



# 2007 Regional Roads Needs Update



Prepared by:

Centralina Council of  
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Roads Committee

# 2007 Regional Roads Needs Update

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## Executive Summary

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The Charlotte Chamber of Commerce has recognized a need to reevaluate the successful BCRTS process and product to determine the status of the region's regional road needs, and what the Chamber should be doing to ensure appropriate resources are available to meet the transportation needs of this region into the future. A Regional Roads Committee was established to oversee this process. The Chamber approached Centralina in late 2006 about updating the 2000 BCRTS Report to determine the progress that has been made in funding and building the region's roads, and what the specific needs are in the coming years.

The 2000 BCRTS Report identified \$3.1 billion worth of additional projects in the 13 counties in North and South Carolina, only \$1.6 billion of which was funded. **There is now \$6.7 billion worth of additional projects currently needed in the region, yet only \$2.2 billion is funded.** A dramatic increase in the cost of constructing projects plays a large role in this new \$6.7 billion figure, but that does not mean the region's needs have stabilized. Growth will continue in the region despite increasing congestion, but the quality of life we currently experience will decline. Travel times will increase, safety will decrease, and the overall reliability of the network to support business will suffer.

As pressing as the transportation needs were in 2000, they have certainly increased in the ensuing seven years. Several regional projects anticipated in 2000 to be in service by 2007 are still under construction, and some have not even begun construction. The unfunded portion of the regional road projects in the region totaled \$1.5 billion in the 2000 Report. Since that time the North Carolina construction price index increased 43 percent and daily VMT increased 31 percent. Available revenues barely increased during this time, resulting in a net decrease in available buying power to build roads. The numbers in the South

## **Executive Summary**

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Carolina-portion of the region is just as dire, as project costs have increased by an average of 61 percent over this period (SCDOT). The challenges facing the region have intensified, despite the completion of nearly \$1.5 billion worth of projects on the regional road network.

The Greater Charlotte region is ideally located in two of the fastest-growing states in the entire nation. Since the Business Community for Regional Transportation Solutions (BCRTS) Regional Roads Infrastructure Inventory (Report) was published in 2000 many significant changes and events have occurred that affect the region's transportation network. As remarkable as it may seem, the pace of population growth in the region has actually increased when compared to the booming 1990s. For example, during the first five years of this decade Union County (NC) grew at twice the pace it experienced during the 1990s, when it grew by nearly 40,000 residents.

The 13-county (**Map 1**) Charlotte region is continuing to experience dramatic population growth, bringing with it a corresponding increase in demand movement of people, goods and services. By 2013 the 13-county region will have 2.6 million residents, an increase of 600,000 since 2000. The 13-county region is anchored by Charlotte, but many growing and economically important communities surround it. The region's communities are connected to each other, and to the rest of North and South Carolina, through a comprehensive regional road network. Until recently the vast majority of segments of this network facilitated the safe and efficient movement of people, goods, and services between communities. This is becoming more of the exception rather than the rule, as frequent traffic jams, accidents, and inefficiency has become a part of the daily lives of many area residents. The ability of state and local governments to meet the mobility needs of the region has been exceeded. The Charlotte Chamber of Commerce has recognized a need to review this vital issue, which it last addressed in 2000. It has created the *Regional Roads Committee* to advocate for improvements.





Centralina solicited the input of staff from area land use and transportation professionals and officials in order to ensure awareness and accuracy of this report. This report was prepared with the review and input from the following persons.

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## **2000 BCRTS Report Review and Assessment**

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The 2000 BCRTS (Business Committee for Regional Transportation Solutions) Report was a comprehensive assessment of all regional road and transit improvements identified, both funded and unfunded, in area plans and improvement programs. This assessment identified \$3.84 billion in total regional road projects needed, with \$2.46 billion already spent or committed. Both for the 2000 and 2007 reports, only roads deemed to be of “regional significance” were studied. A road of regional significance carries high volumes of traffic over longer distances than normal roads, as well as carries significant commercial traffic. A more thorough definition is provided later in this report. Moreover, only those projects that increased capacity (i.e., new road construction projects, new interchanges, road widening, etc) were counted. There was a gap of \$1.56 billion between needed and committed/expended funds to complete these projects.

Notable projects completed since 2000 include widened sections of I-85 in Gaston, Mecklenburg, Cabarrus and Rowan Counties; widened sections of I-77 in York and Mecklenburg Counties; and new sections of I-485 on both the east and west sides of Mecklenburg County. These improvements have had dramatic impacts on travel patterns, congestion, and safety in those counties, yet almost half (six of 13) of the BRCTS counties had no regional projects completed in the ensuing seven years (*Map 2*).

### **Completed Projects Since the 2000 BCRTS Report**

Table 1 shows the completed regional projects listed in the North Carolina 2000-2006 and South Carolina 1998-2004 STIPs (Statewide Transportation Improvement Plans). Projects with only sections of the overall project funded are listed as “partially funded”.



## **2000 BCRTS Report Review and Assessment**

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There were 20 projects with at least a portion of their length completed, done at a 2000 Report-referenced cost of \$1.46 billion. This means less than 40 percent of the 54 total projects in both states listed in the BCRTS Report were completed. All projects in the South Carolina-portion of the region were considered funded in the 2000 Report, at an estimated price tag of \$296 million, but due to cost escalations and redesigns only 9 of the 13 projects have been either partially or fully completed. Two of the four projects, both associated with the Dave Lyle Boulevard Extension in York County, no longer have identified funding sources. The 2007 estimated cost to complete these two unfunded projects is \$110 million, up from \$63 million in the BCRTS Report. Even this \$110 million figure is considered low by York County officials.

