

TABLE OF CONTENTS

9.0	IMPLEMENTATION AND FUNDING	9-2
9.1	Implementation Plan	9-2
9.1.1	Construction and Staging Plan	9-2
9.1.2	Related NCDOT Projects	9-2
9.2	Revenue and Funding	9-2
9.2.1	Federal Aid Construction Program	9-2
9.2.2	North Carolina Highway Trust Fund	9-3
9.2.3	Powell Bill	9-3
9.2.4	Transportation Enhancement Funds	9-3
9.2.5	Local Option Sales Tax	9-4
9.2.6	Toll Facilities	9-4
9.2.7	Congestion Mitigation and Air Quality (CMAQ) Improvement Program	9-4
9.2.8	Conclusions	9-4

LIST OF TABLES

Table	
9-1	Federal Aid Construction Program – FFY 2002 & 2003 North Carolina Department of Transportation (in millions)

9.0 IMPLEMENTATION AND FUNDING

With a price tag of some \$460 million, upgrading the US 52 Corridor will have to be carefully planned and programmed.

9.1 Implementation Plan

9.1.1 Construction and Staging Plan

The US 52 Corridor can be readily divided into the following four segments for reconstruction:

- I-40 to Business 40 (\$75.2 million);
- Business 40 to Northwest Boulevard (\$155.7 million);
- Northwest Boulevard to Glenn Avenue (\$80.9 million); and
- Glenn Avenue to Hanes Mill Road (\$149.3 million).

Of the four segments, the highest priority is for the downtown segment between Business 40 and Northwest Boulevard. This segment of the route has the greatest need for improvement today with the highest traffic demand and accident rate. In addition, the recent announcement of the development of the Piedmont Triad Research Park to the west of the right-of-way will create additional need for the improvement. Of the \$155.7 million identified for this segment of the project, approximately \$40 million would be needed to rebuild the Business 40 and Third Street interchanges. Another \$10 million would be required to rebuild the Martin Luther King, Jr. Drive interchange and the remainder would widen and upgrade the through lanes of US 52.

The segment of US 52 between I-40 and Business 40 is assigned second priority because this segment also has a high traffic demand and accident rate. However, the realignment of US 52 to the west of the existing alignment could be difficult. Of the \$75 million needed for this segment, \$20 million would be required to upgrade the Waughtown Street interchange and to replace the Diggs/Vargrave Street interchange with the proposed Salem Creek Parkway interchange. The remaining costs would be for widening and realigning the mainline of US 52 and to replace the Winston-Salem Southbound railroad bridge over US 52 just north of Mock Street.

Third priority falls to the segment of US 52 located between Northwest Boulevard and Glenn Avenue which is estimated to cost \$80.9 million because right-of-way requirements for the realignment of US 52 in the vicinity of 27th/28th Street interchange could cause delays. Also, if the US 52 bridges over Liberty Street are replaced before this project is funded (as is likely) then this segment may be delayed to maintain use of the replacement bridges for as long as possible.

Finally, the segment of US 52 between Glenn Avenue and Hanes Mill Road is estimated to cost \$149.3 million and has the lowest priority because the roadway geometry meets current freeway and interstate design standards; it is relatively safe; and traffic demand does not exceed its capacity. However, this is the easiest segment to construct because most of the US 52 Corridor has sufficient existing right-of-way for re-construction to occur with only minimal additional right-of-way acquisition necessary. In fact, the segment between Patterson Avenue and Hanes Mill Road would be a good candidate for a design-build project.

9.1.2 Related NCDOT Projects

It is not likely that any improvements to the US 52 Corridor will occur until after the Eastern and Western Beltways around Winston-Salem are completed. In the interim, there are a number of improvements that are planned by the North Carolina Department of Transportation (NCDOT) to increase capacity and improve safety within the US 52 Corridor study area.

