FEASIBILITY STUDY

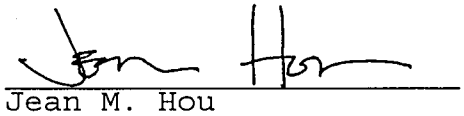
Wake Forest

US 1 Alternate
From US 1 To Proposed NC 98 Bypass
Wake County

Division 5

R-3600

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



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I. GENERAL DESCRIPTION

This preliminary study describes the proposed widening of US 1 Alternate from US 1 to the proposed NC 98 Bypass in Wake Forest, Wake County. The project location is shown on Figure 1. The proposed 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, for the entire project length of 1.9 miles (3.0 km). The required right-of-way width is 100 feet (30.5 m).

This project will likely require one business relocation and two residential relocations. The residential properties are in the Forestville community and may be eligible for the National Register of Historic Places. The properties are noted in "The Historic Architecture of Wake County, North Carolina," by Kelly A. Lally on pp. 251 - 252. The specific properties are the Little House and the Dr. Leroy Chappell House and Office.

The total cost including construction and right-of-way is estimated to be $7,600,000.

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 needs, recommend a treatment including costs, and identify potential problem areas that 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 US 1A in Wake Forest. The project was requested by the Town of Wake Forest through the Capital Area Transportation Advisory Committee. This project is in an area of rapid growth. This growth will likely be accelerated by the proposed NC 98 Bypass (R-2809).

US 1A is classified as a Minor Arterial in the North Carolina Statewide Functional Classification System, and is a Major Thoroughfare on the Wake Forest Thoroughfare Plan. Land use along the project corridor is mixed. Development along the project corridor includes an automobile dealership, manufacturing facilities, day-care centers, the

Wake Forest-Rolesville Middle School, offices, single and multi-family dwellings, and convenience/gasoline stores.

Existing US 1 Alternate is a two-way, mainly two-lane road with grass shoulders. The existing right-of-way width on US 1 Alternate is the "maintained limits", which is variable, but appears to be mainly 60 feet (18.3 m). There is a 0.3 mile (0.5 km) length of curb-and-gutter section on the west side from the middle school to north of Selsey Drive. This curb-and-gutter should be retained if possible; however, the cost estimate for this project includes replacing this curb-and-gutter. The intersection at US 1 is controlled with a traffic signal. The proposed NC 98 Bypass intersection will require signalization.

Traffic volume estimates for US 1 Alternate for the years 1996 and 2020 are 10,400 vehicles per day (vpd) and 23,200 vpd respectively. The Level of Service (LOS) without the proposed improvements is estimated to be Level D in 1996 and Level E in 2020. With the estimated improvements the LOS is estimated to be Level B in 1996 and Level D in 2020.

During the three year period beginning March 1, 1993, and ending February 29, 1996, there were 51 accidents reported on US 1 Alternate within the project limits. This resulted in a total accident rate of 279 accidents per 100 million vehicle miles (ACC/100MVM). This compares with the statewide average of 269 ACC/100MVM for all urban United States routes, in North Carolina, for 1994.

There were no fatal accidents reported, and 32 accidents resulted in 60 injured persons. The most prevalent type accidents were left turn (56.8%), rear-end (25.5 %), and angle (9.8%). The proposed wider cross-section with a center turn lane will reduce the potential for these type accidents.

The Forestville Baptist Church, located in the unincorporated community of Forestville, is on the National Register of Historic Places. This church is approximately 87 feet (26.5 m) west of the centerline of existing US 1A. This project will not require church property, since the proposed widening is on the opposite side of existing US 1A at this location. There are two houses approximately 1,000 feet (305 m) north of the Forestville Baptist Church that may be eligible for the National Register. The properties are noted in "The Historic Architecture of Wake County, North Carolina," by Kelly A. Lally on pp. 251 - 252. These houses are approximately 75 feet (22.9 m) apart and are on opposite sides of US 1A. The Dr. Leroy Chappell House on the east side of US 1A is approximately 33 feet (10.1 m) from the road centerline. This house and 2 related buildings are situated on a relatively small lot. The Little House on the west side of US 1A is approximately 42 feet (12.8 m) from the road

centerline. This single structure is located at the front of a relatively large lot.

III. RECOMMENDATIONS

It is recommended to widen US 1 Alternate from US 1 to the proposed NC 98 Bypass, a distance of approximately 1.9 miles (3.0 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 with 10-foot (3.0-m) berms. The required right-of-way width is 100 feet (30.5 m).

Also, it is proposed to relocate Forestville Road, at the intersection with US 1A, in order to improve the acute angle of the intersection. Forestville Road is a two-way, two-lane paved road with a rural type cross-section.

At the south project terminal, the proposed cross-section will end at the US 1 intersection, where dual left-turn lanes, and a separate right-turn lane will be required on US 1A. The traffic signal at this intersection will require minor revisions.

At the north project terminal, the proposed cross-section will tie into the cross-section to be constructed on US 1A under project R-2809 (NC 98 Bypass).

This project will likely require one business relocation and two residential relocations. The total cost including construction and right-of-way is estimated to be $7,600,000 as follows:

Right-of-Way	.....	$ 2,100,000
Construction	.....	5,500,000
Total Cost	.....	$ 7,600,000

IV. OTHER COMMENTS

An environmental screening was not conducted for this study. No wetlands or endangered species are anticipated. Two houses which may be eligible for the National Register and the Forestville Baptist Church which is on the National Register are discussed above. Underground gasoline storage tanks at a convenience store in the Forestville Community will be involved in the required right-of-way.

