

FEASIBILITY STUDY

Cary
Chapel Hill Road (NC 54)
From Maynard Road (SR 1415) to Trinity Road (SR 1655)
Wake County
U-2908

Prepared by
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I. GENERAL DESCRIPTION

This preliminary study describes proposed improvements to Chapel Hill Road (NC 54) in Cary. It is proposed to widen Chapel Hill Road from Maynard Road (SR 1415) to Trinity Road (SR 1655), a distance of approximately 0.75 miles. Please see Figure 1 for the project location. A five lane curb and gutter cross section (68 feet wide from face to face of curbs) with 14 foot wide outside lanes to accommodate bicycles is recommended on the existing 150 foot wide right of way for the entire length.

The total estimated cost including construction and utility adjustments is \$ 1,300,000. It is estimated there will be no residences or businesses relocated due to this project.

This study is the initial step in the planning and design process for this project and is not the product of an exhaustive environmental or design investigation. The purpose of the study is to describe the problem, 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 improve the traffic carrying capacity and accident experience of Chapel Hill Road. The project was requested by the Town of Cary.

Chapel Hill Road is designated a Major Thoroughfare on the Greater Raleigh Urban Area Thoroughfare Plan. Within the study limits it is classified as Other Urban Principal Arterial in the North Carolina Statewide Functional Classification System. Development on Chapel Hill Road in the project area is limited to the project terminals where there is commercial development around the intersections.

Existing Chapel Hill Road, within the project limits, is a two way, two lane paved road which has been widened at the project terminals. The pavement width is approximately 30 feet wide.

West of Maynard Road, Chapel Hill Road is a two way, two lane facility approximately 24 feet wide and has been widened at the Maynard Road intersection to provide an exclusive right turn lane. Immediately east of Maynard Road, Chapel Hill Road has been widened to a four lane curb and gutter section that is approximately 58 feet wide from face to face of curbs.

Immediately west of Trinity Road, Chapel Hill Road has been widened to a 5-lane curb and gutter section that is approximately 74 feet wide from face to face of curbs. East of Trinity Road, Chapel Hill Road is a 68 foot wide, five lane, curb and gutter facility.

The intersections with Maynard Road and Trinity Road are controlled with traffic signals.

The Average Daily Traffic (ADT) on Chapel Hill Road, between Maynard Road and Trinity Road for the years 1991 and 2015 are estimated to be approximately 17,000 vehicles per day (vpd) and 24,000 vpd respectively.

Chapel Hill Road is currently operating at a Level of Service (LOS) E based on the 1991 peak traffic hour. With the proposed improvements, a LOS B will be attained based on 1991 traffic volumes and LOS C will prevail through the design year.

During the period from January 1, 1989 through July 31, 1992 there were 32 accidents reported on Chapel Hill Road within the project boundaries. This resulted in an accident rate of 191.0 accidents per 100 million vehicle miles (Acc/100MVM), compared to a statewide average of 266.4 Acc/100 MVM for all urban NC routes during 1991. There were no fatalities reported during the period, but 13 of the accidents resulted in injuries. The most prevalent accident types were rear end (38%), left-turn (22%), and angle (13%). The wider cross section with center turn lane proposed for Chapel Hill Road will reduce the potential for these types of accidents.

III. RECOMMENDATIONS

It is proposed to widen Chapel Hill Road (NC 54) from Maynard Road (SR 1415) to Trinity Road (SR 1655), a distance of approximately 0.75 miles. Please see Figure 1 for the project location. A five lane curb and gutter cross section (68 feet wide from face to face of curbs) with 14 foot wide outside lanes to accommodate bicycles is recommended on the existing 150 foot wide right of way for the entire project length.

At the west project terminal the proposed curb and gutter should tie into the existing curb and gutter turn-outs from Maynard Road. At the east project terminal the proposed cross section should tie into the existing 74 foot wide curb and gutter section about 400 feet west of Trinity Road.