US 52 Interim Improvement Study (U2826B). NCDOT is in the process of preparing an interim improvement plan as part of U-2826 B. This project focuses on the segment of US 52 between Stadium Drive and Akron Drive. That study will determine cost-feasible improvements that can occur primarily within the existing right-of-way. The project is funded for \$15 million. Interim

improvements in the US 52 Corridor should include consolidating interchanges, lengthening acceleration/deceleration lanes and weaving sections and adding auxiliary lanes in as many sections as possible.

Bridge Replacement Projects. NCDOT has on-going bridge replacement projects throughout the corridor. Recently, bridges on US 52 at 25th Street, 28th Street and Glenn Avenue were replaced. NCDOT plans to replace the bridges over Liberty Street and NS RR tracks at the airport in 2005 under U2826A (funded in the current Transportation Improvement Program for \$14.2 million). The US 52 Corridor Plan estimates that the total cost of replacing US 52 bridges that are not part of interchanges is \$84.7 million. If bridge replacement can be funded separately and coordinated with the long-range plans for improvements for US 52, then the total cost of the project can be reduced to below \$400 million and the need to re-do bridge projects when US 52 is upgraded could be minimized.

Salem Creek Parkway Study (U-2925). NCDOT is studying the development of the Salem Creek Parkway from Salem Avenue to Martin Luther King, Jr. Drive. The project is funded for \$3.3 million. Its interchange with US 52 could be added to the project as part of this study. However, funding would need to be increased for both the new interchange and to build the roadway extension west of US 52. It should be noted that this interchange and the parkway could form the southern access route to the proposed Piedmont Triad Research Park.

Hanes Mill Road (U-2729). The widening of Hanes Mill Road from Museum Drive to University Parkway (including the bridge over US 52) to a multi-lane facility has been postponed. This is currently an unfunded TIP Project, estimated to cost \$6.35 million.

9.2 Revenue And Funding

The following is an excerpt from the 2002 – 2003 NCDOT Transportation Improvement Program (TIP) program report.

The highway construction budget consists of the Federal Aid Construction Program, the Intrastate and Urban Loop Programs from the North Carolina Highway Trust Fund, and since 1998, the authorization of bond revenues. Combined funding is expected to be \$1.36 billion for Federal Fiscal Year (FFY) 2002 and \$1.42 billion for 2003. Planning and design is budgeted at \$134 million in 2002 and \$139.2 million in 2003, leaving \$1.2 billion for right-of-way and construction in 2002 and \$1.3 billion in 2003. During the seven-year TIP, \$9.6 billion is expected to be available for right-of-way and construction.

9.2.1 Federal Aid Construction Program

The Federal Aid Construction Program consists of many funding categories. Funding in most of these categories is subject to overall federal budget constraints. Although North Carolina's total apportionment for these categories is expected to be about \$818.7 million in 2002 and \$830 million in 2003, it is anticipated that the obligation ceiling will be about \$614 million in 2002 and \$631 million in 2003.

The amount of state matching funds needed for the Federal Aid Program is expected to be \$191.3 million in 2002 and \$195.1 million in 2003, all of which will be funded by the North Carolina Highway Trust Fund (Trust Fund). When federal funds are used on a Trust Fund project, the Trust Fund law allows an equal amount to be transferred from the Trust Fund to the Highway Fund to cover state match and to fund state construction projects.

As shown in Table 9-1, there are a number of Federal Aid Programs under which the US 52 project could be funded. The Bridge Replacement Program for US 52 (\$87 million) could be funded under the Federal Aid Bridge Program, which is currently funded at \$155 to \$158 million annually. US 52 is part of the National Highway System, which is currently funded at \$217 million annually. The route would certainly qualify for congestion mitigation (another \$26 million in 2003) and is part of the Surface Transportation Program (\$252 million in 2003). In 2003, the US 52 project would be eligible for its share of some \$750 million annually. By scheduling the improvements in stages, the project could be funded over a 10-year period using existing sources.

