TABLE OF CONTENTS

***Note**: This Draft EIS has been published in two volumes:*

VOLUME 1 – TEXT AND FIGURES
VOLUME 2 – APPENDICES

PAGE

TABLE OF CONTENTS i
LIST OF TABLES ix
LIST OF FIGURES xi
LIST OF EXHIBITS xii
APPENDICES xii

P PREFACE P-1
P.1 NATIONAL ENVIRONMENTAL POLICY ACT P-1
P.1.1 REGULATIONS AND GUIDANCE P-1
P.1.2 DOCUMENTATION P-2
P.2 HOW THIS DRAFT EIS WILL BE USED P-2
P.3 ORGANIZATION OF THIS DRAFT EIS P-3
P.4 HISTORY OF PROJECT P-3
P.4.1 PREVIOUS STUDIES OF MONROE BYPASS P-4
P.4.2 PREVIOUS STUDIES OF MONROE CONNECTOR P-4
P.4.3 MONROE BYPASS AND MONROE CONNECTOR COMBINED P-5

PC SPECIAL PROJECT COMMITMENTS PC-1

S SUMMARY S-1
S.1 FEDERAL HIGHWAY ADMINISTRATION S-1
S.2 LEAD AGENCIES S-1
S.3 PROPOSED ACTION S-1
S.4 PURPOSE AND NEED FOR PROJECT S-2
S.5 OTHER MAJOR ACTIONS IN THE PROJECT AREA S-3
S.6 ALTERNATIVES CONSIDERED S-3
S.6.1 ALTERNATIVES SCREENING PROCESS S-3
S.6.2 DETAILED STUDY ALTERNATIVES S-4
S.7 RECOMMENDED ALTERNATIVE S-5
S.8 SUMMARY OF ENVIRONMENTAL IMPACTS S-8
S.8.1 NO-BUILD ALTERNATIVE S-8
S.8.2 IMPACTS TO THE HUMAN ENVIRONMENT S-9
S.8.2.1 Land Use and Planning S-9
S.8.2.2 Relocations S-9

S.8.2.3 Neighborhoods S-9
S.8.2.4 Environmental Justice S-10
S.8.2.5 Community Services and Facilities S-10
S.8.3 IMPACTS TO THE PHYSICAL ENVIRONMENT S-11
S.8.3.1 Traffic Noise S-11
S.8.3.2 Air Quality S-11
S.8.3.3 Farmland S-12
S.8.3.4 Utilities S-12
S.8.3.5 Visual Resources S-12
S.8.3.6 Hazardous Materials S-13
S.8.3.7 Floodplains/Floodways S-13
S.8.4 IMPACTS TO CULTURAL RESOURCES S-13
S.8.4.1 Historic Architectural Resources S-13
S.8.4.2 Archaeological Resources S-14
S.8.4.3 Section 4(f) and 6(f) Resources S-14
S.8.5 IMPACTS TO NATURAL RESOURCES S-14
S.8.5.1 Soil and Geology S-14
S.8.5.2 Water Resources S-14
S.8.5.3 Natural Communities and Wildlife S-15
S.8.5.4 Water Resources in Federal Jurisdiction S-16
S.8.5.5 Protected Species S-16
S.8.5.6 Indirect and Cumulative Effects S-17
S.9 UNRESOLVED ISSUES AND AREAS OF CONTROVERSY S-18
S.10 OTHER GOVERNMENT ACTIONS REQUIRED S-19
S.10.1 PERMITS REQUIRED S-19
S.10.2 SUBSEQUENT ACTIONS S-20

