



US 278 Corridor Improvements Environmental Assessment

Beaufort County, South Carolina



June 2021

Project Number: P030450





U.S. Department
of Transportation
**Federal Highway
Administration**

South Carolina

June 28, 2021

1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201
803-765-5411
803-253-3989

In Reply Refer To:
HDA-SC

Mr. Chad Long
Director Environmental Services Office
South Carolina Department of Transportation (SCDOT)
955 Park Street, P.O. Box 191
Columbia, South Carolina 29202

Subject: Environmental Assessment (EA) for the Proposed U.S. Route 278 Corridor
Improvements in Beaufort County, South Carolina (Federal Project Number
P030450)

Dear Mr. Long:

The Federal Highway Administration (FHWA) has reviewed the Environmental Assessment (EA) for the subject project and finds that it adequately addresses the potential impacts of the proposal. The EA is approved and acceptable for public availability and comment. The EA shall be made available for public review for a minimum of thirty (30) days before FHWA makes its final determination. The public availability shall be announced by a notice similar to a public hearing notice. Also, please provide Notice of Availability of the EA to the affected units of government, and to the State intergovernmental review contacts as specified in 23 CFR § 771.119(d).

All project commitments documented in the EA are binding and the SCDOT will need to ensure that they are ultimately carried out. The public hearing may be scheduled fifteen (15) days after the document is made available for public review. Enclosed is a copy of the signed document. Please address any questions you may have concerning this project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

J. Shane Belcher

Digitally signed by J. Shane
Belcher
Date: 2021.06.28 10:48:58 -04'00'

(for) Emily O. Lawton
Division Administrator

Enclosure

cc: Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator



US 278 Corridor Improvements

Beaufort County, South Carolina

Environmental Assessment

Submitted Pursuant to 42 USC 4332 (2)(c)
(and where applicable, 49 USC 303) by the

US Department of Transportation
Federal Highway Administration (FHWA)

and

South Carolina Department of Transportation (SCDOT)

and

Beaufort County

6/25/2021

Date of Approval

for SCDOT

6/28/2021

Date of Approval

for FHWA

SCDOT, FHWA, and Beaufort County propose improvements to the US 278 corridor between Bluffton and Hilton Head Island in Beaufort County, South Carolina. The purpose of this project is to address structural deficiencies at the existing eastbound Mackay Creek bridge and reduce congestion within the project study area. The project has grown to include intersection improvements along the corridor and improvements to the westbound Mackay Creek bridge, the eastbound Skull Creek bridge and the westbound Skull Creek bridge. Improved access to Pinckney Island National Wildlife Refuge and the C.C. Haigh, Jr. Boat Landing is also proposed. The project start date predates the 2020 updates to the CEQ regulations that went into effect on September 14, 2020. Therefore, language primarily related to direct, indirect, and cumulative impacts remains within certain sections of the document.

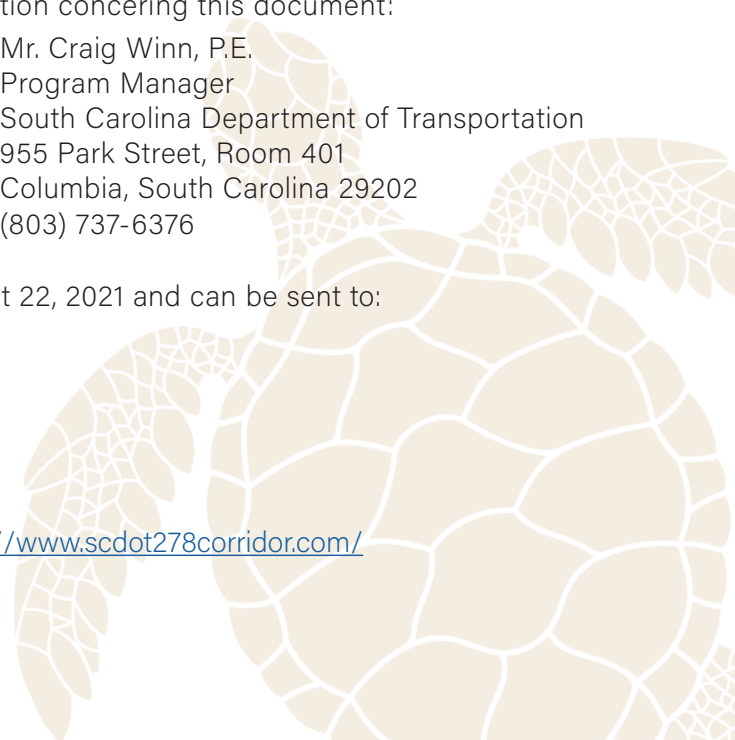
The following persons may be contacted for additional information concerning this document:

Mr. J. Shane Belcher
Lead Environmental Specialist
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201
(803) 253-3187

Mr. Craig Winn, P.E.
Program Manager
South Carolina Department of Transportation
955 Park Street, Room 401
Columbia, South Carolina 29202
(803) 737-6376

Comments on the Environmental Assessment are due by August 22, 2021 and can be sent to:
US 278 Corridor Improvement Project
c/o South Carolina Department of Transportation
Mr. Craig Winn, P.E.
P.O. Box 191
Columbia, South Carolina 29202

Comments can also be submitted via the project website <https://www.scdot278corridor.com/>
or via email to info@scdot278corridor.com





NEPA ENVIRONMENTAL COMMITMENTS

Project ID: P030450	County: Beaufort	District: District 6	Doc Type: EA	Total # of Commitments: 28
Project Name: US 278 Corridor Improvements				

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. Environmental Commitments are bold and italicized in the Environmental Assessment. If there are questions regarding the commitments listed, please contact:

CONTACT NAME: Craig Winn

PHONE #: (803) 737-6376

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Relocations	NEPA Doc Ref: Chapter 4, Section 4.3.3.1	Responsibility: SCDOT
The acquisition of property for right-of-way would be in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646, as amended by 100-17; 49 CFR 24.205 (AF)).		

Community Enhancements	NEPA Doc Ref: Chapter 4, Section 4.3.4	Responsibility: SCDOT
Provide community enhancements for Stoney community per feedback throughout NEPA process. <ul style="list-style-type: none"> Signage to demarcate the Stoney community to include a more "gateway" entrance/exit to the community based on the boundary established in the TCP Report Open-air pavilion on town-owned property near the US 278 and Squire Pope Road intersection to highlight history of the Stoney community and other Gullah neighborhoods on the island Create a theme based street and multiuse path lighting Install flags/signage to the lighting poles along US 278 to indicate they are within the Stoney community Landscaping along US 278 within the Stoney community Seating along multi-use path Develop an online interactive map of the History of Stoney community to share important historical information about the Stoney community, Gullah Communities, and Hilton Head Island 		

Noise	NEPA Doc Ref: Chapter 4, Section 4.6.2	Responsibility: SCDOT
SCDOT will inform local planning officials of future, generalized noise levels expected to occur in the project vicinity after FHWA has made a final decision on the environmental document.		

Noise	NEPA Doc Ref: Chapter 4, Section 4.6.2	Responsibility: Contractor
To minimize construction noise, the contractor would be required to comply with applicable local noise ordinances and Occupational Safety and Health Administration (OSHA) regulations concerning noise attenuation devices on construction equipment.		
<input checked="" type="checkbox"/> Special Provision		

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Water Quality	NEPA Doc Ref: Chapter 4, Section 4.7.1	Responsibility: SCDOT
SCDOT is proposing to treat stormwater runoff from the proposed bridge and roadway prior to discharge into waters below the new bridge. Stormwater will be treated per SCDOT Stormwater Quality Design Manual.		

Water Quality	NEPA Doc Ref: Chapter 4, Section 4.7.1	Responsibility: SCDOT
SCDOT will avoid and minimize impacts to water quality by requiring the contractor to use all appropriate and practical stormwater BMPs and erosion control methods during the construction on the Recommended Preferred Alternative 4A.		

Water Quality	NEPA Doc Ref: Chapter 4, Section 4.7.1	Responsibility: Contractor
The contractor will be required to minimize possible water quality impacts through implementation of BMPs, reflecting policies contained in 23 CFR 650B and the Department's Supplemental Specification on Erosion Control Measures (latest edition) and Supplemental Technical Specifications on Seeding (latest edition). Other measures including seeding, silt fences, sediment basins, etc. as appropriate will be implemented during construction to minimize impacts to water quality.		
<input checked="" type="checkbox"/> Special Provision		

Wetlands	NEPA Doc Ref: Chapter 4, Section 4.8.3.1	Responsibility: Contractor
Implementation of the measures below would minimize impacts to adjacent wetlands		
<ul style="list-style-type: none"> Follow SCDOT BMPs during construction reflecting policies contained in 23 CFR 650 B and the SCDOT's Supplemental Specifications on Seeding and Erosion Control Measures. Contain and filter stormwater runoff from bridges. Obtain National Pollutant Discharge Elimination System (NPDES) permit and prepare a Stormwater Pollution Prevention Plan (SWPPP). Remove existing bridge and allow salt marsh grasses to revegetate. 		
<input checked="" type="checkbox"/> Special Provision		

Wetlands	NEPA Doc Ref: Chapter 4, Section 4.8.4.2	Responsibility: SCDOT
Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers (USACE). 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 resources agencies. In accordance with the permit, the project plans and/or Environmental Compliance Plan will clearly state all environmental commitments and BMPs to be implemented during and following project construction.		

Wetlands	NEPA Doc Ref: Chapter 4, Section 4.8.4.3	Responsibility: SCDOT
The required mitigation for this project will be determined through consultation with the USACE and other resources agencies.		

Permitting	NEPA Doc Ref: Chapter 4, Section 4.9.1.3	Responsibility: SCDOT
The construction of the proposed Mackay Creek and Skull Creek bridges require a USCG Bridge Permit in compliance with Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. All USCG authorizations will be acquired prior to construction.		

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Permitting	NEPA Doc Ref: Chapter 4, Section 4.9.2.3	Responsibility: SCDOT
SCDOT will obtain authorization for the project construction activities under the SCDHEC NPDES program, pursuant to Section 402 of the Clean Water Act. The NPDES permit application will include a SWPPP.		

Floodplains	NEPA Doc Ref: Chapter 4, Section 4.10.1	Responsibility: SCDOT
The Engineer of Record will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator prior to the project letting date.		

