

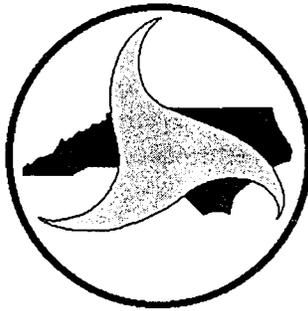
FEASIBILITY STUDY

Belmont

NC 7 (N. Main St.)
from SR 2560 (N. Central Ave.)
to SR 2093 (Belmont / Mt. Holly Rd.)
Gaston County

Division 12

U-3608



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


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3/7/97
Date

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I. General Description

This feasibility study describes widening NC 7 (N. Main St.) from SR 2560 (N. Central Ave.) to SR 2093 (Belmont / Mt. Holly Rd.), a distance of 0.4 miles (0.6 km). The project location is shown on Figure 1. The recommended cross-section is a five-lane curb and gutter section, 64 feet (19.5 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on 100 feet (30.5 m) of right-of-way with no access control. It is anticipated that there will be no residential or business relocations due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$2,900,000.

There is a groundwater incident adjacent to the project right-of-way. Please see the Additional Comments section for more information.

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 proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

II. Need for Project

The purpose of this project is to improve the safety and the traffic flow for NC 7 within the project limits. This project is supported by the City of Belmont.

NC 7 is designated as a major thoroughfare in the Gaston Urban Area Thoroughfare Plan and as a principal urban arterial in the North Carolina Statewide Functional Classification System.

Development along the project is mostly commercial, with businesses, restaurants and churches along both sides of the roadway throughout the project limits. There is also a shopping center located in the northeast corner of the intersection with US 29-74 (Wilkinson Blvd.).

NC 7 (N. Main St.) is currently a four-lane undivided curb and gutter roadway with a pavement width varying between 48 feet (14.6 m) and 68 feet

(20.7 m) from face-to-face of curbs. South of SR 2560 (N. Central Ave.), NC 7 becomes a two-lane curb and gutter roadway that is 40 feet (12.2) wide from face-to-face of curbs. North of the McAdenville Road intersection, the roadway continues as SR 2093 (Belmont / Mt. Holly Rd.) and is a four-lane facility with a structure over Interstate 85. There is also an existing 4-foot (1.2-m) sidewalk on the west side of the roadway throughout the project limits.

There is a railroad adjacent to the project along the eastern side of the roadway. This railroad is owned by NCDOT and is currently not in service. The alignment of this railway was recently realigned to accommodate a new right-turn lane into a shopping center. This railroad crosses US 29-74 (Wilkinson Blvd.) east of NC 7 (N. Main St.) and is currently protected by flashers.

There are existing traffic signals at the intersections with SR 2560 (N. Central Ave.), US 29-74 Wilkinson Blvd.) and SR 2093 (Belmont / Mt. Holly Rd.) / NC 7 (McAdenville Rd.).

Colonial Petroleum maintains a petroleum pipeline located near the intersection with SR 2093 (Belmont / Mt. Holly Rd.). Special accommodations to protect this pipeline must be made if any construction occurs in this area.

O'Connor Grove A.M.E. Zion Church is located south of the intersection with SR 2093 (Belmont / Mt. Holly Rd.) on the west side of the roadway. There are several gravesites here located within 12 feet (3.7 m) of the edge of pavement.

The 1996 Average Daily Traffic (ADT) along NC 7 (N. Main St.) varies from 13,400 to 20,600 vehicles per day (vpd). For the design year 2020, the estimated traffic volumes on NC 7 will range between 18,200 and 30,000 vpd. Truck traffic is estimated to make up two percent of daily traffic.

Currently NC 7 is operating at Level of Service (LOS) D. If no improvements are made, it is projected that the roadway will operate at LOS E in the design year 2020. If NC 7 is widened to a five-lane curb and gutter section, the facility will operate at LOS C in the current year and at LOS D in the design year 2020.

During the three-year period from October 1993 to September 1996, there were 80 accidents reported on NC 7 (N. Main St.) within the project limits. There were 45 injuries reported as a result of these accidents, including no fatalities. The accident rate along NC 7 within the project limits is 1060.37 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1994 statewide rate of 388.90 acc/100mvm for four-lane undivided urban NC routes. Widening this project to a five-lane curb and gutter section and constructing additional turn lanes should help alleviate the accident problem in this area.