1 PURPOSE AND NEED FOR ACTION 1-1
1.1 PROPOSED ACTION 1-1
1.2 SUMMARY OF NEED FOR PROPOSED ACTION 1-2
1.3 PURPOSE OF PROPOSED ACTION 1-3
1.4 PROJECT DESCRIPTION AND HISTORY 1-3
1.4.1 PROJECT SETTING 1-3
1.4.2 EXISTING ROAD NETWORK 1-4
1.4.3 PUBLIC AND AGENCY INVOLVEMENT IN DEVELOPMENT OF THE PURPOSE AND NEED 1-4
1.5 TRANSPORTATION SYSTEMS 1-5
1.5.1 NORTH CAROLINA STRATEGIC HIGHWAY CORRIDOR SYSTEM 1-5
1.5.1.1 NCDOT Strategic Highway Corridors Initiative 1-5
1.5.1.2 Strategic Highway Corridor Vision Plan for US 74 1-6
1.5.1.3 Implementation of the Strategic Highway Corridor Vision 1-7
1.5.2 NORTH CAROLINA INTRASTATE SYSTEM 1-7
1.5.3 NATIONAL HIGHWAY SYSTEM AND STRAHNET 1-8
1.5.3.1 National Highway System 1-8
1.5.3.2 STRAHNET 1-8
1.5.4 MODAL INTERRELATIONSHIPS 1-9
1.5.4.1 Public Transportation 1-9
1.5.4.2 Rail Service 1-9
1.5.4.3 Motor Freight Service 1-9
1.5.4.4 Air Service 1-10

1.6 SOCIAL AND ECONOMIC CONDITIONS 1-10
1.6.1 REGIONAL CONTEXT 1-10
1.6.2 POPULATION AND EMPLOYMENT 1-10
1.6.3 COMMUTING PATTERNS 1-12
1.6.4 GROWTH AND DEVELOPMENT PATTERNS 1-13
1.7 TRANSPORTATION AND LAND USE PLANS 1-13
1.7.1 NCDOT STATE TRANSPORTATION IMPROVEMENT PROGRAM 1-14
1.7.2 MECKLENBURG-UNION METROPOLITAN PLANNING ORGANIZATION LONG RANGE TRANSPORTATION PLAN 1-14
1.7.2.1 Background 1-14
1.7.2.2 Monroe Connector/Bypass in the MUMPO 2030 Long Range Transportation Plan 1-15
1.7.3 MECKLENBURG-UNION THOROUGHFARE PLAN 1-15
1.7.4 LAND USE PLANS 1-15
1.8 ROADWAY CONDITIONS AND OPERATIONS 1-15
1.8.1 EXISTING US 74 CHARACTERISTICS 1-15
1.8.2 TRAVEL TIMES ALONG THE US 74 CORRIDOR 1-17
1.8.3 EXISTING TRAFFIC OPERATIONS 1-18
1.8.3.1 Existing Traffic Volumes 1-18
1.8.3.2 Existing Level of Service on US 74 1-19
1.8.3.3 Existing Crash Data 1-20
1.8.4 PROJECTED TRAFFIC OPERATIONS IN 2030 1-20
1.8.4.1 Design Year 2030 Traffic Volumes 1-20
1.8.4.2 Design Year 2030 Level of Service on US 74 1-20

2 ALTERNATIVES CONSIDERED 2-1
2.1 INTRODUCTION 2-1
2.1.1 OVERVIEW OF THE ALTERNATIVES SCREENING PROCESS 2-1
2.1.2 PUBLIC INVOLVEMENT AND AGENCY COORDINATION RELATED TO THE ALTERNATIVES SCREENING PROCESS 2-2
2.1.3 TRAFFIC FORECASTS AND ANALYSIS 2-3
2.2 QUALITATIVE FIRST SCREENING OF ALTERNATIVE CONCEPTS 2-4
2.2.1 SCREENING CRITERIA 2-4
2.2.2 ALTERNATIVE CONCEPTS 2-4
2.2.2.1 No-Build Alternative 2-5
2.2.2.2 Transportation Demand Management Alternative 2-5
2.2.2.3 Transportation System Management Alternative 2-6
2.2.2.4 Mass Transit/Multi-Modal Alternative 2-8
2.2.2.5 Improve Existing US 74 Alternative 2-9
2.2.2.6 New Location Alternative 2-11
2.2.2.7 New Location/Improve Existing Roadways Hybrid Alternative 2-11
2.2.3 SUMMARY OF RESULTS OF QUALITATIVE FIRST SCREENING 2-12
2.3 QUALITATIVE SECOND SCREENING OF PRELIMINARY CORRIDOR SEGMENTS 2-13
2.3.1 PROJECT STUDY AREA 2-13
2.3.2 DEVELOPMENT OF PRELIMINARY CORRIDOR SEGMENTS 2-14
2.3.2.1 Route Continuity and Project Termini 2-14
2.3.2.2 Natural and Human Environment Features 2-16
2.3.2.3 Previously Studied Corridors 2-16

