FEASIBILITY STUDY

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NC 43 (Charles Street)
From Greenville City Limits
to Bells Fork
Greenville Pitt County
R-2252

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

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R-2252

The subject portion of NC 43 is being studied to determine what improvements may be needed and for possible right-of-way protection. This report provides a brief, initial analysis of possible improvements. The project is not currently funded.

I. GENERAL DESCRIPTION

The segment of NC 43 (Charles Street) studied in this report is located on the southeast side of Greenville in Pitt County (See Figure 1). The project extends from the south city limits of Greenville to Bells Fork a distance of 1.1 miles. The studied improvement is a five lane, 64-foot, face-to-face of curbs, curb and gutter cross section.

II. EXISTING CONDITIONS

The existing roadway consists of a 22-foot pavement with 8 to 10-foot unpaved shoulders within an existing 100-foot right-of-way. Both horizontal and vertical alignments are good with no curves greater than 3° and no grades greater than 3 percent.

At the Greenville City Limits NC 43 widens from a two lane roadway to a five lane curb and gutter roadway (64 feet, face to face of curbs).

At Bells Fork, left turn lanes have been added for turns into Bells Fork Road and County Home Road.

The speed limit on NC 43 is 45 mph. The only traffic signals on the project are at the offset intersections of County Home Road and Bells Fork Road with NC 43. This offset intersection creates problems with traffic operations resulting in congestion for motorists on all the roads involved.

Overhead power lines were observed along both sides of NC 43 and underground telephone cables were noted along the west side of the project. Fire hydrants were also located on the west side of the project from the city limits to just beyond Thackery Road.

The beginning of the project, near the city limits is developed with a mixture of commercial and high density residential development. The area around Bells Fork is developed commercially and a church (Grace Freewill Baptist) is located on the east side of NC 43 just north of the Bells Fork area. The remainder of the project is characterized by low density residential development and open land.

III. PURPOSE OF PROJECT

NC 43 is designated a major thoroughfare in the Greenville Thoroughfare Plan and functions as a major radial route into Greenville from the southeast. The current traffic volume of 9,900 vehicles per day (vpd) is projected to increase to 17,800 in the year 2007. This projected volume exceeds the capacity of the existing two lane roadway. The provision of additional lanes will alleviate congestion in this rapidly developing area of Greenville.

This project has received strong local support.

IV. RECOMMENDED IMPROVEMENTS

It is recommended that NC 43 be widened to a five lane, 64-foot, face of face of curbs, curb and gutter cross section from the Greenville City Limits to Bells Fork. The existing 100-foot right-of-way is expected to be sufficient to contain the proposed cross section in most areas; however, minor construction easements may be needed in some locations to contain construction. Both the City of Greenville and the Division Engineer are in agreement with the recommended cross section and it is in conformance with the Thoroughfare Plan. The proposed widening of NC 43 should be symmetrical about the existing centerline.

The estimated cost of the recommended improvements to NC 43 is $1,350,000 including $1,250,000 for construction and $100,000 for the right-of-way. The construction cost includes engineering and contingencies and the right-of-way cost includes acquisition and utility costs.

The construction cost estimates, furnished by the Roadway Design Unit, were based on aerial photography and contour maps. Right-of-way estimates were furnished by the Right-of-Way Branch following a field review.

V. ADDITIONAL RECOMMENDATIONS

In addition to the widening of NC 43, improvements are needed to the offset intersection at Bells Fork. If this intersection remains as it is, it will continue to be the site of traffic congestion, acting as a bottleneck to good traffic flow.

The major through traffic flow on the crossing roadways is from SR 1708 on the west side of NC 43 to SR 1725 on the east side of NC 43. These roadways are presently functioning as part of a "southern loop" around Greenville connecting the various radials such as NC 11, NC 43 and NC 33. Since these roadways provide the major cross move they should be connected at a single crossing of NC 43. Two alternative design were developed to provide a single crossing connecting SR 1708 to SR 1725.

