

Feasibility Study

Kernersville

SR 2045 (East Mountain Street), SR 1005, & SR 1008  
From NC 66 in Kernersville  
To SR 2001 in Colfax  
Forsyth and Guilford Counties

Divisions 7 & 9

U-3617

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 the proposed widening of SR 2045 (East Mountain Street), SR 1005, and SR 1008 (formerly US 421) from NC 66 in Kernersville, Forsyth County, to SR 2001 in Colfax, Guilford County. The project location is shown on Figure 1. The proposed cross-section is a five-lane curb-and-gutter section, 68 feet (20.7 m) wide from face-to-face of curbs with 10-foot (3.0-m) berms, for the entire project length of 2.8 miles (4.5 km). This cross-section will accommodate anticipated bicycle traffic. East Mountain Street is a designated bicycle route (Kernersville Connector, Route #15) on the Winston-Salem/Forsyth County Bike Map.

The proposed improvements include replacing the existing Norfolk-Southern Railroad bridge (Structure No. 251), revising the SR 2045 - SR 1005 intersection to favor the heavy east-west traffic flow between these roads, and the minor relocation of Old Greensboro Road where it intersects SR 1008. The relocation of Old Greensboro Road will allow the removal of the existing at-grade railroad crossing on Old Greensboro Road, but will require a new at-grade railroad crossing within the relocation.

This project will likely require 1 business relocation and 3 residential relocations. The required right-of-way width is 100 feet (30.5 m). The total cost including construction and right-of-way is estimated to be \$16,700,000.

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 needs, recommend a treatment including costs, and identify potential problem areas that require consideration in the planning and design phases.

II. NEED FOR PROJECT

The purpose of this project is to increase the traffic carrying capacity and safety of SR 2045, SR 1005, and SR 1008 in Forsyth and Guilford Counties. The project was requested by the Winston-Salem Urban Area TAC and the Greater Winston-Salem Chamber of Commerce, and is supported by the Town of

Kernersville. The project corridor serves as an alternative route to the Triad International Airport and is growing in importance as an industrial corridor. Triad Park, a recreation park, now being developed by Forsyth and Guilford Counties, will have a major entrance on the project corridor, creating increased traffic demands. The Forsyth County Parks and Recreation Department is administering the park construction and will operate the park. The park is scheduled to open in September, 1997. Most of the required land has been acquired. According to the Forsyth County Parks and Recreation Director, the acquired parcels that front the project corridor have a dedicated 50-foot (15.2-m) wide right-of-way, measured from the centerline of existing SR 1008, for the project road, and the parcels acquired in the future that front the corridor, will also have this dedication.

The project corridor is classified as a Major Collector in the North Carolina Statewide Functional Classification System, and is a Major Thoroughfare on the Winston-Salem - Forsyth County Thoroughfare Plan. Land use along the project corridor is mainly a mix of commercial and industrial uses, with more dense development in the western half of the project. The eastern half of the corridor is characterized by more undeveloped land and single family residences.

SR 2045, SR 1005, and SR 1008 are each 2-way paved shoulder sections with pavements approximately 24 feet (7.3 m) wide and turf shoulders 6 to 8 feet (1.8 to 2.4 m) wide. The intersection of SR 2045 and SR 1005 is controlled with a stop sign on SR 2045. The intersection of SR 2045 and NC 66 (the western project terminus) is controlled with a traffic signal. The intersection of SR 1008 and SR 2001 (the eastern project terminus) is controlled with a stop sign on SR 2001. Old Greensboro Road (SR 2042 and SR 1846) is a paved 2-lane shoulder section with a pavement approximately 22 feet (6.7 m) wide. The existing right-of-way for these roads is the "maintained limits" which appears to be approximately 60 feet (18.3 m).

Recently purchased property for the Triad Park has a dedicated right-of-way 50 feet (15.2 m) wide measured from the centerline of existing SR 1008. Due to the proximity of the railroad on the south side, some right-of-way in addition to the above mentioned reserves, will be required on the north side of SR 1008 adjacent to the proposed park. The length of this additional right-of-way is approximately 1,000 feet (305 m) measured from the west park boundary. The additional width is estimated to vary from 80 feet to 0 feet, forming a triangle of approximately 1 acre.

