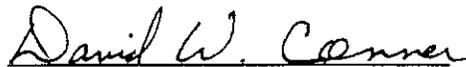


FEASIBILITY STUDY

NC 268
From SR 1966 (Airport Road)
To the Elkin Bypass (R-2604)
Wilkes County

R-3309

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



David W. Conner
Highway Planning Engineer



David G. Modlin, Jr., Ph.D., P.E.
Head of Feasibility Studies

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Date

R-3309

NC 268
From SR 1966 (Airport Road)
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I. General Description

This feasibility study describes recommended roadway improvements to NC 268 in Wilkes County. It is proposed to widen NC 268 from SR 1966 (Airport Road) to the proposed Elkin Bypass (R-2604), a distance of 13.5 miles (21.7 km). Please see figure 1 for the project location.

There are three cross sections recommended throughout the project length. For the major portion of the project the proposed cross section is a 4-lane, divided, shoulder section with 12-foot (3.6-m) wide travel lanes, a 46-foot (14.0 -m) wide median, 2-foot (0.6-m) wide inside paved shoulders, and 8-foot (2.4-m) wide outside shoulders which include 2 feet (0.6 m) paved. A 250-foot (76.2-m) wide right-of-way is recommended for this cross section which is proposed for the following locations:

- a. From SR 1966 to approximately 0.1 miles (0.2 km) west of Roaring River
- b. From approximately 1.1 miles (1.8 km) east of Roaring River to SR 2015
- c. From approximately 0.5 miles (0.8 km) east of SR 2303 to approximately 0.5 miles (0.8 km) northeast of SR 2017
- d. From approximately 0.3 miles (0.5 km) west of SR 2018 to the proposed Elkin Bypass

The second cross section is a 4-lane, 52-foot (15.8-m) wide (face-to-face) curb-and-gutter section with 8-foot (2.4-m) wide berms on a 70-foot (21.3-m) wide right-of-way. This cross section is proposed at the following locations:

- a. From approximately 0.1 miles (0.2 km) west of Roaring River to approximately 1.1 miles (1.8 km) east of Roaring River
- b. From SR 2015 to approximately 0.5 miles (0.8 km) east of SR 2303

The third cross section is recommended from approximately 0.5 miles (0.8 km) northeast of SR 2017 to approximately 0.3 miles (0.3 km) west of SR 2018 and consists of a 5-lane, 64-foot (19.5-m) wide (face-to-face) curb-and-gutter

cross section with 8-foot (2.4-m) wide berms on a 100-foot (30.5-m) wide right-of-way.

This project will likely require the relocation of 130 residences and 22 businesses.

The estimated cost for these improvements, including right-of-way and construction is \$61,400,000 as follows:

Right-of-Way	.....	\$22,100,000
Construction	.....	39,300,000
Total Cost	.....	\$61,400,000

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including costs, and identify potential problems that may require consideration in the planning and design phases.

II. Need for Project

The purpose of this project is to improve the traffic carrying capacity and the safety of NC 268. This project is endorsed by Wilkes County, the Town of Wilkesboro, the Town of North Wilkesboro, and the Wilkes Chamber of Commerce.

NC 268 is designated as a Rural Major Collector on the North Carolina Statewide Functional Classification System.

Development along the project is medium density residential with small businesses scattered throughout the project limits. Also within the project limits, NC 268 passes through the Town of Ronda and the Community of Roaring River.

From SR 1966 to the proposed Elkin Bypass, NC 268 is a 2-lane roadway varying in width from 20 to 22 feet (6.1 to 6.7 m) and has soil shoulders which vary in width from 2 feet (0.6 m) to 5 feet (1.5 m). The existing right-of-way varies between is 60 and 100 feet (18.3 and 30.5 m).

There are four structures located along the length of the project as follows:

1. Culvert # 87, over Rock Creek, is located approximately 0.1 miles (0.2 km) east of the junction with SR 2081. It is a triple 9-foot by 9-foot reinforced concrete box culvert which measures 37 feet (11.3 m) along its centerline. It has a sufficiency rating of 96.4 .

2. Bridge # 88 spans the Roaring River. It is 230 feet (70.1 m) long, has a clear deck width of 26 feet (7.9 m), and has a sufficiency rating of 48.0.
3. Bridge # 92 over Bugaboo Creek is located immediately east of the junction of SR 2015. It is 157 feet (47.9 m) long, has a clear deck width of 28.4 feet (8.6 m), and has a sufficiency rating of 54.5.
4. Bridge # 95 spans the Little Elkin River and is located immediately east of SR 2018. It is 40 feet (12.2 m) long, has a clear deck width of 36.5 feet (11.2 m), and has a sufficiency rating of 71.4.

West of SR 1966, widening of NC 268 is an "Identified Future Need" in the TIP (R-603). This identified future need includes widening NC 268 to a multi-lane facility from the existing multi-lane section in North Wilkesboro to SR 1966.

At the eastern project terminal, the proposed Elkin Bypass (R-2604) is scheduled in the TIP for construction to begin in 2001. The Elkin Bypass is proposed as a 4-lane median divided facility.

