



ENVIRONMENTAL RE-EVALUATION FORM

FHWA South Carolina

State File #	23.03811	Fed Project #	IM23(009)	Project ID	38111	Route	I-85/I-385 Interch	County	Greenville
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Project Name/Description

The SCDOT proposes to re-construct the existing I-85/I-385 interchange to improve the operational efficiency of the interchange to accommodate existing and projected traffic volumes. The proposed improvements include new direct-connect ramps; a new collector-distributor (C-D) along I-385; elimination of the C-D along I-85 southbound; and will modify several merge points. These improvements will address the documented deficiencies associated with the existing facility. This project is currently under construction.

1. DOCUMENT TYPE: EIS EA CE (non Programmatic) PCE (No FHWA Approval Required)

A. Other Actions Associated with the Project:

- Section 4(f) Evaluation
- Section 106 Compliance
- Wetland Finding/Section 404 Compliance
- T & E Species Biological Assessment
- None

2. DOCUMENT APPROVAL DATE:

3. DATE(S) OF PRIOR RE-EVALUATIONS:

4. PROJECT DEVELOPMENT STAGE:

- Final Design
- ROW
- Construction
- Other, Specify

5. HAS DESIGN OR ROW CHANGED SINCE THE LAST APPROVAL?: YES NO
(if "NO" then Go To Item 7)

6. DESCRIPTION OF CURRENT PROJECT/DESIGN CHANGES:

The I-85 roadway has experienced flooding at the Rocky Creek crossing due to floodwater over-topping the existing culvert during heavy storm events. In order to address the insufficient hydraulic capacity of the Rocky Creek culvert, the existing 10-foot x 8-foot quadruple box culvert would be replaced with a bridge, which would reduce the floodway constriction and eliminate hazardous roadway conditions during heavy rainfall events. The proposed bridge would be constructed on existing alignment. No additional right-of-way is anticipated, but it may be needed for access during construction depending on the final design. The previous design had no proposed modifications to this culvert.

7. HAVE THERE BEEN SIGNIFICANT CHANGES IN THE AFFECTED ENVIRONMENT OR HAVE THE ENVIRONMENTAL STUDIES BEEN UPDATED SINCE THE LAST PROJECT APPROVAL?: (If "NO" to both Items 5 and 7, Go To Item 10)

YES NO

8. APPROVED DOCUMENT(S) RE-EVALUATION:

A. REVIEW OF EFFECTS: (Complete this section if "YES" to either Item 5 or Item 7)

SOCIAL ENVIRONMENT

CHANGE

REMARKS

1. Land Use	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
2. Community	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
3. Relocations	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
4. Churches/Institutions	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
5. Title VI/E.O. 12898	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
6. Economic	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
7. Controversy	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
8. Other; Specify	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

NATURAL ENVIRONMENT

CHANGE

REMARKS

1. Wetlands	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	+351 feet of stream impacts (Attachment A)
2. Water Quality	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
3. Wild/Scenic Rivers	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
4. Farmland	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
5. T & E Species	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	See Biological Assessment (Appendix A)
6. Floodplains	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	CLOMR anticipated (See Attachment A)
7. Other; Specify	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

PHYSICAL ENVIRONMENT

CHANGE

REMARKS

1. Noise	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
2. Air Quality	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
3. Energy/Mineral Resources	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
4. Construction/Utilities	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
5. UST's	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
6. Hazardous Waste Sites	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
7. Other; Specify	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

CULTURAL ENVIRONMENT	CHANGE	REMARKS
1. Historic Sites	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
2. Archaeological Resources	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
7. Other; Specify	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

PERMITS	CHANGE	REMARKS
1. U.S. Coast Guard	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
2. Forest Service/USACE/USFWS Land	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
3. Section 404	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Individual Permit Modification Required
4. Other; Specify	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Have the required permits been obtained?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "YES" what is the expiration date?	June 30, 2021	
*If permits have expired, permits will need updated and attached to re-evaluation.		

9. NEED FOR PUBLIC INVOLVMENT:

A public hearing/public information meeting was held for the project on: PIM 1/27/2011; PH 11/15/2012

There have been no changes in project design or environmental effects which would require a public hearing [or additional public hearing if one has already been held] or public information meeting.

The change(s) in project design and/or effects require(s) an additional public hearing/public information meeting. The meeting is scheduled for:

10. FINDINGS/CONCLUSIONS:

Based on the analysis contained in this re-evaluation, it has been determined that the change in project design and/or environmental effects would not significantly alter the conclusions reached in the approved environmental document and/or previous re-evaluation(s).

There have been no changes in the design/ROW of this project nor have there been changes in project effects or the affected environment. Therefore, the conclusions reached in the approved environmental document and/or previous re-evaluation(s) remain valid.

Prepared By:  Will McGoldrick
cn=Will McGoldrick, o=SCDOT, ou=Environmental Services Office, email=mcgoldrwr@scdot.org, c=US
2019.04.03 14:12:15 -04'00' Date: 4-3-19

For Non Programmatic CEs:

Concurred (FHWA): _____ Date: 4-3-19



Environmental Commitments Form

Project Name : I-85/385 over Rocky Creek

SCDOT Project File #: P038111

County: Greenville

Project Specific Environmental Commitments

Applicable For

Item	Source	Standard/Non-Standard Commitment, Special Condition	Commitment	Completion Date	I-85/I-385 Interchange	I-85 Rocky Creek
1	NEPA-FONSI	Non-Standard	Input received during the public hearing process and during the environmental document availability period will be carefully evaluated in the future project development. Modifications will be made where appropriate (p.30).	2/4/2013	✓	✗
2	NEPA-FONSI	Standard	The final drainage system will be designed to accommodate the volume of stormwater associated with the preferred alternative. Stormwater control measures, both during construction and post-construction, are required for SCDOT projects constructed in the vicinity of 303(d), total maximum daily load (TMDL), outstanding resource waters (ORW), tidal, and other sensitive waters in accordance with the SCDOT's MS4 Permit (p. 65).	RFC Plans 12/x/15, NOI submitted 12/x/15	✓	✓
3	NEPA-FONSI	Standard	To minimize impacts to water quality, the contractor will be required to minimize potential impacts through implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and SCDOT's Supplemental Specifications on Seeding and Erosion Control Measures (January 12, 2009) (p. 66).	ongoing; BMPs to be installed during construction	✓	✓
4	NEPA-FONSI	Non-Standard	The Design-Build Construction Team will be responsible for the acquisition of all required environmental permits. The Department will provide applicable oversight and coordination to ensure compliance. The following are the assumed environmental permits required for the construction of the proposed project: a U.S. Army Corps of Engineers (USACE) permit, under Section 404 of the Clean Water Act; a 401 Water Quality Certification from the South Carolina Department of Health and Environmental Control (SCDHEC); a Land Disturbance permit under the SCDHEC National Pollutant Discharge Elimination System (NPDES) Stormwater Program for a construction site exceeding 1.0 acre. These efforts will require evaluation and implementation of various strategies to avoid, minimize, and mitigate the impacts to jurisdictional waters of the U.S. Potential measures would include adjusting fill slopes and implementing erosion control measures, which include seeding of slopes, hay bale emplacement, silt fences, and sediment basins as appropriate, to minimize impact on adjacent wetlands(p. 73).	6-30-2019	✓	✗

Project Specific Environmental Commitments					Applicable For	
Item	Source	Standard/Non-Standard Commitment, Special Condition	Commitment	Completion Date	I-85/I-385 Interchange	I-85 Rocky Creek
5	NEPA-FONSI	Non-Standard	At the appropriate stage of project development, a complete hydraulic study performed to SCDOT guidelines for Hydraulic Design Studies would be conducted to more precisely determine the effects of the project on the base floodplains. If after the completion of the studies it is determined that a conditional letter of map revision (CLOMR) is needed, appropriate coordination with the Federal Emergency Management Agency (FEMA) would take place (p. 76).	4/9/15	✓	✗
6	NEPA-FONSI		To minimize construction noise, the contractor will be required to comply with the SCDOT 2007 Standard Specifications for Highway Construction, which includes specifications regarding nuisance noise avoidance. Other potential minimization strategies would include work- hour limits, equipment muffler requirements, location of haul roads, community rapport, and complaint mechanisms (p. 82).	ongoing	✓	✓
7	NEPA-FONSI	Non-Standard	As required by 23 CFR 772.117, the Department will provide the local planning officials with the appropriate noise impact data (i.e. noise contours per page 12 of the Noise Impact Assessment) to aid in the planning and minimization of noise impacts on adjacent projects (p. 88).	11/15/2012	✓	✗
8	NEPA-FONSI	Non-Standard	The determination of areas that warrant Phase II Assessment will be conducted upon final right-of-way acquisitions. Any Phase II Assessment will be site specific, based on hydrogeologic conditions, distance from specific environmental concerns, and other relative factors. If avoidance of the contamination area is not a viable alternative, tanks and other hazardous materials would be tested and removed and/or treated in accordance with the U.S. Environmental Protection Agency (USEPA) and SCDHEC requirements (p. 90).	ongoing	✓	✓
9	NEPA-FONSI	Non-Standard	The Department will ensure that the existing limits of the Walker Cemetery and located grave sites are delineated and identified in the field with construction barrier fence, or other appropriate measure, prior to construction activity along this area. If construction along Roper Mountain Road impedes in the delineated area, the Department will provide an archaeologist on site to monitor all ground disturbing activities along this area.	ongoing	✓	✗
10	NEPA-FONSI	Non-Standard	The Department, and/or the Design-Build Construction Team will acquire all new right-of-way and process these relocations in compliance with the Uniform Relocation Assistance and Real Property Acquisition policies Act of 1970, as amended (42 U.S. C. 4601 <i>et seq.</i>) (p. 92).	ongoing	✓	✓

