

**FEASIBILITY STUDY**

**Goldsboro**

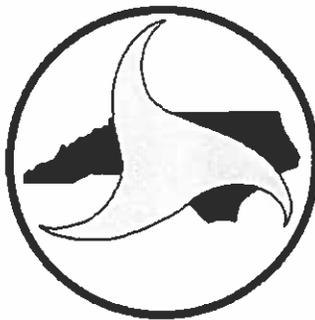
**Berkeley Boulevard (US 13)  
From the US 70 Bypass Interchange  
To New Hope Road (SR 1003)**

**Wayne County**

**Division 4**

**FS-9904E**

U-4406



Prepared by the  
Programming and TIP Branch  
Division of Highways  
N. C. Department of Transportation

A handwritten signature in black ink, appearing to read "Derrick W. Lewis".

Derrick W. Lewis, P.E.  
Feasibility Studies Engineer

A handwritten signature in black ink, appearing to read "H. Franklin Vick".

H. Franklin Vick, P.E.  
Feasibility Studies Unit Head

6/30/00

Date

Goldsboro  
Berkeley Boulevard (US 13)  
From the US 70 Bypass Interchange  
To New Hope Road (SR 1003)

Wayne County

FS-9904E

**I. General Description**

This feasibility study describes the widening of Berkeley Boulevard (US 13) from the US 70 Bypass interchange to New Hope Road (SR 1003), a distance of 1.0 miles (1.6 km). The project location is shown on Figure 1. The recommended cross section is a five-lane, curb and gutter section, 64 feet (19.5 m) wide face to face of curbs with 10-foot (3.0-m) berms. The recommended right-of-way width is 100 feet (30.5 m) with some additional right-of-way at the intersections with Royall Avenue and New Hope Road to accommodate auxiliary turn lanes.

In addition to the proposed widening of Berkeley Boulevard, we also recommend that this project include the following improvements:

1. At the New Hope Road (SR 1003) intersection, widen the northbound Berkeley Boulevard approach in order to provide an exclusive right turn lane.
2. At the Royall Avenue (SR 1560) intersection, widen both the northbound and southbound Berkeley Boulevard approaches in order to provide dual left turn lanes and an exclusive right turn lane for each.
3. Upgrade the existing Berkeley Boulevard railroad signal and include gates.

It is anticipated that the above mentioned improvements will require the relocation of approximately no businesses or residences. The total cost of this project, including construction and right-of-way, is estimated to be \$6,800,000.

Construction.....	\$ 2,800,000
Right-of-way.....	\$ 4,000,000
Total Cost .....	\$ 6,800,000

Even with the above-mentioned improvements to Berkeley Boulevard, we expect poor traffic operations within the existing US 70 Bypass/Berkeley Boulevard diamond interchange. Given the existing design of this interchange, major geometric revisions would be required to accommodate the projected traffic volumes. Therefore, consideration should be given to converting the existing diamond into a single point urban interchange (SPUI) in order to minimize the right-of-way impacts within the interchange area while providing the optimum traffic operations. This SPUI conversion is estimated to cost an

additional \$4,400,000 for construction. However, we do not anticipate the need to acquire additional right of way for this interchange conversion.

If the SPUI conversion is included in this project, the total project cost, including construction and right-of-way, is estimated to be \$11,200,000.

Construction.....	\$ 7,200,000
Right-of-way.....	\$ 4,000,000
Total Cost .....	\$ 11,200,000

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 increase the traffic carrying capacity and safety of Berkeley Boulevard (US 13) in Goldsboro. The City of Goldsboro and the Wayne County Board of Commissioners requested this project.

Berkeley Boulevard is designated as a major thoroughfare in the Goldsboro Thoroughfare Plan and as a principal arterial in the North Carolina Statewide Functional Classification System.

Land use along this project begins as dense commercial development from the US 70 Bypass interchange and transitions to residential development towards the New Hope Road intersection.

Berkeley Boulevard is an existing five-lane curb and gutter section with 12-foot (3.6-m) travel lanes from the US 70 Bypass interchange to just north of Royall Avenue. From this point to the end at New Hope Road, Berkeley Boulevard is mostly a four lane undivided roadway with approximately 40 feet (9 m) of pavement and curb and gutter along the eastern side.

There are two structures located along the project route. Bridge # 43 and Bridge # 48 carry US 70 Bypass over Berkeley Boulevard. Both bridges have a horizontal clearance of 80 feet (24.4 m) and a sufficiency rating of 95 out of 100 possible points.

There are five existing traffic signals on Berkeley Boulevard in the project area. They are located at both US 70 Bypass ramp terminal intersections, Royall Avenue, Lowe's Entrance, and New Hope Road.

