

FEASIBILITY STUDY

US 76, Wilmington,
From Bradley Creek Bridge to SR 1409,
New Hanover County,
U-2572

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

Marc J. Hamel

Marc Hamel
Project Planning Engineer

R. G. Dawson, Jr.

R. G. Dawson, Jr., P. E.
Head of Feasibility & Special
Studies Unit

9/28/90
Date

L. J. Ward
for L. J. Ward, P. E., Manager
Planning and Environmental Branch

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I. DESCRIPTION

This report covers a preliminary study of the proposed upgrading of the subject road. As shown on the attached maps, this study extends from the Bradley Creek Bridge to the multi-lane section on SR 1409 (Military Cutoff) near US 74 (Eastwood Road). The project is 0.7 mile in length, and appears in the 1990-1996 Transportation Improvement Program (T.I.P.) for feasibility study and/or right-of-way protection. It is not currently funded.

II. PURPOSE OF PROJECT

Existing Route Characteristics

US 76 appears as a major thoroughfare on the Wilmington Thoroughfare Plan (adopted 1986, see Figure 3), and as an Urban Principal Arterial on the County Functional Classification Plan. This route serves as a principal route between Wilmington and Wrightsville Beach, and will function (with SR 1409) as an eastern segment of the Wilmington Outer Loop when completed.

The studied section of US 76 has varying pavement widths, primarily due to accommodations for turn lanes at the US 76/SR 1411/SR 1409 intersection. The roadway north of the Bradley Creek Bridge is a 4-lane, 52-foot urban shoulder section with a 4-foot raised concrete median. Shoulders are 8 to 10 feet wide, with 4 feet of this paved. These wide paved shoulders are designed to function as bike lanes, as this route is designated as a bikeway.

The roadway widens at SR 1411 (Wrightsville Ave./Airlee Road) to a 5-lane section to accommodate left-turn movements. This cross section carries through the SR 1409 intersection, then lane-drops and tapers to a two-lane, 24-foot shoulder section as it turns east towards Wrightsville Beach.

SR 1409 is a 2-lane, 22-foot shoulder section, with a southbound left-turn lane at US 76, but widens to a 5-lane section approximately 1000 feet south of US 74. This 5-lane width extends northward to and through the US 74 intersection.

The existing alignment is good and is constructed through level terrain. The speed limit on US 76 and SR 1409 is 45 mph. There are 2 signals on US 76 at SR 1409 and SR 1411, and also a signal at US 74 and SR 1409.

Existing right-of-way on US 76 is generally 100 feet, with additional rights-of-way at the SR 1409 and SR 1411 intersections. Right-of-way on SR 1409 is also generally 100 feet.

One bridge adjoins the project and information is listed below:

<u>Bridge No.</u>	<u>Location</u>	<u>Length (Ft.)</u>	<u>Width (Ft.)</u>	<u>Age (Yrs.)</u>	<u>Rating (New=100)</u>
14	Bradley Ck.	866.0	58.5	1	94.2

This bridge was completed in 1989 as a replacement for an existing facility under the T.I.P. project number B-1296.

Development along US 76 is residential south of SR 1411, with the Saint Andrews Episcopal Church east of US 76 at SR 1411. Development on SR 1409 is primarily small residential, with commercial and industrial intermixed.

Traffic Volumes, Capacity, and Accident Record

Current traffic volumes range from a low of 16,500 vehicles per day (vpd) east of SR 1409 to 22,500 vpd at the Bradley Creek Bridge. By the year 2010, it is estimated that these volumes will reach 23,000 and 27,000 vpd respectively.

Accident data for a recent three-year period indicates a total of 59 accidents on the project. This yields a total accident rate of 957.79 accidents per hundred million vehicle miles (ACC/100MVM), which is greater than the statewide average of 355.0 ACC/100MVM for similar urban multi-lane US routes. The predominant accident types were left-turn (32%), rear-end (27%), and angle (20%) collisions.

Present capacity on US 76 is approximately 25,000 vpd.

Need for Project

The critical need for this project stems from the need to alleviate traffic flow and safety problems associated with the undesirable, unsafe, back-to-back intersections at SR 1409 and SR 1411. Additionally, the route needs to be realigned to favor the predominant movements between US 76 and SR 1409, and to function correctly as a portion of the future Outer Loop.

III. RECOMMENDATIONS AND COSTS

Upgrades to US 76 are proposed from the Bradley Creek Bridge to SR 1409, continuing on SR 1409 to the existing multi-lane section near US 74.

