



Chapter and Section	<u>Page</u>
Executive Summary	S-1
S.1 Federal Highway Administration	S-1
S.2 Contacts	S-1
S.3 Project Description/Purpose	S-1
S.4 Other Government Actions	S-2
S.5 Alternatives Considered	S-2
S.6 Preferred Alternative	S-4
S.7 Major Environmental Impacts	S-4
S.8 Areas of Concern	S-6
S.9 Unresolved Issues S.10 List of Other Covernment Actions Beguined	S-6
S.10 List of Other Government Actions Required S.11 Environmental Commitments	S-6 S-7
Chapter 1. Purpose and Need for Action	3-7 1-1
Introduction	1-1
1.1 What is the I-73 project?	1-1
1.1.1 Where is the project located?	1-2
1.1.2 What would the I-73 facility be like?	1-3
1.1.3 Why was the project initiated?	1-3
1.1.4 Who is responsible for this project?	1-7
Environmental Impacts to be Studied	1-8
1.2 Why study impacts to the environment?	1-9
1.2.1 What type of impacts will be evaluated?	1-9
1.2.2 How are impacts evaluated?	1-9
1.2.2.1 How does FHWA evaluate impacts?	1-9
1.2.2.2 How does USACE evaluate impacts?	1-10
1.2.2.3 How does SCDHEC evaluate impacts?	1-11
Purpose and Need	1-11
1.3 What is the purpose of I-73 and why do we need the project?	1-11
1.3.1 What are the primary project needs?	1-11
1.3.2 What are the secondary project needs?	1-12





Chapter and Section	<u>Page</u>
1.3.3 What is system linkage?	1-12
1.3.4 How would this project affect economic development?	1-12
1.3.4.1 Who lives in Dillon, Marlboro, Richmond, and Scotland County and what population characteristics shape these counties?	1-14
1.3.4.2 What are some of the social and housing characteristics of Dillon,	
Marlboro, Richmond, and Scotland Counties?	1-16
1.3.4.3 What are the employment characteristics in Dillon, Marlboro,	
Richmond, and Scotland Counties?	1-20
1.3.4.4 What are the unemployment rates and poverty levels in Dillon,	
Marlboro, Richmond, and Scotland Counties?	1-22
1.3.5 Would this project benefit travel and tourism in the four-county area? 1-27	
1.3.6 How would this project increase safety on current roads in the project	
study area?	1-29
1.3.7 How would the project incorporate multimodal planning?	1-31
Tolls	1-32
1.4 Will I-73 be a Toll Road?	1-32
Construction	1-36
1.5 How would the road be constructed?	1-36
Summary	1-36
Chapter 2. Development of Alternatives	2-1
2.1 How were the alternatives evaluated?	2-1
2.2 What is the Agency Coordination Team?	2-1
2.3 What are the conditions of the No-build Alternative?	2-3
2.4 How were the Preliminary Build Alternatives developed?	2-3
2.4.1 How was the public involved in developing the Preliminary Build Alternatives?	2-10
2.4.2 How were the 1,896 preliminary Build Alternatives evaluated?	2-11
2.5 How were the reasonable Build Alternatives developed?	2-14
2.5.1 How was the public involved in developing the Reasonable	
Build Alternatives?	2-14

Page TOC-2 Table of Contents





Chapter and Section	<u>Page</u>
2.5.2 How were the Reasonable Alternatives designated?	2-16
2.5.3 How were preliminary interchange locations designated?	2-22
2.5.4 What modifications were made to the Reasonable Build Alternatives	
based on input?	2-22
2.5.4.1 Alternative 1	2-23
2.5.4.2 Alternative 2	2-26
2.5.4.3 Alternative 3	2-28
2.6 How were the three Reasonable Build Alternatives evaluated to	
designate the Preferred Alternative?	2-29
2.6.1 How would the Reasonable Build Alternatives meet the primary needs	
of the project?	2-32
2.6.1.1 How do the reasonable Build Alternatives meet the primary	
needs of system linkage?	2-32
2.6.1.2 How do the reasonable Build Alternatives meet the primary need	
of economic development?	2-33
2.6.2 How would the reasonable Build Alternatives meet the secondary needs of	
the project?	2-37
2.6.2.1 How would the reasonable Build Alternatives improve access	
for tourism?	2-37
2.6.2.2 How would the reasonable Build Alternatives incorporate	
multimodal planning?	2-38
2.6.3 How were the reasonable Build Alternatives compared in terms of human	
and environmental impacts?	2-39
2.6.4 How have the USACE Public Interest Review Factors been addressed?	2-40
2.6.5 How would the reasonable Build Alternative compare in terms of human	
and environmental impacts?	2-41
2.6.6.1 Alternative 1	2-42
2.6.6.2 Alternative 2	2-43
2.6.6.3 Alternative 3	2-44