The cost to complete the projects listed in the 2000 Report in the North Carolina-portion of the Study Area was estimated at \$3.8 billion, of which approximately half was funded. ***After seven years of work the cost to complete those projects identified in the Year 2000 report is \$4.1 billion, yet only 47 percent (\$1.9 billion) of that cost is funded.*** Approximately \$800 million is expected to be funded through the NCTA. These costs and funding levels come from the 2000-2006 and 2007-2013 NCDOT STIPs, and include estimates for construction costs for both toll roads in the area. The costs for both toll road projects are considered higher than the figures cited in the 2007-2013 STIP. For purposes of this assessment the most recent Toll Authority cost estimates and toll revenue projections are used for applicable projects, and assume full implementation of the projects.

**Table 1: 2007 NC Projects Status from the 2000 Report**

<b>PROJECT</b>	<b>DESCRIPTION</b>	<b>COUNTY</b>	<b>2000 TOTAL COST \$ (000s)</b>	<b>07-13 STIP Cost to Complete</b>	<b>2007 STATUS</b>
U-3440	NC 3 widening	Cabarrus	9,434	10,400	Funded
U-3115	US 29 widening	Cabarrus/ Mecklenburg	7,300	-	Completed
I-3803	I-85 widening	Cabarrus/ Mecklenburg	188,050	169,758	Funded
R-615	NC 24-27 widening	Cabarrus/ Mecklenburg	26,124	-	Completed
I-3802	I-85 widening	Cabarrus/ Rowan	123,565	123,300	Unfunded
R-2903	US 52 widening	Cabarrus/ Rowan/ Stanly	148,764	107,050	Unfunded
R-2533	NC 49 widening	Cabarrus/Stanly	126,812	106,455	Partially Funded
R-3100	NC 16 widening	Catawba	34,400	44,650	Partially Funded
U-2404	Newton-Conover Loop	Catawba	37,612	-	Completed
U-2532	Hickory/ Brookford Southern Loop	Catawba	37,187	68,500	Unfunded
R-2206	NC 16 on new location	Catawba/ Gaston/ Lincoln	131,813	44,391	Funded
R-2307	NC 150 widening	Catawba/ Iredell/ Lincoln	67,378	96,900	Unfunded
R-2625	New Route	Cleveland	10,443	-	Completed
R-2707	US 74 Bypass on new location	Cleveland	234,027	283,067	Partially Funded
R-2608	US 321 Bypass	Gaston	133,872	100,900	Unfunded
I-302	I-85 widening	Gaston	99,396	-	Completed
R-617	NC 150 widening	Gaston/ Lincoln	62,583	50,875	Partially Funded
U-3321	Garden Parkway	Gaston/ Meck	80,898	1,255,200	Unfunded
U-2421	US 70 widening	Iredell	8,436	-	Completed
R-2911	US 70 widening	Iredell/ Rowan	98,343	29,905	Funded
R-2705	NC 73 on new location	Lincoln	36,620	27,450	Unfunded
R-2706	NC 73 widening	Lincoln/ Meck	100,078	111,200	Unfunded
I-3311	I-77 widening	Mecklenburg	88,386	81,999	Partially Funded
R-2123	I-485 Eastern Outer Loop	Mecklenburg	277,546	17,600	Funded
R-2248	I-485 Western Outer Loop	Mecklenburg	492,399	167,623	Funded
R-2420	City Blvd. Extension	Mecklenburg	34,392	6,700	Unfunded

<b>PROJECT</b>	<b>DESCRIPTION</b>	<b>COUNTY</b>	<b>2000 TOTAL COST \$ (000s)</b>	<b>07-13 STIP (or NCTA) Cost to Complete</b>	<b>2007 STATUS</b>
U-209	Independence Blvd. Widening	Mecklenburg	132,209	143,974	Partially Funded
U-2510	NC 16 widening	Mecklenburg	26,800	-	Completed
R-2632A	NC 73 widening	Mecklenburg	13,178	16,869	Partially Funded
U-2512	NC 49 widening	Mecklenburg	49,212	-	Completed
R-3329	Monroe Connector	Meck/ Union	121,984	370,300	Funded
U-2510A	NC 16 widening	Meck/ Union	15,672	18,000	Funded
U-3623	NC 150 widening	Rowan	10,047	11,000	Unfunded
I-2304	I-85 widening	Rowan	184,909	178,500	Unfunded
I-2511	I-85 widening & bridge	Rowan	196,852	46,328	Funded
R-2320	US 52 widening	Stanly	76,968	99,271	Partially Funded
R-2530	NC 24/27 widening	Stanly	37,550	28,050	Partially Funded
R-967	NC 24/27 widening	Stanly	75,858	24,300	Funded
R-3802	NC 16 widening	Union	22,508	21,650	Unfunded
R-2559	Monroe Bypass	Union	132,906	183,900	Partially Funded
R-2616	US 601 widening	Union	44,917	39,700	Funded
		<b>TOTAL</b>	<b>3,837,428</b>	<b>4,085,465</b>	

The SCDOT and South Carolina counties included in this report were more conservative in their list of projects, as all projects included in the 2000 report were considered funded. Since 2000 the costs have increased for many of the projects beyond available revenues. The incomplete and remaining projects in South Carolina from the 2000 report are identified in **Table 2**.

**Table 2: 2007 SC Project Status From 2000 Report**

<b>ID</b>	<b>DESCRIPTION</b>	<b>COUNTY</b>	<b>2000 BCRTS COST</b>	<b>2007 COST TO COMPLETE</b>	<b>2007 STATUS</b>
STIP	SC 9	Chester	23,378	-	Complete
STIP	SC 9	Chester	16,312	-	Complete
STIP	US 521 Study for preliminary engineering	Lancaster	500	-	Complete
2	SC 161 from Cherry Road to India Hook	York	17,666	-	Complete
56	SC 161 from India Hook to Mt. Gallant	York	17,666	-	Complete
46	I-77 from US 21 to SC 122	York	35,180	-	Complete
66	I-77 from US 21 to NC State line	York	69,465	-	Complete
STIP	SC 274 from SC 161 to SC 55	York	16,100	-	Funded
49	SC 160 from I-77 to Gold Hill	York	7,200	-	Complete
N/A	SC 161 Connector	York	7,374	10,000	Unfunded
23399	Dave Lyle Blvd. to US 521	York	55,690	100,000	Unfunded
18670	SC 49	York	5,810	2,624	Funded
York County	SC 5	York	24,600	44,272	Funded
<b>ID</b>	<b>TOTAL</b>		<b>93,474</b>	<b>156,896</b>	

The lessons from the 2000 Report and road cost estimations in general are as follows:

- Cost estimates should be considered in future year dollars with a realistic inflation factor to allow for cost overruns;
- Complex projects involving bridging and interchanges are significantly more expensive than at-grade widening, and will typically encounter delays; and,
- Delaying projects has a significant impact on the final cost.