The improvements include widening to a basic 68-foot, 5-lane curb and gutter section throughout the studied length. This cross section would provide wide outside lanes to accommodate vehicular and bicycle traffic. This widening should be symmetrical along US 76 and SR 1409. Additional lanes would be provided at SR 1411 to accommodate right turns. A schematic layout of the suggested improvements and lane arrangements is shown on Figure 2. The widening to 5 lanes near Bradley Creek will allow protected left-turning movements necessitated by new development west of US 76. US 76 northeast of SR 1409 should be realigned as shown on Figure 2 to create a tee intersection to provide more separation and stacking distance. No upgrades are anticipated for the Bradley Creek Bridge.

The total estimated cost of the recommended improvements is \$1,550,000, including \$1,250,000 for roadway construction, and \$300,000 for right-of-way. A right-of-way width of 100 feet was used for cost estimating purposes. Cost estimates were prepared by the Preliminary Estimate Engineer and the Right-of-Way Branch.

No alternative alignments were considered due to existing terrain and development, and the ultimate thoroughfare plan alignment for the Outer Loop.

IV. OTHER COMMENTS

Possible negative environmental impacts of the recommended project are: (1) loss of a small amount of wetlands near Bradley Creek; (2) loss of a small amount of woodlands along US 76 and SR 1409; (3) increased noise levels for existing development. No relocation of residences or businesses would be involved.

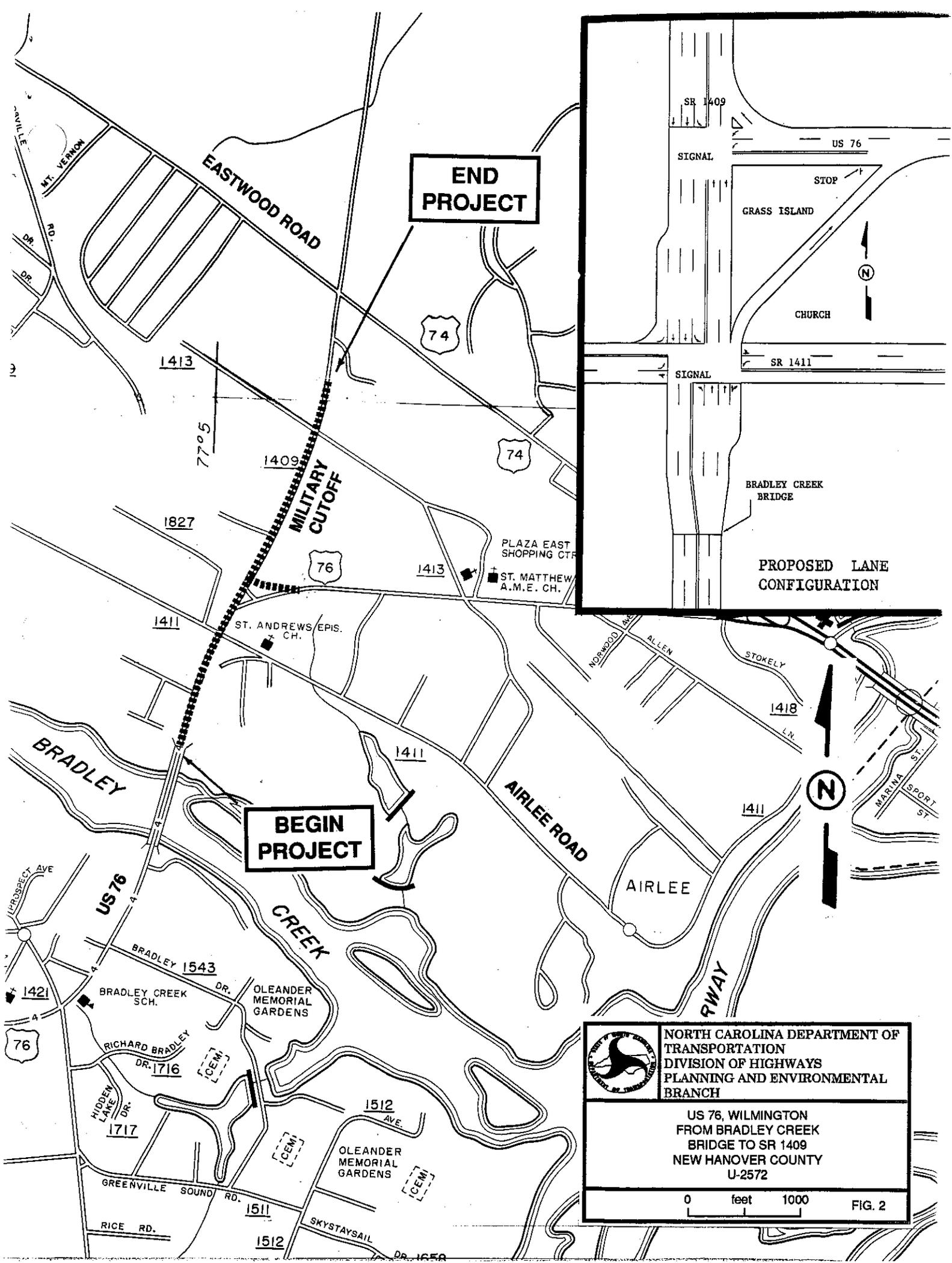
If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning and environmental document prior to that time, and a final decision made as to the most appropriate improvement.