The 1994 Average Daily Traffic (ADT) on NC 268, within the project terminals, varies from approximately 4,600 vehicles per day (vpd) to approximately 7,600 vpd. For the design year (2020), the estimated traffic volumes on NC 268 will range from approximately 8,800 vpd to approximately 14,200 vpd. Truck traffic is estimated to make up 8% of daily traffic.

Based on estimated traffic volumes, NC 268 is currently operating at Level of Service (LOS) E which will continue through the design year (2020) without improvements. Widening this section to a multi-lane facility will improve the LOS to A which will prevail through the design year.

During the three-year period from April 1, 1991, to March 31, 1994, there were 200 accidents reported on NC 268 within the project limits. There were 5 deaths and 127 non-fatal injuries reported. These accidents resulted in an accident rate of 131.8 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 205.4 Acc/100MVM for all rural NC routes. The most prevalent accident types were rear-end (50%), left-turn (25%), and angle (22%). The wider cross section will offer the potential for reduction of these types of accidents.

III. Recommendations

It is recommended to widen NC 268 from SR 1966 (Airport Road) to the proposed Elkin Bypass (R-2604), a distance of 13.5 miles (21.7 km). Please see figure 1 for the project location.

There are three cross sections recommended throughout the project length. For the major portion of the project the proposed cross section is a 4-lane, divided, shoulder section with 12-foot (3.6-m) wide travel lanes, a 46-foot (14.0 -m) wide median, 2-foot (0.6-m) wide inside shoulders, and 8-foot (2.4-m) wide outside shoulders which includes 2 feet (0.6 m) paved. The inside shoulders and 2 feet (0.6 m) of the outside shoulders will be paved. A 250-foot (76.2-m) wide right-of-way is recommended for this cross section which is proposed for the following locations:

- a. From SR 1966 to approximately 0.1 miles (0.2 km) west of Roaring River
- b. From approximately 1.1 miles (1.8 km) east of Roaring River to SR 2015
- c. From approximately 0.5 miles (0.8 km) east of SR 2303 to approximately 0.5 miles (0.8 km) northeast of SR 2017
- d. From approximately 0.3 miles (0.5 km) west of SR 2018 to the proposed Elkin Bypass

The second cross section is a 4-lane, 52-foot (15.8-m) wide (face-to-face) curb-and-gutter section with 8-foot (2.4-m) wide berms on a 70-foot (21.3-m) wide right-of-way. This cross section is proposed at the following locations:

- a. From approximately 0.1 miles (0.2 km) west of Roaring River to approximately 1.1 miles (1.8 km) east of Roaring River
- b. From SR 2015 to approximately 0.5 miles (0.8 km) east of SR 2303

The third cross section is recommended from approximately 0.5 miles (0.8 km) northeast of SR 2017 to approximately 0.3 miles (0.3 km) west of SR 2018 and consists of a 5-lane, 64-foot (19.5-m) wide (face-to-face) curb-and-gutter cross section with 8-foot (2.4-m) wide berms on a 100-foot (30.5-m) wide right-of-way.

It is also recommended that the existing culvert at Rock Creek be lengthened, the existing bridge over the Roaring River be replaced with a new bridge having a clear deck width of 52 feet (15.8 m), widening the existing bridge over Bugaboo Creek to a clear deck width of 52 feet (15.8 m), widening the existing bridge over the Little Elkin River to a clear deck width of 40 feet (12.2 m), and construction of a second bridge over the Little Elkin River with a clear deck width of 40 feet (12.2 m).

This project will likely require the relocation of 130 residences and 22 businesses.

The estimated cost for these improvements, including right-of-way and construction is \$61,400,000 as follows:

Right-of-Way	.....	\$22,100,000
Construction	.....	39,300,000
Total Cost	.....	\$61,400,000

IV. Other Comments

In addition to the recommended alternative, two additional alternatives were evaluated. The first additional alternative includes construction of a 4-lane median divided highway on new location from SR 1989 to SR 2015 and widening as recommended above for the existing segments of NC 268 from SR 1966 to SR 1989 and from SR 2015 to the Elkin Bypass. This alternate would likely require the relocation of 109 residences and 17 businesses and is estimated to cost \$66,073,000 as follows:

Right-of-Way	.....	\$18,723,000
Construction	.....	47,350,000
Total Cost	.....	\$66,073,000

The second additional alternate includes construction of a 4-lane median divided highway on new location from SR 1989 to approximately 0.4 miles (0.6 km) east of SR 2017 and widening as recommended above for the existing segments of NC 268 from SR 1966 to SR 1989 and from approximately 0.4 miles (0.6 km) east of SR 2017 to the Elkin Bypass. This alternate would likely require the relocation of 98 residences and 17 businesses and is estimated to cost \$73,900,000 as follows:

Right-of-Way	.....	\$16,500,000
Construction	.....	57,400,000
Total Cost	.....	\$73,900,000

Costs were developed for upgrading the existing facility to a standard 24-foot (7.3 m) wide pavement with paved and standard earth shoulders and horizontal and vertical alignment changes. These improvements would provide a 55 mph (34.18 kph) design speed. It was determined that the construction costs for these improvements would be approximately \$29,000,000 and right-of-way costs would be great. Also, based on the projected average daily traffic in the

design year, it was determined that the roadway would operate at a Level of Service F thereby not likely qualifying for federal aid funding.

An environmental screening was not conducted for this study.

No special accommodations for bicycles is recommended on this project.