Chapter and Section	<u>Page</u>
2.6.7 Which reasonable Build Alternative was designated as the Preferred	
Alternative?	2-45
Chapter 3. Existing Conditions and Environmental	2-43
Consequences	3-1
Human Environment	3-1
3.1 Land Use	3-1
3.1.1 What is the existing land use in the project study area?	3-1
3.1.2 What is the agricultural land use in the project study area?	3-2
3.1.3 What are the natural land areas in the project study area?	3-2
3.1.4 What are the residential land uses in the project study area?	3-2
3.1.5 What are the commercial land uses in the project study area?	3-3
3.1.5.1 Hotel/Motel	3-4
3.1.5.2 Industrial	3-4
3.1.5.3 Institutional	3-5
3.1.5.4 Public & Semi-Public	3-6
3.1.5.5 Schools	3-6
3.1.6 Do the affected counties have plans for development and future growth?	3-7
3.1.6.1 Dillon County	3-7
3.1.6.2 Marlboro County	3-8
3.1.6.3 Richmond County	3-8
3.1.7 What are the trends and key indicators?	3-9
3.1.8 How is land use expected to change in the project study area?	3-10
3.1.9 How would the No-build Alternative affect land development?	3-10
3.1.9.1 How would overall growth be impacted by the No-build	
Alternative?	3-1
3.1.9.2 How would the No-build Alternative impact development	
in Dillon County?	3-12
3.1.9.3 How would development in Marlboro County be impacted by	
the No-Build Alternative?	3-15

Page TOC-4 Table of Contents





Chapter and Section	<u>Page</u>
3.1.9.4 How would the No-build Alternative influence development	
in Richmond County?	3-15
3.1.10 How would the Build Alternatives impact development in the	
three-county area?	3-16
3.1.10.1 Would land used for right-of-way be lost for development?	3-16
3.1.10.2 How would development shift as a result of I-73?	3-16
3.1.10.3 Would additional new development occur in Dillon,	
Marlboro, Richmond, and Scotland Counties?	3-17
3.1.11 How were land use impacts resulting from the proposed	
project determined?	3-18
3.1.11.1 How does the proximity to an I-73 interchange affect	
development?	3-18
3.1.11.2 How does proximity to an existing urban area influence development?	3-18
3.1.11.3 How does proximity to I-95 and/or I-74 impact development?	3-19
3.1.11.4 Do infrastructure and availability of land influence development?	3-19
3.1.11.5 How do new employment opportunities influence development?	3-20
3.1.11.6 Does site suitability play a role in influencing development?	3-20
3.1.11.7 How would development in Dillon County be impacted by the	
Build Alternatives?	3-20
3.1.11.8 How would the Build Alternatives impact development in	
Marlboro County?	3-22
3.1.11.9 How would development in Richmond County be impacted	
by the Build Alternatives?	3-26
3.1.12 What other factors influence growth and development?	3-26
3.1.13 Conclusion	3-27
3.2 Communities	3-29
3.2.1 How many communities compose the project study area?	3-29
3.2.2 What is a community impact assessment?	3-29
3.2.3 How were communities identified within the project study area?	3-30





Chapter and Section	<u>Page</u>
Dillon County	3-33
3.2.4 What are the characteristics of Dillon County?	3-33
3.2.5 How would Dillon County be impacted by the proposed project?	3-36
3.2.6 What are the characteristics of communities located within Dillon County	
and how would they be impacted by the proposed project?	3-37
3.2.6.1 Bingham	3-37
3.2.6.2 Free State	3-39
3.2.6.3 Minturn	3-41
Marlboro County	3-44
3.2.7 What are the characteristics of Marlboro County?	3-44
3.2.8 How would Marlboro County be impacted by the proposed project?	3-46
3.2.9 What are the Characteristics of Cities and Towns located in Marlboro	
County and how would they be impacted by the Build Alternatives?	3-47
3.2.9.1 Bennettsville	3-47
3.2.9.2 Blenheim	3-52
3.2.9.3 Clio	3-56
3.2.9.4 McColl	3-59
3.2.9.5 Tatum	3-63
3.2.10 What are the characteristics of neighborhoods and communities	
located within Marlboro County?	3-65
3.2.10.1 Aarons Temple	3-66
3.2.10.2 Brightsville	3-68
3.2.10.3 Adamsville	3-72
3.2.10.4 Dunbar	3-75
3.2.10.5 Fletcher	3-78
3.2.10.6 Hebron	3-80
3.2.10.7 Lester	3-83
3.2.10.8 Newtonville	3-86
3.2.10.9 Chavistown	3-89

Page TOC-6 Table of Contents





Chapter and Section	<u>Page</u>
3.2.10.10 Salem	3-91
Richmond County	3-94
3.2.11 What are the characteristics of Richmond County?	3-94
3.2.12 How would Richmond County be impacted by the proposed project?	3-95
3.2.13 What are the characteristics of Hamlet and how would it be impacted?	3-95
Scotland County	3-98
3.2.14 What are the characteristics of Scotland County and how would	
it be impacted?	3-98
3.2.15 How would Scotland County be impacted by the proposed project?	3-99
Considerations for Bicyclists and Pedestrians	3-99
3.2.16 What considerations have been analyzed relating	
to bicyclists and pedestrians?	3-99
3.3 Environmental Justice	3-103
3.3.1 What is Environmental Justice?	3-103
3.3.2 Are there minority populations in the project study area?	3-105
3.3.3 Are there low-income populations in the project study area?	3-105
3.3.4 How were potential environmental justice impacts evaluated?	3-106
3.3.5 Are there any minority and low-income populations impacted?	3-109
3.3.6 What other methods were used to consider impacts to environmental justic	e
populations in the project study area?	3-111
3.3.6.1 Relocations	3-111
3.3.6.2 Community Cohesion	3-113
3.3.6.3 Economic Impacts	3-113
3.3.6.4 Access and Mobility	3-113
3.3.6.5 Noise	3-114
3.3.6.6 Visual and Aesthetic Character	3-114
3.3.6.7 Parkş and Community Facilities	3-114