Threatened and Endangered Species – West Indian (Florida) Manatees	NEPA Doc Ref: Chapter 4, Section 4.11.2.2	Responsibility: Contractor
USFWS Standard Manatee Conditions for In-Water Work will be employed during construction, refer to Appendix H. Precautionary measures will be implemented during construction in summer months or early fall when the waterways may support increasing numbers of manatees.		
<input checked="" type="checkbox"/> Special Provision		

Migratory Birds	NEPA Doc Ref: Chapter 4, Section 4.11.2.3	Responsibility: Contractor
The contractor shall notify the Resident Construction Engineer (RCE) at least four (4) weeks prior to construction/demolition/maintenance of bridges and box culverts. The RCE will coordinate with SCDOT Environmental Services Office (ESO), Compliance Division, to determine if there are any active birds using the structure. After this coordination, it will be determined when construction/demolition/maintenance can begin. If a nest is observed that was not discovered after construction/demolition/maintenance has begun, the contractor will cease work and immediately notify the RCE, who will notify the ESO Compliance Division. The ESO Compliance Division will determine the next course of action.		
The use of any deterrents by the contractor designed to prevent birds from nesting, shall be approved by the RCE with coordination from the ESO Compliance Division.		
<input checked="" type="checkbox"/> Special Provision		

Threatened and Endangered Species	NEPA Doc Ref: Chapter 4, Section 4.11.5	Responsibility: Contractor/SCDOT
<ul style="list-style-type: none"> • Develop a SWPPP and obtain a land disturbance permit and a NPDES permit from SCDHEC prior to construction. • Contractor will adhere to all SCDOT construction and erosion and sediment BMPs. • If existing permitted borrow sites are not available, the contractor will be required to follow SCDOT guidance in Engineering Directive Memorandum 30 (ED-30), Borrow Pit Location and Monitoring. The contractor will be responsible for addressing the potential effects to federally listed threatened and endangered species for any new borrow or disposal sites. • Use of only vibratory hammers and augers for the installation of the steel casings for drilled shaft columns. No impact hammers will be used. • The new US 278 bridge will not have permanent roadway lighting. Lighting will be restricted to red/green vessel navigational lighting, as required by the USCG, and multi-use path lighting which will consist of downward facing lights embedded in the barrier to illuminate the path. • The use of “slow start” methods such as ramp up, dry firing, or soft starts at the beginning of bridge support structure installation activities. • Noise impacts will be attenuated/mitigated by using cushion blocks on pile caps for piles installed by impact pile driving. • Allow for a minimum of eight hours of “quiet hours” with no in water construction each night for the life of the project. • To minimize potential effects to sea turtles, NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions will be employed during construction (Appendix F) Precautionary measures will be implemented during construction in summer (May 1 – October 31), as this is when the waterways are most likely to support increased numbers of sea turtles. • During construction, the contractor will be required to have lights positioned to focus on the work area to minimize the amount of light on the water surface. 		

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

- During sea turtle nesting season (May 1 – October 31), the contractor will restrict in-water work at night to the maximum extent practicable. To avoid potential effects associated with construction lighting during the sea turtle nesting season, the minimum number and lowest wattage of lights necessary for construction will be used.
- The contractor will be required to maintain navigability during construction and will not be allowed to block the respective channels of Mackay or Skull Creeks.
- USFWS Standard Manatee Conditions for In-Water Work (Appendix H) will be employed during all in-water construction. Precautionary measures will be implemented during construction in summer months or early fall when the waterways may support increasing numbers of manatees.
- If SCDOT or the contractor discovers an injured, sick, or dead marine mammal, the Resident Construction Engineer (RCE) and SCDOT Environmental Services Office (ESO) will be notified immediately. The SCDOT ESO will notify NMFS immediately by contacting the NMFS Stranding Coordinator for the Southeast Region. NMFS would be provided with the species or description of the animal(s), the condition of the animal (carcass condition if deceased stranding), location, the date and time of first discovery, observed behaviors (if alive), and photo or video (if available).
- Any collision, injury, or mortality to manatees will also be reported immediately to the RCE and SCDOT ESO. The SCDOT ESO will also notify the USFWS South Carolina Field Office immediately.
- If explosives are required for demolition, the contractor, SCDOT, and FHWA will initiate additional coordination and consultation with the USFWS and NMFS.

☒ **Special Provision****Essential Fish Habitat**

NEPA Doc Ref: Chapter 4, Section 4.12.4

Responsibility: SCDOT

A final mitigation plan will be developed for the 404/401 permit and will include consideration for impacts to EFH as part of that plan. This mitigation plan will be established as part of the Section 404 permitting phase of the project. The EFH Mitigation Plan may include mitigation measures such purchasing mitigation credits from an approved mitigation bank or Permittee Responsible Mitigation (PRM) method such as causeway removal, living shorelines, oyster bed restoration, and/or other methods of mitigating for EFH impacts. SCDOT and FHWA will develop the mitigation plan in coordination with the appropriate resource agencies.

Essential Fish Habitat

NEPA Doc Ref: Chapter 4, Section 4.12.4

Responsibility: Contractor

Additionally, the contractor, SCDOT, and FHWA will be required to stay in compliance with all approved environmental conditions listed below:

- SCDOT and/or the contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) and obtain both a land disturbance permit and a National Pollutant Discharge Elimination System (NPDES) permit from the SCDHEC before construction can commence.
- The contractor will adhere to all SCDOT construction and erosion and sediment control BMPs and all practicable EFH-specific BMPs during construction.
- The limits of any clearing, grading, or fill in wetlands will be delineated and shown on approved permitted plans by the USACE and SCDHEC. SCDOT and the contractor will comply with all applicable permits and permit conditions for the placement of fill in wetlands.
- The contractor will be required to maintain navigability during construction and will not be allowed to block the respective channels of Mackay or Skull Creeks.
- The existing US 278 bridges will be removed in their entirety once construction of the new bridge is completed.
- Non-hazardous demolition debris will be hauled off site and disposed of in accordance SCDOT policy and SCDHEC regulations.
- If explosives are required for demolition, the contractor, SCDOT, and FHWA will initiate additional coordination and consultation with the USFWS and NMFS.
- SCDOT proposes to pre-treat future stormwater runoff from the proposed bridge deck prior to discharge into waters below the new US 278 bridge. Stormwater discharged within 1,000 feet of a shellfish bed will be pre-treated per the SCDOT Stormwater Quality Design Manual.
- The contractor, SCDOT, and FHWA will be required to stay in compliance with all approved environmental conditions established in the EA as well as any special conditions established in the required permit authorizations.

☒ **Special Provision**

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Landscaping	NEPA Doc Ref: Chapter 4, Section 4.13.2.2	Responsibility: SCDOT
A tree canopy section along Squire Pope Road will be maintained through minimization efforts to reduce the proposed project footprint. If potential effects to this tree canopy area along Squire Pope Road arise in later project planning, SCDOT will consult with SHPO for a renewed determination of effect.		

Memorandum of Agreement (MOA)	NEPA Doc Ref: Chapter 4, Section 4.13.4.1	Responsibility: SCDOT
A MOA for the adverse effect to Site 38BU66 has been executed between FHWA, SCDOT, SHPO, USFWS, and Tribes. See Section 4.12.2 of EA and Appendix J. FHWA and SCDOT will ensure that the following stipulations are implemented:		
<ul style="list-style-type: none"> • The proposed construction will result in unavoidable impacts to portions of Site 38BU66. SCDOT plans to mitigate through a data recovery effort to excavate, preserve, and document the presence and characteristics of any buried features on the site within the area of the proposed improvements outside the previously disturbed portion of Site 38BU66. • SCDOT's archaeological consultant, or staff, will develop, in coordination with representatives from the CIN THPO, a treatment plan for data recovery investigations at Archaeological Site 38BU66. The treatment plan will include a description of the project's research design and sampling strategy. A burial discovery plan will also be developed and attached to the treatment plan. The treatment plan will be submitted to the South Carolina SHPO and the CIN THPO for review and approval prior to any fieldwork. The treatment plan will also be submitted to a qualified professional archaeologist for the purpose of peer review prior to any fieldwork. The South Carolina SHPO will make a reasonable effort to review the treatment plan(s) no later than thirty days after receipt. • The construction of the existing US 278 has impacted a portion of Site 38BU67. The project's "area of potential effect" will be limited to this area. To protect the adjacent intact portion of Site 38BU67, the FHWA and SCDOT will ensure that the boundaries of the site will be identified as a "Restricted Area" on all construction plans. Construction, heavy equipment access, or storage for equipment and materials will not be allowed within the Restricted Area. SCDOT will also inform the selected contractor about these restrictions at the Pre-Construction meeting where all special provisions are discussed. • Prior to the start of construction, SCDOT's contractor will install orange barrier fencing at the edge of the area clearly indicate the location of the "Restricted Area" as shown on the construction plans. • All construction activities within the boundaries of archaeological site 38BU67 will be monitored by a professional archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 FR 44738-39). • SCDOT will provide FHWA, the USFWS, the SHPO and the CIN THPO with a written report that describes the results of monitoring activities. • All plans and reports developed for the treatment of Archaeological Sites 38BU66 and 38BU67 shall incorporate guidance from the Secretary of the Interior's "Standards and Guidelines for Archaeological Documentation" (48 FR 44734-37) and the President's Advisory Council on Historic Preservation publication, Treatment of Archaeological Properties (ACHP 1980). In addition, these materials will be consistent with South Carolina Standards and Guidelines for Archaeological Investigations (2005). • At least one on-site meeting between the SCDOT, the FHWA, the CIN THPO, and the SHPO will take place during field investigations in order to discuss any necessary revisions to the original scope of work. Any revisions made to the original scope of work will be attached to the approved treatment plan and this agreement. • A minimum of two copies of the draft technical report of data recovery investigations will be submitted to the SHPO and the CIN THPO for review and approval within twelve (12) months from the last day of fieldwork. The draft technical report will be consistent with the standards outlined in South Carolina Standards and Guidelines for Archaeological Investigations (2005). The SHPO reserves the right to submit the draft technical report to qualified professional archaeologists for the purpose of peer review. • Within three (3) months of draft report approval, SCDOT will provide one bound copy and one compact disk containing a Portable Document Format (PDF) of the final technical report for the SHPO, one bound copy and one compact disk for the CIN THPO, and two bound copies, one unbound copy, and one PDF copy of the final technical report for the South Carolina Institute of Archaeology and Anthropology, all submitted to SHPO. The PDF file will be developed according the specifications and requirements of the SHPO. A separate digital abstract from the report (in Word or html format) will also be provided to the SHPO. The abstract file can be provided on the same CD as the PDF file. • The SCDOT, in coordination with the SHPO and the CIN THPO, will ensure that all artifacts recovered during archaeological investigations are stabilized and processed for curation at the Center. Copies of all records, including but not limited to 		

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

field notes, maps, catalogue sheets, and representative photographs and negatives will be submitted for curation with the artifacts.

- The SCDOT will consult with the South Carolina SHPO and the CIN THPO to develop a creative mitigation component within one (1) year of the execution of this agreement.

Cultural Resources

NEPA Doc Ref: Chapter 4, Section 4.13.4.1

Responsibility: Contractor

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.

☒ **Special Provision****Section 4(f)**

NEPA Doc Ref: Chapter 4, Section 4.14.1

Responsibility: SCDOT

If construction, including materials staging or stockpiling, would result in partial or full temporary closure of the boat landing or PINWR access, the contractor would be responsible for coordinating with SCDOT, FHWA, USFWS, and Beaufort County.

Hazardous Materials

NEPA Doc Ref: Chapter 4, Section 4.16.2

Responsibility: Contractor

If avoidance of hazardous materials is not a viable alternative and soils that appear to be contaminated are encountered during construction, SCDHEC will be informed. Hazardous materials will be tested and removed and/or treated in accordance with USEPA and SCDHEC requirements, if necessary.