Project Specific Environmental Commitments					Applicable For	
Item	Source	Standard/Non-Standard Commitment, Special Condition	Commitment	Completion Date	I-85/I-385 Interchange	I-85 Rocky Creek
12	NEPA-FONSI	Non-Standard	The Design-Build Construction Team will be responsible for the maintenance of all active monitoring wells along the project corridor. Coordination with the South Carolina Department of Health and Environmental Control (SCHDEC) and the GE Turbine facility will be conducted to ensure compliance with all monitoring plans. This coordination will also determine appropriate action regarding the impacted wells, which may include appropriately abandoning the wells, retro-fitting the wells to meet the new elevations, and/or relocating the wells to the same general areas.	complete	✓	✗
13	Re-eval Dec 2015	Standard	SCDOT will comply with the Migratory Bird Treaty Act in regard to the avoidance of taking of individual migratory birds and the destruction of their active nests (12/4/15 Re-Evaluation, Supplemental Information, pg. 5)	ongoing	✓	✓
14	Re-eval March 2019	Non-Standard	A modification to the previously approved 404 Individual Permit (SAC# 2012-00588) will be required for the proposed project. The Contractor, with oversight from SCDOT, will be responsible for preparing the permit modification request, and SCDOT will be responsible for submitting the permit modification request to USACE. In addition, mitigation will be required for impacts to waters of the U.S. The Contractor, in coordination with the SCDOT, will be responsible for obtaining suitable mitigation for the project in consultation with the USACE and other resource/regulatory agencies.		✗	✓
15	Re-eval March 2019	Non-Standard	It is anticipated that a Conditional Letter of Map Revision (CLOMR) would be necessary for impacts to the floodplain associated with Rocky Creek. The contractor would be responsible for coordinating with any required FEMA and local floodplain officials in the preparation of the CLOMR. The selected contractor will send a set of final plans and request for floodplain management compliance determination to the local County Floodplain Administrator.		✗	✓
16	Re-eval March 2019	Standard	The contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations during the construction phase of the project, if any such remains are encountered, the Resident Construction Engineer (RCE) will be immediately notified and all work in the vicinity of the discovered materials and site work shall cease until the SCDOT Archaeologist directs otherwise.		✗	✓

Comments:

EA approved 9/18/2012, FONSI approved 2/4/13, Re-Eval for Structures 11/13/13, Re-Eval for right of way 8/4/15, additional Re-Eval 12/4/15

Attachment A
I-85/I-385 Interchange Improvement Project
Environmental Assessment – Reevaluation
Supplemental Information
April 1, 2019

Introduction/Project Summary

The South Carolina Department of Transportation (SCDOT) proposes to improve the existing I-85 and I-385 interchange located in Greenville County (See Figure 1 – Project Location). SCDOT proposes to reconstruct the existing I-85 and I-385 interchange to include new direct connect ramps between I-85 and I-385; new collector-distributor roadways; and improve numerous ramp movements along the interchange.

The primary purpose of the I-85/I-385 Interchange Improvement Project is to improve operational efficiency of the existing I-85/I-385 interchange to accommodate existing and projected traffic volumes. The secondary purpose of the project is to improve the safety of the interchange.

The I-85/I-385 Interchange Improvement Project is currently in the construction phase under a Design-Build contract that was awarded in October of 2014. This Environmental Assessment Re-Evaluation (Re-Eval) is to address recent design changes that correct deficiencies at the I-85 crossing of Rocky Creek, as discussed below. The design changes only occur at the I-85 crossing of Rocky Creek, and further design and construction will be conducted under a separate Design-Build contract.

The design changes occur completely within the project study area (PSA) of the Environmental Assessment, FONSI, and subsequent Re-Evals so no additional field studies were required (See Figure 2 – Project Study Area). The design changes have resulted in an increase in stream and floodplain impacts. No other changes would occur to impacts on social, natural, physical, or cultural environments that have been discussed in previous NEPA documents. In addition, since the most recent Biological Assessment was completed over three years ago, an updated Biological Assessment was completed for this Re-Eval (See Appendix A). No changes in federally protected species have occurred as a result of the updated Biological Assessment.

Design Changes Since Finding of No Significant Impact and Subsequent Re-Evaluations

As discussed in the December 2015 Re-Eval, a FEMA No-Rise Study was conducted in April of 2015. During the study, the FEMA hydraulic model demonstrated that the I-85 roadway would be inundated by a 25-year or greater storm event at the Rocky Creek crossing. In addition, this portion of I-85 was flooded during a storm event in 2014 that resulted in a roadway closure. No modifications to the Rocky Creek culvert were proposed at the time of the current I-85/I-385 Interchange Design-Build contract. Since the December 2015 Re-Eval, it has been concluded that the culvert at Rocky Creek does not have adequate hydraulic capacity and needs to be replaced with a bridge to accommodate heavy rainfall events.

The existing 10-foot x 8-foot quadruple box culvert at Rocky Creek would be replaced with a bridge, which would reduce the floodway constriction and eliminate hazardous roadway conditions during heavy rainfall events. The proposed bridge would be constructed on existing

alignment. During construction, staging of the proposed bridge and removal of the existing culvert would be conducted in a manner to maintain traffic flow along I-85.

No additional right-of-way is anticipated, but it may be needed for access during construction depending on the final design. If required, the contractor will be responsible for acquiring any right-of-way permissions or acquisitions. All new right-of-way and relocations will be processed in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S. C. 4601 et seq.).

Impact Changes Since Finding of No Significant Impact and Subsequent Re-Evaluations

Wetland and Stream Impacts

The proposed bridge would be constructed on existing alignment. The design changes did not result in additional study area and no field study was required. However, the changes in design resulted in changes to the stream impacts for the project.

North of I-85, Rocky Creek flows parallel to the I-85 roadway and is forced into the existing culvert at a 90-degree angle. South of I-85, the stream flow exits the culvert and is immediately forced to make another 90-degree angle and parallels the I-85 roadway. In order to eliminate the sharp bends in the stream channel, provide a more natural stream flow, and prevent additional bank scour, a section of Rocky Creek would be relocated to the west of the existing culvert under the west bridge span (See Figure 3 – Preliminary Design). In addition, the bents would be constructed on an approximately 20-degree skew from perpendicular in order to eliminate sharp bends within the new stream channel. Based on the preliminary design, this would result in 351 linear feet (0.207 acre) of morphological change impacts to Rocky Creek (See Figure 3 – Preliminary Design).

The most recent Re-Eval (December 2015) stated that the project would impact 1,070 linear feet of stream channel, 0.242 acre of wetland, and 0.173 acre of open waters. No impacts to Rocky Creek were previously anticipated. A U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit (SAC# 2012-00588) was submitted and approved on April 26, 2016 for impacts to 1,070 linear feet of stream, 0.242 acre of wetland, and 0.173 acre of open waters. No changes have occurred to wetland or open water impacts. The additional 351 linear feet of stream impacts would require a permit modification to the existing Section 404 Individual Permit. Prior to construction, a permit modification application would be submitted to the USACE by the Design-Build team.

Compensatory Mitigation

The existing Section 404 Individual Permit required 2.8 wetland mitigation credits and 5,903.8 stream mitigation credits. The additional 351 feet of stream impacts would require an additional 1,702.35 compensatory stream mitigation credits. Prior to construction, the additional stream mitigation credits would be purchased from an approved mitigation bank.

Table 1 below summarizes the changes in stream impacts from the December 2015 Re-Eval, the April 2016 Section 404 Individual Permit, and the recent design changes.

Table 1 Changes in Environmental Impacts				
Impact Category	December 2015 Re-Eval	Approved Section 404 Individual Permit	Revised Design Changes at Rocky Creek	Net Change
Stream Impacts	1,070 feet	1,070 feet	1,421	+351
Wetland/Open Water Impacts	0.415 acre	0.415	No Change	