	_
Chapter and Section	<u>Page</u>
3.3.7 What efforts have been made to ensure full and fair participation of	
environmental justice populations in the transportation decision-making	
process?	3-114
3.3.8 Summary	3-115
3.4 Section 4(f) Resources	3-116
3.4.1 What is Section 4(f)?	3-116
3.4.2 What parks, recreational facilities, and wildlife/waterfowl refuges are found in the	he
project study area?	3-117
3.4.3 Would the Build Alternatives impact Section 4(f) parks or recreational facilities?	3-117
3.5 Section 6(f) Resources	3-118
3.6 Historic Resources	3-119
3.6.1 What are historic resources?	3-119
3.6.2 How was the historic resources survey conducted?	3-120
3.6.3 What above-ground historic resources were found during the survey?	3-120
3.6.4 What would be the potential impacts to historic resources?	3-120
3.6.5 What known archaeological resources are within the project study area?	3-125
3.6.6 What is the potential for archaeological resources being found	
in the right-of-way of the Build Alternatives?	3-125
3.6.7 What are the potential impacts to historic resources under	
Section 4(f)?	3-126
3.7 Hazardous Materials	3-126
3.7.1 What is a hazardous material?	3-126
3.7.2 Are there any potentially contaminated sites located within	
the project study area?	3-127
3.7.3 Would the Build Alternatives impact potentially contaminated sites	
in the project study area?	3-127
3.7.3.1 Alternative 1	3-128
3.7.3.2 Alternative 2	<i>3-129</i>
3.7.3.3 Alternative 3	3-129

Page TOC-8 Table of Contents





Chapter and Section	<u>Page</u>
3.8 Noise	3-131
3.8.1 What is noise?	3-131
3.8.2 How are noise impacts estimated?	3-131
3.8.3 How was background noise determined in the project study area?	3-132
3.8.4 How was TNM tested to ensure accuracy?	3-133
3.8.5 What are the anticipated noise impacts for the proposed alternative?	3-135
3.8.6 What happens when impacts occur and can impacts be mitigated?	3-137
3.8.6.1 No-build Alternative	3-138
3.8.6.2 Highway Alignment	3-138
3.8.6.3 Traffic System Management Measures	3-138
3.8.6.4 Noise Barriers	3-138
3.9 Air Quality	3-141
3.9.1 How is air quality measured?	3-141
3.9.2 What are the potential air quality issues associated with a transportation pro	ject? 3-141
3.9.3 Would air quality be impacted by the proposed project?	3-149
3.10 Farmlands	3-152
3.10.1 Why is farmland an important consideration?	3-152
3.10.2 How is farmland protected?	3-153
3.10.3 What are the different types of protected farmland?	3-154
3.10.4 What are the types and amounts of farmland in the project study area?	3-154
3.10.5 What types of soils are in the project study area?	3-154
3.10.6 What are the typical farm sizes in Dillon, Marlboro, Richmond,	
and Scotland Counties?	3-154
3.10.7 How would the No-build alternative directly impact farmlands?	3-158
3.10.8 How would the Build Alternatives directly impact farmlands?	3-158
3.10.9 What would be the potential indirect and cumulative impacts on	
farmlands?	3-161
3.10.9.1 How would development that is expected to occur with the No-build	
Alternative impact farmlands?	3-162





Chapter and Section	<u>Page</u>
3.10.9.2 What would be the potential impacts from induced development	
on farmland by the Build Alternatives?	3-163
3.10.9.3 What would be the potential cumulative impacts on farmland from	
the Build Alternatives?	3-163
3.10.10 What Federal/USDA farmland programs are active or found in the project	
study area and how would they be impacted by the Build Alternatives?	3-164
3.10.10.1 Conservation Reserve Program	3-164
3.10.10.2 Farm and Ranch Lands Protection Program	3-167
3.10.10.3 Wetlands Reserve Program	3-167
3.11 Uplands	3-167
3.11.1 What are uplands?	3-167
3.11.2 Why are uplands important?	3-167
3.11.3 How were uplands identified for this project?	3-168
3.11.4 What upland natural community types were identified	
within the study area?	3-169
3.11.4.1 Mesic mixed hardwood forest	3-169
3.11.4.2 Oak-hickory forest (Dry or Dry-mesic oak-hickory forest)	3-170
3.11.4.3 Pine flatwoods	3-170
3.11.4.4 Uplands pine-wiregrass woodland	3-171
3.11.4.5 Xeric sandhill scrub	3-171
3.11.4.6 Pine-scrub oak sandhill	3-172
3.11.4.7 Agricultural fields and timberlands	3-173
3.11.4.8 Developed areas	3-173
3.11.4.9 Drained bottomland hardwoods	3-173
3.11.5 How would upland communities be impacted?	3-173
3.12 Wetlands	3-176
3.12.1 What are wetlands?	3-176
3.12.2 Why are wetlands important?	3-176
3.12.3 How were wetland identified for this project?	3-176

