

**THE FUTURE OF NORTH CAROLINA'S
TRANSPORTATION SYSTEM:**
Preserving and Maintaining North Carolina's Economic Lifeline
to Ensure Safe, Smooth and Efficient Mobility

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Prepared by:

TRIP
1726 M Street, NW, Suite 401
Washington, D.C. 20036
202-466-6706 (voice)
202-785-4722 (fax)
www.tripnet.org

Founded in 1971, TRIP® of Washington, DC is a nonprofit organization that researches, evaluates and distributes economic and technical data on highway transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway and transit engineering and construction; labor unions; and organizations concerned with an efficient and safe highway transportation network.

Executive Summary

North Carolina's extensive system of roads, highways, bridges and public transit serves as the backbone of the Tar Heel State's economy, providing mobility and connectivity for the state's residents, visitors and businesses. North Carolina faces a significant challenge in maintaining the condition of roads, highways and bridges and accommodating the state's growing mobility needs. While North Carolina's state-maintained highway system is one of the most extensive in the nation, its funding levels are among the lowest. With an unemployment rate that has more than doubled over the past two years, and with the state's population continuing to grow, North Carolina must improve its roads, highways, bridges and public transit to foster economic growth, keep business in the state, and ensure safe, reliable mobility.

As North Carolina looks to rebound from the current economic downturn, the state will need to improve the physical condition of its transportation network and enhance the system's ability to provide efficient, safe and reliable mobility for residents, visitors and businesses. Making needed improvements to North Carolina's roads, highways, bridges and transit systems could provide a significant boost to the state's economy by creating jobs and stimulating long-term economic growth as a result of enhanced mobility and access.

North Carolina faces a \$65 billion shortfall in funding needed over the next 20 years to maintain the state's current transportation system and to make needed improvements to meet future transportation needs. The American Recovery and Reinvestment Act (ARRA), approved in February 2009, provided approximately \$735 million in stimulus funding for highway and bridge improvements and \$103 million for public transit improvements in North Carolina. ARRA funds were used to partially offset an estimated \$905 million decline in state transportation revenues from 2009 to 2011. This funding can serve as a down payment on needed improvements, but it is not sufficient to allow the state to proceed with numerous projects needed to repair, maintain and expand its surface transportation system. Meeting North Carolina's road, highway, bridge and transit needs will require a significant, long-term boost in state and federal surface transportation funding.

Congress is currently deliberating over a long-range federal surface transportation program, known as SAFETEA-LU, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users. Although SAFETEA-LU was scheduled to expire on September 30, 2009, Congress passed two short term extensions in lieu of a long-term bill. The current extension will expire on December 31, 2010. The level of funding and the provisions of a future federal surface transportation program will have a significant impact on future highway and bridge conditions and safety as well as the level of transit service in North Carolina, which, in turn, will affect the state's ability to improve its residents' quality of life and enhance economic development opportunities.

Key Findings

- North Carolina's increased population and anticipated growth is placing added demands on an already challenged road and highway system.
- There is a \$65 billion shortfall in funding required by 2030 to adequately plan, design, build and maintain the state's transportation system.
- Insufficient federal and state transportation funding has stalled critical road, bridge and transit projects around the state which could help support economic growth by creating jobs and improving transportation connectivity in North Carolina.
- Federal transportation funding – authorized through SAFETEA-LU – is essential to North Carolina and represents more than one-fourth of funding for the state's road and bridges.
- The lack of long-term federal and state funding commitments creates uncertainty for the NC Department of Transportation in planning and delivery of projects. The current federal transportation funding program expires on December 31, 2010.
- Failure to secure long-term, adequate funding solutions will lead to increased congestion, decreased safety, costlier goods and services and diminished quality of life.
- North Carolina's residents lose \$5.7 billion each year as a result of driving on roads and highways that are congested, deteriorated or lack some desirable safety features.
- North Carolina's urban roads are growing more congested, resulting in additional loss of time, fuel and money to drivers.
- Poor road conditions in North Carolina are costing drivers more in vehicle depreciation, damage, tire wear and increased fuel consumption. Proper and timely road maintenance and repair would be one-fourth as costly as reconstruction.
- Approximately one-in-seven bridges in North Carolina are considered structurally deficient. The state must replace 400 bridges annually to correct the problem yet can only fund replacing 100 per year.
- Traffic fatality rates in North Carolina exceed the national average and the rates for non-interstate rural roads are even higher. Roadway design is a leading contributing factor to vehicle crashes which results in significant costs to our state.
- The transportation system drives economic prosperity and job creation in North Carolina.
- It is critical for Americans' future quality of life that the nation creates the preeminent surface transportation system in the world – one that is safe, well-maintained and reliable.

Transportation and Costs

- North Carolina’s residents incur a significant cost as a result of roads and highways that are congested, deteriorated or lack some desirable safety features.
- According to TRIP estimates, North Carolina’s roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions cost the state’s drivers approximately \$5.7 billion annually in the form of traffic crashes, additional vehicle operating costs and congestion-related delays.
- TRIP estimates that roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions, cost the average Charlotte area motorist \$1,351 annually.
- In the Raleigh/Durham area, TRIP calculates that roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions, cost the average area motorist \$1,350 annually.
- Greensboro/Winston-Salem area roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions, cost the average area motorist \$901 annually, according to TRIP estimates.

	Congestion	Crashes	Pavement	TOTAL
Raleigh-Durham	\$733	\$238	\$379	\$1,350
Greensboro - Winston/Salem	\$205	\$368	\$328	\$901
Charlotte	\$876	\$228	\$247	\$1,351

Transportation and Business

- The efficiency of North Carolina’s transportation system, particularly its highways, is critical to the health of the state’s economy. Businesses are increasingly reliant on an efficient and reliable transportation system to move products and services
- Annually, \$294 billion of goods are shipped from sites in North Carolina and another \$257 billion of goods are shipped to sites in North Carolina, mostly by trucks.
- Ninety percent of the goods shipped annually from sites in North Carolina are carried by trucks and another five percent are carried by courier services, which use trucks for part of the deliveries. Similarly, 83 percent of the goods shipped to sites in North Carolina are carried by trucks and another 10 percent are carried by courier services.
- Commercial trucking in North Carolina is projected to increase 31 percent by 2020.

- A 2007 analysis by the Federal Highway Administration found that every \$1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.

Transportation and Growth

- Despite the current economic slump, North Carolina has experienced growth of population, vehicle travel and economic output since 1990 which have resulted in increased demands on the state's major roads and highways.
- North Carolina's population reached 9.4 million in 2009, an increase of 42 percent since 1990 and the ninth highest percentage increase in the nation. The state's population is expected to grow by approximately one-third by 2030 to 12.2 million residents.
- Vehicle travel in North Carolina increased 60 percent from 1990 to 2008, the eighth highest percentage increase in the nation. Vehicle miles of travel (VMT) in North Carolina increased from 62 billion in 1990 to 100 billion VMT in 2008.
- By 2030, vehicle travel in North Carolina is projected to increase another 45 percent.
- From 1990 to 2008, North Carolina's gross domestic product (GDP), a measure of the state's economic output, increased 73 percent, when adjusted for inflation, higher than the national average of 52 percent.
- Despite long-term growth in the state, North Carolina's unemployment rate more than doubled from 4.9 percent in January 2008 to 11.1 percent in January 2010.

Current Transportation Funding Challenges

- Without a substantial boost in state and federal transportation funding, North Carolina will be unable to complete numerous projects to improve the condition and expand the capacity of roads, bridges, highways and public transit, hampering the state's ability to improve mobility and to enhance economic development opportunities in the state.
- The North Carolina Department of Transportation (NCDOT) reports that to meet current needs and to prepare North Carolina for 2030, an estimated additional investment of over \$65 billion is required to plan, design, build and maintain the state's transportation system.
- With 79,288 miles of state-maintained roadway, North Carolina has the second largest state-maintained roadway system in the nation. Seventy-six percent of roadways in North Carolina are maintained by the state, the fourth highest share in the nation.

- Despite the large size of North Carolina's state-maintained roadway system, per-mile capital spending on state-maintained roads in North Carolina is the fourth lowest in the nation.
- The North Carolina Office of State Budget and Management reports that the state's transportation revenues from 2009 to 2011 are expected to be \$905 million lower than originally forecast, largely because of the economic downturn.
- The American Recovery and Reinvestment Act (ARRA) provided approximately \$735 million in stimulus funding for highway and bridge improvements and \$103 million for public transit improvements in North Carolina.
- ARRA funding is a useful down payment on needed road, highway, bridge and transit improvements, but it is not sufficient to allow the state to proceed with numerous projects needed to modernize its surface transportation system. Meeting North Carolina's need to improve and maintain its system of roads, highways, bridges and transit will require a significant, long-term boost in transportation funding at the federal, state or local levels.
- To ensure that federal funding for highways and bridges in North Carolina and throughout the nation continues beyond the expiration of SAFETEA-LU, Congress needs to approve a new long-term federal surface transportation program by December 31, 2010. The lack of a long-term federal program creates funding uncertainty for NCDOT and impedes planning of significant transportation projects.
- Needed projects in North Carolina that would require a significant boost in funding to proceed include upgrading 44 miles of US 52 in four counties up to Interstate standards, rehabilitation of 19 miles of I-85 in Vance and Warren counties, and construction of 4-lane divided freeway in new locations on US 17 in Wilmington and on US 421 in Sanford. Also unfunded are additional lanes on I-85 and I-77 in the Charlotte-Cabarrus metro area and new freeway sections (future I-73 and future I-74 Northeast beltway and the western leg of the Northern Beltway) in the Winston-Salem metro area. A boost in funding would also be required for the East End Connector to proceed in the Raleigh-Durham-Chapel Hill metro area. A full list of needed, but unfunded projects is included in the report.
- Transit projects throughout the state also would require a significant boost in funding to proceed, including an 11-mile light rail extension in Charlotte, a Mountains-to-Sea regional bike/pedestrian trail in the Triad Region, and paved shoulder improvements and widening for bicycle access statewide. A full list of needed, but unfunded transit projects is included in the report.

