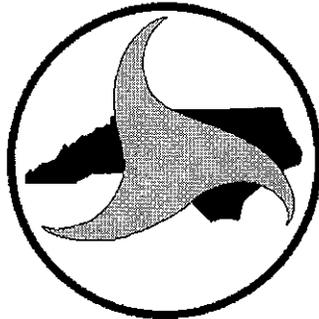


FEASIBILITY STUDY

**Interstate 85
from the NC 49-US 29 Connector in Mecklenburg County
to NC 73 in Cabarrus County**

Division 10

I-3803



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

A handwritten signature in black ink, appearing to read "Eric J. Lamb".

Eric J. Lamb, P.E.
Feasibility Studies Engineer

A handwritten signature in black ink, appearing to read "David G. Modlin, Jr.".

David G. Modlin, Jr., Ph.D., P.E.
Head of Feasibility Studies

3/4/98
Date

Interstate 85
from the NC 49-US 29 Connector in Mecklenburg County
to NC 73 in Cabarrus County

I. General Description

This feasibility study describes widening Interstate 85 from the US 29-NC 49 Connector in Mecklenburg County to NC 73 in Cabarrus County, a distance of 12.8 miles (20.6 km). The project location is shown on Figure 1. The recommended cross-section is an eight-lane divided facility with 12-foot (3.7-m) travel lanes, 10-foot (3.0-m) paved inside shoulders and 12-foot (3.7-m) paved outside shoulders with full control of access. All improvements are to be contained within the existing right-of-way, which varies between 290 and 390 feet (88.4-118.9 m) wide. No residential or business relocations are anticipated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$71,600,000.

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 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 alleviate congestion within the I-85 corridor. This project is supported by the Cabarrus / Kannapolis Chambers' Joint Transportation Committee and by the Cabarrus-South Rowan Urban Area MPO.

I-85 is designated as a freeway in the Concord-Kannapolis and Charlotte Urban Area Thoroughfare Plans and as an interstate in the North Carolina Statewide Functional Classification System.

Throughout the project limits, I-85 is currently a four-lane divided facility with 12-foot (3.7-m) travel lanes, 4-foot (1.2-m) paved inside shoulders, 10-foot (3.0-m) paved outside shoulders, and a grassy median 68 feet (20.7 m) wide. South of the US 29-NC 49 Connector interchange, I-85 is a ten-lane facility with a jersey barrier median.

There is a substantial amount of commercial development adjacent to the project right-of-way. University Shopping Center, University Medical Center, and University Research Park are located adjacent to the project in the vicinity of SR 2665 (Harris Blvd.) in Mecklenburg County. There are plans to construct two

shopping centers, a large hotel and a regional mall around the interchange at Speedway Blvd. in Cabarrus County. The International Business Park at Concord is also located south of the NC 73 interchange.

See Appendix A for a schedule of bridges within the project limits. All existing overhead structures within the project corridor will adequately support widening I-85 to eight lanes, and no modifications to these structures are included in this project.

The following table identifies the active TIP projects within the project corridor:

Table 1. TIP Projects

TIP #	Route	Right-of Way	Construction
R-2420 B	New Route from SR 2480 to SR 2939 in Mecklenburg County	October 1997	March 1998
R-2248 E	New Route - I-485 (Charlotte Western Outer Loop)	June 2000	October 2004
R-2123 CE	New Route - I-485 (Charlotte Eastern Outer Loop)	April 1992	October 2004
R-2246 C	New Route - Kannapolis Westside Bypass	June 2000	June 2002
U-2009 A	New Route - Kannapolis Westside Bypass	February 1997	December 1998
U-3415	Widen SR 1394 (Poplar Tent Rd.)	Identified Future Need	

The 1996 Average Daily Traffic (ADT) along I-85 varies from 61,600 to 73,800 vehicles per day (vpd) throughout the project corridor. For the design year 2020, the estimated traffic volumes on I-85 will range between 87,800 and 102,300 vpd. Truck traffic is estimated to make up twenty-four percent of daily traffic.

Currently I-85 is operating at Level of Service (LOS) E. If no improvements are made, it is projected that the roadway will operate at LOS F in the design year 2020. If I-85 is widened to a six-lane section, the facility will operate at LOS C in the current year and at LOS D in the design year 2020. If I-85 is widened to an eight-lane section, the facility will operate at LOS B in the current year and at LOS C in the design year 2020.

During the three-year period from March 1994 to February 1997, there were 788 accidents reported on I-85 within the project limits. There were 480 injuries reported as a result of these accidents, including one fatality. The accident rate along I-85 within the project limits is 94.07 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1996 statewide rate of 96.12 acc/100mvm for interstate highways.

