

FEASIBILITY STUDY

**Fayetteville
SR 1141 (Bingham Drive)
from SR 1107 (Fisher Road) to US 401 (Raeford Road)
Cumberland County
U-3311**

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



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Date

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I. General Description

This study describes proposed improvements to SR 1141 (Bingham Drive) in Fayetteville. It is proposed to widen Bingham Drive, from SR 1107 (Fisher Road) to SR 3328 (Marykirk Dr.), and relocate Bingham Drive from SR 3328 to US 401. The location is shown as Alternate 1, on Figure 1. The total project length is approximately 2.7 miles (4.4 km). The proposed cross-section is a five-lane curb and gutter section, 64 feet (19.5 m) wide from face-to-face of curbs. The proposed right-of-way width is 90 feet (27.4 m) where the project follows existing alignment, and 100 feet (30.5 m) on new location. One business and five residential relocations are expected due to this project. The total cost including construction and right of way is estimated to be \$8,150,000.

An alternative to the recommended improvement (Alternate 2, on Figure 1) was studied. Alternate 2 proposes to widen Bingham Drive along existing alignment between SR 1107 and US 401, and proposes no relocation of Bingham Drive.

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 relieve congestion and improve the accident experience on Bingham Drive. This project was requested by the Fayetteville Urban Area Transportation Advisory Committee, and is currently ranked #2 on their priority needs list. This project is also supported by the Town of Hope Mills. This project will provide a major thoroughfare from Hope Mills' Central Business District to US 401. Bingham Drive is designated as a major thoroughfare in the Fayetteville Urban Area Thoroughfare Plan and as a minor urban arterial in the North Carolina Functional Classification System. The proposed relocation of Bingham Drive at the north project terminal is included on the Thoroughfare Plan as a proposed major thoroughfare.

Development along Bingham Drive is primarily single family residential, with some open farm land.

Bingham Drive is a two-lane, two-way facility that varies from 20 to 24 feet (6.1 to 7.3 m) in width, with 1-foot (0.3-m) paved shoulders. At some intersections Bingham Drive is widened to provide left turn lanes. The existing right-of-way width along the project appears to vary from approximately 60 to 80 feet (18.3 to 24.4 m). There are no bridges located within the project limits.

The 1994 Average Daily Traffic (ADT) on Bingham Drive is estimated to be 9,000 vehicles per day (vpd). For the design year (2015), the estimated traffic volume on Bingham Drive is 18,500 vpd.

The Level Of Service (LOS), based on 1994 traffic volumes, and without the proposed improvements, is estimated to be Level D. With the proposed improvements, and based on 1994 traffic, the LOS is estimated to be Level A. The LOS for the design year, 2015, with the improvements, is estimated to be Level C.

During the three-year period from April 1, 1991, to March 31, 1994, there were 192 accidents reported on Bingham Drive within the project limits. Eighty-eight accidents resulted in 163 injuries and one fatality. The total accident rate is 402.94 accidents per 100 million vehicle miles (ACC/100MVM). This compares with the 1993 statewide rate of 311 ACC/100MVM for North Carolina urban secondary roads. Fifty of the 192 accidents reported occurred at the intersection with US 401. Fifty-five percent of the accidents along the project were rear-end collisions. Also, a high percentage of accidents along Bingham Drive occurred during the PM peak period. The proposed wider cross-section with center turn-lane should reduce the accident potential for Bingham Drive.

III. Recommendations

It is recommended to widen Bingham Drive to a 64-foot (19.5-m) wide, five-lane, curb & gutter cross-section on existing alignment from SR 1107 to SR 3328, a distance of 2.1 miles (3.3 km). North of SR 3328, it is recommended to relocate Bingham Drive on new location to intersect US 401 at SR 1411, a distance of 0.6 miles (1.0 km). The total project length is approximately 2.7 miles (4.4 km). The proposed right-of-way width is 90 feet (27.4 m) along the existing alignment and 100 feet (30.5 m) on the new location. The existing traffic signal at US 401 will require revision.

One business and five residential relocations are anticipated.

The total cost is as follows:

Construction.....	\$5,350,000
Right-of-way.....	<u>\$2,800,000</u>
Total Cost	\$8,150,000

IV. Alternate 2

Between SR 1107 and SR 3328 Alternate 2 is identical to the recommended alternative. North of SR 3328, Alternate 2 follows the existing alignment of Bingham Drive to the US 401 intersection, a distance of approximately 0.7 miles (1.1 km). The 5-lane curb & gutter section is recommended for the entire project length, a distance of approximately 2.8 miles (4.5 km). The proposed right-of-way width is 90 feet (27.4 m). Two residential and no business relocations are anticipated due to this alternate. The cost of Alternate 2 is as follows:

Construction.....	\$4,680,000
Right-of-way.....	<u>\$1,980,000</u>
Total Cost	\$6,660,000

V. Discussion of Alternatives

The recommended alternative is estimated to be \$1,490,000 more costly than Alternate 2. However, the recommended improvement addresses the long-range transportation needs of the area to a much greater extent than Alternate 2. The recommended alignment of Bingham Drive with SR 1411 at US 401 will create an important north-south arterial, connecting the rapidly developing area south of US 401 with existing major shopping and institutional areas north of US 401. This alignment will also create less adverse impact on the already congested US 401 Corridor. Also, Alternate 2 follows more restrictive horizontal and vertical alignment along Bingham Drive than Alternate 1. Finally, the relocation of Bingham Drive at the north terminal is included on the Fayetteville Urban Area Thoroughfare Plan, while the north terminal location under Alternate 2 is not.