The current year Average Daily Traffic (ADT) along Berkeley Boulevard is estimated to be between 16,600 to 28,700 vehicles per day (vpd). The projected 2020 design year ADT along Berkeley Boulevard is estimated to be between 24,000 and 36,700 vehicles per day (vpd). The Truck traffic is estimated to make up three percent of daily traffic.

Currently, Berkeley Boulevard between the US 70 Bypass interchange and New Hope Road (SR 1003) operates at Level of Service (LOS) F. If no improvements are made, this section of Berkeley Boulevard is expected to continue to operate at LOS F in the design year 2020. If Berkeley Boulevard (US 13) is widened to a five-lane curb and gutter section and the recommended improvements are provided, this facility should operate at a LOS D or better through the 2020-design year.

During the three-year period from July 1996 through June 1999, there were 219 accidents reported on Berkeley Boulevard within the project limits. There were 129 injuries reported as a result of these accidents, including 1 fatality. The accident rate along Berkeley Boulevard within the project limits is 588 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1995 to 1997 statewide rate of 266 acc/100mvm for urban US routes.

### **III. Discussion of Alternates / Recommendations**

This feasibility study describes the widening of Berkeley Boulevard (US 13) from the US 70 Bypass Interchange to New Hope Road (SR 1003), a distance of 1.0 miles (1.6 km). The project location is shown on Figure 1. The recommended cross section is a five-lane, curb and gutter section, 64 feet (19.5 m) wide face to face of curbs with 10-foot (3.0-m) berms. The recommended right-of-way width is 100 feet (30.5 m) with some additional right-of-way at the intersections to accommodate auxiliary turn lanes.

In addition to the recommended widening of Berkeley Boulevard, we also recommend that this project include the following improvements:

1. At the New Hope Road (SR 1003) intersection, widen the northbound Berkeley Boulevard approach in order to provide one left turn lane, two through lanes and an exclusive right turn lane.
2. At the Royall Avenue (SR 1560) intersection, widen both the south and northbound Berkeley Boulevard approaches in order to provide dual left turn lanes, two through lanes and an exclusive right turn lane.
3. Upgrade the existing Berkeley Boulevard railroad signal and include gates.

It is anticipated that the proposed improvements will require the relocation of no businesses or residences. The total cost of this project, including construction and right-of-way, is estimated to be \$6,800,000.

Construction.....	\$ 2,800,000
Right-of-way.....	\$ 4,000,000
Total Cost .....	<u>\$ 6,800,000</u>

Even with the above-mentioned improvements to Berkeley Boulevard, we expect poor traffic operations within the existing US 70 Bypass/Berkeley Boulevard diamond interchange. Given the existing design of this interchange, major geometric revisions would be required to accommodate the projected traffic volumes. Therefore, consideration should be given to converting the existing diamond into a single point urban interchange (SPUI) in order to minimize the right-of-way impacts within the interchange area while providing the optimum traffic operations. This SPUI conversion is estimated to cost an additional \$4,400,000 for construction. However, we do not anticipate the need to acquire additional right of way for this interchange conversion. If the SPUI conversion is included, the total cost of this project, including construction and right-of-way, would increase to \$11,200,000.

Construction.....	\$ 7,200,000
Right-of-way.....	\$ 4,000,000
Total Cost .....	<u>\$ 11,200,000</u>

#### IV. Other Alternates Considered

The initial feasibility study request also included the widening of Berkeley Boulevard from Ash Street (US 70 Business) to the US 70 Bypass interchange to a seven-lane section. This section is an existing five-lane curb and gutter facility. From a traffic safety and operational perspective, seven-lane sections are strongly discouraged. Based on the information available, no improvements are currently recommended for this section of Berkeley Boulevard because the existing five-lane section appears to be adequate. However, if it were to be widened in the future, the cross-section should be a six-lane divided curb and gutter facility, 92 feet (28.0 m) face to face of curbs with a 16-foot (4.88-m) raised grass median, on 120 feet (36.6 m) right of way.

It is anticipated that widening this section of Berkeley Boulevard to a six lane divided facility would require the relocation of eight businesses and no residences. The total cost of this improvement, including construction and right-of-way, would be an additional \$13,800,000.