Bridge Number 251 in Forsyth County carries the Norfolk Southern Railroad over the project roadway. Currently there

are 7 trains per day on this track traveling at 35 mph. This railroad is not a part of the Governor's High Speed Rail Corridor. This structure was built in 1941 and has a vertical clearance of 13.67 feet (4.2 m). It is proposed to replace this structure with a structure having a vertical clearance of 15.5 feet (5.1 m). This will require construction of a railroad detour approximately 1,000 feet (305 m) in length.

Traffic volume estimates for the project corridor for the years 1996 and 2020 are 13,000 vehicles per day (vpd) and 27,000 vpd respectively. The Level of Service (LOS) without the proposed improvements is estimated to be LOS E in 1996 and LOS F in 2020. With the estimated improvements the LOS is estimated to be Level B in 1996 and Level C in 2020.

Traffic volume estimates for Old Greensboro Road for the years 1996 and 2020 are 1,100 vehicles per day (vpd) and 6,400 vpd respectively. This unusually large growth in traffic is due to the impact of Project U-2800 which is discussed on page 4 and shown on Figure 1.

During the three year period beginning March 1, 1993 and ending February 29, 1996, there were 55 accidents reported within the project limits. This resulted in a total accident rate of 253 accidents per 100 million vehicle miles (ACC/100MVM). This compares with the statewide average of 348 ACC/100MVM for all urban secondary routes, in North Carolina, for 1994.

There were no fatal accidents reported and 28 accidents resulted in 47 injured persons. The most prevalent type accidents were Left-turn (35 %), Rear-end (24 %), and Ran off road (22 %). The proposed wider cross-section with a center turn lane will reduce the potential for these type accidents.

### III. RECOMMENDATIONS

It is proposed to widen SR 2045 (East Mountain Street), SR 1005, and SR 1008 (formerly US 421) from NC 66 in Kernersville, Forsyth County, to SR 2001 in Colfax, Guilford County. The project location is shown on Figure 1. The proposed cross-section is a five-lane curb-and-gutter section, 68 feet (20.7 m) wide from face-to-face of curbs with 10-foot (3.0-m) berms, for the entire project length of 2.8 miles (4.5 km). This cross-section will accommodate anticipated bicycle traffic. East Mountain Street is a designated bicycle route (Kernersville Connector, Route #15) on the Winston-Salem/Forsyth County Bike Map.

The proposed improvements include replacing the existing Norfolk-Southern Railroad bridge (Structure Number 251),

revising the SR 2045 - SR 1005 intersection to favor the heavy east-west traffic flow between these roads, and the minor relocation of Old Greensboro Road where it intersects SR 1008. The relocation of Old Greensboro Road will allow the removal of the existing at-grade railroad crossing on Old Greensboro Road, but will require a new at-grade railroad crossing within the relocation, to be protected with automatic signals and gates. The Exposure Index for this crossing is 44,800. Although this Exposure Index exceeds the guidelines for a grade separation; a grade separation is not feasible at this location.

The total cost including construction and right-of-way is estimated to be \$ 16,700,000 as follows:

Right-of-Way	.....	\$ 5,900,000
Construction	.....	<u>10,800,000</u>
Total Cost	.....	\$16,700,000