Page TOC-10 Table of Contents





Chapter and Section	<u>Page</u>
3.12.4 What wetland types were identified along the alternatives?	3-178
3.12.4.1 Aquatic beds	3-180
3.12.4.2 Bay forests	3-180
3.12.4.3 Bottomland hardwoods	3-181
3.12.4.4 Deciduous shrub swamps	3-181
3.12.4.5 Evergreen shrub bogs/pocosins	3-182
3.12.4.6 Freshwater marshes	3-183
3.12.4.7 Pine savannahs and wet flatwoods	3-183
3.12.4.8 Ponds and borrow pits	3-184
3.12.4.9 Rivers and canals	3-184
3.12.4.10 Savannahs and wet meadows	3-185
3.12.4.11 Wooded swamps	3-185
3.12.5 How many acres of wetland would be impacted by the project?	3-186
3.12.6 What kind of impacts would occur in streams as a result of the project?	3-186
3.12.7 How much stream and what kind of impact would result from the project?	3-190
3.12.8 What indirect impacts to wetlands and streams would occur as the	
result of the project?	3-193
3.12.9 What would cumulative impacts be to wetlands and streams in the	
project study area?	3-194
3.12.10 What is mitigation?	3-196
3.12.11 What was done to avoid and minimize wetland and stream impacts?	3-197
3.12.11.1 Avoidance	3-197
3.12.11.2 Minimization	3-198
3.12.12 How will compensation be determined for wetland and stream impacts?	3-200
3.12.12.1 Wetlands	3-202
3.12.12.2 Streams	3-202
3.13 Invasive Species	3-204
3.13.1 What are invasive plant species?	3-204
3.13.2 What is FHWA policy on invasive species?	3-204





THEEL OF CONTENTS	
Chapter and Section	<u>Page</u>
3.13.3 What are FHWA recommendations regarding invasive species?	3-204
3.13.4 What invasive plant species occur within the project study area?	3-205
3.13.5 How do invasive plants negatively impact the land?	3-206
3.13.6 How would actions from the proposed project create impacts from	
invasive plant species?	3-206
3.13.7 What measures have been successful in preventing and/or controlling	
the spread of invasive plant species?	3-207
3.14 Federally Protected Species	3-207
3.14.1 What are federally protected species?	3-207
3.14.2 Which federally protected species may be found in the	
project study area?	3-207
3.14.3 What has been done to avoid impacts to federally protected species	
on this project?	3-208
3.14.4 How could federally protected species be affected by the proposed project?	3-209
3.14.4.1 Rough-leaved loosestrife	3-210
3.14.4.2 Canby's dropwort	3-211
3.14.4.3 Michaux's sumac	3-211
3.14.4.4 American chaffseed	3-212
3.14.4.5 Bald eagle	3-214
3.14.4.6 Red-cockaded woodpecker	3-215
3.14.4.7 American alligator	3-216
3.14.4.8 Shortnose sturgeon	3-217
3.14.4.9 Carolina heelsplitter	3-218
3.14.5 What would happen if a federally protected species was affected	
by the proposed project?	3-219
3.14.6 What would indirect and cumulative impacts to federally protected	
species be?	3-219
3.15 State Species of Concern	3-221
3.16 Wildlife	3-221

Page TOC-12 Table of Contents





Chapter and Section	Page
3.16.1 What types of wildlife habitat are found in the project study area?	3-221
3.16.2 What species are typically found in upland habitats within the	
project study area?	3-229
3.16.2.1 Mesic mixed hardwood forests	3-229
3.16.2.2 Oak-hickory forest	3-229
3.16.2.3 Pine flatwoods	3-230
3.16.2.4 Xeric sandhill scrubs, Pine-scrub oak sandhill, and Upland pine-wi	
woodiana 3.16.2.5 Disturbed areas	3-231
	3-231
3.16.3 What species are generally found in wetland habitats within	3-233
the project study area?	3-233 3-233
3.16.3.1 Aquatic beds	
3.16.3.2 Bottomland hardwoods	3-234
3.16.3.3 Deciduous shrub swamps	3-234
3.16.3.4 Bay forests and evergreen shrub bogs/pocosins	3-235
3.16.3.5 Freshwater marsh	3-236
3.16.3.6 Ponds and borrow pits	3-236
3.16.3.7 Rivers and canals	3-237
3.16.3.8 Pine savannahs and wet flatwoods & savannahs	
and wet meadows	3-238
3.16.3.9 Wooded swamps	3-239
3.16.4 How would wildlife and their habitat be impacted by this project?	3-240
3.16.5 What impacts would occur to wildlife from construction?	3-243
3.16.6 What can be done to minimize impacts to wildlife?	3-243
3.16.7 What indirect and cumulative impacts would occur to wildlife?	3-243
3.16.8 What are migratory birds?	3-247
3.16.9 Which migratory birds potentially occur in the project study area?	3-248
3.16.10 What potential impacts to migratory birds do roadways cause?	3-248