2.3.2.4 Public and Agency Input 2-17
2.3.2.5 Tolling 2-17
2.3.3 QUALITATIVE SECOND SCREENING METHODOLOGY AND RESULTS 2-18
2.3.3.1 Individual Segment Assessment 2-19
2.3.3.2 Relative Segment Comparison Assessment 2-20
2.3.3.3 Consolidation of Corridor Segments 2-21
2.3.4 QUALITATIVE SECOND SCREENING CONCLUSIONS 2-21
2.4 QUANTITATIVE THIRD SCREENING OF PRELIMINARY STUDY ALTERNATIVES 2-21
2.4.1 PRELIMINARY STUDY ALTERNATIVES 2-22
2.4.2 DESIGN CRITERIA 2-22
2.4.3 QUANTITATIVE THIRD SCREENING CRITERIA 2-23
2.4.4 RESULTS OF QUANTITATIVE THIRD SCREENING 2-25
2.4.4.1 Quantitative Third Screening Conclusions 2-25
2.4.4.2 Public and Agency Input 2-25
2.4.4.3 Further Consideration of Preliminary Study Alternative G (Upgrade Existing US 74 Alternative) 2-27
2.5 DETAILED STUDY ALTERNATIVES 2-34
2.5.1 FUNCTIONAL DESIGNS FOR THE DETAILED STUDY ALTERNATIVES 2-35
2.5.1.1 Design Criteria for the Functional Engineering Designs 2-36
2.5.1.2 Developing the Functional Engineering Designs 2-36
2.5.1.3 Considering Tolling in the Functional Engineering Designs 2-37
2.6 TRAFFIC FORECASTS AND OPERATIONS ANALYSIS 2-38
2.6.1 TRAFFIC FORECASTS FOR THE NO-BUILD ALTERNATIVE 2-39
2.6.2 TRAFFIC FORECASTS FOR BUILD ALTERNATIVES 2-39
2.6.3 2035 TRAFFIC OPERATIONS ANALYSES FOR THE BUILD ALTERNATIVES 2-40
2.6.3.1 Traffic Operations Along the Monroe Connector/Bypass 2-41
2.6.3.2 Traffic Operations Along Existing US 74 With the Build Alternatives 2-42
2.7 COST ESTIMATES 2-43
2.8 RECOMMENDED ALTERNATIVE 2-44

3 HUMAN ENVIRONMENT 3-1
3.1 SOCIO-ECONOMIC CHARACTERISTICS 3-1
3.1.1 DEMOGRAPHIC STUDY AREA 3-1
3.1.2 POPULATION CHARACTERISTICS 3-2
3.1.3 ECONOMIC CHARACTERISTICS 3-4
3.1.4 SOCIO-ECONOMIC IMPACTS 3-6
3.2 COMMUNITY CHARACTERISTICS AND RESOURCES 3-7
3.2.1 COMMUNITY CHARACTERISTICS 3-7
3.2.2 NEIGHBORHOOD IMPACTS 3-7
3.2.3 COMMUNITY RESOURCES 3-9
3.2.4 IMPACTS TO COMMUNITY RESOURCES 3-10
3.2.5 SUMMARY OF COMMUNITY RESOURCE IMPACTS 3-12
3.3 LAND USE AND TRANSPORTATION PLANNING 3-13
3.3.1 LAND USE PLANS 3-14
3.3.2 TRANSPORTATION PLANS 3-16
3.3.3 LAND USE IMPACTS 3-17
3.3.4 PLAN CONSISTENCY 3-17

