



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

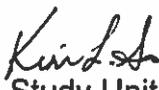
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GARLAND B. GARRETT JR.
SECRETARY

February 6, 1997

MEMORANDUM TO: Whitmel H. Webb, III, P.E.
Manager, Program Development Branch

FROM: Kim So 
Feasibility Study Unit

SUBJECT: Proposed Interchange,
I-40 at SR 1656 (Trinity Road)
Wake County

The Feasibility Study Unit was asked to investigate the proposed interchange on I-40 at SR 1656 (Trinity Road). The proposed interchange is situated between two nearby interchanges: I-40/Wade Avenue interchange approximately 0.7 mile to the north, and I-40/NC 54 interchange about 1 mile to the south (see Figure 1).

The proposed interchange would provide an access from the freeway to the future North Carolina State University athletic complex and the corporations located along Corporate Center Road. The interchange would also provide a link to Trenton Road, and more importantly, to Edwards Mill Road Extension which will connect Trinity Road to US 70 (see Figure 2). The Thoroughfare Plan shows that Cary Parkway will extend to Trinity Road at the intersection with Trenton Road. It is clear that the proposed interchange will be an important access point for the street network in the surrounding area. The significance of this interchange is indicated by the estimated volume of future traffic it will serve (see Figure 3).

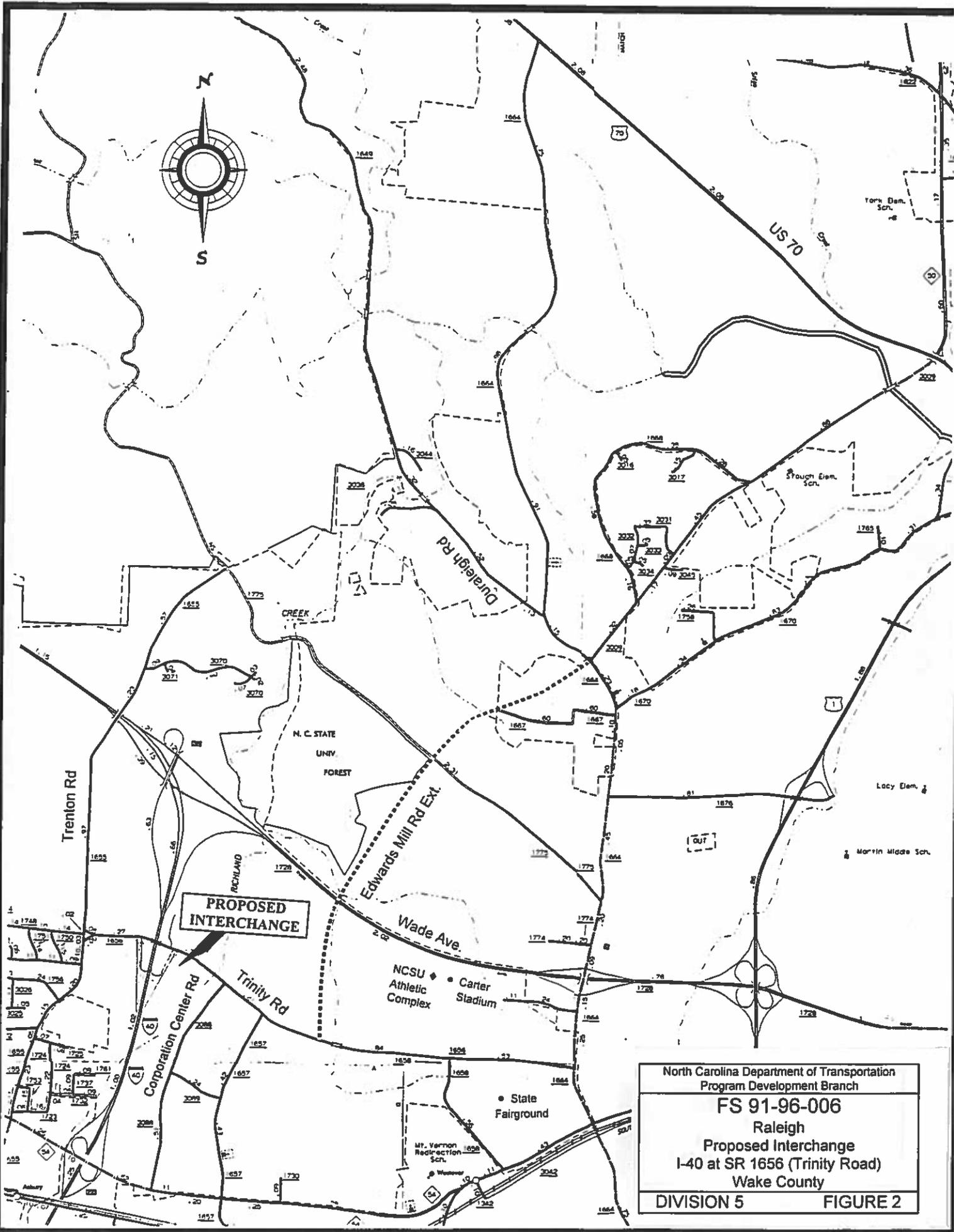
The estimated cost for this project, which also includes the construction of a northbound auxiliary lane from the NC 54 interchange to the proposed interchange, is:

Right of way	\$2,700,000
Construction	\$4,000,000
Total	<hr/> \$6,700,000



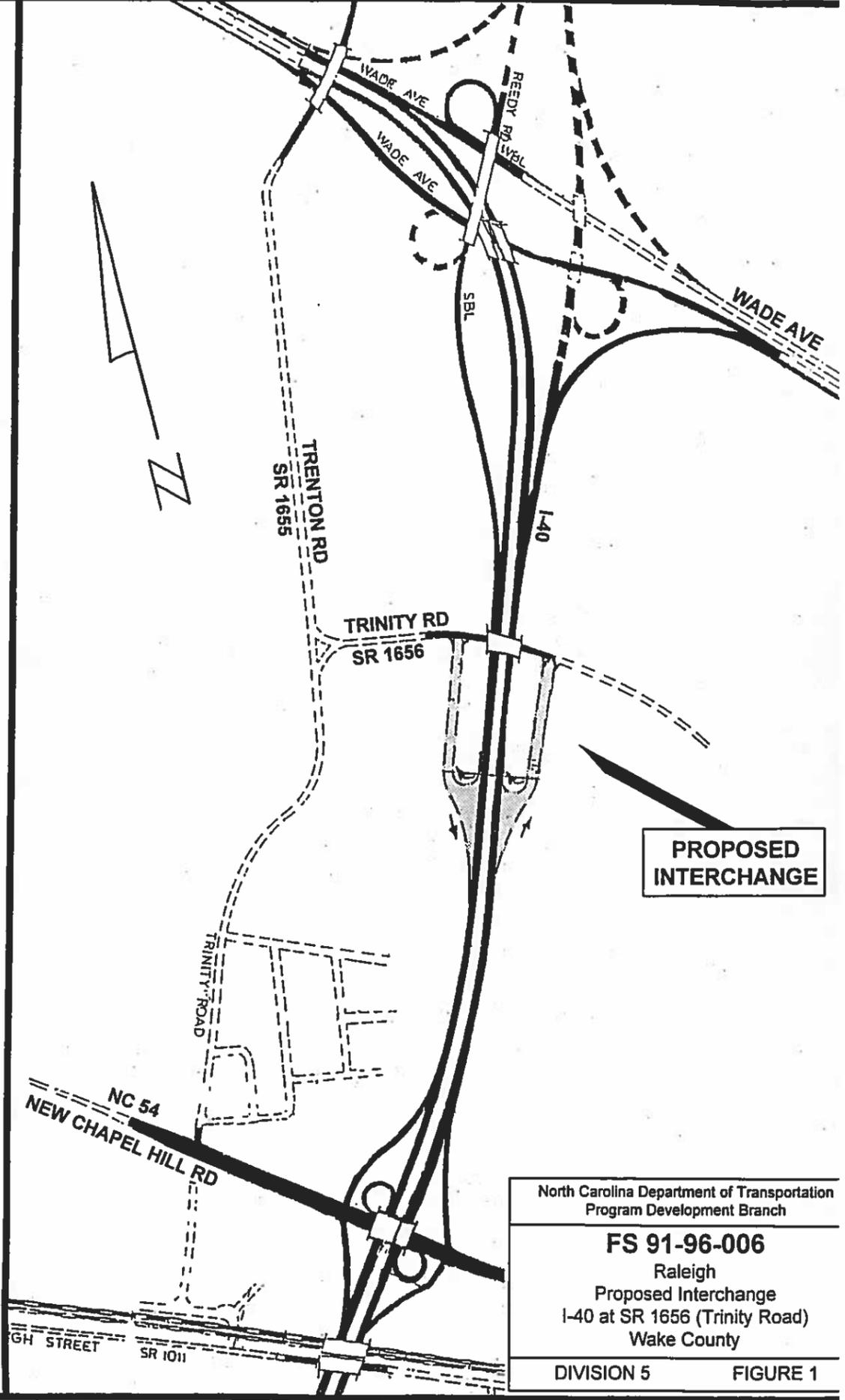
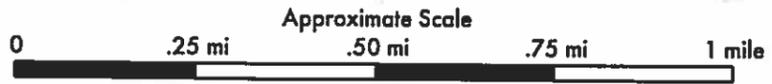
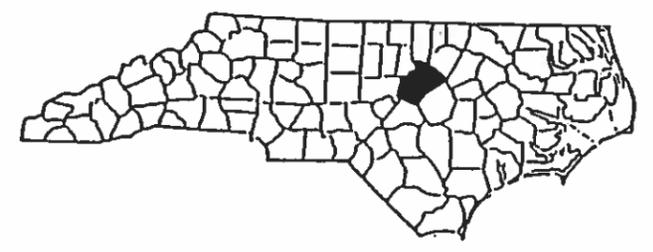
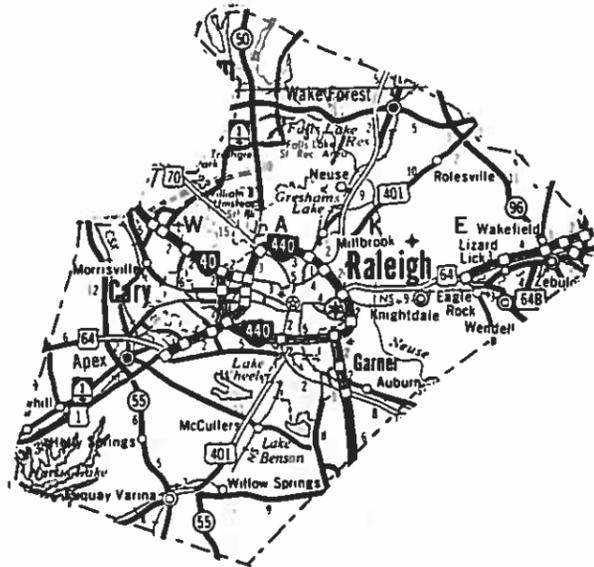
The proximity of the proposed interchange to the existing nearby interchanges on I-40 raises some concerns relative to the weaving maneuvers and the efficiency of traffic operation. The proposed interchange is approximately 0.7 mile from the I-40/Wade Avenue interchange and 1.0 mile from the I-40/NC 54 interchange. Figure 1 indicates that there will be a continuous weaving area from the Wade Avenue interchange ramp to the NC 54 interchange ramp. Figure 1 also shows the short distance (approximately 1000 feet) between two ramp terminals.

The accelerating traffic entering the freeway from Reedy Creek Road will have conflict with the I-40 traffic that weaves into the auxiliary lane to exit the freeway. It will cause the traffic entering the freeway to slow down and weave into the through lane before the freeway speed is attained, resulting in interference to the smooth flow of the through traffic. When there is a high volume of traffic entering the freeway that stays on the auxiliary lane and continues past the exit ramp at the proposed interchange, it will be very difficult for the freeway traffic to maneuver across the auxiliary lane into the exit ramp. Such conflict impedes the smooth traffic operation and, possibly, jeopardizes safety. The traffic within the weaving area between the NC 54 interchange and the proposed interchange will again encounter similar difficulties in weaving maneuvers. The close spacing between these three interchanges will greatly increase the intensity of lane-changing and the resulting level of turbulence.



PROPOSED INTERCHANGE

North Carolina Department of Transportation
 Program Development Branch
FS 91-96-006
 Raleigh
 Proposed Interchange
 I-40 at SR 1656 (Trinity Road)
 Wake County
DIVISION 5 **FIGURE 2**



North Carolina Department of Transportation
 Program Development Branch

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 Proposed Interchange
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DIVISION 5 FIGURE 1