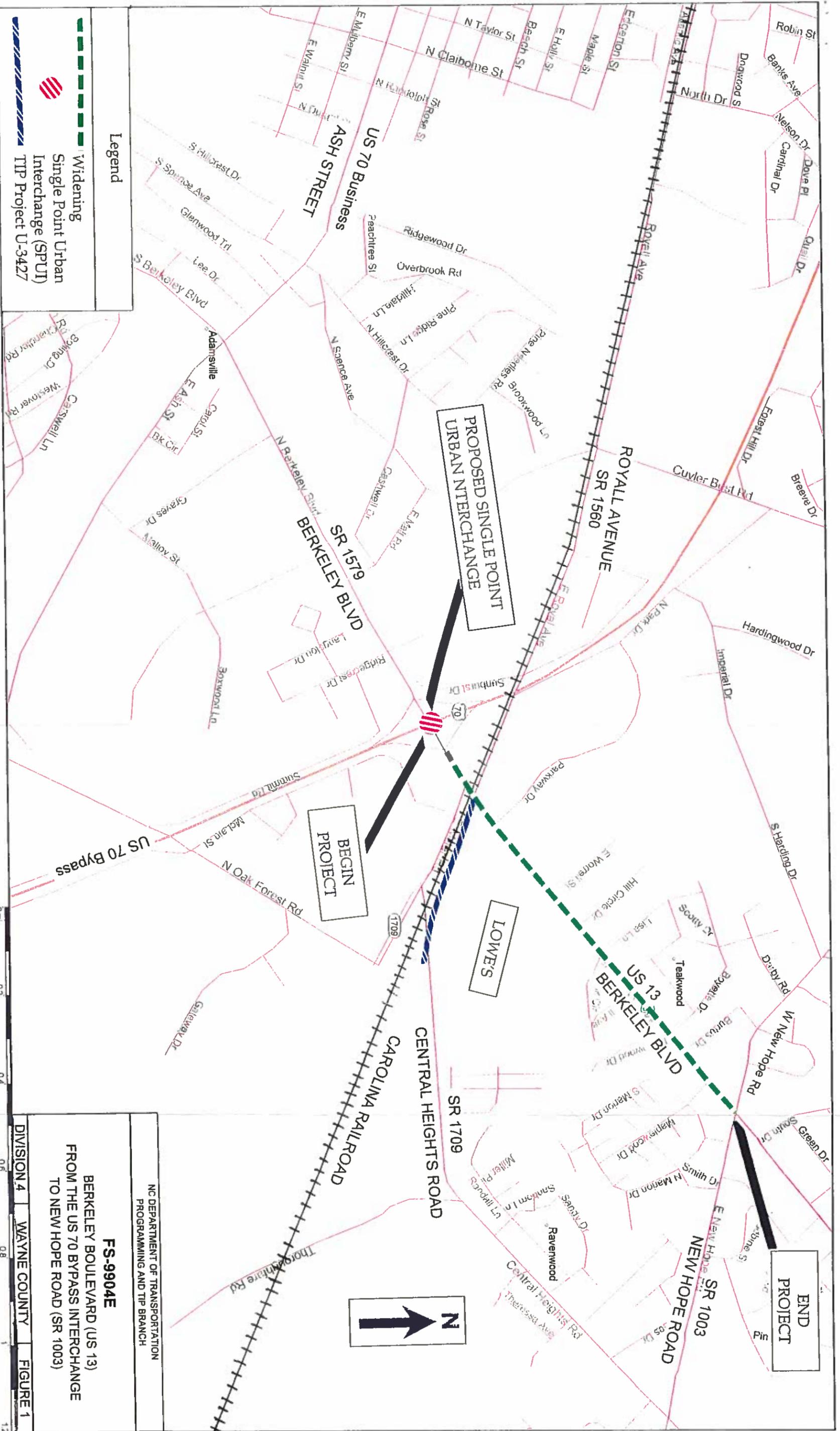
Construction.....	\$ 5,300,000
Right-of-way.....	\$ 8,500,000
Total Cost .....	<u>\$ 13,800,000</u>

## **V. Additional Comments**

An environmental screening was not conducted for this study. No historic properties, endangered species, wetlands or stream crossings are anticipated.

No special accommodation for bicycles is recommended on this project.

A complete transportation benefit analysis can not be completed for this project because the proposed intersection and interchange improvements are beyond the capabilities of the benefit analysis package developed by the Statewide Planning Branch. However, for the period between the current year and the 2020 design year, it is estimated that the transportation benefits, for only the widening of Berkeley Boulevard, are \$5,000,000, which is an average of \$250,000.00 per year. The total benefits for the entire project are assumed to be much higher because of the safety and operational benefits associated with the proposed intersection and interchange improvements.



**Legend**

- Widening
- Single Point Urban Interchange (SPUI)
- TIP Project U-3427

**FS-9904E**  
 BERKELEY BOULEVARD (US 13)  
 FROM THE US 70 BYPASS INTERCHANGE  
 TO NEW HOPE ROAD (SR 1003)

NC DEPARTMENT OF TRANSPORTATION  
 PROGRAMMING AND TIP BRANCH

DIVISION 4    WAYNE COUNTY    FIGURE 1

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