U.S. Department of Transportation
Federal Highway Administration

South Carolina

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Columbia, South Carolina 29201
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May 25, 2016

In Reply Refer To:
HDA-SC

Ms. Heather Robbins
Director Environmental Services Office
South Carolina Department of Transportation (SCDOT)
955 Park Street, P.O. Box 191
Columbia, South Carolina 29202

Dear Ms. Robbins:

The FHWA has received your letter requesting a Finding of No Significant Impact (FONSI) determination for the proposed I-85 Widening and Improvements from Mile Marker 80 to Mile Marker 96 in Cherokee and Spartanburg Counties, South Carolina (Federal Project No.P27114). Based on the information provided to complete the environmental process the FHWA finds that the project will have no significant impacts; therefore a FONSI determination is justified. Please proceed accordingly with the publication of the notice of availability of location and preliminary design approval and availability of the FONSI. The final documentation is to be made available to the public upon request. A notice of the FONSI approval shall be sent to the affected units of Federal, State, and local governments. A notice shall also be sent to the State inter-governmental review contacts established under Executive Order 12372.

We have also reviewed the Interchange Modification Report (IMR) submitted on April 14, 2016 for Interstate access revisions at Exits 82, 83 and 95. Based on our review, the modifications as recommended are acceptable. As the selected alternative contained in the NEPA document is consistent with the IMR, the proposed access revision to the Interstate System is approved. Please note that the approved access revision is valid for a period of eight years and must be re-assessed if not advanced to construction within this timeframe.

By our adoption of the FONSI and completion of the public comment/hearing requirements of 23 U.S.C. 128, the SCDOT is authorized to proceed with further project development. Please ensure that the project commitments made during the NEPA process are included in the project construction proposal and ultimately carried out. Please address any questions to Mr. J. Shane Belcher at jeffrey.belcher@dot.gov /803-253-3187 or Carolyn Fisher at carolyn.fisher@dot.gov /803-765-5464.

Sincerely,

Emily O. Lawton
Division Administrator

Enclosures

ec: Mr. David Kelly, SCDOT NEPA Coordinator, RPG 4
Mr. Brad Reynolds, SCDOT Program Manager

FEDERAL HIGHWAY ADMINISTRATION
SOUTH CAROLINA DIVISION OFFICE
FINDING OF NO SIGNIFICANT IMPACT
for

I-85 Widening and Improvements, Mile Marker 80 to 96, Project

Spartanburg and Cherokee Counties, South Carolina

PIN P27114

Project Description

The South Carolina Department of Transportation (SCDOT) proposes improvements to an approximately 17-mile long section of the I-85 corridor designed to increase capacity and upgrade interchanges and overpass bridges to meet state and federal design requirements. SCDOT intends to widen I-85 from four to six lanes beginning at the existing six lanes near Exit 80 – Gossett Road (S-57) in Spartanburg County and ending approximately 1.5 miles north of Exit 96 – Shelby Highway (SC 18) in Cherokee County (Figure 1, page 2). Along the approximately 17-mile project area, interchanges at Exit 83 – Battleground Road (SC 110), Exit 87 – Green River Road (S-39), Exit 95 – Pleasant School Road (S-82), and Exit 96 – Shelby Highway (SC 18) will be modified to bring them into compliance with state and federal design requirements. Also, the overpass bridge at Sunny Slope Drive (S-131) will be replaced to provide greater vertical clearance to meet design standards.

The proposed improvements of the I-85 corridor are included in the current South Carolina State Transportation Improvement Program (STIP), which includes information about federally funded projects for the 2014-2019 time frame (Revised September 18, 2015). The STIP currently lists funding of approximately $319 Million. The total cost of the Preferred Alternative is estimated at $245 Million. Therefore, it has been determined that there is a reasonable availability of funding to construct the proposed project. It is anticipated that the project will be developed and constructed through a "Design-Build" process.

Purpose and Need

The proposed project has two primary purposes: increase roadway capacity to address the projected increased traffic volumes; and correct geometric and clearance deficiencies by bringing them into compliance with current state and federal design standards. The secondary purpose is to improve safety which will be enhanced by reducing congestion and improving the geometric design of the facility.

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1 inch = 6,000 feet

I-85 Widening MM 80-96

Project Location Map

Figure 1

Revisions Since Approval of the EA

As a result of new information gathered at the public hearing and subsequent coordination with commenting groups and individuals, changes were made to the designs at several locations on the project.

SCDOT revised the previous design to:

- widen the inside shoulder of the loop ramp in the southeastern quadrant of Exit 83;
- relocate the frontage roads in the northwest, southeast, and southwest quadrants of the interchange at Exit 87 (refer to Figure 2, page 4);
- eliminate the change to the alignment of the frontage road at Exit 90;
- realign S-82, Pleasant School Road, and the frontage road at Exit 95 to reduce the impact to the UPS facility (refer to Figure 3, page 5); and,
- replace the existing twin box culvert under North Limestone Street near Exit 95 with a culvert of equal or greater size.

In addition, there was one change to the wetland impacts calculated for the Preferred Alternative at Exit 87. A wetland, south of Exit 87 and east of South Green River Road, was brought to the attention of the project team as a result of comments received from a property owner at the Public Hearing. This wetland was field verified and delineated. It was determined that the wetland would have been partially impacted by the re-alignment of Overbrook Drive for Alternative 5b and would have increased by 0.059 acres the wetland impact of the Preferred Alternative. However, design changes at Exit 87 as a result of comments received moved Overbrook Drive to the north, which eliminated impacts to this wetland.

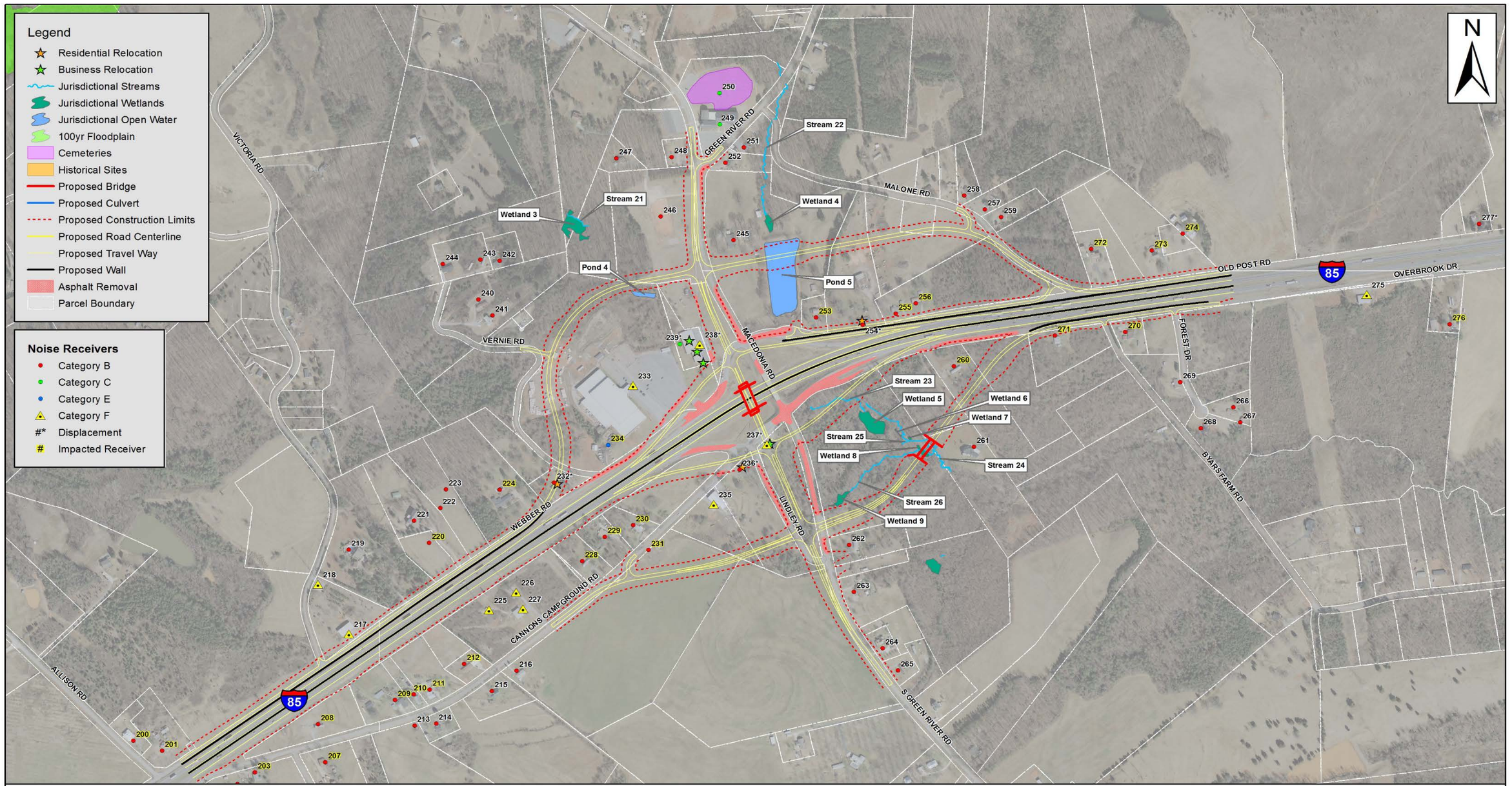
Exit 83

The inside shoulder of the northbound loop/ramp at Exit 83 has been widened and a barrier installed between the ramps. This did not result in any changes in impacts for the project.