III. Recommendations

It is recommended to widen Interstate 85 from the US 29-NC 49 Connector in Mecklenburg County to NC 73 in Cabarrus County, a distance of 13.6 miles (21.9 km). The project location is shown on Figure 1. The recommended cross-section is an eight-lane divided facility with 12-foot (3.7-m) travel lanes, 10-foot (3.0-m) paved inside shoulders and 12-foot (3.7-m) paved outside shoulders with full control of access. All improvements are to be contained within the existing right-of-way, which varies between 290 and 390 feet (88.4-118.9 m) wide.

All widening for this project is to be contained within the existing median, which is 68 feet (20.7 m) wide through the project limits. The ultimate median width for this project will be 20 feet (6.1 m) wide with fully paved shoulders and a jersey-style concrete barrier. The recommended cross-section will require a design exception from the Federal Highway Administration (FHWA) for acceptable shoulder widths.

Seven bridges carrying I-85 over streams and other roadways will require widening as a part of this project. Each bridge will be widened to 70 feet (21.3 m) in order to support four lanes for each direction. See Appendix A for more information.

No residential or business relocations are anticipated due to the project. The total cost of the project is as follows:

Construction.....	\$ 71,400,000
Right-of-way.....	\$ 200,000
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Total Cost	\$ 71,600,000

IV. Alternates

Six-lane Widening

The cost of constructing the project as a six-lane section was also examined. As in the eight-lane alternate, this project will have 12-foot (3.7-m) travel lanes, 10-foot (3.0-m) paved inside shoulders and 12-foot (3.7-m) paved outside shoulders with full control of access. All of the proposed widening is to be done within the existing median, and these improvements will be contained within the existing right-of-way. However the median under this proposal will be 44 feet (13.4 m) wide and will not feature any sort of barrier separation.

No residential or business relocations are anticipated due to the project. The total cost of the six-lane alternate is as follows:

Construction.....	\$ 53,900,000
Right-of-way.....	\$ 200,000
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Total Cost	\$ 54,100,000

Combination of Eight-lane and Six-lane Widening

The cost of widening this project under a combination of eight-lane and six-lane cross-sections was also evaluated. This alternate widens I-85 to eight lanes from NC 73 to the proposed I-485 Charlotte Outer Loop, a distance of 7.3 miles (11.8 km). From I-485 to the US 29-NC 49 Connector, this project would utilize a six-lane cross-section, a distance of 5.5 miles (8.9 km). Each cross-section would be consistent with the dimensions of the cross-sections as defined in the previous alternates.

No residential or business relocations are anticipated due to the project. The total cost of the combined eight-lane and six-lane alternate is as follows:

Construction.....	\$ 64,100,000
Right-of-way.....	\$ 200,000
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Total Cost	\$ 64,300,000

V. Discussion of Alternates

While traffic projections indicate that the traffic in the project corridor will decrease south of I-485 upon its completion, the anticipated Level of Service of D for this project in the design year 2020 does not meet Federal criteria for capacity on rural projects. The construction of an eight-lane section is also more consistent with the development of I-85 through North Carolina.

It is also likely the eight-lane section will have a longer design life than a six-lane section. Constructing the eight-lane section throughout the project corridor now instead of widening the six-lane section later should result in a greater long-term cost savings.