# 2007 Regional Roads Current Needs

## Issues Affecting the Region in 2007

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### **Growth and Congestion**

The 13-county Study Area is projected to add an additional quarter-million residents between 2005 and 2010. It has already added an average of approximately 47,000 additional residents per year for the first half of the decade, and the region can expect this growth to accelerate slightly in the future, with nearly 49,000 residents added per year through 2010. The population growth for the entire Study Area was approximately 10 percent between 2000 and 2005. By 2013 the Study Area can expect to have approximately 2.64 million residents, up from 2.01 million in 2000.

According to the Texas Transportation Institute, in the Charlotte Urbanized Area in the first three years of this decade the amount of vehicle delay in the total number of person-hours increased 23 percent, from 13.6 to 16.7 million person-hours of delay. The Charlotte Urbanized Area now ranks as the second-most congested mid-sized urban area in the nation, behind only Austin, Texas. This figure of average amount of delay does not apply to all portions of the Study Area, as it only considers the Charlotte urban area, but does allow the Charlotte Urbanized Area's congestion to be compared to that in other urbanized areas throughout the country.

### **Cost Inflation**

One of the most significant events in the seven years since the 2000 BCRTS Report was developed was the sustained increases in motor fuel prices, punctuated by dramatic price spikes following oil extraction and refining damage caused by Hurricanes Katrina and Rita in 2005. In addition to these motor fuel increases, continued development in China and India has driven up the prices of construction materials. Worldwide, increased environmental and regulatory

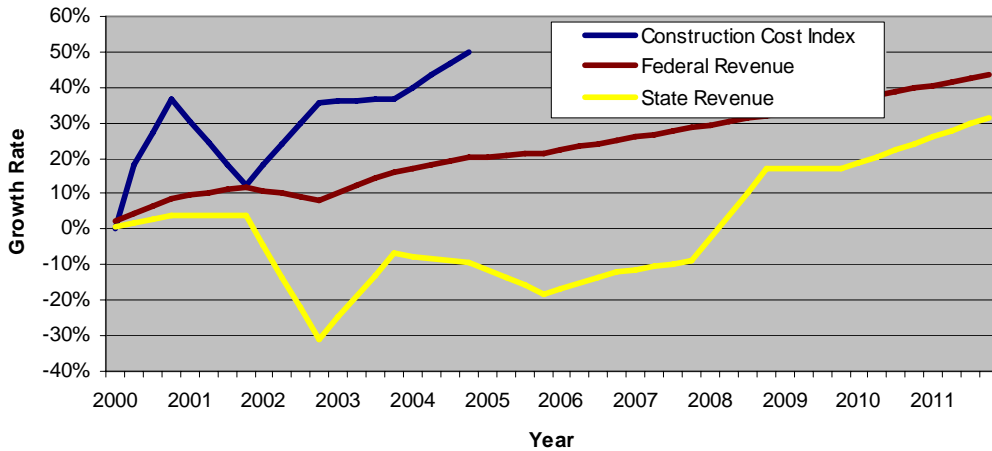


review of transportation projects has both lengthened the process and increased

## Issues Affecting the Region in 2007

the costs. Finally, increased development pressure throughout the area has increased the cost of rights-of-way for new projects. The tables below show these trends in greater detail. For the most recent year (2006) the construction cost index increased approximately 10 percent, making the total increase between 2000 and 2006 to be 43 percent. The NCDOT prepared a 1997-2005 construction cost index (**Graph 2**) that provides a dramatic depiction of recent cost increases.

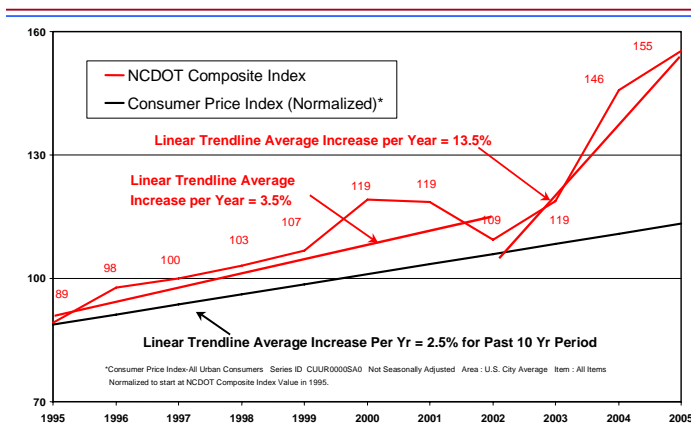
**Graph 1: NCDOT Buying Power 2000-2004**



**Graph 2: NC Highway Construction Cost Index 1995-2005**



### North Carolina Highway Construction Cost Index Annual Index (1997 Base Year)



### Motor Fuel Prices

The impact of motor fuel increases is two-fold: increasing the cost of road-building and reducing tax revenues for funding such projects.

The North Carolina motor fuel tax includes a portion that is allowed to adjust every six months to reflect recent fuel prices, and act to partially preserve NCDOT buying power. After the price spikes of 2005 an adjustment raised the total North Carolina motor fuel tax to 29.9 cents per gallon. The Legislature then enacted a cap on the motor fuel tax, so that even if motor fuel prices increase, the total tax will remain at this maximum level. This has provided tax relief to the traveling public, but has reduced available revenues to the NCDOT, as the tax would have likely adjusted upwards four cents after the second-half of 2006.