Inadequate Roadway Safety

- Between 2004 and 2008, 7,783 people were killed in traffic accidents in North Carolina, an average of 1,557 fatalities per year.

- North Carolina's traffic fatality rate was 1.41 fatalities per 100 million vehicle miles of travel in 2008, higher than the national average of 1.25 fatalities per 100 million vehicle miles of travel.
- The traffic fatality rate in 2008 on North Carolina's non-Interstate rural roads is the fourth highest in the nation at 3.03 traffic fatalities per 100 million vehicle miles of travel. This is more than four times the traffic fatality rate of 0.70 for all other roads and highways in the state. Only 31 percent of vehicle travel in the state occurs on rural, non-Interstate routes, but 66 percent of all traffic fatalities occur on these roads.
- The cost of serious traffic crashes in North Carolina in 2008, in which roadway design was likely a contributing factor, was approximately \$2.9 billion.
- The cost of serious traffic crashes in the Charlotte urban area in 2008, in which roadway design was likely a contributing factor, was approximately \$228 per driver. There were 71 traffic fatalities in the Charlotte urban area in 2008.
- In the Raleigh/Durham urban area the cost of serious traffic crashes in 2008, in which roadway design was likely a contributing factor, was approximately \$238 per driver. Ninety-seven traffic fatalities occurred in the Raleigh/Durham urban area in 2008.
- The cost of serious traffic crashes in the Greensboro/Winston-Salem urban area in 2008, in which roadway design was likely a contributing factor, was approximately \$368 per driver. There were 106 traffic fatalities in the Greensboro/Winston-Salem urban area in 2008.
- Several factors are associated with vehicle accidents that result in fatalities, including driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is an important factor in one-third of fatal traffic accidents.
- Where appropriate, highway improvements can reduce traffic fatalities and accidents while improving traffic flow to help relieve congestion. Such improvements include removing or shielding obstacles; adding or improving medians; adding rumble strips, wider lanes, wider and paved shoulders; upgrading roads from two lanes to four lanes; and better road markings and traffic signals.
- The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.

Traffic congestion

- In 2007, North Carolina faced increasing congestion on its urban Interstates and other highways or freeways: 54 percent of the state's urban highways carried a level of traffic that is likely to result in significant delays during peak travel hours
- Without additional highway capacity, travel delays in the state's major urban areas are projected to double in the future.

- The average rush hour trip in the Charlotte metropolitan area takes 25 percent longer to complete than during non-rush hour, and 17 percent longer in the Raleigh-Durham area. Charlotte-area drivers waste 40 hours a year in traffic, and Raleigh-Durham area drivers lose 34 hours a year in traffic.
- According to a report by the Reason Foundation, by 2030, unless additional highway capacity is added, traffic delays in the Charlotte and Raleigh-Durham urban areas will more than double, with the average rush hour trip in the Charlotte area taking 62 percent longer to complete than during non-rush hour and the average rush hour trip in the Raleigh-Durham area taking 37 percent longer to complete than during non-rush hour.
- In the Charlotte urban area the cost of congestion in lost time and wasted fuel is \$876 annually for the average driver, in the Raleigh-Durham area that cost is \$733 annually and in the Greensboro/Winston-Salem area that cost is \$205 a year.
- North Carolina's statewide cost of traffic congestion in lost time and wasted fuel is approximately \$1.2 billion annually

Rough Roads and Costs

- In 2007, 27 percent of major roads in North Carolina were in poor or mediocre condition, providing motorists with a rough ride. This includes Interstates, highways, connecting urban arterials and key urban streets that are maintained by state or municipal governments.
- Roads rated in poor condition may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.
- Roads in need of repair cost North Carolina drivers a total of \$1.6 billion annually in extra vehicle operating costs. Costs include accelerated vehicle depreciation, additional repair costs and increased fuel consumption and tire wear.
- In the Charlotte urban area, where 10 percent of major roads are rated in poor condition and 17 percent of major roads are rated in mediocre condition, driving on roads in need of repair costs motorists \$247 each year in extra vehicle operating costs.
- Nineteen percent of major roads are rated in poor condition and 26 percent of major roads are rated in mediocre condition in the Raleigh/Durham urban area. Driving on roads in need of repair in the Raleigh/Durham area costs motorists \$379 each year in extra vehicle operating costs.

- In the Greensboro/Winston-Salem urban area, where 16 percent of major roads are rated in poor condition and 21 percent of major roads are rated in mediocre condition, driving on roads in need of repair costs motorists \$328 each year in extra vehicle operating costs.
- The functional life of North Carolina's roads is greatly affected by the state's ability to perform timely maintenance and upgrades to ensure that pavement structures last as long as possible. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.

Inadequate Bridges

- A total of 29 percent of bridges in North Carolina show significant deterioration or do not meet current design standards.
- In 2008, 14 percent of North Carolina's bridges were structurally deficient. A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Structurally deficient bridges are often posted for lower weight or closed to traffic, restricting or redirecting large vehicles, including commercial trucks, school buses and emergency services vehicles.
- In 2008, 15 percent of North Carolina's bridges were functionally obsolete. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.
- This report contains a list of needed bridge rehabilitation and replacement projects across the state that would require significant federal funding to be completed.
- Bridge conditions in North Carolina are likely to worsen at current funding levels. The NCDOT estimates that it needs to replace 400 bridges annually in order to reduce the number of structurally deficient bridges in the state. But at current funding NCDOT is only able to replace slightly more than 100 bridges annually.

SAFETEA-LU: Funding for North Carolina's system of roads, highways, bridges and public transit

- Federal spending levels for highways and public transit are based on the current federal surface transportation program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was approved by Congress in 2005. Under two short term extensions, SAFETEA-LU, scheduled to expire on September 30, 2009, now expires December 31, 2010.
- Since 1998, North Carolina has been able to complete numerous highway, bridge and transit projects using federal and state funding that have improved safety and enhanced mobility and economic productivity. This report contains lists of projects completed or initiated from 1998-2008 with significant federal funding, including rehabilitation of 5.6

miles of I-95 in Lumberton and 17.2 miles of I-85 in Granville County, new bridges on US 64 in Manteo and on US 17-NC55 on the Neuse River, and replacement bridges on the Catawba River in Mecklenburg and Gaston counties and numerous replacement bridges on I-40 Business in Forsyth County. A listing of significant completed projects is included in this report.

- North Carolina also has made strides to accommodate a growing population and growing traffic congestion. The report lists 26 notable capacity-expansion projects as well as 41 key transit projects that were completed or initiated between 1998 and 2008 with state and federal funding. North Carolina also has been able to widen and/or construct 4-lane divided freeway sections in several counties, including US 70 around Clayton and NC 87 in Cumberland, Hamett and Lee counties. Urban-area projects completed in the state include additional lanes on I-77 and I-85 in Mecklenburg and Cabarrus counties, relocated I-73 and I-85 in Guilford County, and parts of I-540 and NC 540 in Durham and Wake counties. North Carolina also has enhanced its transit system statewide, including improving rail and highway crossings from Charlotte to Raleigh, creating bike and pedestrian trails in urban and nonurban areas, and advancing the North Carolina Railroad Improvement Project in Charlotte, Greensboro, and Raleigh-Durham. A list of completed capacity and transit projects is included in this report.
- From 1998 to 2008, North Carolina received approximately \$10 billion in federal funding for road, highway and bridge improvements, and \$1 billion for public transit, a total of approximately \$11 billion.
- Federal funds provide 22 percent of revenues used annually by the North Carolina Department of Transportation to pay for road, highway and bridge construction, repairs and maintenance.
- Federal funds provide 17 percent of the revenue used annually to pay for the operation of and capital improvements to the state's public transit systems, which includes the purchase and repair of vehicles and the construction of transit facilities. This is the ninth highest share in the nation.

Overhauling the Federal Surface Transportation Program

- The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC) and the National Surface Transportation Infrastructure Financing Commission (NSTIFC) were created by Congress to examine the current condition and future funding needs of the nation's surface transportation program, develop a plan to insure the nation's surface transportation system meets America's future mobility needs, and to recommend future funding mechanisms to pay for the preservation and improvement of the nation's roads, highways, bridges and public transit systems.
- The NSTPRSC concluded that it is critical to the future quality of life of Americans that the nation create and sustain the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.

- The NSTIFC found that the U.S. faces a \$2.3 trillion funding shortfall over the next 25 years in maintaining and making needed improvements to the nation's surface transportation system.
- The NSTIFC found that the use of motor fuel fees is not sustainable as a primary source of funding for the nation's surface transportation system because of the shift to a variety of fuel sources and more fuel efficient vehicles.

Key recommendations of the Commissions and the American Association of State Highway Transportation Officials (AASHTO) include:

Program format:

- Allocate funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking (NSTPRSC).
- Consolidate the more than 100 current transportation funding programs into 10 programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship, and the development of environmentally-friendly energy sources (NSTPRSC).
- Speed up project development processes to reduce the excessive time required to move projects from initiation to completion by better coordinating the development and review process for transportation projects (NSTPRSC).
- Develop a future federal surface transportation program that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget (AASHTO).
- Provide a federal surface transportation program that is based on state-driven performance measures and is focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations, and environmental protection (AASHTO).

Funding:

- Shift the collection of federal surface transportation revenues from fuel taxes to mileage-based fees, which would charge motorists a fee based on the number of miles driven, with full deployment of a comprehensive system in place by 2020 (NSTIFC).
- Ensure that once implemented, mileage-based fees were indexed to inflation and that they and any other federal transportation charges were set at a rate that would provide enough revenue to provide adequate federal funding to ensure that the nation achieves an integrated national transportation system that is less congested, safer, and that promotes increased productivity, stronger national competitiveness, and improved environmental outcomes (NSTIFC).