The Capital Area Metropolitan Planing Organization has indicated a need for bicycle accommodations on this project. Providing 14-foot (4.2-m) wide outside travel lanes is estimated to add $ 250,000 to the project cost. This bicycle

accommodation is not recommended, at this time, because it does not appear to be part of a comprehensive plan for bicycle routes in the area.

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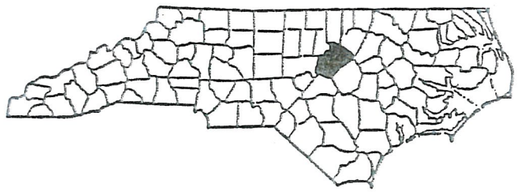

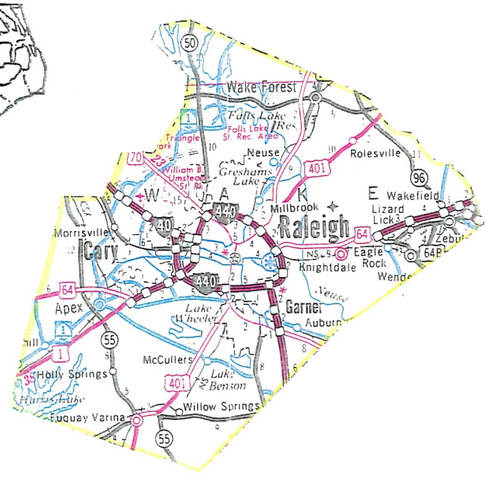

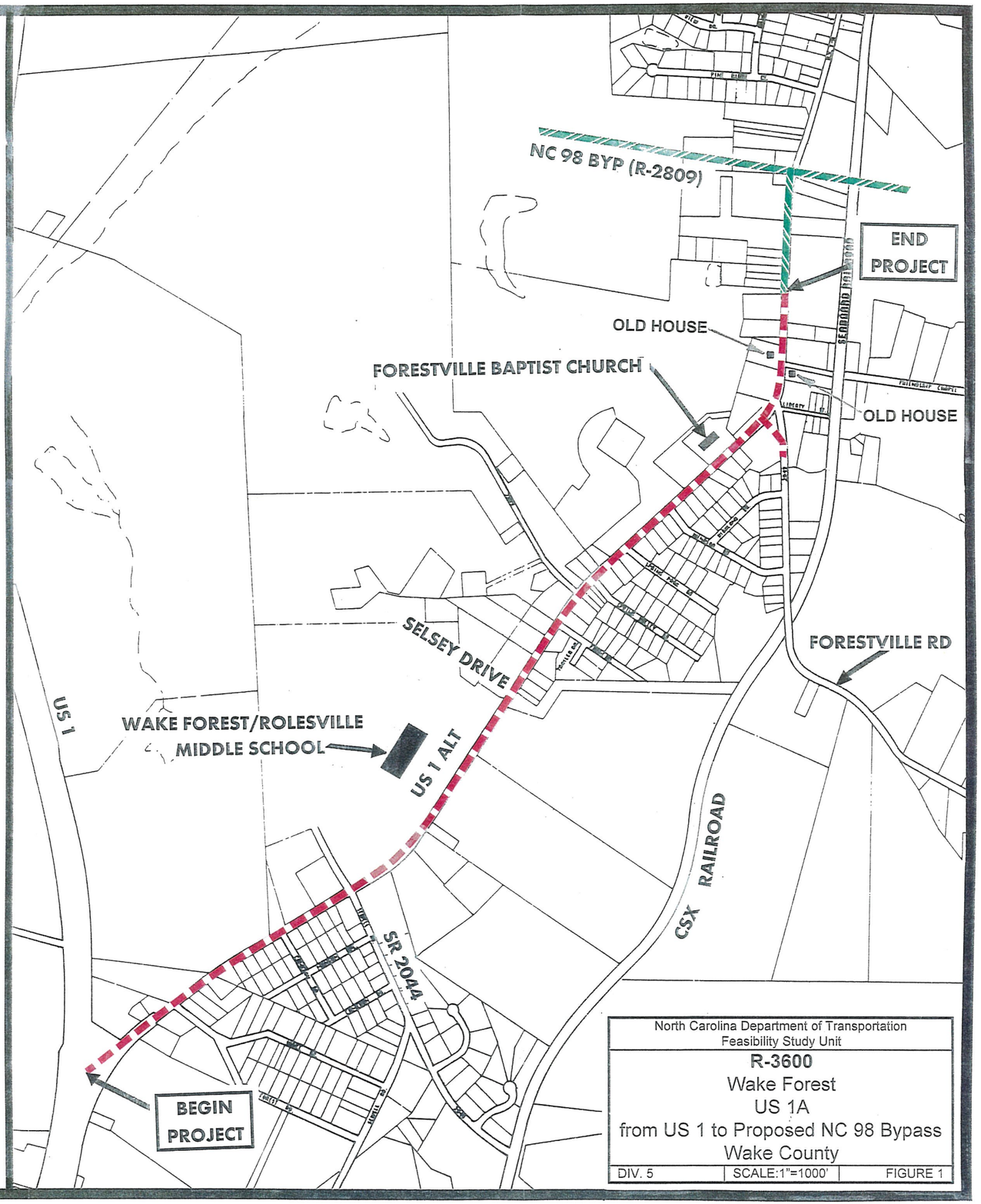

North Carolina Department of Transportation
Feasibility Study Unit

R-3600

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DIV. 5	SCALE:1"=1000'	FIGURE 1