FEASIBILITY STUDY

NC 24-27 (Albemarle Road)

from US 74 (Independence Boulevard) to Wilora Lake Road

Mecklenburg County

U-3603

Division 10

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

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3/11/97
Date

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I. GENERAL DESCRIPTION

This feasibility study evaluates the potential for the widening of NC 24-27 (Albemarle Road), from US 74 (Independence Boulevard) to Wilora Lake Road in Mecklenburg County (See Figure 1). The project is approximately 1.4 miles (2.3 kilometers) in length. The studied typical section is a six-lane, 16-foot (4.9-meter) wide raised, median-divided, curb and gutter section with 10-foot (3.0-meter) wide berms and sidewalks on both sides. A 115-foot (35.1-meter) wide right-of-way with existing, partial and full access control is recommended. Two interchange configurations were studied at the existing NC 24-27/Sharon Amity Road intersection. The estimated cost of the project with a half-cloverleaf interchange is $ 39,300,000 ($ 28,800,000 for right-of-way and $ 10,500,000 for construction). The estimated cost of the project with a single-point urban (SPUI) interchange is $ 50,600,000 ($ 39,800,000 for right-of-way and $ 10,800,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents studied cross-sections for improvements, general corridors of improvements, and estimated costs of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues that deserve consideration in the planning and construction stages.

II. NEED FOR PROJECT

The studied improvements are needed to reduce traffic congestion on NC 24-27 (Albemarle Road). NC 24-27 is classified as an other principal arterial on the Statewide Functional Classification System. This route is classified as a major thoroughfare on the Charlotte-Mecklenburg Thoroughfare Plan.

The existing NC 24-27 is mainly a four-lane, 56-foot (17.1-meter) face-to-face, curb and gutter section with 8-foot (2.4-meter) wide berms and sidewalks on both sides. Older records indicate that there may be as much as 100 feet (30.5 m) of existing right-of-way. Approximately 80 feet (24.4 m) of right-of-way

may be claimed. There are additional left-turn lanes at major intersections. Land use along the studied corridor consists of dense commercial development.

The west terminus is located just east of the intersection with US 74 (Independence Boulevard) (See Figure 1). This is also the terminus for TIP Project U-209B, the US 74 (Independence Boulevard) widening. The east terminus is located at the intersection with Wilora Lake Road (See Figure 1). East of this location, NC 24-27 continues as a six-lane, divided roadway.

Estimated 1996 average daily traffic (ADT) on NC 24-27 is 36,400 vehicles per day (vpd). In the design year 2020, the traffic volume is expected to be 59,400 vpd. Design year traffic on Sharon Amity Road is estimated to range from 49,000 to 56,000 vpd. The existing NC 24-27 is operating at a level of service (LOS) D, and is anticipated to operate at a LOS F in the design year 2020. With the recommended roadway widening and proposed interchange, the current traffic volumes along NC 24-27 would operate at a LOS C and in the design year, LOS D.

During the period from February, 1993, through January, 1996, there were 401 accidents reported along the studied section of NC 24-27. This resulted in an accident rate of 1259.8 accidents per 100 million vehicle miles (acc/100mvm) compared to a statewide average of 317.2 acc/100mvm for this type of facility. Rear-end collisions accounted for a majority of the accidents (62%). There were no fatalities reported. The recommended improvements are expected to reduce the accident rate.

III. STUDIED ALTERNATES

Two alternates were evaluated for widening NC 24-27 (Albemarle Road) from the existing 4-lanes to 6-lanes from US 74 to Wilora Lake Road, a distance of approximately 1.4 miles (2.3 kilometers). The studied typical section is a six-lane, 16-foot (4.9-meter) wide raised, median-divided, curb and gutter section with 10-foot (3.0-meter) wide berms and sidewalks on both sides. There would be three 12-foot (3.7-meter) wide lanes in each direction. A 115-foot (35.1-meter) wide right-of-way with partial control of access is recommended. Widening may be symmetrical and asymmetrical to the existing roadway to minimize right-of-way and construction costs.

Due to the high volume of traffic and the excessive number of accidents at the intersection of Sharon Amity Road and NC 24-27 (Albemarle Road), an interchange is recommended at this location. A single-point urban interchange and a half-cloverleaf interchange were evaluated. The single-point urban interchange will provide better traffic operations with the estimated high turning

volumes. The right-of-way to provide the single point urban interchange is $ 11,000,000 more costly than that for the half-cloverleaf interchange.

Utilizing the SPUI design, access should be full control between Pierson Drive and Grafton Place to protect the capacity potential of the interchange. Sharon Amity Road would cross over NC 24-27 with approximately 1500 to 2000 feet (458 to 610 m) of grade change on Sharon Amity Road. Additional right-of-way along Sharon Amity Road will be required to accommodate this interchange.

The alternate interchange studied was a half-clover interchange with loops and ramps in the northwest and southeast quadrants. For the half-clover interchange, full control of access would be needed on the north side between Pierson Drive and Sharon Amity and on the south side between Sharon Amity and Starkwood Drive. Approximately 1500 to 2000 feet (458 to 610 m) of grade change would be required on Sharon Amity along with additional right-of-way.

The studied improvements are expected to decrease traffic congestion and improve safety.

Moderate utility conflicts are expected.

It is estimated that this project would require the relocation of 3 residences and 48 businesses with the half-cloverleaf alternate and 2 residences and 60 businesses with the SPUI alternate.

Total project cost is estimated as follows:

Half-cloverleaf interchange alternate

Right-of-Way	$ 28,800,000
Construction	10,500,000
Total	$ 39,300,000

Single-point urban interchange alternate

Right-of-Way	$ 39,800,000
Construction	10,800,000
Total	$ 50,600,000

IV. OTHER COMMENTS AND CONCERNS

Based on a GIS screening, it is not anticipated that this project will require any environmental permits.

If the right-of-way were to remain as existing, controlled by driveway permits only, between Starkwood Drive and Wilora Lake Road, an estimated savings of $ 6,000,000 is expected in the right-of-way cost of either alternate.

US 74 (INDEPENDENCE BLVD)
TIP # U-209 F

NC 24/27 (ALBEMARLE RD)
TIP # U-209 B

BEGIN STUDY

END STUDY

SHARON AMITY RD

CENTRAL AVE

WILORA LAKE RD

REDDMAN RD

ALBEMARLE

EASTWAY JR. HIGH SCH.

ASBURY MEM. CH.

WINTERFIELD ELEM. SCH.

SHEFFIELD PARK

GOOD SHEPPARD LUTH. CH.

HILLCREST GOLF COURSE

CENTRAL UNITED METH. CH.

OAKHURST ELEM. SCH.

WOONSOCKET SPINNING CO.

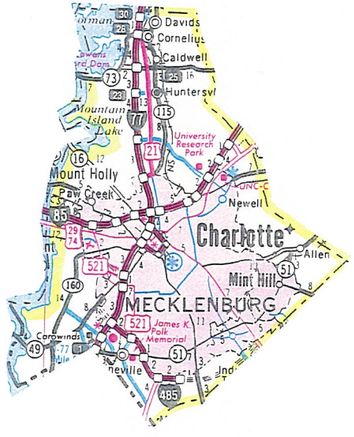
EASTERN

2940

3300

24 27

0 1000 2000 FEET



North Carolina Department of Transportation
Program Development Branch

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Charlotte
NC 24/27 (Albemarle Road)
from US 74 (Independence Boulevard)
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DIVISION 10 FIGURE 1