

PROJECT PLANNING REPORT

NC 54 Bypass, Orange County  
From NC 54 to US 15-501  
State Project 8.1500401, R-963  
Federal-Aid Project FR-100-1(3)

Submitted to  
Planning Board

by

Planning and Research Branch

Division of Highways

N. C. Department of Transportation

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NC 54 Bypass, Orange County  
From NC 54 to US 15-501  
R-963

Project Description

The proposed project consists of resurfacing, adding turn lanes at one intersection, and installing guardrail along a 2.7-mile segment of NC 54 Bypass at Chapel Hill and Carrboro (see attached map). Because of limited impacts on the environment, this project qualifies as a categorical exclusion.

Existing Conditions

NC 54 Bypass is a major thoroughfare in the Chapel Hill -Carrboro Thoroughfare Plan and a minor arterial in the Functional Classification Plan for Orange County. The subject section of road has a basic two-lane, 24-foot pavement with 10-foot shoulders, including 4-foot paved, constructed on good alignment. The cross section widens to two and four-lane divided roadway with a raised median through the interchanges of SR 1005, SR 1919, and US 15-501. Existing right of way is 150 feet and is not access controlled except in areas of the interchanges. Single bridges carry NC 54 Bypass over SR 1005 and SR 1919. Each bridge has a clear roadway width of 28 feet and length of 135 and 131 feet, respectively.

Current daily traffic on NC 54 Bypass range from 7000 vehicles per day at NC 54 to 16,000 vpd at US 15-501. Ten year traffic projections are 10,000 and 22,000 vpd, respectively. Truck traffic comprises approximately 6 percent of the daily traffic volume.

A total of 21 accidents were reported in a recent 3-year period. This yields an accident rate of 0.48 accidents per million vehicle miles, substantially less than the statewide average of 2.42 acc/mvm for two-lane NC routes in 1983. No unusual traffic accident pattern is noted. Present speed limit along this section of road is 45 MPH.

Proposed Improvements

To improve the safety of the studied facility, the following improvements are proposed:

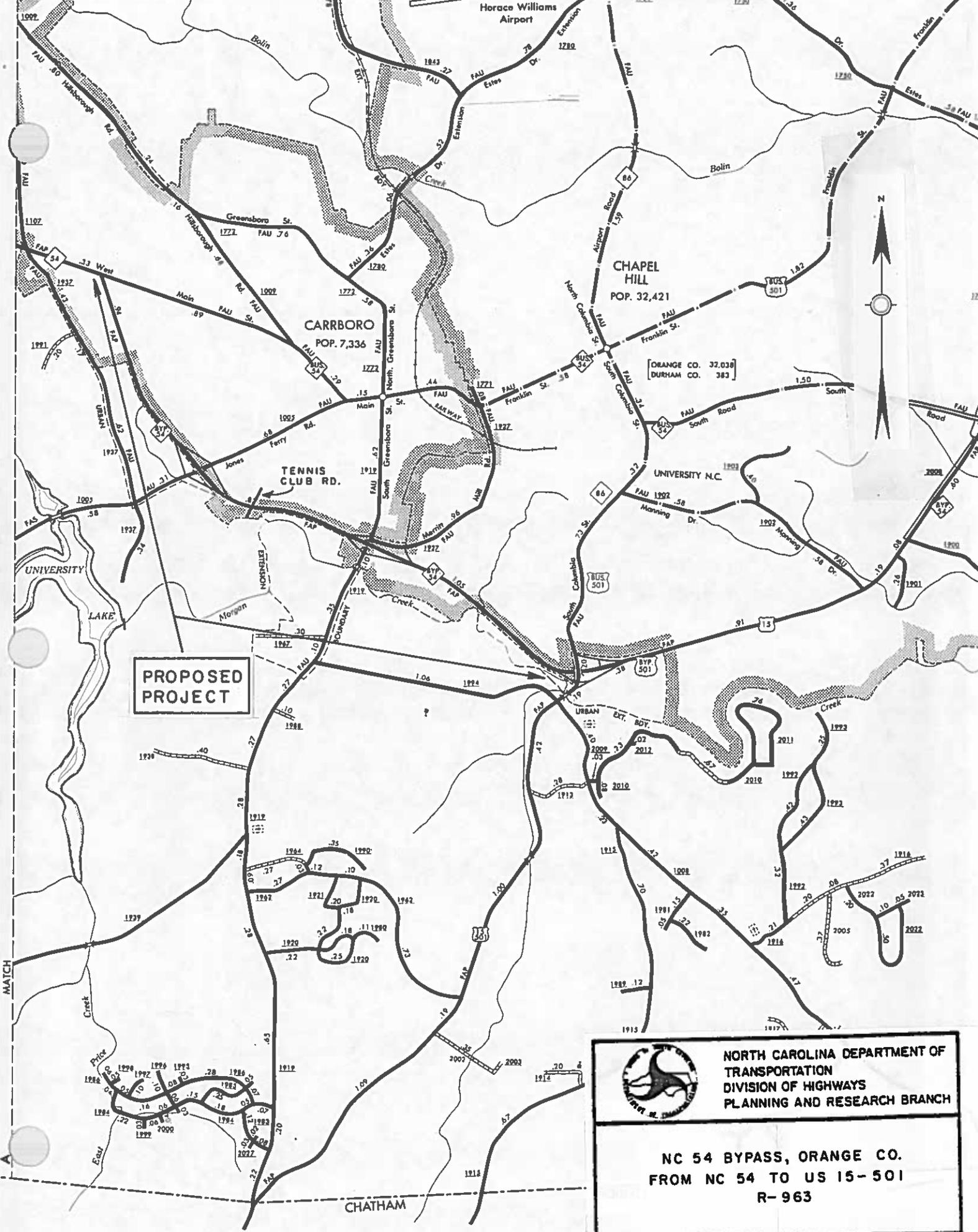
- (1) Resurfacing along the entire length of the mainline plus all ramps at interchanges.
- (2) Construction of left turn lanes at Tennis Club Road (several rear end collisions have occurred at this location).
- (3) Removal of islands between the travel lane of NC 54 Bypass and entrance ramps at interchanges of SR 1005 and SR 1919.

- (4) Removal of endwalls and conversion to grated inlets at two locations.
- (5) Installation of approximately 2500 feet of guardrail at various locations along the project.

The proposed resurfacing would be carried across the two bridges located on NC 54 Bypass. Constructed in 1957, the bridges are in adequate condition and requires no rehabilitation.

Total estimated cost of the project is \$400,000.

RGD/sdt



**PROPOSED PROJECT**



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

**NC 54 BYPASS, ORANGE CO.  
FROM NC 54 TO US 15-501  
R-963**

**5/84 0 mile 1/2 FIG. 1**