- Failure to address the immediate funding shortfall and provide adequate long-term funding for surface transportation will lead to unimaginable levels of congestion, reduced safety, costlier goods and services, eroded quality of life and diminished economic competitiveness (NSTIFC).
- In the short term, significantly boost the current federal motor fuel tax and index it to inflation to support increased federal surface transportation investment (NSTIFC).
- Expand the ability to use additional surface transportation funding sources including tolling, state investment banks and public-private partnerships as a supplement to the primary sources of funding such as motor fuel fees and eventually a mileage-based fee (NSTIFC).

All data used in the report is the latest available. Sources of information for this report include the North Carolina Department of Transportation (NCDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), the National Surface Transportation Infrastructure Financing Commission (NSTIFC), the U.S. Census, The Bureau of Transportation Statistics (BTS), the American Association of State Highway and Transportation Officials (AASHTO), the National Highway Traffic Safety Administration (NHTSA), the Reason Foundation and the Texas Transportation Institute (TTI).

Introduction

North Carolina's system of roads, highways, bridges and transit provides vital transportation links for the state's residents, visitors and businesses, providing daily access to homes, jobs, shopping and recreation. But as the state's population and mobility demands continue to outpace the rate of transportation improvements, North Carolina is struggling to accommodate its transportation needs. Meeting this demand for improved transportation will be critical to North Carolina's ability to provide its residents and visitors with safe and efficient mobility and support future economic growth in the state.

The state currently faces tremendous economic challenges, with unemployment more than doubling from 4.9 percent in January 2008 to 11.1 percent in January 2010.¹ As North Carolina and the nation look to rebound from the current economic downturn, the improvement of its transportation system could play an important role in improving the state's economic well-being by providing critically needed jobs in the short term and by improving the productivity and competitiveness of the state's businesses in the long term.

While the state government is responsible for maintaining most of North Carolina's roadways, bridges and public transit systems, the federal government also plays an important role in helping to fund repairs and improvements to many of the most heavily used roads, highways, bridges and public transit systems. As North Carolina faces the challenge of preserving and improving its surface transportation system, the future level of state and federal funding will be a critical factor in whether the state's residents, businesses and visitors will be able to enjoy the benefits of a safe, reliable and well-maintained surface transportation network.

This report examines the condition, use and safety of North Carolina's roads, highways, bridges and public transit systems, the impact on the public of deficient roads, the role of funding

in the maintenance and improvement of the state's surface transportation system, and the future mobility needs of the state. Included in the report are lists of highway, bridge and transit projects that have been completed with federal and state funding, and needed transportation projects that will require a significant boost in federal or state funding to proceed.

All data used in the report is the latest available. Sources of information for this report include the North Carolina Department of Transportation (NCDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), the National Surface Transportation Infrastructure Financing Commission (NSTIFC), the U.S. Census, The Bureau of Transportation Statistics (BTS), the American Association of State Highway and Transportation Officials (AASHTO), the National Highway Traffic Safety Administration (NHTSA), the Reason Foundation and the Texas Transportation Institute (TTI).

Population, Travel and Economic Trends in North Carolina

North Carolina residents and businesses require a high level of personal and commercial mobility. Population growth and economic growth in the Tar Heel State since 1990 have resulted in a significant increase in the demand for mobility as well as an increase in vehicle miles of travel (VMT). To foster a high quality of life in North Carolina, it will be critical that the state provide and preserve a safe and modern transportation system that can accommodate future growth in population and vehicle travel and that will foster economic development.

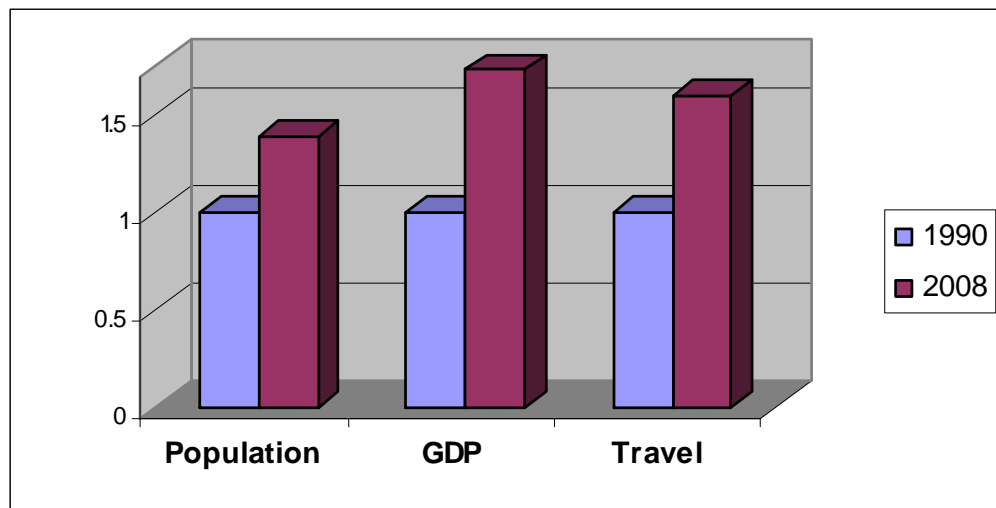
North Carolina's population grew 42 percent between 1990 and 2009, increasing from 6.6 million to 9.4 million residents.² This is the ninth greatest increase in the country. By 2030,

the population of North Carolina is projected to increase to 12.2 million residents, an increase of nearly 3 million residents.³

North Carolina has experienced significant economic growth since 1990. From 1990 to 2008, North Carolina's gross domestic product (GDP), a measure of the state's economic output, increased 73 percent, when adjusted for inflation.⁴ This is the tenth greatest increase in the U.S. and higher than the national average of 52 percent.⁵

Burgeoning economic and population growth in North Carolina has resulted in the eighth highest increase in vehicle travel in the nation. From 1990 to 2008, annual vehicle miles of travel in North Carolina increased 60 percent, from 62.7 billion miles traveled annually to 100 billion miles traveled annually.⁶ Based on population and other lifestyle trends, TRIP estimates that travel on North Carolina's roads and highways will increase 45 percent by 2030, to approximately 145 billion miles of travel.⁷

Chart 1: North Carolina's population, GDP and Vehicle Travel increase 1990-2008 (1 = 1990 level).



Source: TRIP analysis of federal data

Condition of North Carolina's Roads

The life cycle of North Carolina's roads is greatly affected by the state's ability to perform timely maintenance and upgrades to ensure that road and highway surfaces last as long as possible. The pavement condition of the state's major roads is evaluated and classified as being in poor, mediocre, fair or good condition.

In 2007, 27 percent of North Carolina's major roads were rated in poor or mediocre condition, providing motorists with a rough ride.⁸ Nine percent of North Carolina's major roads were rated in poor condition and 18 percent were rated in mediocre condition.⁹ Roads rated poor may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced but often are too deteriorated and must be reconstructed. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.

Chart 2. Pavement conditions in North Carolina.

<i>Pavement Rating</i>	<i>Percentages</i>
Poor	9%
Mediocre	18%
Fair	24%
Good	49%

Source: TRIP analysis of Federal Highway Administration Data

Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road's foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. It is

critical that roads have preventative maintenance performed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.¹⁰

As North Carolina’s roads and highways continue to age, they will reach a point where routine paving and maintenance will not be adequate to keep pavement surfaces in good condition and costly reconstruction of the roadway and its underlying surfaces will become necessary.

Many critical projects needed to improve the condition of the state’s major roads and highways will not proceed without a substantial boost in federal or state funding. The following chart details selected reconstruction and pavement preservation needs in North Carolina that would require significant federal funding or a boost in state funding to proceed.

Chart 3. Needed reconstruction and pavement preservation projects of regional or statewide significance in North Carolina that would require significant federal funding to proceed.

Route	County	From	To	Miles	Avg. Daily Traffic	Project Description	Estimated Project Cost
US 52 (Future I-74)	Forsyth/ Stokes/ Surry	NC 65	I-74	21.3	32,000	Upgrade to Interstate Standards	\$ 111,300,000
I-40 Bus/ US 421	Guilford/ Forsyth	SR 2662	SR 1850 in Guilford Co.	8.5	51,000	Pavement & Bridge Rehab	\$ 29,700,000
I-40 Business	Forsyth	Church St.	Fourth St.	1	60,000	Pavement rehabilitation, route modernization and replacement of 11 bridges	\$70,000,000
US 52 (Future I-285)	Davidson/ Forsyth	I-85	I-40	23	50,000	Upgrade to Interstate Standards	\$ 9,050,000
US 220 (Future I-73)	Guilford/ Randolph	W. Presnell St.	I-85	23	39,000	Upgrade to Interstate Standards	\$ 72,160,000
I-85	Vance & Warren	US 158 in Vance Co.	Virginia State Line	19	26,300	Pavement Rehabilitation	\$ 112,000,000
US 220	Randolph	South of NC 134/US 220 Business	North of SR 1462	8	25,300	Safety improvements to bring to Interstate standards	\$ 23,000,000
I-26	Polk	Milepost 61	Milepost 71	10	29,000	Pavement Rehabilitation	\$ 14,000,000
I-40	Buncombe	Milepost 59	Milepost 67	8	32,000	Pavement Rehabilitation	\$ 12,000,000

Source: NCDOT response to TRIP survey.

The Costs to Motorists of Roads in Deteriorated Condition

TRIP has calculated the additional cost to motorists of driving on roads in poor or unacceptable condition. Roads in poor condition – which may include potholes, rutting or rough surfaces – increase the cost to operate and maintain a vehicle. These additional vehicle operating costs include accelerated vehicle depreciation, additional vehicle repairs, increased fuel consumption and increased tire wear.

TRIP estimates that additional vehicle operating costs borne by North Carolina motorists as a result of poor road conditions is \$1.6 billion annually. Costs borne by motorists in North Carolina’s largest urban areas are typically higher than those in more rural areas. A greater percentage of major roads rated in poor to mediocre condition in most urban areas results in higher vehicle operating costs.

Chart 4. Additional vehicle operating costs in North Carolina urban areas.