Exit 87

The frontage roads at Exit 87 (Webber Road, Cannons Campground Road and Overbrook Drive) have been changed (refer to Figure 2, page 4). As a result of the shift in Webber Road, northwest of this interchange, the Orchard Place building and the Ambustar facility would not be relocated. However, one additional residence along Webber Road, north of I-85 and west of the interchange, would now be relocated. The shift of Cannons Campground Road southwest of I-85 would reduce impacts to farmland, including an active farm, by 3 acres.

The stream impacts would not be changed by the newly proposed alignment at Exit 87. However, a pond west of Macedonia Road (Pond 4) would no longer be impacted by the re-alignment of Webber Road. This would reduce the pond impacts by approximately 0.07 acres.



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1 inch = 600 feet

I-85 Widening MM 80-96

Modified Preferred Alternative Exit 87

Figure 2

South Carolina Department of Transportation

1 inch = 500 feet

I-85 Widening MM 80-96

Modified Preferred Alternative Exit 95

Figure 3

The noise model was re-run for the new configuration of Exit 87. The Ambustar facility, no longer to be relocated, would be impacted by noise. One residence that was previously impacted by noise would now be relocated and is no longer considered a noise-impacted receiver. One residence on Old Post Road, which was incorrectly shown as not impacted by noise with the initial design (it was entered in the noise model as a displaced residence), is now correctly reported as being impacted by the revised design. The noise barrier modeling for the new Exit 87 determined that neither of the proposed barriers 15 and 16 would achieve a reasonable 8 dBA reduction for 80 percent of the impacted receivers, thus these barriers are considered unreasonable and would not be constructed. The results of the changes at Exit 87, including noise impacts, are shown in the revised impact summary in Table 1.1.

Table 1.1
Exit 87 Preferred Alternative Impact Summary

Categories	**Exit 87 Initial Preferred Alternative (Alt 5b)**	**Exit 87 Revised Preferred Alternative**
Meets P&N	Yes	Yes
Cost (Millions)	$38.4	$38.4
Wetlands (acres)	0	0
Streams (linear feet)	369	369
Ponds (acres)	0.84	0.77
Floodplains	None	None
T and E Species	No	No
Historical Sites	No	No
Archaeological Sites	No	No
Section 4(f) Sites	No	No
Relocations (Total)	8	7
- Business	6	4
- Residential	2	3
- Vacant Commercial	1	0
- Other	0	0
Noise Impacted Receptors	18	19
-Residential (NAC B)	18	18
-Schools & Churches (NAC C)	0	0
-Businesses (NAC E)	0	1
Hazardous Material Sites	0	0
Farmlands (acres)	28.4	25.4

Exit 90

The re-alignment of Peachoid Road in the northeast quadrant at Exit 90 was eliminated. This re-alignment would have impacted a reported 70 parking places at Hamrick's Department store.

Exit 95

The crossover road (Pleasant School Road) and frontage road (Wilcox Avenue) at Exit 95 have been changed. The interchange has been skewed to the east on the north side of I-85, moving it away from the UPS facility. This allowed Wilcox Avenue to be shifted to the east also, which reduced the impacts to the UPS facility (refer to Figure 3, page 5). Wilcox Avenue would no longer be routed through a portion of the building but would now touch a corner of the facility's parking and travel way. A pump house along Pleasant School Road near Lake Whelchel would, however, be impacted and require relocation. One less business, SC Wholesale, would require relocation. This is not related to the design change, but resulted simply from access being provided to SC Wholesale, located in the southeast quadrant of the interchange, from the realigned Shelby Highway. There would also be a slight (0.2 acre) reduction in farmland impacted. There would be an additional 98 feet of stream impact in the northeast quadrant due to the shift of the alignment to the east.

One important element of this change in the design is the effect that it would have on the operation of Exit 95 during construction. The revised location of North Limestone/Pleasant School Road would require the proposed alignment to cross over the existing alignment. The proposed profile will be approximately 17 feet higher than the existing road elevation at the crossover. This height differential would require Exit 95 to be closed from nine to twelve months while the new interchange is constructed. Traffic would be detoured to Exits 92 (for northbound traffic heading to Exit 95) and 96 (for southbound traffic heading to Exit 95) then travel along the frontage roads to Pleasant School Road/North Limestone Road during this time.

The shift was evaluated for noise impacts, and it was determined that "Given the location of this new alignment relative to noise sensitive receivers, the proposed alignment would not lead to additional impacts or otherwise alter the sound levels for any noise sensitive receivers in the area."[1] It was discovered that one residence on the northeast side of the interchange that would not be relocated had been evaluated as relocated during the noise evaluation. This residence would be impacted by noise (the NAC would be exceeded). A noise wall at this location was determined not to be reasonable due to an estimated cost of $363,695 for one benefitted receiver.

Also near Exit 95, the twin box culverts (double 10' by 10') located in Providence Branch, under North Limestone Road, south of the interchange are to be replaced. Providence Branch is a FEMA Zone AE floodplain. Originally, the culverts were to remain in place and retaining walls were to be placed on either side to prevent encroachment into the floodplain as the road was

[1] Noise Assessment Memorandum. Edwards-Pitman Environmental, Inc., March 7, 2016.

raised by about 6 feet. Evaluation of the culverts indicated that they would be overstressed by the additional fill (the existing culverts date from 1937) and should be replaced. The culverts are to be replaced by culverts at least equal to the current size, if not larger. A hydraulic study will be done to determine the size needed to accommodate the volume of flow and not impact the floodplain.

The new culvert(s) will not encroach into the floodplain without FEMA review and approval. Any additional stream impacts that would occur at this location as a result of changes to the culverts will be made part of the Section 404 permit application. The results of the changes at Exit 95 are shown in the revised impact summary in Table 1.2.

Table 1.2
Exit 95 Preferred Alternative Impact Summary

Categories	**Exit 95 Initial Preferred Alternative**	**Exit 95 Revised Preferred Alternative**
Cost (Millions)	$27.3	$27.3
Wetlands (acres)	0	0
Streams (linear feet)	399	497
Ponds (acres)	0	0
Floodplains	1 Zone AE Floodplain at Providence Branch	1 Zone AE Floodplain at Providence Branch
T and E Species	No**	No**
Historical Sites	No	No
Archaeological Sites	No	No
Section 4(f) Sites	No	No
Relocations (Total)	10	10
- Business	4	3
- Residential	5	5
- Vacant Commercial	1	1
- Other	0	1
Noise Impacted Receptors	77	77
-Residential (NAC B)	73	73
-Schools & Churches (NAC C)	4	4
-Businesses (NAC E)	0	0
Hazardous Material Sites	3	3
Farmlands (acres)	10.2	10

Environmental Commitments

On January 14, 2016, the US Fish and Wildlife Service (USFWS) published in the *Federal Register* the Final 4(d) rule, which "focuses prohibitions on protecting [northern long-eared] bats when and where they are most vulnerable: maternity roost trees during June and July pup-rearing and at hibernation sites."[2] On May 3, 2016, SCDOT consulted with USFWS to revise its prior commitment to eliminate the restriction on clearing of trees greater than 3 inches in diameter between November 15 and March 31. USFWS concurred on May 4, 2016. Therefore, there are no restrictions on the clearing of trees associated with the Northern long-eared bat. Attachment A includes the revised *NEPA Environmental Commitments* agreed to by SCDOT.

Summary of Impacts from the Changes to the Preferred Alternative

The impacts resulting from changes to the Preferred Alternative are summarized in Table 1.3. Changes at Exit 87 resulted in 0.07 of an acre less pond impacts and at Exit 95 resulted in 98 linear feet more stream impacts. There would be impacts to one more noise receptor at Exit 87. Two less businesses would be relocated by the revised preferred alternative and one more residence would be relocated. No impact would occur to the parking at the Hamrick's Department store. There would be a net reduction of 3.2 acres of farmland impacts as a result of the design changes.