#### IV. OTHER COMMENTS

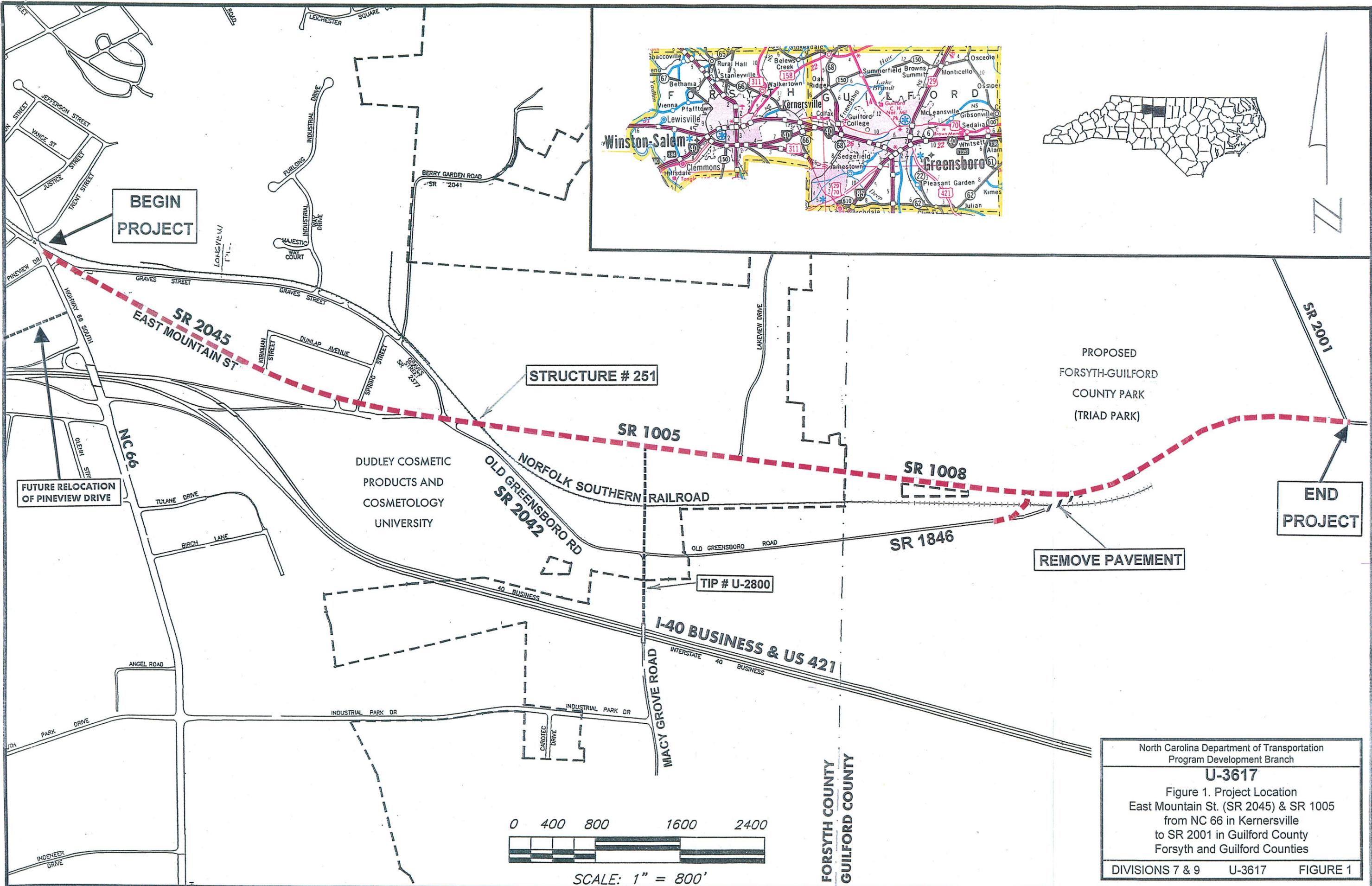
An environmental screening was not conducted for this study. No wetlands or endangered species are anticipated.

The Town of Kernersville has expressed an interest in closing Spring Street at SR 2045. This might facilitate the operation of the driveway entrance from the Dudley Cosmetic Complex.

The Town of Kernersville has plans to relocate Pineview Drive as shown on Figure 1. This will help relieve the multi-legged intersection where Pineview Drive, NC 66, and East Mountain Street now meet.

Underground utilities within the project corridor include water distribution mains and natural gas distribution mains.

Project U-2800 is the widening and extension of Macy Grove Road from I-40 Business to SR 1005 as shown on Figure 1. The Feasibility Study for this project was completed on 10/12/1992. The Environmental Assessment is scheduled to begin in 1998. The feasibility study recommends converting the existing grade separation at I-40 Business to an interchange, widening Macy Grove Road to a 5-lane section, and extending Macy Grove Road from Old Greensboro Road to SR 1005. The study recommends at-grade intersections with Old Greensboro Road and with the railroad.



0 400 800 1600 2400



SCALE: 1" = 800'

FORSYTH COUNTY  
GUILFORD COUNTY

North Carolina Department of Transportation  
Program Development Branch

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Figure 1. Project Location  
East Mountain St. (SR 2045) & SR 1005  
from NC 66 in Kernersville  
to SR 2001 in Guilford County  
Forsyth and Guilford Counties

DIVISIONS 7 & 9 U-3617 FIGURE 1