Chapter and Section	<u>Page</u>
3.17 Groundwater Resources	3-251
3.17.1 What are the groundwater resources in the project study area?	3-251
3.17.2 How would groundwater resources be impacted by the	
proposed project?	3-254
3.18 Surface Waters	3-255
3.18.1 What drainage basin is the proposed project located?	3-255
3.18.2 Surface waters designated in the project study area	3-255
3.18.3 Drinking water sources in the project study area	3-257
3.18.4 How is surface water quality evaluated?	3-258
3.18.5 What are the surface water quality conditions in the Pee Dee River Sub-basin	
and the Yadkin-Pee Dee River Sub-basin 03-07-06?	3-262
3.18.5.1 Watershed Units which Drain into the Great Pee Dee River	3-263
3.18.5.2 Watershed Units which Drain into the Little Pee Dee River	3-266
3.18.7 What are the potential impacts to water quality?	3-268
3.18.7.1 No-Build Alternative	3-268
3.18.7.2 Alternative 1	3-269
3.18.7.3 Alternative 2	3-270
3.18.7.4 Alternative 3	3-271
3.18.8 How much pollutant would runoff into streams in the project	
study area as a result of the Build Alternatives?	3-271
3.18.9 What best management practices and measures would be used	
to minimize the amount of runoff pollution into streams?	3-275
3.18.10 What are the cumulative impacts to water quality?	3-276
3.19 Floodplains	3-278
3.19.1 What is a floodplain?	3-278
3.19.2 What agencies regulate floodplains?	3-278
3.19.3 How were the floodplain boundaries determined for this study?	3-279
3.19.4 What floodplains are located within the project study area?	3-279
3.19.5 What direct impacts would there be to floodplains?	3-279

Page TOC-14 Table of Contents





Chapter and Section	Page
3.20 Wild and Scenic Rivers	3-283
3.21 Resources Affected Uniformly	3-284
3.21.1 How would coastal zone resources be affected?	3-284
3.21.1.1 Coastal Zone Resources	3-284
3.21.1.2 Coastal Barrier Resources	3-285
3.21.2 How would energy be consumed by the project?	3-285
3.21.2.1 Energy consumption during construction	3-285
3.21.2.2 Energy consumption during the operation of the facility	3-286
3.21.2.3 Conservation potential of the project	3-286
3.21.2.4 Estimated statewide energy consumption savings with the	
Build Alternatives	3-286
3.22 Permits	3-287
3.22.1 Section 404 of the Clean Water Act	3-287
3.22.2 Section 401 Water Quality	3-287
3.22.3 Section 402 of the Clean Water Act	3-287
3.22.4 Construction in State Navigable Waters	3-288
3.22.5 Stormwater Management and Sediment Reduction Act of 1991	3-288
3.23 Short-term uses versus long-term productivity	3-289
Chapter 4. Public Involvement and Agency Coordination	4-1
Public Involvement	4-1
4.1 How was the public engaged in the project?	4-1
4.2 What happened at the Public Scoping Meetings?	4-2
4.3 What took place at the Public Information Meetings?	4-3
4.4 How did the FHWA and SCDOT reach out to communities?	4-4
4.5 What other meetings took place?	4-5
4.5.1 Community Information Meetings	4-5
4.5.2 Other Meetings	4-6
4.6 What other forms of information were available to the public?	4-6
4.7 How were local governments and leadership involved?	4-8





Chapter and Section	<u>Page</u>
Agency Involvement and Coordination	4-10
4.8 What is the Agency Coordination Team?	4-10
4.9 How did the ACT contribute to the project?	4-11
4.10 Were there any meetings with agencies prior to the formation of the ACT?	4-12
4.11 Who participated in the ACT meetings and contributed to the project?	4-12
4.12 When did the ACT meetings occur and what happened at the meetings?	4-12
4.12.1 October 19, 2005 ACT Meeting	4-12
4.12.2 December 15, 2005 ACT Meeting	4-14
4.12.3 January 10, 2006 CAT Workshop	4-15
4.12.4 January 19, 2006 ACT Meeting	4-15
4.12.5 February 10, 2006 Meeting with SCDHEC-OCRM	4-15
4.12.6 February 23, 2006 Meeting with SCDAH	4-15
4.12.7 March 2, 2006 ACT Meeting	4-16
4.12.8 March 14, 2006 Meeting with SCDAH	4-16
4.12.9 April 19, 2006 ACT Meeting	4-16
4.12.10 July 13, 2006 ACT Meeting	4-16
4.12.11 August 30, 2006 ACT Meeting	4-17
4.12.12 September 13-14, 2006 Field Trip	4-17
4.12.13 September 28, 2006 ACT Meeting	4-17
4.12.14 November 2, 2006 ACT Meeting	4-18
4.12.15 January 18, 2007 ACT Meeting	4-18
4.12.16 February 22, 2007 ACT Meeting	4-19
4.12.17 May 9, 2007 ACT Meeting	4-19
4.13 How were the North Carolina agencies involved in the project?	4-19
4.13.1 October 13, 2005 Meeting	4-19
4.13.2 February 23, 2006 Meeting	4-20
4.13.3 July 20, 2006 Meeting	4-20
4.13.4 December 6, 2006 Meeting	4-20
4.13.5 June 14, 2007 Meeting	4-20