☒ **Special Provision****Phase II ESA Recommendation**

NEPA Doc Ref: Chapter 4, Section 4.16.3

Responsibility: Contractor

Prior to construction, the project contractor will perform Phase II ESAs on the properties identified within the footprint, including the Exxon at 1544 Fording Island Road, Circle K at 1610 Fording Island Road, Mid Island Car Care at 166 William Hilton Parkway, and Parkers 53 at 165 William Hilton Parkway, and/or on the adjoining properties or the ROW. Ultimately, the Phase II ESAs will include environmental sample collection (e.g. soil, soil gas, and groundwater), specifically, in areas where a potential for disturbance of soil and/or groundwater exists. Asbestos Containing Material and/or Lead Based Paint testing will be assessed separately. Materials containing asbestos and lead-based paints will be managed and disposed of properly at an appropriate permitted facility to minimize impact during the construction and cleanup. Activities will be monitored by a professional that is certified in the removal, handling and disposal of lead-based paint and/or asbestos-containing materials.

☒ **Special Provision****Asbestos**

NEPA Doc Ref: Chapter 4, Section 4.16.3

Responsibility: Contractor

Existing facilities shall be inspected and if asbestos containing materials (ACM) are identified on structures impacted by the project activities, they must be removed and disposed of in accordance with SCDHEC Regulation 61-86.1. Standards of performance of asbestos and the provisions of Subsection 107.27 apply. Direct questions about the permit to the SCDHEC Bureau of Air Quality.

☒ **Special Provision**

ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Lead-Based Paint

NEPA Doc Ref: Chapter 4, Section 4.16.3

Responsibility: Contractor

The existing structures shall be removed and disposed of by the Contractor in accordance with Subsection 202.4.2 of the Standard Specifications. The Contractor's attention is called to the fact that this project may require removal and disposal of structural components containing lead-based paints. Removal and disposal of structural components containing lead-based paints shall comply with all applicable Federal, State, and Local requirements for lead as waste, lead in air, lead in water, lead in soil, and worker health and safety.

 Special Provision
Navigation

NEPA Doc Ref: Chapter 5, Section 5.6

Responsibility: SCDOT

If a closure is necessary, it would be advertised 30 days in advance and the navigation channel would be accessible to the maximum feasible extent. SCDOT would ensure that there would not be unreasonable interference with navigation because the vertical and horizontal clearances would remain sufficient during construction.

Navigation

NEPA Doc Ref: Chapter 5, Section 5.6

Responsibility: Contractor

Upon completion of the new bridge and the shifting of traffic onto the new bridge, the existing bridge would be removed in its entirety. The piers and substructures of the existing bridge would be removed to the natural river bottom in accordance with SCDOT standard specifications Section 202.4.2.4.

 Special Provision

A

ACE	Agency Coordination Effort
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos Containing Materials
ACP	Agency Coordination Plan
ACS	American Community Survey
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials

B

BG	Block Group
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
BWSAR	Beaufort Water Search and Rescue

C

CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIA	Community Impact Assessment
CIN	Catawba Indian Nation
CPS	Current Population Survey
CT	Census Tract
CWA	Clean Water Act
CZC	Coastal Zone Consistency

D

dB	Decibel
DSS	Decent, Safe, and Sanitary
DTL	Diurnal Tide Level

E

EA	Environmental Assessment
EFH	Essential Fish Habitat
EJ	Environmental Justice
EO	Executive Order
ESA	Endangered Species Act
ESA	Environmental Site Assessment



F

FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act

G

GIS	Geographic Information Systems
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H

HAPC	Habitat Area of Particular Concern
HUC	Hydrologic Unit Code

I

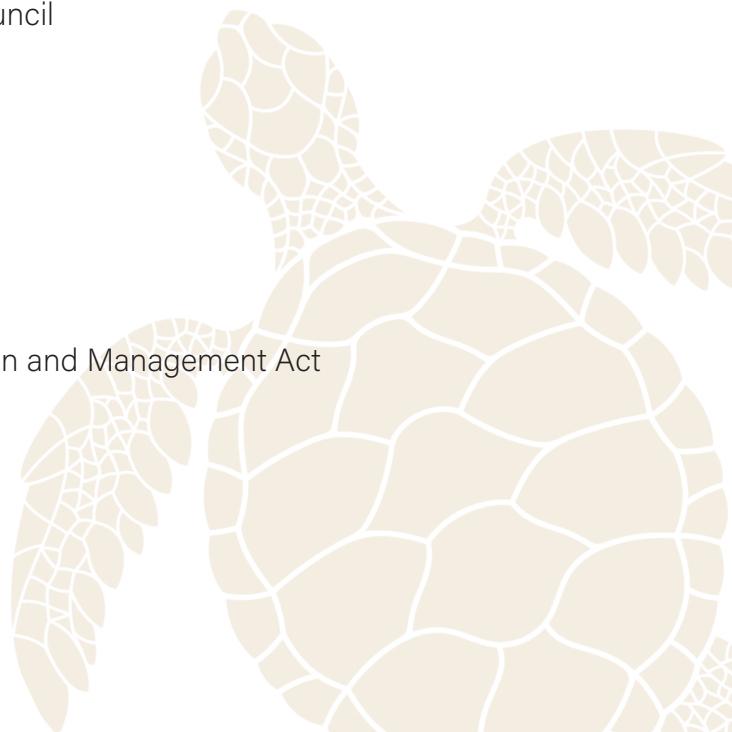
ICE	Indirect and Cumulative Effects
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L

LATS	Lowcountry Area Transportation Study
LEDPA	Least Environmentally Damaging Practicable Alternative
LEP	Limited English Proficiency
LIDAR	Light Detection and Ranging
LOI	Letter of Intent
LOS	Level of Service
LRTP	Long Range Transportation Plan
LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Fund

M

MAFMC	Mid-Atlantic Fisheries Management Council
MBTA	Migratory Bird Treaty Act
MHW	Mean High Water
MLW	Mean Low Water
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MOVES	Motor Vehicle Emissions Simulator
MPO	Metropolitan Planning Organization
MRLC	Multi-Resolution Land Characteristics
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSAT	Mobile Source Air Toxics



N

NAC	Noise Abatement Criteria
NAAQS	National Ambient Air Quality Standards
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
NHD	National Hydrography Data
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Study Area
NWI	National Wetland Inventory
NWR	National Wildlife Refuge

O

OCRM	Ocean and Coastal Resource Management
OSHA	Occupational Safety and Health Administration

P

PINWR	Pinckney Island National Wildlife Refuge
PRM	Permittee Responsible Mitigation
PSA	Project Study Area
PSD	Public Service District
PUD	Planned Unit Development

Q

QAPP	Quality Assurance Program Plan
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R

RA	Reasonable Alternative
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Concern
RIBITS	Regulatory In-Lieu Fee and Bank Information Tracking System



S

SAFMC	South Atlantic Fisheries Management Council
SARA	Superfund Amendments and Reauthorization Act
SCCZMP	South Carolina Coastal Zone Management Plan
SCDAH	South Carolina Department of Archives and History
SCDHEC	South Carolina Department of Health and Environmental Control
SCDNR	South Carolina Department of Natural Resources
SCDOT	South Carolina Department of Transportation
SFH	Shellfish Harvesting
SHPO	State Historic Preservation Office
SIPP	Survey of Income and Program Participation
STIP	Statewide Transportation Improvement Program
SWPPP	Stormwater Pollution Prevention Plan

T

TCP	Traditional Cultural Property
TDM	Transportation Demand Management
TL	Tide Level
THPO	Tribal Historic Preservation Office
TNM	Traffic Noise Model
TSM	Transportation System Management

U

USACE	United States Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank

V

VMT	Vehicle Miles Traveled
VPIM	Virtual Public Information Meeting

W

WOUS	Waters of the United States
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Table of Contents

Chapter 1: Introduction

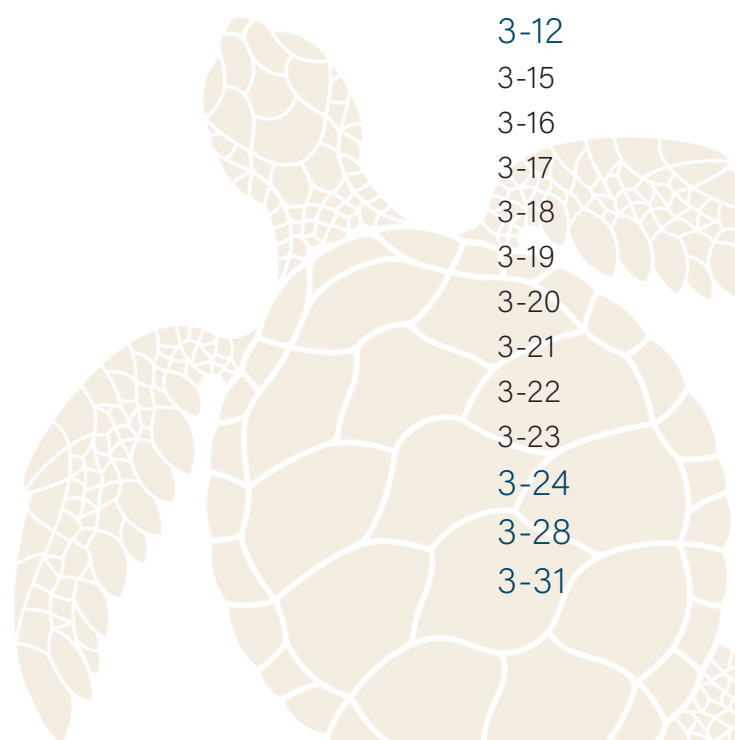
1.0 Introduction	1-1
1.1 Public and Agency Involvement	1-2
1.1.1 Cooperating Agencies	1-2
1.1.2 Participating Agencies	1-2
1.2 Existing Facilities	1-4
1.2.1 Existing Bicycle and Pedestrian Accommodations	1-5

Chapter 2: Purpose and Need

2.0 Project Purpose	2-1
2.1 Project Need	2-1
2.1.1 Growth in Population and Employment	2-1
2.1.2 Decreased Mobility and Increased Traffic Congestion	2-2
2.1.2.1 Base Year Traffic Conditions	2-3
2.1.2.2 Projected Traffic Conditions	2-5
2.2 Logical Termini and Independent Utility	2-6
2.3 Reasonable Availability of Funding	2-6

