

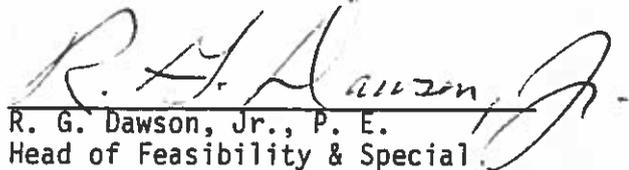
FEASIBILITY STUDY

NC 42  
From Proposed US 264 Bypass  
To Wilson City Limits, Wilson County  
R-2532

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



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I. DESCRIPTION

This report covers a preliminary study of the proposed improvement of NC 42, from the Wilson city limits to the proposed US 264 Bypass, a distance of approximately 2.8 miles. The project location is shown on Figure 1. This project is included in the 1990-1996 Transportation Improvement Program for feasibility study and/or right of way protection. No funds have been appropriated for this project.

II. PURPOSE OF PROJECT

Existing Road Characteristics

NC 42 serves as a collector route in the primarily rural areas of eastern North Carolina. It appears as a major thoroughfare on the mutually adopted Wilson Thoroughfare Plan and is classified as a rural major collector in the North Carolina Functional Classification System.

The existing cross section on the studied segment of NC 42 consists of a 20-foot paved roadway, with 10-foot shoulders (4-foot paved and 6-foot grassed). At SR 1203 (Millbrook Drive), the pavement flares out on the south side of the project with curb and gutter installed 26 feet from the centerline of the highway for a total roadway width of 41 feet (face of curb to edge of pavement). The pavement is marked to provide a left-turn lane at this location and also at the nearby entrance to Greenfield School. The eastern terminus of the project ties into an existing 5-lane curb and gutter section which extends eastward for approximately 2 miles toward the Wilson central business district.

The existing alignment of NC 42 is generally good and is constructed in relatively flat terrain. The speed limit along the facility varies from 45 to 55 mph.

There is one bridge located on the project where it crosses Bloomery Swamp. The bridge is 60 feet long with a roadway width of 28 feet. This bridge was built in 1935 and has a sufficiency rating of 69.4 out of a possible 100 points.

Development along the project is generally light with the primary land use being agricultural. Other development includes a residential subdivision at Millbrook Drive, Greenfield School, 2 churches, a radio station, and the Contentnea Volunteer Fire Department.

Traffic Volumes, Capacity and Accident Record

The current traffic volume on NC 42 is 6800 vehicles per day (vpd). This volume is projected to be 13,000 vpd by the year 2010. With this projection, capacity of the facility will be exceeded before the end of the planning period.

During a recent 3 1/2-year period, a total of 50 accidents were reported along the studied portion of NC 42. This resulted in an accident rate of 224.92 accidents per 100 million vehicle miles (ACC/100 MVM), compared to a statewide average of 214.2 ACC/100 MVM for all rural two lane NC routes. Rear-end and angle type accidents accounted for approximately half of the total accidents. There were no fatalities, but 29 of the accidents resulted in injuries.

### Need for Project

The existing two-lane width along NC 42 is not sufficient to adequately handle the increasing traffic demands. With NC 42 interchanging with existing I-95 and proposed US 264 bypass, it will become more important major radial serving the Wilson area.

## III. RECOMMENDATIONS AND COSTS

Upgrading NC 42 from SR 1165 Forest Hills Road at the City Limits to the proposed US 264 interchange is recommended due to the increasing traffic volume.

The recommended improvements to the existing two-lane width consist of widening to a 5-lane curb and gutter section, 64-foot face-to-face of curbs. Due to its age, the bridge over Bloomery Swamp should be replaced.

Widening is recommended to be generally symmetrical throughout the project. At the existing curb and gutter section at Millbrook Drive and Greenfield School, it should be shifted to the north to minimize right-of-way damage. Widening of the sharp curve at the intersection of SR 1158 should be on the inside of the curve to obtain a better alignment. A 100-foot right-of-way was used for cost estimate purposes.

The total estimated cost of the recommended improvement is \$6,560,000, including \$4,800,000 for roadway construction and \$1,760,000 for right-of-way. Cost estimates were prepared by the Preliminary Estimate Engineer and the Right of Way Branch.

## IV. ALTERNATIVES CONSIDERED

Since the proposed project involves the widening of an existing highway, no alternative alignments were considered.

A four-lane cross section was considered for the improvement to NC 42. The four-lane alternative would cost less than the recommended five-lane cross section, but the interference of existing driveways and side streets and the turning traffic which they generate would create a capacity deficiency on this section before the end of the planning period. Without the center turn lane, the roadway would not only have a capacity deficiency, but would have a higher accident potential due to the high number of turns. Drivers are accustomed to using the left lane of a highway as a high speed through lane and are not expecting vehicles

to be stopped or turning from this lane. The four-lane cross section would not appreciably lessen the accident potential for rear-end and angle collisions over the present roadway, and these have been the predominant types of accidents on this highway in the past. Due to the inadequate capacity, the difficulty of turning into adjacent development, and the higher accident potential, a four-lane cross section is not recommended.