Floodplains

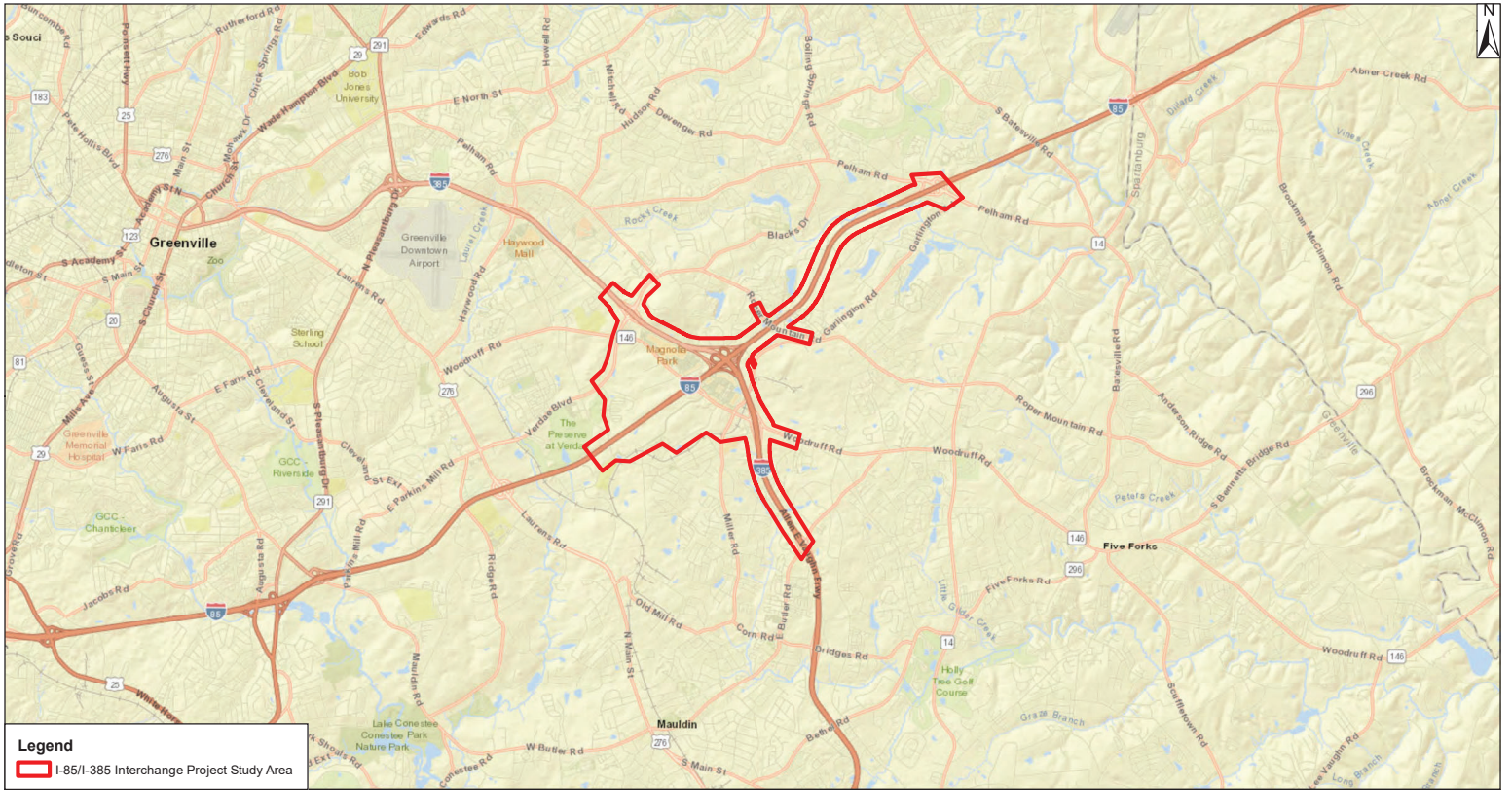
According to the FEMA flood insurance rate maps, this section of Rocky Creek is associated with a regulated Zone AE floodplain and floodway (See Figure 4 - Floodplains). The previous design did not propose modifications to the existing Rocky Creek culvert, and measures such as retaining walls were proposed to minimize floodplain impacts. The December 2015 Re-Eval concluded that the project would result in a “No-Rise” condition. Retaining walls would still be utilized along the roadway fill embankments at the northwest and southeast corners of the proposed bridge to minimize impacts.

Replacing the existing culvert at Rocky Creek with the proposed bridge would alleviate floodwater from over-topping I-85 during 1% annual chance flood events. However, based on preliminary hydraulic studies, these changes would increase downstream base flood elevations (BFEs) by greater than 0.1-foot. In order to meet the “No-Rise” condition, changes in BFEs cannot be more than 0.1-foot; therefore, the project is now expected to require a CLOMR. A Bridge Replacement Scoping Trip Risk Assessment Form was completed and is included in Appendix B. During the Design-Build phase of the project, the Design-Build team will coordinate with the FEMA and the Greenville County Flood Administrator to ensure that the project will meet all state and federal requirements.

Conclusion

Based on the analysis contained in this re-evaluation, it has been determined that the change in project design and/or environmental effects would not significantly alter the conclusions reached in the approved environmental document or previous re-evaluations; therefore, the previous FONSI determination remains valid.

Figures




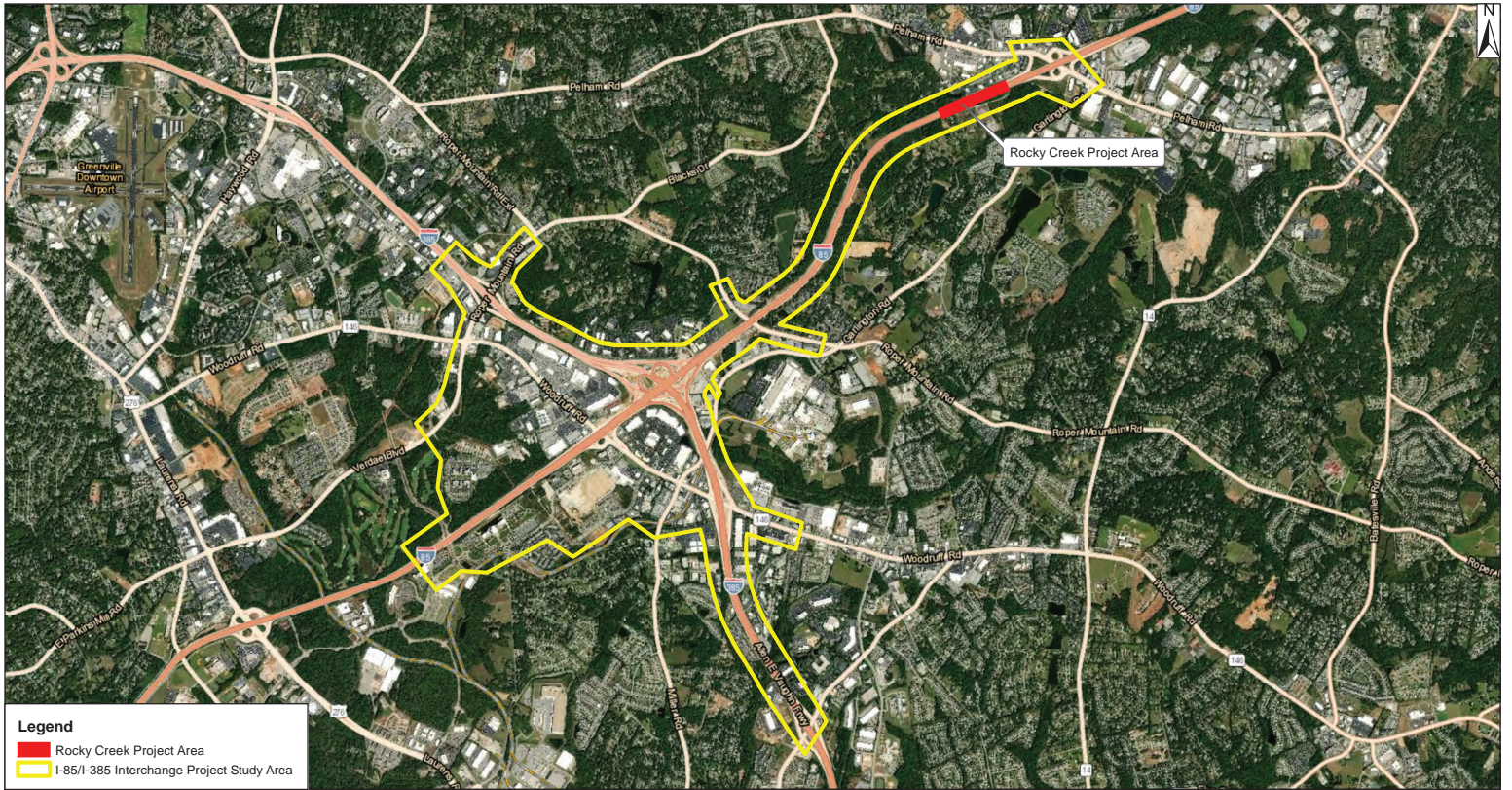
Legend
 I-85/I-385 Interchange Project Study Area

Figure 1
Project Location
 I-85/I-385 Interchange Improvement Project
 SCDOT PIN# P038111
 Greenville County, SC
 January 31, 2019