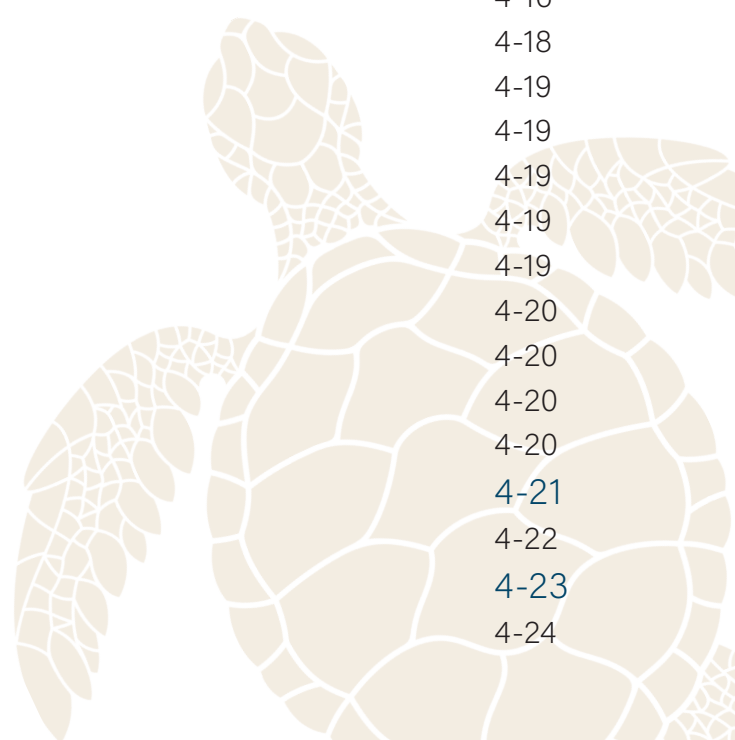
Chapter 3: Alternatives Analysis

3.0 Alternatives Analysis	3-1
3.1 Preliminary Range of Alternatives	3-3
3.1.1 No Build	3-5
3.1.2 Transportation System Management and Transportation Demand Management	3-5
3.1.3 Mass Transit	3-5
3.1.4 Preliminary Alternatives	3-7
3.2 Proposed Reasonable Alternatives	3-12
3.2.1 Reasonable Alternative 1	3-15
3.2.2 Reasonable Alternative 2	3-16
3.2.3 Reasonable Alternative 3	3-17
3.2.4 Reasonable Alternative 4	3-18
3.2.5 Reasonable Alternative 4A	3-19
3.2.6 Reasonable Alternative 5	3-20
3.2.7 Reasonable Alternative 5A	3-21
3.2.8 Reasonable Alternative 6	3-22
3.2.9 Reasonable Alternative 6A	3-23
3.3 Reasonable Alternatives Summary	3-24
3.4 Recommended Preferred Alternative	3-28
3.5 Intersection Analysis	3-31

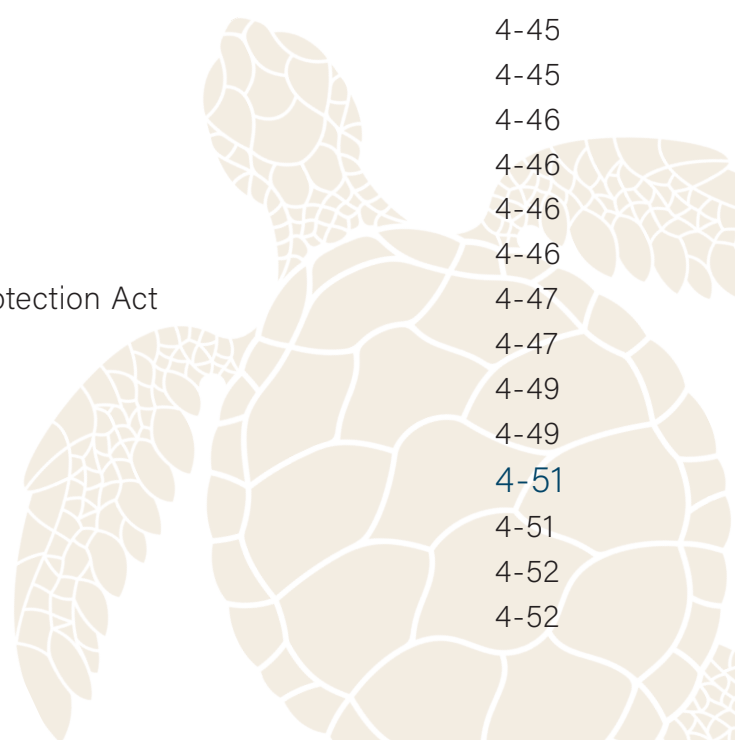


Chapter 4: Existing Conditions and Environmental Consequences

4.0 Existing Conditions and Environmental Consequences	4-1
4.1 Land Use	4-2
4.1.1 Existing Conditions	4-2
4.1.2 Area Land Use Planning Documents	4-2
4.1.3 Impacts	4-3
4.2 Farmlands	4-4
4.3 Socioeconomics and Communities	4-4
4.3.1 Study Area and Methodology	4-5
4.3.2 Existing Conditions	4-6
4.3.2.1 Bluffton and Hilton Head Island	4-6
4.3.3 Recommended Preferred Alternative 4A Impacts	4-7
4.3.3.1 Relocations	4-7
4.3.3.2 Community Cohesion	4-7
4.3.3.3 Community Facilities and Services	4-7
4.3.3.4 Mobility and Access	4-8
4.3.3.5 Special Populations	4-8
4.3.3.6 Visual and Aesthetics	4-8
4.3.3.7 Economics	4-9
4.3.3.8 Noise	4-9
4.3.4 Indirect and Cumulative Effects	4-9
4.3.4.1 Indirect Effects	4-11
4.3.4.2 Cumulative Effects	4-12
4.4 Environmental Justice	4-15
4.4.1 Existing Conditions	4-15
4.4.2 Outreach and Community Enhancements	4-16
4.4.3 Impacts	4-18
4.4.3.1 Economics	4-19
4.4.3.2 Relocations	4-19
4.4.3.3 Aesthetic Values	4-19
4.4.3.4 Community Cohesion	4-19
4.4.3.5 Traffic Congestion and Safety	4-19
4.4.3.6 Air Quality	4-20
4.4.3.7 Noise	4-20
4.4.3.8 Water Quality	4-20
4.4.3.9 Hazardous Waste	4-20
4.5 Air Quality	4-21
4.5.1 Impacts	4-22
4.6 Noise	4-23
4.6.1 Impacts	4-24



4.6.2 Mitigation	4-24
4.7 Water Quality	4-26
4.7.1 Impacts	4-28
4.8 Wetlands and Waters of the U.S.	4-28
4.8.1 Existing Conditions	4-29
4.8.2 Impacts	4-30
4.8.3 Indirect and Cumulative Effects	4-31
4.8.3.1 Indirect Effects	4-36
4.8.3.2 Cumulative Effects	4-38
4.8.4 Mitigation	4-39
4.8.4.1 Avoidance	4-39
4.8.4.2 Minimization	4-39
4.8.4.3 Compensatory Mitigation	4-40
4.9 Environmental Permits	4-40
4.9.1 Federal Environmental Permits	4-40
4.9.1.1 Section 404 Permit	4-40
4.9.1.2 404(b)1 Guidelines	4-41
4.9.1.3 US Coast Guard Bridge Permit	4-41
4.9.1.4 Public Interest Review Factors	4-41
4.9.2 State Environmental Permits	4-41
4.9.2.1 Section 401 Water Quality Certification	4-41
4.9.2.2 Critical Area Permit and Coastal Zone Consistency Determination	4-42
4.9.2.3 NPDES Construction General Permit	4-42
4.10 Floodplains	4-43
4.10.1 Impacts	4-44
4.11 Natural Resources	4-45
4.11.1 Existing Conditions	4-45
4.11.1.1 General Wildlife	4-45
4.11.1.2 Pinckney Island National Wildlife Refuge	4-46
4.11.2 Federally Protected Species	4-46
4.11.2.1 Endangered Species Act	4-46
4.11.2.2 Marine Mammal Protection Act	4-46
4.11.2.3 Migratory Birds and Bald and Golden Eagle Protection Act	4-47
4.11.3 Impacts	4-47
4.11.4 Coordination	4-49
4.11.5 Environmental Commitments	4-49
4.12 Essential Fish Habitat	4-51
4.12.1 Existing Conditions	4-51
4.12.2 Impacts	4-52
4.12.3 Coordination	4-52



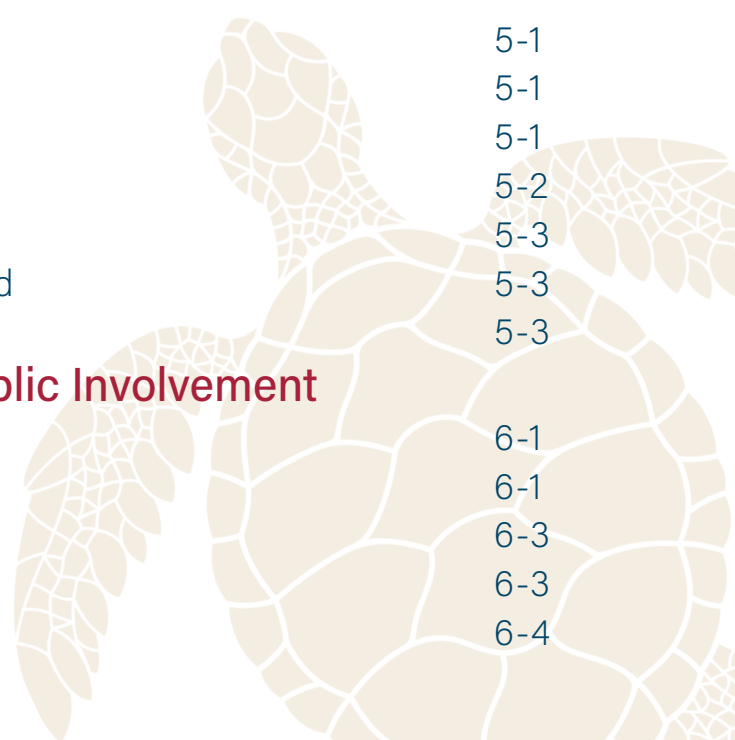
4.12.4 Mitigation and Conservation	4-53
4.13 Cultural Resources	4-54
4.13.1 Existing Resources	4-54
4.13.1.1 Archaeological and Architectural Resources	4-54
4.13.1.2 Traditional Cultural Property	4-54
4.13.2 Impacts	4-55
4.13.2.1 Archaeological and Architectural Resources	4-55
4.13.2.2 TCP	4-56
4.13.3 Coordination	4-56
4.13.3.1 Archaeological Resources	4-56
4.13.3.2 TCP	4-57
4.13.4 Mitigation	4-57
4.13.4.1 Archaeological Resources	4-57
4.13.4.2 TCP	4-58
4.14 Section 4(f) Resources	4-59
4.14.1 Pinckney Island National Wildlife Refuge	4-59
4.14.1.1 Mitigation	4-61
4.14.2 Property Owned by Town and County	4-61
4.14.3 Stoney Community TCP	4-63
4.14.4 Impacts	4-63
4.15 Section 6(f) Resources	4-63
4.16 Hazardous Waste	4-64
4.16.1 Findings	4-64
4.16.2 Impacts	4-65
4.16.3 Mitigation	4-66

Chapter 5: Navigation

5.0 Navigation	5-1
5.1 USCG Coordination	5-1
5.2 Existing Bridge Clearances	5-1
5.3 Proposed Bridge Clearances	5-2
5.4 Navigation Study Summary	5-3
5.5 Federal and State Navigation Permits Required	5-3
5.6 Navigation During Construction	5-3

Chapter 6: Agency Coordination and Public Involvement

6.0 Agency Coordination and Public Involvement	6-1
6.1 Regulatory and Resource Agencies	6-1
6.2 Public Involvement Goals	6-3
6.3 Outreach Area	6-3
6.4 Public Engagement	6-4



6.4.1 Public Information Meetings and Public Hearing	6-4
6.4.2 Public Information Meeting One (September 27, 2018)	6-4
6.4.3 Public Information Meeting Two (September 19, 2019)	6-5
6.4.4 Future Opportunities for Public Input	6-6
6.4.5 Advertisement of Public Information Meetings and Public Hearing	6-6
6.5 Additional Community Outreach	6-6
6.5.1 Special Outreach Area and Traditionally Underserved Populations	6-6
6.5.2 Community Meetings and Speakers Bureau	6-7
6.5.3 Community Events	6-7
6.5.4 Small Business Outreach	6-7
6.5.5 Stakeholder Engagement	6-8
6.6 Public Comments	6-8