Alternative 1 connects to a straight portion of SR 1708 approximately 0.6 mile west of SR 1725, and extends across NC 43 connecting to a straight segment of SR 1725 with only one relatively flat curve (See

figure 2). This alternative provides an excellent alignment for the cross traffic. It is the alignment shown in the Greenville Thoroughfare Plan for a future improvement and a portion of the right-of-way (adjacent to the recently constructed Bells Fork Square Shopping Center) has been dedicated. A drawback of this alternative is the length of new roadway needed to make the proposed connection of SR 1725 and SR 1708, and the associated construction costs involved. This alternative is 1.0 mile long with a total cost of $1,000,000, including $350,000 for construction and $650,000 for right-of-way. The construction cost includes engineering and contingencies and the right-of-way cost includes relocation, utility and acquisition costs. This alternative requires a much longer relocation of County Home Road (SR 1725 on the west side of NC 43) than the other alternative with a length of 1500 feet compared to 600 feet with Alternative 2. The most significant impact of Alternative 1 is the relocation of 4 residences. It will also cross a small stream, possibly requiring a 404 permit from the Corps of Engineers. No other significant environmental effects are expected.

Alternative 2 connects to SR 1708 approximately 700 feet west of SR 1725, extends eastward across NC 43 on new location, and connects to SR 1725 at its intersection with 1729. The main advantage of Alternative 2 is the replacement of the existing offset intersection with a single new crossing of NC 43. With the first alternative, the SR 1729 intersection with NC 43 would remain in addition to the intersection of the new SR 1708-SR 1725 connector. Alternative 2 involves a much shorter roadway relocation than the first alternative, with a length of 0.3 mile. With a 10° curve on the east end, the alignment is not as good as the first alternative. The estimated cost of Alternative 2 is $900,000 including $200,000 for construction and $700,000 for right-of-way. As with the first alternative the construction cost includes engineering and contingencies and the right-of-way cost includes relocation, utility and acquisition costs. Alternative 2 requires the relocation of one more residence than the first alternative, with a total of 5 and it also requires 1 business to be relocated. No other significant impacts are expected.

If a decision is made to improve the offset intersection at Bell's Fork, further study of the alternatives will be required since neither is clearly superior. Alternative 1 provides the best alignment, utilizes right-of-way that has been reserved by previous planning efforts, and is in conformance with the Greenville Thoroughfare Plan. It also has less impact on the local community, relocating one less residence and no businesses. Alternative 2 eliminates the need for a second intersection in the busy Bell's Fork area and is slightly cheaper than Alternative 1.

VI. ALTERNATIVES

There are no feasible alternatives to the widening of NC 43. If a four lane cross section were built, drivers desiring to turn left into side streets and driveways would have to slow down and possibly stop in the left lane which is normally used for higher speed vehicles. This would reduce the capacity and the safety of the roadway especially in the future when the roadside becomes fully developed and traffic volumes increase. Therefore a five lane cross-section with a center left-turn lane was selected as the recommended improvement for NC 43.

As discussed above, two alternative designs were considered for the improvement of the Bells Fork intersection.

VII. POSSIBLE ENVIRONMENTAL IMPACTS

No significant impacts are anticipated with the proposed improvements to NC 43.

The improvement to the Bells Fork intersection, if included with this project, will require the relocation of 4 residences. No other significant impacts are anticipated with the intersection improvement.

VIII. FUTURE ACTIVITIES

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning/environmental document prior to that time, and a final decision made as to the most appropriate improvement.