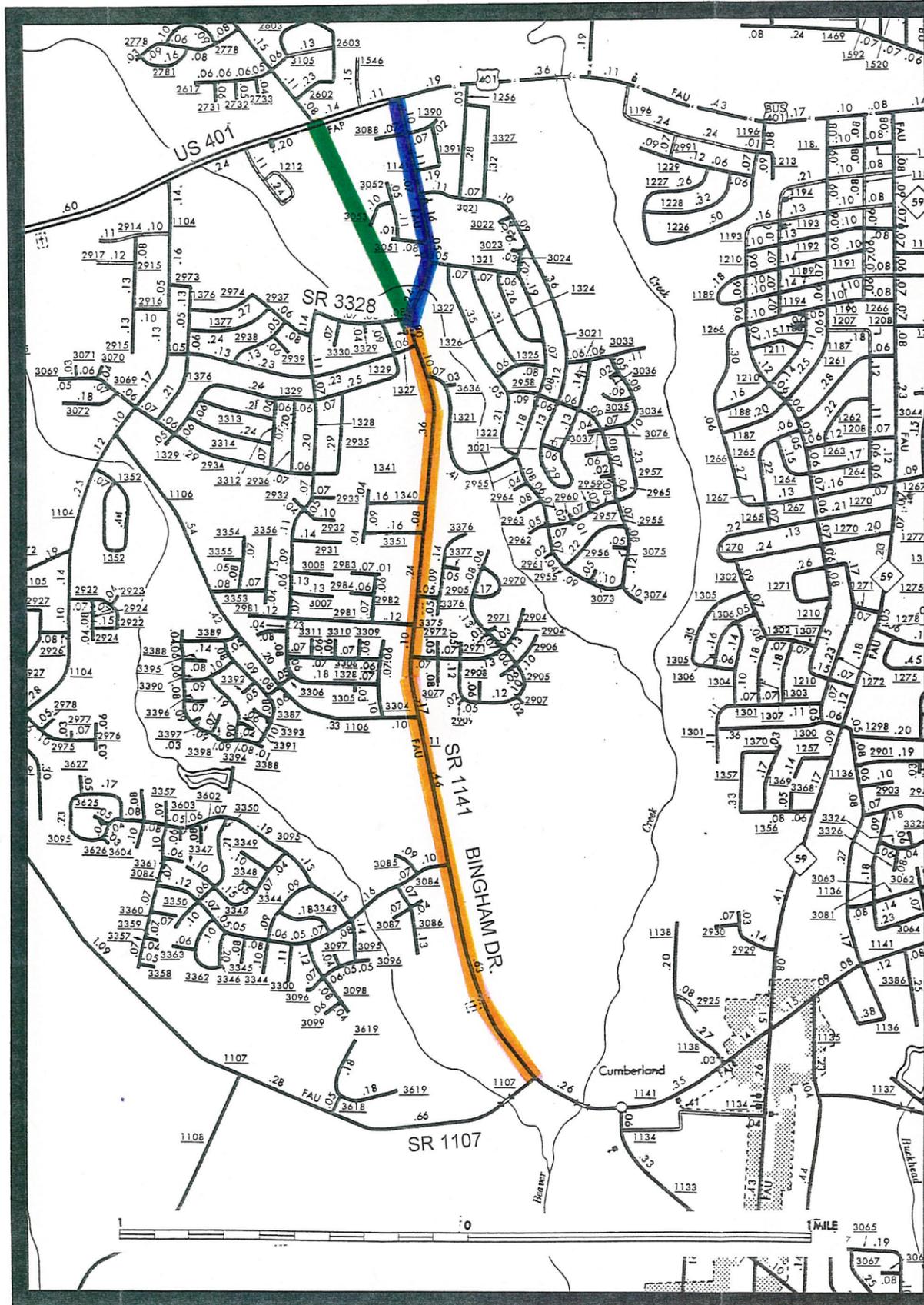
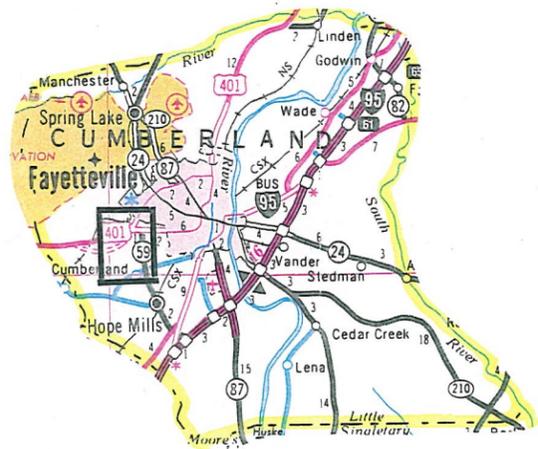
VI. Other Comments

This project will impact some wetlands, therefore a Section 404 Corps of Engineers Nationwide Permit may be required.

An environmental screening was not conducted for this study.

No special accommodation for bicycles is recommended on this project.

The southern terminal of this project generally coincides with the western project terminal for the Proposed Hope Mills Bypass (TIP Project # U-0620). The exact location of the terminal, and cross-section detail should be coordinated, in the design phase, with project #U-0620.



ALTERNATE 1 

ALTERNATE 2 

FEASIBILITY STUDIES UNIT

FIGURE 1 - PROJECT LOCATION

SR 1141 (BINGHAM DRIVE)
FROM SR 1107 (FISHER ROAD)
TO US 401 (RAEFORD ROAD)
FAYETTEVILLE
U-3311

DIVISION 6 | CUMBERLAND CO. | FIGURE 1