Figures

Figure 1-1 Project Study Area (PSA)	1-1
Figure 1-2 US 278 over Mackay Creek and US 278 over Skull Creek	1-4
Figure 1-3 US 278 Safety Improvements at Salt Marsh Dr/Moss Creek Village	1-6
Figure 2-1 Level of Service (LOS)	2-2
Figure 2-2 US 278 2018 Existing Segment/Intersection LOS	2-4
Figure 2-3 Project Funding Chart	2-7
Figure 2-4 Project Funding Sources	2-7
Figure 3-1 Alternative 1	3-7
Figure 3-2 Alternative 2	3-7
Figure 3-3 Alternative 3A	3-7
Figure 3-4 Alternative 3B	3-7
Figure 3-5 Alternative 4A	3-8
Figure 3-6 Alternative 4B	3-8
Figure 3-7 Alternative 4C	3-8
Figure 3-8 Alternative 4D	3-8
Figure 3-9 Alternative 4E	3-9
Figure 3-10 Alternative 4F	3-9
Figure 3-11 Alternative 5A	3-9
Figure 3-12 Alternative 5B	3-9
Figure 3-13 Alternative 6A	3-10
Figure 3-14 Alternative 6B	3-10
Figure 3-15 Alternative 6C	3-10
Figure 3-16 Alternative 6D	3-10
Figure 3-17 Alternative 6E	3-11
Figure 3-18 Alternative 7	3-11
Figure 3-19 Alternative 8	3-11

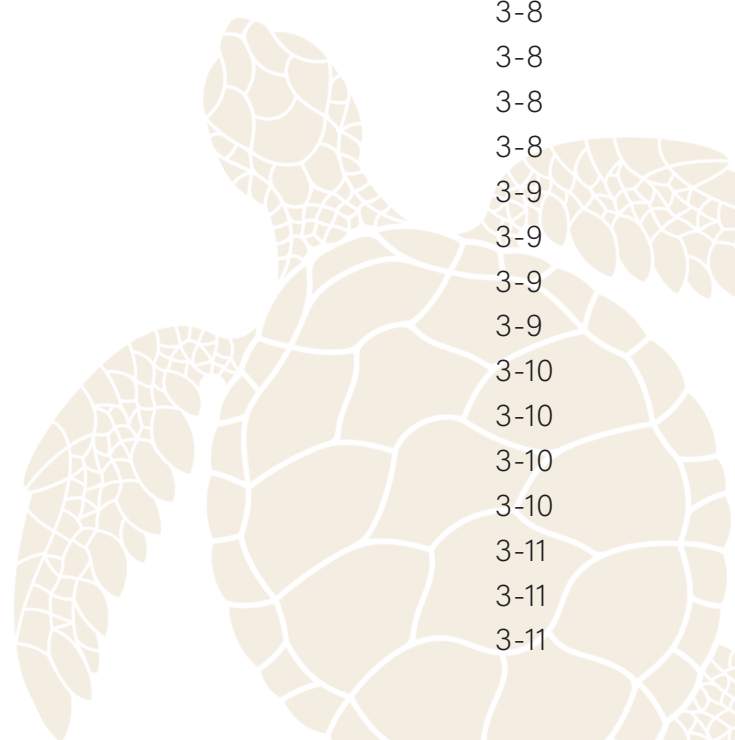


Figure 3-20 Reasonable Alternatives 4 & 4A at PINWR	3-12
Figure 3-21 Reasonable Alternative 2 at Hog Island	3-13
Figure 3-22 Reasonable Alternatives 6 & 6A at Jenkins Island	3-14
Figure 3-23 Reasonable Alternative 1	3-15
Figure 3-24 Reasonable Alternative 2	3-16
Figure 3-25 Reasonable Alternative 3	3-17
Figure 3-26 Reasonable Alternative 4	3-18
Figure 3-27 Reasonable Alternative 4A	3-19
Figure 3-28 Reasonable Alternative 5	3-20
Figure 3-29 Reasonable Alternative 5A	3-21
Figure 3-30 Reasonable Alternative 6	3-22
Figure 3-31 Reasonable Alternative 6A	3-23
Figure 3-32 Recommended Preferred Alternative 4A	3-26
Figure 3-33 Recommended Preferred Alternative 4A Mainline Cross Section	3-27
Figure 3-34 Recommended Preferred Alternative 4A Bridge Cross Section	3-27
Figure 4-1 US 278 Corridor Improvements PSA	4-1
Figure 4-2 Study Area Block Groups	4-5
Figure 4-3 ICE Study Area for Communities	4-10
Figure 4-4 Stoney community on Hilton Head Island	4-16
Figure 4-5 Community Enhancement Renderings	4-18
Figure 4-6 US 278 Project Noise Study Area	4-25
Figure 4-7 Savannah River Basin and Calibogue Sound Watershed	4-26
Figure 4-8 Shellfish Harvesting Waters	4-27
Figure 4-9 Delineated Features in the PSA	4-29
Figure 4-10 Recommended Preferred Alternative 4A Delineated Features	4-31
Figure 4-11 ICE Study Area for Wetlands	4-32
Figure 4-12 2001 NLCD	4-34
Figure 4-13 2016 NLCD	4-35
Figure 4-14 Floodplains within the PSA	4-43
Figure 4-15 Blue Heron Nest on PINWR	4-46
Figure 4-16 <i>de minimis</i> impact	4-62
Figure 5-1 NOAA Nautical Chart #11516	5-2
Figure 6-1 US 278 Corridor Improvement Outreach Area	6-3
Figure 6-2 Public Information Meeting One Summary Infographic	6-4
Figure 6-3 Public Information Meeting Two Summary Infographic	6-5
Figure 6-4 Comment Summary	6-8

Tables

Table 1-1 Cooperating and Participating Agencies	1-3
Table 1-2 US 278 Intersection Summary	1-5
Table 2-1 Population and Growth (2010-2017)	2-1

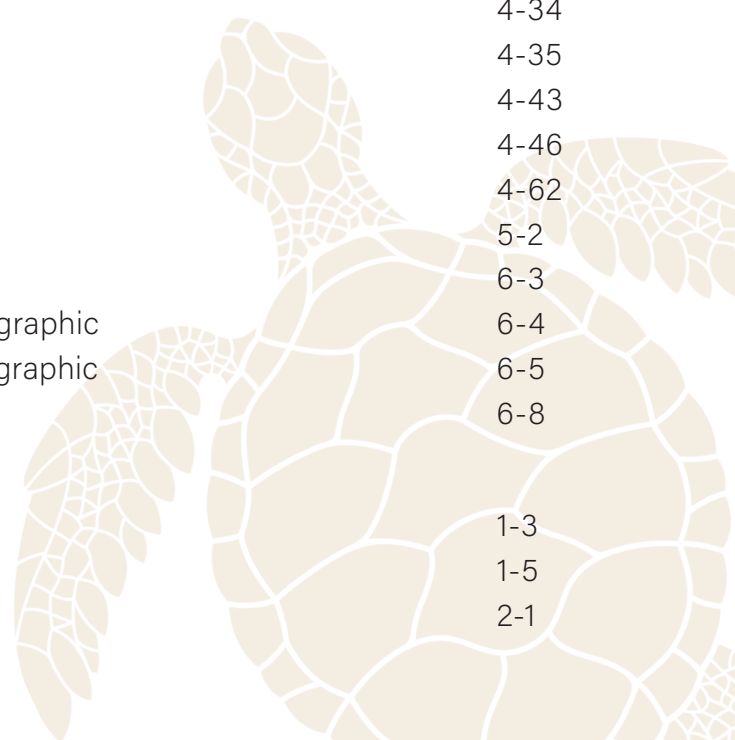
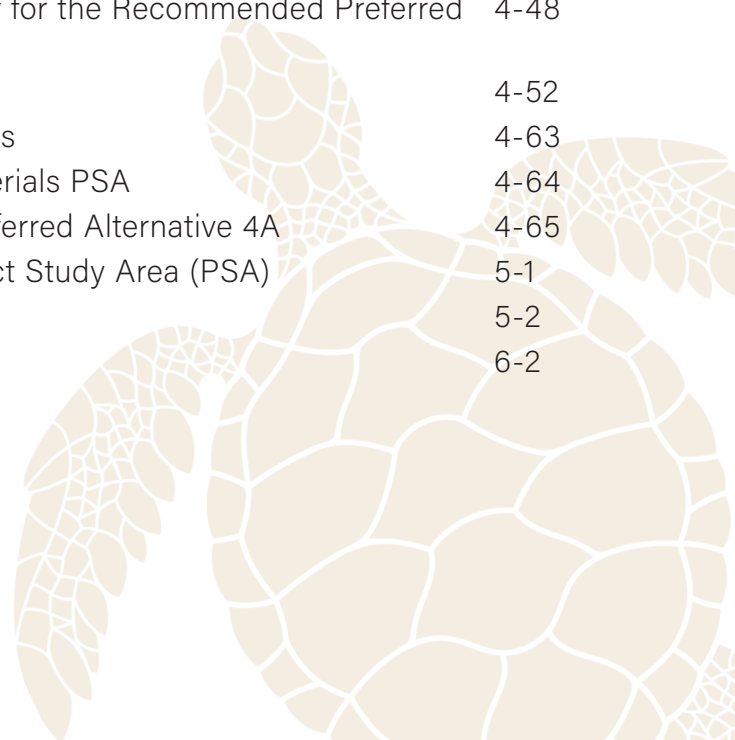


Table 2-2 Level of Service Criteria for Signalized Intersections	2-2
Table 2-3 Level of Service Criteria for Unsignalized Intersections	2-2
Table 2-4 2018 Segment LOS	2-3
Table 2-5 2018 Intersection LOS	2-3
Table 2-6 2045 No Build Segment LOS	2-4
Table 2-7 2045 No Build Intersection LOS	2-4
Table 3-1 Preliminary Range of Alternatives Screening Criteria	3-1
Table 3-2 Reasonable Alternatives Screening Criteria	3-2
Table 3-3 Preliminary Range of Alternatives Summary	3-4
Table 3-4 Reasonable Alternatives Summary	3-25
Table 3-5 Recommended Preferred Alternative 4A Segment LOS	3-29
Table 3-6 Recommended Preferred Alternative 4A Impacts Summary	3-30
Table 4-1 Recommended Preferred Alternative 4A Right-of-Way Impacts	4-3
Table 4-2 Farmland in the PSA	4-4
Table 4-3 Demographics, Housing, and Economic Characteristics	4-6
Table 4-4 Historical Summary of US 278 within the ICE Study Area	4-13
Table 4-5 Committed Projects within Beaufort County	4-14
Table 4-6 LATS Corridor Recommendations	4-14
Table 4-7 Community Meetings	4-17
Table 4-8 Attainment Classifications, Definitions, and Status	4-21
Table 4-9 Noise Abatement Criteria	4-23
Table 4-10 Wetland Types and Respective Acreage and Percent Coverage	4-30
Table 4-11 2001 and 2016 NLCD Comparison	4-36
Table 4-12 Impact Causing Activities	4-36
Table 4-13 2001 and 2016 NLCD Impervious Surface Comparison within the ICE Study Area for Wetlands	4-38
Table 4-14 Federally Protected Species in Beaufort County for the Recommended Preferred Alternative 4A	4-48
Table 4-15 EFH Impacts	4-52
Table 4-16 Recommended Preferred Alternative 4A Impacts	4-63
Table 4-17 Types of High-Risk Sites in the Hazardous Materials PSA	4-64
Table 4-18 REC Sites Impacted by the Recommended Preferred Alternative 4A	4-65
Table 5-1 Creek Crossings in the US 278 Navigation Project Study Area (PSA)	5-1
Table 5-2 Tides/Water Level Datums	5-2
Table 6-1 Coordination Tracking	6-2



