

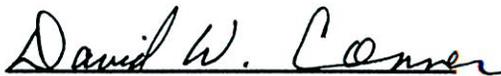
Secret

FEASIBILITY STUDY

**Monroe Bypass Extension
From the Charlotte Outer Loop (R-211)
To US 74 (R-2559 - Monroe Bypass)
Mecklenburg and Union Counties**

R-3329

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



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Date

**Monroe Bypass Extension
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To US 74 (R-2559 - Monroe Bypass)
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I. General Description

This feasibility study describes extension of the proposed Monroe Bypass (R-2559) in Union County to the proposed Charlotte Outer Loop (R-211) in Mecklenburg County. Please see Figure 1 for the project location.

NOTE: The length of this project (R-3329) is dependent on the final alignment of project R-2559, which is in the EIS stage at the time of this writing. The western section of R-2559 has been narrowed down to two alternate alignments which are shown on the attached Figure 1 and are designated as Alternate 1 and Alternate 2.

Throughout this report, this project (R-3329) will be discussed in two segments. Segment 1 extends from the Charlotte Outer Loop (R-211) to Alternate 1 of the Monroe Bypass at approximately 0.1 miles (0.2 km) west of the eastern leg of R-1508 (Poplin Road). Segment 2 extends from the eastern terminal of Segment 1 to approximately 0.1 miles (0.2 km) west of US 601. Segment 1 will be required regardless of the selected alternate of R-2559 and Segment 2 will be required if Alternate 2 of R-2559 is selected.

Segment 1 is approximately 6.4 miles (10.3 km) long and Segment 2 is approximately 1.7 miles (2.7 km) long.

The recommended cross section, for both segments 1 and 2 is a 4-lane, divided, shoulder section with 12-foot (3.6-m) wide travel lanes, a 46-foot (14.0 -m) wide median, 2-foot (0.6-m) wide inside paved shoulders, and 10-foot (3.0-m) wide outside paved shoulders.

A 250-foot (76.2-m) wide right-of-way, on new location, with full control of access is recommended for both segments of this project.

In Segment 1, diamond type interchanges are recommended at SR 1365, SR 1520, the western leg of SR 1508, and SR 1514.

If Alternate 1 of the Monroe Bypass is the selected Alternate, Segment 1 of this project will require a new interchange at the eastern leg of SR 1508.

Grade separations will be required at SR 1523, SR 1501, SR 1518, SR 1367, and SR 1509 in Segment 1.

No new interchanges are recommended as part of Segment 2; however, an interchange reconfiguration will be required at US 601. Grade separations will be required at the eastern leg of SR 1508, SR 1507, SR 1506, and SR 1503.

Segment 1 of this project will likely require the relocation of 58 residences and 4 businesses and Segment 2 will likely require the relocation of 10 residences and 1 business.

The estimated cost for these improvements, including right-of-way and construction is \$58,400,000 for Segment 1 and \$12,500,000 for Segment 2 as follows:

	<u>Segment 1</u>	<u>Segment 2</u>
Right-of-Way	\$11,200,000	\$ 2,000,000
Construction	47,200,000	10,500,000
Total Cost	\$58,400,000	\$12,500,000

The estimated cost of the possible interchange at SR 1508 or the interchange reconfiguration at US 601, including right-of-way and construction is \$4,700,000 in addition to the segment costs shown above.

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 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 traffic carrying capacity and the safety of US 74.

The western Union County (Indian Trail/Stallings) section of US 74 is a 4-lane median divided facility with 12-foot (3.3-m) wide travel lanes, a 30-foot (9.1-m) wide median, and 4-foot to 10-foot (1.2-m to 3.0-m) wide soil shoulders. The right-of-way width varies from 150 feet to 200 feet (45.7 m to 61.0 m).

Development along existing US 74 is generally medium density commercial with heavy commercial concentrations at intersecting routes.

The 1994 Average Daily Traffic (ADT), on this section of US 74, varies from approximately 28,000 vehicles per day (vpd) to approximately 38,000 vpd. Truck traffic is estimated to make up 5% of daily traffic. Based on these traffic volumes, it is estimated that the roadway is currently operating at a Level of Service C.

It is anticipated that, by the design year (2020), the roadway will have traffic volumes approaching 75,000 vpd. In order to maintain an acceptable Level of Service, US 74 would need to be widened to in excess of 6 lanes. Due to the high cost of right-of-way and the existing development along US 74, a widening of this nature is deemed to be unacceptable. Therefore, strong consideration should be given to supplementing the capacity of US 74 by construction of a separate route (Monroe Bypass Extension).

