FEASIBILITY STUDY

Pilot Mountain

NC 268 (S. Key St.)
from SR 2048 (Shoals Rd.)
to existing multilanes
Surry County

Division 11

R-3605

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

Eric J. Lamb
Feasibility Studies Engineer

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

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Date

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I. General Description

This feasibility study describes widening NC 268 (S. Key St.) from SR 2048 (Shoals Rd.) eastward to an existing multilane section in Pilot Mountain, a distance of 0.7 miles (1.1 km). The project location is shown on Figure 1. The recommended cross-section is a five-lane curb and gutter section, 68 feet (20.7 m) wide from face-to-face of curbs with 10-foot (3.0-m) berms, on 100 feet (30.5 m) of right-of-way with no new access control. It is anticipated that there will be one residence and no businesses relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be $8,800,000.

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 relieve peak hour congestion and improve capacity through the project corridor. Replacing Bridge No. 155 on this project will also allow for future interstate expansion and widening along US 52. This project is supported by the Town of Pilot Mountain and by Surry County.

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

Development along the project is mostly commercial. There is a hotel, a fire station and several service stations along the project. There is also an apartment complex located west of Heatherly Creek. There is a diamond interchange with US 52 with ramps in each quadrant. The ramp in the southwest quadrant also supports a service road, which serves a church and several residences.

NC 268 is currently a two-lane roadway with a pavement 18 to 24 feet (5.5-7.3 m) wide with soil shoulders. West of SR 2048 (Shoals Rd.), NC 268 is a two-lane roadway with soil shoulders. The eastern terminus of the project is a four-lane curb and gutter cross-section, 44 feet (13.4 m) wide from face-to-face of curbs.

There are two structures within the project limits. Bridge No. 155 carries NC 268 over US 52. This is a reinforced concrete structure on prestressed concrete girders that is 214 feet (65.2 m) long, 28 feet (8.5 m) wide and has an under vertical clearance of 14 feet 4 inches (4.4 m). This bridge was built in 1960 and has a sufficiency rating of 79.0.

There is also a culvert at Heatherly Creek. Bridge No. 159 is a triple 6-foot by 8-foot (1.8-m x 2.4-m) reinforced concrete box culvert that is 49 feet 6 inches (15.1 m) long. Built in 1929, this culvert currently has a sufficiency rating of 97.3.

TIP Project R-2640 will construct a bypass around the south side of Pilot Mountain and may intersect this project in the vicinity of Heatherly Creek. This project is currently scheduled for post-year right-of-way and construction.

This portion of NC 268 is part of NC Bicycle Route 4 and wide outside shoulders to accommodate bicycle traffic will be required.

The 1996 Average Daily Traffic (ADT) along NC 268 varies from 8,900 to 9,800 vehicles per day (vpd). For the design year 2020, the estimated traffic volumes on NC 268 will range between 16,900 and 19,500 vpd. Truck traffic is estimated to make up five percent of daily traffic.

Currently NC 268 is operating at Level of Service (LOS) E. If no improvements are made, it is projected that the roadway will operate at LOS F in the design year 2020. If NC 268 is widened to a five-lane curb and gutter section, the facility will operate at LOS A in the current year and at LOS B in the design year 2020.

During the three-year period from April 1993 to March 1996, there were 54 accidents reported on NC 268 within the project limits. Twenty-four injuries were reported as a result of these accidents, including no fatalities. The accident rate along NC 268 within the project limits is 1,136.84 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1994 statewide rate of 282.10 acc/100mvm for two-lane urban NC routes. Over fifty percent of the accidents within the project limits were "rear-end slow or stop" accidents.

III. Recommendations

It is recommended to widen NC 268 (S. Key St.) from SR 2048 (Shoals Rd.) eastward to an existing multilane section, a distance of 0.7 miles (1.1 km). The project location is shown on Figure 1. The recommended cross-section is a five-lane curb and gutter section, 68 feet (20.7 m) wide from face-to-face of curbs with 10-foot (3.0-m) berms, on 100 feet (30.5 m) of right-of-way with no new access control.

It is recommended to upgrade the interchange at US 52 to accommodate future interstate standards. This will replace the existing structure with a new bridge that is 72 feet (22.0 m) wide and has an under vertical clearance of 17 feet (5.2 m). This modification will also raise the grade of NC 268 in the vicinity of the interchange and will require shifting the ramps outward from the interchange. It is also recommended to shift SR 2098 (Golf Course Rd.) slightly eastward away from the interchange to improve intersection spacing.

The service road on the ramp in the southwest quadrant violates current design criteria for roadway access. It is recommended to remove the access to the ramp and realign the service road to tie into SR 2048 (Shoals Rd.) (See Figure 1).

It is anticipated that one residence and no businesses will be relocated due to the project. The total cost is as follows:

Construction	$ 5,200,000
Right-of-way	$ 3,600,000
Total Cost	$ 8,800,000

IV. Alternates

The cost of widening NC 268 without replacing the bridge over US 52 was also examined. This option would not involve shifting the ramps outward from their previous alignment, nor would it involve realigning SR 2098 (Golf Course Rd.) or the Service Road.

The Feasibility Study for TIP Project R-3441, which will upgrade US 52 to an interstate route as part of the I-73 corridor, identified Bridge No. 155 as deficient for interstate standards due to its under vertical clearance. The existing under vertical clearance for this structure is 14 feet 5 inches (4.4 m). In order to meet interstate standards, an under vertical clearance of 17 feet (5.2 m) will be required.

