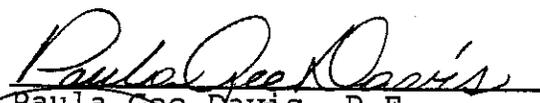


FEASIBILITY STUDY

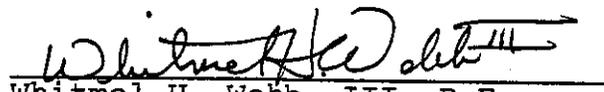
NC 273
New Connector from NC 273 to NC 16
Near Duke Power Village
Gaston County
R-2720

Prepared by
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I. GENERAL DESCRIPTION

This preliminary study describes a proposed 0.66 mile long connector to be built on new location between NC 273 and NC 16 near Duke Power Village in the northeast corner of Gaston County. The vicinity map is shown on Figure 1 and the project location is shown on Figure 2. The proposed roadway is a two lane pavement 24 feet wide, with 2 foot wide paved shoulders on each side. The proposed right of way is 100 feet wide. The southwest terminal of the connector is on NC 273 approximately 2000 feet south of the NC 273-SR 1992 (Old NC 16) intersection. From this terminal the connector will run in a northeast direction, on new location to NC 16, a distance of approximately 0.66 miles. The total estimated cost for this improvements is \$1,110,000.

This is not an exhaustive environmental or design investigation but a preliminary study to define feasible project alternatives and determine estimated right-of-way and construction costs for these alternatives.

II. NEED FOR PROJECT

The purpose of this project is to provide area motorists with a direct connection between NC 273 and NC 16 that will likely be safer and require less travel time than the current connection which is via SR 1992. See Figure 2 for the location of the proposed connector.

NC 273 currently terminates at SR 1992 (Old NC 16). NC 16, a 4 lane median divided facility, runs generally parallel to and north of SR 1992 and was opened to traffic in January 1990. Without the proposed connector, traffic bound for NC 16 is forced to travel 2.8 miles north on SR 1992 or 1.1 miles south on SR 1992 to reach NC 16. A comparison of the frequency of traffic accidents on NC 16 (a 4-lane divided facility) with the accident frequency on SR 1992 (a 2-lane roadway) reveals that accidents occur nearly 8 times less frequently on NC 16 than on SR 1992. The accident rate on NC 16 and SR 1992 were found to be 37 accidents per 100 million vehicle miles (Acc/100 MVM) and 282 Acc/100 MVM respectively.

Development along NC 273, in the project area, is primarily rural/residential with the exception of a large truck assembly plant (approximately 1500 employees). The NC 273 corridor has had a 5 to 10 percent increase in population from 1980 to 1990 and this rate of growth is expected to continue.

Both SR 1992 and NC 273 are federal aid secondary, rural routes and both are classified Rural, Major Collectors in the North Carolina Functional Classification System.

NC 273 is a 2-lane rural section with a 24 foot wide pavement and 6 foot wide unpaved shoulders on a 60 foot wide right of way. NC 16 is a 4-lane divided highway with a 64 foot wide median and 9 foot wide unpaved shoulders. SR 1992 is a 2-lane, rural section with a 24 foot wide pavement and 5 foot grass shoulders on right of way 60 feet wide.

The Average Daily Traffic (ADT) volumes on the proposed connector for 1991 and 2011 are estimated to be 4400 vehicles per day (vpd) and 8800 vpd respectively. For NC 16 the ADT volumes for 1991 and 2011 are estimated to be 12,000 vpd and 24,000 vpd respectively. A capacity analysis indicates the proposed connector will operate at a level of service D through the year 2011.

The accident frequency on new NC 16 was compared to that on old NC 16 (SR 1992) for the period 2-1-90 through 1-31-91. On new NC 16 during this period there were 5 accidents resulting in an accident rate of 37 Acc/100 MVM while on SR 1992 there were 10 accidents resulting in an accident rate of 282 Acc/100 MVM. The proposed connector will provide NC 273 traffic with direct access to the safer NC 16 facility in contrast to the circuitous and less safe SR 1992.

III. RECOMMENDATIONS

It is recommended to construct a 0.66 mile long connector on new location between NC 273 and NC 16 near Duke Power Village in Gaston County. The project location is shown on Figure 2. The proposed roadway cross section is a two lane pavement, 28 feet wide, on a 100 foot wide right of way. The southwest terminal of the connector is on NC 273 approximately 2000 feet south of the NC 273-SR 1992 (Old NC 16) intersection. From this terminal the connector will run in a northeast direction on new location to NC 16, a distance of approximately 0.66 miles.