MH/plr

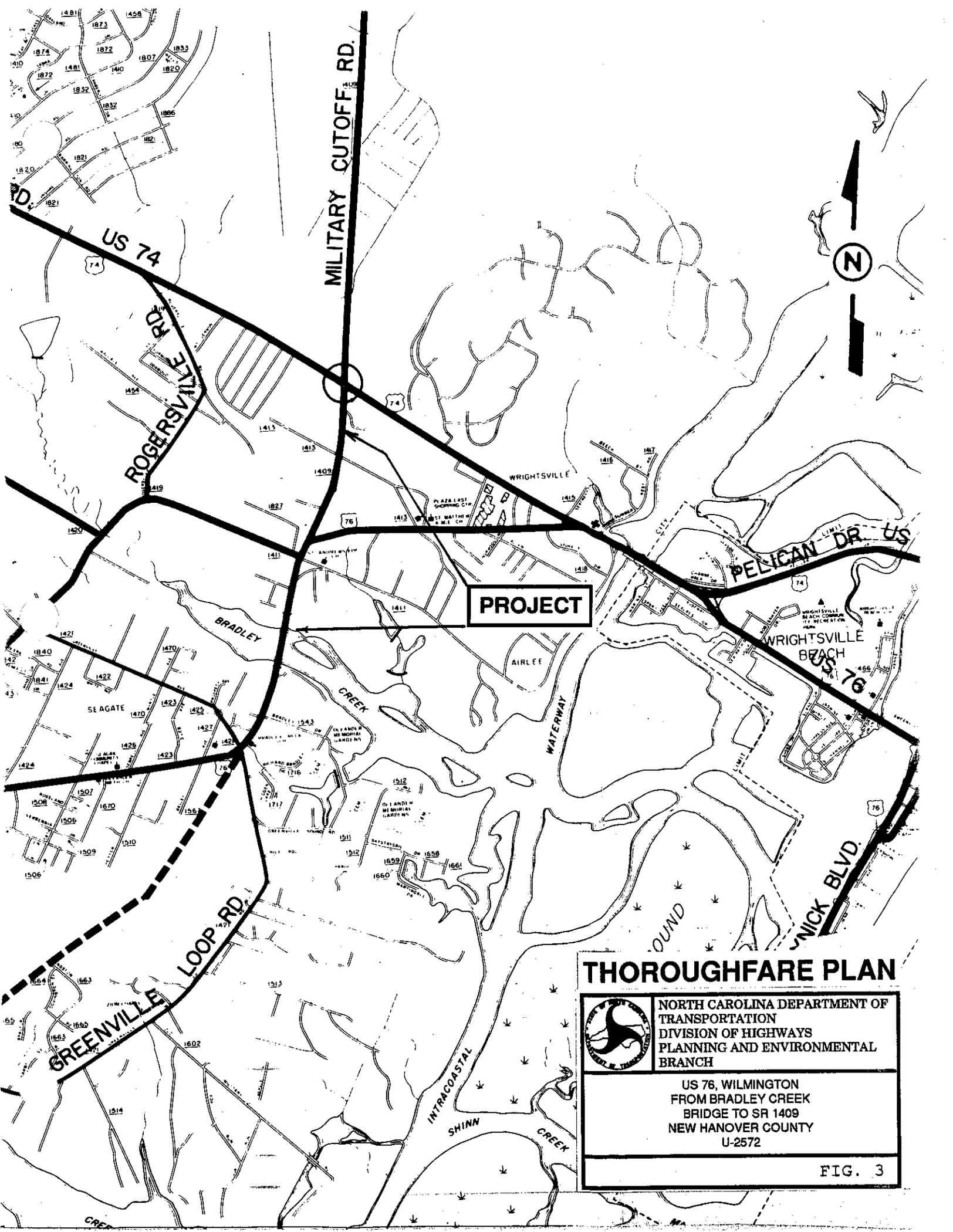


PROJECT VICINITY

	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH</p>
	<p>US 76, WILMINGTON FROM BRADLEY CREEK BRIDGE TO SR 1409 NEW HANOVER COUNTY U-2572</p>
<p>0 miles 2</p>	
<p>FIG. 1</p>	



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH</p>
	<p>US 76, WILMINGTON FROM BRADLEY CREEK BRIDGE TO SR 1409 NEW HANOVER COUNTY U-2572</p>
<p>0 feet 1000</p>	
<p>FIG. 2</p>	



PROJECT

THOROUGHFARE PLAN



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

US 76, WILMINGTON
FROM BRADLEY CREEK
BRIDGE TO SR 1409
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FIG. 3