WEST 526 LOWCOUNTRY CORRIDOR

Appendix T

USCG Permit Application

Navigation Report

I-526 West Lowcountry Corridor

U.S. Coast Guard Bridge Permit Application

Prepared For:

South Carolina Department of Transportation

August 27, 2020

Prepared By:

Civil Engineering Consulting Services, Inc.

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I. INTRODUCTION

The South Carolina Department of Transportation (SCDOT) in conjunction with the Federal Highway Administration (FHWA) is submitting this United States Coast Guard (USCG) Bridge Permit Application as part of the forthcoming infrastructure improvements and widening of Interstate 526 (I-526) in Charleston County (Attachment A). Proposed improvements to I-526 would include providing additional travel lanes over the Ashley River, through widening the existing bridges (see Attachment B Conceptual Plans).

For the USCG to issue a permit for a structure to be built over "Navigable Waters of the U.S.," the structure must meet the reasonable needs of current and foreseeable future navigation. In May 2019, a Navigation Impact Report was submitted to the USCG for review and comment. This report proposed a vertical clearance of 35 feet and a horizontal clearance of 60 feet. The USCG preliminary concurrence determination letter (June 11, 2019) of these clearances and a copy of the navigation report are included in Attachments C and D.

II. EXISTING FACILITY

The General William C. Westmoreland bridges (Westmoreland bridges) are located along I-526 and connect the city of North Charleston with the West Ashley area of Charleston, SC (refer to Appendix A, Figure 1). The twin span bridge carries two lanes of I-526 in each direction across the Ashley River and the surrounding tidal marshes. The 3,908-foot long bridge was constructed in 1980 and each bridge is approximately 43 feet wide. The existing bridge deck consists of two 12-foot travel lanes, one in each direction, a 5.5-foot inside shoulder, and a 10-foot outside shoulder. I-526 within the project limits is primarily a four-lane divided highway.

General William C. Westmoreland Bridges over the Ashley River.

III. PROPOSED PROJECT OVERVIEW

The I-526 Lowcountry Corridor (LCC) West project is located between Paul Cantrell Boulevard and Virginia Avenue and is approximately 11.4 miles long. SCDOT currently ranks the segment of I-526 between I-26 and Virginia Avenue as the most congested segment of interstate highway in the state. The remainder of the I-526 LCC West project, from I-26 to Paul Cantrell Boulevard, ranks among the top ten of the state's existing most congested corridors. Traffic forecasts show that segments of that corridor will continue to be among the state's most congested in 2040. The interchange of I-526 and I-26 is the major source of the congestion. The purpose of the project is to increase vehicular capacity along I-526 through infrastructure improvements to support increasing usage and population growth.

As part of the improvements to I-526, SCDOT proposes to widen the existing bridges over the Ashley River. The current bridges are approximately 42.8 feet wide. The existing bridge deck consists of two 12-foot travel lanes, two in each direction; a 5.5-foot inside left shoulder; and a 10-foot outside right shoulder. Additionally, there are barriers on each side of the bridge (2 total) that are 1.7 feet wide each. Widening I-526 would require that these bridges be widened and that the shoulders and bridge barriers be modified slightly to accommodate four lanes in each direction with shoulders and bridge barriers. The proposed bridges would have two additional travel lanes in each direction that are 12 feet wide, and shoulders in each direction of travel that are 12 feet wide (refer to Attachment B, Conceptual Bridge Plan and Profile, Sheet 5 Widening Schematic). The width of the additional bridging would be 32.5 feet wide in each direction. The total final bridge width in each direction would be 75.3 feet.

IV. CONSTRUCTION OVERVIEW

This project is expected to be delivered either via the design build or bid build process and final construction and design plans would be determined by the contractor and/or SCDOT. To maintain competitiveness during the bid process, means and methods of construction may not be final, giving contractors the ability to propose specific methods and equipment. The following is an outline of the likely construction activities and project designs. This may vary slightly depending on the selected contractor and bid process. Any modifications from those proposed in this document that could impact effects to listed species would require additional coordination with SCDOT and federal agencies.

During construction of the widened bridges, traffic would be maintained on the existing facility. Maintenance and improvements would be made to the existing Westmoreland bridges and the structures would be retained at their existing height and length.

Generally, the project improvements would consist of the following components:

- Widen the northbound and southbound roadway approaches to the Westmoreland Bridges.
- Construct temporary access areas to include matting, barges, and work trestles.
- Widen existing northbound structure to the south, or downstream side, of the existing Westmoreland Bridges on a mix of prestressed concrete piles and drilled shafts.
- Widen existing southbound structure between the existing northbound and southbound Westmoreland Bridges on a mix of prestressed concrete piles and drilled shafts.
- Extend the existing fender system to the south of the Westmoreland Bridge.
- Paint the existing and new steel beams over the Ashley River main navigational channel and over Bull Creek.
- Install lighting for navigation and to meet SCDOT urban interstate lighting requirements ("Roadway Lighting on Interstate Routes in South Carolina").

Fender System

The existing fender system will be extended with a system that can accommodate all required uses of the waterway. The proposed fender system will be designed for both recreational watercraft, as well as larger vessels such as commercial fishing boats and tug boats. The fender elements would likely consist of rubber fenders, with a steel panel and polyethylene facing. Additional prestressed concrete piles will be required to support the new fender systems. These piles would not be load bearing and would not require extensive pile strikes such as those on the permanent bridge system.

Temporary Access

The Ashley River would be accessed via barges for construction. Barges may be delivered and moved via water and transport vessels or via land on flatbed trucks with cranes and other heavy equipment. At no point would barges in the Ashley River block more than 50% of the channel. Temporary work trestles would be placed in marsh and wetland areas for construction access outside of the existing eastbound

bridge. Temporary trestle would be approximately 40 feet wide and would be supported by steel pipe piles. For access over marsh areas between the existing bridges either trestle or a combination of barge, barge mats, and timber mats would be needed due to the limited space between the structures.

Plans for cofferdams, falsework, or any other temporary structures to be placed in the water to facilitate the bridge construction, would be submitted to the District Commander prior to the start of construction.

V. REQUIRED SUPPLEMENTAL INFORMATION

At this phase in the project there are several planning and design elements that are currently underway, or are pending. Supplemental information that would be submitted to support this bridge permit application include:

- National Environmental Policy Act Documentation (Environmental Impact Statement)
- Bridge Lighting and Signal Plan
- Detailed plans for temporary construction access
- Clean Water Act Section 404 Individual Permit

ATTACHMENTS:

A **US Coast Guard Bridge Permit Application**

B **I-526 West Lowcountry Corridor Conceptual Bridge Plan and Profile Sheets**

C **US Coast Guard Navigation Clearance Letter**

D **I-526 West Lowcountry Corridor Navigation Impact Report**

E **Draft Section 6(F) Environmental Assessment Highland Terrace-Liberty Park Community Center Land Conversion**

F **I-526 West Lowcountry Corridor Biological Assessment for USFWS**

G **Draft I-526 West Lowcountry Corridor Biological Assessment for NOAA-NMFS**

H **Essential Fish Habitat Assessment, I-526 Lowcountry Corridor WEST**

I **Section 106 Correspondence**

Attachment A US Coast Guard Bridge Permit Application

Dear Mr. Overton

Application is hereby made for a Coast Guard bridge permit for the I-526 West Lowcountry Corridor Improvement Project.

A. ADMINISTRATIVE AND NAVIGATION INFORMATION

1. Application Date: August 27, 2020

   a. Applicant information:

      1) Name: Will McGoldrick (South Carolina Department of Transportation)

      2) Address: 955 Park Street, Columbia, SC 29201

      3) Telephone number: 803-737-1326

      4) Email address: McgoldriWR@scdot.org

   b. Consultant/Agent information (if employed):

      1) Name (company or individual): Maher Almassri, PE (Civil Engineering Consulting Services, Inc)

      2) Address: 2000 Park Street, Suite 201, Columbia, SC 29201

      3) Telephone number: 803-779-0311

      4) Email address: almassriM@cecsinc.com

      5) Letter authorizing a consultant/agent to obtain permits on behalf of the applicant included: ☒ Yes ☐ No (please see attached cover letter granting permission)

   c. Name of Proposed Bridge(s): I-526 General William C. Westmoreland Bridge

      1) Name of the waterway that the bridge(s) would cross: Ashley River

      2) Number of miles above the mouth of the waterway where the bridge(s) would be located and provide latitude and longitude coordinates (degree/minute/second) at centerline of navigation channel (contact the local Coast Guard Bridge Office for guidance): Waterway mile 10.6 at 32.835645, -80.024364 (32°50'08.3"N 80°01'27.7"W)

      3) City or town, county/parish, and state where the bridge(s) would be located at, near, or between: Charleston, South Carolina

      4) Brief description of project to include type of bridge(s) proposed [fixed or movable (drawbridge, bascule, vertical lift, swing span, pontoon), highway, railway, pedestrian, pipeline] and existing bridge(s) at project site, if applicable: As part of the improvements to I-526, SCDOT proposes to widen the existing fixed span

bridges over the Ashley River. The current bridges are approximately 42.8 feet wide. The existing bridge deck consists of two 12-foot travel lanes, two in each direction; a 5.5-foot inside left shoulder; and a 10-foot outside right shoulder. Additionally, there are barriers on each side of the bridge (2 total) that are 1.7 feet wide each. Widening I-526 would require that these bridges be widened and that the shoulders and bridge barriers be modified slightly to accommodate four lanes in each direction with shoulders and bridge barriers. The proposed bridges would have two additional travel lanes in each direction that are 12 feet wide, and shoulders in each direction of travel that are 12 feet wide (refer to Attachment B, Conceptual Bridge Plan and Profile, Sheet 5 Widening Schematic). The width of the additional bridging would be 32.5 feet wide in each direction. The total final bridge width in each direction would be 75.3 feet.