3.4 RIGHT-OF-WAY ACQUISITION AND RELOCATIONS 3-18
3.4.1 RESIDENTIAL RELOCATIONS 3-19
3.4.2 BUSINESS RELOCATIONS 3-20
3.4.3 RELOCATION ASSISTANCE 3-21
3.5 ENVIRONMENTAL JUSTICE 3-21
3.5.1 ENVIRONMENTAL JUSTICE IMPACTS 3-23

4 PHYSICAL ENVIRONMENT 4-1

4.1 NOISE 4-1
4.1.1 CHARACTERISTICS OF NOISE 4-1
4.1.2 NOISE ABATEMENT CRITERIA 4-1
4.1.3 EXISTING NOISE ENVIRONMENT 4-2
4.1.4 NOISE IMPACT ANALYSIS METHODOLOGY 4-4
4.1.5 TRAFFIC NOISE IMPACTS 4-4
4.1.5.1 Noise Contours 4-4
4.1.5.2 Potential Noise Impacts to Churches, Schools, and Other Special Uses 4-6
4.1.5.3 Construction Noise 4-6
4.1.6 NOISE ABATEMENT MEASURES 4-7
4.2 AIR QUALITY 4-9
4.2.1 NATIONAL AMBIENT AIR QUALITY STANDARDS AND EXISTING CONDITIONS 4-10
4.2.2 TRANSPORTATION CONFORMITY 4-11
4.2.3 MOBILE SOURCE AIR TOXICS 4-13
4.2.4 LOCAL ORDINANCES 4-14
4.2.5 AIR QUALITY IMPACTS 4-14
4.2.5.1 Criteria Pollutants and Transportation Conformity 4-14
4.2.5.2 Mobile Source Air Toxics Impact Analysis 4-18
4.2.5.3 Construction Air Quality 4-19
4.3 FARMLAND 4-19
4.3.1 FARMLAND PROTECTION POLICY ACT 4-19
4.3.2 PRIME AND IMPORTANT FARMLAND SOILS 4-20
4.3.3 EXISTING AGRICULTURE 4-21
4.3.3.1 Census Information 4-21
4.3.3.2 Agricultural Uses in the Detailed Study Alternatives 4-21
4.3.4 FARMLAND IMPACTS 4-22
4.3.4.1 Prime and Important Farmland Soils 4-22
4.3.4.2 Farmland Conversion Impact Ratings 4-22
4.3.4.3 Farm Relocations 4-23
4.4 UTILITIES AND INFRASTRUCTURE 4-23
4.4.1 EXISTING CONDITIONS 4-24
4.4.1.1 Electric Power 4-24
4.4.1.2 Water and Sewer Facilities 4-24
4.4.1.3 Natural Gas 4-25
4.4.1.4 Telecommunications 4-26
4.4.1.5 Railroads 4-26
4.4.2 IMPACTS TO UTILITIES 4-26
4.5 VISUAL RESOURCES 4-26
4.5.1 VISUAL ENVIRONMENT 4-26
4.5.2 VISUAL IMPACTS 4-27

4.6 HAZARDOUS MATERIALS 4-28
4.6.1 EXISTING CONDITIONS 4-28
4.6.2 IMPACTS FROM HAZARDOUS MATERIALS/WASTE SITES 4-30
4.6.3 MITIGATION FOR HAZARDOUS MATERIALS/WASTE SITES 4-31
4.7 FLOODPLAINS AND FLOODWAYS 4-31
4.7.1 BACKGROUND INFORMATION 4-31
4.7.2 FLOODPLAINS AND FLOODWAYS IN THE PROJECT STUDY AREA 4-31
4.7.3 MAJOR DRAINAGE STRUCTURES AND FLOODWAY/FLOODPLAIN IMPACTS 4-32