III. Recommendations

It is recommended to widen NC 7 (N. Main St.) from SR 2560 (N. Central Ave.) to SR 2093 (Belmont / Mt. Holly Rd.), a distance of 0.4 miles (0.6 km). The project location is shown on Figure 1. The recommended cross-section is a five-lane curb and gutter section, 64 feet (19.5 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on 100 feet (30.5 m) of right-of-way with no access control. Due to the presence of heavy utilities and limited right-of-way on the west side of the roadway, it is recommended to widen NC 7 asymmetrically to the east side of the roadway throughout the project.

It is recommended to realign the NCDOT railroad within the project limits to accommodate the asymmetrical widening of NC 7. This will straighten and improve the existing alignment of the railroad without having major effects to the crossings at US 29-74 (Wilkinson Blvd.) and at a shopping center driveway. Retaining walls may be required on the shopping center property to minimize the impact of the railroad realignment on parking.

It is recommended to upgrade the existing signals at SR 2560 (N. Central Ave.), US 29-74 and SR 2093 (Belmont / Mt. Holly Rd.) / NC 7 (McAdenville Rd.). In order to accommodate traffic demands, a double left-turn lane from eastbound US 29-74 onto northbound NC 7 will be required via symmetrical widening along US 29-74. It is also recommended to upgrade the railroad crossing at US 29-74 with gates and to coordinate operation of the flashers and gates with the traffic signal at NC 7.

It is anticipated that there will be no residential or business relocations due to this project. The total cost of the project is as follows:

Construction.....	\$ 1,600,000
Right-of-way.....	\$ 1,300,000
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Total Cost	\$ 2,900,000