5) Drawbridge Regulations (if applicable): N/A

6) Date of plans and number of plan sheets: May 8, 2020 5 sheets

7) Estimated cost of bridge(s) and approaches:

   a) Provide the estimated cost of the bridge(s) as proposed, with vertical and horizontal navigational clearances: $45,000,000

   b) Provide the estimated cost of a low-level bridge(s) on the same alignment with only sufficient clearance to pass high water while meeting the intended purpose and need: N/A

8) Type and source of project funding (federal, state, private, etc.): Federal, state

9) Proposed project timeline: Construction is expected to begin in 2022. Construction of the bridge phase over the Ashley River would last approximately 3 years. Within that 3-year period, in-water work of an estimated 5 months would be needed.

10) Other Federal actions (e.g., permits, approvals, funding, etc.) associated with the proposal: NEPA Draft EIS, Final EIS, Record of Decision, Clean Water Act Section 404 Individual Permit

d. Legal authority for proposed action:

   1) Cite appropriate Bridge Act: General Bridge Act of 1946 (33 U.S.C. 525-533).

   2) If not the owner of the existing bridge(s) that is being replaced or modified, include a signed statement from the bridge owner authorizing the removal or modification work and cite its location: Owner is SCDOT

   3) For privately owned bridges, cite authorization for right to build (e.g. deed or easement from the property owner authorizing the proposed construction or modification work): N/A

e. International bridges (if applicable):

1) Cite the International Bridge Act of 1972, or a copy of the Special Act of Congress if constructed prior to 1972, as the legislative authority for international bridge construction: N/A

2) For permits issued under the International Bridge Act of 1972, cite Presidential approval, via the State Department, included with the application as required:

NOTE: Please include a copy of State Department approval for international bridges in the application package for a Coast Guard bridge permit.

f. Dimensions of the proposed bridge(s):

1) Vertical clearance as indicated on plan sheets: 35 feet

2) Horizontal clearance as indicated on plan sheets: 60 feet

3) Length of bridge(s) project: 3,907.5 feet

If no prior permit exists, and this is a modification or replacement project, is the length the same as the old bridge: Yes

If not, what is the difference: N/A

4) Width of bridge(s) project: Two bridge widenings at 32.5 feet wide each (Existing bridges are 42.8 feet wide. Final width of existing bridge plus widened section would be 75.3 feet. Please see Attachment B Bridge Plans, Sheet 5, Widening Schematic).

If no prior permit exists, and this is a modification or replacement project, is the width the same as the old bridge: Yes

If not, what is the difference: N/A

5) Depth of the waterway at project site at MHW if tidal or OHW if non-tidal, using the appropriate elevation and datum (e.g., NGVD 1929, NAVD 1988, etc.): 25 feet NAVD 88

6) Width of waterway at project site at MHW if tidal or OHW if non-tidal: 1365 feet

7) Significant effect on flood heights and associated drift, if any, that could cause a navigation hazard: N/A

g. Temporary Bridge(s) dimensions (vertical clearance, horizontal clearance, length and width), if applicable: No temporary bridges within Ashley River navigable waterway; 40-foot wide trestle proposed for adjacent tidal marsh only.

h. Enclosed are the waterway data requirements as determined by the Coast Guard District Bridge Office. If a navigation impact report was conducted please cite location(s) in the case file, list title and date of document as appropriate: Ashley River Navigation Impact Report submitted May 2019. Preliminary navigational clearance provided by the USCG Seventh District Bridge Program via letter on June 11, 2019

noting a vertical clearance of at least 35 ft. and a horizontal clearance of at least 60 ft.

i. Existing bridge(s) if applicable:

1) Name of bridge(s): General William C. Westmoreland Bridge

2) Type of bridge(s) and number of lanes (e.g., fixed or moveable (drawbridge, bascule, vertical lift, swing span, pontoon, etc.); highway, railway, pedestrian, pipeline): Fixed multi span twin bridges with two vehicle lanes each.

3) For movable spans identify the existing drawbridge operating regulation governing the structure (e.g. 33 CFR 117.XXX, if applicable): N/A

When applicable, identify if the local Coast Guard Bridge Office identified that modification of an existing drawbridge requires revision or removal of the existing regulation (e.g. if the bridge project involves replacing the existing drawbridge with a fixed bridge):

NOTE: If the waterway is not already identified in 117 Subpart B, please note if an operating schedule other than open on demand is being considered.

4) Latitude and longitude coordinates (degree/minute/second) at centerline of the bridge(s): 32.835586, -80.024182 (32°50'08.1"N 80°01'27.1"W) and 32.835748, -80.024397 (32°50'08.7"N 80°01'27.8"W)

5) Dimensions of the existing bridge(s):

a) Vertical clearance(s) as indicated on previous plan sheets (include both the open and closed-to-navigation clearances for movable spans). [The proposed and existing vertical clearances must be compared using the same datums. This may require surveying the existing bridge]: 35 feet

b) Horizontal clearance as indicated on previous plan sheets: 60 feet

c) Length of existing bridge(s): 3,908 feet

d) Width of existing bridge(s): 43 feet

6) Owner of the existing bridge(s): SCDOT

j. Discuss construction methodology, if known, and removal of existing bridge(s), as applicable:

1) Discuss proposed construction methodology and restrictions: No removal of existing bridges other than chipping 2 feet of existing deck to facilitate connection with widened segment. New segments will match existing superstructure spans and configurations while supported on a mix of round columns and prestressed piles. A summary of the new bridge construction follows:

- Widen the northbound and southbound roadway approaches to the Westmoreland Bridges.

- Construct temporary access areas to include matting, barges, and work trestles. At no point will more than 50% of the navigable channel be obstructed.

- Widen existing northbound structure to the south, or downstream side, of the existing Westmoreland Bridges on a mix of prestressed concrete piles and drilled shafts.

- Widen existing southbound structure between the existing northbound and southbound Westmoreland Bridges on a mix of prestressed concrete piles and drilled shafts.

- Extend the existing fender system to the south of the Westmoreland Bridge.

- Paint the existing and new steel beams over the Ashley River main navigational channel and over Bull Creek.

- Install lighting for navigation and to meet SCDOT urban interstate lighting requirements ("Roadway Lighting on Interstate Routes in South Carolina").

2) Discuss maintenance of land traffic during construction activities: Traffic would be maintained on existing bridges while new bridges are constructed.

3) Discuss extent of removal of existing bridge(s) (e.g. in its entirety, two feet below the mud line, down to or below the natural bottom of the waterway or to a specific elevation), time needed for removal, etc.: N/A

4) Discuss demolition methodology: N/A

<u>NOTE</u>: In the interest of navigational safety, the Coast Guard must make the final decision concerning the extent of bridge(s) removal.

k. Other agencies with jurisdiction over the proposed project:

1) Agency: U.S. Army Corps of Engineers, National Park Service

2) Permits or type of approvals required for the project: Clean Water Act Section 404 Individual Permit, Section 6(f), 401 Water Quality Certification, DHEC-OCRM Critical Area Permit, and Coastal Zone Consistency Certification

B. ENVIRONMENTAL INFORMATION:

1. **National Environmental Policy Act**

   Lead Federal Agency: Federal Highway Administration (FHWA)

   List Cooperating Agencies for project: US Coast Guard, US Army Corps of Engineers, National Park Service

   a. Type of environmental document.

   ☒ Environmental Impact Statement/Record of Decision (EIS/ROD)

   Cite location(s) in the application package: EIS is currently being prepared; expected to be available late 2020.

   ☐ Environmental Assessment/Finding of No Significant Impact (EA/FONSI)

   Cite location(s) in the application package:

   ☐ Categorical Exclusion (CE)

   Cite location(s) in the application package:

   b. Has the environmental document been modified, reevaluated, supplemented or rescinded for the proposed action?

   ☐ Yes ☒ No

   If yes, cite location(s) in the application package:

2. **Environmental Effects Abroad**

   a. Does the proposed project involve a bridge connection to Canada or Mexico?

   ☐ Yes ☒ No

   If yes, cite location(s) in NEPA document where environmental effects abroad are described:

3. **Clean Water Act**

   a. Has a Water Quality Certification (WQC), waiver or statement that the WQC is not required been obtained from the appropriate federal, interstate, or state agency?

   ☐ Yes ☒ No

   If yes, cite location(s) in the application package: WQC request in preparation; application to be submitted to SC DHEC on August 31, 2020.

   NOTE: The USCG will not accept an application package as complete if a WQC,

waiver, or statement from the appropriate regulatory body has not been obtained.

b. Name of the Federal, State or Tribal certifying agency and point of contact with phone and email address, if available: Chuck Hightower, SC DHEC Bureau of Water, 803-898-0369, hightocw@dhec.sc.gov

c. If the WQC is granted under a Programmatic Agreement (e.g., U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) include the date of the NWP, the type of NWP (14, 15, etc.) and the NWP number and title: N/A

d. For permit amendment actions, include a new WQC or a written confirmation from the certifying agency that the existing WQC has been reissued/renewed or is still valid for the proposed action.

☐ New WQC Attached

☐ Written Confirmation of WQC validity attached

4. **Wetlands**

a. Is the proposed project located in or adjacent to a wetland?

☒ Yes ☐ No

b. If yes, what is the acreage of wetlands that will be permanently and temporarily impacted by the proposed project? TBD

Include USACE permit (nationwide authorization or individual), if required, and cite where wetland mitigation measures are described in the application package: Permit application submitted with Conceptual Mitigation Plan, August 31, 2020.