Consumption of fuel in North Carolina, like elsewhere in the country, is a function of travel demand and vehicle fleet fuel efficiency. Fuel consumption had historically been increasing at a 2-3 percent annual rate, but in the past two years has moderated to 0-1 percent per year. This has had a direct impact on revenue generation for funding road improvements, and may have an even greater impact in the coming years. Fuel consumption is extremely *inelastic* in the short-term (1-5 years), i.e. as prices increase, demand does not significantly decrease. Over the long-term (more than five years) demand will decrease in response to higher fuel prices, although at a rate less than the increase in the price of fuel. Funds for construction may not increase in the coming years under this scenario.

Before the horizon of this report (2013) there may be plug-in gasoline-electric hybrid vehicles available for sale to the general public. These vehicles potentially could operate for long-periods of time without using motor fuel, and thus bypass much of their expected contribution to the maintenance and improvement of North Carolina's road network through fuel consumption. This report does not

## **Issues Affecting the Region in 2007**

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condemn these vehicles, or a move towards increased fuel efficiency, but a future with stagnant revenues and increasing costs does merit discussion at the state-level on how to ensure all motorists pay their fair share of the costs to provide an adequate transportation system.

## **Road Planning and Building Processes in the Region**

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### **1. Transportation Planning and Road Funding in North Carolina**

This section describes the means by which roads are built in North Carolina, in both rural and urban portions on the state. The urban area projects are prioritized by Metropolitan Planning Organizations (MPOs), in cooperation with the NCDOT to develop and prioritize transportation projects within their study areas. Rural Planning Organizations (RPOs) have come into existence in the past five years to perform many of the same activities as MPOs, but in the non-urbanized portions of the state.

#### **A. Metropolitan Planning Organizations (MPOs)**

The transportation analysis and decision-making for roads in urbanized areas over 50,000 in population are made by MPOs in cooperation with the NCDOT. There are four MPOs in the North Carolina-part of the Charlotte region: Mecklenburg-Union Metropolitan Planning Organization (MUMPO); Gaston Urban Area MPO (GUAMPO); Cabarrus-Rowan MPO (CRMPO); and the Greater Hickory MPO (GRMPO). Map 3 shows the boundaries of the four MPOs in the region.

The MPOs represent all members of the various units of government within the MPO's boundary. The policy-level body of the MPO is referred to as the Transportation Advisory Committee (TAC). It is comprised of elected officials from its member governments, as well as a representative of the NCDOT Board of Transportation. The MPO boundaries, at a minimum, must include the Urbanized Area as defined by the most recent decennial census. The Study Area for an MPO must include the Urbanized Area, but should also incorporate those areas that are expected to become urban in the subsequent twenty years. Study Area boundaries typically change after each census, but may also change when member governments annex areas outside of the current Study Area. Federal law designates an MPO for each Urbanized Area with a population of more than 50,000 persons.

## **Road Planning and Building Processes in the Region**

Federal law also requires that a Technical Coordinating Committee (TCC) support an MPO. This committee consists of staff members from the member governments of the MPO, as well as from the NCDOT, Federal Highway Administration (FHWA), Federal Transit Administration (FTA), transit operators, airport officials, and representatives from freight facilities.

### **B. Rural Planning Organizations**

Until several years ago, transportation planning in small urban areas and rural counties was conducted by the NCDOT Transportation Planning Branch (TPB), in cooperation with local planning and governing boards. A small urban area is classified as “an area with a population of 50,000 or less.” The TPB is still responsible for much of the development of Comprehensive Transportation Plans (CTPs) for rural areas, but much of the responsibilities for day-to-day transportation planning and priority list development has shifted to the Rural Planning Organizations (RPOs). The RPOs were mandated by the North Carolina General Assembly as a counterpart to the existing MPOs.

There are two RPOs in the Charlotte region, the Lake Norman RPO (LNRPO), and the Rocky River RPO (RRRPO) (refer to **Map 3** for RPO boundaries). They are organized similarly to MPOs, with TCCs and TACs. They develop priority lists that are submitted for consideration by the NCDOT for inclusion in the STIP. These lists are placed alongside the projects from the MPO’s Candidate Lists for equal consideration by the NCDOT. Local representatives can continue to engage in dialogue with NCDOT officials during the development of the draft STIP. A few counties (Union and Gaston) have areas both in an MPO and RPO.



## Road Planning and Building Processes in the Region

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### C. North Carolina State Transportation Improvement Program (STIP)

The STIP is a document created every other year by the NCDOT to assign funding to a variety of transportation project types, including highway, enhancement, bicycle and pedestrian, bridge, maintenance, public transportation, and rail. This list is updated on a two-year cycle. In the first year MPOs submit “Candidate Projects” from a prioritized list that is presented to the NCDOT for consideration in the upcoming STIP. The NCDOT also obtains input on transportation needs through public input hearings held throughout the State. Over the course of the two years, the MPOs and the NCDOT work together to develop a draft STIP and Metropolitan Transportation Improvement Program (MTIP). NCDOT Board of Transportation members and MPO staffs review the draft plans, along with the public comments generated at the public hearings. The process is finalized when each MPO adopts its MTIP and when the Board of Transportation (BOT) adopts the STIP. The MTIP is considered a subset of the larger STIP.

The “Candidate Project” list includes a variety of project types, including road, transit, bicycle and pedestrian, and enhancement programs. Inclusion on the Candidate Project list does not ensure inclusion in the STIP.

The NCDOT typically selects projects from the Candidate Project list, but not necessarily in the order as presented. An MPO’s “high priority” projects may remain on the Candidate Project list for many years before gaining funding. Jurisdictions have the option of contributing money to current STIP projects to accelerate implementation. The amount of money that jurisdictions can contribute is limited by the terms of North Carolina General Statute (NCGS) 136.66-3.