Page TOC-16 Table of Contents





Chapter and Section	<u>Page</u>
Stakeholder Working Group Involvement	4-21
4.14 What was the Stakeholder Working Group?	4-21
4.15 What happened at the Stakeholder Working Group Meetings?	4-21
Tribal Involvement	4-21
4.16 How was Tribal Consultation handled for this project?	4-21
Chapter 5. List of Preparers	5-1
5.1 Federal Highway Administration	5-1
5.2 South Carolina Department of Transportation	5-1
5.3 The LPA Group, Incorporated	5-2
5.4 Wilbur Smith Associates	5-3
5.5 Adobe Palm Communications, LLC	5-4
5.6 Brockington and Associates, Inc.	5-4
5.7 Civil Engineering Consulting Services, Inc.	5-5
5.8 Environmental Planning Strategies, Inc.	5-5
5.9 The Grant Group, Inc.	5-5
5.10 OLH International	5-5
5.11 P.J. Noble & Associates, Inc.	5-5
5.12 Press and Potter, LLC	5-6
<u>Index</u>	I-1
List of Acronyms	A-1
<u>Appendices</u>	
A Resolutions & Correspondence with Local Governments	
B Agency Letters	
C Corridor Analysis Tool	
D Memorandum HEPN-10	
E Comprehensive List of Wildlife Species	
F Correspondence with Native Americans	





<u>Tables</u>	<u>Page</u>
Executive Summary	
S.1 Three Reasonable Alternatives Matrix	S-5
Chapter 1. Purpose and Need for Action	
1.1 Project Study Area Population Growth	1-14
1.2 Project Study Area Population Forecasts, 2000-2030 Population Forecasts,	
In Thousands	1-15
1.3 Demographic Composition of Communities in the Project Study Area	1-17
1.4 Demographic Characteristics of Counties in the Project Area	1-18
1.5 Housing Characteristics of Counties in the Project Study Area	1-19
1.6 Project Area Educational Attainment Levels	1-19
1.7 Project Study Area Job Training/Adult Education Options	1-20
1.8 Top Employers in Dillon and Marlboro Counties	1-24
1.9 Top Employers in Richmond and Scotland Counties	1-25
1.10 2030 Estimated Reduction in Average Annual Daily Traffic Volumes	1-30
Chapter 2. Development of Alternatives	
2.1 Alternative Evaluation Criteria	2-2
2.2 Agencies Contacted Regarding GIS Data	2-6
2.3 Available GIS Layers for CAT Program	2-7
2.4 Six Preliminary Alternatives Matrix	2-18
2.5 Alternatives Considered by the ACT	2-22
2.6 Three Reasonable Alternatives Matrix	2-29
2.7 Minimum Trip Time Between I-95 and U.S. Route 74 in Year 2030	2-33
2.8 Economic Impact Summary in 2035 from Travel Efficiencies	
(Alternatives Compared to No-build)	2-33
2.9 Strategic Development GRP Impact from 2015-2035 (Alternatives	
Compared to No-build)	2-35
2.10 Strategic Development Employment Increases by Alternative and County	
(Permanent Full-Time Jobs)	2-36
2.11 Strategic Development Annual Income Increases by Alternative and	
County (Millions of Dollars)	2-36
2.12 Economic Impact Summary in 2030 by Alternative	2-37
2.13 Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) in	
Network for Alternatives using Average Annual Daily Traffic Volumes	
(Year 2030)	2-38

Page TOC-18 Table of Contents





<u>Tables</u>	<u>Page</u>
2.14 Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) in	
Network for Alternatives using Average Annual Daily Traffic Volumes	
with I-73 Traffic Removed (Year 2030)	2-39
2.15 USACE Public Interest Review Factors	2-41
Chapter 3. Existing Conditions and Environmental Conseque	nces
3.1 Projected Population Growth by County, 2000 to 2030	3-10
3.2 No-build Alternative Summary of Land Use Requirements in Acres	3-12
3.3 No-build Alternative, Detailed Land Use Requirements in Acres	3-15
3.4 Proposed I-73 Interchanges Along Each Alternative by Census Tract	3-19
3.5 Total Shift in Anticipated Development Resulting from Build Alternatives	
by Census Tract (in acres of new development)	3-21
3.6 Anticipated Development Resulting from Build Alternatives by	
Census Tract (in acres of new development)	3-22
3.7 Total Growth by 2030 including Impact of Build Alternatives by	
Census Tract (in acres of new development)	3-25
3.8 Total Impacts to Communities in Project Study Area by Alternative	3-32
3.9 Demographic Characteristics of Communities in Project Study Area	3-35
3.10 Economic Characteristics of Communities in Project Study Area	3-36
3.11 Churches in Bennettsville	3-48
3.12 Projected 2030 Development within Communities in Project Study	
Area, in acres	3-52
3.13 Summary of Direct Impacts by Alternative for Communities in	
Project Study Area	3-100
3.14 2000 USHHS Poverty Thresholds	3-102
3.15 Minority Population, 2000	3-104
3.16 Low-income Population, 2000	3-106
3.17 Total Number of Block Groups with EJ Populations	3-106
3.18 Block Groups Impacted by Build Alternatives	3-108
3.19 Community and Block Group Relocations	3-110
3.20 Public Recreational Facilities, Parks, and Wildlife/Waterfowl Refuges	
Located in Project Study Area	3-116
3.21 NRHP Sites in the Project Study Area	3-119
3.22 Archaeological Predictive Model: High Probability Acreage	3-123