Appendices

Appendix A	Agency Coordination Plan
Appendix B	Phase I Traffic Report
Appendix C	Traffic Technical Memorandums: Reversible Lane Analysis and Alternative Intersection Analyses
Appendix D	Community Impact Assessment, Visual Impact Assessment, Relocation Impact Study
Appendix E	Environmental Justice Analysis
Appendix F	Noise Analysis Report
Appendix G	Preliminary Jurisdictional Determination
Appendix H	Essential Fish Habitat Technical Memorandum
Appendix I	SCDOT Bridge Replacement Scoping Trip Risk Assessment Form, Floodplains Checklist, 2-D Hydraulic Analysis
Appendix J	Biological Evaluation
Appendix K	Marine Mammal Protection Act Technical Memorandum
Appendix L	Cultural Resources Survey and Section 106 Consultation
Appendix M	Traditional Cultural Property Report
Appendix N	Cultural Resources Memorandum of Agreement
Appendix O	Section 4(f) Coordination
Appendix P	Hazardous Materials Phase I Environmental Site Assessment
Appendix Q	US Coast Guard Navigation Report
Appendix R	Public Information Meeting Plans and Summaries
Appendix S	Website
Appendix T	Newsletters
Appendix U	Community Meeting Plans and Summaries
Appendix V	Stakeholder Meeting Plans and Summaries

Chapter 1: Introduction

1.0 Introduction

South Carolina Department of Transportation (SCDOT), Federal Highway Administration (FHWA), and Beaufort County propose improvements to the US 278 corridor between Bluffton and Hilton Head Island in Beaufort County, South Carolina. The project study area (PSA) extends from Moss Creek Drive to Wild Horse/Spanish Wells Road for approximately 4.11 miles, refer to Figure 1-1. The project includes replacement of the eastbound Mackay Creek bridge and potential improvements to the three other bridges located within the PSA. The three bridges to be improved include the westbound Mackay Creek, the eastbound Skull Creek bridge and the westbound Skull Creek bridge. Improved access to the Pinckney Island National Wildlife Refuge (PINWR) and the C.C. Haigh, Jr. Boat Landing is also proposed as part of this project.

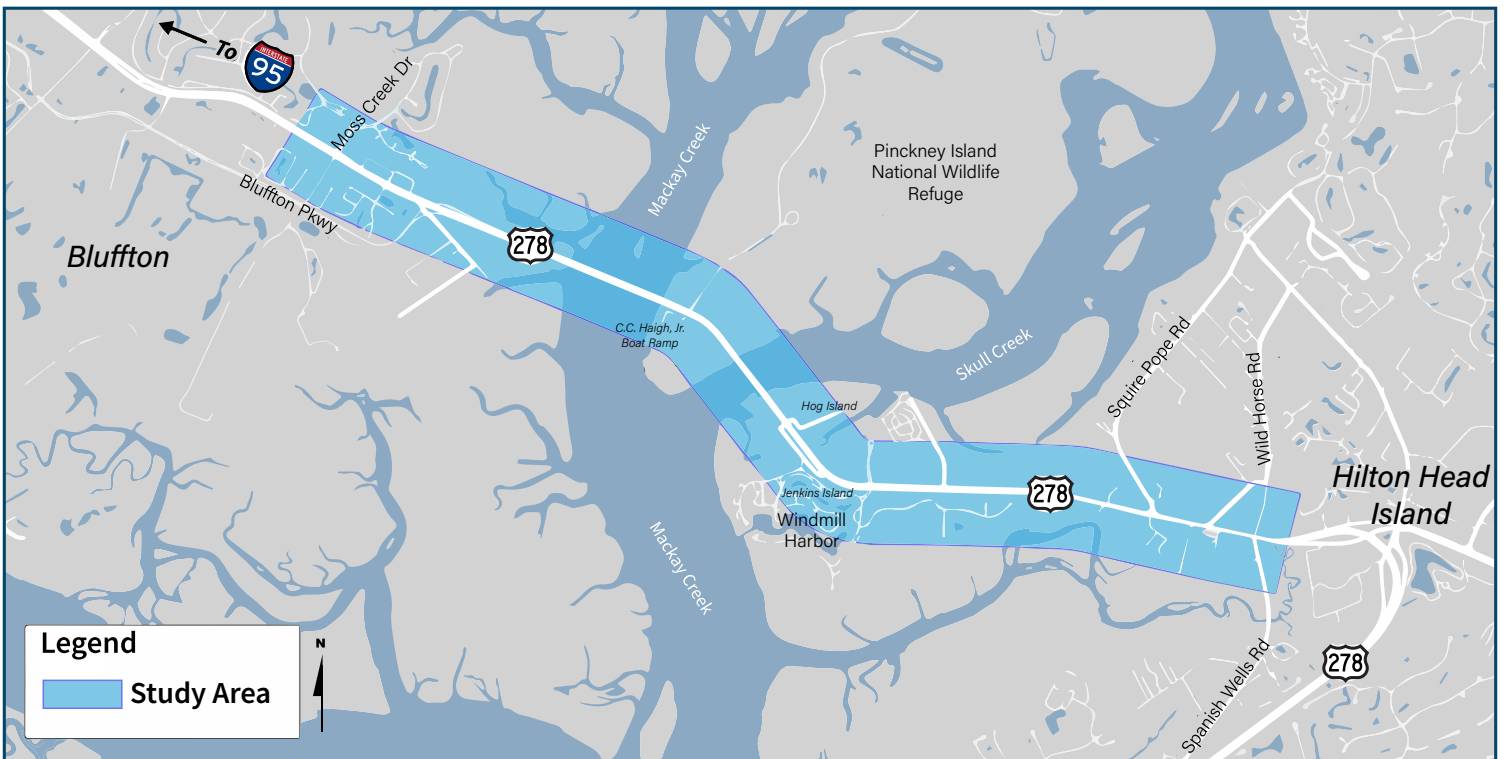


Figure 1-1 Project Study Area (PSA)

The proposed US 278 Corridor Improvements Project will result in modifications to the human and natural environment. As lead agencies, FHWA and SCDOT are responsible for the Environmental Assessment (EA). The purpose and need for the proposed project is being prepared according to the provisions of the National Environmental Policy Act (NEPA) and corresponding regulations and guidelines of the FHWA, the lead federal agency (23 Code of Federal Regulations [CFR] 771 and 40 CFR 1500–1508).

However, SCDOT has not identified impacts that would require the preparation of an Environmental Impact Statement (EIS); therefore, the project meets the criteria under 23 CFR 771.115(c) for processing as an EA. Environmental studies have been conducted during early project development and will continue throughout the NEPA process to provide the opportunity for maximum improvements while minimizing impacts to the human as well as the natural environment.

1.1 Public and Agency Involvement

An Agency Coordination Plan (ACP) was developed to define the process by which SCDOT and FHWA will communicate information about the US 278 Corridor Improvement Project to fulfill the federal and state review and regulatory agencies obligations through NEPA. This plan includes identification of the participating and cooperating agencies for the project and their responsibilities; major coordination points and tasks; impact assessment methodologies; and a schedule for the project. FHWA and SCDOT sent letters to agencies requesting their involvement as a participating or cooperating agency, refer to Table 1-1. Appendix A includes the Agency Coordination Plan and copies of the agency coordination letters and responses.

1.1.1 Cooperating Agencies

In accordance with the Council of Environmental Quality (CEQ) regulations, Cooperating Agencies will be involved in the NEPA process for implementing NEPA's procedural provisions (40 CFR 1501.6). According to CEQ (40 CFR 1508.5)". Cooperating Agencies become involved through the scoping process and in the review of the NEPA document before it is distributed to the public. This allows the NEPA document to be adopted by the Cooperating Agencies, in whole or in part, to fulfill the agencies' obligations through NEPA. Cooperating Agencies are to identify information they need to complete their review, limit their comments to their areas of expertise, make personnel and/or expertise available to the lead agency, and complete their reviews in accordance with the agreed upon project schedule. A preliminary list of Cooperating Agencies is included in Table 1-1.

"Cooperating agency" means any federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative.

1.1.2 Participating Agencies

Participating Agencies, identified in accordance with 23 United States Code (USC) 139, are to provide information and identify and resolve issues. Participating Agencies will allow FHWA and SCDOT to ensure that agencies with special expertise provide input and guidance throughout the NEPA process and the development of the EA. The agencies also provide input during the three major coordination points outlined in the ACP.

"Participating agencies" are identified as those federal, state, tribal, regional, and local agencies with an interest in the project and they have specific responsibilities in the process.

Table 1-1 Cooperating and Participating Agencies

Agency or Local Government	Type of Agency Involvement	
	Cooperating	Participating
Federal Agencies		
U.S. Army Corps of Engineers (USACE)	✓	
U.S. Fish and Wildlife Service (USFWS)	✓	
U.S. Coast Guard (USCG)	✓	
Environmental Protection Agency (EPA)		✓
National Oceanic and Atmospheric Administration (NOAA) Fisheries		✓
State Agencies		
South Carolina Department of Archives and History (SCDAH)		✓
South Carolina Department of Health & Environmental Control (SCDHEC)		✓
South Carolina Department of Health & Environmental Control; Ocean & Coast Resource Management (SCDHEC-OCRM)		✓
South Carolina Department of Natural Resources (SCDNR)		✓
Sovereign Nations		
Catawba Indian Nation		✓
Eastern Shawnee Tribe		✓
Muscogee (Creek) Nation		✓
Local Agencies		
Beaufort County		✓

1.2 Existing Facilities

US 278 currently extends for 1,074 miles from Hilton Head Island, South Carolina to Wickes, Arkansas and crosses through five states (South Carolina, Georgia, Alabama, Mississippi and Arkansas). The PSA is in the southeast portion of Beaufort County, South Carolina. It extends from Moss Creek Drive to Wild Horse Road/Spanish Wells Road and crosses Mackay Creek and Skull Creek via bridge. The land uses within the immediate vicinity of the PSA include both commercial and residential properties. Commercial uses include restaurants, retail and outlet stores, car dealerships, gas and convenient stores, and banks. Outdoor recreation facilities and a National Wildlife Refuge are also found in the vicinity of the PSA.

The Mackay Creek bridges are located along US 278 and connect the Moss Creek area on the Bluffton side (mainland) to Pinckney Island National Wildlife Refuge (PINWR), refer to Figure 1-2. The bridge that carries US 278 eastbound lanes over Mackay Creek is 2,190 feet in length and was constructed in 1956. The bridge that carries US 278 westbound lanes over Mackay Creek is 2,231 feet in length and was constructed in 1983. The roadway width, curb to curb, on the eastbound and westbound bridges is 36.1 feet. The Skull Creek bridges are located along US 278 and connect Pinckney Island to Hilton Head Island. The bridges carrying US 278 eastbound and westbound over Skull Creek are 2,821.9 feet in length and were constructed in 1982. The roadway width, curb to curb, on the eastbound and westbound bridges is 36.1 feet. Mackay Creek and Skull Creek are primarily used by recreational vessels. Public boat ramps and private docks are located along both creeks.