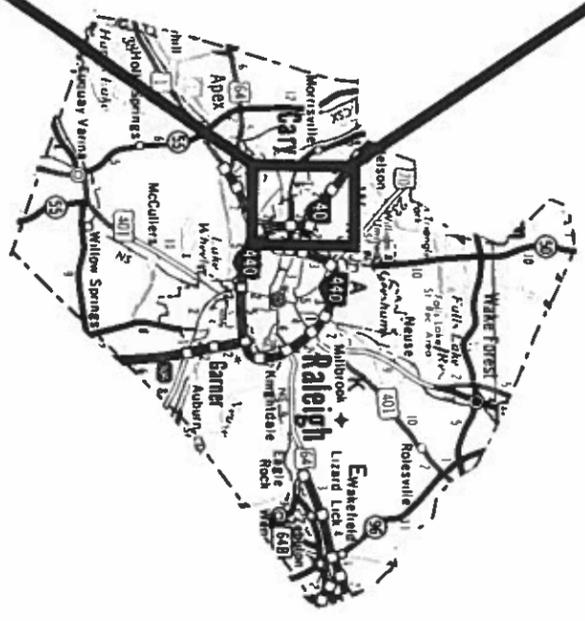
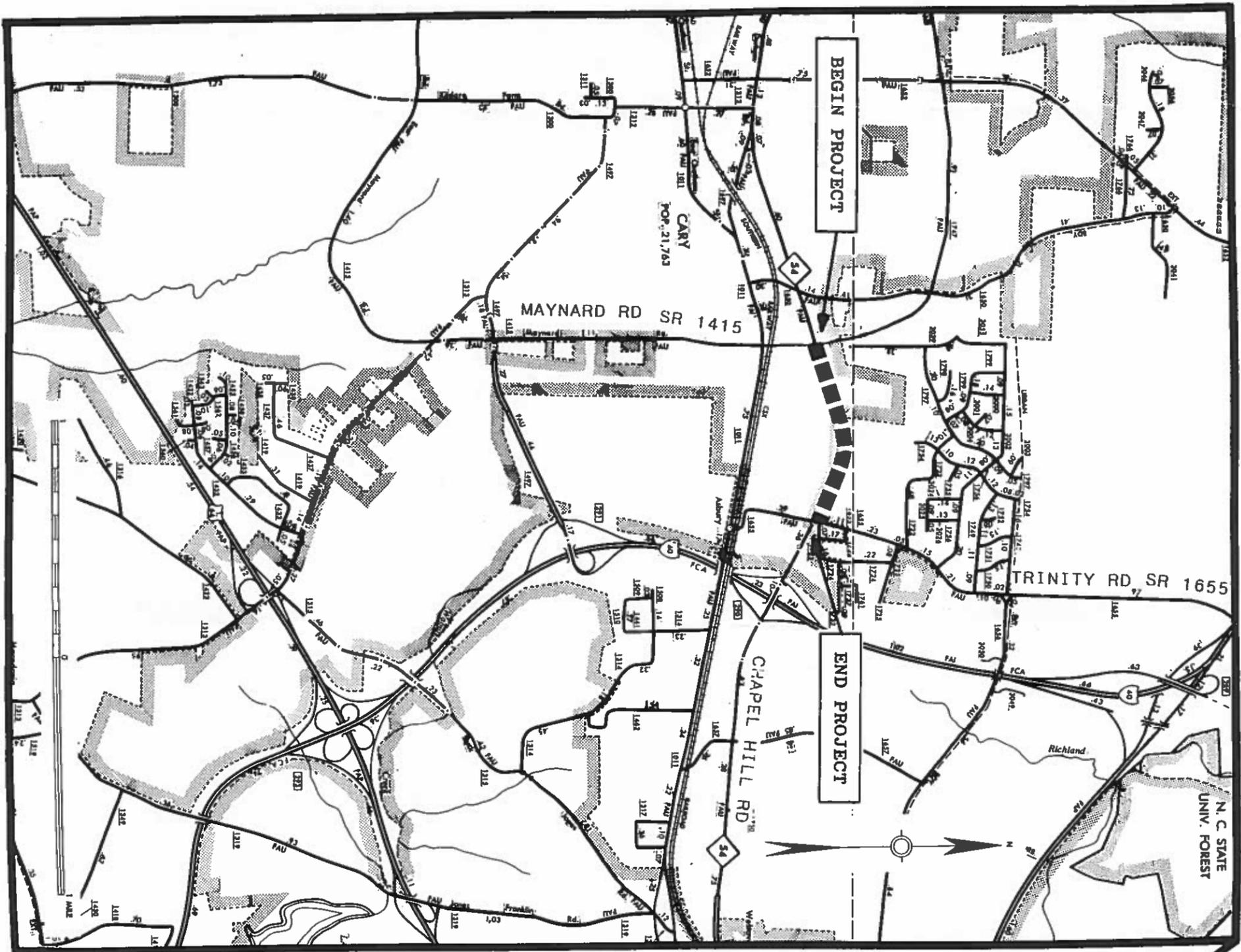
It is estimated there will be no residences or businesses relocated due to this project. The total estimated cost including construction and utility adjustments is \$ 1,300,000 as follows:

Construction	\$ 1,200,000
Utility Adjustments	100,000
Total Cost	\$ 1,300,000

V. OTHER COMMENTS

An environmental screening was not conducted for this study.

The NCDOT Bicycle Program has identified NC 54 as a roadway with significant bicycle use, and has requested that this project include wide outside lanes to accommodate this use. The 68 foot wide recommended cross section provides this extra width.



FEASIBILITIES STUDIES UNIT
 FIGURE 1. LOCATION MAP
 NC 54
 FROM MAYNARD ROAD (SR 1415)
 TO TRINITY ROAD (SR 1655)
 CARY, WAKE COUNTY
 U-2908 DIV. 5 FIGURE 1