VI. Additional Comments

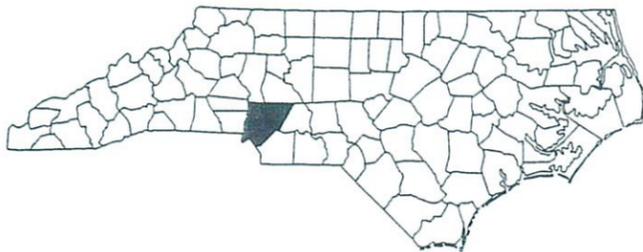
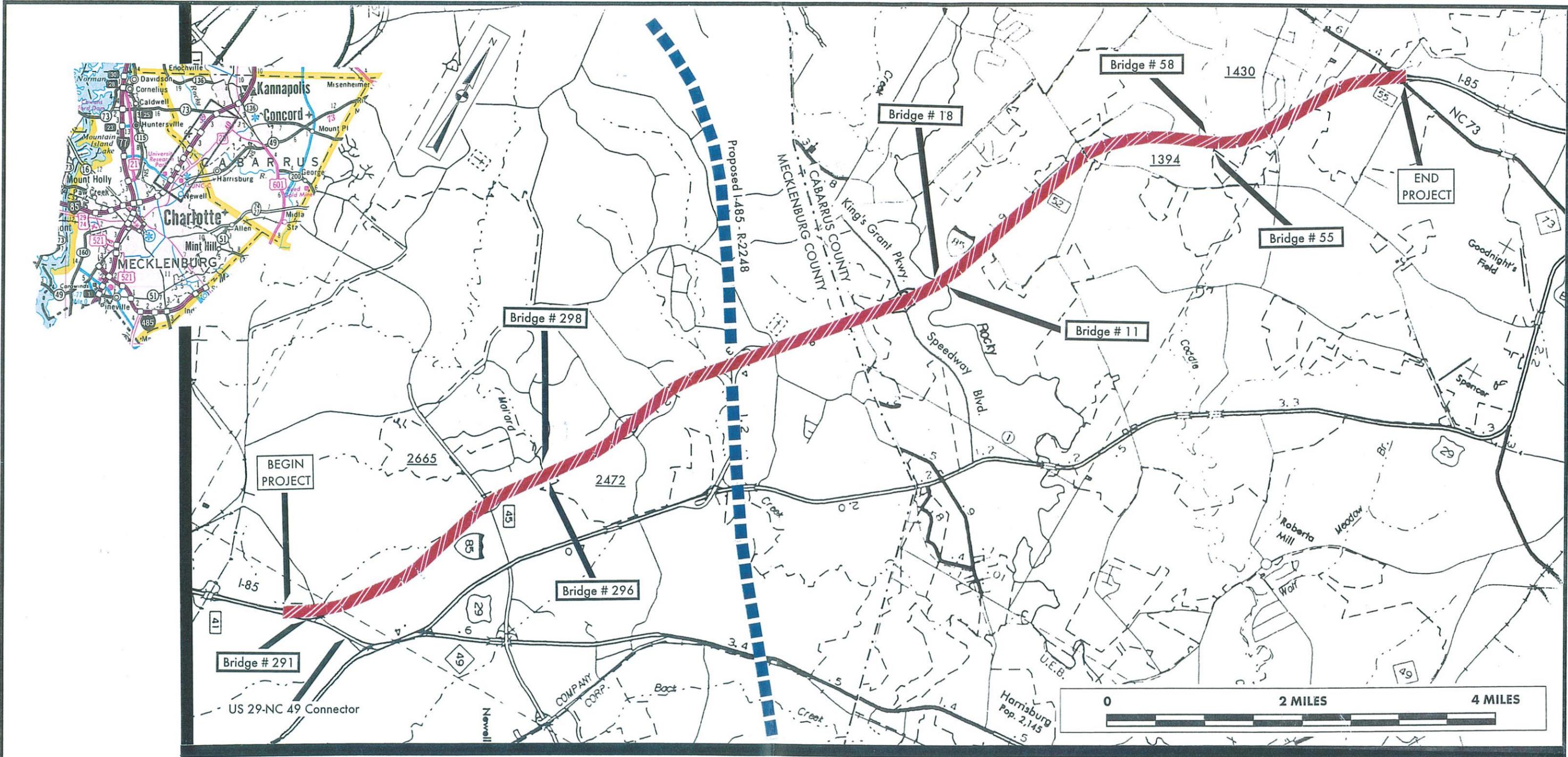
An environmental screening was not conducted for this study. However, no impacts to historic properties or wetlands are anticipated.

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.

All of the waterways are within the project corridor are Class C streams and are part of the Yadkin River Basin.

APPENDIX A - I-3803 Structures to be Modified

Structure Number	Feature Intersected	Structure Description	Structure Length	Deck Width	Year Constructed	Sufficiency Rating	Proposed Treatment
MECKLENBURG COUNTY (59)							
291	Southbound US 29-NC 49 Connector	Reinforced concrete deck on I-beams	155'	54.8'	1967	96.0	Widen structure to 70' clear roadway width
296	Mallard Creek	Reinforced concrete deck on precast prestressed concrete girders	198'	42.0'	1967	95.2	Widen structure to 70' clear roadway width
298	Mallard Creek	Reinforced concrete deck on precast prestressed concrete girders	198'	42.0'	1967	95.2	Widen structure to 70' clear roadway width
CABARRUS COUNTY (12)							
11	Rocky River	Reinforced concrete deck on I-beams	196'	42.0'	1968	94.9	Widen structure to 70' clear roadway width
18	Rocky River	Reinforced concrete deck on I-beams	194'	42.0'	1968	94.9	Widen structure to 70' clear roadway width
55	Coddle Creek	Reinforced concrete deck on I-beams	186'	42.0'	1968	95.1	Widen structure to 70' clear roadway width
58	Coddle Creek	Reinforced concrete deck on I-beams	187'	42.0'	1968	96.1	Widen structure to 70' clear roadway width



LEGEND

PROPOSED WIDENING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROGRAM DEVELOPMENT BRANCH

**I-3803
INTERSTATE 85
FROM THE US 29-NC 49 CONNECTOR
TO NC 73**

DIVISION 10	MECKLENBURG AND CABARRUS COUNTIES	FIGURE 1
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