Table 1.3
Preferred Alternative Impact Summary

Categories	**Old Preferred Alternative (total)**	**New Preferred Alternative (total)**
Cost (Millions)	$245	$245
Wetlands (acres)	0.25	0.25
Streams (linear feet)	1,279	1,377
Ponds (acres)	0.84	0.77
Floodplains	2 Zone A Floodplains, Irene Creek & Broad River; 1 Zone AE Floodplain at Providence Branch	2 Zone A Floodplains, Irene Creek & Broad River; 1 Zone AE Floodplain at Providence Branch
T and E Species	No	No
Historical Sites	Yes	Yes
Archaeological Sites	No	No
Section 4(f) Sites	de minimis	de minimis
Relocations (total)	33	31
- Business	15	12

[2] US Fish and Wildlife Service, *Northern long-eared bat Final 4(d) Rule – Questions and Answers*, February 2016. http://www.fws.gov/midwest/endangered/mammals/nleb/FAQsFinal4dRuleNLEB.html

Table 1.3 Preferred Alternative Impact Summary		
Categories	**Old Preferred Alternative (total)**	**New Preferred Alternative (total)**
- Residential	13	14
- Vacant Commercial	4	3
- Other	1	2
Noise Impacted Receptors	509	510
-Residential (NAC B)	263	263
-Schools & Churches (NAC C)	155	155
-Hotels (NAC E)	91	92
Hazardous Material Sites	2	2
Farmlands (acres)	71.8	68.6

Alternatives

No-Build Alternative

The No Build Alternative was evaluated as a baseline for comparison. There would be no widening of the interstate and no improvements made at existing interchanges and bridges.

While the mainline No-Build Alternative would have none of the impacts associated with the construction of the Preferred Alternative, it would not satisfy the purpose and need for the project. The traffic congestion projected for the No-Build Alternative would have impacts, such as economic costs from time lost while stuck in traffic, increased accidents, and increased air emissions from idling engines. These impacts would not result from the Build Alternatives. The projected congestion would result from increased traffic volumes without adding capacity, especially at peak hours.

The No-Build Alternative for the interchanges also represents no changes to the existing conditions. Many of the impacts associated with the construction of the interchanges would not occur, but the interchanges would remain out of conformance with current state and federal design standards. This would not satisfy the purpose and need for the project.

While there would be none of the impacts associated with the construction of the Build or Reasonable Alternatives, the No-Build could have impacts. The short entrance and exit ramps would remain and traffic conflicts between frontage road and interstate ramp traffic would continue. In addition, exit ramps with insufficient lengths can lead to traffic backing up onto the interstate during peak times. As traffic in the area increases over time, the inherent safety problems of these situations are anticipated to lead to more accidents.

Build Alternatives

Several proposed solutions for addressing the needs were identified during the development of the project. These solutions, or alternatives, were created for the mainline of I-85 and for each

interchange to be improved. Some of these alternatives were eliminated from further consideration because preliminary evaluation showed that they were either very similar to other alternatives, had elements that made them function poorly, or had substantially greater impacts or costs than other alternatives.

The remaining alternatives were evaluated in greater detail to fully understand the benefits and costs. These *Reasonable Alternatives* were analyzed more thoroughly in order to determine which would be the best to accomplish the purpose for the project while minimizing impacts to the human and natural environments. A matrix (Table 1.4, page 12) was prepared for comparing the potential impacts, costs, and constructability.

There is one mainline Reasonable Alternative that was further evaluated. It included two alternative designs for the Sunny Slope bridge replacement. The mainline for I-85 adds two new travel lanes in the median. There are areas where the frontage road is too close to the outside lane of the existing interstate to meet current clear zone requirements, which led to the shifting of the adjacent frontage road.

There were four Reasonable Alternatives developed for the interchange at Exit 83, five for Exit 87, two for Exit 95, and three for Exit 96.

Mainline Alternative

The mainline widening alternative would widen the existing four lanes to six lanes from just north of Gossett Road (where the current six lanes end) to just short of the Broad River Bridge. Other improvements made along the mainline would also include:

- Construction of a mechanically stabilized earth wall to minimize impacts to the stream east of railroad bridge crossing I-85 near MM 81;
- Closure of the slip ramp onto Buds Drive, west of Battleground Road;
- Realignment of a portion of the Zelure Road loop intersection where the road fronts the interstate;
- Replacement of the existing Sunny Slope Drive bridge (Sunny Slope Alternative 1) to meet vertical clearance requirements;
- Realignment of Lemmons Lane, the frontage road southwest of Exit 90;
- Realignment of Peachoid Road, the frontage road northeast of Exit 90; (this improvement has been eliminated from the project based upon comments received at the Public Hearing.
- Realignment of Winslow Avenue, the frontage road southeast of Exit 90;
- Realignment of a portion of Cresthaven Drive, the frontage road southeast of Exit 92;
- Construction of a curb and gutter at Canty Way and Cresthaven to reduce impacts;

Table 1.4
Reasonable Alternatives Analysis Matrix

Categories	**Mainline Alt 1**	**Sunny Slope Alt 1**	**Sunny Slope Alt 2**	**Exit 83 Alt 1**	**Exit 83 Alt 2**	**Exit 83 Alt 3**	**Exit 83 Alt 4**	**Exit 87 Alt 1**	**Exit 87 Alt 2**	**Exit 87 Alt 3**	**Exit 87 Alt 4**	**Exit 87 Alt 5b**	**Exit 95 Alt 1**	**Exit 95 Alt 2**	**Exit 96 Alt 1**	**Exit 96 Alt 2**	**Exit 96 Alt 3**
Meets P&N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constructability*		VC	VC	VC	VC	D	VC	E	VC	D	D	D	VC	VC	VC	VC	VC
Cost (Millions)	$125.6	$13.5	$15.9	$24.9	$22.8	$25.2	$23.4	$32.7	$37.4	$38.4	$38.3	$38.4	$26.8	$27.3	$24.2	$23.7	$22.6
Wetlands (acres)	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.17	0.17	0.17	0.00	0.00	0.00	0.02	0.00	0.00
Streams (linear feet)	77	0	0	454	312	480	312	369	611	970	970	369	1,613	399	0	226	226
Ponds (acres)	0	0	0	0	0	0	0	0.54	0.91	0	0	0.84	0	0	0	0	0
Floodplains	2 Zone A Floodplains, Irene Creek & Broad River	No	No	No	No	No	No	No	No	No	No	No	2 Zone AE Floodplains, Providence Branch & Lake Whelchel	1 Zone AE Floodplain at Providence Branch	No	No	No
T and E Species	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Historical Sites	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Archaeological Sites	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Section 4(f) Sites	De minimis	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Relocations																	
- Business	1	0	0	3	3	4	2	6	2	4	4	6	6	4	9	2	2
- Residential	3	1	1	1	3	5	2	6	5	4	3	2	9	5	1	0	0
- Vacant Commercial	1	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1
- Other**	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Noise Impacted Receptors	377			116	115	116	116	31	33	35	35	31	116	77	14	15	16
-Residential (NAC B)	178			17	16	17	17	21	22	24	24	21	91	73	14	15	16
-Schools & Churches (NAC C)	75			98	98	98	98	10	10	10	10	10	4	4	0	0	0
-Hotels (NAC E)	124			1	1	1	1	0	1	1	1	0	21	0	0	0	0
Hazardous Material Sites	2	0	0	3	2	2	2	0	0	0	0	0	3	3	1	1	1
Farmlands (acres)	209.3	12.2	11.2	13	10.2	14.4	8.9	22	34.4	34.1	35.8	28.4	8.5	10.2	13.4	12.7	12.1

*"Constructability" is defined as Very Constructible (VC), Difficult (D), and Extremely Difficult (E, Closure of entire interchange for extended period during construction).
**"Other" refers to utility facility.

- Realignment of Canty Way with a modification to its intersection with Hampshire Drive;
- Closure of the slip ramp at Exit 95 onto Hampshire Drive and realignment of Hampshire Drive westward as it fronts the interstate;
- Realignment of Wilcox Avenue west of UPS Freight ending less than 200 yards from Lillie Drive;
- Realignment of Wilcox Avenue west of I-85 at Exit 96; and,
- Closure of the slip ramp onto I-85 North from Gaffney Ferry Road.

There were two Sunny Slope Drive bridge replacement alternatives, each with essentially the same impacts; however, the cost of Alternative 1 is nearly $2.5 million less than Alternative 2. Therefore, Alternative 1 was included with the mainline Preferred Alternative.

