STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

July 19, 2011

MEMORANDUM

TO: Mr. Calvin W. Leggett, P.E.
Manager, Program Development Branch

FROM: Mr. R. N. Prince
Feasibility Studies Engineer

SUBJECT: **R-2586** – Proposed widening of US 158 from east of US 29 in Rockingham County to NC 86/SR 1572 in Caswell County.

As requested, we have completed feasibility study R-2586 for the widening of US 158 from US 29/158 interchange to NC 86/US 158 intersection in Rockingham/Caswell Counties. This project proposes to construct a multi-lane divided highway for the limits mentioned above, a distance of approximately 19.0 miles. Our evaluation of this project was based on a four-lane divided shoulder section, with 12-foot travel lanes, a 46-foot depressed grass median, and 10-foot shoulders (4 feet of which is paved) on 250 feet of right of way. It is anticipated that thirty seven (37) businesses and two hundred sixty two (262) residents would need to be relocated due to this project.

The estimated total cost of this project is as follows:

Construction	$ 109,000,000
Right of Way	$ 138,700,000
Utility Relocation	$ 35,300,000
Total Cost	$ 283,000,000

The current year Average Daily Traffic (ADT) along US 158 ranges from 1,700 vehicles per day (vpd) to 6,500 vpd. For the design year 2035, the traffic volume along US 158 is estimated to range between 3,000 vpd to 9,700 vpd. Truck traffic is estimated to make up approximately 9 percent of the daily traffic.

The existing segment of US 158 operates at a level of service (LOS) C under current traffic volumes. If no improvements are made in the 2035 design year, it is projected that the segment along US 158 will continue to operate at a LOS D. With the proposed improvements, it is projected US 158 will operate at a LOS A.

Between 2008 and 2011, 165 total crashes were reported within the project limits. The crash rate for US 158 is 250.45 crashes per 100 million vehicle miles (crashes/100MVM) traveled. This rate is

significantly higher than the statewide rate; 151.02 crashes/100MVM and a critical rate of 176.68 for a two-lane undivided rural United States routes between 2007 and 2009. There were 53 non-fatal injury crashes, 112 property damage only crashes, and no fatal crash. The most prevalent types of crashes were Animals (34%), Fixed Object (22.4%), Rear End (12.1%), Left Turn (10.9%), Overturn/rollover (6.1%), sideswipe (4.9%) Angle (4.2%) and other (5.4%).

There were threatened and endangered areas identified, wetlands, Water and Environment Concerns within the project study area. See Table 1, 2 and 3 for detailed information.

A detailed investigation was not conducted for this feasibility study; however it is anticipated that there will be possible impacts to a power line property, and a church's cemetary.

Maps at the Survey and Planning Branch of the North Carolina State Historic Preservation Office were used to determine if any historic properties on the National Register of Historic Places (NRHP) or State study lists exist within the proposed project study area. There is 1 (One) known property (Bartlett Yancey House) located within the proposed project study area.

The proposed project study area is located in the Roanoke River Basin. US 158 crosses 2 (Two) water bodies in the project corridor, Hogans Creek and Moon Creek. These water bodies will likely need to be surveyed and have the appropriate coordination with the North Carolina Department of Environment and Natural Resources (NCDENR) and the U.S. Army Corps of Engineers (USACE) during any environmental document study. A portion of the project study area is located in a WS-II and WSIII Water Supply Watershed. Portions of the project study area are located within a floodplain.

Although Caswell Airport is located in the area, it is not expected to be affected.

US 158 crosses wetlands associated with the National Wetland Inventory areas and lanes, Significant National Heritage Area (Hogan Creek floodplains and slopes). Permitting with the U.S. Army Corps of Engineers (USACE) will likely need to be obtained before construction of the project, and appropriate mitigation measures should be taken if deemed necessary.

As you are aware, this work is preliminary and not the product of comprehensive environmental or design evaluations. If you should have further questions or additional information is needed, please do not hesitate to contact me at 715-5538, or via e-mail at rprince@ncdot.gov.

ATT: Table 1: Threatened and Endangered Species
Project Map

cc: Al Avant, Assistant Branch Manager – Programming
Mike Stanley, P.E., Manager – TIP Central Region
Mike Mills, PE, Division 7 Engineer

Table 1. Threatened and endangered species within the project study area.

Type	Scientific Name	FID	Name Catgy.
Wetland	*Peidmont/low mountain alluvial forest*	5262	National Community
Wetland	*Peidmont Mountian Semipermanent impoundment*	8058	National Community

Table 2. Water Environment Concerns

Name	Class	FID	Location
Water Supply Watershed	*WS-III*	*31*	Fuller Creek
Water Supply Watershed	*WS-II*	*42*	Country Line Creek
High Quality Water Zones DWQ	*WSW*	27	Caswell County
High Quality Water Zones DOT	*WS-II*	15	Caswell County

Table 3. Wetlands

Name	NWI Name	FID
Nat. Wetlands Inv. Lanes	PFO1B	*2714*
Nat. Wetlands Inv. Lanes	R2UBH	*2458*
Nat. Wetlands Inv. Areas	PFO1Fb	12882
Nat. Wetlands Inv. Areas	PFO1Cb	13315
Nat. Wetlands Inv. Areas	PBHb	13461
Nat. Wetlands Inv. Lanes	PFO1A	2708
Nat. Wetlands Inv. Areas	PSS1A	14676
Nat. Wetlands Inv. Areas	PEM1Fb	13600
Nat. Wetlands Inv. Areas		13638

There are two Bridges, Bridge No. 151 and 163, Power lines that cross US 158 approximately 0.58 miles east of US 29 ramps, a church and a Fire Station in the vicinity to consider during the design phase.

R-2586 Rockingham/Caswell Counties
Location Map