5. **Coastal Zone Management Act** - The Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. § 1451), as amended, and its implementing regulations (15 CFR Part 930), requires all projects located within the designated coastal zone of a state to be consistent with the State's federally approved CZM plan (CZMP).

a. Is the project located in a state that has an approved Coastal Zone Management Act Plan (CZMP)?

☒ Yes ☐ No

b. If yes, is the project within an area included in the federally approved CZMP?

☒ Yes ☐ No

c. If yes, has the State specifically excluded this activity from its federally approved CZMP?

☐ Yes ☒ No

Include State CZM concurrence/with consistency certification and cite location(s) in

the application package: CZC request in preparation; application to be submitted to SC DHEC OCRM on August 31, 2020.

6. **Floodplains**

   a. Is the proposed project located in the base floodplain? An encroachment into the base floodplain does not exist when only the piers, pilings, or pile bents are located in the floodplain. Project is within Zone VE. The low member clearance relative to the 100-year flood height is 24.5 feet.

   ☒ Yes ☐ No

   b. Is there a significant encroachment (constituting a considerable probability of loss of human life; likely future damage associated with the encroachment that could be substantial in cost or extent; or a notable adverse impact on natural and beneficial floodplain values) into the floodplain?

   ☐ Yes ☒ No

   c. If yes, provide documentation and cite location(s) in the application package:

7. **Wild and Scenic Rivers**

   a. Is the river involved in the proposed bridge project a designated Wild and Scenic River?

   ☐ Yes ☒ No

   b. If yes, attach correspondence with the river-administering agency and cite location(s) in the application package: (State scenic river only).

8. **Coastal Barrier Resources Act**

   a. Does the proposed project connect to a unit of the Coastal Barrier Resources System?

   ☐ Yes ☒ No

   b. If yes, and the project is federally funded, cite location of Section 6 exception in the application package and any correspondence with the FWS: N/A

9. **Land and Water Conservation Fund Act**

   a. Does the proposed project involve a conversion of land or facilities funded under Section 6(f) of the Land and Water Conservation Fund Act?

   ☒ Yes ☐ No

   b. If yes, include correspondence with the NPS and authorization from the Secretary of the Interior for that conversion and cite location(s) in the application package: Conversion and coordination currently underway. Draft EA included in Attachment E, PDF page 119.

10. **National Marine Sanctuaries Act**

a. Is the proposed project in or adjacent to a National Marine Sanctuary?

☐ Yes ☒ No

b. Is the proposed bridge(s) likely to destroy, cause loss of, or injure a resource of a National Marine Sanctuary? (If no, provide evidence)

☐ Yes ☒ No

c. If yes, include evidence of consultation with Office of National Marine Sanctuaries and the agency's findings/conditions and cite location(s) in the application package: N/A

11. **Marine Protected Areas**

a. Is the proposed project in or adjacent to a Marine Protected Area (MPA) as defined in section 4(d) of Executive Order 13158?

☐ Yes ☒ No

b. If yes, will the proposed project affect the natural or cultural resources that are protected by the MPA? (If no, provide evidence)

☐ Yes ☒ No

d. If yes, include evidence of correspondence with MPA Center, if applicable, and cite location(s) in the application package: N/A

12. **Endangered Species Act**

a. Are there federally designated threatened or endangered species and/or critical habitat in the area that the proposed project is located? (If no, provide evidence)
(See Attachment F for USFWS Biological Assessment, PDF page 181).

☒ Yes ☐ No

b. May the proposed project affect federally designated threatened or endangered species and/or critical habitat? (If no, provide evidence)
May effect, not likely to adversely affect Bachman's warbler, piping plover, Eastern black rail, West Indian manatee, pondberry, Canby's dropwort, Northern long-eared bat, American wood stork, and Atlantic sturgeon, shortnose sturgeon.

☒ Yes ☐ No

c. If yes, was there formal or informal consultation with the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS)?

☐ Formal consultation

☒ Informal consultation

e. If formal, provide date(s) and attach biological assessment, biological opinion, and any other relevant correspondence and cite location(s) in application package: N/A

d. If informal, provide dates and include correspondence or documented phone conversations with and from USFWS/NMFS and cite location(s) in the application package: USFWS concurred with Section 7 effects findings on April 6, 2020 (concurrence letter attached, Attachment F). NMFS coordination was initiated on April 1, 2020 and is ongoing (Attachment G).

e. Include Biological Assessment/Biological Evaluation, as appropriate. Biological Assessments (2) included as Attachments F and G

13. **Fish and Wildlife Coordination Act**

a. Include any correspondence with USFWS and the relevant state wildlife agency regarding Fish and Wildlife Coordination Act coordination and cite location(s) in the application package: N/A

14. **Magnuson-Stevens Fishery Conservation and Management Act**

a. Will the proposed project likely adversely affect designated Essential Fish Habitats (EFH) as defined in the Magnuson-Stevens Act? (If no, provide evidence)

☒ Yes ☐ No

b. Identify location of EFH assessment and relevant correspondence with NMFS in the application package: EFH Assessment submitted for review (Attachment H).

15. **Marine Mammal Protection Act**

a. Does the proposed project involve a "take" of marine mammals as defined in the Marine Mammal Protection Act?

☐ Yes ☒ No

b. If yes, include the incidental harassment authorization or letter of authorization from NMFS and any relevant correspondence and cite location(s) in the application package: N/A

16. **Migratory Bird Treaty Act**

a. Does the proposed project involve a potential take of migratory birds as defined in the Migratory Bird Treaty Act? (If no, provide evidence)

☐ Yes ☒ No

b. If yes, is a permit required?

☐ Yes ☒ No

c. If a permit is required, include it and any correspondence with USFWS and cite location(s) in the application package: Coordination ongoing.

17. **Bald and Golden Eagle Protection Act**

a. May the proposed project take or disturb bald or golden eagles (including nests) as defined in the Bald and Golden Eagle Protection Act? (If no, provide evidence)

☐ Yes ☒ No

b. If yes, is a permit required?

☐ Yes ☒ No

c. If a permit is required, include it and any correspondence with USFWS and cite location(s) in the application package. N/A

18. **Invasive Species**

a. Does the proposed project have potential to introduce or foster the spread of invasive species?

☐ Yes ☒ No

b. If yes, cite the document that describes measures that will be taken to minimize this risk and location(s) in the application package: N/A

19. **Section 106**

a. Does the proposed project have potential to impact properties (including submerged abandoned shipwrecks) listed in or eligible for inclusion in the National Register of Historic Places?

☒ Yes ☐ No

b. If yes, provide evidence of consultation with the State Historic Preservation Officer (and the Advisory Council on Historic Preservation, if applicable) and cite location (s) in the application package. Include:

☒ Copies of the correspondence (Section 106 correspondence: Attachment I)

☐ Memorandum of Agreement

☐ No effect determination

c. For projects involving Federal lands only provide:

☐ Archeological clearances

☐ Archeological reports

20. **Clean Air Act**

a. Does the proposed project occur in an area of nonattainment or maintenance for any criteria pollutant?

☐ Yes ☒ No

b. If project occurs in a nonattainment or maintenance area, do the transportation or general conformity regulations, or both, apply? N/A

☐ General ☐ Transportation

c. Is the project exempt from a transportation conformity analysis for any of the reasons listed in 40 CFR § 93.126? Which reason?

☐ Yes ☒ No Reason:

d. Is the project exempt from a general conformity analysis for any of the reasons listed in 40 CFR § 93.153(c)?

☐ Yes ☒ No

e. If general conformity applies, is the project listed in a conforming State Implementation Plan (SIP)? N/A

☐ Yes ☐ No

f. If a general conformity determination was prepared, include the draft and final determinations and any relevant correspondence and cite their location(s) in the application package: N/A

g. If transportation conformity applies, is the project listed in a conforming SIP, Transportation Improvement Program (TIP), Regional Transportation Plan (RTP), or Federal Implementation Plan (FIP)? N/A

☐ Yes ☐ No

h. If yes, cite location of information regarding listing in the application package:

i. If transportation conformity applies, does the project contribute to any new localized CO, PM_{10}, or $PM_{2.5}$ violations or increase the frequency or severity or any existing violations of the same?

☐ Yes ☐ No

j. If yes, cite location of information in the application package:

21. **Actions to Address Environmental Justice in Minority or Low-Income Populations**

a. Does the proposed project involve disproportionate adverse impacts to minority and/or low-income populations as defined in Executive Order 12898?

☐ Yes ☒ No (EJ impacts will result from project but will not be disproportionately adverse. All EJ impacts will be adjacent to roadway improvement sections; no EJ impacts at or near Ashley River bridge improvements. DEIS Chapter 4 addresses EJ impacts in greater detail.)

b. If yes, include the analysis describing the impacts and cite location(s) in the application package: N/A

c. If yes, cite the location in the application package that describes measures to be taken to reduce those impacts: N/A

22. **Hazardous Materials, Substances or Wastes**

a. Does the proposed project involve or is it located near a Superfund site or any site regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA) or State law regulating hazardous materials, substances or wastes?

☒ Yes ☐ No

b. If yes, cite the location(s) in the NEPA document where hazardous materials, substances or wastes are discussed: Draft EIS pending; sites with potential construction impacts include former Amoco (50 feet east of 6001 Rivers Avenue, North Charleston) RCRA NonGen/NLR, UST, LUST GWCI;
Westvaco Paper Mill (5600 Virginia Avenue, North Charleston) SEMS-Archive, RCRA-TSDF, Airs, Manifest, GWCI;
Coburg Dairy/Borden Dairy (5001 Lacross Road, North Charleston) FINDS, ECHO, RMP, TRIS

See Attachment B for plan sheets.