Exit 83 Alternatives

Alternative 1 (refer to Figure 2.4 in the EA, page 35) includes a diamond interchange at Battleground Road (SC 110) and realigned frontage roads that intersect at a distance of at least 750 feet from the interchange. The alignment of Battleground Road is shifted to the west with construction of a new bridge over I-85. The frontage road on the north side of I-85, Phillips Drive, would be shifted slightly northward. A new road would be constructed south from Phillips Road to provide access to the existing truck stop and other properties in the northeast quadrant of the interchange. Access to Horry Road from Phillips Drive would be retained, but a cul-de-sac would be created on the south end of Horry Road that would eliminate through traffic. A segment of Dewberry Road would also be moved slightly north to connect with the realigned Phillips Drive. On the south side, Bud Arthur Bridge Road would be moved to a new location to intersect Battleground Road approximately 800 feet south of the existing intersection and a new connection to Edgefield Road would be constructed.

Alternative 2 consists of a partial cloverleaf interchange with ramps located in the northwest and southeast quadrants of the interchange (refer to Figure 2.5, page 39, in the EA). The alternative includes a westward shift in the alignment of Battleground Road and construction of a new bridge over I-85. On the north side of I-85, Phillips Drive and Dewberry Road would be shifted northward. The north end of Horry Road would be realigned and continue to provide access to the existing Truck Stop Road businesses and other properties in the southeast quadrant of the interchange. On the south side of I-85, the frontage road in the southwest quadrant, Bud Arthur Bridge Road, would be realigned to intersect Battleground Road at the I-85 ramps and a new connection to Edgefield Road, in the southeast quadrant, would be provided.

Alternative 3 is a partial cloverleaf and partial diamond interchange (refer to Figure 2.6 in the EA, page 41). Exit and entrance ramps for southbound I-85 traffic are located in the northwest quadrant; diamond-style ramps are provided for northbound I-85. The alternative includes an eastward shift in the alignment of Battleground Road and construction of a new bridge over I-85. On the north side of I-85, the frontage road, Phillips Drive, would be shifted northward. Horry Road would be realigned and continue to provide access to the existing businesses on

Truck Stop Road and other properties in the northeast quadrant of the interchange. On the south side of I-85, Bud Arthur Bridge Road would be realigned in accordance with the 750-foot separation requirement, and a new connection to Edgefield Road would be constructed.

Alternative 4 also consists of a partial cloverleaf and partial diamond interchange (refer to Figure 2.7 in the EA, page 43). Cloverleaf exit and entrance ramps for northbound I-85 are located in the southeast quadrant; diamond-style ramps are provided for southbound I-85. The alternative includes a westward shift in the alignment of Battleground Road and construction of a new bridge over I-85. On the north side of I-85, the frontage roads, Dewberry Road, and Phillips Drive would be shifted northward. A new road would be constructed south from Phillips Drive to provide access to Truck Stop Road and the properties in the northeast quadrant of the interchange. Access to Horry Road from Phillips Drive would be retained, but a cul-de-sac would be created on the south end of Horry Road eliminating through traffic. On the south side of I-85, Bud Arthur Bridge Road would be realigned to intersect Battleground Road at the I-85 ramps; and a new connection to Edgefield Road would be provided.

Exit 83 Preferred Alternative

Alternative 4 is the Preferred Alternative for Exit 83. The cost of Alternative 4 is slightly higher ($0.6 million) than the least expensive alternative, Alternative 2. It would have the least amount of impact to streams. Alternative 4 would have no direct impacts to Mountain View Baptist Church or Mountain View Christian Academy facilities. It would also remove through truck and other traffic from Horry Road between the Church and the Academy. Alternative 4 would have the least impacts of any of the alternatives to the Builders FirstSource facility. It would relocate the fewest number of businesses and would provide the best access to and from the interstate of any of the build alternatives. Alternative 4 would have the same access to the businesses on Truck Stop Road as any of the build alternatives.

Exit 87 Alternatives

Alternative 1 is a spread diamond interchange with frontage road intersections separated from the interchange intersections by a distance of at least 750 feet (refer to Figure 2.8, page 47, in the EA). The alternative includes a westward shift of Green River Road (SC 39) and construction of a new bridge over I-85. On the north side of I-85, Webber Road would be realigned to separate it from the interchange. Likewise, the frontage roads on the south side of I-85, Cannons Campground Road and Overbrook Drive, would be realigned to provide the required separation from the interchange. Lindley Road would be closed.

Alternative 2 consists of a partial cloverleaf interchange with ramps located in the northeast and southwest quadrants and frontage road intersections separated from the interchange by a distance of at least 750 feet (refer to Figure 2.9 in the EA, page 49). The alternative includes a westward shift of Green River Road and construction of a new bridge over I-85. On the north side of I-85, Old Post Road would be closed to through traffic and relocated slightly north and Malone Road would become the new frontage road. This would require a new intersection with Macedonia Road and a new connection to Green River Road. Webber Road would be

realigned to the north to meet with Malone Road at a new intersection. On the south side of I-85, Cannons Campground Road and Overbrook Drive would be moved to new locations at least 750 feet south of the interchange intersection.

Alternative 3 consists of a spread diamond interchange with frontage road intersections separated from the interchange by a distance of at least 750 feet (refer to Figure 2.10 in the EA, page 51). The alternative includes a westward shift of Green River Road (SC 39) and construction of a new bridge over I-85. In the northeast quadrant, the design is similar to Alternative 2, closing Old Post Road to through traffic and relocating it slightly north and utilizing much of existing Malone Road for the new frontage road. It would also include a new intersection with Macedonia Road and a reconfiguration of the connection with Green River Road. In the northwest quadrant, Webber Road would be realigned to the north and extend to the west into Victoria Road before tying into the existing alignment of Webber Road. On the south side of I-85, Cannons Campground Road and Overbrook Drive would be moved to new locations at least 750 feet south of the interchange intersection.

Alternative 4 consists of a spread diamond interchange with frontage road intersections separated from the interchange by a distance of at least 750 feet (refer to Figure 2.11 in the EA, page 53). This alternative is similar to Alternative 3, but with a different alignment for the frontage roads on the south side of I-85. The alternative includes a westward shift of Green River Road and construction of a new bridge over I-85. In the northeast quadrant, the design utilizes much of the existing Malone Road alignment to reroute the frontage road. It also includes the relocation of Old Post Road slightly north of its current alignment and closing it to through traffic. In the northwest quadrant of the interchange, Webber Road would be extended primarily on new location extending north to Victoria Road. On the south side of I-85, Cannons Campground Road and Overbrook Drive would be moved to a new location, intersecting Green River Road farther south from the interchange compared to Alternative 3.

Alternative 5b consists of a spread diamond interchange with frontage road intersections separated from the interchange by a distance of 750 feet to the south and approximately 600 feet to the north (refer to Figure 2.12 in the EA, page 55). The northern frontage road was moved closer to the interchange intersection than other alternatives in order to reduce impacts. The alternative includes a westward shift of Green River Road and construction of a new bridge over I-85. In the northeast quadrant, the design utilizes a portion of the existing Malone Road alignment to reroute the frontage road. It also includes relocating Old Post Road slightly north of its current alignment and closing it to through traffic. In the northwest quadrant of the interchange, Webber Road would be realigned to separate it from the interchange. It would extend on new location south from Green River Road to tie into existing Webber Road near the Ambustar facility. The frontage roads on the south side of I-85, Cannons Campground Road and Overbrook Drive, would be realigned to intersect Green River Road farther south and provide the required separation from the interstate interchange.

Exit 87 Preferred Alternative

Since approval of the EA, the Preferred Alternative for Exit 87 has been revised. While the cost to construct the preferred alternative is the highest of the alternatives, the costs of Alternatives 2, 3, 4, and 5 are similar (within $1 million of each other). It remains the only alternative with no wetland impacts (although the wetland impacts for the worst alternatives are less than 0.2 acres) and equals Alternative 1 for the least amount of stream impacts. It would avoid an entire stream system that Alternatives 2, 3, and 4 each cross twice.

The revised alignment of Webber Road northwest of the interchange would no longer impact a pond west of Macedonia Road (Pond 4), reducing the pond impacts by approximately 0.07 acres. Two fewer businesses would be relocated (the Orchard Place building and the Ambustar facility); however, one additional residence along Webber Road would now be relocated. There is the potential that three of the four remaining business relocations may be avoided during the right-of-way process if it is possible to provide access from the realigned Webber Road.

The revised preferred alternative would result in one new noise impacted receptor. The Ambustar facility, no longer to be relocated, would be impacted by noise. Despite the new residential relocation on Webber Road, there was no net change in the residential noise impacts due to a residence on Old Post Road, previously shown as not impacted by noise in the initial design, now reported as being impacted.

The revised alignment of Cannons Campground Road, southwest of Exit 87, would result in fewer impacts to active farmland by 3 acres. The preferred alternative would minimize impacts to the Old Post Road, Webber Road and South Green River Road communities, while at the same time help preserve the character of the Malone Road community more than Alternatives 2, 3, and 4 by using only the southern portion of Malone Road as part of the frontage road. It would also avoid splitting the Macedonia Community Park in half.

