

FEASIBILITY STUDY

Battleboro
New Connector

from US 301 in Nash County
to SR 1407 (Battleboro-Leggett Road) in Edgecombe County

Nash and Edgecombe Counties

U-3329

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation


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Date



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I. GENERAL DESCRIPTION

This preliminary study describes a proposed connector on new alignment from US 301 near NC 4 to SR 1407 (Battleboro-Leggett Road) at its intersection with SR 1412 (Morning Star Church Road) south of Battleboro (See Figure 1). The studied cross section is a two-lane, 24-foot (7.3-m) roadway with 8-foot (2.4-m) shoulders, including 2-foot (0.6-m) paved shoulders, on 100 feet (30.5 m) of right of way. The project crosses the CSX Railroad which carries 28 trains a day at 79 mph (127 kmph). Three grade separation options were studied: (1) a conventional earth fill with structure; (2) a reinforced earth fill with structure; and (3) a conventional elevated structure. The estimated construction costs range from \$ 3,400,000 to \$ 10,600,000.

The length of the studied connector is 0.9 miles (1.5 km).

The details of the studied alternates are presented in the RECOMMENDATIONS section along with their total costs. No residences or businesses will be located as a result of the proposed project.

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the problem, recommend a treatment including costs, and identify potential problem areas that require special consideration in the planning and design phases.

II. NEED FOR PROJECT

This project will provide several benefits to the surrounding area. This connector will provide an alternate route for traffic using SR 1407 through Battleboro, reduce the impact to Town utilities buried under SR 1407 and avoid conflicts with the railroad grade crossing. Carlisle Plastics would have improved access to US 301 and NC 4 utilizing SR 1411 (Gainor Avenue), SR 1407, and SR 1400 (Old Battleboro Road) in conjunction with the new connector. Abbott Laboratories would benefit by having access east of the railroad. A similar connector is shown on the Battleboro Thoroughfare Plan.

The studied alignment crosses open land with minor involvement with woodland and Beech Branch. A major NC Power transmission line parallels the CSX rail line. Crossing the rail line and adjusting the power line are the major considerations in this project.

Representatives of NC Power have visited the site and have offered alternates with regard to the transmission lines. One alternate provides for raising the double circuit 230 KV line on existing right of way to provide clearance and a second alternate provides for relocation of the line. Additionally, two single circuit wood H-frame lines will require adjustment. The estimated costs are \$230,000; \$320,000; and \$30,000, respectively. For the purposes of this study, it will be assumed that the most satisfactory alternate will be the relocation of the 230 KV double circuit lines.

The CSX Railroad has 28 trains per day at approximately 79 mph (127 kmph) using the existing tracks. Previous consideration for an additional at-grade crossing has been denied. The design year 2020 traffic volume of 3000 vehicles per day combined with the 28 trains per day yields an index of 74,000. An index of 30,000 is the threshold for a grade separation.

The 1994 estimated traffic that would use the connector is 2000 vehicles per day. The design year 2020 traffic is estimated to be 3000 vpd. The proposed two lane roadway will function at Level of Service B through the design year.

III. RECOMMENDATIONS

This preliminary study recommends the construction of the studied connector on new alignment from US 301 near NC 4 to SR 1407 (Battleboro-Leggett Road) at its intersection with SR 1412 (Morning Star Church Road). The studied cross section is a two-lane, 24-foot (7.3-m) roadway with 8-foot (2.4-m) shoulders, including 2-foot (0.6-m) paved shoulders, on 100 feet (30.5 m) of right of way. Three grade separation options were studied: (1) a conventional earth fill with structure; (2) a reinforced earth fill with structure; and (3) a conventional elevated structure. The estimated construction costs range from \$ 3,400,000 to \$ 10,600,000. Coordination of this study with Abbott Laboratories indicates that any of the three studied crossings of the CSX lines will meet their approval and comes with an offer to donate the required right of way under their ownership. Abbott Laboratories owns the property along the studied corridor between US 301 and SR 1400 (Old Battleboro Road).

The recommended construction alternate is a connector utilizing a conventional earth fill and bridge structure to cross the CSX railroad. The studied structure is 170 feet (51.9 m) long and has a clear deck width of 40 feet (12.2 m). It is additionally recommended that the NC Power transmission lines be relocated in order to provide the necessary clearance over the roadway. This relocation is particularly critical in the construction phase of this project. Traffic signals are recommended at US 301 and SR 1407. The total estimated cost is \$ 4,000,000 as follows:

Construction	\$ 3,400,000
Utilities	350,000
Right of Way	250,000
Total	<u>\$ 4,000,000</u>