It is anticipated that no residences or businesses will be relocated due to this option. The total cost of this option is as follows:

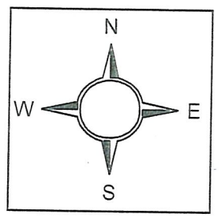
Construction	$	4,700,000
Right-of-way	$	2,200,000
Total Cost	$	6,900,000

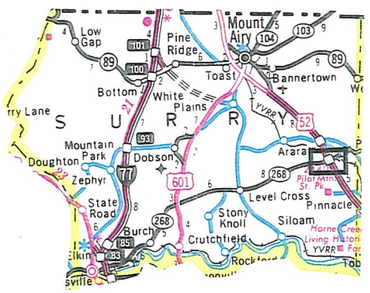
V. Other Comments

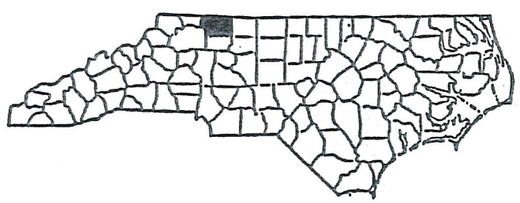
An environmental screening was not conducted for this study. However, no impacts to historic properties or wetlands are anticipated.

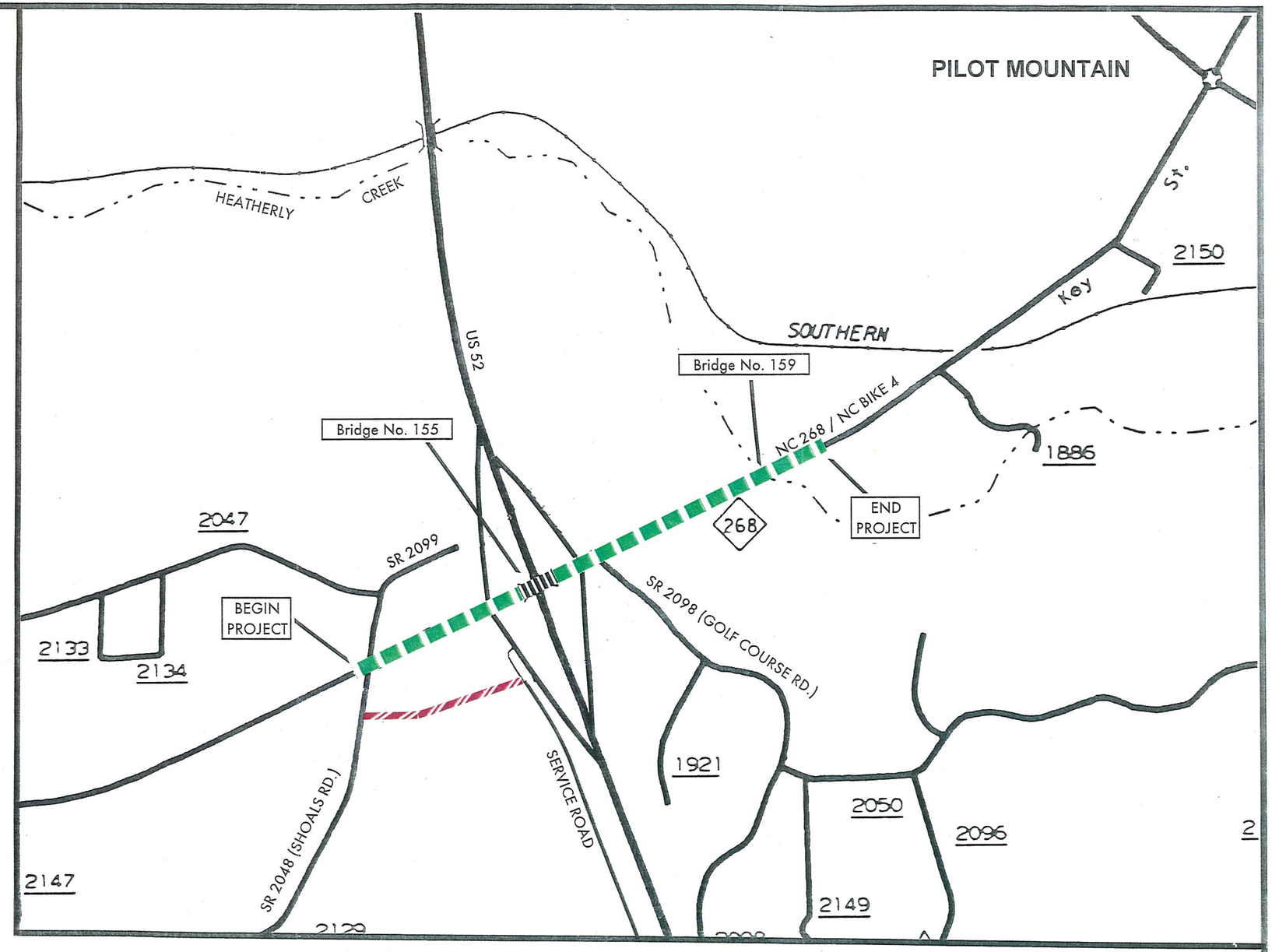
Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

This section of Heatherly Creek within the project corridor is classified C and is part of the Yadkin-Pee Dee River Basin.









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LEGEND

- PROPOSED FIVE-LANE SECTION
- EXISTING STRUCTURE
- PROPOSED REALIGNMENT

NC DEPARTMENT OF TRANSPORTATION
FEASIBILITY STUDIES UNIT

R-3605
NC 268 (S. KEY ST.)
FROM SR 2048 (SHOALS RD.)
TO EXISTING MULTILANES
PILOT MOUNTAIN

DIVISION 11	SURRY COUNTY	FIGURE 1