Exit 95 Alternatives

Alternative 1 consists of a diamond interchange with frontage roads relocated so that their intersections are separated from the interchange by a distance of at least 750 feet on both sides of I-85 (refer to Figure 2.13 in the EA, page 59). The alternative includes shifting Pleasant School Road/S-82 to the east and constructing a new bridge over I-85. On the north side of I-85, Wilcox Avenue would be relocated to the north and a new intersection would be created with Pleasant School Road. On the south side of I-85, Limestone Street would be realigned to the south and traffic on Shelby Highway (SC 18) would be a through movement. Traffic going north on Limestone Street to the interchange or beyond would have to make a left turn off Shelby Highway. The frontage road in the southwest quadrant, Hampshire Drive, and the parallel Matthew Drive, are shown as realigned and extended to tie into the realigned Shelby Highway with T-intersections. Fatz Drive would be removed.

Alternative 2 also consists of a diamond interchange (refer to Figure 2.14 in the EA, page 61). The design calls for Pleasant School Road to be realigned and to tie directly to Limestone Street

(SC 18) south of the new interchange; the new alignment crosses I-85 on a new bridge, west of the existing S-82 bridge. On the north side of I-85, the new frontage road intersects Pleasant School Road. On the south side of I-85, Matthew Drive will be realigned and extended to function as the service road, intersecting Limestone Street approximately 770 feet south of the new interchange.

Exit 95 Preferred Alternative

Since approval of the EA, the Preferred Alternative for Exit 95 has been revised. Modifications to the alignment of Pleasant School Road, Wilcox Avenue, and the north side of the interchange have reduced impacts to the UPS facility. The revised Preferred Alternative continues to have fewer relocations than Alternative 1. Access will be provided to SC Wholesale, which was previously designated a business relocation, from the realigned Shelby Highway. A pump house along Pleasant School Road near Lake Whelchel would be impacted and require relocation.

The Preferred Alternative presented in the EA would have 39 fewer (77 versus 116) noise impacts, primarily because of the relocation of noise receptors. The revised Preferred Alternative "would not lead to additional impacts or otherwise alter the sound levels for any noise sensitive receivers in the area."[3] It would impact 497 linear feet of streams, which is over 1,100 linear feet less than the impact for Alternative 2. The revised Preferred Alternative would result in a slight reduction (0.2 acre) in impacted farmland. The cost of the revised Preferred Alternative is slightly higher than Alternative 1; however, they are rated equal for constructability.

Exit 96 Alternatives

Alternative 1 consists of a diamond interchange and a frontage road on new location on the north side of I-85 (refer to Figure 2.15 in the EA, page 65). The alternative includes a westward shift in the alignment of Shelby Highway/SC 18 and construction of a new bridge over I-85. South of I-85, the design calls for the new alignment of Shelby Highway/SC 18 to intersect the existing Limestone Street/SC 18 and Victory Trail Road/SC 329 alignment with a T-intersection.

Alternative 2 consists of a diamond interchange and a service road on new location on the north side of I-85 (refer to Figure 2.16, page 67, in the EA). The alternative includes an eastward shift in the alignment of Shelby Highway/SC 18 and construction of a new bridge over I-85. South of I-85, the design would tie Shelby Highway/SC 18 directly to Limestone Street/SC 18 to create a free-flow for traffic and create a stop-controlled T-intersection for Victory Trail Road/SC 329. In addition, a new connector road would be provided between Speedway Road and Victory Trail Road/SC 329.

Alternative 3 consists of a diamond interchange, and the frontage road would be moved farther north on new location on the north side of I-85 (refer to Figure 2.17 in the EA, page 68). The alternative includes an eastward shift in the alignment of Shelby Highway/SC 18 and construction of a new bridge over I-85. South of I-85, the design ties Shelby Highway/SC 18

[3] Noise Assessment Memorandum. Edwards-Pitman Environmental, Inc., March 7, 2016

directly to Victory Trail Road/SC 329 to create a free-flow for traffic, and creates a stop-controlled T-intersection for Shelby Highway/SC 18. In addition, a new connector road is provided between Speedway Road and Victory Trail Road/SC 329.

Exit 96 Preferred Alternative

Alternative 3 is the Preferred Alternative for Exit 96. Alternatives 2 and 3 would have similar impacts to one another, with the difference that Alternative 3 would cost slightly less and provide a through movement to the south, along SC 329, instead of west along SC 18. With the existing Meadow Creek Industrial Park and the proposed Lee Nuclear Station proceeding with permitting for the facility, this movement would be the most beneficial to accommodate traffic that would be expected at the industrial park and to be added for the Lee Nuclear Station.

Project Preferred Alternative

A Preferred Alternative has been designated by combining the Preferred Alternatives for each segment of the project. The mainline with the Sunny Slope 1 Alternative, along with Alternative 4 at Exit 83, the revised Alternative at Exit 87, the revised Alternative at Exit 95, and Alternative 3 at Exit 96 comprise the Preferred Alternative for the project.

Impact Summary

What is described in this section are the impacts resulting from the Preferred Alternative compared to the No-Build Alternative. If the proposed improvements were not made, the impacts described in this section would not occur. These effects are discussed in more detail for each of the categories considered in this chapter. There can be consequences from the No-Build Alternative as well.

Waters of the United States

The Preferred Alternative would impact approximately 1,377-linear feet (lf) of streams or tributaries, 0.25 acre of wetlands, and 0.77 acre of ponds.

Compensatory mitigation is normally required to offset unavoidable losses of waters of the U.S. It is anticipated that compensatory mitigation for permanent project impacts will be attained through purchase of mitigation credits from a US Army Corps of Engineers-approved mitigation bank. Specific mitigation requirements will be established during the Section 404/401 permitting process.

Threatened and Endangered Species

There were two federally threatened species with the potential to be found in the study area: the Dwarf-flowered heartleaf (*Hexastylis naniflora*) and the Northern long-eared bat (*Myotis septentrionalis*). Potential habitat for dwarf-flowered heartleaf was identified in multiple locations within the project study area. However, no dwarf-flowered heartleaf plants were identified during the field reviews. Potential habitat for the Northern long-eared bat exists throughout the project study area. No evidence of bats was found during the field survey; however, the generic nature of the summer habitat of the bat means that it could be found

through most of the study area. Originally, SCDOT committed to performing acoustic or mist netting surveys for the Northern long-eared bat during the survey window (May 15 through August 15) prior to construction or to only perform clearing of trees greater than 3 inches in diameter between November 15 and March 31. However, after the EA was published, the US Fish and Wildlife Service (USFWS) revised their guidance under the Final 4(d) rule.[4] Therefore, SCDOT consulted with USFWS on May 3, 2016, to revise its prior commitment in order to eliminate the requirement for additional surveys or restrictions on clearing of trees. USFWS concurred on May 4, 2016. Therefore, there are no additional surveys required, nor are there any restrictions on the clearing of trees associated with the Northern long-eared bat.

Water Quality

The proposed project is located within the Broad River Sub-Basin of the Broad River Basin. Increased pavement would result in an increase in run-off to the surface waters adjacent to the project. This run-off would contain sediments and contaminants that resulted from the operation of motor vehicles. During construction activities, temporary siltation may occur in adjacent waters and erosion will be increased.

To mitigate potential impacts SCDOT will follow the guidance contained in Engineering Directive Memorandum (Number 23), dated March 10, 2009, regarding procedures to be followed in order to ensure compliance with S.C. Code of 72-400, Standards for Stormwater Management and Sediment Reduction. It is recommended that the contractor minimize construction impacts through implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and S.C. Code of Regulations 72-400. Exposed areas may be stabilized by following SCDOT's Supplemental Technical Specification for Seeding (SCDOT Designation SC-M-810 (11-08)). Due to the existing water quality impairments and approved TMDL within the project watershed, the South Carolina Department of Health and Environmental Control may require additional water quality protection and stormwater treatment measures during and after construction. Specific mitigation requirements for impacts to water quality will be established during the Section 404/401 permitting process.

Air Quality

This project was evaluated for its consistency with state and federal air quality goals, including ozone, CO, and PM2.5, and MSATs as part of this assessment. Results indicated that the project is consistent with the State Implementation Plan for the attainment of clean air quality in South Carolina and is in compliance with both state and federal air quality standards.

The proposed project is in an attainment area for ozone. South Carolina does not have any areas that are considered nonattainment for CO. No analysis is required for this project to determine impacts to CO concentrations. The area is classified as an attainment area for $PM_{2.5}$.

The proposed project would be classified as a Tier 2 project with Low Potential MSAT Effects.