<u>Tables</u>	Page
3.23 Summary of Hazardous Material Sites Identified within the	
Project Study Area	3-125
3.24 Hazardous Materials and Waste Sites Potentially Impacted	
by Alternative	3-126
3.25 Common Noises and dB Levels	3-132
3.26 FHWA Noise Abatement Criteria	3-133
3.27 Ambient Noise Levels	3-134
3.28 Noise Model Vehicular Data	3-135
3.29 Approximate Distance to NAC Contours For Existing, Future	
No-Build, Future Build	3-137
3.30 Approximate Distance to NAC Contour (feet)	3-137
3.31 Noise Impacts Based on GIS Analysis	3-138
3.32 Criteria Pollutants Measured Under the NAAQS	3-142
3.33 Top Crops Grown in Dillon, Marlboro, Richmond, and Scotland	
Counties in 2002, in acres	3-153
3.34 Summary of Prime and Statewide Importance Farmland Soils	
in the Project Study Area	3-155
3.35 Prime Farmland Soil Types in Project Study Area, by county	3-156
3.36 Types of Soils of Statewide Importance in Project Study Area, by county	3-157
3.37 Agriculture Land Use in Four-county Area in 2002	3-158
3.38 NRCS Farmland Conversion Evaluation Point Total by Alternative	3-159
3.39 Prime Total and Statewide Important Total Soils by Acres	3-160
3.40 Divided Farmland Parcels in the Project Study Area by Acres	3-161
3.41 Impacts from Induced Development on Prime and Farmland of	
Statewide Importance Soils in the Project Study Area by Alternative	
in Acres	3-162
3.42 Cumulative Impacts to Prime and Farmland of Statewide Importance	
Soils in the Project Study Area by Alternative in Acres	3-163
3.43 Land Enrolled in Federal Conservation Programs by Acres	3-165
3.44 Impacts to Land in the Conservation Reserve Program	3-165
3.45 Potential Agricultural and Developed Land Impacts in Acres	3-174
3.46 Potential Natural Forested Upland Community Impacts in Acres	3-174
3.47 Potential Wetland Impacts in Acres and Wetland Values	3-188
3.48 Existing Stream/Riparian Wetland Crossings	3-191

Page TOC-20 Table of Contents



PATHWAY TO PROGRESS

TABLE OF CONTENTS

<u>Tables</u>	Page
3.49 Potential Stream Impacts	3-192
3.50 Potential Indirect Wetland Acres and Stream Impacts	3-193
3.51 Potential Total I-73 Wetland Impacts Relative to Study Area	
Wetlands (Acres)	3-195
3.52 Federally Protected Species in Dillon County and Marlboro County,	
South Carolina, and Richmond County and Scotland County,	
North Carolina	3-208
3.53 State Listed Rare, Threatened, and Endangered Species Known to Occur	
in Dillon County and Marlboro County, South Carolina, and	
Richmond County and Scotland County, North Carolina	3-222
3.54 Undisturbed Upland and Wetland Habitats in Project Study Area	3-229
3.55 Potential Wildlife Habitat Impacts in Acres	3-241
3.56 Relative Roadway Effects on Habitats	3-242
3.57 Potential Indirect Wildlife Habitat Impacts in Acres	3-245
3.58 Potential Cumulative Wildlife Habitat Impacts in Acres	3-246
3.59 Migratory Bird Species Potentially Found within the Project Study Area	3-249
3.60 Sub-basins, Watershed Units, and Major Streams in Project Study Area	3-256
3.61 Water Service Providers in the Project Study Area	3-257
3.62 SCDHEC's Use Support Determination System	3-259
3.63 NCDENR's Use Support Determination System for Class C Waters	3-261
3.64 303(d) List of Impaired Streams within Project Study Area	3-255
3.65 Stream/Ditches Impacted by Predicted Development in the	
Project Study Area	3-269
3.66 Stream/Ditch Crossings by Alternative	3-270
3.67 Pollutant Discharge in Pounds	3-272
3.68 Anticipated Amount of New Impervious Surfaces by Induced Development	
in the Project Study Area	3-274
3.69 National Flood Insurance Program Regulated Floodplains Located	
within the Project Study Area	3-280
3.70 Floodplain Crossings Locations and Impact Areas	3-282
Chapter 4. Public Involvement and Agency Coordination	
4.1 Community Information Meetings	4-5
4.2 Other Public Meetings	4-7
4.3 Summary of Letters and Resolutions Received for Proposed Project	4-9





