



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

DIVISION OF HIGHWAYS
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

GARLAND B. GARRETT JR.
SECRETARY

March 15, 1996

MEMORANDUM TO: Mr. Fred Eidson, Member, Board of Transportation
Mr. W. E. Hoke, P.E., Division Engineer, Division 11
Mr. C. W. Leggett, P.E.
Mr. W. H. Webb, P.E.
Mr. J. M. Lynch, P.E. (6) Attention: Roberto Canales, P.E.
Congestion Management Engineer
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. *David Modlin*
Head of Feasibility Studies

SUBJECT: Feasibility Study # R-3423, NC 268 from Elkin to Pilot
Mountain, Surry County.

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. Eric J. Lamb



FEASIBILITY STUDY

NC 268
from Elkin to Pilot Mountain
Surry County
R-3423



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

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Eric J. Lamb

Feasibility Studies Engineer

A handwritten signature in black ink, appearing to read "David G. Modlin, Jr.", written over a horizontal line.

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

2/28/96
Date

NC 268
from Elkin to Pilot Mountain
Surry County
R-3423

I. General Description

This feasibility study describes widening and improving NC 268 from 850 feet (259.1 m) west of Peglam Street in Elkin to SR 2048 (Shoals Rd.) / SR 2099 (Barney Venable Rd.) in Pilot Mountain, a distance of 24.5 miles (39.4 km). The project location is shown on Figure 1. The recommended cross-section is a two-lane, 24-foot (7.3-m) roadway with 8-foot (2.4-m) shoulders including 4-foot (1.2-m) paved shoulders on 100 feet (30.5 m) of right-of-way with no access control. It is recommended to install turn lanes at fifteen intersections within the project limits. It is anticipated that there will be 170 residences and 17 businesses relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$66,000,000.

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 to 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 capacity and the safety of NC 268 between Elkin and Pilot Mountain. These improvements will also accommodate the industrial development and large amounts of commercial traffic near Elkin. This project is supported by the Surry County Commissioners.

NC 268 is designated as a major thoroughfare in the Pilot Mountain / Elkin Thoroughfare Plan and as a minor rural collector in the North Carolina Statewide Functional Classification System.

From the western terminus of the project to SR 1141 (Gentry Rd.), development is mostly industrial and commercial in nature. There are high concentrations of industrial development inside the Elkin city limits and in the vicinity of SR 1141. From SR 1141 to the eastern terminus, development is primarily residential and agricultural.

NC 268 is currently a two-lane, two-way roadway with a pavement width of 18-20 feet (5.5-6.1 m) and soil shoulders varying between 3-5 feet (0.9-1.5 m) wide. Additional guardrail and paved shoulders have been added along portions of NC 268 between SR 1142 (Elkin Wildlife Rd.) and SR 1121 (Joe Layne Mill Rd.) due to high amounts of commercial traffic and problems with the horizontal and vertical alignment of the roadway.

There are five culverts and six bridges within the project limits. These structures are detailed in Appendix A.

There is a railroad in close proximity to the roadway near Elkin. The Yadkin Valley Railroad owns a track that is within 20 feet (6.1 m) of the edge of pavement of the roadway. This track carries four trains per day at 10 mph (16 kph).

There are currently two flashers within the project limits. It is anticipated the flasher at US 601 will soon be upgraded to a fully actuated traffic signal. There is also a flasher at the intersection with SR 2221 (Rockford Rd.) There is also an electric substation adjacent to right-of-way located east of this intersection.

The 1994 Average Daily Traffic (ADT) along NC 268 varies from 1800 to 3900 vehicles per day (vpd). For the design year 2020, the estimated traffic volume on NC 268 will range between 3100 and 7900 vpd. Truck traffic is estimated to make up 12-16% of daily traffic.

The Level of Service (LOS) varies along different segments of NC 268 due to differences in volumes and truck traffic. The LOS for NC 268 is as follows:

	Existing Roadway (18'-20' w/ varying shoulders)		Proposed Roadway (24' w/ 4' paved shoulders)	
	1995	2020	1995	2020
Elkin to US 601	C	D	C	C
US 601 to SR 2038	C	D	B	C
SR 2038 to SR 2048	E	E	D	E

During the three-year period from June 1992 to May 1995, there were 194 accidents reported on NC 268 within the project limits. There were 131 injuries reported as a result of these accidents, including 2 fatalities. The accident rate along NC 268 within the project limits is 240.83 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1994 statewide rate of 211.50 acc/100mvm for rural North Carolina routes.