The project will intersect SR 1992 and NC 16 at grade. The intersection at NC 16 will be controlled with a fully traffic actuated traffic signal while the intersection with SR 1992 will be controlled with stop signs on SR 1992. At the southwest terminal, the resulting "Y" type intersection will be controlled with stop signs for southbound traffic on the northwest leg. This project will likely not require any business or residential relocations. The total estimated cost for the recommended improvements is \$1,110,000 as follows:

R/W Cost	:	\$	310,000
Construction Cost	:		800,000
Total Cost	:	\$	1,110,000

IV. STUDIED ALTERNATIVES

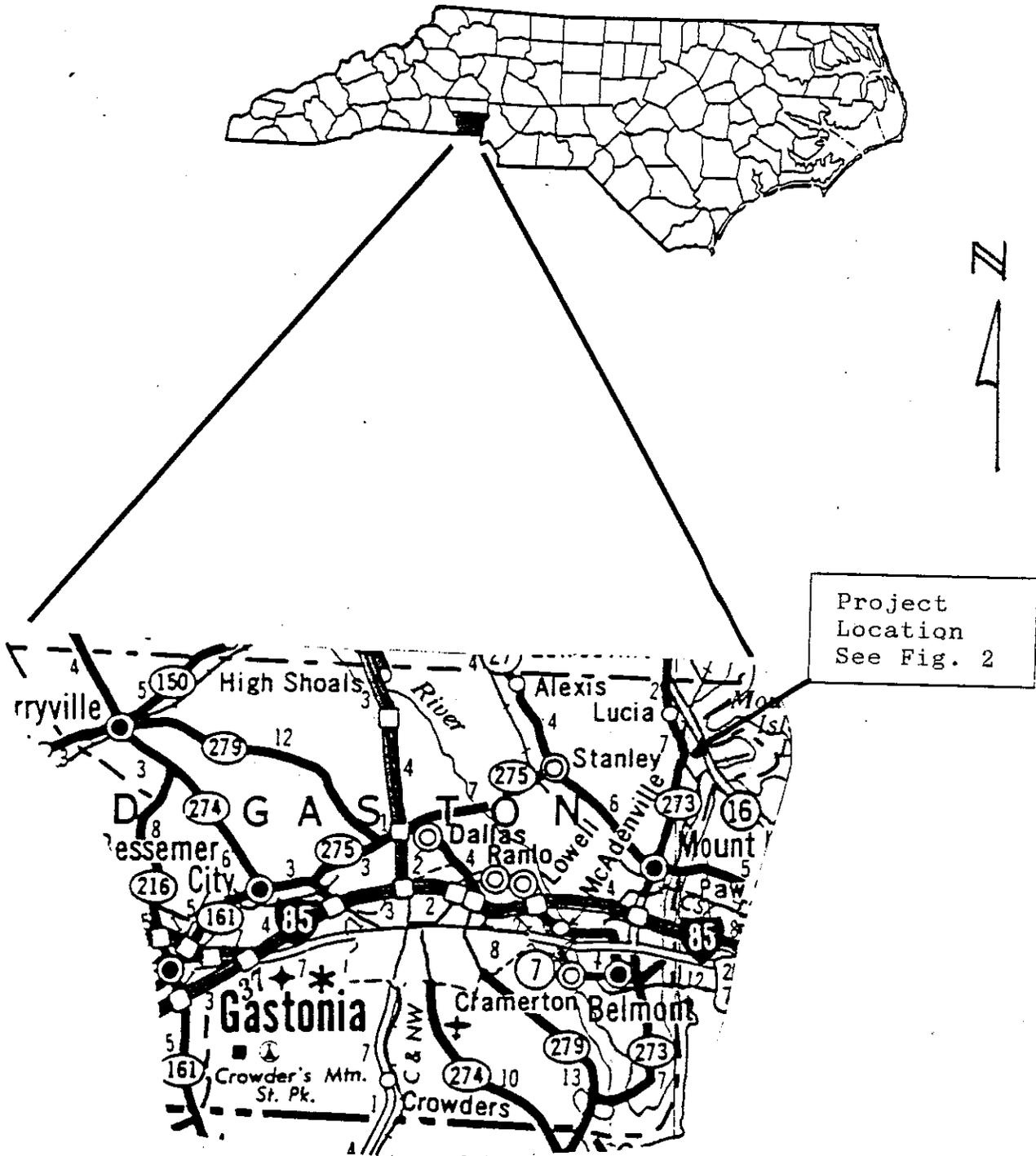
A 4-lane median divided cross section was considered for the proposed connector, however current and projected future traffic volumes do not warrant these improvements at this time. This alternative is estimated to cost \$1,860,000 as follows:

R/W Cost	:	\$	310,000 ^a
Construction Cost	:		1,550,000
Total Cost	:	\$	1,860,000

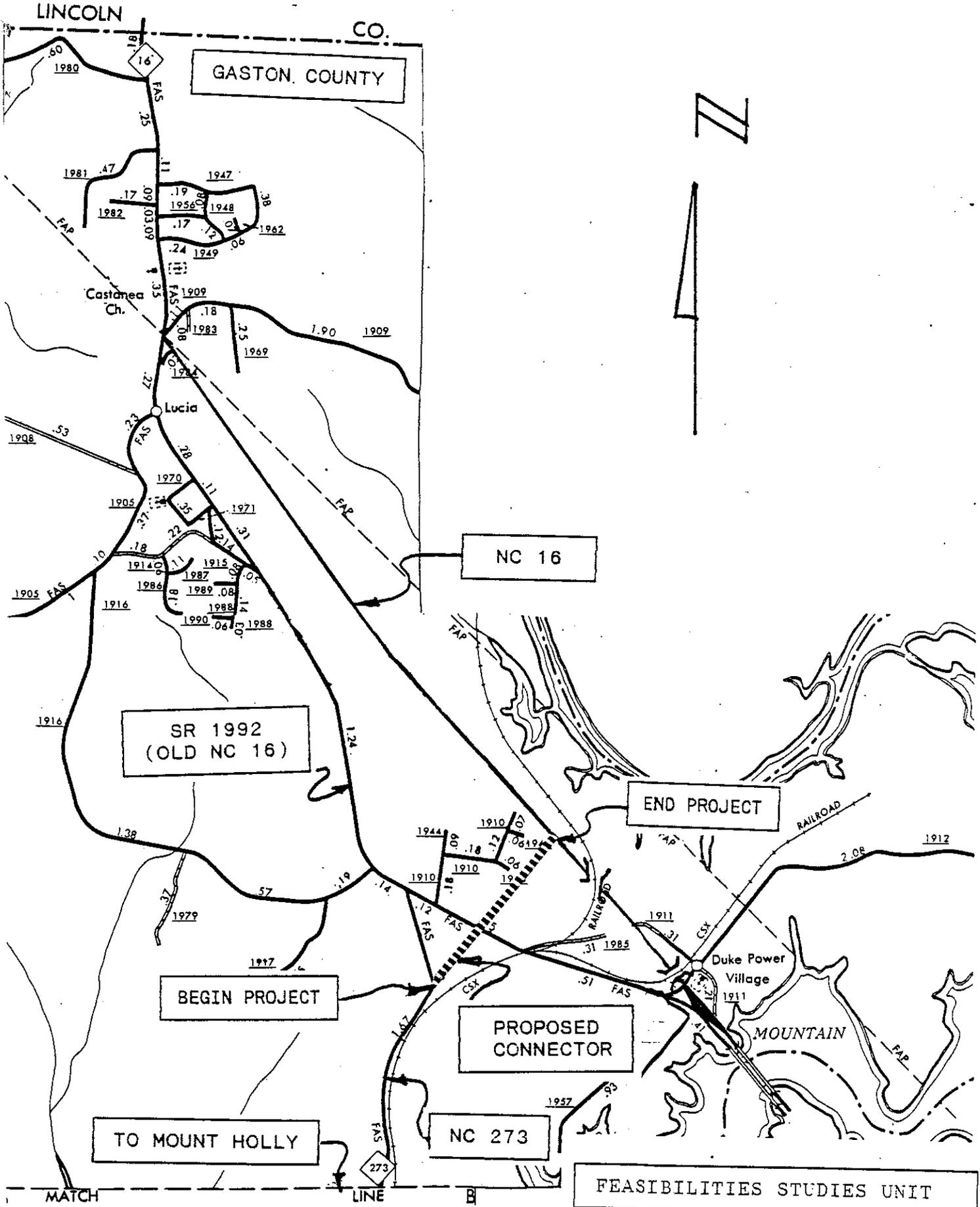
V. OTHER COMMENTS

Consideration was given to widening NC 273 from the proposed connector to south of the truck assembly Plant, however current and projected future traffic volumes do not warrant this widening.

An environmental screening was conducted and no significant environmental problems are anticipated.



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Figure 1. Vicinity Map New Connector From NC 273 to NC 16	
R-2720	Gaston County



SCALE

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Figure 2. Location Map
New Connector
From NC 273 to NC 16

R-2720 Gaston County