<u>Tables</u>	<u>Page</u>
4.4 Agency Coordination Team Members	4-13
4.5 ACT Meetings and Attendance for Northern I-73 Project	4-14
4.6 Tribal Consultation Process	4-23
<u>Figures</u>	<u>Page</u>
Chapter 1. Purpose and Need for Action	
1-1 Interstate Corridor	1-1
1-2 I-73 Project Study Area	1-3
1-3 I-73 Interim 4 Lanes	1-5
1-4 I-73 Ultimate 6 Lanes	1-6
1-5 Project Study Area Counties	1-13
1-6 Population Density of the Project Study Area	1-14
1-7 Median Household Income of the Project Study Area	1-16
1-8 Percent Unemployed within Project Study Area	1-22
1-9 Population Below Poverty Level	1-26
Chapter 2. Development of Alternatives	
2-1 All Preliminary Build Segments	2-9
2-2 Preliminary Build Alternatives	2-12
2-3 Six Preliminary Build Alternatives	2-13
2-4 Potential Interchange Design for Preliminary Build Alternatives 1 and 2	2-17
2-5 Potential Interchange Design for Preliminary Build Alternative 6	2-18
2-6 Potential Interchange Design for Preliminary Build Alternatives 3, 4, and 5	2-19
2-7 Reasonable Build Alternative 1	2-22
2-8 Reasonable Build Alternative 2	2-25
2-9 Reasonable Build Alternative 3	2-26
2-10 Alternative 1	2-42
2-11 Alternative 2	2-43
2-12 Alternative 3	2-44
Chapter 3. Existing Conditions and Environmental Conseque	ences
3-1 Industrial Parks within Project Study Area	3-5
3-2 Alternative 1 Year 2030 Potential Land Use Change Areas	3-13
3-3 I-73 Census Tract Map	3-14
3-4 Alternative 2 Year 2030 Potential Land Use Change Areas	3-23

Page TOC-22 Table of Contents





<u>Figures</u>	Page
3-5 Alternative 3 Year 2030 Potential Land Use Change Areas	3-24
3-6 Communities Evaluated by Community Impact Assessment	3-31
3-7 Community Boundaries	3-34
3-8 Dillon County	3-33
3-9 Community Populations in Project Study Area	3-33
3-10 Bingham	3-37
3-11 Free State	3-39
3-12 Minturn	3-41
3-13 Marlboro County	3-45
3-14 Bennettsville	3-47
3-15 Blenheim	3-53
3-16 Clio	3-56
3-17 McColl	3-60
3-18 Tatum	3-63
3-19 Aarons Temple	3-66
3-20 Brightsville	3-69
3-21 Adamsville	3-72
3-22 Dunbar	3-75
3-23 Fletcher	3-78
3-24 Hebron	3-81
3-25 Lester	3-83
3-26 Newtonville	3-86
3-27 Chavistown	3-89
3-28 Salem	3-92
3-29 Richmond County	3-94
3-30 Hamlet	3-96
3-31 Scotland County	3-99
3-32 Environmental Justice Block Groups Impacted by the Alternatives	3-107
3-33 Location of Lake Paul Wallace	3-117
3-34 Known Sites on the National Register of Historic Places	3-122
3-35 Location of Resource 0918	3-123
3-36 Location of the McLaurin House	3-124
3-37 Noise Impacts	3-139
3-38 Land Enrolled in Conservation Reserve Program	3-166



Table of Contents

<u>Figures</u>	Page
3-39 Wetlands, Streams, and Floodplains	3-179
3-40 Potential Roadway Impacts to Wildlife Habitat	3-244
3-41 Groundwater aquifers	3-252
3-42 Potentially Impacted Watershed Units	3-265
3-43 Projects within the Pee Dee Basin	3-276
3-44 State Scenic Rivers in Project Study Area	3-284
<u>Charts</u>	Page
Chapter 1. Purpose and Need for Action	
1.1 Past and Projected Population: 1970-2030	1-15
1.2 2000 Median Household Income	1-18
1.3 Total Employment by County	1-21
1.4 Dillon County Employment by Industry	1-21
1.5 Marlboro County Employment by Industry	1-22
1.6 Richmond County Employment by Industry	1-22
1.7 Scotland County Employment by Industry	1-23
1.8 2002 to 2006 Project Study Area Unemployment Levels (by Percent)	1-23
1.9 Percent Below Poverty Level in 2000	1-26
Chapter 3. Existing Conditions and Environmental Conseq	uences
3.1 U.S. Annual Vehicle Miles Traveled (VMT) vs. Mobile Source Air	
Toxics Emissions, 2000 to 2020	3-145
3.2 Total acres of Farmland in Project Study Area	3-159

Page TOC-24 Table of Contents