Urban Area	Percentage of Roads Rated Poor and Mediocre	Additional vehicle operating costs
Charlotte	27	\$247
Raleigh/Durham	45	\$379
Greensboro/Winston-Salem	37	\$328

Source: TRIP analysis of FHWA data.

Additional vehicle operating costs have been calculated in the Highway Development and Management Model (HDM), which is recognized by the U.S. Department of Transportation and more than 100 other countries as the definitive analysis of the impact of road conditions on vehicle operating costs. The HDM report is based on numerous studies that have measured the impact of various factors, including road conditions, on vehicle operating costs.¹¹

The HDM study found that road deterioration increases ownership, repair, fuel and tire costs. The report found that deteriorated roads accelerate the pace of depreciation of vehicles and the need for repairs because the stress on the vehicle increases in proportion to the level of roughness of the pavement surface. Similarly, tire wear and fuel consumption increase as roads deteriorate since there is less efficient transfer of power to the drive train and additional friction between the road and the tires.

TRIP's additional vehicle operating cost estimate is based on taking the average number of miles driven annually by a motorist, calculating current vehicle operating costs based on AAA's 2008 vehicle operating costs and then using the HDM model to estimate the additional vehicle operating costs paid by drivers as a result of substandard roads.¹² Additional research on the impact of road conditions on fuel consumption by the Texas Transportation Institute (TTI) is also factored into TRIP's vehicle operating cost methodology.

Bridge Conditions in North Carolina

Bridges form key links in North Carolina's highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, and facilitating commerce and access for emergency vehicles. In 2008, approximately 29 percent of the state's bridges (20 feet or longer) were rated as structurally deficient or functionally obsolete.¹³

Fourteen percent of North Carolina's bridges were rated as structurally deficient.¹⁴ A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action. Deteriorated bridges can have a

significant impact on daily life. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks, school buses and farm equipment – to use alternate routes to avoid posted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy.

In 2008, 15 percent of North Carolina’s bridges were rated functionally obsolete.¹⁵ Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment with the approaching roadway, or do not have sufficient capacity to meet current travel demands.

North Carolina’s bridges are aging. Many bridges were built in the 1950s and 1960s, and were not designed for modern vehicles and trucks, or for the amount of traffic they currently carry. The service life of bridges can be extended by performing routine maintenance such as resurfacing decks, painting surfaces, insuring that a facility has good drainage and replacing deteriorating components. But most bridges will eventually require more costly reconstruction or major rehabilitation to remain operable.

Bridge conditions in North Carolina are likely to worsen at current funding levels. NCDOT estimates that it needs to replace 400 bridges annually in order to reduce the number of structurally deficient bridges in the state. But at current funding NCDOT is only able to replace slightly more than 100 bridges annually.¹⁶

With current levels of funding, North Carolina has been able to undertake numerous preservation projects but cannot initiate other, critically needed projects without a substantial boost in federal or state funding. The following two charts list bridges of regional or statewide importance that need to be repaired or replaced to enhance safety and provide congestion relief but cannot proceed without a significant boost in federal or state funding.

Chart 5. Needed bridge repair or replacement projects in North Carolina’s major urban areas that would require a significant boost in federal or state funding to proceed.

Route	County or Closest City	Route or feature intersected	Average Daily Traffic	Project Description	Estimated Project Cost
PROJECTS NEEDED IN THE CHARLOTTE METRO AREA					
US 29 SBL	Mecklenburg	Mallard Creek	30,000	Replace existing bridge	\$ 3,000,000
NC 218	Union	Goose Creek	8,600	Replace existing bridge	\$ 2,300,000
NC 200	Union	Chinkapin Creek	7,700	Replace existing bridge	\$ 1,000,000
PROJECTS NEEDED IN THE GREENSBORO/WINSTON-SALEM METRO AREA					
SR 2264	Forsyth	Norfolk & Western RR	8,300	Replace bridge	\$ 7,285,000
SR 3000	Guilford	S. Buffalo Creek	3,400	Replace bridge	\$ 3,740,000
SR 1001	Forsyth	NC 67	17,000	Replace bridge	\$ 5,325,000
I-40/I-85	Guilford	US 29-70-220	60,000	Replace bridges	\$ 10,000,000
SR 2128	Guilford	Reedy Fork Rd.	4,100	Replace bridge	\$ 2,000,000
PROJECTS NEEDED IN THE RALEIGH – DURHAM METRO AREA					
US 70-401/NC 50	Wake	Peace Street	41,000	Replace bridge	\$ 10,835,000
NC 50	Wake	US 70	8,900	Replace bridge	\$ 9,130,000
US 70 Bypass	Orange	Eno River	11,000	Replace bridge	\$ 6,820,000

Source: NCDOT response to TRIP survey.

Chart 6. Needed bridge repair or replacement projects of regional or statewide significance, located outside North Carolina’s major urban centers, that would require a significant boost in federal or state funding to proceed. All of the follow projects are new bridges needed to replace older bridges.

Route	County or Closest City	Route or Feature Intersected	Avg. Daily Traffic	Estimated Project Cost
NC 12	Dare	Oregon Inlet	4,900	\$ 350,000,000
I-85	Davidson/Rowan	Yadkin River	60,000	\$300,000,000
NC 99	Beaufort	Pantego Creek	2,000	\$ 24,000,000
I-95 Bus./ US 301	Cumberland	Cape Fear River	18,000	\$ 13,000,000
US 17 Business	Onslow	New River	35,000	\$ 16,000,000
US 23-74	Jackson	SR 1705, Southern RR, Scott Creek	21,000	\$ 19,000,000
SR 1316	Bladen	Cape Fear River	3,800	\$ 15,000,000
US 70/NC 55	Carteret	North River	9,600	\$ 24,000,000
NC 50-210	Pender	Intracoastal Waterway	9,500	\$ 32,000,000
I-26	Buncombe	SR 3431-Hominy Creek	71,000	\$ 15,000,000
NC 24-27-73	Stanly	Pee Dee River	6,700	\$ 20,000,000

Source: NCDOT response to TRIP survey

Traffic Congestion in North Carolina

Traffic congestion in North Carolina is a growing burden in key urban areas and threatens to impede the state's economic development. Congestion on North Carolina's urban highways is growing as a result of increases in vehicle travel and commerce.

In 2007, 54 percent of North Carolina's urban highways were congested, carrying traffic volumes that result in significant rush hour delays.¹⁷ Highways that carry high levels of traffic are also more vulnerable to lengthy traffic delays as a result of traffic accidents or other incidents.

Traffic congestion in North Carolina's urban areas is likely to worsen significantly unless the state is able to improve its transportation system. Charlotte-area drivers now waste 40 hours a year in traffic, up from 25 hours annually in 1997.¹⁸ The average rush-hour trip in Charlotte takes 25 percent longer to complete than in non-rush hour traffic. Raleigh-Durham-area drivers now waste 34 hours a year in traffic, and a rush-hour drive takes 17 percent longer to complete than in non-rush hour traffic.¹⁹

In the Charlotte urban area the cost of congestion in lost time and wasted fuel is \$876 annually for the average driver. The cost for the average Raleigh-Durham driver as a result of lost time and wasted fuel due to congestion is \$733 per year, and in the Greensboro/Winston-Salem area the cost is \$205 annually.²⁰

According to a report by the Reason Foundation, by 2030, unless additional highway capacity is added, traffic delays in the Charlotte and Raleigh-Durham urban areas will more than double, with the average rush hour trip in the Charlotte area taking 62 percent longer to complete

than during non-rush hour and the average rush hour trip in the Raleigh-Durham area taking 37 percent longer to complete than during non-rush hour.²¹

Many projects needed to increase the capacity of the state’s major roadways to relieve traffic congestion, improve safety and support economic development cannot proceed without a significant boost in federal or state funding. The following capacity-enhancing projects are located throughout the state, outside North Carolina’s major urban areas.

Chart 7. Needed roadway widening projects of regional or statewide significance, located outside North Carolina's major urban areas, that would require a significant boost in federal or state funding to proceed.

Route	County or Closest City	From	To	Length (Miles)	Av. Daily Traffic	Project Description & Benefits	Estimated Project Cost
SR 1406	Jacksonville	NC 24	SR 1410	5.2	18,000	Widen to multi-lanes: address congestion, safety	\$ 50,000,000
US 17	Wilmington	US 421	US 74-76	7.6	30,000	4 lane divided freeway—new location: economic development, congestion	\$ 221,000,000
NC 24	Sampson County	SR 1404	US 421-US 701	13.5	12,600	Widen to multi-lanes: economic development, safety, congestion	\$ 100,000,000
US 421	Sanford	West of SR 1400	West of US 1-15-501	3.5	16,000	4 lane divided freeway on new location: economic development, congestion	\$ 46,000,000
US 29 Business	Rockingham County	SR 2686	NC 14	3.8	13,000	Widen to multi-lanes: congestion, safety	\$ 36,000,000
US 221	Rutherford County	S.C. State Line	North of US 74 Bypass	9.5	7,000	Widen to multi-lanes: congestion, safety	\$ 93,000,000
US 74	Cleveland	West of SR 1162	West of SR 1001	18.9	30,000	4 lane divided freeway on new location: econ dev., congestion, safety	\$ 323,000,000

Source: NCDOT response to TRIP survey

The demand for mobility on North Carolina roadways is mounting. The following capacity-enhancing projects in the state’s major urban areas would help address future mobility needs, improve safety and address traffic congestion; however, they cannot proceed without a significant boost in federal or state funding.

Chart 8. Needed roadway projects to expand capacity of regional significance in North Carolina’s major urban areas that require a significant boost in federal or state funding to proceed.