Source: ESRI World Streets





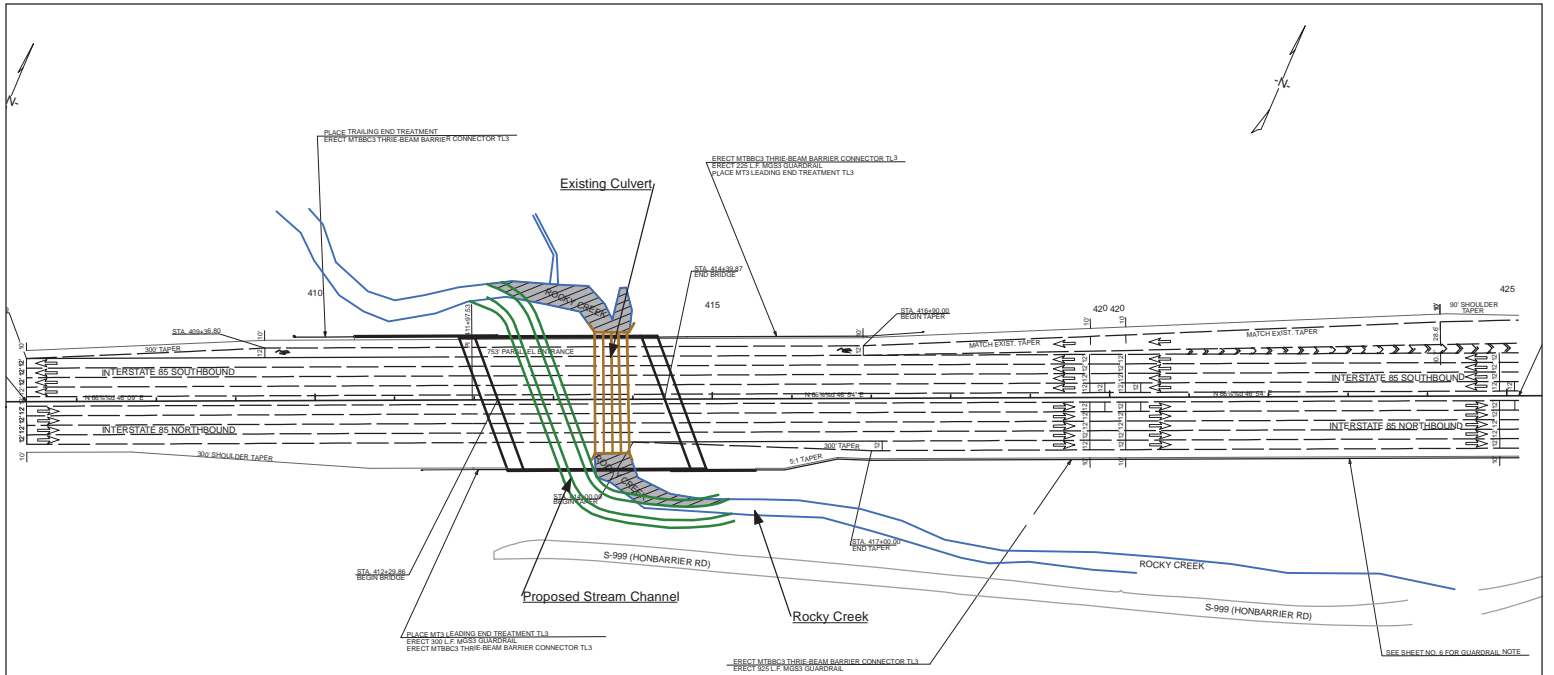
Legend
 Rocky Creek Project Area
 I-85/I-385 Interchange Project Study Area



Source: ESRI World Imagery/Transportation

Figure 2
Project Study Area
 I-85/I-385 Interchange Improvement Project
 SCDOT PIN# P038111
 Greenville County, SC
 January 31, 2019





- Legend**
- Existing Culvert
 - Proposed Stream Channel
 - Stream Boundary
 - Stream Impacts



Figure 3
Preliminary Design
 I-85/I-385 Interchange Improvement Project
 SCDOT PIN# P038111
 Greenville County, SC
 February 26, 2019





Legend

- Rocky Creek Project Area
- FEMA Flood Hazard**
- Zone AE, Floodplain
- Zone AE, Floodway
- Zone X, 0.2% Annual Chance Flood Hazard



Figure 4
Floodplains
 I-85/I-385 Interchange Improvement Project
 SCDOT PIN# P038111
 Greenville County, SC
 January 31, 2019



Source: ESRI World Imagery & Transportation
 & FEMA National Flood Hazard Layer (NFHL)



Appendix A

Biological Assessment

**Biological Assessment
I-85 over Rocky Creek
Greenville County, South Carolina
SCDOT PIN# P038111
February 28, 2019**

1.0 Introduction

The South Carolina Department of Transportation (SCDOT) proposes to replace the I-85 bridge over Rocky Creek in Greenville County. This project was originally included in the I-85/I-385 Interchange Improvement Project, which proposed to improve the existing I-85 and I-385 interchange located in Greenville County (See Figure 1 – Project Location). The I-85 bridge replacement over Rocky Creek was subsequently removed from the I-85/I-385 Interchange Improvement Project, which is currently in the construction phase under a Design-Build contract that was awarded in October of 2014. This document is to discuss the potential of federally listed threatened and endangered species only within the survey area of the I-85 bridge replacement over Rocky Creek in which further design and construction will be conducted under a separate Design-Build contract (See Figure 2 – Survey Area).

Pursuant to the Section 7 of the Endangered Species Act (ESA), a field survey for federally listed threatened and endangered species was conducted within the survey area. The following is a list of endangered and threatened species known to occur in Greenville County.

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES Known to Occur in Greenville County, South Carolina				
Common Name	Scientific Name	Status	Suitable Habitat Present?	Biological Conclusion
Bald eagle*	<i>Haliaeetus leucocephalus</i> *	BGEPA	No	No Effect
Bog turtle	<i>Glyptemys muhlenbergii</i>	Threatened & S/A	No	No Effect
Bunched arrowhead	<i>Sagittaria fasciculata</i>	Endangered	No	No Effect
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	Threatened	No	No Effect
Mountain sweet pitcher plant	<i>Sarracenia rubra ssp. jonesii</i>	Endangered	No	No Effect
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	No	No Effect
Rock gnome lichen	<i>Gymnoderma lineare</i>	Endangered	No	No Effect
Small whorled pogonia	<i>Isotria medeoloides</i>	Threatened	No	No Effect
Swamp pink	<i>Helonias bullata</i>	Threatened	No	No Effect
White fringeless orchid	<i>Platanthera integrilabia</i>	Threatened	No	No Effect
White irisette	<i>Sisyrinchium dichotomum</i>	Endangered	No	No Effect

Source: USFWS website, February 25, 2019 (www.fws.gov/charleston/pdf/Endangered/species_by_county/greenville_county.pdf)

* Federally protected under the Bald and Golden Eagle Protection Act

S/A - Federally protected due to similarity of appearance to a listed species.

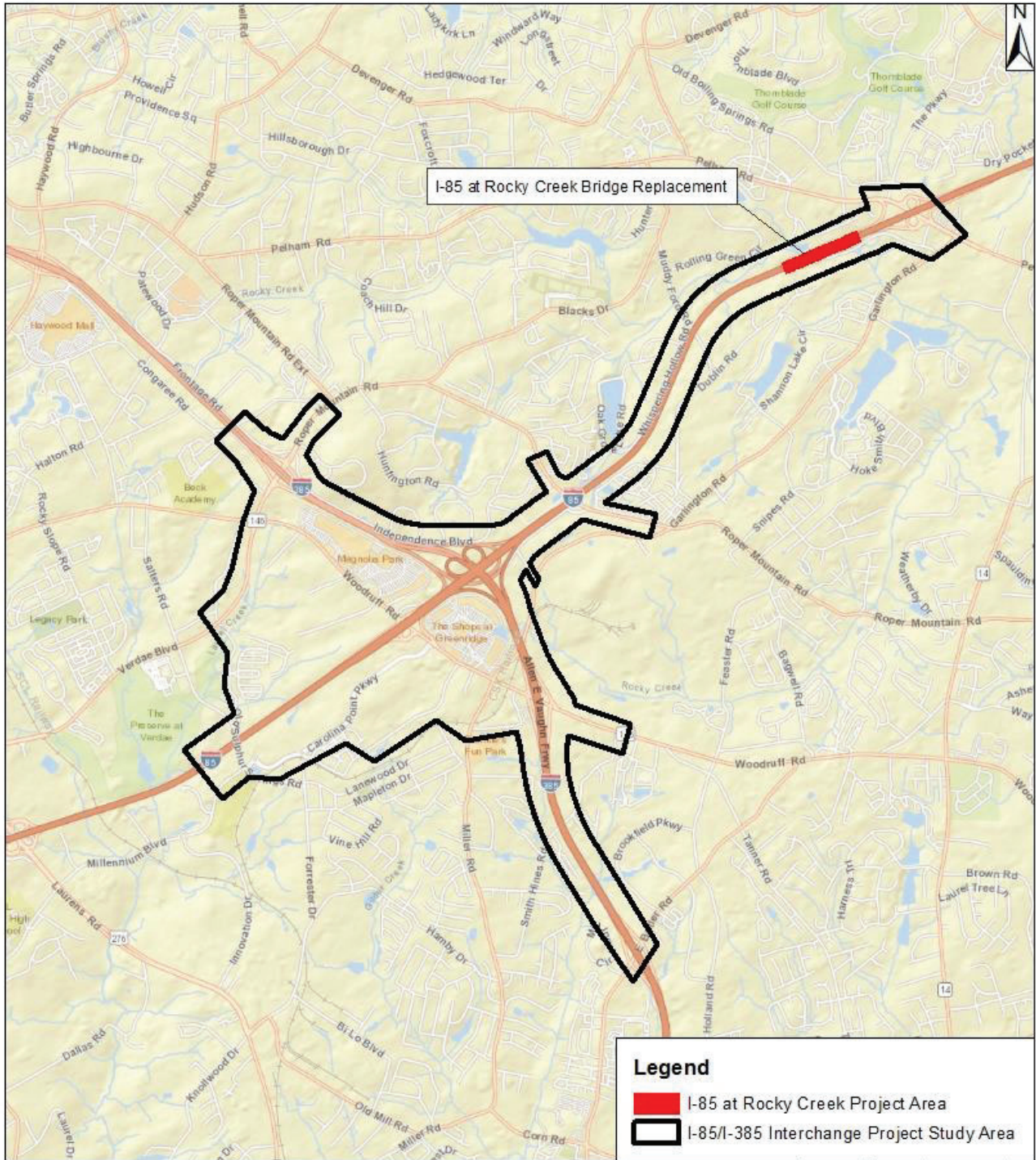


Figure 1
Project Location
 I-85 at Rocky Creek Bridge Replacement
 SCDOT PIN# P038111
 Greenville County, SC
 February 26, 2019