III. Recommendations

It is recommended to widen and improve NC 268 from 850 feet (259.1 m) west of Peglam St. in Elkin to SR 2048 (Shoals Rd.) / SR 2099 (Barney Venable Rd.) in Pilot Mountain, a distance of 24.5 miles (39.4 km). The project location is shown on Figure 1. The recommended cross-section is a two-lane, 24-foot (7.3-m) roadway with 8-foot (2.4-m) shoulders on 100 feet (30.5 m) of right-of-way with no access control. Four-foot (1.2-m) paved shoulders are recommended due to the high amount of commercial traffic within the project limits.

It is recommended to install turn lanes at fifteen intersections within the project limits. All of the intersections within the project limits have been evaluated for additional turn lanes based on existing and proposed traffic volumes, available sight distance and accident history. See Figure 2 for the location of each intersection. The following intersections are recommended for turn-lane improvements:

- SR 1144 (Johnson Ridge Rd.)
- SR 1142 (Elkin Wildlife Rd.)
- SR 1139 (Friendship Church Rd.)
- SR 1141 (Gentry Rd.)
- SR 1138 (C. C. Camp Rd.)
- SR 1121 (Joe Layne Mill Rd.)
- US 601 (*existing*)
- SR 2221 (Rockford Rd.)
- SR 2209 (Copeland School Rd.)
- SR 1003 (Siloam Rd.)
- SR 2088 (Miller Gap Rd.)
- SR 2038 (Quaker Church Rd./Eldora Rd.)
- SR 2044 (Pilot Power Dam Rd.) - *west intersection*
- SR 2047 (Burge Rd. / Whitaker Chapel Rd.)
- SR 2048 (Shoals Rd.) / SR 2099 (Barney Venable Rd.) (*existing*)

It is recommended to realign portions of the roadway between Elkin and US 601 due to existing problems with horizontal and vertical alignments. This will require significant amounts of earthwork and retaining walls. It is also recommended to shift SR 2225 (Bear Creek Church Rd.) 50 feet (15.2 m) westward to improve sight distance. The eastern intersection with SR 2040 (Patterson Rd.) should be realigned to reduce the skew and improve sight distance.

The following structure work is recommended:

Structure Number	Feature Intersected	Type of Structure	Recommended Improvement
C91	Unnamed Creek	Culvert	Extend
103	Mitchell River	Bridge	Replace
C109	King Creek	Culvert	Extend
112	Cody Creek	Bridge	Rehabilitate & widen
133	Fisher River	Bridge	Rehabilitate & widen
C137	Whittier Creek	Culvert	Extend
145	Ararat River	Bridge	Rehabilitate & widen

All bridges are to be widened to a clear deck width of 40 feet (12.2 m).

It is anticipated that there will be 170 residences and 17 businesses relocated due to this project.

The total cost of the recommended improvements is as follows:

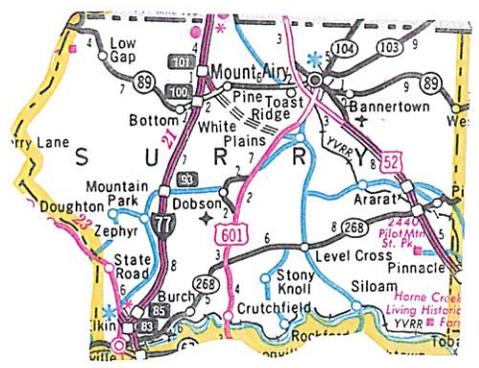
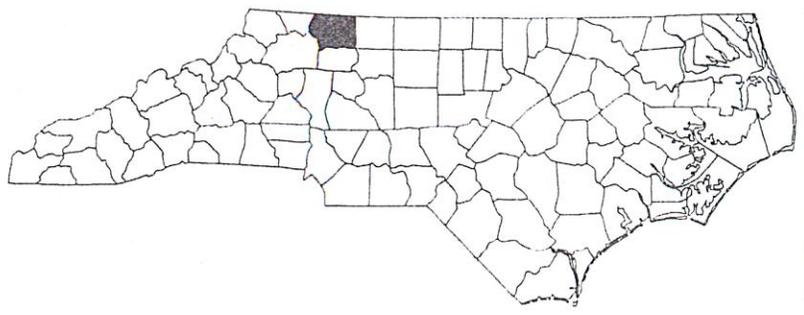
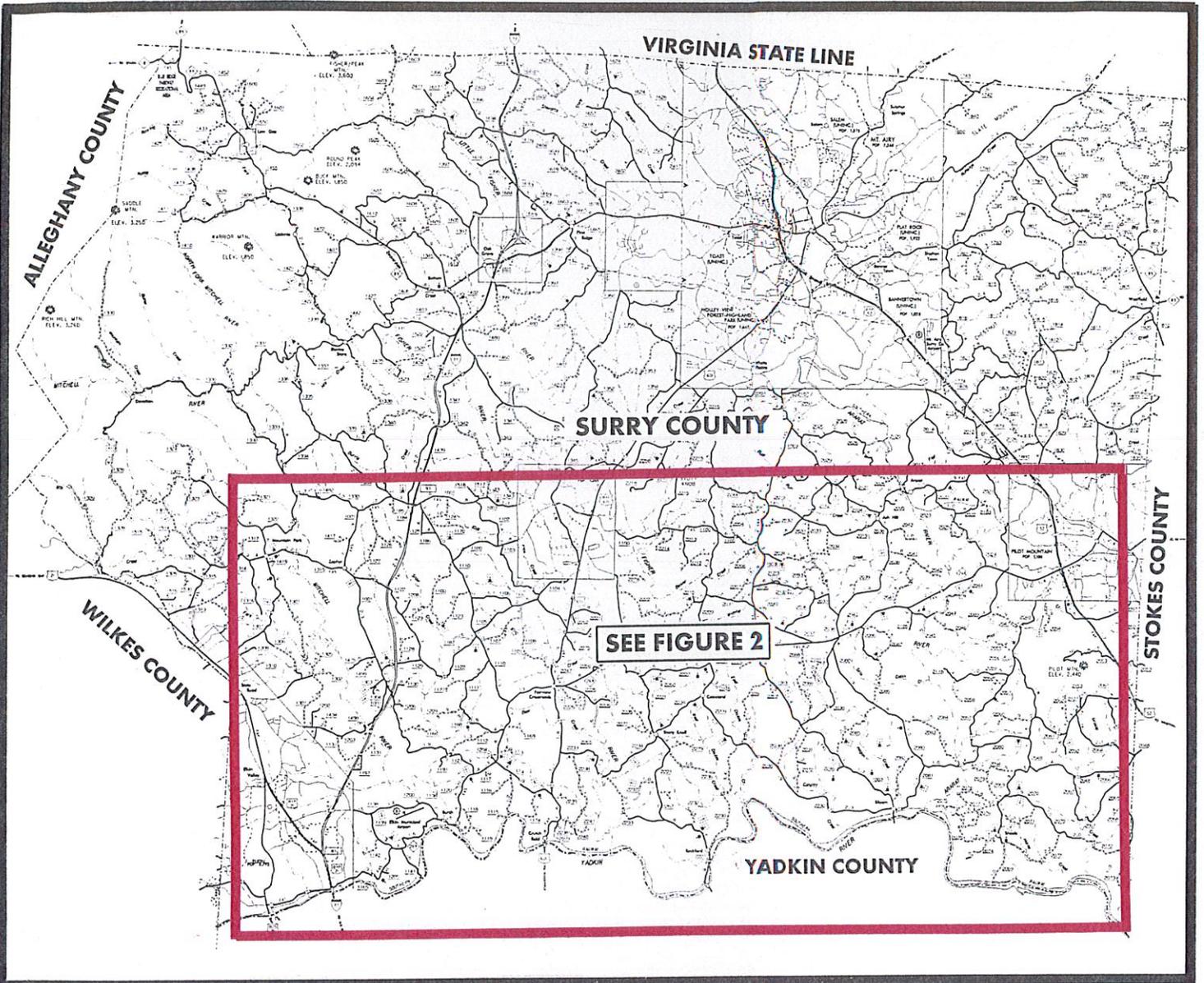
	<i>Segment 1</i> Elkin to US 601	<i>Segment 2</i> US 601 to SR 2048	<i>Totals</i>
Construction	\$19,600,000	\$17,900,000	\$37,500,000
Right-of-Way	\$16,000,000	\$12,500,000	\$28,500,000
Total	\$35,600,000	\$30,400,000	\$66,000,000