Route	County or Closest City	From	To	Length (Miles)	Average Daily Traffic	Project Description	Estimated Project Cost
CHARLOTTE METRO AREA							
I-85	Cabarrus, Rowan	NC 73	US 29-601 connector	13.6	76,000	Add additional lanes	\$ 170,000,000
I-85	Cabarrus	SR 2894	NC 73	7.2	94,000	Add additional lanes	\$ 198,000,000
I-77	Iredell, Mecklenburg	NC 73	I-40	26	65,000	Add additional lanes	\$ 500,000,000
I-77	Mecklenburg	I-485	NC 73	6	87,000	Add additional lanes	\$ 37,000,000
I-85	Gaston	I-85/US 321 interchange		N/A	90,000 on I-85	Geometric safety improvements to interchange	\$ 36,000,000
I-485	Mecklenburg	US 521 (Johnston Rd)	I-77	6.6	100,000	Add additional lanes	\$ 60,000,000
GREENSBORO/WINSTON – SALEM METRO AREA							
I-40	Davie/ Forsyth	NC 801	Harper Road	0.8	49,000	Widening and Rehabilitation	\$ 41,800,000
Future I-73	Guilford	NC 68	Greensboro W. Loop	1.5	50,000	New Freeway	\$ 133,650,000
Northern Beltway (Western Leg)	Forsyth	I-40	US 52	14.8	44,000	New Freeway	\$ 490,000,000
NC 109	Davidson/ Forsyth	I-85 Bus.	I-40/US 311	13.5	10,000	Widening to Multi-lanes	\$ 125,000,000
US 70	Alamance/ Guilford	SR 3056 in Guilford	SR 1309 in Alamance	10.6	12,000	Widening to Multi-lanes	\$ 15,900,000
Greensboro W. Loop	Guilford	Bryan Blvd.	Lawndale Dr.	6.9	53,200	New Freeway	\$ 250,000,000
Future I-74 N.E. Beltway	Forsyth	US 311	US 52	17.1	76,600	New Freeway	\$ 800,000,000
Johnson ST./Sandy Ridge Rd.	Guilford	Skeet Club Rd.	I-40	4.4	17,000	Widening to Multi-lanes	\$ 20,000,000
Skeet Club Road	Guilford	US 311	SR 1818	3.2	6,800	Widening to Multi-lanes	\$ 24,400,000
RALEIGH – DURHAM METRO AREA							
East End Connector	Durham	NC 147	NC 98	3.8	65,700	Freeway, part on new location, part upgrade existing multilane	\$ 157,000,000
US 401	Franklin, Wake	Rolesville Bypass	Louisburg	11.3	11,000	Widening	\$ 47,000,000
I-40	Wake	I-440	Clayton Bypass	9	99,000	Widening	\$ 107,000,000

Source: NCDOT response to TRIP survey

North Carolina offers a range of public transit options for residents and visitors -- from rail to bus to facilities for non-motorized travel -- all of which provide increased mobility and relieve traffic congestion. Yet at current funding levels, many needed public transit programs and improvements in North Carolina cannot proceed. The following two charts outline some of the most pressing transit needs in the state that cannot proceed without a significant boost in federal or state funding. Projects in these urban areas are geared toward congestion relief, economic development, and air quality.

Chart 9. Needed transit projects of regional or statewide significance in North Carolina’s major urban areas that would require a significant boost in federal or state funding to proceed.

County or Closest City	Type of Project	Project Description	Estimated Project Cost
CHARLOTTE METRO AREA			
Mecklenburg	Bike/Ped	Little Sugar Creek Trail: New paved trail to SC line	\$ 10,000,000
15 County Area	Bike/Ped	Carolina Thread Trail: New paved trail system	\$ 15,000,000
Charlotte	Rail (light)	Northeast Rail Corridor: 11-mile light rail line that extends existing rail line (LYNX Blue Line) from 7 th Street in uptown Charlotte to the UNC-Charlotte; 14 stations and 7 park-and-ride lots	\$1.18 billion
GREENSBORO/WINSTON SALEM METRO AREA			
Greensboro	Bike/Ped	Battleground Ave Rail Trail: New paved trail	\$ 5,000,000
Forsyth-Guilford	Bike/Ped	Piedmont Greenway System: New paved trail	\$ 7,000,000
Winston-Salem	Bike/Ped	Salem Creek Greenway: New paved trail	\$ 5,000,000
Triad Region	Bike/Ped	Mountains to Sea Trail: New paved regional trail	\$ 15,000,000
Greensboro	Transit	New Intermodal Center (near Piedmont Triad Airport)	\$ 24,000,000
RALEIGH – DURHAM METRO AREA			
Triangle Region	Bike/Ped	East Coast Greenway: New paved regional trail	\$ 7,000,000
Raleigh	Bike/Ped	Comprehensive Bike/Ped System: New city-wide bike/ped projects	\$ 5,000,000
Cary	Bike/Ped	Comprehensive Bike/Ped System: New city-wide bike/ped projects	\$ 3,000,000
Wake County	Bike/Ped	Comp. Bike/Ped System: County-wide bike/ped projects & improvements	\$ 5,000,000
Durham	Bike/Ped	Comprehensive Bike/Ped System: City-wide bike/ped projects & improvements	\$ 5,000,000
Chapel Hill-Carrboro	Bike/Ped	Comprehensive Bike/Ped System: City-wide bike/ped projects & improvements	\$ 3,000,000

Source: NCDOT response to TRIP survey

Meeting mobility demands and transit needs in other parts of the state would require extending rail service to more areas as well as providing new city-wide bike/pedestrian trails and

improvements to several services and routes. These projects would improve safety, enhance economic development and mobility, and address traffic congestion.

Chart 10. Needed transit projects of regional or statewide significance, in areas of the state outside major urban areas, that would require a significant boost in federal or state funding to proceed.

County or Closest City	Type of Project	Description of Route and Project	Estimated Project Cost
Coastal Counties	Bike	Improve paved shoulders, VA to SC	\$ 20,000,000
Greenville	Bike/Ped	Comprehensive Bike/Ped System: New/improved city-wide bike/ped projects	\$ 5,000,000
Rocky Mount	Bike/Ped	Comprehensive Bike/Ped System: New/improved city-wide bike/ped projects	\$ 4,000,000
Wilmington	Bike/Ped	Comprehensive Bike/Ped System: New/improved city-wide bike/ped projects	\$ 5,000,000
Wayne, Lenoir, Craven	Bike/Ped	Neuse River Trail: Mountains-to-Sea trail	\$ 20,000,000
NC Towns & Cities	Bike/Ped	Municipal Bike/Ped Systems: New and improved local bike/ped projects	\$ 20,000,000
Salisbury-Asheville	Rail	Service extension Upgrade Norfolk Southern S line to accommodate passenger trains	\$ 175,000,000
Raleigh-Fayetteville-Wilmington	Rail	Service extension Upgrade NCRR/CSXT A & SE lines	\$ 175,000,000
Raleigh-Goldsboro-Wilmington	Rail	Service extension Upgrade NCRR/CSXT lines	\$ 175,000,000
Southport	Rail	International/Intermodal port: Upgrade US Military railroad	\$ 50,000,000

Source: NCDOT response to TRIP survey

Traffic Safety in North Carolina

A total of 7,783 people were killed in motor vehicle accidents in North Carolina from 2004 through 2008, an average of 1,557 fatalities per year.²²

North Carolina's traffic fatality rate was 1.41 fatalities per 100 million vehicle miles of travel in 2008, higher than the national average of 1.25.²³

Chart 11. Traffic fatalities in North Carolina from 2004 – 2008.

<i>Year</i>	<i>Fatalities</i>
2004	1,573
2005	1,547
2006	1,554
2007	1,676
2008	1,433
Total	7,783

Source: National Highway Traffic Safety Administration

North Carolina’s rural, non-Interstate roads have a fatality rate significantly higher than other roads in the state. The traffic fatality rate in 2008 on North Carolina’s non-Interstate rural roads was 3.03 traffic fatalities per 100 million vehicle miles of travel, which is more than four times the rate of 0.70 traffic fatalities per 100 million vehicle miles of travel on all other roads and highways in the state.²⁴

A disproportionate share of highway fatalities occur on North Carolina’s rural, non-Interstate roads. In 2008, 66 percent of traffic fatalities in North Carolina occurred on rural, non-Interstate routes, while only 31 percent of vehicle travel in the state occurred on these roads.²⁵

Three major factors are associated with fatal vehicle accidents: driver behavior, vehicle characteristics and roadway design. TRIP estimates that roadway characteristics, such as lane widths, lighting, signage and the presence or absence of guardrails, paved shoulders, traffic lights, rumble strips, obstacle barriers, turn lanes, median barriers and pedestrian or bicycle facilities, are likely a contributing factor in approximately one-third of all fatal and serious traffic crashes. Improving safety on North Carolina’s roadways can be achieved through further improvements in vehicle safety; improvements in driver, pedestrian, and bicyclist behavior; and a variety of improvements in roadway safety features.

The cost of serious traffic crashes in North Carolina in 2008, in which roadway characteristics were likely a contributing factor, was approximately \$2.9 billion.²⁶ The economic

cost of serious crashes includes lost productivity, lost earnings, medical costs and emergency services.

The cost of serious traffic crashes in the Charlotte urban area in 2008, in which roadway characteristics were likely a contributing factor, was approximately \$228 per driver. There were 71 traffic fatalities in the Charlotte urban area in 2008.²⁷

In the Raleigh/Durham urban area, the cost of serious traffic crashes in 2008, in which roadway characteristics were likely a contributing factor, was approximately \$238 per driver. There were 97 traffic fatalities in the Raleigh/Durham urban area in 2008.²⁸

The cost of serious traffic crashes in the Greensboro/Winston-Salem urban area in 2008, in which roadway characteristics were likely a contributing factor, was approximately \$368 per driver. There were 106 traffic fatalities in the Greensboro/Winston-Salem urban area in 2008.²⁹

Where appropriate, the severity of serious traffic crashes could be reduced through roadway improvements such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection layout, and providing better road markings and upgrading or installing traffic signals.

Roads with poor geometry, with insufficient clear distances, without turn lanes, inadequate shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

The following chart shows the correlation between specific needed road improvements and the reduction of fatal accident rates nationally.³⁰

Chart 12. Reduction in fatal accident rates after roadway improvements.