## **Road Planning and Building Processes in the Region**

Funding for highway construction comes from both federal and state revenue sources, primarily from state and federal motor fuel surcharges, but also from vehicle title and use taxes. The North Carolina-portion of the gas tax is currently capped at 29.9 cents per gallon, with 17 cents fixed, and the remainder varying based on the previous six-month prices. The federal portion of the gas tax is 18.4 cents per gallon. The federal diesel fuel tax is 24.4 cents per gallon. Combined, these motor fuel taxes raise approximately 55 percent of all state transportation revenues. The Highway Use Tax raises an additional 25 percent by assessing taxes based on the value of vehicles, and inspection/registration fees supply the remaining 20 percent.

Funding for highway construction comes from the Federal Aid Construction Program, the Intrastate and Urban Loop Programs and from the North Carolina Highway Trust Fund. The total amount available in the STIP for the FY 06-07 was \$1.58 billion, or 42 percent of the \$3.8 billion NCDOT budget for the year. These funds typically are available for certain types of roads or purposes, so not all funds are available exclusively for highway expansion.

### **D. Toll Roads**

The North Carolina Turnpike Authority (NCTA) was created in 2002 out of an identified need to utilize alternative financing to pay for much-needed roads during a time of rapid growth, dwindling resources and skyrocketing costs. The NCTA is authorized to plan, develop, construct, operate and maintain up to nine toll facilities in the state, two of which are located within the Charlotte region. One is the Monroe Bypass/ Connector and the other is the Garden Parkway, sometimes referred to as the East-West Connector. Any toll road created in North Carolina is required to have a free, alternate route for those travelers who do not wish to pay a toll. In addition, only identified routes authorized for the

## **Road Planning and Building Processes in the Region**

NCTA to design, establish, purchase, construct, operate, and maintain are considered for implementation as toll roads.

The NCTA has stated that none of the nine proposed toll road projects will pay for all of the construction and maintenance costs associated with their implementation through toll revenues. Most successful toll road projects can be expected to pay for one-half to two-thirds of the construction and maintenance costs through tolls. The remainder of the cost not paid by tolls is referred to as a “gap”, and must be addressed through traditional funding sources in the STIP, or through other sources such as public-private partnerships.

i. Monroe Connector/Bypass

This 21-mile facility will be built from the vicinity of US 74 and I-485 in eastern Mecklenburg County to US 74 near the Town of Marshville in Union County. The “Bypass” is the section between US 74 near Marshville and US 601, and the “Connector” the section between US 601 and US 74/I-485 near the Mecklenburg County line. Preliminary cost is approximately \$550 million (April 2007). Final costs will be determined during the more in-depth design phase of project development. The NCTA is currently in the beginning phases of the project development, environmental, and engineering studies for this project. These projects are identified as R-2559 and R-3329 on Table 2). The estimated opening date for this facility is between 2012 and 2015, depending on funding arrangements. This report assumes the entire facility will be tolled, which means the facility is fully funded (approximately \$397.5 million in bonded toll revenues plus \$185.7 million in attributed TIP funds). If only the Connector is tolled the amount of unfunded regional roads projects identified in Table 1 will increase by the amount of the cost of the Bypass, approximately \$153.9-\$160 million. Toll revenues will also decrease.

## Road Planning and Building Processes in the Region

### ii. Garden Parkway (East-West Connector)

This 21 to 23-mile facility (the difference being on which alignment is chosen) would be built from I-85 west of Gastonia in Gaston County to I-485 near the Charlotte Douglas International Airport in Mecklenburg County. The preliminary cost is estimated to be between \$409 million and \$1.219 billion, depending on which scenario is chosen. A final EIS is expected to be complete by the summer of 2009, with construction commencing in 2010, and the project open to the public in 2015.

Implementation of the Garden Parkway has been broken into three scenarios:

- **Scenario A** from I-485 to NC 279. This 5.7-mile section is projected to be the most traveled section of the Parkway, with 10,000-17,000 vehicles per day in 2015. Approximately 53 percent of the \$398 million total cost would be paid through tolls, leaving a gap of \$187.7 million.
- **Scenario B** from I-485 to US 321. This 14.1-mile scenario is projected to carry 8,000-22,000 vehicles per day. Approximately 45 percent of the \$742 million total costs would be paid for through tolls, leaving a gap of \$418.1 million.
- **Scenario C** from I-485 to I-85 west of Gastonia: This 22.3-mile scenario is projected to carry 9,000-26,000 vehicles per day. Approximately 34 percent of the \$1,219 million cost would be paid for through tolls, leaving a gap of \$834 million.

There has been no determination on whether to build the entire project or to construct it in phases. The decision of how much of the overall project to complete initially will determine the amount of “gap” funding required.

## **Road Planning and Building Processes in the Region**

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### **2. ROAD BUILDING PROCESS IN SOUTH CAROLINA**

Road projects of regional significance in urban areas are addressed by MPOs, as is the case in North Carolina. Councils of Government (COGs) perform the work of RPOs in North Carolina in rural areas. The two states have different staffing and development procedures for creating the STIP, as well as how to fund such projects.

#### **A. Metropolitan Planning Organizations**

There is one MPO in the South Carolina—portion of the Study Area, the Rock Hill-Fort Mill Area Transportation Study (RFATS). This MPO serves the urbanized portion of York County, and represents Rock Hill, Fort Mill, Tega Cay, the Catawba Indian Nation, as well as the unincorporated portions of York County (refer to Map 2). The RFATS has a Policy Committee and a Technical Team that each are the equivalent to the TACs and TCCs found in North Carolina MPOs. The Study Team reviews and analyzes data to develop a needs list. The Policy Committee then reviews and adopts the list for the local TIP (LTIP), which is then forwarded to the SCDOT for approval and inclusion into the STIP.