5 CULTURAL RESOURCES 5-1
5.1 INTRODUCTION 5-1
5.1.1 BACKGROUND 5-1
5.1.2 SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT 5-1
5.2 HISTORIC ARCHITECTURAL RESOURCES 5-3
5.2.1 HISTORIC ARCHITECTURAL RESOURCES IN THE PROJECT AREA 5-3
5.2.1.1 Historic Architectural Resources Survey Methodology 5-3
5.2.1.2 Historic Architectural Resources Survey Findings 5-3
5.2.2 POTENTIAL IMPACTS TO HISTORIC ARCHITECTURAL RESOURCES 5-5
5.3 ARCHAEOLOGICAL RESOURCES 5-5
5.4 SECTION 4(f) AND SECTION 6(f) RESOURCES 5-6
5.4.1 REGULATIONS 5-6
5.4.1.1 Section 4(f) Resources 5-6
5.4.1.2 Section 6(f) Resources 5-7
5.4.2 RESOURCES IN THE STUDY AREA 5-7
5.4.2.1 Section 4(f) Resources 5-7
5.4.2.2 Section 6(f) Resources 5-8
5.4.3 SECTION 4(F) AND SECTION 6(F) RESOURCE IMPACTS 5-8
5.4.3.1 Section 4(f) Impacts 5-8
5.4.3.2 Section 6(f) Impacts 5-8
5.5 SUMMARY OF IMPACTS TO CULTURAL RESOURCES 5-9

6 NATURAL ENVIRONMENT 6-1
6.1 SOILS, GEOLOGY, AND MINERAL RESOURCES 6-1
6.1.1 SOILS AND GEOLOGY IN THE PROJECT STUDY AREA 6-1
6.1.2 MINERAL RESOURCES 6-2
6.1.3 SOILS AND MINERAL RESOURCE IMPACTS 6-3
6.2 WATER RESOURCES 6-3
6.2.1 WATER RESOURCES DESCRIPTIONS 6-3
6.2.1.1 River Basins and Streams 6-3
6.2.1.2 Water Supply Resources 6-4
6.2.2 WATER QUALITY 6-5
6.2.2.1 Impaired Waters 6-5
6.2.2.2 Best Usage Classification 6-5
6.2.2.3 National Pollutant Discharge Elimination System Discharges 6-6
6.2.2.4 Water Quality Monitoring and Basin-Wide Assessments 6-6
6.2.3 WATER RESOURCES IMPACTS AND MITIGATION 6-7
6.3 NATURAL COMMUNITIES AND WILDLIFE 6-9
6.3.1 TERRESTRIAL COMMUNITIES 6-9

6.3.2 TERRESTRIAL WILDLIFE 6-10
6.3.3 AQUATIC COMMUNITIES AND WILDLIFE 6-11
6.3.4 INVASIVE PLANT SPECIES 6-12
6.3.5 IMPACTS TO NATURAL COMMUNITIES AND WILDLIFE 6-12
6.4 WATER RESOURCES IN FEDERAL JURISDICTION 6-14
6.4.1 WATERS OF THE UNITED STATES 6-14
6.4.2 CATAWBA RIVER RIPARIAN BUFFER RULES 6-15
6.4.3 EXISTING JURISDICTIONAL RESOURCES 6-15
6.4.3.1 Surveys for Jurisdictional Resources 6-15
6.4.3.2 Characteristics of Streams and Wetlands 6-16
6.4.4 IMPACTS ON JURISDICTIONAL RESOURCES 6-17
6.4.5 PERMITTING AND MITIGATION 6-18
6.4.5.1 Section 404/401 Permit Issues 6-18
6.4.5.2 Avoidance and Minimization of Impacts 6-19
6.4.5.3 Compensatory Mitigation 6-20
6.5 PROTECTED SPECIES 6-20
6.5.1 FEDERAL REGULATIONS 6-20
6.5.2 STATE REGULATIONS 6-21
6.5.3 PROTECTED SPECIES IMPACTS 6-22
6.5.3.1 Federally-Protected Species 6-22
6.5.3.2 Federal Species of Concern and Candidate Species 6-24
6.5.3.3 State Listed Species 6-25
6.5.4 SURVEY FINDINGS AND IMPACTS TO PROTECTED SPECIES 6-25