Type of Improvement	Reduction in Fatal Accident Rates after Improvements
New Traffic Signals	53%
Turning Lanes and Traffic Signalization	47%
Widen or Modify Bridge	49%
Construct Median for Traffic Separation	73%
Realign Roadway	66%
Remove Roadside Obstacles	66%
Widen or Improve Shoulder	22%

Source: TRIP analysis of U.S. Department of Transportation data

Importance of Transportation to Economic Growth

Many diverse industries have boosted the Tar Heel State's gross domestic product by 73 percent since 1990, when adjusted for inflation – higher than the national average of 52 percent.³¹ Furniture manufacturing, textiles and tobacco remain significant industries in the state. High-tech manufacturing and other knowledge-driven industries have bolstered the North Carolina economy, as has tourism, which has become one of the state's largest industries. Annually, over 45 million people visit North Carolina.³²

All the state's businesses are dependent on an efficient, safe, and modern transportation system. The new culture of business demands that an area have well-maintained and efficient roads, highways and bridges if it is to remain economically competitive. The advent of modern national and global communications and the impact of free trade in North America and elsewhere have resulted in a significant increase in freight movement. Consequently, the quality of a region's transportation system has become a key component in a business's ability to compete locally, nationally and internationally.

Businesses have responded to improved communications and the need to cut costs with a variety of innovations including just-in-time delivery, increased small package delivery, demand-side inventory management and by accepting customer orders through the Internet. The result of these changes has been a significant improvement in logistics efficiency as firms move from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

Highways are vitally important to continued economic development in North Carolina. As the economy expands, creating jobs and increasing consumer confidence, the demand for consumer and business products grows. In turn, manufacturers ship greater quantities of goods to market to meet this demand, a process that adds to truck traffic on the state's highways and major arterial roads.

Every year, \$294 billion in goods are shipped from sites in North Carolina and another \$257 billion in goods are shipped to sites in North Carolina, mostly by trucks.³³ Ninety percent of the goods shipped annually from sites in North Carolina are carried by trucks and another 5 percent are carried by courier services, which use trucks for part of their deliveries. Similarly, 83 percent of the goods shipped to sites in North Carolina are carried by trucks and another 10 percent are carried by courier services.³⁴

Trucking is a crucial part of North Carolina's economy, as commercial trucks move goods from sites across the state to markets inside and outside the state. Commercial truck travel in the Tar Heel State is expected to increase significantly over the next decade. Based on federal projections, TRIP estimates that commercial trucking in North Carolina will increase by 31 percent between 2009 and 2020.³⁵

Spending on road, highway and bridge repairs is very effective in creating jobs. A 2007 analysis by the Federal Highway Administration found that every \$1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.³⁶

Despite long-term growth in the state, North Carolina's unemployment rate more than doubled from 4.9 percent in January 2008 to 11.2 percent in January 2010.³⁷

The Funding of North Carolina's Surface Transportation System

The construction, repair and upkeep of North Carolina's roads, bridges, highways and public transit systems are paid for by local, state and federal governments. North Carolina's roads, highways and bridges are maintained mostly by state government. In fact, with 79,288 miles of state-maintained roadway, North Carolina has the second-largest state roadway system in the nation. North Carolina also maintains the fourth highest share of roadways nationally, maintaining 76 percent of the roadways in the state.³⁸

While North Carolina maintains one of the largest state-maintained roadway systems in the nation, it's funding for repairs and improvements per-mile of its major roads and highways is among the lowest in the nation. In 2007, North Carolina ranked 47th nationally in its level of capital spending per-mile on its state-maintained roads and highways.³⁹

At current transportation revenue levels, North Carolina faces a significant shortfall over the next 20 years in funding needed repairs and improvements to the state's transportation

system. The North Carolina Department of Transportation reports that to meet current needs and to prepare North Carolina for 2030, an estimated additional investment of over \$65 billion is required to plan, design, build and maintain the state's transportation system.⁴⁰ North Carolina's transportation funding challenges are likely to be further exacerbated by declining state transportation revenues as a result of the region's economic downturn. The North Carolina Office of State Budget and Management reports that the state's transportation revenues from 2009 to 2011 are expected to be \$905 million lower than originally forecast, largely because of the state's economic downturn.⁴¹

Federal funding for North Carolina's highways and bridges comes from the Federal Highway Trust Fund, under funding levels and formulas determined by Congress. Federal spending levels for highways and public transit are based on the current federal surface transportation program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was approved by Congress in 2005. The current extension of the SAFETEA-LU program expires on December 31, 2010. The lack of a long-term federal program creates funding uncertainty for NCDOT and impedes planning of significant transportation projects.

From 1998 to 2008, North Carolina received approximately \$10 billion in federal funding for road, highway and bridge improvements, and \$1 billion in funding for public transit, a total of approximately \$11 billion in federal surface transportation funding.⁴² This federal funding is a critical source of revenue for North Carolina's transportation system. Federal funds provide 22 percent of all revenues used by NCDOT to pay for road, highway and bridge construction, repairs and maintenance.⁴³ Federal funds also provide 17 percent of the revenue used annually

to pay for the operation of and capital improvements to the state’s public transit systems, including the purchase and repair of vehicles and the construction of transit facilities.⁴⁴

As a result of this level of federal support, since 1998 North Carolina has been able to complete numerous projects on the state’s highway system, rehabilitate deteriorated roadways and bridges, and expand transit systems and access to improve traffic safety, relieve traffic congestion and enhance economic development opportunities.

The following chart shows major highway rehabilitation projects completed in North Carolina since 1998 for which the federal government was a significant source of funding. These system preservation projects focused on pavement rehabilitation to enhance safety and extend the life span of the roadway.

Chart 13. North Carolina highway rehabilitation/preservation projects, located outside major urban areas, completed from 1998 to 2008.

Route	County or Closest City	From	To	Length (Miles)	Year Complete	Average Daily Traffic	Project Cost
I-95	Lumberton	North of US 74	US 301	5.6	2001	44,400	\$ 46,000,000
I-77	Surry County	Mile Post 99	Virginia State Line	7	2002	23,500	\$ 23,000,000
I-95	Johnston County	US 70	North of SR 1001	2.9	2001	36,000	\$ 12,000,000
I-95	Nash and Halifax County	North of SR 1524	South of NC 481	10	2003	38,000	\$ 18,000,000
I-95	Johnston and Wilson Counties	US 301 in Johnston County	SR 1116 in Wilson County	8	2006	29,000	\$ 21,000,000
I-95	Wilson County	SR 1116	SR 1309	8.3	2003	32,300	\$ 13,000,000
I-85	Granville County	North of NC 56 in Granville County	I-85/US 158 in Vance County	17.2	2003	31,600	\$ 45,000,000

Source: NCDOT response to TRIP survey

Selected major rehabilitation and preservation projects in urban areas undertaken with federal and state funding between 2004 and 2009 are listed below.

Chart 14. Highway rehabilitation/preservation projects, located in the major urban areas of North Carolina, completed or underway from 1998 to 2008.

Route Name	County	From	To	Length (Miles)	Year Complete	Average Daily Traffic	Improvements Made	Project Cost (millions)
I-40 Business / US 421	Forsyth	US 158	SR 2662	2.1	2006	51,000	Reconstruction	\$ 30
I-40	Davie	SR 1436	NC 801	4.6	2008	36,000	Major rehabilitation	\$ 19
I-85	Durham	US 15-510	Falls Lake	11	1999	49,000	Reconstruction, guardrail	\$ 16

Source: NCDOT response to TRIP survey

Similarly, numerous major bridges have been rehabilitated throughout the state, both within and outside the major urban areas, due largely to federal transportation funding since 1998. The following two charts look at projects of regional or statewide importance across the state that were completed between 1998 and 2008.

Chart 15. Major bridge projects, located outside North Carolina's major urban areas, completed between 1998 and 2008 in which federal funds were a significant source of revenue.

Route	County	Route or Feature Intersected and Improvements Made	Year Complete	Av. Daily Traffic	Total Project Cost (millions)
US 64	Manteo	Croatan Sound: Constructed new bridge	2003	5,200	\$ 137
US 17-NC 55	New Bern	Neuse River: Constructed new bridge to replace older bridge	1998	20,000	\$ 151
US 17	Edenton	Chowan River: Constructed new bridge to replace older bridge	2000	9,400	\$ 44
SR 1101/ SR 1442	Carteret and Onslow County	White Oak River: Replaced existing bridge	2006	1,200	\$ 10
SR 1531	Greenville	Tar River: Replaced existing bridge	2003	11,000	\$ 14

Source: NCDOT response to TRIP survey

Bridge rehabilitation projects in North Carolina's major urban areas completed or underway largely due to federal transportation funding since 1998 include the following projects that focused largely on safety and preservation.

Chart 16. Major bridge projects, located in North Carolina’s major urban areas, completed between 1998 and 2008 in which federal funds were a significant source of revenue.

Route Carried	County	Route or feature intersected	Year Complete	Av. Daily Traffic	Improvements Made	Project Cost
CHARLOTTE METRO AREA						
NC 49	Mecklenburg	Catawba River	2003	25,000	Replace existing bridge	\$14,300,000
NC 27	Gaston and Mecklenburg	Catawba River	2002	12,000	Replace existing bridge	\$15,000,000
US 29-NC 49	Mecklenburg	Norfolk Southern RR	2003	15,000	Replace existing bridge	\$4,200,000
NC 7	Gaston	South Fork Catawba Riv.	2006	10,000	Replace existing bridge	\$5,800,000
GREENSBORO/WINSTON-SALEM METRO AREA						
US 29-70-220	Guilford	Lee Street	2006	73,000	Replacement	\$10,744,000
I-40 Business	Forsyth	Various	2000	70,000	Rehabilitation and replacement	\$26,561,000
I-40 Business	Forsyth	Various	1998	70,000	Rehabilitation and replacement	\$12,8902,000
RALEIGH – DURHAM METRO AREA						
US 70 / NC 50	Wake	SR 1728	2004	24,000	Replace existing bridge	\$ 4,860,000

Source: NCDOT response to TRIP survey

Accommodating population growth and providing opportunities for economic development require transportation enhancements. The following chart shows major projects undertaken to provide additional capacity on North Carolina’s roadway system that were completed from 1998 to 2008 and for which federal funds were a significant source of funding. These projects addressed economic development, congestion and safety issues.