#### **B. Rural Transportation Planning**

In non-MPO areas, Councils of Governments (COGs) assist the SCDOT in developing a rural priority needs list. The Catawba Regional Council of Governments (CRCOG), located in Rock Hill, serves as the COG for York, Lancaster and Chester Counties. The SCDOT and the CRCOG entered into an agreement to coordinate the rural roads ranking process with the counties and municipalities in the Catawba region in an effort to ensure representation of local needs.

## **Road Planning and Building Processes in the Region**

The rural roads ranking process utilizes information provided by the SCDOT, including current and future volume to capacity ratios, accident rates, and average daily traffic per lane mile. This data is used to produce a list of roads that have identified deficiencies. Local officials are asked to use this information to prioritize road construction needs in their county area forward the prioritized list to the CRCOG. After each county prioritizes their needs, the COG's Rural Highway Technical Committee (RHTC), comprised of county and city managers, reviews the local needs and develops a prioritized list on a regional basis. The RHTC forwards its recommendations to the CRCOG Board. The Board then determines the regional priority list for funding against a predetermined amount (developed by the SCDOT) available for the area. The SCDOT then presents this list to the SCDOT Highway Commission that then votes on the list before it is approved and included in the STIP.

### **C. South Carolina State Transportation Improvement Program**

The SCDOT STIP is produced annually and projects five years ahead (as opposed to seven years in North Carolina.) The STIP only includes projects with funding, and therefore is considered "cost-constrained". The Transportation Commission ultimately approves it, which functions in a similar fashion as the BOT in North Carolina. In South Carolina, the SCDOT Transportation Commission determines the funding priorities for the federal-aid program following each new federal highway bill and annual appropriations act. Since the mid 1990s, the allocation between urban and rural federal-aid funds for MPOs and COGs, called "Guideshare", has been based on study area population (SCDOT). This provides a predictable funding stream for planning future projects and implementation.

## **Road Planning and Building Processes in the Region**

### **D. Capital Projects Sales Tax**

The State of South Carolina authorized counties to submit a list of capital projects for its voters to consider in its entirety, paid for through an additional one-cent on the dollar sales tax. York County presented a \$99 million list to its voters in November 1997, which was approved by a narrow margin. All revenues were dedicated to the construction of a list of transportation projects presented. This program has been commonly called “Pennies for Progress”, and has since funded the construction of many transportation projects throughout York County. These include the current SC 5 widening and the Fort Mill Northern Bypass. This tax, as designed by the state legislature, expires after seven years, the projects have been completed, or the projected amount of money has been raised, whichever comes first. Collection of revenues began in 1998, and the \$99 million ceiling was reached in 2004. In November 2003 York County placed a second Pennies for Progress initiative before York County voters, this time for \$174 million. This was also approved. Funding from this initiative will be used to implement a series of transportation improvements throughout the county, from paving gravel roads to widening secondary roads to multi-lanes.

### **E. SCDOT State Infrastructure Bank**

The South Carolina General Assembly passed the “South Carolina Transportation Infrastructure Bank Act” in 1997. The purpose of this act was “to focus greater attention on larger transportation projects, and thereby allow SCDOT resources to be devoted sooner to smaller, but yet important, transportation projects.” The purpose of the bank is “to select and assist in financing major projects by providing loans and other financial assistance for constructing and improving highway and transportation facilities for public purposes including economic development.” The SCDOT currently funds the SIB with approximately \$24 million per year from state motor fuel user fees. The SIB has previously funded improvements on SC 5, SC 161, and SC 160 in York County.

## **2007 Roads of Regional Significance Definition and Network**

Centralina staff met with local planning and transportation officials in February 2007 to review the 2000 network of roads of regional significance. The group amended the definition of roads essential to the regional network, and added roads into the network based on this revised definition. The group considered the NCDOT Strategic Highway Corridor network, and subsequent growth since 2000, in updating the network. The new 2007 roads of regional significance had the following characteristics:

1. US Highway Routes; or,
  2. Interstate Routes; or,
- NC and SC State Highway Routes, and other roads, that provides essential regional connectivity:
- Between major cities; or,
  - Between major employment centers; or,
  - Between Regional Resources, including: universities, major medical complexes, inter-modal facilities, regional entertainment and cultural facilities, and regional commercial/retail centers.

This definition clarified the role of NC and SC routes, as not all facilities should qualify for inclusion in the Regional Road Network. The group determined NC and SC routes must provide regional connectivity as described above. This is not a substantial shift from the 2000 process, but does provide improved guidance in choosing such roads for inclusion.

## 2007 Roads of Regional Significance Definition and Network

With this updated definition, the following roads were added (**Map 4**) to the network (i.e., these roads were not included in the 2000 BCRTS Report):

- US 21 where it is not co-located on I-77 in Chester, Iredell and York Counties
- Fort Mill Southern Bypass in York County
- Fort Mill Northern Bypass in York County
- SC/NC 51 in York and Mecklenburg Counties
- SC 9 through Lancaster County
- NC 24 in Mecklenburg County
- NC 84 in Union County



- Map 4

## **2007 Roads of Regional Significance Definition and Network**

### **Strategic Highway Corridors**

In 2004 the NCDOT Board of Transportation approved the Strategic Highway Corridor (SHC) concept as a part of North Carolina's Long-Range, Multi-Modal Statewide Transportation Plan. The primary purpose of the Strategic Highway Corridors initiative (Map 5) is to provide a network of high-speed, safe, reliable highways throughout North Carolina. A primary goal is to create a greater consensus towards the development of a genuine vision for each Corridor - specifically towards the identification of the desired facility type (freeway, expressway, boulevard, or thoroughfare) for each Corridor. Buy-in towards this vision and desired facility type would affect decision-making through the project improvement process, i.e., affecting funding decisions, project planning decisions, design decisions, access decisions (driveway permit approval), and local land use decisions. The current fiscal year 2007-2013 STIP actually states whether individual projects are in the SHC. All routes in the Study Area designated as Strategic Highway Corridors are considered roads of regional significance.