7 INDIRECT AND CUMULATIVE EFFECTS 7-1
7.1 DEFINITIONS AND ANALYSIS SCENARIOS 7-1
7.1.1 DEFINITIONS 7-1
7.1.2 ANALYSIS SCENARIOS 7-2
7.2 STUDY AREA FOR INDIRECT AND CUMULATIVE EFFECTS (STEP 1) 7-2
7.2.1 FUTURE LAND USE STUDY AREA 7-3
7.2.2 TIMEFRAME FOR ANALYSIS 7-4
7.3 STUDY AREA DIRECTIONS AND GOALS (STEP 2) 7-4
7.3.1 DEMOGRAPHIC AND EMPLOYMENT TRENDS 7-5
7.3.2 LAND USE PATTERNS 7-5
7.3.3 LAND USE PLANS AND ORDINANCES 7-6
7.3.4 ENVIRONMENTAL REGULATIONS 7-6
7.4 INVENTORY OF NOTABLE FEATURES (STEP 3) 7-7
7.4.1 WATER RESOURCES 7-7
7.4.2 TERRESTRIAL HABITAT 7-8
7.4.3 FEDERALLY PROTECTED SPECIES 7-8
7.4.4 CULTURAL RESOURCES 7-8
7.4.5 PRIME FARMLAND SOILS 7-9
7.5 IDENTIFICATION OF IMPORTANT IMPACT-CAUSING ACTIVITIES (STEP 4) 7-9
7.5.1 RECENT AND PROPOSED DEVELOPMENT ACTIVITY AND TRANSPORTATION PROJECTS 7-9
7.5.2 WATER AND SEWER AVAILABILITY AND ALLOCATION 7-13
7.6 IDENTIFICATION AND ANALYSIS OF POTENTIAL INDIRECT IMPACTS (STEP 5) 7-13
7.6.1 NO-BUILD ALTERNATIVE 7-13

7.6.2 DETAILED STUDY ALTERNATIVES 7-14
7.6.3 ANALYSIS OF INDIRECT IMPACTS TO NOTABLE FEATURES 7-16
7.7 IDENTIFICATION AND ANALYSIS OF POTENTIAL CUMULATIVE EFFECTS (STEP 5) 7-17
7.7.1 WATER QUALITY AND AQUATIC HABITAT 7-18
7.7.2 CAROLINA HEELSPLITER HABITAT (GOOSE CREEK AND DUCK CREEK WATERSHED) 7-18
7.7.3 TERRESTRIAL COMMUNITIES AND HABITAT 7-19
7.8 CONCLUSIONS 7-20
7.8.1 POTENTIAL INDIRECT EFFECTS 7-20
7.8.2 POTENTIAL CUMULATIVE EFFECTS 7-21

8 OTHER IMPACT CONSIDERATIONS 8-1

8.1 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES 8-1
8.2 RELATIONSHIP BETWEEN SHORT-TERM IMPACTS AND LONG-TERM BENEFITS 8-1

9 PUBLIC INVOLVEMENT AND AGENCY COORDINATION 9-1

9.1 PUBLIC INVOLVEMENT 9-1
9.1.1 CITIZENS INFORMATIONAL WORKSHOPS 9-1
9.1.2 LOCAL OFFICIALS MEETINGS 9-2
9.1.3 OPEN HOUSES 9-3
9.1.4 SMALL GROUP MEETINGS 9-3
9.1.5 OTHER OUTREACH EFFORTS 9-4
9.1.5.1 Newsletters 9-4
9.1.5.2 Project Web site and E-mail 9-4
9.1.5.3 Project Toll-Free Telephone Number 9-4
9.2 AGENCY COORDINATION 9-5
9.2.1 SCOPING LETTER 9-5
9.2.2 NOTICE OF INTENT 9-6
9.2.3 AGENCY COORDINATION 9-6
9.2.3.1 Section 6002 Project Coordination Plan 9-6
9.2.3.2 Coordination with MUMPO 9-7
9.2.3.3 Turnpike Environmental Agency Coordination Meetings 9-10

