



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

DIVISION OF HIGHWAYS
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R. SAMUEL HUNT III
SECRETARY

December 19, 1994

MEMORANDUM TO: Mr. J. Douglas Galyon, Member, Board of Transportation
Mr. J. W. Watkins, Division Engineer, Division 7
Mr. C. W. Leggett, P.E.
Mr. W. H. Webb, P.E.
Mr. J. M. Lynch, P.E.
Mr. J. B. Williamson
Mr. H. F. Vick, P.E. (2)
Mr. D. R. Morton, P.E.
Mr. G. T. Shearin, P.E.
Mr. M. R. Poole, P.E.
Mr. A. L. Avant (2)
Mr. J. D. Lane
Mr. T. A. Peoples, P.E.
Mr. L. K. Barger, P.E.

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

A handwritten signature in cursive script, appearing to read "David G. Modlin".

SUBJECT: Feasibility Study # R-3105, NC 119 and NC 62 in Alamance and
Caswell Counties.

Our staff has completed a feasibility study for the subject proposed project. This brief analysis suggests improvements that would be logical if the project were to be funded. A copy of our report is attached for your information.

DGM/joa

Attachment

cc: Dr. L. R. Goode, P.E.
Mr. B. G. Jenkins, P.E.
Mr. W. J. Watson, P.E.



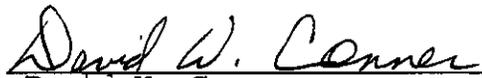
FEASIBILITY STUDY

NC 119 and NC 62
in
Alamance and Caswell Counties
R-3105

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



W. J. Watson, P.E.
Highway Planning Engineer



David W. Conner
Highway Planning Engineer



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

12/15/94
Date

NC 119 and NC 62
in
Alamance and Caswell Counties
R-3105

I. GENERAL DESCRIPTION

This is a feasibility study for improvements to NC 119 in Alamance County and NC 62 in Alamance and Caswell Counties as shown on Figure 1 and as described below:

1. Widen NC 119 in Alamance County for a distance of approximately 5.7 miles (9.2 km). The proposed cross section will be a 2-lane roadway with a pavement width of 32 feet (9.8 m), including a 4-foot (1.2-m) wide paved shoulder on each side. The total shoulder width (paved and unpaved) will be 8 feet (2.4 m).
2. Construct a 3.4 mile (5.5 km) connector (generally on new location) from NC 119 to NC 62 in Alamance County. The recommended cross section is a 2-lane roadway with a pavement width of 28 feet (8.5 m), including a 2-foot (0.6-m) wide paved shoulder on each side. The total shoulder width (paved and unpaved) will be 8 feet (2.4 m).
3. Widen NC 62 in Alamance and Caswell Counties for a distance of 1.2 miles (1.9 km). The recommended cross section is a 2-lane roadway with a pavement width of 28 feet (8.5 m), including a 2-foot (0.6-m) wide paved shoulder on each side. The total shoulder width (paved and unpaved) will be 8 feet (2.4 m).
4. Replace two existing bridges on NC 62 north of the Alamance/Caswell County line with new bridges having a clear deck width of 28 feet (8.5 m).

The total project length is 10.3 miles (16.6 km) and will require an 80-foot (24.4-m) wide right-of-way.

It is estimated that there will be 10 residences and 1 business relocated due to this project.

The total cost for right-of-way and construction is estimated to be \$13,395,000.

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 the study is to describe the problem, recommend a treatment 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 NC 119 to meet current roadway standards, improve the safety conditions and accident experience, and to provide more direct access from NC 119 to NC 62.

NC 119 is designated a major collector in the Statewide Functional Classification System.

The project route is located in a rural area consisting of farms, pastures, and wooded lands with light residential development between the project terminals.

Within the project terminals, existing NC 119 and NC 62 are generally 2-lane, 20-foot (6.1-m) wide, rural shoulder sections with 4 to 6-foot (1.2 to 1.8-m) wide soil shoulders. There is one major intersection along the project route at NC 49. This intersection is stop sign controlled on NC 119.

The speed limit on NC 119 and NC 62 is 55 miles per hour (90 km/h).

There are two culverts located on NC 119 within the project terminals. A single barrel, 48-foot (14.6-m) by 18-foot (5.5-m), reinforced concrete arch culvert is located approximately 1.0 mile (1.6 km) north of SR 1917. This culvert has a sufficiency rating of 99.7 and an estimated remaining life of 18 years. The second culvert, a quadruple barrel, 11-foot (3.3-m) by 15-foot (4.6-m), reinforced concrete box culvert, is located approximately 2.3 miles (3.7 km) north of SR 1917. This culvert has a sufficiency rating of 99.7 and an estimated remaining life of 17 years.