See Attachments C and D for Waterway Data Requirements (General William C. Westmoreland Navigation Impact Report and Preliminary Approval Letter)

See Attachment E for Section 6(f) Land Conversion Environmental Assessment

See Attachment F for I-526 West Lowcountry Corridor Biological Assessment for USFWS

See Attachment G for Draft I-526 West Lowcountry Corridor Biological Assessment for NOAA-NMFS

See Attachment H for Draft Essential Fish Habitat Assessment, I-526 Lowcountry Corridor WEST

See Attachment I for Section 106 Correspondence

Attachment B I-526 West Lowcountry Corridor Conceptual Bridge Plan and Profile Sheets

BRIDGE PLANS ID	SHEET NO.
	1

INDEX OF SHEETS

South Carolina Department of Transportation

CONCEPTUAL PLANS
FOR
COAST GUARD PERMIT ONLY
WIDEN TWIN BRIDGES OVER
BULL CREEK AND ASHLEY RIVER
ALONG I-526
CHARLESTON COUNTY

Approximate Location of Bridge is	
Latitude	32°-50'-07" N
Longitude	80°-01'-28" W

WIDEN 3907'-6" BRIDGE ALONG
I-526 (MARK CLARK EXPY)

LAYOUT

-N-

REVIEWED				
DR.		BY	CHK	DATE

$$time$$
$$date$$
$$design-file-name$$

CONSULTING ENGINEERING FIRM

CIVIL ENGINEERING
CONSULTING SERVICES, INC.

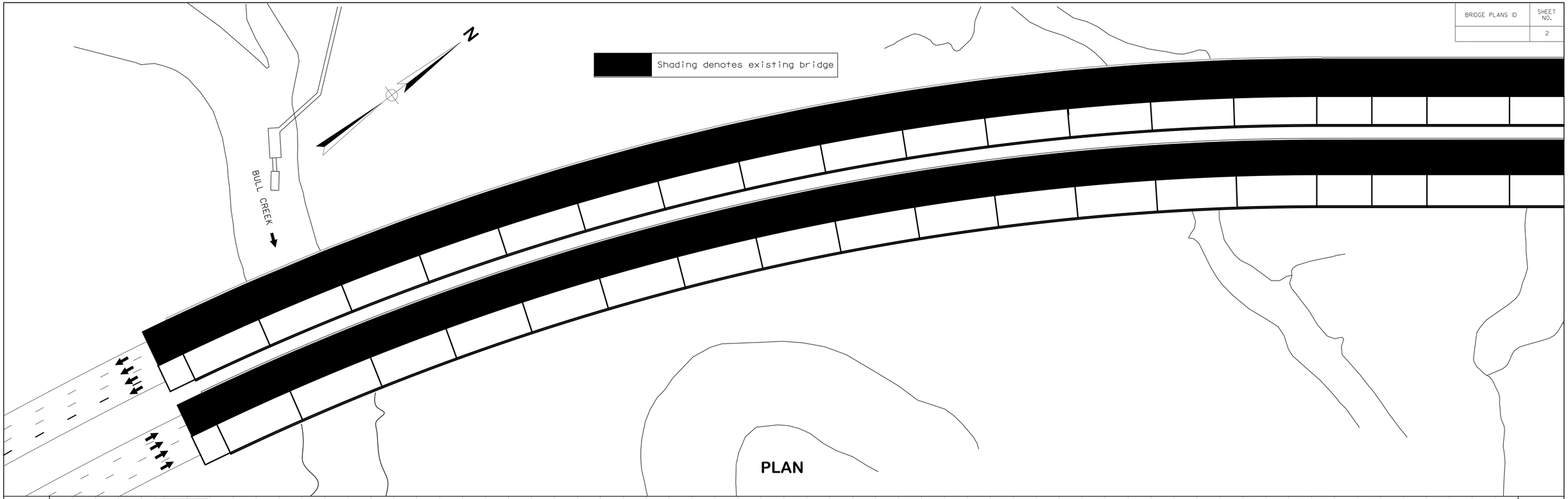
2000 PARK STREET
SUITE 201
COLUMBIA, S.C. 29201

ENGINEER OF RECORD

CONCEPTUAL PLANS
NOT FOR CONSTRUCTION

DRAWING NO. 700-02

BRIDGE PLANS ID	SHEET NO.
	2



PLAN

ELEVATION

CONCEPTU-L SUBSTRUCTURE:
Bents 1-3 & 6-48 - Driven Prestressed piles
Bents 4 & 5 - Concrete Columns

CONCEPTUAL PLANS FOR COAST GUARD PERMIT ONLY

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REVIEWED			
QUAN.			
DR.			
DES.			
BY / CHK. / DATE			

CE CS CIVIL ENGINEERING CONSULTING SERVICES, INC.

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

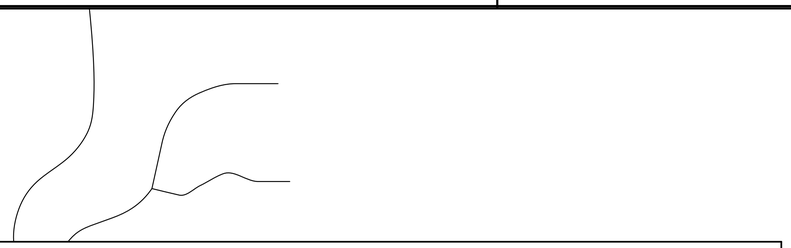
BRIDGE PLAN & PROFILE

WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

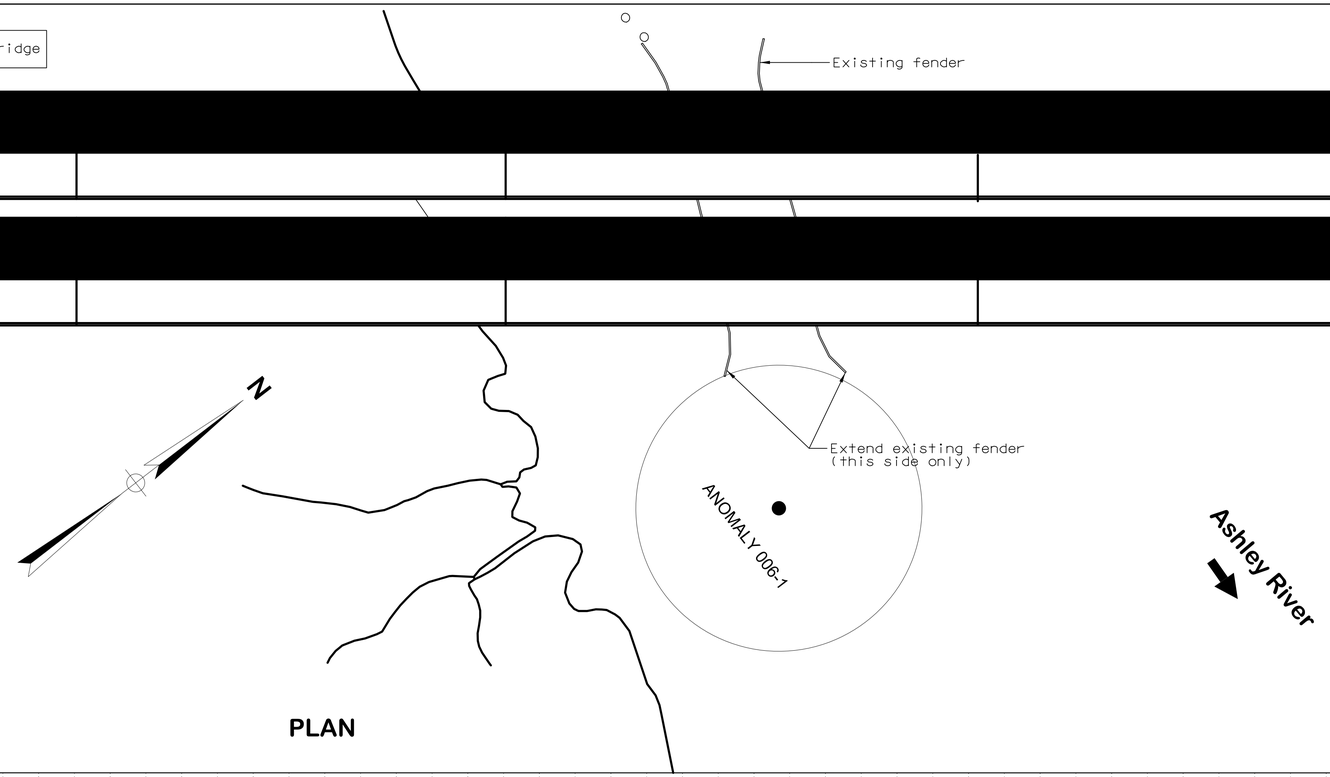
BRIDGE PLANS ID	SHEET NO.
	3

Shading denotes existing bridge

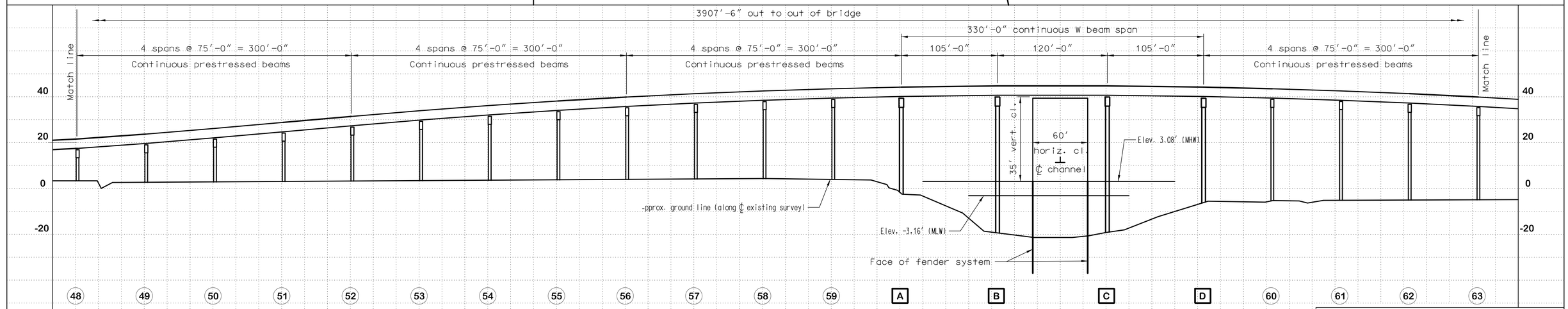


Widening schematic

Maintain 2 lanes of traffic in each direction during construction



PLAN



ELEVATION

CONCEPTUAL SUBSTRUCTURE:

Bents 48-63 Concrete Columns
Bents A,B,C, and D - Concrete Columns

CONCEPTUAL PLANS

FOR COAST GUARD PERMIT ONLY

REV.			
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REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE

CIVIL ENGINEERING CONSULTING SERVICES, INC.