[4] US Fish and Wildlife Service, *Northern long-eared bat Final 4(d) Rule – Questions and Answers*, February 2016. http://www.fws.gov/midwest/endangered/mammals/nleb/FAQsFinal4dRuleNLEB.html

Floodplains

Based upon a review of the floodplain mapping and a GIS analysis of the project study area, the proposed project crosses or encroaches on eight FEMA-regulated floodplains. The project does not propose the replacement of the existing structures spanning four of these floodplains; the Pacolet River, Thicketty Creek, Cole Creek, or Cherokee Creek. Furthermore, the project would not modify the existing dam and spillway of Lake Whelchel; therefore, encroachment into the associated floodplains of these waterbodies is not anticipated.

The Preferred Alternative would cross the Floodway and Zone AE Floodplains of Providence Branch. This encroachment is located south of I-85, within the project limits of the Exit 95 interchange. The preliminary design of the project proposes to extend the existing headwalls of the culvert vertically to minimize impacts to these FEMA-regulated areas; however, the project would encroach on the FEMA-regulated areas to accommodate the roadway improvements within the interchange.

The Preferred Alternative would also encroach on two Zone A floodplains, including Irene Creek and the Broad River. I-85 currently crosses Irene creek with a single box culvert and traverses the floodplains of the Broad River with an earthen causeway and bridge. The Irene Creek floodplain is mapped as crossing Peachoid Road and extending into the area between this frontage road and I-85 (refer to Figure 3.1C in the EA, page 75). The project would require placement of fill within the limits of these two floodplains to accommodate the widened I-85 roadway.

In accordance with Executive Order 11988, a hydraulic analysis must be conducted for an encroachment of a FEMA-regulated floodplain. The hydraulic analysis is used to determine if the project is likely to increase the risk of flooding within the floodplain (refer to SCDOT Floodplains Checklist, Appendix E). These encroachments are not anticipated to increase the risk of flooding within these floodplains and the proposed project would be designed to meet the "No-Rise" requirements. A detailed hydraulic analysis will be performed for each encroachment of a FEMA-regulated floodplain during final design.

Farmland

In accordance with the *FPPA*, the NRCS was formally consulted for the proposed project. Farmland Impact Conversion Rating Forms for Corridor Type Projects (NRCS-CPA-106) were completed for the Preferred Alternative.

The corridor assessment value for the Preferred Alternative scored 29 and 52 points on the Farmland Impact Conversion Rating Forms for Spartanburg and Cherokee Counties, respectively. By totaling the relative value and the corridor assessment value, it was determined that the total threshold, 160 points overall, set by NRCS, was not exceeded by the Preferred Alternative in either Spartanburg or Cherokee County. Since the 160-point threshold was not exceeded for the Preferred Alternative, neither alternative sites nor additional studies are required under the FPPA. The Farmland Impact Conversion Rating Forms can be found in Appendix F of the EA.

Land Use

The project is in accord with local plans and is expected to positively impact land use in the area by providing efficient access for motorists to reach industrial, commercial and residential establishments. Some existing land uses would be changed due to the acquisition of right-of-way for the road. The proposed improvements at the interchanges create the potential for development to occur at surrounding undeveloped land, assuming other necessary infrastructure is available. If parcels change land use categories, it is anticipated that the overall land use would be consistent due to the counties' well-defined comprehensive plans.

Cultural Resources

Archaeological resources and historic architectural field surveys were conducted to identify archaeological sites and record and evaluate all historic architectural resources (buildings, structures, objects, designed landscapes, and/or sites with above-ground components) in the project study area.

As a result of the archaeological survey, no sites were recommended eligible for listing on the NRHP.

No architectural resources identified within the study area in Spartanburg County were recommended eligible for inclusion on the NRHP. Two architectural resources identified within the study area in Cherokee County were recommended eligible for inclusion on the National Register of Historic Places. These two resources are: 186-0198, the Blanton Farm Complex, a late nineteenth century farm complex located at 1820 West Rutledge Avenue; and 186-0207 a Usonian-style Ranch house located at 119 Canty Way.

The Blanton Farm Complex was not impacted by the proposed project. A minor amount of right-of-way was taken from the Canty Way property. A small section of right-of-way is to be taken from the parcel on the side between the house and the interstate frontage road (Canty Way). Additionally, a section of the parcel at the northeast corner is proposed to be taken to realign the intersection of Canty Way and Hampshire Drive. Coordination with the State Historic Preservation Officer (SHPO) occurred to evaluate this resource and to consider ways to minimize impacts to the site. SCDOT committed to limit the amount of right-of-way that would be needed by using curb and gutter along this parcel and require the protection of several mature trees crucial to the character of the property during construction. As for the realignment of the Canty Way and Hampshire Drive, proposed changes in this northeastern portion of the parcel would not alter the character of the parcel's core, which contains the attributes that make this resource NRHP eligible.

Due to the proposed project's minimal ROW acquisition at 119 Canty Way and the lack of character-changing effects generated by the ROW acquisition, SCDOT and FHWA determined that the proposed project will have no adverse effect to Resource 186-0207 (refer to Appendix G in the EA). This opinion was provided to the SC SHPO, the Catawba Indian Nation Tribal Historic Preservation Officer (THPO), the Eastern Band Cherokee THPO, and the SC Institute of

Archaeology and Anthropology. The SC SHPO, along with the Catawba Indian Nation THPO, provided their concurrence with the determination (refer to Appendix G in the EA).

Section 4(f)

No publicly-owned parks, recreations lands or wildlife and waterfowl refuges are located within the project study area. Two historic architectural resources identified in the preceding section are recommended eligible for inclusion in the NRHP. Thus, these two resources are Section 4(f) properties.

As previously discussed, the Blanton Farm Complex would not be impacted by the project. The Canty Way property would be impacted, but with the mitigation measures SCDOT agreed to in order to minimize the impact, was determined to have no adverse effect. The project was therefore determined by the FHWA to have a *de minimis* impact (refer to Appendix G of the EA for FHWA *de minimis* and SHPO coordination).

Section 6(f)

No Section 6(f) resources have been identified within the study area, therefore no Section 6(f) impacts would result from this project.

Noise Impacts

A preliminary Noise Assessment was performed for all of the Reasonable Alternatives using the Federal Highway Administration's Transportation Noise Model (TNM), version 2.5, and which was validated by field measurements. This was supplemented with a detailed noise and noise abatement study for the Preferred Alternative. The number of potentially impacted receivers for each alternative was used as part of the analysis of the alternatives (refer to Table 2.1 in the EA, page 21).

These numbers were recalculated for the Preferred Alternative and the No Build Alternative as part of the analysis of the Preferred Alternative. During the review of the supporting documentation for the EA, a mistake in the initial calculation of potentially impacted receptors was found. This error understated the number of Category C receptors that would be impacted. These numbers were updated and the corrected numbers were reported in Table 3.11 of the EA (page 113) (refer to Table 1.5 below). However, the text on that page reports the old numbers from the original report.

Table 1.5
Comparison of Build and No Build Noise Impacts

	Mainline	Exit 83	Exit 87	Exit 95	Exit 96	Total
Preferred Alternative	324	113	18	39	15	509
2040 No Build Alternative	322	111	34	90	17	574

Based on the location and concentration of impacted receivers in the build condition, 43 locations within the project area were considered for noise walls and assessed for adherence to feasibility criteria. Of these 43 noise walls, 42 met both the acoustic and engineering feasibility requirements and were assessed for reasonableness.

Of the 42 walls assessed under the reasonableness criteria, only 17 could be designed to achieve the noise reduction design goal of 8 dBA reduction at 80% of receivers within the first two rows. The location of noise walls considered for abatement is shown on the Noise Impacts Map in Appendix H of the EA. None of those 17 walls met the cost effectiveness criteria for reasonableness, the construction cost exceeded the benefitted cost for the receivers, per SCDOT Noise Policy. Therefore, no measures considered were both feasible and reasonable to abate noise impacts to receivers within the project corridor resulting from the proposed project.

Socio-economic Impacts

Relocations

As a result of the project, 12 businesses and 14 residences may be required to relocate. Table 1.6 highlights the number of potential relocations associated with the revised Preferred Alternative.

Table 1.6
Relocations

Location	Businesses	Residences
Mainline	1	3
Sunny Slope Drive	0	1
Exit 83	2	2
Exit 87	4	3
Exit 95	3	5
Exit 96	2	0
TOTAL	**12**	**14**

Environmental Justice

While minority populations are present within the study area, no notably adverse community impacts are anticipated with this project; nor do the impacts to minority and low-income populations appear to be disproportionality high and adverse.

Economic Impacts

Providing improved interstate capacity and improved access to the interchanges could help boost economic opportunities and encourage commercial and industrial businesses to locate in the area. Increased capacity for I-85 could help to accommodate growth. Induced

development resulting from the improvements is consistent with the Cities' and Counties' plans for the area.