Source: ESRI World Streets Map



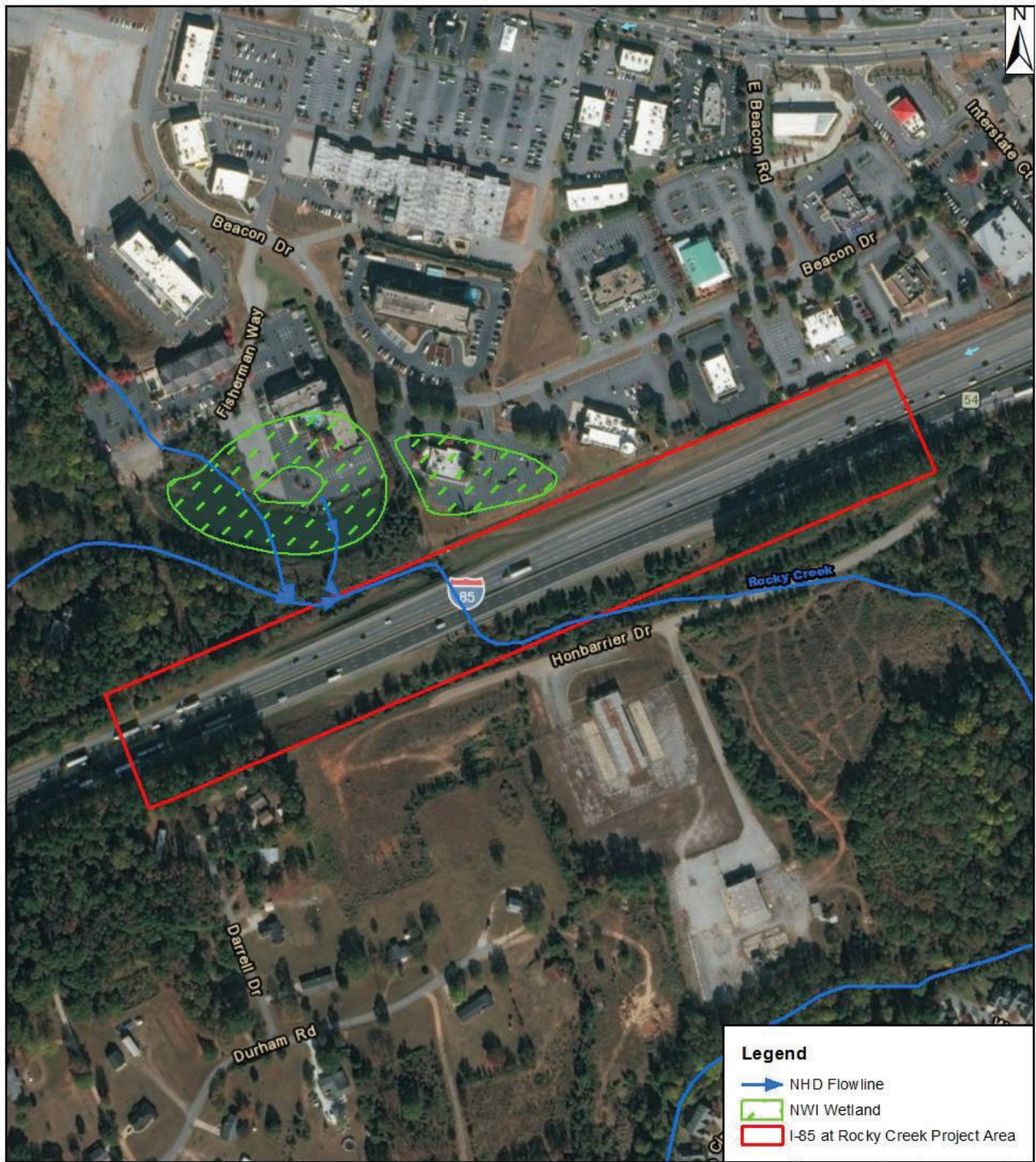


Figure 2
Survey Area
 I-85 at Rocky Creek Bridge Replacement
 SCDOT PIN# P038111
 Greenville County, SC
 February 26, 2019

Source: ESRIWorld Imagery/Transportation, National Wetlands
 Inventory Data (US FWS) & USGS National Hydrography Dataset (NHD)



2.0 Methods

Prior to the field surveys, the South Carolina Department of Natural Resources (SCDNR) SC Rare, Threatened & Endangered Species Inventory website, SCDNR Bald Eagle Nest Location website, and the US Fish and Wildlife Service (USFWS) Charleston field office website was accessed to obtain pertinent species occurrence information for Greenville County. In addition, a literature search was performed to investigate species descriptions and habitat requirements for each listed species. Important sources of reference information included natural resource agency data and published reports, the Federal Register, and available USFWS Recovery Plans.

Field survey were conducted within the survey area on November 5, 2015 and November 15, 2015. The habitats surveyed are determined by each species' ecological requirements. The survey area includes mixed pine/hardwood forests and disturbed areas such as utility right-of-way (ROW) and roadway shoulders.

Disturbed areas

A majority of the survey area is comprised of disturbed areas. Disturbed areas are lands that have been highly impacted by human activities such as residential and/or commercial development. The disturbed areas in the study area consist of the existing roadway, utilities, and their respective maintained ROW, as well as commercial properties scattered along the northern portion of the survey area.

Mixed pine/hardwood

Mixed pine/hardwood communities are scattered throughout the survey area and occur primarily in small patches. These are upland communities, and the portions of these communities located within the survey area are disturbed transitional areas adjacent to the maintained ROW. The vegetation identified in the canopy include loblolly pine (*Pinus taeda*), water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), and tulip poplar (*Liriodendron tulipifera*). The understory consists of southern magnolia saplings (*Magnolia grandiflora*), sweetgum saplings, American holly (*Ilex opaca*), eastern redcedar (*Juniperus virginiana*), and blackberry (*Rubus* spp.). Woody vines include Virginia creeper (*Parthenocissus quinquefolia*) and poison ivy (*Toxicodendron radicans*).

Streams

One named perennial stream (Rocky Creek) and one unnamed intermittent stream are located within the survey area. Rocky Creek is approximately 20 to 30 feet in width, and the portion located within the survey area appears to be a partially impaired stream. North of I-85, Rocky Creek primarily flows through maintained ROW with very little vegetative buffer. South of I-85, approximately 70 feet of stream channel occurs within maintained ROW and the remainder flows parallel to I-85 with approximately 25-30 feet of vegetative buffer. The unnamed stream flows directly into Rocky Creek and is an outfall channel from a pond located outside of the survey area and north of I-85. The portion of this stream located within the survey area is approximately 2 - 4 feet in width and flows through a disturbed maintain utility ROW.

3.0 Species Descriptions

Bald eagle

The bald eagle (*Haliaeetus leucocephalus*) is a large bird of prey with a dark brown body and conspicuous white coloration on the head, neck, and tail. Its wingspan may reach up to seven feet, and it can weigh as much as seven pounds as an adult.¹

¹ Georgia Department of Natural Resources. *Haliaeetus leucocephalus*. 2009. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

The bald eagle requires large trees with an open limb structure for nesting, usually in a forest/marsh ecotone within one kilometer (0.62-mile) of open water. Large trees allow for the construction of large nests that are supported for many years without falling. Nesting habitats initially selected by eagles usually have limited disturbance. Trees suitable for perching and future nesting sites are also important components of stable nesting territories. Fresh, brackish and marine habitats provide suitable foraging sites and include open water, marsh, and riverine habitat. Prime habitats are characterized by having shallow, slow moving water with abundant fish and bird prey. Large manmade reservoirs in South Carolina have provided many acres of new inland eagle foraging habitat. Concentrations of eagles may be found below hydroelectric dams where they forage on injured fish. Impounded marsh managed for waterfowl is also preferred foraging and nesting habitat.²

No individual species, nests, or nesting habitat were identified within the survey area. Due to the lack of suitable habitat, this species is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

Bog turtle

The bog turtle (*Glyptemys muhlenbergii*) is the smallest turtle species in North America reaching 4.5 inches in maximum carapace length. The low-keeled, black, brown, or mahogany-colored carapace is usually rough in appearance due to the distinctive growth annuli of the scutes.³ Its skin color is brown to pink and may have some reddish mottling.⁴ The habitats capable of supporting a viable bog turtle population may be as small as an acre. Although the habitat type varies from spring seepages, bogs, and wet meadows, the presence of soft, deep, mucky organic soil and open wet areas with shallow water are prerequisites to inhabitation by bog turtles. These bogs are ideally quite open and characterized by a rich growth of sedges, rushes, bulrushes, and, especially, sphagnum moss.⁵ This species has a discontinuous range that stretches from western Massachusetts southward to extreme northeastern Georgia. A large gap in West Virginia and northern Virginia separates the so-called northern and southern populations.⁶

No suitable habitat, such as spring seepages, bogs, or wet meadows with the presence of soft, deep, mucky organic soil and open wet areas with shallow water, were identified within the survey area. Due to the lack of suitable habitat, this species is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

Bunched arrowhead

The bunched arrowhead (*Sagittaria fasciculata*) is an aquatic perennial herb with erect, emergent leaves that are 1.5 - 3.5 cm long. In May and June, one to several flowering stems appear bearing white flowers arranged in whorls; female flowers on the lowest whorls, males on the upper ones.⁷ This species typically is found in very gently sloping areas with slow, continuous seepage of cool, clear water. The continuous seepage appears to be the most important factor in the ecology of the species.⁸ The bunched arrowhead is endemic to North Carolina and South Carolina and is extant in Henderson County, North Carolina and

² South Carolina Department of Natural Resources Wildlife Conservation Plan website: <http://www.dnr.sc.gov/wcp>.