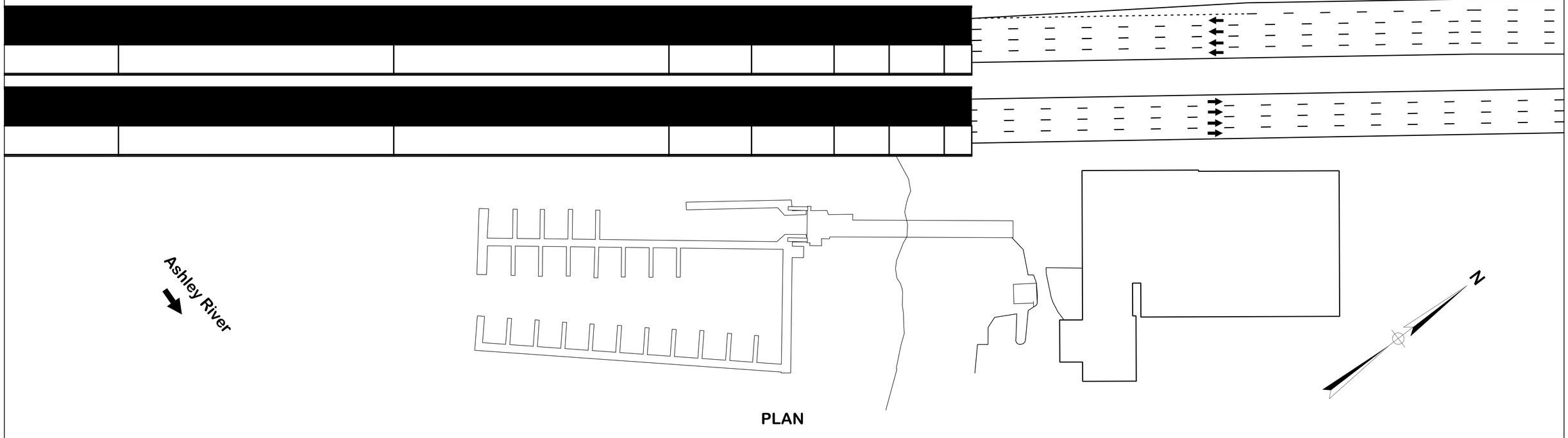
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

BRIDGE PLAN & PROFILE

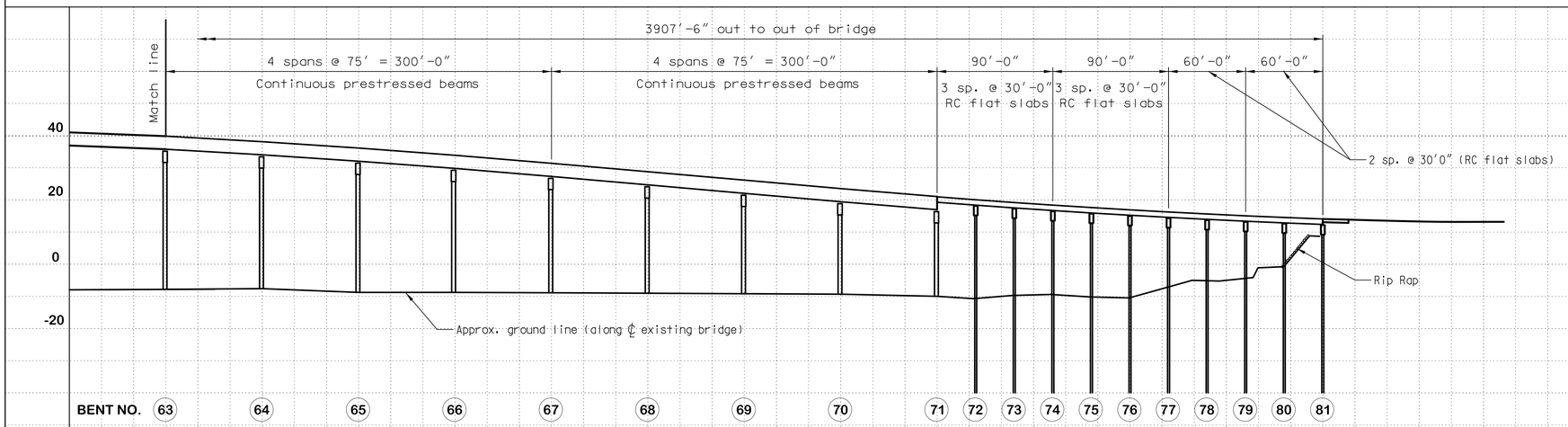
WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

BRIDGE PLANS ID	SHEET NO.
	4



PLAN



CONCEPTU-L SUBSTRUCTURE:

Bents 72-81- Driven Prestressed piles
Bents 63-71 - Concrete Columns

ELEVATION

CONCEPTUAL PLANS FOR COAST GUARD PERMIT ONLY

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REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE

CIVIL ENGINEERING CONSULTING SERVICES, INC.

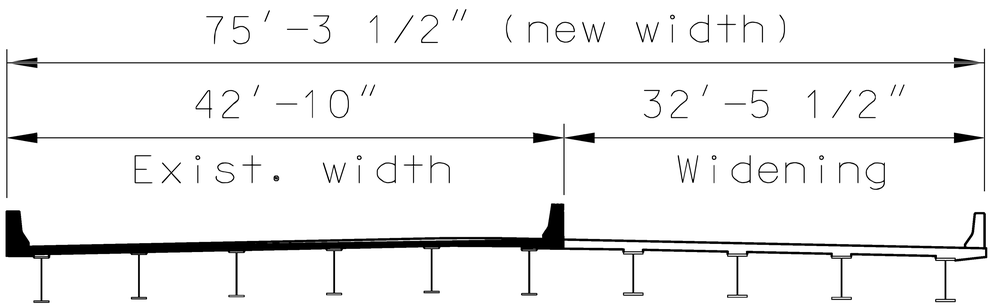
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

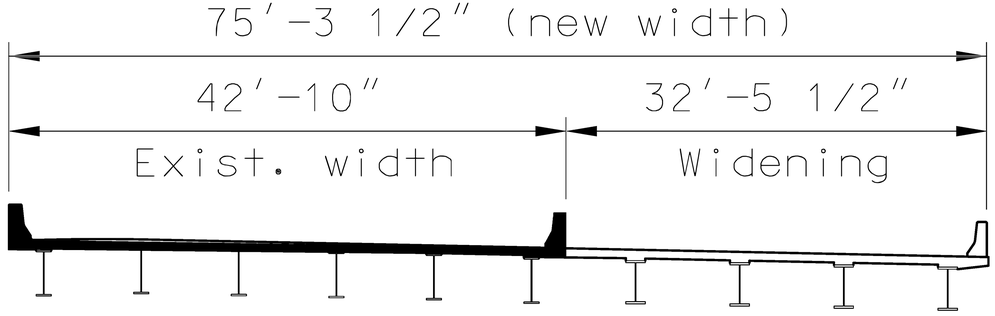
BRIDGE PLAN & PROFILE

WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

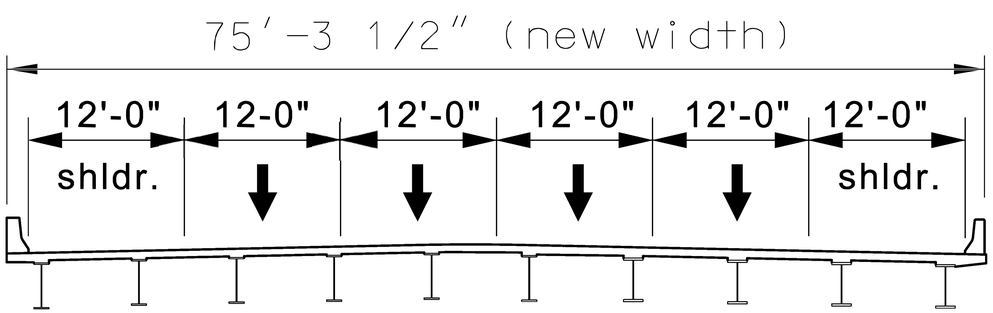
BRIDGE PLANS ID	SHEET NO.
	5

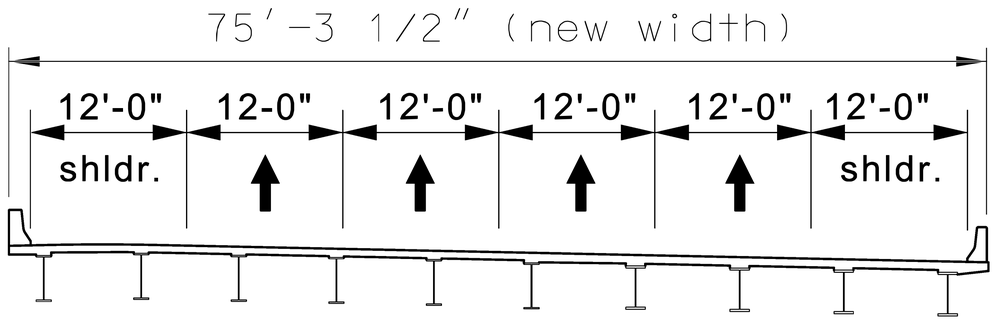




Widening Schematic

Maintain 2 lanes of traffic in each direction during construction





Final Configuration

CIVIL ENGINEERING CONSULTING SERVICES, INC.