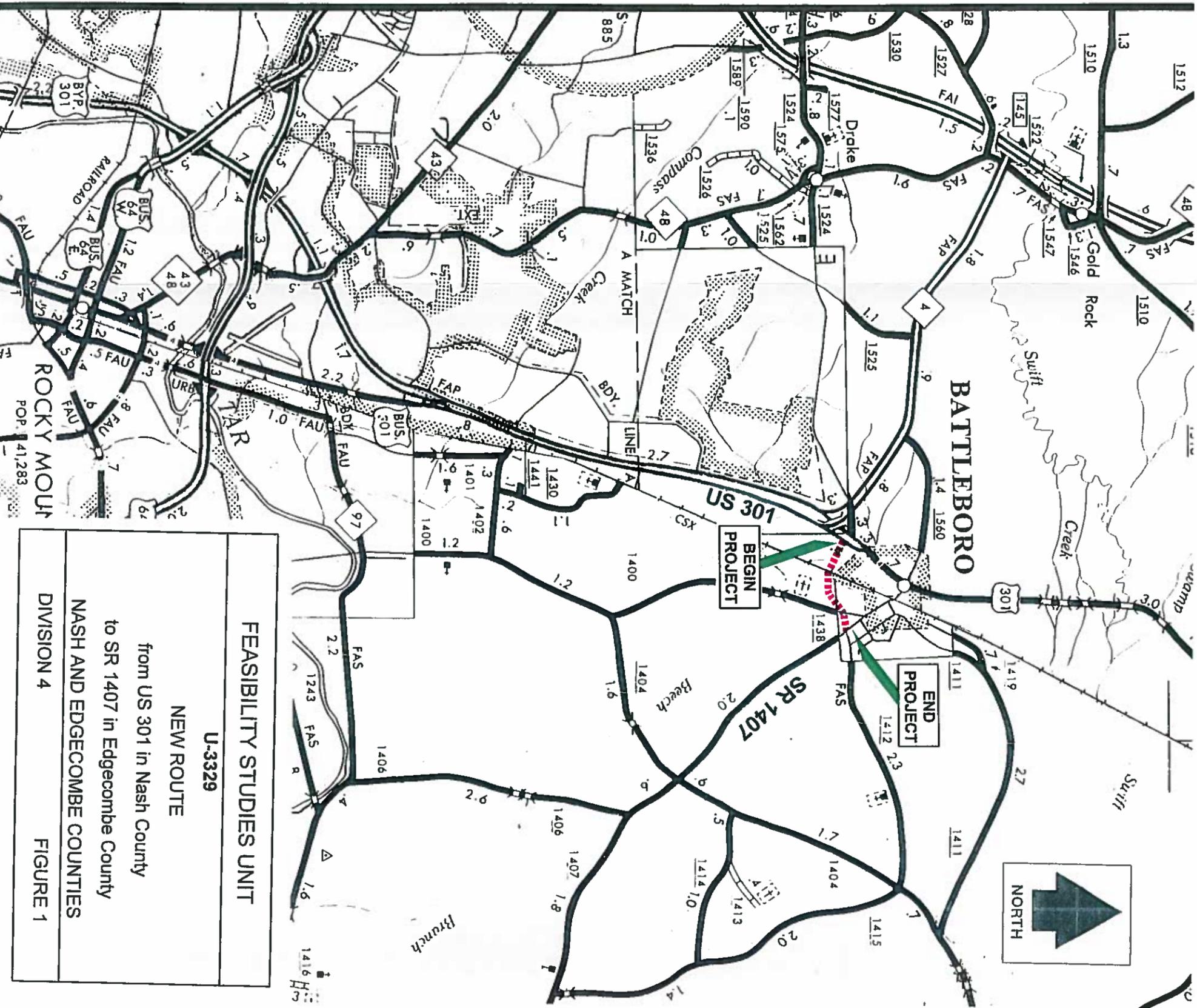
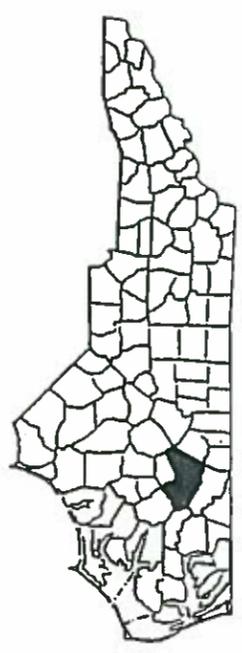
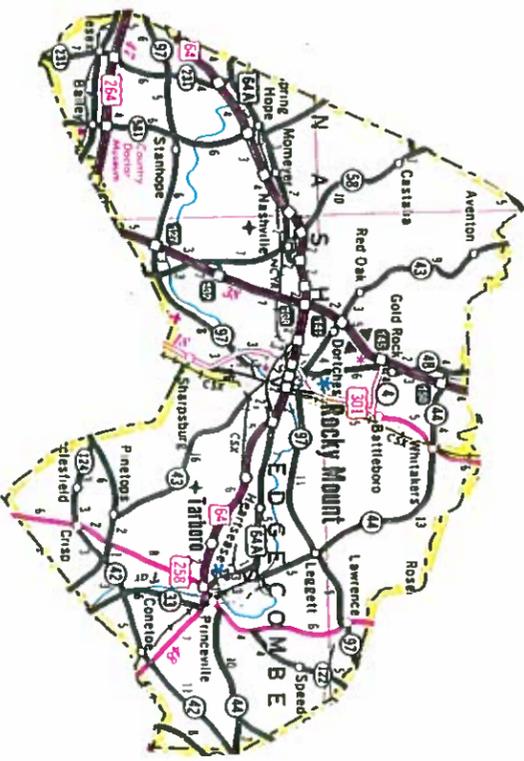
There will be no residential or business relocations as a result of this project.

The right of way estimate above does not consider the potential donation of right of way by Abbott Laboratories. The utilities cost, excluding NC Power; acquisition costs; and remaining right of way costs may approach \$ 70,000.

IV. OTHER COMMENTS

Two additional grade separation alternates of the CSX railroad were studied. The reinforced earth fill would add \$ 7,200,000 to the estimated construction cost and the conventional elevated structure would add \$ 3,300,000. All other costs would remain the same. For economic reasons, these alternates are not competitive with the recommended conventional earth fill alternate.

An environmental screening was not conducted for this study. Based on available mapping at the Department of Environment, Health and Natural Resources - Natural Heritage Section, no threatened and/or endangered species were identified in the study corridor. Impacts to wetlands are expected to be minor and a Corps of Engineers Section 404 Nationwide Permit is anticipated.



FEASIBILITY STUDIES UNIT
U-33329
NEW ROUTE
 from US 301 in Nash County
 to SR 1407 in Edgecombe County
 NASH AND EDGECOMBE COUNTIES
 DIVISION 4 **FIGURE 1**