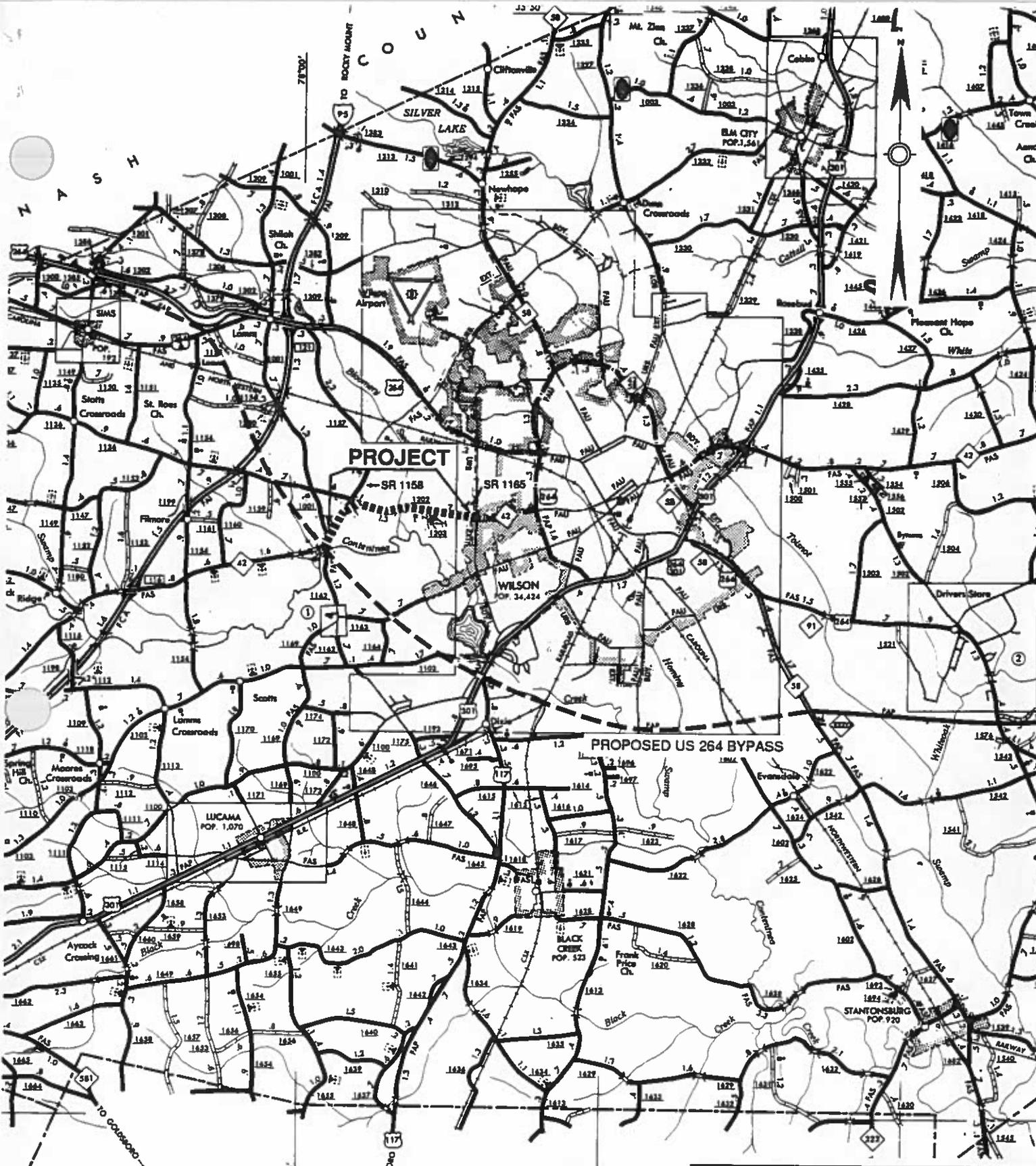
#### V. ENVIRONMENTAL EFFECTS

The most significant effect of the proposed project would be the relocation of five residences and one business. There will be limited wetland impacts associated with the replacement of the bridge over Bloomery Swamp. Other impacts will be primarily related to the actual construction of project and will cease upon completion of the project. These include minor erosion and siltation, increased noise levels from construction machinery, and delay and inconvenience to motorists.

#### VI. FUTURE ACTIVITIES

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/environmental document prior to that time, and a final decision made as to the most appropriate improvement.

RJB/sdt



**PROJECT**

**PROPOSED US 264 BYPASS**

W A Y N E C



**NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PLANNING AND RESEARCH BRANCH**

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