CONCEPTUAL PLANS FOR COAST GUARD PERMIT ONLY

REV.			
REV.			
REV.			
REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

BRIDGE STAGING

WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

DRAWING NO.

Attachment C US Coast Guard Navigation Clearance Letter

U.S. Department of Homeland Security
United States Coast Guard

Commander
United States Coast Guard
Seventh District

909 S. E. First Avenue
Miami, Fl 33131
Staff Symbol: (dpb)
Phone: (305) 415-6736
Fax: (305) 415-6763
Email: randall.d.overton@uscg.mil

16591/164
11 June 2019

J. Shane Belcher
Environmental Coordinator
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, S.C. 29201
Via email: Jeffrey.Belcher@dot.gov

Dear Mr. Belcher:

The Coast Guard has completed its review of the Navigation Impact Report (NIR) for the I-526 West Corridor Project in Charleston, South Carolina (draft report dated May 2019). The project under study proposes widening Interstate 526 (I-526) in Charleston County, South Carolina. The infrastructure improvement project for I-526, requires widening the existing I-526 Bridge structure across the Ashley River to accommodate additional travel lanes. The existing I-526 Bridge crosses the Ashely River at waterway mile 10.6, latitude/longitude, 32.835645, -80.024364.

In May 2019, the U.S. Coast Guard received a draft navigational impact report for the Ashely River associated with the proposed I-526 Bridge widening project. The report succinctly and accurately documented the navigational environment for this stretch of the Ashely River.

Based on our review of the navigational impact report, the Coast Guard has made a preliminary determination that to provide for the reasonable needs of navigation on this stretch of the Ashely River, a vertical clearance of at least 35 ft. and a horizontal clearance of at least 60 ft. is required for a fixed bridge structure. Please note that this preliminary determination does not constitute an approval or final agency action. The Coast Guard can only make a final determination after processing a complete bridge permit application.

Refer to the Coast Guard Bridge Permit Application Guide located at https://go.usa.gov/xRFk2 to make application for a Coast Guard bridge permit. Please contact Mr. Randall Overton, (305) 415-6736, with any questions. We look forward to working with FHWA and SCDOT to move this project forward.

Sincerely,

RANDALL D. OVERTON
Chief, Permits Division
Seventh District Bridge Program
U.S. Coast Guard

eCopy: Mr. Richard Keefauver (Richard.D.Keefauver@uscg.mil), CG Sector Charleston

Attachment D I-526 West Lowcountry Corridor Navigation Impact Report

WEST 526 LOWCOUNTRY CORRIDOR

TECHNICAL MEMORANDUM:

GENERAL WILLIAM C. WESTMORELAND BRIDGE

ASHLEY RIVER NAVIGATION IMPACT REPORT

Prepared For:

SCDOT
South Carolina Department of Transportation

Prepared By:

Civil Engineering Consulting Services, Inc.

May 2019

Table of Contents

Tables

Appendices

I. INTRODUCTION

This Navigation Impact Report was prepared to assist the South Carolina Department of Transportation (SCDOT) in conjunction with the Federal Highway Administration (FHWA) in preparation of the forthcoming United States Coast Guard (USCG) Bridge Permit Application and the Environmental Impact Statement (EIS) regarding infrastructure improvements and widening of Interstate 526 (I-526) in Charleston County. Proposed improvements to I-526 would include providing additional travel lanes over the Ashley River, through widening the existing bridges. The permitting improvement provisions found in the 2014 Memorandum of Understanding between the United States Coast Guard (USCG) and FHWA requires applicants with to prepare a navigation impact report to analyze the navigational impacts of the bridge design alternatives. This report will be provided to the USCG Bridge Program to assist with determining the reasonable navigational clearance on the Ashley River. The USCG Bridge Program ensures marine safety, security, and stewardship and has the authority to approve the location and plans of all new bridges, modifications of existing bridges, international bridges, and causeways in or over navigable waterways of the United States. In accordance with 33 CFR 116.01, "[a]ll bridges are obstructions to navigation and are tolerated only as long as they serve the needs of land transportation while allowing for the reasonable needs of navigation." Pursuant to the Rivers and Harbors Act, "No bridge shall at any time unreasonably obstruct the free navigation of any navigable waterway of the Unites States." In addition, per the International Bridge Act of 1972, "No bridge erected or maintained under the provisions of sections 491 to 498 of this title, shall at any time unreasonably obstruct the free navigation of the waterway over which it is constructed."

The main objective of the bridge permitting process is to determine vertical and horizontal clearances of the structure spanning the navigation channel. USCG has jurisdiction over this permitting process as directed by 33 U.S.C. 401, 491, 525-533, the International Bridge Act of 1972 and additional Congressional acts.

For the USCG to issue a permit for a structure to be built over "Navigable Waters of the U.S.," the structure must meet the reasonable needs of current and foreseeable future navigation. These needs have been taken into account in this Navigation Report. This study and its recommendations are based on current facts and circumstances and may be amended if facts and circumstances surrounding the project change over time, or are discovered during the permit application and public notice process.

II. EXISTING FACILITY

The General William C. Westmoreland bridge (Westmoreland bridge) is located along I-526 and connects the city of North Charleston with the West Ashley area of Charleston, SC (refer to Appendix A, Figure 1). The twin span bridge carries two lanes of I-526 in each direction across the Ashley River and the surrounding tidal marshes. The 3,908-foot long bridge was constructed in 1980 and each bridge is 42 feet wide. The existing bridge deck consists of two 12-foot travel lanes, one in each direction, a 5.5-foot inside shoulder, and a 10-foot outside shoulder. I-526 within the project limits is primarily a four-lane divided highway.

General William C. Westmoreland Bridge over the Ashley River.

III. PROPOSED PROJECT OVERVIEW

The I-526 Lowcountry Corridor (LCC) West project is located between Paul Cantrell Boulevard and Virginia Avenue and is approximately 11.4 miles long. SCDOT currently ranks the segment of I-526 between I-26 and Virginia Avenue as the most congested segment of interstate highway in the state. The remainder of the I-526 LCC West project, from I-26 to Paul Cantrell Boulevard, ranks among the top ten of the state's existing most congested corridors. Traffic forecasts show that segments of that corridor will continue to be among the state's most congested in 2040. The interchange of I-526 and I-26 is the major source of the congestion. The purpose of the project is to increase vehicular capacity along I-526 through infrastructure improvements to support increasing usage and population growth.

As part of the improvements to I-526, SCDOT proposes to widen the existing bridges over the Ashley River. The proposed bridge would have two additional travel lanes in each direction that are 12 feet wide, and shoulders in each direction of travel that are 12 feet wide (refer to Appendix B, Conceptual Bridge Plan and Profile). The widened bridge structures would each be 35 feet, 5.5 inches wide. During construction of the widened bridge, traffic would be maintained on the existing facility. Maintenance and

improvements would be made to the existing Westmoreland bridge and the structure would be retained at its existing height and length.

IV. BRIDGE CHARACTERISTICS

The Westmoreland bridge spans the Ashley River with a horizontal clearance of 60 feet and a vertical clearance of 35 feet when measured from mean high water (MHW). This is a twin span fixed bridge with four main spans. The longest span is approximately 120 feet. The concrete deck is approximately 43 feet wide. The bridge is in fair condition with no vehicular traffic restrictions. Within the vicinity of the Westmoreland bridge, there are 5 major upstream and downstream crossings over the Ashley River, as shown in Table 1 (refer to Appendix A, Figure 1). Additionally, overhead powerlines are present just downstream of the CSX Railroad Bridge.

Table 1. Major Ashley River Crossings in the I-526 West Navigation Impact Study Area.