Four bridges have been identified as needing improvements. The Mackay Creek bridges and Skull Creek bridges carry two lanes of traffic in each direction.



Figure 1-2 US 278 over Mackay Creek (top) and US 278 over Skull Creek (bottom)

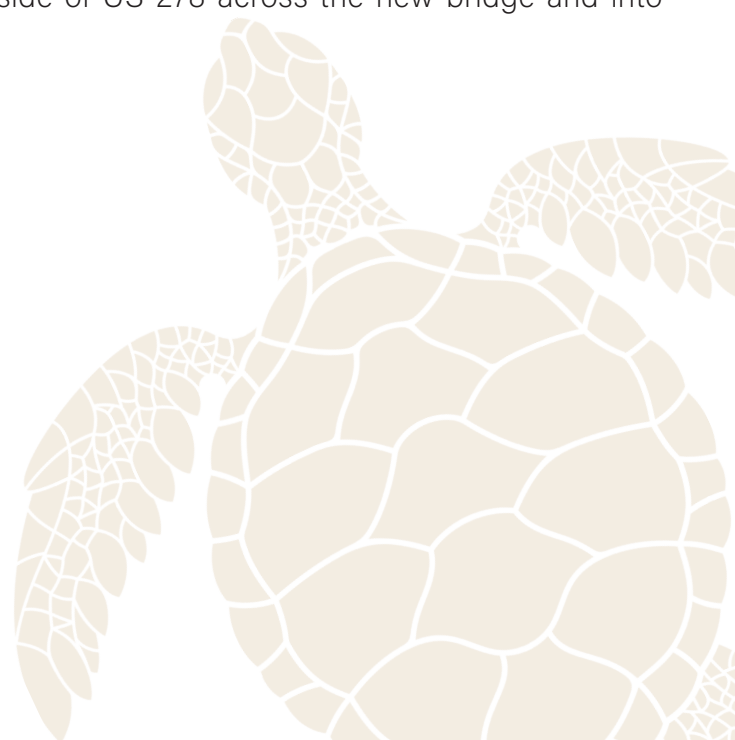
Within the PSA, US 278 is primarily a four-lane divided highway. From Moss Creek Drive to Salt Marsh Drive, US 278 is a six-lane divided highway with a 35-foot grass median. US 278 from Salt Marsh Drive to 1,700 feet east of Jenkins Road consists of two 12-foot lanes in either direction and a 40-foot grass median. The width of the median shifts to a 14-ft paved two-way left turn lane through the Squire Pope Road intersection. East of Squire Pope Road, three lanes exist in either direction. Table 1-2 shows that the PSA includes multiple signals and stop-controlled intersections and one interchange.¹

Table 1-2 US 278 Intersection Summary

Cross Street	Type	Type of Access
Moss Creek Drive	Signalized Intersection	Full Access
Salt Marsh Drive	Stop-Controlled Intersection	Full Access
Fording Island Road Ext	Stop-Controlled Intersection	Median Channelization
Bluffton Parkway	Merge/Diverge Interchange	Partial Access
Pinckney Wildlife Refuge	Stop-Controlled Intersection	Full Access
Blue Heron Point Road	Stop-Controlled Intersection	Full Access
Crosstree Drive/Gateway Drive	Stop-Controlled Intersection	Median Channelization; Right-in/Right-out
Jenkins Road	Stop-Controlled Intersection	Full Access
Squire Pope Road	Signalized Intersection	Full Access
Wild Horse Road/Spanish Wells Road	Signalized Intersection	Full Access

1.2.1 Existing Bicycle and Pedestrian Accommodations

Sidewalks currently exist along US 278 from Jenkins Island to Wild Horse/Spanish Wells Road, the eastern end of the PSA. Bicycle and pedestrian improvements include a multi-use path and a sidewalk on the west end of the proposed project. A 10-foot shared-use path will be constructed on the south side of US 278, and a 5-foot sidewalk will be added on the north side of US 278. This sidewalk will extend to Fording Island Road. The shared-use path will continue along the south side of US 278 across the new bridge and into Hilton Head Island.



1 CDM Smith. Phase I Traffic Report. 2019.

Chapter 2: Purpose and Need

2.0 Project Purpose

The purpose of this project is to address structural deficiencies at the existing eastbound Mackay Creek bridge and reduce congestion within the project study area (PSA). An alternative would successfully reduce congestion if it would decrease travel delays within the US 278 corridor relative to the 2045 No Build condition during peak traffic hours, refer to Section 2.1.2. While the original purpose of this project was to replace the structurally deficient eastbound Mackay Creek Bridge, at the request of Beaufort County, the project was expanded to include improvements throughout the corridor between Moss Creek Drive and Wild Horse/Spanish Wells Road. The eastbound Mackay Creek bridge (traveling to Hilton Head Island) would be replaced as part of South Carolina Department of Transportation (SCDOT) bridge replacement program. The other three bridges in the PSA - the westbound bridge over Mackay Creek and the eastbound and westbound bridges over Skull Creek - have also been identified for potential improvements. In addition, the access to Pinckney Island National Wildlife Refuge (PINWR) and the C.C. Haigh, Jr. Boat Landing have also been considered for possible improvements.

2.1 Project Need

The Mackay Creek bridge was built during the 1950s and is scheduled for replacement as part of SCDOT’s bridge replacement program. However, based on discussions with local officials, the scope of the proposed bridge replacement project was expanded to include the US 278 Corridor from Moss Creek Drive to Wild Horse/Spanish Wells Road in order to address traffic congestion within the project limits. A traffic analysis was used to determine base year conditions and to analyze future needs, refer to Appendix B. The need for this project is derived from the following factors, which are detailed further in the sections below:

- Growth in population and employment
- Decreased mobility and increased traffic congestion

2.1.1 Growth in Population and Employment

Bluffton, Hilton Head and Beaufort County have all experienced substantial population and employment growth since 2010.¹ Population and employment in Beaufort County has also experienced significant growth, increasing by 19.7 percent from 2010 to 2018. The increase in available jobs results in commuters utilizing the corridor to reach these employment opportunities. Due to growth in population and employment within the PSA, transportation needs have grown and this growth is expected to continue.

Table 2-1 Population and Growth (2010-2017)

Location	Total Population	Percent Growth Since 2010
Hilton Head Island	40,055	8.0
Bluffton	21,085	61.1
Beaufort County	186,844	15.2
South Carolina	5,024,369	8.6

2.1.2 Decreased Mobility and Increased Traffic Congestion

A traffic analysis was conducted to evaluate base year and future roadway capacity. For the 2018 condition, existing counts were used to calculate the delay and level of service. The LATS travel demand model was utilized to obtain the future year growth rate (1.19% annually) to project future traffic volumes, refer to Appendix B. Methods used include daily traffic counts along US 278 via 24-hour video, automatic traffic recorders maintained by SCDOT and SCDOT daily volumes. Turning movement counts were taken during peak hours (7:30-8:30 AM and 4:30-5:30 PM). The results of the traffic analysis are presented as Level of Service (LOS) for the segments between the intersections, as well as each intersection.

Poor LOS ratings are caused by a high density of traffic on the roadway or excessive delay at the intersections. Figure 2-2 illustrates the LOS range from A to F, with free flow conditions represented by LOS A, and LOS F representing congested conditions with slower speeds and restricted ability to change lanes. A LOS of D or better is considered acceptable; however, LOS of C or better is ideal. Intersection LOS is defined in terms

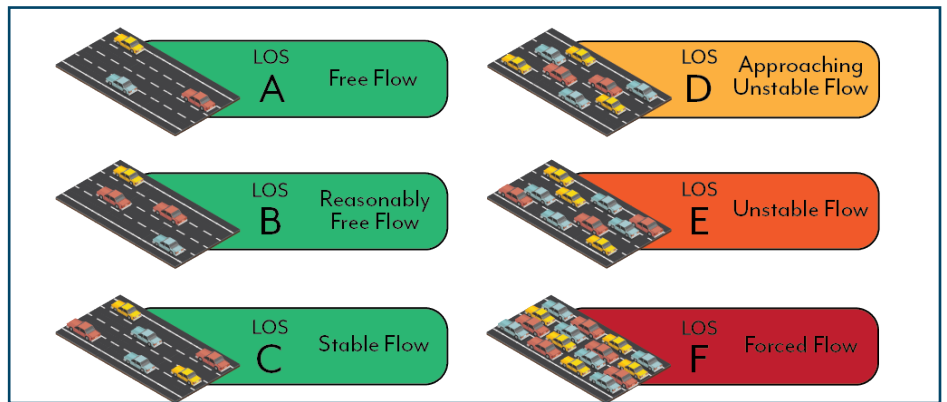


Figure 2-1 LOS for Roadways

of average delay per vehicle measured in variables such as signal phasing, cycle length and intersection volumes, refer to Tables 2-2 and 2-3.

Table 2-2 LOS Criteria for Signalized Intersections

Level of Service	Average Control Delay (sec/vehicle)	General Description
A	< 10	Free Flow
B	> 10-20	Stable flow (slight delays)
C	> 20-35	Stable flow (acceptable delays)
D	> 35-55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	> 55-80	Unstable flow (intolerable delays)
F	> 80	Forced flow (jammed)

Table 2-3 LOS Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (sec/vehicle)
A	0-10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

2.1.2.1 Base Year Traffic Conditions

Many of the segments within the PSA and along the US 278 Corridor currently operate at an unacceptable LOS. Four out of the six segments operate at a LOS E during the peak hours of the day (7:30-8:30 AM and 4:30-5:30 PM), refer to Table 2-4.

Table 2-4 2018 Segment LOS

Segment	Eastbound		Westbound	
	AM	PM	AM	PM
Moss Creek Drive to Salt Marsh Drive	B	B	A	B
Salt Marsh Drive to Bluffton Parkway	C	C	B	D
Bluffton Parkway to Pinckney Wildlife Refuge	E	D	C	E
Pinckney Island Refuge to Blue Heron Point Road	E	C	C	D
Blue Heron Point Road to Jenkins Road	E	D	C	E
Jenkins Road to Squire Pope Road	E	C	C	E
Squire Pope Road to Spanish Wells Road	C	B	B	C

Many of the intersections along the US 278 Corridor within the PSA currently operate at an unacceptable LOS. Six out of nine intersections operate at a LOS F in the AM peak hour for the base year condition, while seven out of nine operate at a LOS F in the PM peak hour, refer to Table 2-5. Intersection delays are usually caused by vehicles turning left; however, the delay along the US 278 corridor within the PSA is mostly due to substantial through traffic volumes.