After receiving input from the local planning and transportation officials, the network used for the Regional Roads Committee report is shown below.

Map 5

## 2007 Identified Regional Road Needs

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There are 48 projects in North Carolina and 10 projects in South Carolina added to the 2000 BCRTS list of projects needed on the regional roads network (**Map 6**). Each of these projects is found on the regional road network, and add capacity, or in the case of interchanges/intersections, address an identified geometric, capacity, or alignment deficiency. These project costs total approximately \$2.2 billion, with \$76 million already spent on the projects, \$283 million committed, and \$1.8 billion unfunded. Interstates 77 and 85 would receive many improvements, as they have identified projects that account for approximately half of that total, including a variety of widening and interchange projects. When completed, these would result in at least an eight-lane facility from Rock Hill to Statesville, and from Gaston County to Rowan County. High-Occupancy Vehicle (HOV) Lanes would be found on additional sections of I-77 in Mecklenburg County.

The notable characteristic of the additional projects is the emphasis on improving existing facilities versus developing wholly new corridors. Improving existing interchanges was not a significant issue in 2000, but is the purpose for several regionally significant projects, not the least of which is the nearly \$200 million I-40/I-77 interchange project in Iredell County. These indicate a trend towards expanding existing infrastructure, especially where interchanges exist.

Map 6

Map 7

Map 8

Map 9



Map 10

Map 11

Map 12

Map 13

## 2007 Identified Regional Road Needs

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All projects listed, as well as their associated costs, come from the current STIPs for North and South Carolina DOTs, the 1997 and 2003 York County Pennies for Progress lists, and the NC Turnpike Authority (NCTA). Due to the dramatic reduction in buying power of construction funds since 2000, the group of area land use and transportation professions decided to include those projects included in MPO Long Range Transportation Plans (LRTP) 2020 project lists. These projects were seen as currently needed, but were not included in the STIP for each state since funding was limited when compared to needs. The three RPOs in North Carolina included in this report were considered to have their 2020 needs already listed in the NCDOT 2007-2013 STIP, although often as unfunded.

**Tables 3 and 4** show the following information for projects on regionally significant roads on a county-by-county basis:

1. Project ID number
2. Route- identifies the facility to be improved.
3. County- Which county (or counties) contain(s) the project.
4. Funds Spent through 2006 (in thousands of dollars)- total amount already expended on the project.
5. Funds Committed (in thousands of dollars)- total amount funded through 2013.
6. Funds Needed for Completion (in thousands of dollars)- difference between Total Estimated Cost and the sum of Spent plus Committed.
7. Total Cost (in thousands of dollars)- is the current, official estimate of the cost to complete the project.
8. Funding Status- Is the project funded, partially funded, or unfunded.

**TABLE 3: 2007 NC Identified Regional Road Needs**

<i>Project</i>	<i>Road</i>	<i>County</i>	<i>Funds Spent (000s)</i>	<i>Funds Committed (000s)</i>	<i>Funds Needed for Completion (000s)</i>	<i>Total Cost (000s)</i>	<i>Funding Status</i>
R-85BE	US 321 interchange	Catawba	0	0	2,600	2,600	Unfunded
U-4700	US 321 widening	Catawba	3,024	0	146,400	149,424	Unfunded
U-2307	Eastside Thoroughfare	Catawba	362	0	20,200	20,562	Unfunded
U-2529	Fairgrove Church Road on new location	Catawba	37,250	0	37,250	74,500	Unfunded
U-3450	Newton Conover Loop	Catawba	1,500	0	5,500	7,000	Unfunded
R-2246	Kannapolis Pkwy. Bypass Extension	Cabarrus	17,849	23,900	17,000	58,749	Partially Funded
U-2009	Westside Bypass	Cabarrus	0	0	55,186	55,186	Unfunded
R-4706	NC 73 widening	Cabarrus	0	0	23,844	23,844	Unfunded
I-4750	I-77 widening	Mecklenburg/Iredell	0	14,000	511,800	525,800	Partially Funded
I-4733	I-77 & Catawba Ave. Int. revision	Mecklenburg	784	6,500	27,000	34,284	Partially Funded
R-0211EC	I-485 & Weddington Rd. Interchange	Mecklenburg	650	17,600	0	18,250	Funded
R-4902	I-485 widening	Mecklenburg	2,000	43,400	0	45,400	Funded
U-2509	Independence Blvd. Upgrade	Mecklenburg	420	0	20,500	20,920	Unfunded
U-2704	US 29-74 improvement	Mecklenburg	600	0	9,371	9,971	Unfunded
U-3447	NC 51 to SC state line	Mecklenburg	1,550	6,537	0	8,087	Funded
U-3603	NC 27 adding EB lane	Mecklenburg	550	1,550	0	2,100	Funded
U-3850	I-277 adding WB lane	Mecklenburg	0	3,000	0	3,000	Funded
R-4441	US 74 upgrade to Interstate	Union	0	0	172,000	172,000	Unfunded
U-3467	Rea Rd. extension	Union	2,300	0	31,600	33,900	Unfunded
U-4024	US 601 widening	Union	600	12,715	33,300	46,615	Partially Funded
R-4045	US 74 upgrade to Interstate	Cleveland	100	0	16,200	16,300	Unfunded
I-5000	I-85 & US 321 interchange revision	Gaston	0	4,700	23,700	28,400	Partially Funded
U-3806	US 74 adding lanes	Gaston	86	0	5,650	5,736	Unfunded
I-3819	I-40 & I-77 interchange modification	Iredell	869	126,016	70,000	196,885	Partially Funded