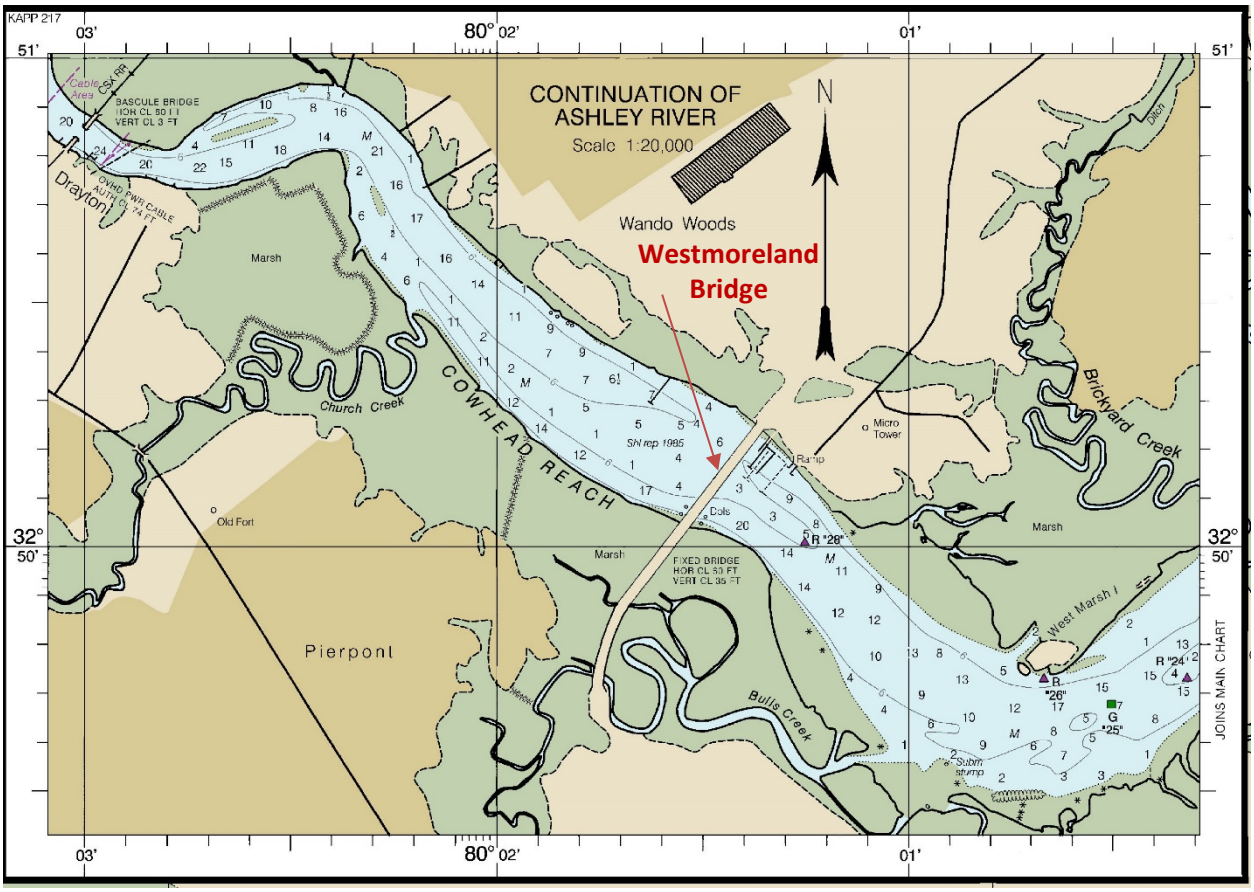
Bridge	Route	Bridge Type	Horizontal Clearance	Vertical Clearance	Vertical Clearance when closed, if moveable	Measured From
CSX Railroad Bridge *(upstream of project)*	CSX RR	Moveable	60 ft	Unlimited	3 ft	MHW
General William C. Westmoreland Bridge *(project site)*	I-526	Fixed	60 ft	35 ft	n/a	MHW
Memorial Bridge *(downstream of project)*	SC 7	Fixed	100 ft	50 ft	n/a	MHW
T. Allen Legare Bridge (N/B) *(downstream of project)*	US 17	Moveable	110 ft	Unlimited	18 ft (at center 50 ft)	MHW
T. Allen Legare Bridge (S/B) *(downstream of project)*	US 17	Moveable	110 ft	Unlimited	14 ft	MHW
James Island Expressway Bridge *(downstream of project)*	SC 30	Fixed	110 ft	56 ft	n/a	MHW

Source: NOAA National Ocean Service Coast Survey, Charleston Harbor. 54th Ed. June 2015. Last Correction: 2/5/2019. Cleared through: LNM 1119 (3/12/2019), NM: 1319 (3/30/2019)

The current Westmoreland bridge has the least amount of vertical clearance of the structures in the study portion of the Ashley River. It has a similar amount of horizontal clearance (60 feet) as the CSX Railroad bridge located approximately 1.85 miles upstream. Both the CSX Railroad bridge and the existing Westmoreland bridge have the most restrictive horizonal clearance (60 feet).

V. WATERWAY CHARACTERISTICS

The Ashley River is a tidally influenced river with the headwaters originating in Dorchester County. The river runs for approximately 30 miles, eventually joining the Cooper River to form the Charleston Harbor before discharging into the Atlantic Ocean. The entire drainage of the Ashley River system, including its headwaters in Cypress and Wassamassaw swamps, extends approximately 60 river miles. At the project site, the width of the main deeper-water navigational channel of the Ashley River is approximately 15 feet wide. The Ashley River is a designated State Scenic River, largely in part to numerous historic properties located along the riverbanks. The proposed project is located 0.88 mile upstream from a significant bend in the Ashley River. This bend does not prohibit the safe passage of vessels in the Ashley River. The channel bottom is a mix of sand and sediment. Some shoaling and sediment deposition exists, primarily at bends in the channel and at the channel banks. Per the National Oceanic and Atmospheric Administration (NOAA) Ashley River bridge station (Station ID 8665099) the mean tidal range is 5.68 feet and the diurnal range is 6.23 feet. MHW is approximately 3.08 feet and MLW is -3.16 feet at the center of the channel. The Ashley River drains to the east, to the Atlantic Ocean.



NOAA Navigation Chart – Charleston Harbor. 54th Ed. June 2015. Last Correction: 2/5/2019.

VI. NAVIGATION

There are various types of navigational activities by numerous vessel types that occur along the Ashley River. To determine the types and extents of activity in the channel, existing documentation was reviewed regarding known vessel use. This included a review of bridge opening records of a nearby moveable downstream facility, the T. Allen Legare bridges, located at milepoints 2.4 and 2.5. Additionally, aerial photography was reviewed and spot verified through ground truthing. A representative sample of local boat ramps, private boat docks, marinas, and marine-dependent businesses were identified (refer to Appendix A, Figure 2, Exhibits 1 and 2). This portion of the Ashley River is not a part of commercial large-scale cargo routes.

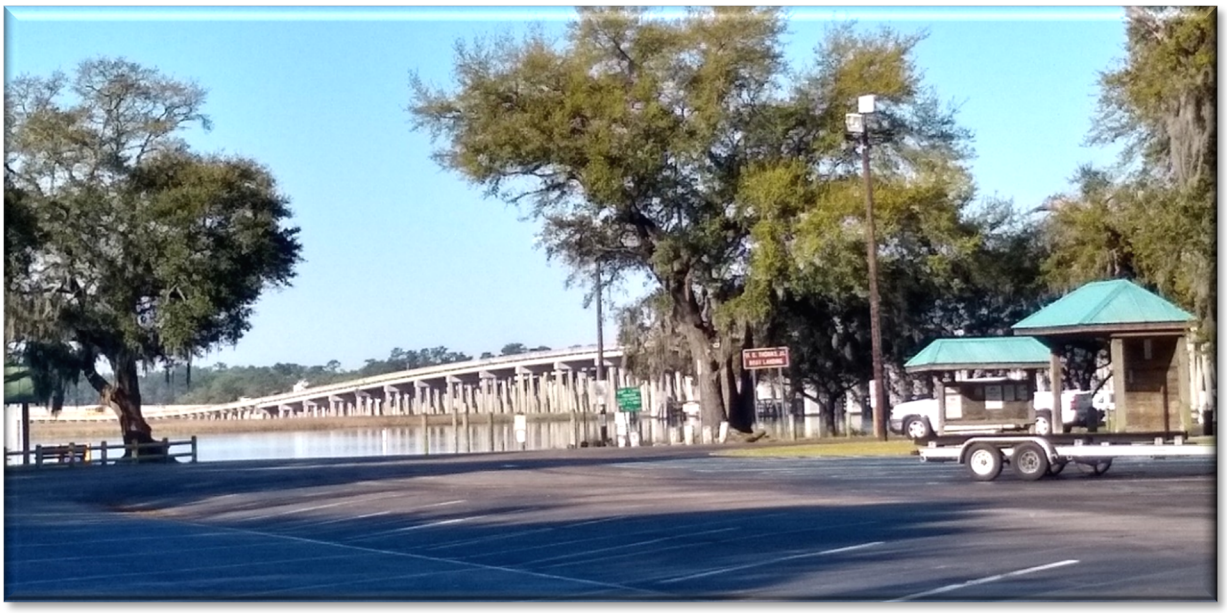
This study does not include interviews or surveys of business, residents, or through-boaters. Additionally, camera surveys of active vessel traffic were not conducted.

Residential Docks

Through aerial photography reviews, it was noted that there are approximately 128 residential docks are located in the study area. Approximately 102 of these docks are located upstream of the project site and 26 are located downstream.

Pubic Boat Ramps

A large portion of marine traffic in the area surrounding the proposed project constitutes recreational and commercial boating. The W.O. Thomas Jr. Boat Landing is a public boat ramp managed by the Charleston County Park and Recreation Commission (CCPRC). This facility is located approximately 500 feet southeast or downstream of the proposed project. The landing is used by private recreational and commercial boats. The Pierpoint Public Boat Landing is located upstream of the project site, just off of Church Creek. Church Creek flows to the Ashley River. Pierpoint is also managed by the CCPRC and they recommend that due to a variety of constraints, launching standard size watercraft from Pierpoint is not recommended and the launching of kayaks and canoes is more appropriate at this location. A third public boat ramp was opened by CCPRC in 2014. Northbridge Park is considered a "gateway park" based on its location at the entrance to West Ashley from 1-26. The park consists of a fishing pier, kayak launch, vehicular ingress and egress, parking area, multi-purpose trail, and picnic area. Northbridge Park is located over 2.5 "river miles" east or downstream of the proposed project. The Wando Woods/Flynn Drive boat ramp is also



W.O Thomas Jr. Boat Landing and General William C. Westmoreland Bridge over the Ashley River.

open to the public. This provides access to the Ashley River in North Charleston from a residential street, Flynn Drive. There are no other facilities at this location and no parking available.