IV. Other Comments

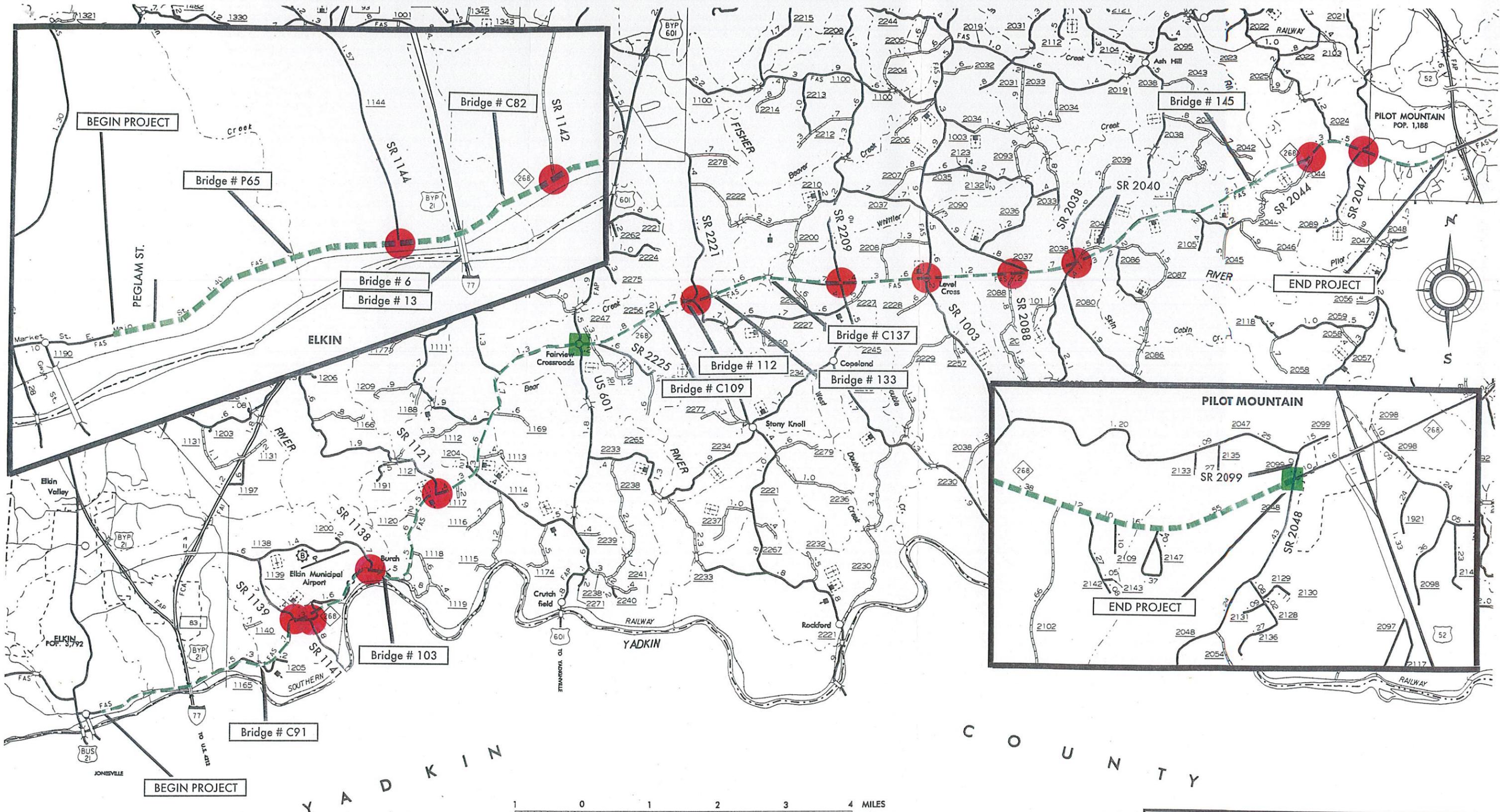
An environmental screening was not conducted for this study. However, no impacts to wetlands are anticipated. There are several historical sites located within the project limits; however, no impacts are anticipated from this project. There is also a superfund site (NCD# 986171254) located west of the intersection with SR 2200 (Joe Hill Rd.).

Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor. All waterways within the project corridor are classified C and are part of the Yadkin River Basin.

No special accommodation for bicycles is recommended on this project.

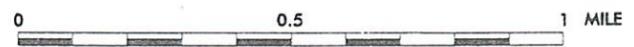


FEASIBILITY STUDIES UNIT		
R-3423 NC 268 FROM ELKIN TO PILOT MOUNTAIN		
DIVISION 11	SURRY COUNTY	FIGURE 1



LEGEND

- EXISTING TURN LANES
- PROPOSED ADDITION OF TURN LANES



SCALE FOR ENLARGEMENTS

FEASIBILITY STUDIES UNIT

R-3423
NC 268
FROM ELKIN TO PILOT MOUNTAIN

DIVISION 11 | SURRY COUNTY | FIGURE 2