**FEASIBILITY STUDY**

# Fayetteville

# Cedar Creek Road (NC 53 – NC 210)
# From the Existing Five-Lane Section East of I-95
# To the NC 53 / NC 210 Intersection

## Cumberland County

## Division 6

## FS-9906H

U-4415

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

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8/15/00
Date

Fayetteville

Cedar Creek Road (NC 53 – NC 210)
From the Existing Five-Lane Section East of I-95
To the NC 53 – NC 210 Intersection
Cumberland County

FS-9906H

## I. General Description

This feasibility study describes the widening of Cedar Creek Road (NC 53 – NC 210) from the existing five-lane section just east of I-95 to the NC 53 / NC 210 intersection, a distance of 2.9 miles (4.7 km). The project location is shown on Figure 1. Considering the amount of undeveloped property along this facility, we considered a four-lane divided, narrow median, curb and gutter section and five-lane curb and gutter section as alternates for the proposed widening of Cedar Creek Road. In addition to the widening of Cedar Creek Road, we recommend that A.B. Carter Road (SR 2011) be relocated into the Cedar Creek Road / Evans Road (SR 2216) intersection in order to eliminate an offset intersection. The recommended cross-section for the A.B. Carter Road relocation is a two-lane shoulder section, 28 feet (8.5 m) of pavement including 2-foot (0.6-m) paved shoulders. The recommended right-of-way width for the widening of Cedar Creek Road and the relocation of A.B. Carter Road is 100 feet (30.5 m).

### Alternate 1
(Preferred)

Alternate 1 proposes to widen Cedar Creek Road to a four-lane, divided curb and gutter section, 68 feet (20.7 m) wide from face-to-face of curbs, with a 16-foot (4.9-m) wide raised grass median and 10-foot (3.0-m) berms. It is anticipated that there will be no residences and no businesses relocated due to this alternate. The total cost of the project, including construction and right-of-way, is estimated to be $11,900,000.00.

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|---|---|
| Construction | $ 9,850,000 |
| Right-of-way | $ 2,350,000 |
| Total Cost | $ 11,900,000 |

### Alternate 2

Alternate 2 proposes to widen Cedar Creek Road to 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. It is anticipated that no residences and no businesses will be relocated due to this alternate. The total cost of the project, including construction and right-of-way, is estimated to be $12,350,000.

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|---|---|
| Construction | $ 10,000,000 |
| Right-of-way | $ 2,350,000 |
| Total Cost | $ 12,350,000 |

Except for the commercial development near the I-95 interchange and the Monsanto Plant near the NC 53 / NC 210 intersection, the majority of Cedar Creek Road is undeveloped with some scattered residential development. Therefore, it is felt that the four-lane divided section (Alternate 1) would maintain the operational integrity of the proposed facility more efficiently that the five-lane section (Alternate 2) because five-lane sections have historically promoted strip type development. However, it should be noted five-lane sections are typically considered the standard cross-section for these facilities because of the maintenance problems associated with the raised narrow median. The NCDOT may require maintenance agreements or commitments from the local authorities before the four-lane divided section can be provided.

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 Cedar Creek Road (SR 1400) in Fayetteville. The Fayetteville Urban Area MPO and the City of Fayetteville support this project.

Cedar Creek Road is designated as a major thoroughfare in the Fayetteville Thoroughfare Plan and as a major collector in the North Carolina Statewide Functional Classification System.

Existing Cedar Creek Road is mostly a two-lane, 24-foot (7.0-m) wide, shoulder section widening to a five-lane curb and gutter section near the I-95 interchange.

There are no existing traffic signals within the project limits. This section of Cedar Creek Road is mostly undeveloped with some scattered residential development. However, there is some commercial development near the I-95 interchange and Monsanto has a plant near the NC 53 / NC 210 intersection.

The current year Average Daily Traffic (ADT) along Cedar Creek Road is estimated to be between 9,500 to 13,600 vehicles per day (vpd). For the design year 2025, the estimated traffic volumes will range between 17,100 and 20,200 vpd. Truck traffic is estimated to make up ten percent of daily traffic.

Currently, Cedar Creek Road operates at a "D" level of service (LOS). If no improvements are made, it is projected that this facility will operate at a "E" LOS in the 2025 design year. With the proposed multilane improvements to this section of Cedar Creek Road, we expect that this facility will function at a "B" LOS in the 2025 design year.

During the three-year period from September 1996 through August 1999, there were 56 accidents reported on Cedar Creek Road within the project limits. There were 52 injuries reported, as a result of these accidents, but included one fatality. The accident rate along Cedar Creek Road within the project limits is 164 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1996 to 1998 statewide rate of 229 acc/100mvm for rural North Carolina 2-lane roadway.

## III. Discussion of Alternates / Recommendations

This feasibility study describes the widening of Cedar Creek Road (NC 53 – NC 210) from the existing five-lane section east of I-95 to the NC 53 / NC 210 intersection, a distance of 2.9 miles (4.7 km). The project location is shown on Figure 1. Considering the amount of undeveloped property along this project, we evaluated a four-lane divided, narrow median, curb and gutter section and five-lane curb and gutter section as alternates for the widening of Cedar Creek Road. In addition to the widening of Cedar Creek Road, we recommend that A.B. Carter Road (SR 2011) be relocated into the Cedar Creek Road / Evans Road (SR 2216) intersection in order to eliminate an offset intersection. The recommended cross-section for the A.B. Carter Road relocation is a two-lane shoulder section, 28 feet (8.5 m) of pavement including 2-foot (0.6-m) paved shoulders. The recommended right-of-way width for the widening of Cedar Creek Road and the relocation of A.B. Carter Road is 100 feet (30.5 m).

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| Construction | $ 9,850,000 |
| Right-of-way | $ 2,350,000 |
| Total Cost | $ 11,900,000 |

## Alternate 2

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| Construction | $ 10,000,000 |
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## IV. Additional Comments

An environmental screening was not conducted for this study. There are no properties on the National Register of Historic Places along the project. No significant impacts on wetlands are anticipated.

A transportation benefit analysis was also completed for this project. For the period between the current year and the 2025 design year, it is estimated that the total transportation benefits for the project are $22,100,000, which is an average of $850,000 per year. The total benefits include accident cost savings, time cost savings, and operating cost savings.