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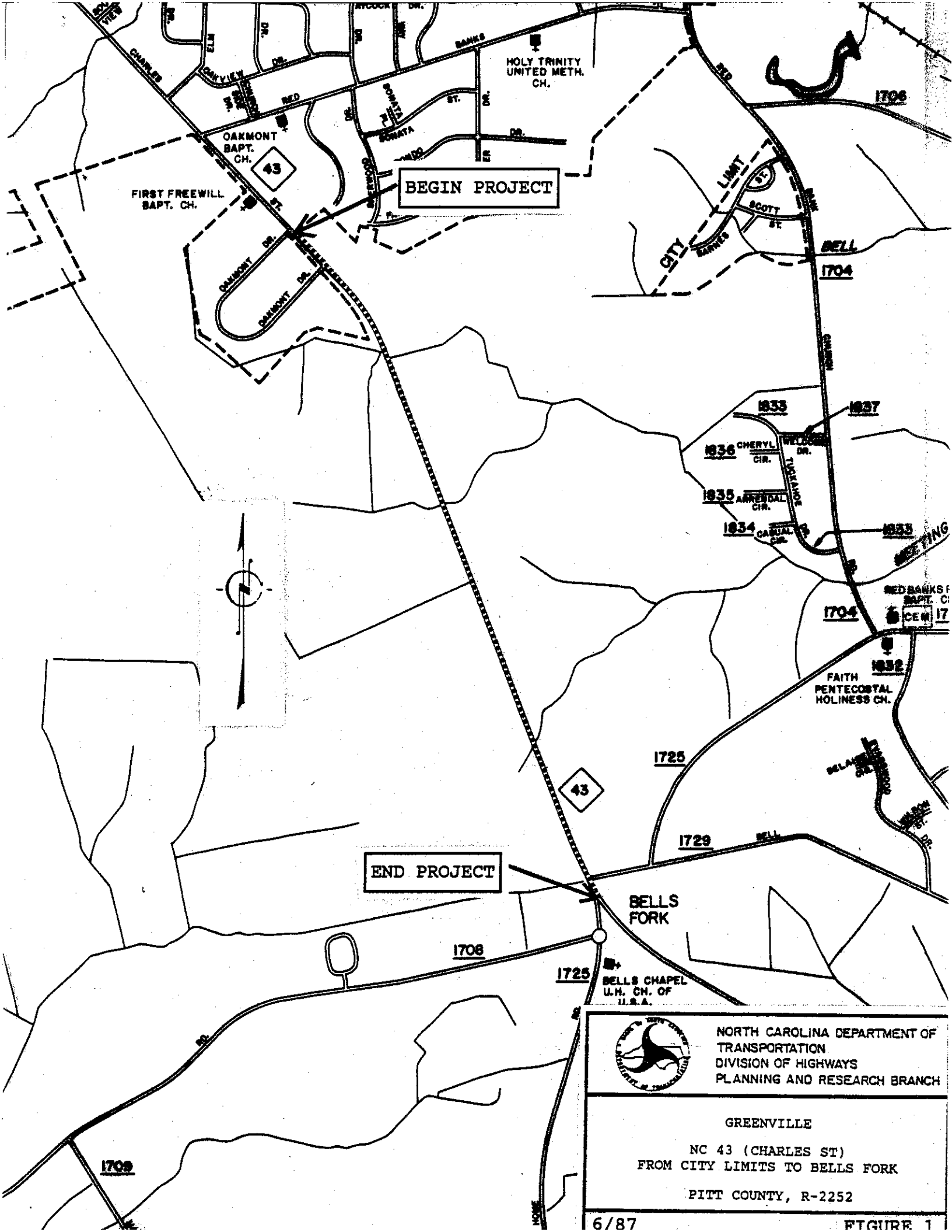

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

GREENVILLE

NC 43 (CHARLES ST)
FROM CITY LIMITS TO BELLS FORK

PITT COUNTY, R-2252

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FIGURE 1

BEGIN PROJECT
CHARLES ST
CHARLES ST
RED BANKS RD
GREENVILLE
LIMIT
CITY
GRACE
FREE WILL
BAPTIST CHURCH
NC 43
BELL'S FORK SQUARE
SHOPPING CENTER
BELLS FORK
END PROJECT
ALTERNATIVES 1 & 2
ALTERNATIVE 1
ALTERNATIVE 2
COUNTY HOME RD
NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH
GREENVILLE
NC 43 (CHARLES ST)
FROM CITY LIMITS TO BELLS FORK
PITT COUNTY, R-2252
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FIGURE 2