Table 9-1. Federal Aid Construction Program – FFY 2002 & 2003
North Carolina Department of Transportation (in millions)

Category	Federal Funds 2002	Required State Matching Funds 2002	Total 2002	Federal Funds 2003	Required State Matching Funds 2003	Total 2003
Interstate Maintenance	143.7	16.0	159.7	146.6	16.3	162.9
Appalachian Development	28.7	7.2	35.9	28.7	7.2	35.9
Bridge Program	124.2	31.1	155.3	126.7	31.7	158.4
National Highway System	170.3	42.6	212.9	173.7	43.4	217.1
Congestion Mitigation	20.6	5.2	25.8	21.0	5.3	26.3
Surface Transportation Program	197.7	49.4	247.1	201.6	50.4	252.0
High Priority Projects	43.3	10.8	54.1	43.3	10.8	54.1
Minimum Guarantee	90.2	22.6	112.8	88.4	22.1	110.5
Total Apportionment	818.7	184.9	1003.6	830.0	187.2	1017.2
Obligation Limitation	614.0	153.5	767.5	630.8	157.7	788.5
Minimum Guarantee	64.5	16.1	80.6	63.2	15.8	79.0
Appalachian Development	25.4	6.4	31.8	25.4	6.4	31.8
Guarantee not Subject	20.5	5.1	25.6	20.1	5.0	25.1
High Priority Projects	40.7	10.2	50.9	40.7	10.2	50.9
Total Federal Funding Availability	765.1	191.3	956.4	780.2	195.1	975.3

Source: North Carolina Department of Transportation 2002-2003 Transportation Improvement Program

9.2.2 North Carolina Highway Trust Fund

The 1989 North Carolina General Assembly created the North Carolina Highway Trust Fund to accomplish the following goals:

- Complete a 3,600-mile intrastate system of four-lane roads;
- Widen and improve 113 miles of existing interstate highways;
- Build multi-lane loops and connectors near seven major cities;
- Provide additional funds in order to pave all unpaved secondary roads by 2006; and
- Provide additional funds for municipal streets.

Revenues for the Trust Fund are generated from the state motor fuels tax, the 3 percent use tax on the sale of motor vehicles, titles and other fees, and interest income. Also, in November 1996, a \$950 million Highway Bond referendum was approved, allocating \$500 million of the proceeds to Urban Loops, \$300 million to the Intrastate System, and \$150 million to Secondary Roads. The Trust Fund Law specifies that a designated amount will be transferred each year from the Trust Fund to the General Fund.

Beginning in State Fiscal Year (SFY) 1992, the transfer amount has been \$170 million annually. The Governor's 2001 Recommended Budget increased the transfer to \$200 million for 2002 and 2003. One half of Trust Fund revenues generated from title and other fees is then allocated to the paving of secondary roads. A maximum of 4.5 percent of the remaining Trust Fund revenues may be used for administration of the Trust Fund Program. The balance of revenues is then distributed as follows:

- 61.95 percent to the Intrastate System;
- 25.05 percent to Urban Loops;
- 6.5 percent to pave Secondary Roads;
- 6.5 percent to municipal street aid (the Powell Bill program).

Because the sources of Trust Fund revenues are sensitive to changes in the economy, revenue forecasts are revised annually. Total Trust Fund Revenues available for the Trust Fund Program are projected to be about \$846 million for SFY 2002, \$881 million in 2003, and growing to over \$1 billion in 2006. Over \$7 billion is estimated to be generated through these revenue sources during the seven-year TIP period.

The North Carolina Highway Trust Fund is outdated, inflexible and unable to meet its original goals or those of North Carolina's communities. The Trust Fund collects gasoline taxes and automobile registration fees, and only permits very specific uses:

- Building urban loop highways around seven North Carolina cities;
- Widening one section of highway to four lanes in each legislator's district. (the stated goal was to have every North Carolinian living within ten miles of a four-lane road).
- Paving gravel roads throughout the state.