IV. Additional Comments

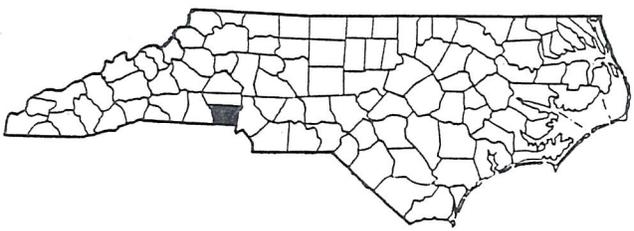
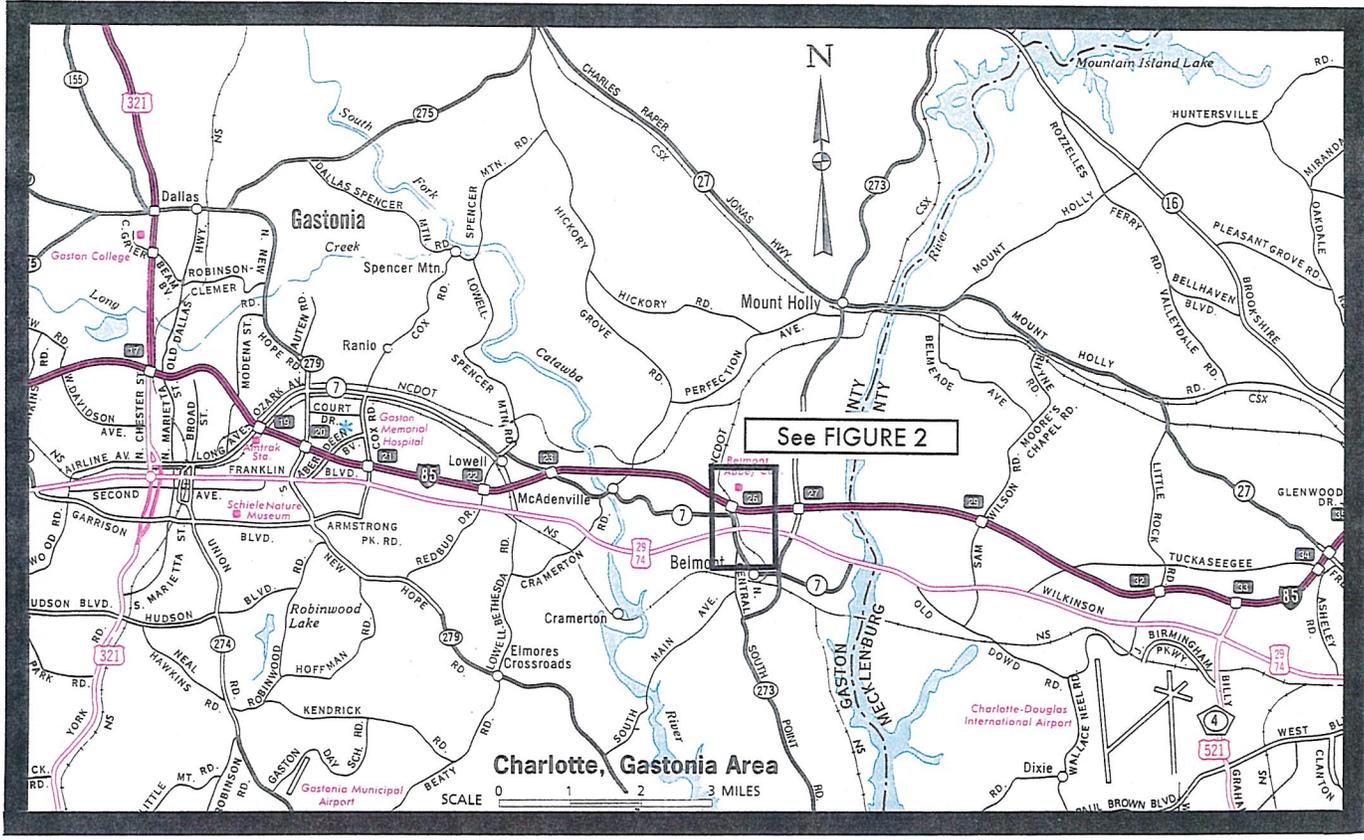
A GIS survey indicated there is a groundwater incident in the southeast quadrant of the intersection with US 29-74. According to the Department of Environment, Health & Natural Resources - Groundwater Section, Incident # 5240 was an Exxon station with gasoline and diesel fuel leaks from underground storage tanks. According to their records, the tanks have been removed, but contamination of soil and groundwater has been confirmed. This site currently has a low cleanup priority. The GIS survey also indicated this project is within a protected water supply watershed.

All work regarding the adjacent NCDOT railroad should be coordinated with the Rail Division to ensure adequate design and right-of-way.

An environmental screening was not conducted for this study. However, no impacts to historic properties or wetlands are anticipated.

Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

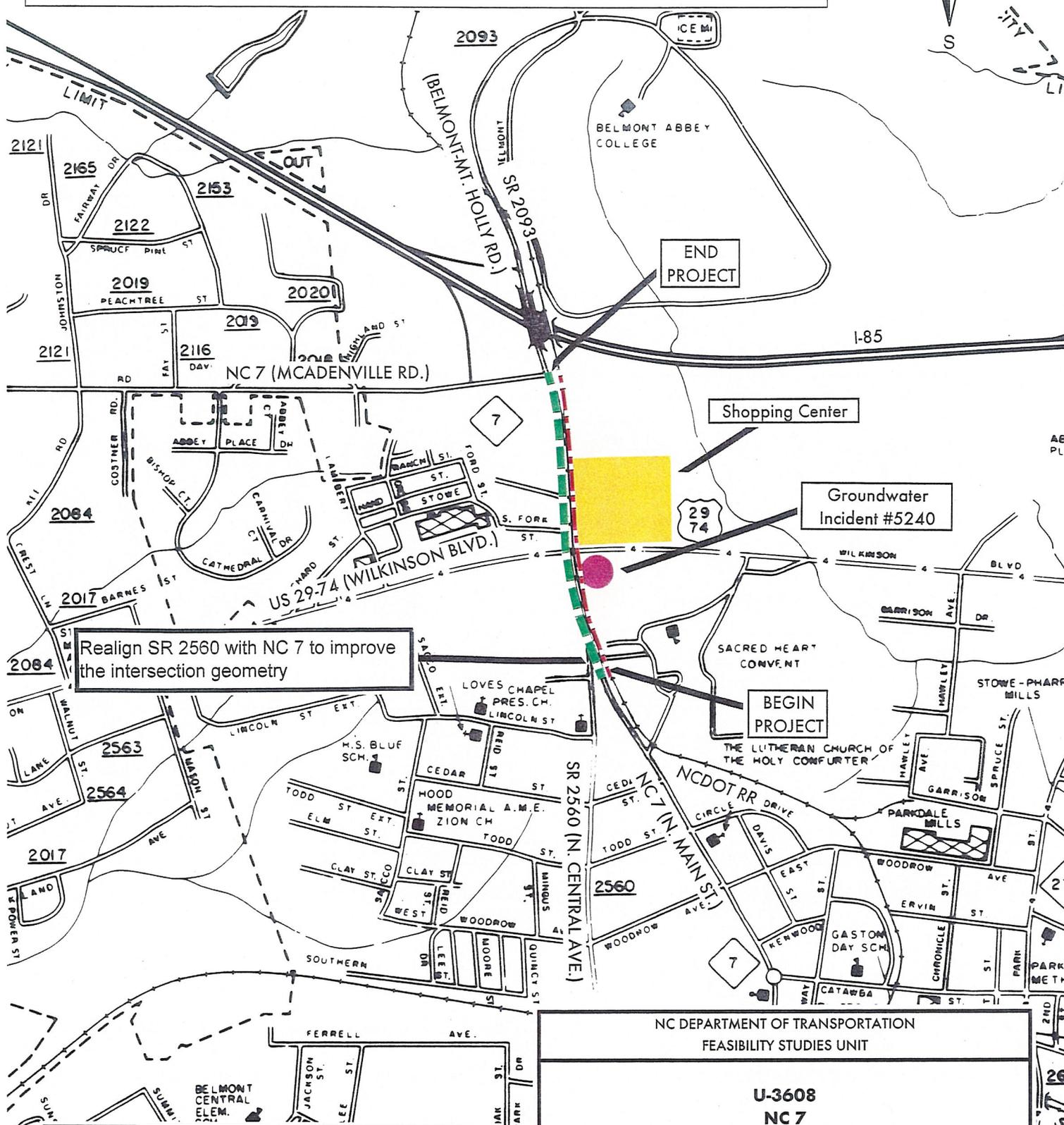
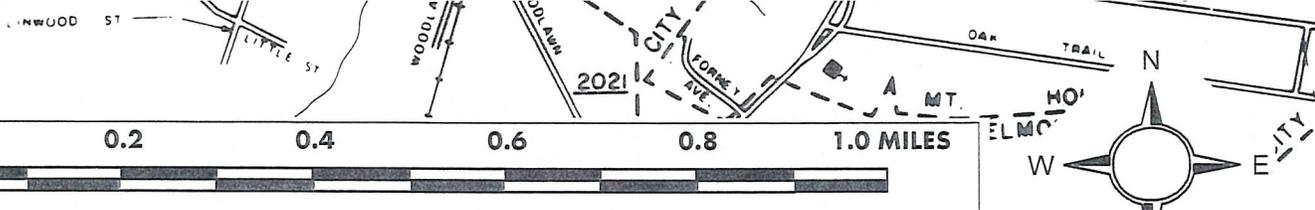
No special accommodation for bicycles is recommended on this project.



NC DEPARTMENT OF TRANSPORTATION
FEASIBILITY STUDIES UNIT

U-3608
NC 7
FROM SR 2560 (N. CENTRAL AVE.)
TO SR 2093 (BELMONT-MT. HOLLY RD.)
BELMONT

DIVISION 12	GASTON COUNTY	FIGURE 1
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Realign SR 2560 with NC 7 to improve the intersection geometry

END PROJECT

Groundwater Incident #5240

BEGIN PROJECT

NC DEPARTMENT OF TRANSPORTATION
 FEASIBILITY STUDIES UNIT

U-3608
NC 7
FROM SR 2560 (N. CENTRAL AVE.)
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BELMONT

DIVISION 12 | **GASTON COUNTY** | **FIGURE 2**

LEGEND

- PROPOSED FIVE-LANE SECTION
- PROPOSED RAILROAD IMPROVEMENTS