10 LIST OF PREPARERS 10-1

10.1 FEDERAL HIGHWAY ADMINISTRATION 10-1
10.2 NORTH CAROLINA TURNPIKE AUTHORITY 10-1
10.3 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 10-1
10.4 PRIVATE CONSULTING FIRMS 10-2

11 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT 11-1

11.1 FEDERAL AGENCIES 11-1
11.2 REGIONAL OFFICES OF FEDERAL AGENCIES 11-1
11.3 STATE AGENCIES 11-1
11.4 LOCAL GOVERNMENTS AND AGENCIES 11-2

11.5 PUBLIC REVIEW LOCATIONS 11-2

12 REFERENCES 12-1

12.1 REFERENCES 12-1
12.2 SUPPORTING PROJECT DOCUMENTATION 12-9

LIST OF TABLES

Special Project Commitments

PC-1 Special Commitments and Coordination Required after the Draft EIS PC-1

Summary

S-1 Detailed Study Alternatives S-4
S-2 Summary of Environmental Impacts S-22

Section 1

1-1 Population Growth from 2000 to 2008 1-11
1-2 Existing and Projected Population and Employment in the Region 1-11
1-3 Journey to Work by Mode 1-13
1-4 Speed Limits on US 74 1-17
1-5 Average Travel Times and Speeds Through the US 74 Corridor 1-18
1-6 Existing (2007) Signalized Intersection Level of Service 1-19
1-7 2030 No-Build Signalized Intersection Level of Service 1-21

Section 2

2-1 Qualitative First Screening - Ability of Alternative Concepts to Meet Purpose and Need 2-13
2-2 Preliminary Study Alternatives Summary 2-22
2-3 Quantitative GIS Analysis Screening Criteria 2-24
2-4 Quantitative Screening of Preliminary Study Alternatives 2-26
2-5 Projected 2035 Traffic Volumes Along Existing US 74 2-33
2-6 Detailed Study Alternatives 2-34
2-7 Projected 2035 Traffic Volumes Along Mainline 2-40
2-8 Preliminary Cost Estimates for Detailed Study Alternatives 2-43

Section 3

3-1 Population Change - 1990 - 2000 3-2
3-2 Median Household and Family Income (1999) 3-5
3-3 Potential Neighborhood Impacts 3-7
3-4 Summary of Impacts to Churches 3-11
3-5 Summary of Impacts to Community Resources 3-13
3-6 Residential and Business Relocations 3-18
3-7 Number of Relocated Households in Each Income Level 3-19
3-8 Value of Homes to be Relocated 3-20
3-9 General Environmental Justice Evaluation for Toll Facilities 3-22

Section 4

4-1 FHWA Noise Abatement Criteria 4-2
4-2 NCDOT Definition of Substantial Increase in Noise Levels 4-2
4-3 Existing Noise Level Measurements 4-3
4-4 2035 Traffic Noise Contours 4-5
4-5 Impacted Receptors by Detailed Study Alternative Based on 2035 Traffic Noise Contours 4-5
4-6 Preliminary Feasible and Reasonable Noise Barriers 4-8
4-7 Summary of Noise Barriers by Detailed Study Alternative 4-9
4-8 National Ambient Air Quality Standards 4-10
4-9 Prime and Important Farmland Soils in the Detailed Study Alternatives 4-20
4-10 Impacts to Prime and Important Farmland Soils 4-22
4-11 Farmland Impact Rating 4-23
4-12 Known and Potentially Contaminated Sites in the Project Study Area 4-28
4-13 Impact of Potentially Contaminated Sites on the Detailed Study Alternatives 4-30
4-14 Summary of Major Drainage Structures and Floodway and Floodplain Crossings 4-33

Section 5

5-1 Historic Architectural Resources in the Area of Potential Effects 5-4
5-2 Effects to Historic Architectural Resources 5-5