Much of the Trust Fund System has been completed and the remainder is either difficult to build or stalled in court cases. The North Carolina State Legislature is considering ways to reallocate the Trust Fund to meet expanding needs of the State's transportation system. Although US 52 does not currently meet the requirements for a Trust Fund project, the redefinition of Trust Fund projects to include new urban interstate connectors or to include upgrading substandard freeways would then allow US 52 to benefit from the Trust Fund. Dependence on the Trust Fund for implementation of US 52 is a long-range possibility that would require changes in State law.

9.2.3 Powell Bill

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities, which establish their eligibility and qualify as provided by G.S. 136-41.3. The general statutes require that a sum be allocated to the qualifying municipalities equal to the amount produced during the fiscal year by 1-3/4 cents on each taxed gallon of motor fuel. Powell Bill funds are expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities. US 52 is the responsibility of the NCDOT to maintain and upgrade and traditionally Powell Bill funds would not be used for its improvement.

9.2.4 Transportation Enhancement Funds

Although a relatively small source of funds, transportation enhancement grants could be used for landscaping and to create gateways in the US 52 Corridor.

The Transportation Enhancement Funds program was established by Congress in 1991 through the Intermodal Surface Transportation Efficiency Act (ISTEA) as a means of ensuring that a variety of projects—most not typically associated with the road-building mindset—were implemented. The widespread use of this program nationwide led Congress to reauthorize the Enhancement program in 1998 through the Transportation Equity Act of the 21st Century (TEA-21). TEA-21 not only provided record investment to continue building America's highways and transit systems, but moved beyond concrete, asphalt and steel to build a better America by improving safety, protecting the environment and public health, and creating an opportunity for all Americans to improve their quality of life through transportation enhancements. The Enhancement program, administered by the NCDOT, has continued to attract positive responses from the citizens of this state through the successful implementation of projects deemed to be important by or communities.

The following types of projects are eligible for enhancement funds:

- Facilities for bicycles and pedestrians
- Bicycle and pedestrian safety and educational activities
- Acquisition of scenic/historic easements/sites
- Scenic/historic highway programs, including tourist/visitors centers
- Landscaping and scenic beautification
- Historic Preservation

- Rehabilitation/operation of historic transportation facilities
- Preservation of abandoned railway corridors
- Control and removal of outdoor advertising
- Archaeological planning and research
- Mitigation of highway runoff and provision of wildlife connectivity
- Establishment of transportation museums

In 2002, \$22.5 million was available in North Carolina for Enhancement Projects, although only \$10 million was available for distribution. Of that amount, some \$550,000 was allocated to Division 9, which includes Davidson, Davie, Forsyth, Rowan and Stokes counties. Historically, North Carolina has allocated 35% of its Enhancement funds for bicycle and pedestrian projects and another 26% for landscaping and streetscaping. The City of Winston-Salem could use enhancement funds to develop gateways in the US 52 Corridor and to create a scenic corridor.

9.2.5 Local Option Sales Tax

Local governments can petition the legislature to levy a local sales tax for the improvement of the transportation system. Mecklenburg County levied a ½ cent sales tax to support its public transit/transportation initiative. If the need becomes great enough, Forsyth County could raise funds through a sales tax increase to improve US 52.

9.2.6 Toll Facilities

North Carolina recently approved its first Toll Road initiative. Although US 52 appears to be an unlikely candidate as a toll facility today, as congestion increases and if the Beltway project is delayed indefinitely, the need for improvements to US 52 may become high. There are several methods of toll collecting that should be considered if tolls are determined to be a viable funding mechanism for US 52.

Flat Tolls: This is the traditional and simplest method of toll setting. Tolls are set to achieve financial objectives while encouraging maximum usage. Flat tolls are easy to communicate to customers; simple fixed message signs suffice. However, flat tolls do not allow for more sophisticated traffic management techniques involving value pricing.

Fixed-Variable Tolls: Under a fixed-variable scheme, tolls are set based on time of day and day of week, and the toll rates are published. The intent of the variable tolls is to manage flow for either the time of day or the day of the week in order to avoid overcrowding and to maximize revenue potential.