**TABLE 3: 2007 NC Identified Regional Road Needs (Continued)**

<b>Project</b>	<b>Road</b>	<b>County</b>	<b>Funds Spent (000s)</b>	<b>Funds Committed (000s)</b>	<b>Funds Needed for Completion (000s)</b>	<b>Total Cost (000s)</b>	<b>Funding Status</b>
U-4914	NC 150 in Mooresville	Iredell	0	0	25,900	25,900	Unfunded
I-3610	I-85 and US 29 Interchange	Rowan	0	0	8,000	8,000	Unfunded
I-3804	I-85 and Beattys Ford Interchange	Rowan	0	0	9,050	9,050	Unfunded
I-4411	I-77 & Langtree Rd. Interchange	Iredell	6,088	23,300	0	29,388	Funded
C-2	NC 274 widening	Gaston	0	0	5,945	5,945	Unfunded
C-4	NC 274 widening	Gaston	0	0	18,798	18,798	Unfunded
C-5	US 321 add turn lane	Gaston	0	0	2,029	2,029	Unfunded
126	US 74/ Sharon Amity Int.	Mecklenburg	0	0	61,600	61,600	Unfunded
302	I-77 HOV Lane	Mecklenburg	0	0	6,500	6,500	Unfunded
8	Billy Graham Pkwy/ NC 160 Interchange	Mecklenburg	0	0	107,000	107,000	Unfunded
159	US 74 Expressway	Mecklenburg	0	0	19,900	19,900	Unfunded
160	US 74 Expressway	Mecklenburg	0	0	19,200	19,200	Unfunded
79	NC 51	Mecklenburg	0	0	24,200	24,200	Unfunded
707	I-77 HOV Lane	Mecklenburg	0	0	22,500	22,500	Unfunded
36	I-77 HOV Lane	Mecklenburg	0	0	128,100	128,100	Unfunded
117	Billy Graham Pkwy/ Morris Field Dr. Interchange	Mecklenburg	0	0	15,900	15,900	Unfunded
216	I-77 widening	Mecklenburg	0	0	59,500	59,500	Unfunded
45	I-85/ Billy Graham Pkwy Interchange	Mecklenburg	0	0	27,000	27,000	Unfunded
39	I-77 widening & HOV	Mecklenburg	0	0	33,900	33,900	Unfunded
72	NC 49/ I-77	Mecklenburg	0	0	3,000	3,000	Unfunded
38	I-77 widening	Mecklenburg	0	0	102,900	102,900	Unfunded
708	I-77 widening	Mecklenburg	0	0	8,100	8,100	Unfunded
209	I-485 widening	Mecklenburg	0	0	53,000	53,000	Unfunded
		<b>TOTAL</b>	<b>76,582</b>	<b>283,218</b>	<b>1,841,823</b>	<b>2,201,623</b>	

## 2007 Identified Regional Road Needs

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**Table 4** shows 2007 needs on the status of roads of regional significance in South Carolina. The twelve projects shown are in all three SC counties (**Map 14**). Approximately half of these projects are included in the 2003 York County Pennies for Progress referendum, and will be implemented in the next six years. York County has received the overwhelming majority of growth of the three South Carolina counties included in RRC region, and has the majority of projects listed below. Several projects are priority needs, but do not yet have cost estimates associated with them. Considering each of those CRCOG priority projects are in excess of ten miles, the cost estimates for each will certainly be in the tens of millions of dollars. York County and the SCDOT have also spent significant sums improving capacity on its major roads, which has significantly reduced congestion. Despite these improvements, needs still exist, although many are scheduled to be addressed in the near future.



**TABLE 4: 2007 SC Identified Regional Road Needs**

<i>Project</i>	<i>Road</i>	<i>County</i>	<i>Funds Spent (000s)</i>	<i>Funds Committed (000s)</i>	<i>Funds Needed For Completion (000s)</i>	<i>Total Cost (000s)</i>	<i>Funding Status</i>
2003 Pennies-25	SC 51	York	0	5,904	0	5,904	Funded
2003 Pennies-04	Fort Mill Southern Bypass (Phase II)	York	0	15,197	0	15,197	Funded
2003 Pennies-17	SC 72	York	0	6,771	0	6,771	Funded
2003 Pennies-25	SC 160	York	0	1,600	0	1,600	Funded
RFATS Unfunded List	US 21 from Fort Mill Northern Bypass to SC 51	York	0	0	13,300	13,300	Unfunded
2003 Pennies-08	US 21 from SC 161 to Sutton	York	0	17,120	0	17,120	Funded
CRCOG	SC 160	Lancaster	0	12,000	6,000	18,000	Partially Funded
CRCOG	SC 72	York / Chester	0	0	No estimate	No estimate	Unfunded
York County	SC 5 Bypass	York	0	12,800	0	12,800	Funded
CRCOG	SC 9	Lancaster	0	0	No estimate	No estimate	Unfunded
CRCOG	SC 5 between US 21 and US 521	York / Lancaster	0	0	No estimate	No estimate	Unfunded
2003 Pennies-15	SC 160 east of Fort Mill to County Line	York	0	2,545	0	2,545	Funded
		<b>TOTAL</b>	<b>0</b>	<b>73,937</b>	<b>19,300</b>	<b>93,237</b>	

Map 14

## Conclusion

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Regional mobility is essential to the quality of life and economic future of a community. A safe and reliable road network facilitates the movement of people, goods and services between communities. The 13-county bi-state region is experiencing growth the demand for travel, and the regional road network necessary to safely and reliably meet these demands is falling short. This report has concluded that the funds available to meet identified current needs will not occur for the foreseeable future, and the current needs have increased significantly since 2000. This means current deficiencies will only become worse, and roadways currently deemed sufficient are likely to become inadequate in the near future, despite awareness of the coming issues.

There is an adage in economics that contends there is no free lunch. This holds true in transportation as well. The region must decide whether they are willing to provide an reliable and safe regional roads network, or whether they will accept the conclusions of this report, which concludes the current needs of the region will not be met in the coming years, and that the problems have only gotten worse since the first edition of this report was produced in 2000.