It is estimated that with the construction of the Monroe Bypass Extension, the 2020 traffic volumes on existing US 74 will be reduced to an approximate high of 23,000 vpd and the volumes on the Monroe Bypass Extension would reach a high of approximately 63,000 vpd. At these volumes, existing US 74 will be operating at a Level of Service B and the Monroe Bypass Extension will be approaching a Level of Service E.

During the three-year period from June 1, 1991, to May 31, 1994, there were 447 accidents reported on US 74 in the area of this proposed project. There were 2 deaths and 362 non-fatal injuries reported. These accidents resulted in an accident rate of 171.5 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 151.3 Acc/100MVM for all rural US routes. The most prevalent accident types were rear-end (43%) and angle (15%).

III. Recommendations

It is recommended that the proposed Monroe Bypass (R-2559) in Union County be extended to the proposed Charlotte Outer Loop (R-211) in Mecklenburg County. Please see Figure 1 for the project location.

NOTE: The length of this project (R-3329) is dependent on the final alignment of project R-2559, which is in the EIS stage at the time of this writing. The western section of R-2559 has been narrowed down to two alternate alignments which are shown on the attached Figure 1 and are designated as Alternate 1 and Alternate 2.

Throughout this recommendation, this project (R-3329) will be discussed in two segments. Segment 1 extends from the Charlotte Outer Loop (R-211) to Alternate 1 of the Monroe Bypass at approximately 0.1 miles (0.2 km) west of the eastern leg of R-1508 (Poplin Road). Segment 2 extends from the eastern terminal of Segment 1 to approximately 0.1 miles (0.2 km) west of

US 601. Segment 1 will be required regardless of the selected alternate of R-2559 and Segment 2 will be required if Alternate 2 of R-2559 is selected.

Segment 1 is approximately 6.4 miles (10.3 km) long and Segment 2 is approximately 1.7 miles (2.7 km) long.

The recommended cross section, for both segments 1 and 2 is a 4-lane, divided, shoulder section with 12-foot (3.6-m) wide travel lanes, a 46-foot (14.0 -m) wide median, 2-foot (0.6-m) wide inside paved shoulders, and 10-foot (3.0-m) wide outside paved shoulders.

A 250-foot (76.2-m) wide right-of-way, on new location, with full control of access is recommended for both segments of this project.

In Segment 1, diamond type interchanges are recommended at SR 1365, SR 1520, the western leg of SR 1508, and SR 1514.

If Alternate 1 of the Monroe Bypass is the selected Alternate, Segment 1 of this project will require a new interchange at the eastern leg of SR 1508 where the project will tie into the Monroe Bypass.

Grade separations will be required at SR 1523, SR 1501, SR 1518, SR 1367, and SR 1509 in Segment 1. These grade separations will consist of dual 38-foot (11.6-m) wide (clear deck width) bridges.

No new interchanges are recommended as part of Segment 2; however, an interchange reconfiguration will be required at US 601 where the project will tie into the Monroe Bypass. Grade separations will be required at the eastern leg of SR 1508, SR 1507, SR 1506, and SR 1503. These grade separations will consist of dual 38-foot (11.6-m) wide (clear deck width) bridges.

Segment 1 of this project will likely require the relocation of 58 residences and 4 businesses and Segment 2 will likely require the relocation of 10 residences and 1 business.

The estimated cost for these improvements, including right-of-way and construction is \$58,400,000 for Segment 1 and \$12,500,000 for Segment 2 as follows:

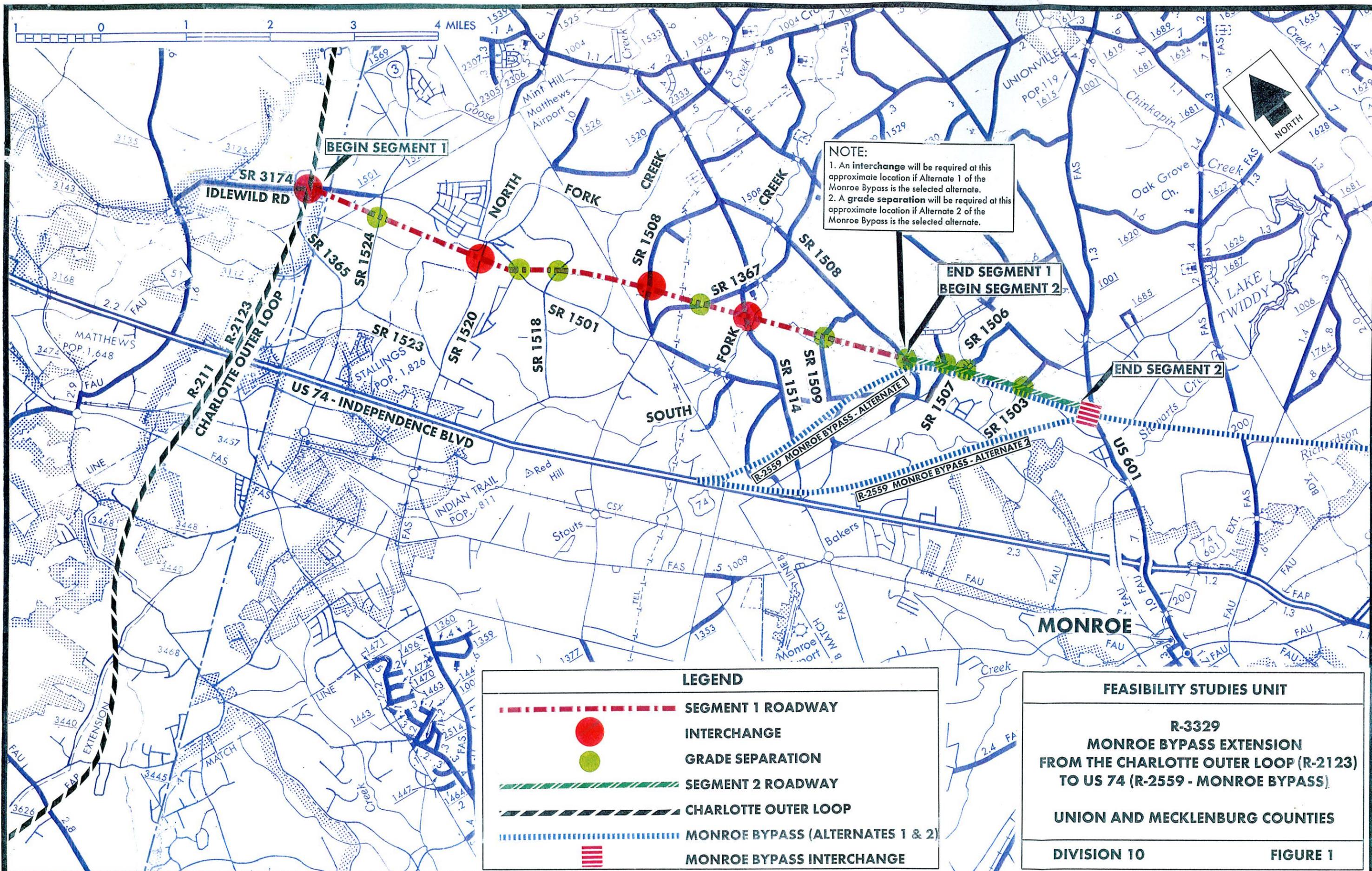
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Right-of-Way	\$11,200,000	\$ 2,000,000
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The estimated cost of the possible interchange at SR 1508 or the interchange reconfiguration at US 601, including right-of-way and construction is \$4,700,000 in addition to the segment costs shown above.

IV. Other Comments

An environmental screening was not conducted for this study.

This project is endorsed by the city of Monroe and the Union County Development Corporation.



NOTE:
 1. An interchange will be required at this approximate location if Alternate 1 of the Monroe Bypass is the selected alternate.
 2. A grade separation will be required at this approximate location if Alternate 2 of the Monroe Bypass is the selected alternate.

LEGEND	
	SEGMENT 1 ROADWAY
	INTERCHANGE
	GRADE SEPARATION
	SEGMENT 2 ROADWAY
	CHARLOTTE OUTER LOOP
	MONROE BYPASS (ALTERNATES 1 & 2)
	MONROE BYPASS INTERCHANGE

FEASIBILITY STUDIES UNIT	
R-3329	
MONROE BYPASS EXTENSION	
FROM THE CHARLOTTE OUTER LOOP (R-2123)	
TO US 74 (R-2559 - MONROE BYPASS)	
UNION AND MECKLENBURG COUNTIES	
DIVISION 10	FIGURE 1