

**FEASIBILITY STUDY**

**Hendersonville**

**Short Street Extension  
from Clear Creek Road (SR 1503)  
to US 64  
Henderson County**

**Division 14**

**FS-9914A**

4-4016



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

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

A handwritten signature in black ink, appearing to read "David G. Modlin, Jr.". The signature is written in a cursive style and is positioned above a horizontal line.

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

5/7/99

Date

Hendersonville  
Short Street Extension  
From Clear Creek Road (SR 1503) to US 64  
Henderson County  
FS-9914A

**I. General Description**

This feasibility study describes constructing the Short Street Extension from Clear Creek Road (SR 1503) to US 64, a distance of 0.8 miles (1.29 km). The recommended cross-section is a five-lane, curb and gutter section, 64 feet (19.5 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on a variable right-of-way. Two alignment alternates were studied for the Short Street Extension during this feasibility study (See Figure 1).

**Alternate 1**

Alternate 1 begins at the relocated Clear Creek Road (SR 1503) / Berkley Mills Road (SR 1508) intersection proposed in Clear Creek Road widening project (TIP U-2425). Proceeding on new location on 120 feet (36.6 m) to 130 feet (39.6 m) of right-of-way, this alternate continues east until it connects with Hyder Street (SR 1521), also known as Short Street, near the Linda Vista Drive (SR 1521) intersection. This alternate continues east towards US 64 via the Hyder Street and Thompson Road alignments with some new location in between, on 100 feet (30.5 m) of right-of-way. Duncan Hill Road (SR 1525) will need to be relocated south to a new intersection with Clear Creek Road. It is anticipated that there will be eight residences and two businesses relocated due to this alternate. The total cost of the project, including construction and right-of-way, is estimated to be \$8,300,000.

Construction.....	\$ 5,900,000
Right-of-way.....	\$ 2,400,000
Total Cost .....	<u>\$ 8,300,000</u>

**Alternate 2**

Alternate 2 begins at the Clear Creek Road (SR 1503) / Plantation Drive (SR 1652) intersection. Proceeding on new location, this alternate continues east towards the Hyder Street / Linda Vista Drive intersection, on 120 feet (36.6 m) to 140 feet (42.7 m) of right-of-way. From this point on this alternate is essentially the same as Alternate 1 except that Duncan Hill Road is not relocated. It is anticipated that there will be six residences and two businesses relocated due to this alternate. The total cost of the project, including construction and right-of-way, is estimated to be \$7,400,000.

Construction.....	\$ 5,250,000
Right-of-way.....	\$ 2,150,000
Total Cost .....	\$ 7,400,000

**Although Alternate 1 costs more than Alternate 2, Alternate 1 is preferred because Berkley Mills Road continues west to other areas of Hendersonville, while Plantation Drive is a loop road back to Clear Creek Road. Therefore, it is recommended that Alternate 1 be implemented.**

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 provide an alternate east-west route from Clear Creek Road to US 64 near Thompson Road in order to avoid the congestion along US 64 and Duncan Hill Road. This project is requested by the Hendersonville Chamber of Commerce.

The Short Street Extension is not specifically on the Hendersonville Thoroughfare plan. However, it provides a similar function to the thoroughfare plan alignment that connects US 64 to Clear Creek Road by extending Thompson Road. The above mentioned thoroughfare alignment is designated as a major thoroughfare in the Hendersonville Thoroughfare Plan. US 64 is designated as a major thoroughfare in the Hendersonville Thoroughfare Plan and a principal arterial in the North Carolina Statewide Functional Classification System. Clear Creek Road is designated as a major thoroughfare in the Hendersonville Thoroughfare Plan and a minor arterial in the North Carolina Statewide Functional Classification System.

Hyder Street (SR 1521), also known as Short Street, is a two-lane shoulder section with a pavement width of 20 feet (6.1m). Thompson Road is three-lane, curb and gutter section, 33 feet (10.1 m) wide face-to-face of curbs. Clear Creek Road is currently scheduled to be widened to a five-lane, curb and gutter section, 64 feet (19.5 m) wide face-to-face of curbs, under the TIP project U-2425. US 64 is currently a five-lane, curb and gutter section, 64 feet (19.5 m) wide face-to-face of curbs.

There is an existing traffic signal at the US 64 / Thompson Road intersection. In addition, TIP project U-2425 proposes to provide a traffic signal at the Clear Creek Road / Duncan Hill Road / Berkley Mills Road intersection.