Dynamic Tolls: With dynamic tolls, prices change frequently to react to changes in demand. This system also has maximum tolls that can be charged at any given time period. The advantage of dynamic tolling is that it can react to variations in traffic flow. However, travelers cannot plan their departure times based on a known toll level. Over time though, as travel patterns develop, drivers should be able to anticipate a range of tolls at a given time period.

9.2.7 Congestion Mitigation and Air Quality (CMAQ) Improvement Program

In 1990, Congress amended the Clean Air Act (CAA) to bolster America's efforts to attain the National Ambient Air Quality Standards (NAAQS). The amendments required further reductions in the amount of permissible tailpipe emissions, initiated more stringent control measures in areas that still failed to attain the NAAQS (nonattainment areas), and provided for a stronger, more rigorous linkage between transportation and air quality planning. In 1991, Congress adopted the Intermodal Surface Transportation Efficiency Act (ISTEA). This law authorized the CMAQ program, and provided \$6.0 billion in funding for surface transportation and other related projects that contribute to air quality improvements and reduce congestion. The CMAQ program, jointly administered by the FHWA and the Federal Transit Administration (FTA), was reauthorized in 1998 under the Transportation Equity Act for the 21st Century (TEA-21). The TEA-21 CMAQ program provides over \$8.1 billion dollars in funds to State DOTs, MPOs, and transit agencies to invest in projects that reduce criteria air pollutants regulated

from transportation-related sources over a period of six years (1998-2003). The CAA amendments, ISTEA, TEA-21, and the CMAQ program together were intended to realign the focus of transportation planning toward a more inclusive, environmentally sensitive, and multimodal approach to addressing transportation problems.

In 2002, North Carolina was allotted \$20.7 million in CMAQ funds which was apportioned to the Charlotte, Raleigh-Durham and Piedmont Triad metropolitan areas. The funds available for the US 52 project are very limited at present, to non-highway modes of travel.

9.2.8 Conclusions

There are two issues related to the ultimate funding of US 52 that need to be addressed: its place in the Transportation Improvement Program (TIP), and its place with respect to other projects competing for funding dollars in the area. First, the major upgrading of US 52 currently appears as an unfunded project in the 2004-2010 TIP. Project number U-2826 calls for the widening and upgrading of US 52 from I-40 Bypass to the Northern Beltway interchange at the northern city limits and estimates the costs at \$387.25 million.

The Winston-Salem / Forsyth County Metropolitan Planning Organization should identify US 52 as a high-priority project in its Metropolitan Transportation Improvement Program (MTIP) and request funding to begin the environmental review process. By requesting project planning funds as soon as possible, the project can continue to move forward.

Finding the funding for a project of this magnitude will be difficult. Under current legislation, the route would be eligible as a Federal Aid construction project using bridge funds as part of the National Highway System and for congestion mitigation or as part of the Surface Transportation Program. Presently, improvements on US 52 are not eligible for Highway Trust Funds, although revisions in the Trust Fund legislation may change its eligibility status in the future. The US 52 Corridor would be a likely candidate for Trust Fund eligibility if the legislation were broadened in the future because US 52 could apply for Interstate designation and the route is part of a strategic north-south intrastate corridor.

Competing for funds in Division 9 is the Northern Beltway around Winston-Salem. R-2247 (the western portion of the loop) is funded for \$284.5 million and is schedule to begin construction as soon as the project receives environmental approval. U-2579 (the eastern portion of the loop) has another \$225.6 million allocated for funding (although some \$193.8 million is slated for post 2008 funding) and has been linked to the scheduling of the Western leg of the Beltway through the environmental review process. Thus, approximately \$510 million has been allocated to Highway Trust Fund projects in Winston-Salem and Forsyth County, probably over the next decade. It is likely that funding of US 52 will have to wait for the completion of the Northern Beltway. However, the planning and environmental review process on US 52 should continue since it can be a lengthy process (as the Beltway projects have shown). In this manner, US 52 will have all necessary permits and approvals and will be ready for construction when the funds become available.