Improved access would lead to a reduction in travel times in the area; this could lead to greater productivity, a reduction in transportation costs, and more competitive pricing for goods produced or shipped to the upstate region. Businesses as well as consumers benefit from productivity gains, reduced transportation costs, and more competitive pricing of goods and services

Some businesses could be negatively impacted as a result of the proposed project. As a result of the project, fifteen businesses would be directly impacted. Table 1.6 quantifies the business impacts noted in Chapter 2 – *Alternatives Analysis* of the EA. Not all of these businesses would relocate. Although a building at Builders FirstSource would be impacted by the interchange at Exit 83, the business is not likely to relocate. The potential exists for three businesses at Exit 87 to resolve access issues during the right-of-way process that would allow them to remain where they are. Some businesses would be negatively impacted by less direct access resulting from these changes.

Hazardous Materials

The proposed project would require the acquisition of two properties identified as sites of environmental concern and/or potentially contaminated sites, the UPS Facility at Exit 95 and the Auriga Polymers facility near mile marker 80.6. Construction activities within contaminated sites have the potential for construction workers to come into contact with contaminated soils, and can pose health risks.

Additional information on these two sites was provided in reports on the Auriga and UPS facilities. SCDHEC provided a report regarding the groundwater status at the UPS facility.[5] Another report, describing groundwater conditions at the Auriga facility was also obtained.[6] Both of these reports (refer to Appendix I) indicated ongoing investigations regarding groundwater and/or soil contamination that may affect the project. Further assessment of sites directly impacted by the project may be warranted during the development of the project's final design.

Indirect and Cumulative Impacts

Indirect Impacts

The indirect effects of transportation projects are commonly related to changes in travel patterns that lead to changes in land use. The proposed improvements at existing interchanges along I-85 have the potential to accelerate growth in the area. There are also direct impacts to existing businesses, such as through relocation, or indirect impacts that result from changes in access. Several businesses would have their access changed as a result of this project.

[5] ARCADIS, *Groundwater Monitoring Report: UPS Freight – Gaffney Terminal*, July 2013

[6] F&ME Consultants, Inc., *Limited Phase II Environmental Site Assessment Report: I-85 Rehabilitation Project MM 77.0 to MM 84.0 Spartanburg and Cherokee Counties, South Carolina*, August 5, 2015

The changes in land use from undeveloped land to development with increased impermeable surfaces could result in impacts to the area's water quality and the loss or diminishment of aquatic habitat in streams through filling or relocation of stream channels.

Cumulative Impacts

The growth that has occurred, and is anticipated to continue, has impacted water quality by removing or relocating streams and eliminating wetlands. This is also expected to continue as new roadways and developments are constructed.

Other actions that are planned within the study area include various transportation improvements, including the proposed widening of I-85 from mile marker 96 to mile marker 106 at the South Carolina/North Carolina state line that is within the study area for indirect and cumulative impacts. I-85 has several other improvement projects that are geared to improving the capacity and efficiency of moving traffic through the area. The I-85/I-385 interchange improvements, the widening from SC 25 to I-385 and the widening from Pelham Road to SC 101 are either underway or in development. While the transportation improvements, with the exception of the widening of I-85 from 96 to 106, are beyond the study area of the indirect and cumulative impacts, the nature of the improved transportation resulting from these projects would facilitate additional development in this area.

There are three corporate parks adjacent to the study area that contain developable land and available lots; Upstate Corporate Park, located at Exit 83, Sunny Slope Corporate Park at Exit 87 and Meadow Creek Industrial Park at Exit 96 are all expected to add tenants. Recently Dollar Tree, Inc. announced that it will build a 1.5 million square foot distribution center in Upstate Corporate Park. The proposed Lee Nuclear Station, which is in the process of obtaining permits, is located off of Exit 96.

The cumulative impact of these projects would be changes in existing land use, loss of aquatic habitat, and impacts to water quality. The conversion of land use would, in turn, increase the amount of impermeable surfaces that could lead to larger volumes of runoff to the remaining streams and rivers with the accompanying additional pollutant loading. It could also result in loss of aquatic habitat due to filling streams and tributaries for site construction.

Cumulative Impact Mitigation

Land use impacts are mitigated by being in conformance with local land use and transportation plans and development ordinances. The proposed project is in accord with land use and transportation plans and is not anticipated to alter future land use plans.

Water quality Impact would be mitigated by stormwater control measures, both during construction and post-construction, which are required for new development projects in both Counties[7] [8] and the City. Increased impermeable surfaces would be remediated through

[7] Spartanburg County, South Carolina, *Storm Water Management Design Manual*, http://www.spartanburgcounty.org/govt/depts/pubwrks/docs/StormWater/DesignManual.pdf, March 16, 2009

appropriate best management practices during construction and operation such as overland sheet flow, grassed side slopes, detention of stormwater runoff, and natural wetland filtration.

Impacts to aquatic habitat are addressed through the Section 404 permitting process. Approval of a permit to impact streams, rivers, wetlands and other Waters of the United States is required through the U.S. Army Corps of Engineers (USACE). The USACE typically requires compensatory mitigation for any impacts to jurisdictional areas for which a permit application is submitted.

USACE Public Interest Review

The public interest review factors pertinent to this project have been considered in the development and selection of the Preferred Alternative. The Alternatives Analysis Matrix (Table 1.4, page 12) quantifies impacts to many of these categories that were considered during the evaluation of the alternatives, including wetlands, ponds, jurisdictional streams, protected species, historic properties, floodplains, business and residential relocations, noise, farmlands, and hazardous material sites. The potential impacts of these features to land use, community impacts, impacts to publicly-owned parks and recreation areas (even consideration for a privately-owned, but available-to-the-public park at Exit 87), economic impacts, wildlife impacts, and general environmental concerns, such as impacts to hazardous material sites and air quality impacts were considered for all Reasonable Alternatives.

Section 404(b)(1) Guidelines

The Section 404(b)(1) guidelines are U.S. Environmental Protection Agency regulations (40 CFR Part 230) that regulate the deposition of dredge or fill material in wetlands. They are essential during consideration for the issuance or denial of a permit to fill or alter jurisdictional waters of the United States.

The consideration of the impacts to aquatic systems during the alternatives analysis has been documented in the EA in Chapter 2, Section 2.2.3 and is illustrated in the EA in Table 2.2 on page 33. The Preferred Alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA) based upon the amount of streams and wetlands impacted when compared with the other alternatives. The mainline has only 0.25 acres of wetland impacts and 77 linear feet of stream impacts. All four of the interchanges have no wetland impacts and three of the four interchange alternatives had the lowest stream impacts. The only interchange alternative for the Preferred Alternative that did not have the least amount of stream impact was at Exit 96. However, the alternative with less stream impacts at this interchange would have impacted seven more businesses and a residence and is the only alternative that provides for the dominant traffic movement to be to Victory Trail Road. These impacts to businesses and the residence are considered “other significant adverse environmental consequences”. In addition, Alternative 1, the alternative with lower stream impacts, has an estimated cost of

[8] Cherokee County, South Carolina, *Cherokee County Land Development Regulations*, http://cherokeecountysc.gov/assets/docs/uniform-land-development-regulations.PDF, January 1, 2013

right-of-way and relocations of $2.3 million dollars while Alternative 3 has an estimated cost of $1.2 million. This difference of over a million dollars for the right-of-way and relocations between these two interchanges is well above the estimated $91,500 cost of stream mitigation.

The effort to reduce impacts to jurisdictional waters of the United States continued through the refinement of the design of the Preferred Alternative and is illustrated by the reduction of stream impacts from 226 linear feet to 122 linear feet at Exit 96 after the Preferred Alternative had been designated. The compensatory mitigation for unavoidable impacts from the project is described in the EA in Chapter 3, Section 3.1.4, page 82.

Table 1.7 summarizes the impacts of the Preferred Alternative after changes were made to the design of the Preferred Alternative in response to comments at the Public Hearing. These design changes affected impacts to streams, ponds, relocations, farmlands, and noise receptors.

Table 1.7
Preferred Alternative Impact Summary

Categories	**Preferred Alternative**
Meets P&N	Yes
Constructability*	
Cost (Millions)	$245
Wetlands (acres)	0.25
Streams (linear feet)	1,377
Ponds (acres)	0.77
Floodplains	2 Zone A Floodplains, Irene Creek & Broad River; 1 Zone AE Floodplain at Providence Branch
T and E Species	No
Historical Sites	Yes
Archaeological Sites	No
Section 4(f) Sites	De minimis
Relocations	
- Business	12
- Residential	14
- Vacant Commercial	3
- Other	2
Noise Impacted Receptors	510
-Residential (NAC B)	263
-Schools & Churches (NAC C)	155
-Hotels (NAC E)	92

Table 1.7 Preferred Alternative Impact Summary	
Categories	**Preferred Alternative**
Hazardous Material Sites	2
Farmlands (acres)	68.6
*"Constructability" is defined as Very Constructible (VC), Difficult (D), and Extremely Difficult (E, Closure of entire interchange for extended period during construction).	