Chart 17. North Carolina highway projects, located outside North Carolina’s major urban areas, completed from 1998 to 2008 largely due to federal surface transportation funds.

Route	County	From	To	Length (Miles)	Year Complete	Avg. Daily Traffic	Improvements Made	Project Cost (millions)
US 17	Wilmington	US 17	US 421	13.05	2006	17,000	4 lane divided freeway on new location	\$ 240
US 13	Fayetteville	I-95	US 401	8.6	2005	10,100	4 lane divided freeway on new location	\$ 126
US 74	Rockingham	US 74 East of Pee Dee River	US 74 East of Hamlet	16.8	2001	12,725	4 lane divided freeway on new location	\$ 125
US 74	Lumberton	US 74 Maxton Bypass	NC 41	19.5	2008	10,500	4 lane divided freeway on new location	\$ 245
US 220	Ellerbe	South of Ellerbe	US 220 A South of Emery	12	2008	8,700	4 lane divided freeway on new location	\$ 116
US 421	Watauga County	South Fork New River	West of Blue Ridge Parkway	8.3	2001	16,000	4 lane divided facility, part on new location	\$ 72
US 64	Chatham County	West of Pittsboro	West of Jordan Lake	14.2	2000	10,100	4 lane divided freeway on new location	\$ 66
NC 87	Cumberland Harnett, Lee Counties	Sanford	Spring Lake	20.8	2004	22,250	Widen to 4 lane divided facility	\$ 57
US 19-23	Madison County	Mars Hill	Tennessee State Line	10.8	2004	15,325	4 lane divided freeway on new location	\$ 267
US 70	Clayton	I-40 in Wake County	US 70 Business in Johnston County	9.5	2008	43,000	4 lane divided freeway on new location	\$ 204

Source: NCDOT response to TRIP survey

The following chart indicates urban capacity expansion or significant reconstruction projects completed in North Carolina’s major urban areas from 1998 to 2008, in which federal funds were a significant source of funding. These projects addressed safety and mobility issues and traffic congestion.

Chart 18. Highway capacity and reconstruction projects in North Carolina’s major urban areas, completed from 1998 to 2008, largely due to federal surface transportation funds.

Route Name	County	From	To	Length (Miles)	Year Complete	Avg. Daily Traffic	Improvements Made	Project Cost
CHARLOTTE METRO AREA								
I-77	Mecklenburg	I-85	North of Charlotte Outer Loop	8	2005	89,000	Construct Additional lanes	\$ 88,000,000
I-85	Mecklenburg Cabarrus	South of US 29/NC 49 connector	Speedway/Concord Mills Blvd	8.3	2006	97,000	Construct additional lanes	\$ 93,000,000
US 74 Independence Blvd	Mecklenburg	Brookshire Freeway	Briar Creek	1.5	1999	93,000	Construct Additional lanes	\$ 54,000,000
NC 49	Cabarrus	Harrisburg	East of SR 2630	11.7	2006	9,600	Construct Add'l. lanes	\$ 71,000,000
NC 150	Gaston	NC 279	Lincoln County line	3.2	1998	14,000	Construct Add'l. lanes	\$ 11,000,000
GREENSBORO/WINSTON – SALEM METRO AREA								
I-73	Guilford	I-85	SR 2085	12	2007	26,000	Freeway on new location	\$270,000,000
I-40	Guilford	I-40 Bus.	SR 1616	9.6	2004	131,000	Widening	\$174,000,000
I-85	Guilford	SR 1120	I-40	14.7	2006	50,000	Freeway on new location	\$288,000,000
US 311 / Future I-74	Guilford	NC 68	US 29-70	4.8	2005	29,000	Freeway on new location	\$ 70,000,000
RALEIGH – DURHAM METRO AREA								
I-85	Durham	Orange County	US 70	9.7	2008	87,000	Widening and reconstruction	\$327,000,000
I-40	Durham	Orange County	NC 147	10.6	2007	115,000	Widening	\$ 86,000,000
US 64	Wake	I-440	US 64 Business	10.2	2007	59,000	Freeway on new location	\$262,000,000
NC 55	Durham, Wake	US 64	SR 1121	13	2008	28,000	Widening	\$ 64,000,000
I-540, NC 540	Durham, Wake	NC 55	US 64-264	31.1	2008	88,000	Freeway on new location	\$702,000,000
US 15-501	Chatham, Orange	US 64	NC 54	12.8	2006	21,000	Widening	\$ 85,000,000
US 1-64	Wake	SR 1009	I-40	2.6	2007	113,000	Widening	\$ 72,000,000

Source: NCDOT response to TRIP survey

Federal funding provided for public transit in North Carolina since 1998 was put to use for congestion relief as well as economic development. The following four charts show major projects completed or underway from 1998 to 2008 for which federal funds were a significant source of funding.

Chart 19. Pedestrian, transit and rail improvements of regional or statewide significance in the Charlotte metropolitan area that were completed from 1998 to 2008 and for which federal funds were a significant source of funding.

County or Closest City	Route and Project Description	Project Benefits	Year Complete	Project Cost
Charlotte	Construction of 9.6 mile light rail line from city center to I-485	Congestion relief, health, economic development	2007	\$462,750,000
Charlotte	Construction of 2.8 mile busway on Independence Blvd.	Congestion relief, health, economic development	2005	\$17,600,000
Mecklenburg	Ped/Bike Paved Trail – New Greenway: Mallard Creek, Phase 2	Congestion relief, health, economic development	1999	\$ 300,000
Mecklenburg	Ped/Bike Paved Trail – New Greenway: Mallard Creek, Phase 4	Congestion relief, health, economic development	2004	\$ 400,000
Gastonia	Bicycle Parking – New bike racks installed citywide	Congestion relief, health, economic development	2005	\$ 50,000
Gastonia	Bike/Ped Paved Trail – New Greenway: Avon-Catawba Trail	Congestion relief, health, economic development	2008	\$ 215,000
Mecklenburg	Bike/Ped Paved Trail – New Greenway: Little Sugar Creek, Phase B, D	Congestion relief, health, economic development	2008	\$ 895,000
Mecklenburg	Paved Shoulder Bike Lanes: Weddington Rd. (improvements)	Congestion relief, health, economic development	2005	\$ 275,000
Charlotte	Rail/Highway Crossing Safety – Sealed Corridor R&D: Norfolk Southern Mainline/North Carolina Railroad/Sugar Creek Road	Innovative improvement in safety, increased effectiveness from 48% to 95%, a new national standard	2003	\$ 500,000
Charlotte to Raleigh	Rail/Highway Crossing Safety – Deploy Sealed Corridor: Norfolk Southern Mainline/North Carolina Railroad/Sugar Creek Road	Innovative improvement in safety, increased effectiveness from 48% to 95%, a new national standard	2008	\$ 15,000,000
State-wide	Crossing hazard elimination – 125 closures statewide	Crossing hazard elimination	2008	\$ 2,000,000

Source: NCDOT response to TRIP survey

Chart 20. Pedestrian, transit and rail improvements of regional or statewide significance, located in the Greensboro/Winston-Salem metropolitan area, that were completed since 1998 for which federal funds were a significant source of funding.

County or Closest City	Route and Project Description	Project Benefits	Year Complete	Project Cost
Greensboro	New Greenway: Bike/ped trail Battleground Ave.	Congestion relief, economic development	2008	\$ 3,440,567
Winston-Salem	New Greenway: Bike/ped trail Brushy Creek, Phase A	Congestion relief, economic development	2002	\$300,000
Winston-Salem	New Greenway: Bike/ped trail Muddy Creek, Phase 1	Congestion relief, economic development	2007	\$170,000
Winston-Salem	Norfolk Southern R Line Multi-Modal Acquire right-of-way	Enable economic dev. project; preserve right-of-way for future transit access	2006	(n/a)
Greensboro	Major renovation of historic train station as multimodal center	Safety, economic dev., congestion, air quality	2003	Approximately \$19 million
Greensboro	7 new routes connecting several local area colleges and universities to the downtown and each other	Safety, mobility options, air quality. Reduces number of cars on campus	2006	\$8 million, including capital costs
Winston-Salem	Bus replacements	Safety, air quality	2009	Approximately \$8 million

Source: NCDOT response to TRIP survey

Chart 21. Pedestrian, transit and rail improvements of regional or statewide significance, located in the Raleigh-Durham metropolitan area, that were completed since 2008 for which federal funds were a significant source of funding. All examples listed are new projects, and they address traffic congestion and economic development.

County or Closest City	Description of Route	Project Description	Year Complete	Project Cost
Durham	American Tobacco Rail Trail, A	New Paved Bike/Pedestrian Trail	1998	\$ 300,000
Durham	American Tobacco Rail Trail, B	New Paved Bike/Pedestrian Trail	1998	\$ 300,000
Durham	American Tobacco Rail Trail, C	New Paved Bike/Pedestrian Trail	2000	\$ 400,000
Durham	American Tobacco Rail Trail, D	New Paved Bike/Pedestrian Trail	2002	\$ 400,000
Wake	American Tobacco Rail Trail	New Stone Bike/Pedestrian Trail	2003	\$1,200,000
Chatham	American Tobacco Rail Trail, F	New Paved Bike/Pedestrian Trail	2008	\$2,400,000
Wake	Reedy Creek Greenway, A & B	New Paved Bike/Pedestrian Trail	2007	\$5,000,000
Wake	Black Creek Greenway	New Paved Bike/Pedestrian Trail	2004	\$ 400,000
Orange	Booker Creek Greenway	New Paved Bike/Pedestrian Trail	2000	\$ 260,000
Durham	Cornwallis Rd, RTP	Paved Shoulders - Bike/Pedestrian	2007	\$ 900,000

Source: NCDOT response to TRIP survey

Chart 22. Pedestrian, transit and rail improvements of regional or statewide significance, located outside North Carolina’s major urban areas, that were completed since 1998 for which federal funds were a significant source of funding. These projects address congestion, mobility, and economic development.