TIP Project U-2425 will widen Clear Creek Road to a five-lane facility. It is currently scheduled for right-of-way acquisition in June 2000 and for construction in December 2001.

No special provisions for bicycles are provided in this project.

The estimated 1999 Average Daily Traffic (ADT) along the proposed Short Street Extension is 15,000 vehicles per day (vpd) for Alternate 1 and 8600 vpd for Alternate 2. For the design year 2020, the estimated traffic volumes on proposed Short Street Extension are projected to be 26,500 vpd for Alternate 1 and 15,900 vpd for Alternate 2.

Utilizing the estimated traffic projections, the proposed Short Street Extension should operate at a Level of Service (LOS) B in the current year and at a LOS C in the 2020 design year.

### III. Recommendations / Description of Project

It is recommended to provide the Short Street Extension from Clear Creek Road (SR 1503) to US 64, a distance of 0.8 miles (1.29 km). The recommended cross-section is a five-lane, curb and gutter section, 64 feet (19.5 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on a variable right-of-way width. Two alignment alternates were studied for the Short Street Extension during this feasibility study (See Figure 1).

#### Alternate 1 (Recommended)

Alternate 1 begins at the relocated Clear Creek Road (SR 1503) / Berkley Mills Road (SR 1508) intersection proposed in Clear Creek Road widening project (TIP U-2425). Proceeding on new location on 120 feet (36.6 m) to 130 feet (39.6 m) of right-of-way, this alternate continues east until it connects with Hyder Street (SR 1521), also known as Short Street, at the Linda Vista Drive (SR 1521) intersection. The variable right-of-way width is needed to contain the cut and fill slopes within this area. This alternate continues east towards US 64 via the Hyder Street and Thompson Road alignments with some new location in between, on 100 feet (30.5 m) of right-of-way. With this alternate, Duncan Hill Road will need to be relocated to the adjacent intersection immediately south of its existing location. It is anticipated that there will be eight residences and two businesses relocated due to this alternate. The total cost of the project, including construction and right-of-way, is estimated to be \$8,300,000.

Construction.....	\$ 5,900,000
Right-of-way.....	\$ 2,400,000
Total Cost .....	\$ 8,300,000

A transportation benefit analysis was also completed for this project. For the period between current year and the 2020 design year, it is estimated that the total transportation benefits for the project are \$223,420,000, which is an average of \$10,639,047 per year. The total benefits include accident cost savings, time cost savings, and operating cost savings.

### **Alternate 2**

Alternate 2 begins at the Clear Creek Road (SR 1503) / Plantation Drive (SR 1652) intersection. Proceeding on new location, this alternate continues east towards the Hyder Street / Linda Vista Drive intersection, on 120 feet (36.6 m) to 140 feet (42.7 m) of right-of-way. This variable right-of-way width is needed to contain the cut and fill slopes within this area. From this point on this alternate is essentially the same as Alternate 1 except that Duncan Hill Road is not relocated. It is anticipated that there will be six residences and two businesses relocated due to this alternate. The total cost of the project, including construction and right-of-way, is estimated to be \$7,400,000.

Construction.....	\$ 5,250,000
Right-of-way.....	\$ 2,150,000
Total Cost .....	\$ 7,400,000

A transportation benefit analysis was also completed for this project. For the period between current year and the 2020 design year, it is estimated that the total transportation benefits for the project are \$126,640,000, which is an average of \$6,030,476 per year. The total benefits include accident cost savings, time cost savings, and operating cost savings.

### **IV. Other Alternates Considered**

When the Hendersonville Chamber of Commerce requested the Short Street Extension, a two-lane facility was requested. Therefore, a two-lane shoulder section, 32 feet (9.8 m) of pavement with 4-foot (1.2-m) paved shoulders, was considered. The two alignment alternates previously indicated were utilized and cost estimates developed. It should, however, be noted that the two-lane facility is expected to function at a LOS E in the current year and at a LOS F in the 2020 design year. The total cost of a two-lane cross-section utilizing the alignments for Alternate 1 and 2 are provided below.

The total cost of a two lane facility using the Alternate 1 alignment, including construction and right-of-way, is estimated to be \$4,700,000. It is anticipated that eight residences and two businesses will be relocated due to this alternate.