Project Coordination

The project has been coordinated with various local, state and federal agencies; local stakeholders; and the general public to identify issues to be considered in the development of the project. A detailed summary of the coordination efforts is included in Section 4.0 of the EA.

Public Involvement

Public Information Meetings

SCDOT hosted informal, drop-in style Public Information Meetings on November 18, 2014 and March 24, 2015 at Gaffney High School – Cherokee County, and on November 20, 2014 and March 26, 2015 at Cowpens Middle School – Spartanburg County. Notice of the meetings was advertised in The Spartanburg Herald Journal, The Gaffney Ledger, and on SCDOT's website.

The purpose of the initial meetings in November was to provide the local community, citizens, and project stakeholders an introduction to the project as well as to gather information from the public and any interested organizations. A total of 166 people attended the meetings. Two additional meetings were held in March to present the proposed conceptual designs for the improvements to the interchanges and receive comment on those designs from the public. A total of 215 people attended the March meetings.

Members of the public, especially diverse communities that might be affected by the proposed project, were encouraged to attend the second public information meetings. SCDOT sent outreach letters to four African American churches in the vicinity of the I-85 project encouraging the pastors to share the Public Information Meeting advertisement with their congregation and neighboring community.

Public Hearing

SCDOT hosted a Public Hearing was held on December 1, 2015, between 5 and 7 p.m., at Gaffney High School in Gaffney, SC. The Hearing included an informal drop-in format, along with a formal Hearing where commenters had their remarks transcribed and made part of the project record. A total of 194 people signed in at the Hearing and 17 people signed up to comment during the formal Hearing. Only 9 people provided comments during the formal

hearing. A detailed summary of the Public Hearing is provided in the Public Hearing Certification package included with the FONSI request package.

FHWA Decision

The FHWA has determined that this project will have no significant impact on the human environment. This Finding of No Significant Impact is based on the Environmental Assessment and other supporting information, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. The Environmental Assessment provided sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope and content of the Environmental Assessment and other environmental documentation for this project.

Date: _____ _____

Attachment A

SCDOT NEPA Environmental Commitments Form

Date: 10/12/2015	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	

Project ID : 027114 | County : Cherokee | District : District 4 | Doc Type: EA | Total # of Commitments: 11

Project Name: I-85 Widening (MM80-96)

The Environmental Commitment **Contractor Responsible** measures listed below **are to be included in the contract and must be implemented**. It is the responsibility of the Program Manager to make sure the Environmental Commitment **SCDOT Responsible** measures are adhered to. If there are questions regarding the commitments listed please contact:

CONTACT NAME: Mr. Brad Reynolds **PHONE #:** (803) 737-1440

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Water Quality Responsibility: CONTRACTOR

The contractor will be required to minimize possible water quality impacts through implementation of construction BMPs, reflecting policies contained in 23 CFR 650B and the Department's Supplemental Specifications on Seeding and Erosion Control Measures (Latest Edition). Other measures including seeding, silt fences, sediment basins, etc. as appropriate will be implemented during construction to minimize impacts to Water Quality.

Non-Standard Commitment Responsibility: CONTRACTOR

Floodplains

The selected contractor will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator.

A hydraulic analysis will be performed for each encroachment of a FEMA-regulated floodplain and a detailed hydraulic analysis will be performed during final design. The proposed project will be designed to meet the "No-Rise" requirements.

Non-Standard Commitment Responsibility: CONTRACTOR

Noise

Contractors on all highway construction projects are required to adhere to SCDOT Standard Specification Section 107.1 – Laws to Be Observed, which states in part that the contractor shall "Keep fully informed of, and at all times observe and comply with, all federal, state, and local laws, ordinances, regulations, and all orders and decrees of bodies or tribunal having any jurisdiction or authority…" unless the necessary variance is obtained. Low-cost, easy-to-implement measures may be incorporated into project plans and specifications, where applicable, including: work-hour limits; equipment muffler requirements; locations of haul roads; elimination of "tail gate banging;" ambient sensitive back-up alarms; community rapport; and, complaint mechanisms.

Project ID : 027114	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Non-Standard Commitment Responsibility: CONTRACTOR

Cultural Resources

SCDOT has committed to use curb and gutter to reduce the ROW, and require fencing or other barriers between the construction and several mature trees during construction at 119 Canty Way to preserve those trees that are crucial to the character of the property. The contractor shall be responsible for having a licensed arborist identify the extent of the root balls for the trees. Temporary orange construction fencing will placed outside of the limits of the roots and no impacts to the root systems will be allowed.

Proposed project improvements will not intrude into the eligible boundary area of Resource 186-0198 (the Blanton Farm Complex) and will not result in a noticeable change to the view to or from the site.

Displacements Responsibility: CONTRACTOR

The SCDOT will acquire all new right-of-way and process any relocations in compliance with the Uniform Relocation Assistance and Real Property Acquisition policies Ace of 1970, as amended (42 U.S. C. 4601 et seq.). The purpose of these regulations is to ensure that owners of real property to be acquired for Federal and federally-assisted projects are treated fairly and consistently, to encourage and expedite acquisition by agreements with such owner, to minimize litigation and relieve congestion in the courts, and to promote public confidence in Federal and federally-assisted land acquisition programs.

USTs/Hazardous Materials Responsibility: CONTRACTOR

If avoidance of hazardous materials is not a viable alternative and soils that appear to be contaminated are encountered during construction, the South Carolina Department of Health and Environmental Control (SCDHEC) will be informed. Hazardous materials will be tested and removed and/or treated in accordance with the United States Environmental Protection Agency and the SCDHEC requirements, if necessary.

Project ID : 027114	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Non-Standard Commitment Responsibility: CONTRACTOR

Wetlands

Bridges will be used to cross streams at the interchanges at Exit 87 and 96. At Exit 87 a bridge will be used to cross the streams for the relocated Overbrook Drive frontage road in the southeast quadrant of the interchange. At Exit 96 a bridge will be used where the relocated Wilcox Avenue crosses a stream in the northeast quadrant of the interchange.

Non-Standard Commitment Responsibility: CONTRACTOR

Water Quality

The contractor will follow the guidance contained in Engineering Directive Memorandum (Number 23), dated March 10, 2009, regarding Department procedures to be followed in order to ensure compliance with S.C. Code of 72-400, Standards for Stormwater Management and Sediment Reduction. SCDHEC may require additional water quality and stormwater measures during and after construction, which will be determined during the 404/401 permitting process.

Non-Standard Commitment Responsibility: CONTRACTOR

Air Quality

State and local regulations regarding dust control and other air quality emission reduction controls will be followed. Current state best management practices (BMPs), will be followed during the construction of the project. These include covering earth-moving trucks to keep dust levels down, watering haul roads, and refraining from open burning, except as may be permitted by local regulations.

Project ID : 027114	SCDOT NEPA ENVIRONMENTAL COMMITMENTS FORM	

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Individual Permit Responsibility: CONTRACTOR

Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers. Based on preliminary design, it is anticipated that the proposed project would be permitted under an Individual Army Corps of Engineers Permit (IP). SCDOT will provide the Army Corps with information regarding any proposed demolition activities during the Section 404 permitting process. The required mitigation for this project will be determined through consultation with the USACE and other resource agencies.

Migratory Bird Treaty Act (all bridge and box culvert projects) Responsibility: CONTRACTOR

The federal Migratory Bird Treaty Act, 16 USC § 703-711, states that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not.

The Department will comply with the Migratory Bird Treaty Act of 1918 in regard to the avoidance of taking of individual migratory birds and the destruction of their active nests. At least four (4) weeks prior to construction/demolition of the bridges, the Resident Construction Engineer (RCE) will coordinate with SCDOT Environmental Services Compliance Office to determine if there are any active nests on the bridge. After this coordination, it will be determined whether construction/demolition can begin. After construction/demolition has begun, measures can be taken to prevent birds from nesting, such as screens, noise producers, and deterrents etc. If during construction or demolition a nest is observed on the bridge that was not discovered during the biological surveys, the contractor will cease work and immediately notify the RCE, who will contact SCDOT Environmental Services Compliance Office. SCDOT biologists will determine whether the nest is active and the species utilizing the nest. After this coordination, it will be determined whether construction/demolition can resume or whether a temporary moratorium will be put into effect. All costs for determining the need for, the placing of deterrents, and applying of all special actions including, but not limited to, removing nests and any costs associated with conducting work in compliance with the Migratory Bird Treaty Act as stated herein will not be paid for separately but will be considered to have been included with other items of work.