There are two bridges located on NC 62 within the project limits. Bridge #14 is located approximately 0.3 miles (0.5 km) south of SR 1114 in Caswell County. This bridge was built in 1922. It has a clear deck width of 18.8 feet (5.7 m), a sufficiency rating of 54.4 and an estimated remaining life of 7 years. Bridge #28 is located approximately 100 feet (30.5 m) south of SR 1114. It was built in 1922, has a clear deck width of 18.7 feet (5.7 m), a sufficiency rating of 75.4, and an estimated remaining life of 8 years.

The average daily traffic (ADT) on NC 119 within the project terminals is estimated to currently be approximately 1,825 vehicles per day (vpd). The design year (2015) volume is estimated to be 3,400 vpd.

It is estimated that 5% of the traffic on NC 119, in Alamance County, is truck traffic. An evaluation of this traffic indicates that trucks are coming onto NC 119 from NC 62 and exiting from NC 119 to NC 62 via SR 1001 in Caswell County. See Figure 1 for the location of this route.

The level of service (LOS) on NC 119 within the project terminals is currently estimated to be level B. With no improvements, the LOS is expected to reach a high level C to a low level D by the design year. With the proposed improvements, the current LOS is also expected to be level B and reach level C by the design year (2015).

During the period from July 1, 1990, through June 30, 1993, there were 43 accidents reported on NC 119 within the project terminals. This resulted in an accident rate of 384.96 accidents per 100 million vehicle miles (Acc/100MVM), compared to a statewide average of 210.1 Acc/100 MVM for all rural NC 2-lane undivided routes during 1993. There were no fatalities reported during the period, but 24 (56%) of the accidents resulted in injuries. The most prevalent accident types were ran-off-the-road (32.5%), left-turn (20.1%), and angle (18.6%). The wider cross section will offer the potential for reduction of these types of accidents.

III. RECOMMENDATIONS

It is recommended that improvements be made to NC 119 in Alamance County and NC 62 in Alamance and Caswell Counties as shown on Figure 1 and as described below:

1. NC 119, in Alamance County, will be widened from approximately 0.2 miles (0.3 km) south of SR 1917 (White Level Road) to approximately 0.5 miles (0.8 km) north of SR 1901, a distance of 5.7 miles (9.2 km). The roadway will generally be widened 6 feet (1.8 m) on each side to provide a 2-lane cross section with a 32-foot (9.8-m) wide pavement including a 4-foot (1.2-m) wide paved shoulder on each side. The total shoulder width (paved and unpaved) will be 8 feet (2.4 m). This segment of the project will follow the existing alignment to the extent possible and should be generally symmetrical to the centerline of the existing roadway.
2. A new 3.4 mile (5.5 km) connector will be constructed from approximately 0.5 miles (0.8 km) north of SR 1901, on NC 119, to NC 62 at approximately 0.4 miles (0.6 km) south of the intersection of NC 62 and SR 1768 in Alamance County. The cross section for the connector is a 2-lane, 28-foot (8.5-m) wide pavement including a 2-foot (0.6-m) wide paved shoulder on each side. The total shoulder width (paved and unpaved) will be 8 feet (2.4 m). The connector will be on new location except that it will follow the alignment of SR 1900 for approximately 0.5 miles (0.8 km) north from SR 1761.
3. NC 62 will be widened from approximately 0.4 miles (0.6 km) south of SR 1768 in Alamance County to SR 1114 in Caswell County, a distance of approximately 1.2 miles

(1.9 km). This segment of roadway will generally be widened 4 feet (1.2 m) on each side to provide a 28-foot (8.5-m) wide pavement including a 2-foot (0.6-m) wide paved shoulder on each side. The total shoulder width (paved and unpaved) will be 8 feet (2.4 m).

4. Two existing bridges on NC 62 north of the Alamance/Caswell County line will be replaced with new bridges having a clear deck width of 28 feet (8.5 m).

The total project length is 10.3 miles (16.6 km) and will require an 80-foot (24.4-m) wide right-of-way.

It is estimated that there will be 10 residences and 1 business relocated due to this project.

At the south project terminal, the widening should tie into the 28-foot (8.5-m) wide roadway to be constructed as a part of Project U-3109.

At the north project terminal, the widening should taper to meet the existing 20-foot (6.1-m) wide NC 62.

The total cost for right of way and construction is estimated to be \$13,395,000 as follows:

Construction Cost.....	\$ 10,420,000
Right of Way	2,975,000
Total Cost	\$ 13,395,000

V. OTHER COMMENTS

The Office of Bicycle and Pedestrian Transportation has indicated that NC 119 is signed as an Alamance County Bike Route and they have suggested that 4-foot (1.2-m) wide paved shoulders be included to accommodate bicycle traffic. The cross section proposed for the NC 119 widening accommodates this request; however, the connector and the NC 62 widening is not recommended with widened shoulders.

An environmental screening was not conducted for this study.



FEASIBILITY STUDIES UNIT

FIGURE 1. LOCATION MAP

WIDEN NC 119 IN ALAMANCE COUNTY
AND CONSTRUCT A CONNECTOR TO
NC 62 IN CASWELL COUNTY

ALAMANCE AND CASWELL COUNTIES

R-3105 DIVISION 7