Construction.....	\$ 2,300,000
Right-of-way.....	\$ 2,400,000
Total Cost .....	\$ 4,700,000

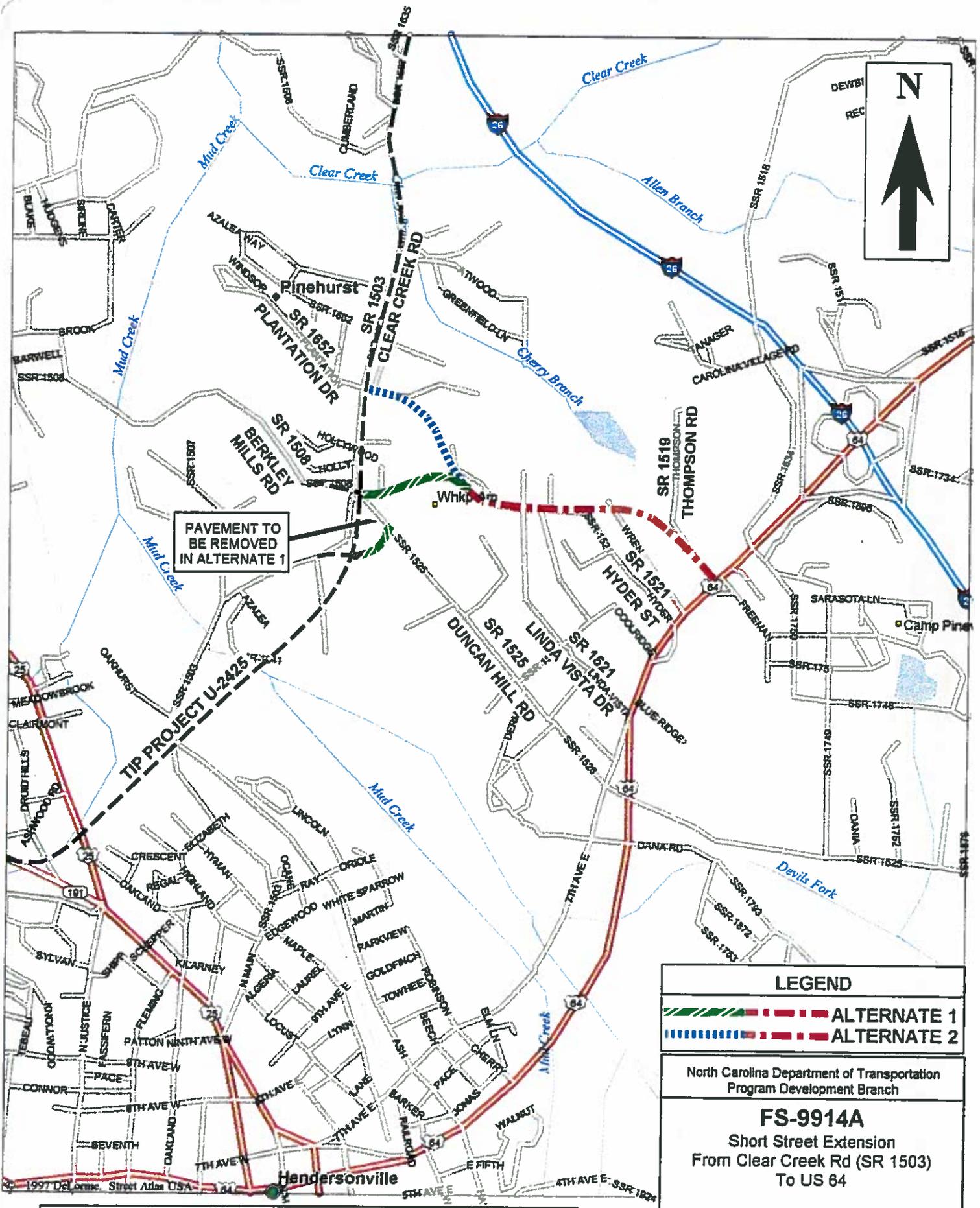
The total cost of a two-lane facility using the Alternate 2 alignment, including construction and right-of-way, is estimated to be \$4,400,000. It is anticipated that six residences and two businesses will be relocated due to this alternate.

Construction.....	\$ 2,300,000
Right-of-way.....	\$ 2,100,000
Total Cost .....	\$ 4,400,000

### VI. Additional Comments

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

No special accommodation for bicycles is recommended on this project.



PAVEMENT TO BE REMOVED IN ALTERNATE 1

TIP PROJECT U-2425

LEGEND	
	ALTERNATE 1
	ALTERNATE 2
North Carolina Department of Transportation Program Development Branch	
<b>FS-9914A</b> Short Street Extension From Clear Creek Rd (SR 1503) To US 64	
Hendersonville, Henderson County	
DIVISION 14	FIGURE 1