Section 6

6-1 Soils Within the Detailed Study Alternatives 6-1
6-2 Active NPDES Permits with Discharges to Streams in the Project Study Area 6-6
6-3 Potential Impacts to Terrestrial Communities by Detailed Study Alternative 6-13
6-4 Impacts to Waters of the US 6-17
6-5 Federally-Protected Species Listed for Union and Mecklenburg Counties 6-22
6-6 Candidate and Federal Species of Concern 6-24
6-7 State Listed Species in Union and Mecklenburg Counties with Known Occurrences in the Project Study Area 6-25

Section 7

7-1 Summary of Potential Indirect Impacts by Zone 7-15
7-2 Indirect Impacts to Notable Features 7-16
7-3 Land Cover in Union County 7-19

Section 9

9-1 Workshop Comment Form Responses 9-2
9-2 Scoping Comments 9-5
9-3 Agency Roles 9-7
9-4 MUMPO Meeting Summaries 9-8
9-5 MUMPO Technical Coordinating Committee Meeting Summaries 9-8
9-6 TEAC Meeting Summaries 9-10

LIST OF FIGURES (Figures located at the end of each section)

Preface

P-1 Monroe Bypass Detailed Study Alternatives and Preferred Alternative
P-2 Monroe Connector Preliminary Corridors and Detailed Study Alternatives

Section 1

1-1 Project Location Within North Carolina
1-2 Project Location Within Union and Mecklenburg Counties
1-3 Project Study Area
1-4 Metrolina Area Strategic Highway Corridor Vision Plan Map
1-5 STIP Projects in the Study Area
1-6 MUMPO 2030 Long Range Transportation Plan
1-7 Mecklenburg-Union Thoroughfare Plan
1-8 Existing Roadway Characteristics

Section 2

2-1 Preliminary Corridor Segments
2-2 (a-c) Land Suitability Mapping
2-3 Preliminary Corridor Segments Revised
2-4 (a-e) Preliminary Corridor Segments (Relative Segment Comparison Areas)
2-5 Preliminary Corridor Segments for Quantitative Third Screening
2-6 (a-d) Preliminary Study Alternatives
2-7 Preliminary Study Alternatives Typical Cross-Sections
2-8 (a-c) Detailed Study Alternatives
2-9 Revised Preliminary Study Alternative G Cross-Sections
2-10 (a-cc) Detailed Study Alternatives Functional Designs
2-11 New Location Alternative Typical Cross Sections

Section 3

3-1 Population Change (1990/2000)
3-2 (a-c) Neighborhoods
3-3 (a-c) Community Resources
3-4 African-American Population in the Demographic Area
3-5 Hispanic Population in the Demographic Area
3-6 Percentage Below Poverty Level in the Demographic Area

Section 4

4-1 (a-c) Noise Impact Assessment Information
4-2 Farmland Soils
4-3 Hazardous Material Sites
4-4 (a-c) Water Resources

Section 5

5-1 Historic Architectural Resources
5-2 Proposed Matthews Sportsplex

Section 6
6-1 Natural Communities

Section 7
7-1 Future Land Use Study Area (FLUSA)
7-2 Watershed Basins

LIST OF EXHIBITS

Chapter 2
2-1 Preliminary Study Alternative G 2-28
2-2 Revised Preliminary Study Alternative G 2-31

Chapter 4
4-1 VMT vs MSAT Emissions, 2000-2020 4-13

APPENDICES

A. Federal Register Notices and Agency Correspondence
B. Design Criteria for the Functional Engineering Designs
C. Relocation Reports
D. Noise Contour Maps
E. Mobile Source Air Toxics (MSAT) Analysis
F. Farmland Conversion Impact Rating Forms
G. Elevated Roadway Photo Simulation
H. Recommended Preliminary Drainage Crossing Table
I. Section 4(f) *de minimis* Impact Analysis for Matthews Sportsplex
J. Jurisdictional Resources Attribute and Impact Tables
K. Public Involvement Materials