³ Georgia Department of Natural Resources. *Glyptemys muhlenbergii*. 2009. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

⁴ Ibid.

⁵ Ibid

⁶ Ibid.

⁷ NatureServe. Nature Explorer. *Sagittaria fasciculata*. Available online at (<http://explorer.natureserve.org/servlet/NatureServe?searchName=Sagittaria+fasciculata>). Accessed 25 February 2019.

⁸ Ibid.

Greenville County, South Carolina. There are also known historical records in Henderson and Buncombe counties, North Carolina.⁹

No suitable habitat, such as very gently sloping areas with slow, continuous seepage of cool, clear water, was identified within the survey area. Due to the lack of suitable habitat, this species is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

Dwarf-flowered heartleaf

The dwarf-flowered heartleaf (*Hexastylis naniflora*) is a stemless perennial herb with mottled heart-shaped leaves that are 4-6 cm wide and supported on thin leaf stems arising from an underground rhizome. This species blooms in April and May with small dark brown or maroon-splotched flowers that are borne near the rhizome tip, sometimes not rising above the leaf litter.¹⁰ It is found on moist to rather dry north-facing slopes of ravines in the Piedmont, usually in the oak-hickory-pine community type. The current reported range is Cherokee, Greenville and Spartanburg counties in South Carolina.¹¹

No suitable habitat, such as moist to rather dry north-facing slopes of ravines in an oak-hickory-pine community, was identified within the survey area. Due to the lack of suitable habitat, this species is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

Mountain sweet pitcher plant

The mountain sweet pitcher plant (*Sarracenia rubra* ssp. *jonesii*) is an insectivorous perennial herb with waxy-green, maroon-veined leaves that form erect, vase-like "pitchers" with ascending "lids." The pitchers are usually about 18 inches tall. The flowers bloom in the spring and the lower petals are pendulous, maroon on the outside and yellowish, tinged with red on the inner surface.¹² This species is most commonly found in seepage-fed depression bogs with flat to gently sloping topography in valley bottoms that are not subjected to flooding. The soils of these bogs are deep, poorly drained loam/sand/silt, with lots of organic matter and an acidic pH.¹³ Mountain sweet pitcher plant is endemic to a few mountain bogs and waterslides in southwest North Carolina and northwest South Carolina on both sides of the Blue Ridge divide. Five populations are located in the Saluda River drainage in Greenville County, South Carolina and one population is in the Enoree River drainage in Greenville County, South Carolina.¹⁴

No suitable habitat, such as seepage-fed depression bogs with flat to gently sloping topography in valley bottoms and deep, poorly drained loam/sand/silt, with lots of organic matter, was identified within the survey area. Due to the lack of suitable habitat, this species is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

⁹ Ibid.

¹⁰ NatureServe. Nature Explorer. *Hexastylis naniflora*. Available online at (<http://explorer.natureserve.org/servlet/NatureServe?searchName=Hexastylis+naniflora>). Accessed 25 February 2019.

¹¹ Ibid.

¹² NatureServe. Nature Explorer. *Sarracenia rubra* ssp. *jonesii*. Available online at (<http://explorer.natureserve.org/servlet/NatureServe?searchName=Sarracenia+rubra+ssp.+jonesii>). Accessed 25 February 2019.

¹³ Ibid

¹⁴ Ibid

Northern long-eared bat

The northern long-eared bat (*Myotis septentrionalis*) is dull brown in color and can be distinguished from other *Myotis* species in their range by their longer ears and longer, more pointed tragus.¹⁵ During the summer, this species typically roosts in tree cavities and under exfoliating bark, but it has also been found in buildings and behind shutters. During winter, this species hibernates in tight crevices in caves and mines. Foraging is done primarily on forested hillsides and ridges. This species is known to occur throughout southern Canada and the central and eastern United States.¹⁶

No suitable winter hibernaculum, such as caves and mines, were identified within the survey area. SCDOT biologists conducted a habitat and visual survey of the project corridor on July 28, 2015 (See Appendix A). In addition, the Rocky Creek culvert was inspected for bats on November 15, 2015 (See Appendix A). There were no bats or evidence of bat presence found within the corridor.

SCDOT determined that due to the urban nature of the project and the limits of clearing within the existing road corridor, there would be no effect to the northern long-eared bat. Due to the lack of suitable habitat, unlikely occurrence of the species in the project study area, and lack of winter hibernacula within/nearby the project study area, the proposed project will have no effect on the northern long-eared bat. The proposed project would not result in a viability concern for the species within Greenville County nor is the project likely to jeopardize the continued existence of the species. The USFWS concurred with these findings on October 29, 2015 and confirmation is included in Appendix A.

Rock gnome lichen

The rock gnome lichen (*Gymnoderma lineare*) grows in dense colonies up to 2 square yards in size. Colonies consist of many, very narrow, strap-shaped, slightly branched lobes that are 0.38 – 0.88-inch in length and less than 0.06 inch wide. The upper surface of the lobes is dark blue-gray and shifting to black at the base, and the lower surface is shiny white.¹⁷ This species typically inhabits moist, rocky cliff faces at high elevations that are usually shaded and often growing with the mosses *Andreaea* or *Grimmia*. The rock gnome lichen is endemic to the Southern Appalachians of Georgia, North Carolina, and Tennessee.¹⁸

No suitable habitat, such as moist, rocky cliff faces at high elevations, was identified within the survey area. Due to the lack of suitable habitat, this species is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

Small whorled pogonia

The small whorled pogonia (*Isotria medeoloides*) is a perennial herb with a waxy, pale green stem 1.5 - 10 inches in height and topped by a whorl of 4 - 6 leaves. Its leaves are 0.63 – 3.38 inches long and 0.25- 1.5 inches wide, pointed, and waxy. It has one to two flowers on very short stalks rising from the center of the leaf whorl.¹⁹ This species is found in acidic soils of mixed hardwood-pine forests on lower slopes and stream terraces, often with chestnut oak, red maple, hemlock, white pine or Virginia pine, lowbush blueberry, Indian cucumber root, and New York fern. Its range is comprised of Georgia, South Carolina, Tennessee, and 18 other states north to Maine and Ontario and northwest to Missouri.²⁰

¹⁵ Georgia Department of Natural Resources. *Myotis septentrionalis*. 2015. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

¹⁶ *Ibid.*

¹⁷ Georgia Department of Natural Resources. *Gymnoderma lineare*. 2016. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

¹⁸ *Ibid.*

¹⁹ Georgia Department of Natural Resources. *Isotria medeoloides*. 2016. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

²⁰ *Ibid.*

No suitable habitat, such as acidic soils associated with mixed hardwood-pine forests on lower slopes or stream terraces, was identified within the survey area. Due to the lack of suitable habitat, the plant is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

Swamp pink

The swamp pink (*Helonias bullata*) is a perennial herb that often forms dense patches of large basal rosettes connected by underground stems. Its leaves can grow 3.5 - 12 inches in length and up to 1.5 inches in width and are glossy, evergreen, and widest above the middle with pointed tips and tapering bases. The stem is 1 - 2 feet tall and rises from the center of each rosette. The flowers are approximately 0.38 inch in width with six pink tepals and six blue stamens.²¹ This species is primarily found in shady seepage swamps and sphagnum bogs with continually saturated soils that are not flooded.²²

No suitable habitat, such as shady seepage swamps and sphagnum bogs, was identified within the survey area. Due to the lack of suitable habitat, the plant is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

White fringeless orchid

The white fringeless orchid (*Platanthera integrilabia*) is a perennial herb with an erect stem that is 20 - 32 inches tall and often in colonies of single-leaved, juvenile plants. Its leaves are 4.75 - 9 inches long and 0.38 - 1.25 inches wide and are alternate. Two to three large leaves, folded along a strong central vein, are at mid- to lower stem, and two to three small, bract-like leaves are near the top of the stem.²³ Its flowers are 6 - 15 in number, pure white, and in a small cluster at the top of the stem. This species is typically found in seepage sphagnum bogs, springheads, seepy stream banks, and red maple-black gum swamps.²⁴

No suitable habitat, such as seepage sphagnum bogs, springheads, seepy stream banks, or red maple-black gum swamps, was identified within the survey area. Due to the lack of suitable habitat, the plant is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

White irisette

The white irisette (*Sisyrinchium dichotomum*) is a perennial herb with winged, branching stems, 4 to 8 inches in height, rising above basal clumps of blue-green, grass-like leaves. Tiny (0.25-inch long) white flowers bloom at the ends of the stems from late May through July.²⁵ The species is found on mid elevation slopes, characterized by open, dry to moderate-moisture oak-hickory forests. The white irisette is known from four counties in North Carolina and South Carolina (Greenville, SC; Henderson, NC; Polk, NC; Rutherford, NC).²⁶

²¹ Georgia Department of Natural Resources. *Helonias bullata*. 2016. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

²² Ibid.