County or Closest City	Description of Route and Project	Year Complete	Project Cost
Dare	NC 12: Paved Shoulders for bike access	1998	\$ 1,750,000
Currituck	NC 12: Paved Shoulders for bike access	2001	\$ 2,000,000
Carteret	NC 58: Paved Shoulders for bike access	1999	\$ 1,500,000
New Hanover	River Road: Paved Shoulders for bike access	2003	\$ 2,000,000
Williamston	Rail Trail: New paved bike trail	2004	\$ 400,000
Greenville	Green Mill Run: New paved bike/ped trail	2005	\$ 500,000
Asheville	W.T. Weaver Rd.: New paved bike/ped trail	2002	\$ 400,000
Hendersonville	Oklawaha Trail: New paved bike/ped trail	2008	\$ 500,000
Lincolnton	Lincolnton Rail Trail: New paved bike/ped trail	2003	\$ 300,000
Rocky Mount	Tar River Trail: New paved bike/ped trail	2003	\$ 600,000
Rocky Mount	Renovate buildings for multi-modal station. Intercity rail, intercity and local bus. http://www.bytrain.org/istation/irockymount.html	2000	\$ 9,000,000
Wilson	Renovate buildings for multi-modal station. Intercity rail, intercity and local bus. http://www.bytrain.org/istation/iwilson.html	2003	\$ 2,500,000
Greensboro	Renovate buildings for multi-modal station. Intercity rail, intercity and local bus. http://www.bytrain.org/istation/igreensboro.html	2005	\$32,000,000
Charlotte, Greensboro, Raleigh-Durham	Southeast High Speed Rail; NEPA Document http://www.sehsr.org/Tier I Record of Decision	2002	\$10,000,000
Charlotte, Greensboro, Raleigh-Durham	North Carolina Railroad Improvement Project, http://www.bytrain.org/track/statuschart.html	2008	\$60,000,000

Source: NCDOT response to TRIP survey

Future Federal Surface Transportation Program

To ensure that federal funding for highways and public transit in North Carolina and throughout the nation continues beyond the expiration of the current federal surface transportation program, SAFETEA-LU, Congress will need to approve new long-term federal surface transportation legislation by December 31, 2010.

The American Recovery and Reinvestment Act provides approximately \$735 million in stimulus funding for highway and bridge improvements and \$103 million for public transit improvements in North Carolina, a total of \$839 million.⁴⁵ This funding can serve as a down payment on needed road, highway, bridge and transit improvements, but it is still not sufficient

to allow the state to proceed with numerous projects needed to improve and enhance its surface transportation system.

The crafting of a new federal highway and transit program is occurring during a time when the nation's surface transportation program faces numerous challenges, including significant levels of deterioration, increasing traffic congestion, a high number of traffic deaths, high construction costs and a decline in revenues going into the Federal Highway Trust Fund.

Recommendations for the Nation's Surface Transportation System

When Congress approved SAFETEA-LU in 2005, it recognized the tremendous challenge the nation would continue to face in maintaining and improving its highway and transit systems in order to meet the country's future mobility needs. The 2005 legislation stipulated that two national commissions be created to examine the condition of the nation's surface transportation system and its future needs, and to make recommendations about the future of the nation's surface transportation program.

The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC) was created by Congress to examine the current condition and future funding needs of America's surface transportation program, develop a plan to ensure the nation's surface transportation system meets the nation's future mobility needs and examine funding alternatives for adequately funding the nation's future highway and transit needs.

Comprised of transportation officials, business leaders and members of academia, the Commission held numerous field hearings, was advised by a panel of transportation experts, commissioned numerous reports and held 12 executive sessions in preparing its report.

In January, 2008 the NSTPRSC released its findings. The Commission found that at the current level of investment in surface transportation in the U.S., the nation's highways and bridges would further deteriorate, traffic casualties would increase and traffic congestion would increase, jeopardizing the nation's economic leadership due to an erosion of transportation reliability.⁴⁶ The Commission concluded that it is critical to the future quality of life of Americans that the nation create and sustain the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.⁴⁷

The Commission recommended a broad overhaul of the Federal Surface Transportation Program that would significantly boost funding, consolidate the program into fewer funding categories, speed up the project delivery process, require greater accountability in project selection and expand the use of alternate funding sources.

Key recommendations by the Commission include:

- ✓ Allocate funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking.
- ✓ Consolidate the more than 100 current transportation funding programs into 10 programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship and the development of environmentally-friendly energy sources.
- ✓ Speed up the project development process to reduce the excessive time required to move projects from initiation to completion by better coordinating the development and review process for transportation projects.

- ✓ Significantly boost federal funding for surface transportation. Options for increasing federal surface transportation revenues include reduced evasion of federal motor fuel taxes, moving costs of exemptions from motor fuel fees to the general fund, indexing the motor fuel tax, increasing the motor fuel tax, additional tolling, congestion pricing, increased use of public-private partnerships and freight fees.

Similarly, the National Surface Transportation Infrastructure Financing Commission (NSTIFC) was created by Congress to re-envision the way the federal government funds and finances the nation's surface transportation infrastructure. Comprised of individuals from diverse backgrounds, including economics, finance, government, industry, law and public policy, the NSTIFC sought out the best ideas, the latest data and the strongest research before deliberating over a variety of potential financing options.

In February, 2009, the NSTIFC released its findings. The NSTIFC found that the U.S. faces a \$2.3 trillion funding shortfall through 2035 in maintaining and making needed improvements to the nation's surface transportation system.⁴⁸ The Commission found that failure to address the immediate funding shortfall and provide adequate long-term funding for the nation's surface transportation system will lead to higher levels of congestion, reduced safety, costlier goods and services, and eroded quality of life and economic competitiveness.⁴⁹

The Commission found that the current federal surface transportation funding structure, which relies primarily on taxes imposed on petroleum-derived vehicle use, is not sustainable. Instead, the Commission recommended that the nation's future surface transportation investment be funded largely by a charge on motorists based on the number of miles driven. The NSTIFC recommended that a full deployment of a mileage-based federal transportation fee be completed by 2020 and that the federal motor fuel tax eventually be phased out as revenue from a federal

motor fuel fee was replaced by a mileage fee.⁵⁰ Once implemented, the NSTIFC recommended that mileage charges be set at a rate that would provide enough revenue to provide adequate federal funding to ensure that the nation achieve an integrated national transportation system that is less congested and safer and that promotes increased productivity, stronger national competitiveness, and improved environmental outcomes.⁵¹ The NSTIFC also recommended that in the short term, the nation's federal motor fuel tax be boosted significantly and indexed to inflation to allow the federal surface transportation program to be funded at an adequate level until the transition to a mileage-based federal transportation fee.

Another organization that has presented a vision for the nation's future surface transportation program is the American Association of State Highway and Transportation Officials (AASHTO), which represents the nation's state transportation departments.

AASHTO has recommended that a future federal surface transportation program be developed that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget. AASHTO has also called for a federal surface transportation program that is based on state-driven performance measures and focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations and environmental protection.

Conclusion

Roads and bridges are the backbone of the Tar Heel State's transportation system. Today, North Carolina's surface transportation system is under multiple pressures from aging roads and bridges, increasing traffic congestion and the lack of adequate transportation funding.

As it looks to enhance and build a thriving, growing and dynamic state, it will be essential that North Carolina is able to provide a 21st Century network of roads, highways, bridges and public transit that can accommodate the growing mobility demands of a modern society.

Without the federal surface transportation program, North Carolina would not have been able to fund many key projects on major components of the state's surface transportation network. These projects have supported the state's economic development and created new opportunities for its residents. This progress may slow without a strong transportation program to take the place of SAFETEA-LU when it expires December 31, 2010.

The state has an immediate need to move forward with numerous bridge, rehabilitation, expansion and transit projects, but without a substantial boost in federal and state funding, North Carolina will be unable to fund dozens of vital projects.

Increased surface transportation funding would permit North Carolina to upgrade important sections of its Interstate highways, improve traffic safety, replace obsolete bridges and expand transit services statewide. Preservation work, such as rehabilitation and maintenance, performed on North Carolina's network of roads and bridges will pay off in future years by protecting the state's past investment in transportation and extending the life of its aging infrastructure.

A modernized highway and transit system in North Carolina will help the state accommodate continuing population growth and offer congestion relief. Completing critical, unfunded projects would increase mobility, better support commerce and tourism, enhance economic development and improve traffic safety statewide, boosting the quality of life for residents, visitors and businesses.

As the nation looks to rebound from the current economic downturn, the U.S. will need to modernize its surface transportation system, improve the physical condition of its transportation network and enhance the system's ability to provide efficient and reliable mobility for motorists and businesses. Making needed improvements to North Carolina's roads, highways, bridges and transit could provide a significant boost to the state's economy by creating jobs in the short-term and stimulating long-term economic growth as a result of enhanced mobility and access.

The federal stimulus package has provided a helpful down payment on an improved transportation system. However, without a substantial boost in federal or state surface transportation funding, numerous needed projects to expand capacity and upgrade the condition of North Carolina's roads, bridges, highways and transit will not move forward, hampering the state's ability to enhance not only mobility, but also economic development statewide.

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Endnotes

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⁴³ TRIP analysis of Highway Statistics 2007, Table SF-1. Federal Highway Administration.

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⁴⁵ U.S. Department of Transportation data.

⁴⁶ National Surface Transportation Policy and Revenue Study Commission. Transportation for Tomorrow, December 2007. P. 3.

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⁴⁸ Paying Our Way. February, 2009. The National Transportation Infrastructure Financing Commission. P3. Summary Findings.

⁴⁹ Ibid. P. 12.

⁵⁰ Ibid.

⁵¹ Ibid.