Table 2-5 2018 Intersection LOS

Intersection	Movement	AM		PM		
		LOS	Delay	Movement	LOS	Delay
Moss Creek Drive	Overall	B	19.6	Overall	C	21.6
Salt Marsh Drive	SBL	F	215.5	NBL	F	+
Fording Island Road	NBL	F	+	NBL	F	+
Pinckney Island Refuge	SBL	F	+	NBL	F	+
Blue Heron Point Road	NEL	F	+	NEL	F	+
Crosstree Drive/Gateway Drive	NBL	F	+	NBL	F	+
Jenkins Road	SBL	F	199.0	SBL	F	+
Squire Pope Road	Overall	A	6.7	Overall	F	87.9
Wild Horse Road/Spanish Wells Road	Overall	B	14.3	Overall	D	46.8

+ Results are producing unreasonably long delays that are often greater than 360 seconds, but the values are not shown due to software limitations.



Figure 2-2 US 278 2018 Existing Segment/Intersection LOS

2.1.2.2 Projected Traffic Conditions

With a growing tourism industry and the corresponding increase in economic opportunity, this area continues to see population and business growth. Traffic growth was estimated using the annual growth rates and average daily traffic for the US 278 Corridor Improvements project, extending from Moss Creek Drive to Wild Horse Road/Spanish Wells Road, refer to Appendix B.

Moss Creek Drive to Bluffton Parkway is approximately 0.75 miles of the US 278 PSA Corridor. The remaining segments of the corridor are projected to operate at an unacceptable LOS in 2045. Between Bluffton Parkway and Squire Pope Road, the level of service is expected to be F in the peak hour directions (eastbound in the AM, westbound in the PM).

Table 2-6 2045 No Build Segment LOS

Segment	Eastbound		Westbound	
	AM	PM	AM	PM
Moss Creek Drive to Salt Marsh Drive	C	B	B	B
Salt Marsh Drive to Fording Island Road	C	C	B	D
Fording Island Road to Bluffton Parkway	D	D	C	E
Bluffton Parkway to Pinckney Wildlife Refuge	F	E	C	F
Pinckney Wildlife Refuge to Squire Pope Road	F	D	C	F
Squire Pope Road to Spanish Wells Road	D	C	B	D

The traffic growth memorandum also studied the following nine intersections and one interchange:

- Moss Creek Drive
- Salt Marsh Drive
- Fording Island Road
- Bluffton Parkway
- Pinckney Wildlife Refuge
- Blue Heron Point Road
- Crosstree Drive/Gateway Drive
- Jenkins Road
- Squire Pope Road
- Wild Horse Road/Spanish Wells Road

Table 2-7 shows eight of the nine intersections in the PSA would operate at a LOS F in 2045 without any proposed improvements. Results indicate the signalized intersections are starting to degrade as more vehicles are on the roadways. The unsignalized intersections show an increase in the already excessive delays as the volumes on US 278 increase.

Table 2-7 2045 No Build Intersection LOS

Intersection	Movement	AM		PM		
		LOS	Delay	Movement	LOS	Delay
Moss Creek Drive	Overall	C	23.6	Overall	C	28.1
Salt Marsh Drive	NBL	F	+	NBL	F	+
Fording Island Road	NBL	F	+	NBL	F	+
Pinckney Island Refuge	NBL	F	315.6	SBL	F	+
Blue Heron Point Road	NEL	F	315.6	NWL	F	63.1
Crosstree Drive/Gateway Drive	NBL	F	+	NBL	F	+
Jenkins Road	SBL	F	+	SBL	F	+
Squire Pope Road	Overall	C	21.9	Overall	F	166.5
Wild Horse Road/Spanish Wells Road	Overall	C	34.5	Overall	F	118.5

+ Results are producing unreasonably long delays that are often greater than 360 seconds, but the values are not shown due to software limitations.

2.2 Logical Termini and Independent Utility

Pursuant to Federal Highway Administration (FHWA) regulations 23 Code of Federal Regulations (CFR) Section 771.111(f), a project shall “connect logical termini..., have independent utility..., and not restrict...other reasonably foreseeable transportation improvements.”

Logical termini are defined by FHWA as rational endpoints for both the proposed transportation improvement project as well as the evaluation of environmental impacts.

The proposed western project termini is Moss Creek Drive, an intersecting roadway that also marks the point where US 278 transitions to a six-lane roadway to the west. The proposed eastern project termini is an intersection roadway, Wild Horse Road/Spanish Wells Road, which marks the point where US 278 is a six-lane roadway to the east. Both Moss Creek Drive and Wild Horse Road/Spanish Wells Road are determined to be rational endpoints as both connect to the existing six-lane roadway sections.

The proposed project is independent from other proposed projects in the area and is not dependent on other improvements for functionality.

2.3 Reasonable Availability of Funding

SCDOT has identified \$40 million for the replacement of the eastbound Mackay Creek bridge. However, Beaufort County recognizes that this project presents an opportunity to address congestion and mobility concerns throughout the corridor. Understanding the importance of this corridor and the opportunities this bridge replacement project provides, Beaufort County has secured \$120 million from the State Infrastructure Bank. The citizens of Beaufort County approved a One Cent Sales Tax that will provide an additional \$80 million towards the improvements of this corridor. Any additional funds needed above and beyond will need to be identified from other sources. Refer to Figures 2-3 and 2-4. Total estimated cost for the proposed project is \$283,832,429.39.

Currently the Statewide Transportation Improvement Program (STIP) for 2017-2022 includes \$12,443,000 for the US 278 Corridor Improvements project with an additional \$240,000,000 remaining for years 2023+.²

1 data.census.gov

2 To be added when STIP is updated and before a final NEPA decision is made.

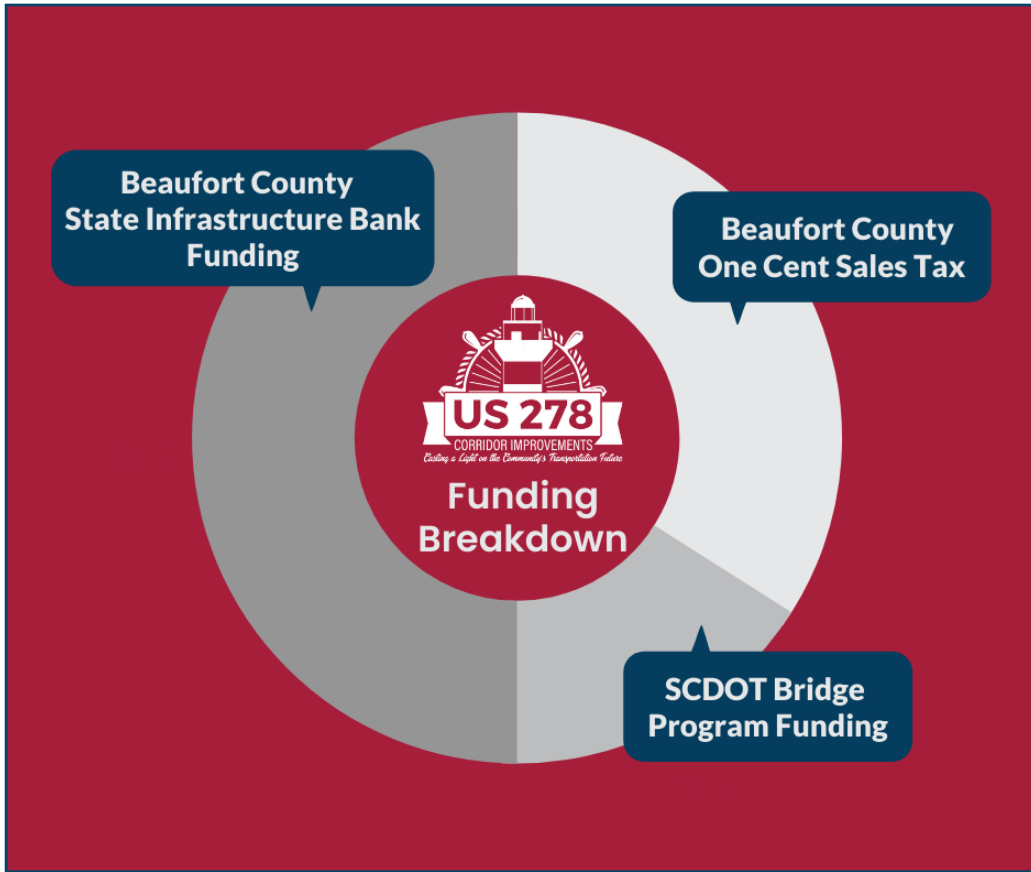


Figure 2-3 Project Funding Chart

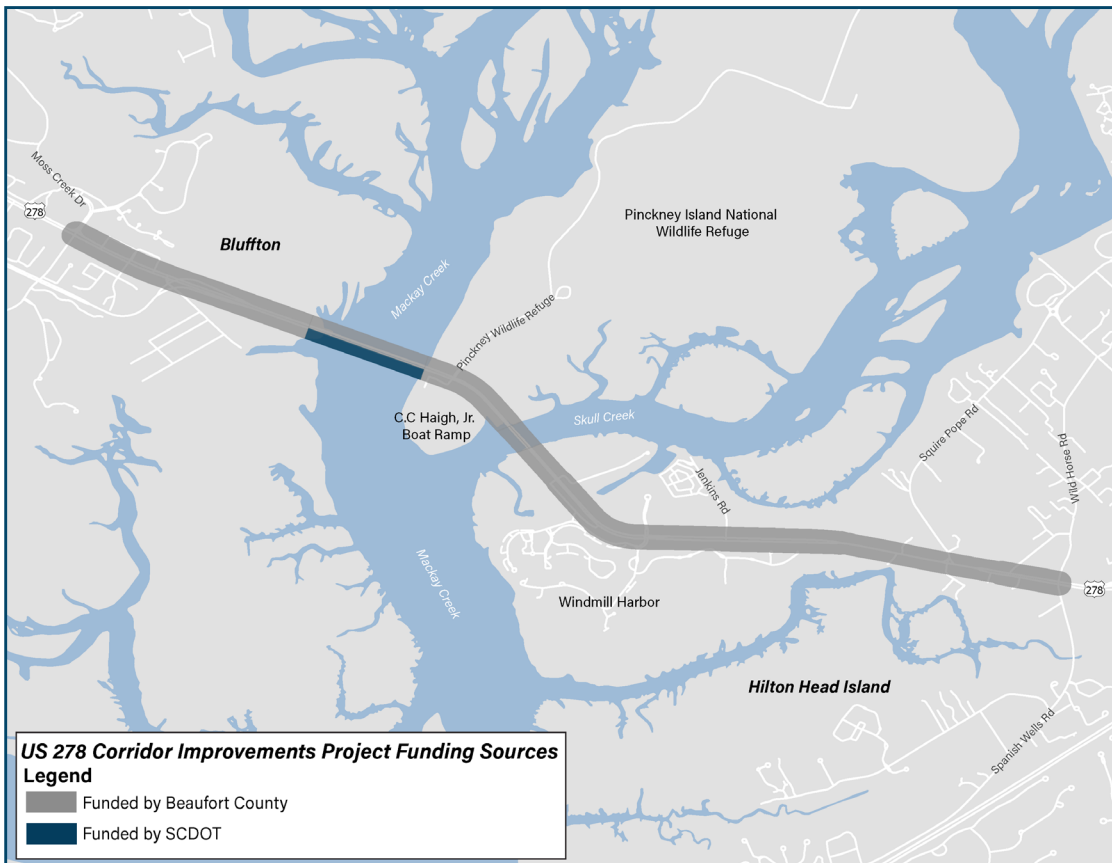


Figure 2-4 Project Funding Sources