²³ Georgia Department of Natural Resources. *Platanthera integrilabia*. 2010. Rare species profiles. Available online at (<http://georgiawildlife.com/species>). Accessed 25 February 2019.

²⁴ Ibid.

²⁵ NatureServe. Nature Explorer. *Sisyrinchium dichotomum*. Available online at (<http://explorer.natureserve.org/servlet/NatureServe?searchName=Sisyrinchium+dichotomum>). Accessed 25 February 2019.

²⁶ Ibid.

No suitable habitat, such as mid elevation slopes, characterized by open, dry to moderate-moisture oak-hickory forests, was identified within the survey area. Due to the lack of suitable habitat, the plant is not expected to occur within the impacted areas, and there are no known occurrences of the species in the survey area. Therefore, the proposed project would have no effect on this species.

4.0 Results

No suitable habitat for any federally protected species listed for Greenville County was observed within the survey area. In addition, the SCDNR Rare, Threatened and Endangered Species Inventory and SCDNR Bald Eagle Nest Location database was reviewed and there are no documented occurrences of federally listed species within or adjacent to the survey area. Based on the field studies, it has been determined that the proposed project would have no effect on federally protected species listed for Greenville County.

Appendix A

Northern Long-Eared Bat Survey & Coordination

APPENDIX C: Bridge/Structure Inspection Form

Bridge Inspection Form

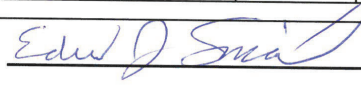
This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside, from activities above that bore down to the underside, or that could impact expansion joints, from deck removal on bridges, or from structure demolish. Each bridge/structure to be worked on must have a current bridge inspection. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the US Fish and Wildlife Service, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing structures prior to allowing any work to proceed.

DOT Project #	Water Body Rocky Creek	Date/Time of Inspection 11/15/2015 12:30 PM
---------------	---------------------------	--

Route:	County:	Federal Structure ID:	Bat Indicators				Notes: (e.g., number & species of bats, if known)
			Visual	Sound	Droppings	Staining	
I-85	Greenville		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	no evidence observed, no bats present
	Map #1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	<input type="checkbox"/>	Crevices, rough surfaces or imperfections in concrete	<input checked="" type="checkbox"/>	Human disturbance or traffic under bridge/in culvert or at the structure	High <input checked="" type="checkbox"/>	Low <input type="checkbox"/>	None <input type="checkbox"/>
All crevices >12" deep & not sealed	<input type="checkbox"/>	Spaces between walls, ceiling joists	<input checked="" type="checkbox"/>	Possible corridors for netting	None/poor <input type="checkbox"/>	Marginal <input checked="" type="checkbox"/>	excellent <input type="checkbox"/>
All guardrails	<input type="checkbox"/>		<input type="checkbox"/>	Evidence of bats using bird nests, if present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
All expansion joints	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Spaces between concrete end walls and the bridge deck	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Vertical surfaces on concrete I-beams	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	

Inspection Conducted By: <u>Ed Smail</u>	Signature(s): 
District Environmental Use Only:	Date Received by District Environmental Manager: _____

Gordon, Siobhan

From: Mark Caldwell <mark_caldwell@fws.gov>
Sent: Thursday, October 29, 2015 2:31 PM
To: Gordon, Siobhan
Cc: Belcher, Jeffery - FHWA; Morgan Wolf
Subject: RE: NLEB - I-85/I-385 Interchange Improvements, Greenville and Spartanburg Counties. PIN 38111

Siobhan,

We agree that the I-85/I-385 interchange project area is considered a high density urban area. We also agree that improvements to the interchange would not affect the northern long-eared bat.

Mark

Mark A. Caldwell
U.S. Fish and Wildlife Service
South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
843-727-4707 ext 215
843-300-0426 (direct line)
843-727-4218 – facsimile

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.

From: Gordon, Siobhan [mailto:GordonSO@scdot.org]
Sent: Wednesday, October 28, 2015 10:07 AM
To: charleston_regulatory@fws.gov
Cc: Belcher, Jeffery - FHWA; Kelly, David P.
Subject: NLEB - I-85/I-385 Interchange Improvements, Greenville and Spartanburg Counties. PIN 38111

Based on our conversation during Monday morning's meeting, SCDOT believes the I-85/I-385 Interchange Improvements in Greenville and Spartanburg Counties is located within a high density urban area and thus will have no effect on NLEB. Please review the attached maps and project description below and respond with your concurrence of this determination. Thanks!

Project Description –

SCDOT proposes to improve the existing I-85 and I-385 interchange, generally located along the southern limits of the City of Greenville, in Greenville County, SC. The proposed project will reconstruct the existing I-85/I-385 interchange to improve the operational efficiency and accommodate the existing and projected traffic volumes.

SCDOT proposes to improve the existing I-85/I-385 facility with several activities including: Improvements to the I-85/I-385 interchange and ramps; rehabilitation of I-85 north and south of the interchange; adding a fourth auxiliary lane on the northbound and southbound I-85 from I-385 to Pelham Road; adding a third through lane in each direction on I-385 from East Butler Road through the interchange; intersection improvements on Woodruff Road; and replacing the Roper Mountain Road bridge over I-85. The project includes asphalt repaving northeast along I-85 to Aviation Parkway just into Spartanburg County and southwest along I-85 to Parkins Lake Road. The project also includes a small section of Garlington and Chrome Roads southeast of the I-85/I-385 interchange.

Siobhan O. Gordon

*Permits Manager, Midlands | Biologist
SCDOT Environmental Services Office
Phone 803 737 1337 | Fax 803 737 1394*

Northern Long-Eared Bat and Migratory Bird Survey of
I-85/I-385 Interchange Improvements in
Greenville County, S.C.
IM23(009)
November 6, 2015

Pursuant to Section 7 of the Endangered Species Act and the Migratory Bird Treaty Act of 1918, a field survey was conducted for the Northern long-eared bat (*Myotis septentrionalis*) and migratory birds on the proposed improvements to the I-85/I-385 interchange and associated interchanges in Greenville County.

Methods

The project area was examined by reconnaissance methods on July 28, 2015. Mr. Jack Valetti, the SCDOT construction engineer for the project, and project consultant Ms. Crystal Fox of Zachary Construction, assisted in the survey. Searches for potential evidence of the presence of bats and migratory birds were conducted, which includes visual sightings and signs of activity. Survey techniques consisted of thorough examination of all impacted bridges from underneath bridge decks with binoculars and foot travel upslope to bridge end abutments. The concrete slopes underneath bridges were examined for the presence of staining and dung from bat activity.

Results

The project consists of re-designing the I-85/I-385 interchange, the I-85/Roper Mountain Road interchange, the I-385/Woodruff Road interchange, and the I-85/Garlington Road interchange. The project will involve demolishing some of the bridges in these interchanges including various ramps (see attached interchange map; note bridges 1, 7 and 8 not shown). No bats of any species, nor signs of their activity were observed. Barn swallows (*Hirundo rustica*) were seen flying and both active and inactive nests were found. The survey results are as follows:

1. I-85 mainline at Roper Mountain Rd. (Structure Number 2370054800100)
SB - No bats or migratory bird nests seen
NB - No bats seen; 1 barn swallow nest seen, appears inactive
2. I-85 NB to I-385 NB ramp over I-85 mainline (Structure Number 2310038510571)
No bats or migratory bird nests seen

3. I-385 mainline over I-85 mainline, etc. (Structure Number 2310038510500)
NB - No bats seen; numerous barn swallow bird nests seen
SB - No bats seen; 1 barn swallow nest seen
4. I-385 SB to I-85 NB ramp over I-85 mainline (Structure Number 2310038510572)
No bats or migratory bird nests seen
5. I-385 mainline over I-385 SB to I-85 NB ramp (Structure Number 2310038510500)
SB - No bats seen; 3 barn swallow bird nests seen
NB - No bats seen; 6 barn swallow bird nests seen
6. I-385 mainline over I-85 NB to I-385 NB ramp (Structure Number 2310038510500)
No bats or migratory bird nests seen
7. I-385 mainline at Garlington Rd. (Structure Number 2310038510400)
SB - No bats or migratory birds seen
NB - No bats seen; 1 inactive barn swallow nest seen
8. I-385 mainline at Woodruff Rd. (Structure Number 2340014600201)
No bats or migratory bird nests seen

Per USFWS confirmation (see attached email) there are no bat hibernacula near the project. Potential roosting trees for the northern long-eared bat occur in the project right of way, some of which require clearing. However, USFWS confirmed on October 29, 2015 (see attached email), that since the proposed project is located in a high density urban area, the project will not affect the northern long-eared bat.

Jeffrey West

November 6, 2015

FW: Northern Long-Eared Bat Request for I-85/I-385 Interchange Improvements in Greenville County

Delete Reply Reply all Forward

MC Mark Caldwell <mark_caldwell@fws.gov>
Tue 8/4/2015 2:46 PM

Mark as unread

To: West, Jeff C;

You replied on 8/5/2015 8:03 AM.

Jeff,

There are no known hibernacula near the 1-85/I-385 interchange.

Mark

Mark A. Caldwell
U.S. Fish and Wildlife Service
South Carolina Ecological Services
[176 Croghan Spur Road, Suite 200](#)
[Charleston, SC 29407](#)
843-727-4707 ext 215
843-300-0426 (direct line)
843-727-4218 – facsimile

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.

From: Morgan Wolf [mailto:morgan_wolf@fws.gov]

Sent: Tuesday, August 04, 2015 2:33 PM

To: Mark Caldwell

Subject: RE: Northern Long-Eared Bat Request for I-85/I-385 Interchange Improvements in Greenville County

No known hibernacula near this site.

Morgan K. Wolf

U.S. Fish and Wildlife Service
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
Office: (843) 727-4707 ext. 219

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.

From: Mark Caldwell [mailto:mark_caldwell@fws.gov]

Sent: Tuesday, August 04, 2015 1:55 PM

To: Morgan Wolf

Subject: FW: Northern Long-Eared Bat Request for I-85/I-385 Interchange Improvements in Greenville County

Question from Jeff

Mark A. Caldwell

U.S. Fish and Wildlife Service

South Carolina Ecological Services

[176 Croghan Spur Road, Suite 200](#)

[Charleston, SC 29407](#)

843-727-4707 ext 215

843-300-0426 (direct line)

843-727-4218 – facsimile

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.

From: West, Jeff C [mailto:WestJC@scdot.org]

Sent: Tuesday, August 04, 2015 9:33 AM

To: mark_caldwell@fws.gov

Subject: Northern Long-Eared Bat Request for I-85/I-385 Interchange Improvements in Greenville County

Hi Mark,

SCDOT has awarded a design/build contract to redesign and construct the I-85/I-385 interchange in Greenville County. Could you please tell us if there are any hibernacula for the Northern Long-Eared Bat in the area that might be impacted by the project? Thank you very much for your assistance.

Sincerely,
Jeffrey

Appendix B

Bridge Replacement Scoping Trip Risk Assessment Form

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: Greenville

DATE: 01/29/2019

ROAD #: I-85

STREAM CROSSING: Rocky Creek

Purpose & Need for the Project:

To determine what measures need to be taken to prevent the Interstate from overtopping for the 1% annual chance flood, and design the appropriate structure.

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? Yes No

Panel Number: 45045C0407E Effective Date: 08/18/2014 (See Attached)

II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number 325P illustrates the existing 100 year flood:

- Passes under the existing low chord elevation.
 Is in contact with the existing low chord elevation.
 Overtops the existing bridge finished grade elevation.

III. No Rise/CLOMR Preliminary Determination

Preliminary assessment indicates this project may be constructed to meet the "No-Rise" requirements. A detailed hydraulic analysis will be performed to verify this assessment.

Justification:

Preliminary assessmnet indicates this project may require a CLOMR/LOMR. Impacts will be determined by a detailed hydraulic analysis.

Justification:

The proposed replacement structure for the existing box culverts under I-85 at Rocky Creek is a 210' bridge with two 160' spans. The bridge will prevent over-topping of the interstate for the 1% annual chance flood, but will impact base flood elevations.

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans Yes File No. _____ Sheet No. _____ (See Attached)
 No

b. Road Plans Yes File No. 23.412 Sheet No. 42 (See Attached)
 No

B. Historical Highwater Data

a. USGS Gage Yes Gage No. _____ Results: _____
 No

b. SCDOT/USGS Documented Highwater Elevations
 Yes Results: _____
 No

c. Existing Plans Yes See Above
 No

V. Field Review

A. Existing Bridge

Length: _____ ft. Width: 169.25 ft. Max. span Length: _____ ft.

Alignment: Tangent Curved

Bridge Skewed: Yes No Angle: _____

End Abutment Type: N/A

Riprap on End Fills: Yes No Condition: _____

Superstructure Type: N/A - quad 10' wide x 8' high box culverts

Substructure Type: _____

Utilities Present: Yes No

Describe: Overhead power just outside of the upstream CA fence.
USGS/SCDOT Flood Warning Station upstream.

Debris Accumulation on Bridge: Percent Blocked Horizontally: _____ %
Percent Blocked Vertically: _____ %

Hydraulic Problems: Yes No

Describe: The crossing experienced significant flooding on August 10, 2014. Four to five feet of water
reportedly flooded southbound I-85 for a distance of up to 500 feet at the Rocky Creek culvert.

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

V. Field Review (cont.)

B. Hydraulic Features

a. Scour Present: Yes No Location: _____

b. Distance from F.G. to Normal Water Elevation: _____ ~ 14 ft.

c. Distance from Low Steel to Normal Water Elev.: _____ N/A ft.

d. Distance from F.G. to High Water Elevation: _____ ft.

e. Distance from Low Steel to High Water Elev.: _____ N/A ft.

f. Channel Banks Stable: Yes No

Describe: Channel was relocated when box culverts were constructed per 1958 plans.

g. Soil Type: Loam. Cartecay and Toccoa soils.

h. Exposed Rock: Yes No Location: _____

i. Give Description and Location of any structures or other property that could be damaged due to additional backwater.

Chophouse '47 and Hampton Inn are a few hundred feet upstream.

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement

Yes No

Describe:

If "yes", does the existing vertical and horizontal curves meet the proposed design speed criteria?

If "No", will the proposed bridge be:

Staged Constructed

Replaced on New Alignment

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

VI. Field Review (cont.)

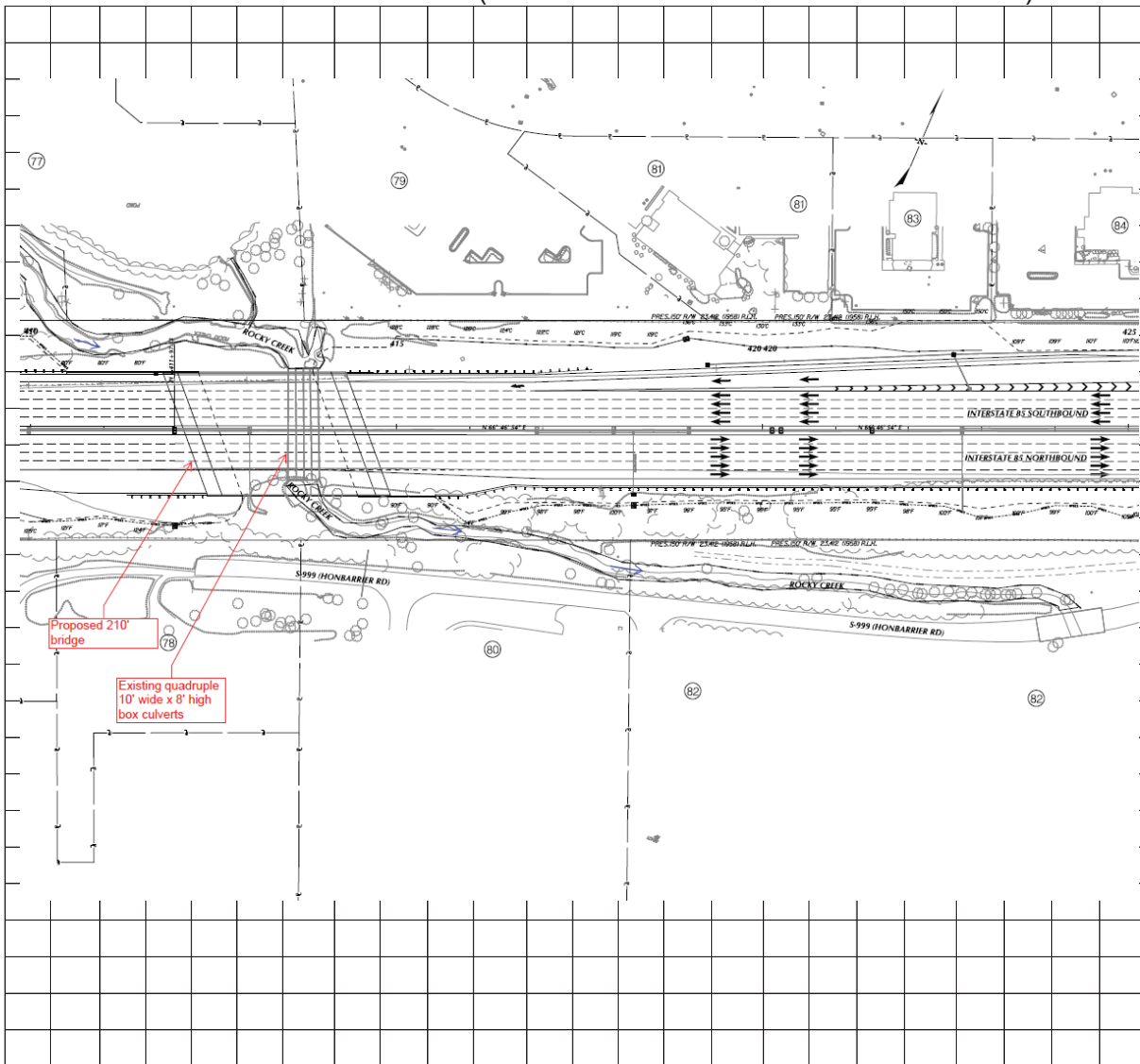
A. Proposed Bridge Recommendation:

Length: 210 ft. Width: 169.25 ft. Elevation: 859.56 ft.

Span Arrangement: 2 -160 ft. spans

Notes: Centerline bridge elevation is 859.56. Bridge will be on approximately 0.86% grade.

BRIDGE SITE DIAGRAM: (Show North Arrow and Direction of Flow)



Performed By: Steve Swygert

Title: Hydraulic Engineer