Commercial Marinas and Marine-Dependent Businesses

There is a private marina located adjacent to the proposed project (Rivers Edge Marina Sales). The marina is used to launch, store, maintain and fuel private, recreational boats. Their dry stacks can house approximately 450 boats and they have 58 outdoor slips. Rivers Edge Marina provides fuel, dockage, vehicle parking, launch ramp, slip management and provisioning, a store, picnic/grill area, fish cleaning station, and restrooms (see Appendix C – marina phone logs). Dolphins Cove Marina is a full-service marine facility located downstream from the project area. This marina has 275 dry slips and approximately 125 wet slips to house boats of different sizes. They offer services such as boat and trailer repair, painting, fuel, and a travel lift (see Appendix C – marina phone logs). A sampling of marine facilities (marinas, major docking facilities, and boat repair facilities) located within a 3-mile radius of the proposed project are listed in Table 2.

Rivers Edge Marina in Charleston, SC.

Table 2. A sample of marine-dependent businesses in the I-526 West Navigation Impact Study Area.

Facility	Address	Phone
Rivers Edge Marina	4354 Bridge View Dr, North Charleston, SC 29405	(843) 554-8901
Dolphin Cove Marina	2079 Austin Ave, Charleston, SC 29405	(843) 744-2562
Duncans Boats	4350 Bridge View Dr, North Charleston, SC 29405	(843) 744-2628
Parker Marine	68 Braswell St, North Charleston, SC 29405	(843) 853-7615
Charleston Ship Repair	5800 Dorchester Rd, North Charleston, SC 29418	(843) 642-8798
Bombadils Marine	5700 Dorchester Rd, North Charleston, SC 29418	(843) 693-3331
Jerrys Marine Services	3601 Meeting Street Rd, North Charleston, SC 29405	(843) 554-3732
Marine Diesel, Inc	3575 Meeting Street Rd, Charleston, SC 29405	(843) 377-1914
Marine Tech Tools	2652 Bonds Ave #203, North Charleston, SC 29405	(843) 253-4123
Mckay Marine	4208 A, Pace St, North Charleston, SC 29405	(843) 747-6250
Charleston Yachting	4208 Pace St, North Charleston, SC 29405	(800) 610-9065

Facility	Address	Phone
Ripley Light Yacht Club	95 Ripley Point Dr. Charleston, SC 29407	(843) 766-0908

Emergency Operations

Emergency operations are conducted by the USCG, the South Carolina Department of Natural Resources, (SCDNR), Charleston County, and the City of Charleston Fire Department Marine Units. The Charleston County Volunteer Rescue Squad responds to waterway incidents with a variety of light, medium and heavy rescue vehicles. This includes a variety of boats including an air boat and vessels equipped with specialty equipment such as side scan sonar. Charleston Fire Department operates one Fireboat, Marine 101. The responding vessel features a 980-horsepower engine, is 40 feet long, and has the capacity to pump 3,800 gallons of water a minute.

Moveable Bridge Records

The T. Allen Legare moveable bascule bridges open periodically for marine traffic. In relation to the project, these bridges are located downstream, beyond the fixed SC 7 Memorial bridge. The operating schedule that governs the bridge openings requires a bridge tender to be present during daytime hours from 8 a.m. to 4 p.m. daily for on signal openings. All other times a 12-hour advanced notification is required. Sport fishing boats and yachts were the most frequent vessel requiring a bridge opening. Sail boats and tug boats also require a greater clearance, with an occasional opening for a tow boat or motorboat needed as well. Bridge opening logs were reviewed from April 2018 to March 2019 and vessel openings are shown in Table 3 (daily logs available in Appendix D).

Table 3. Number of T. Allen Legare Bridge Openings By Vessel Type.

Vessel Type	Number of Openings
Sail	17
Sport fish	30
Motorboat	2
Tug	10
Tow	1
Yacht	28
TOTAL NUMBER OF OPENINGS:	**88**

Source: SCDOT Bridge Opening Logs for the T. Allen Legare Bridges (4/2018 to 3/2019)

VII. RECOMMENDATIONS

The proposed project does not seek to increase or decrease either the vertical or horizontal clearance of the current bridge structure or the proposed widened bridge facilities.

Horizontal Clearance

The proposed minimum horizontal clearance for the main navigational opening would be 60 feet between fenders. This configuration will be similar to the existing bridge, or would be less restrictive. Therefore, horizontal clearance in the Ashley River at the project site will not be restricted.

Vertical Clearance

A harbor of refuge is defined as a naturally or artificially protected water area that provides a place of relative safety or refuge for commercial and recreational vessels traveling along the coast or operating in a region. The proposed project involves widening the current alignment of the roadway, not altering the vertical clearance of the bridge. The proposed project will not prohibit the entry of a vessel to the local harbor of safe refuge. The vertical clearance of the proposed fixed span bridge would be a minimum of 35 feet from the MHW datum to meet the needs of mariners in the area.

Construction

The potential exists for temporary closures during brief stages of construction. These closures will be advertised 30 days in advance and will be no longer than 48 hours. During this 48-hour period the navigation channel will be accessible to boat traffic to the maximum extent feasible.

Due to the nature of the project, waterway users will be minimally impacted and mitigation is not recommended.

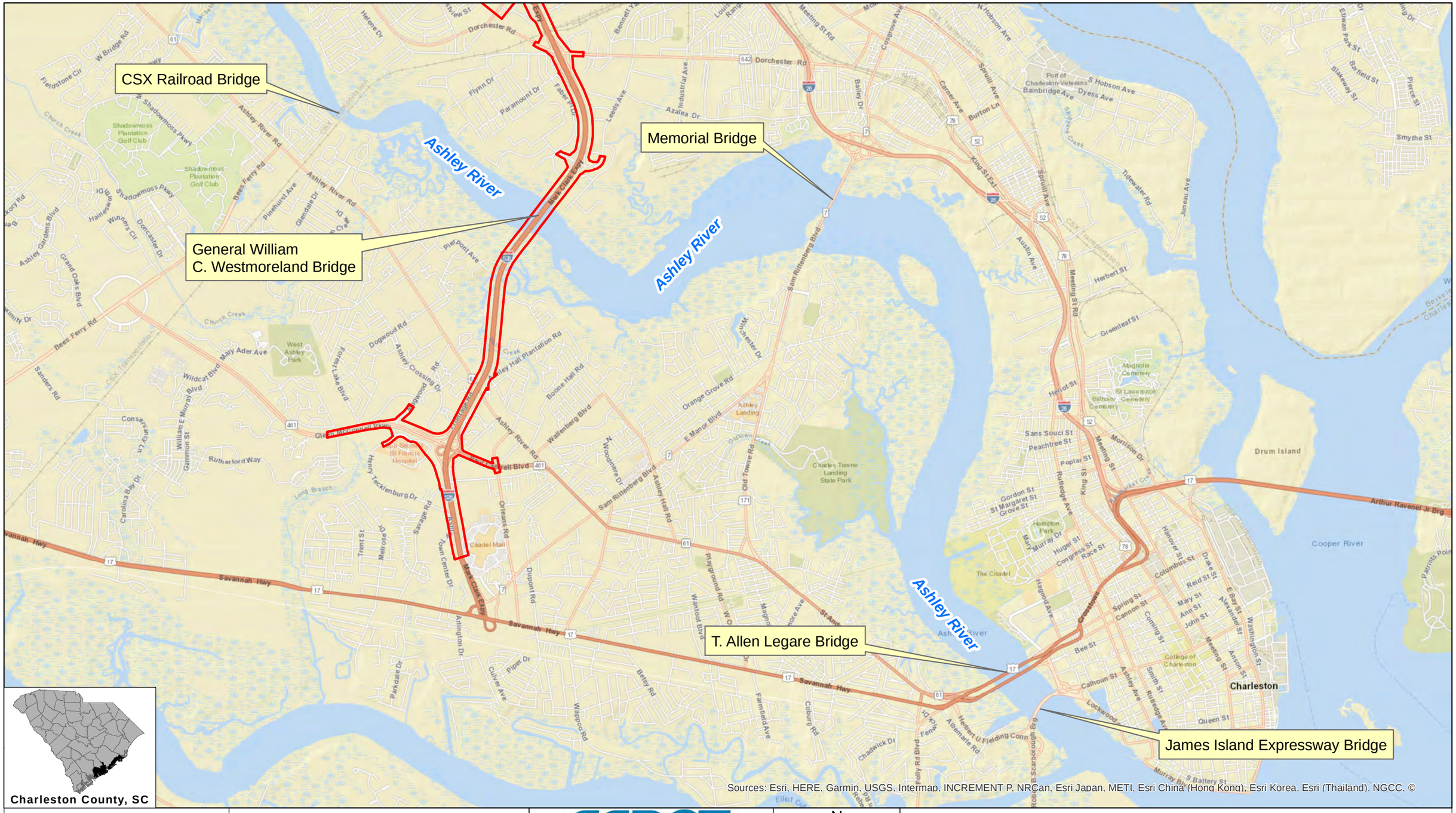
Appendix A

Figure 1. Location Map

Figure 2. Bridges Index Sheet

Exhibit 1 Upstream Bridge

Exhibit 2 Downstream Bridge



0 2,500 5,000
Feet

Figure 1
I-526 West Lowcountry
Corridor Improvements
Ashley River Bridges

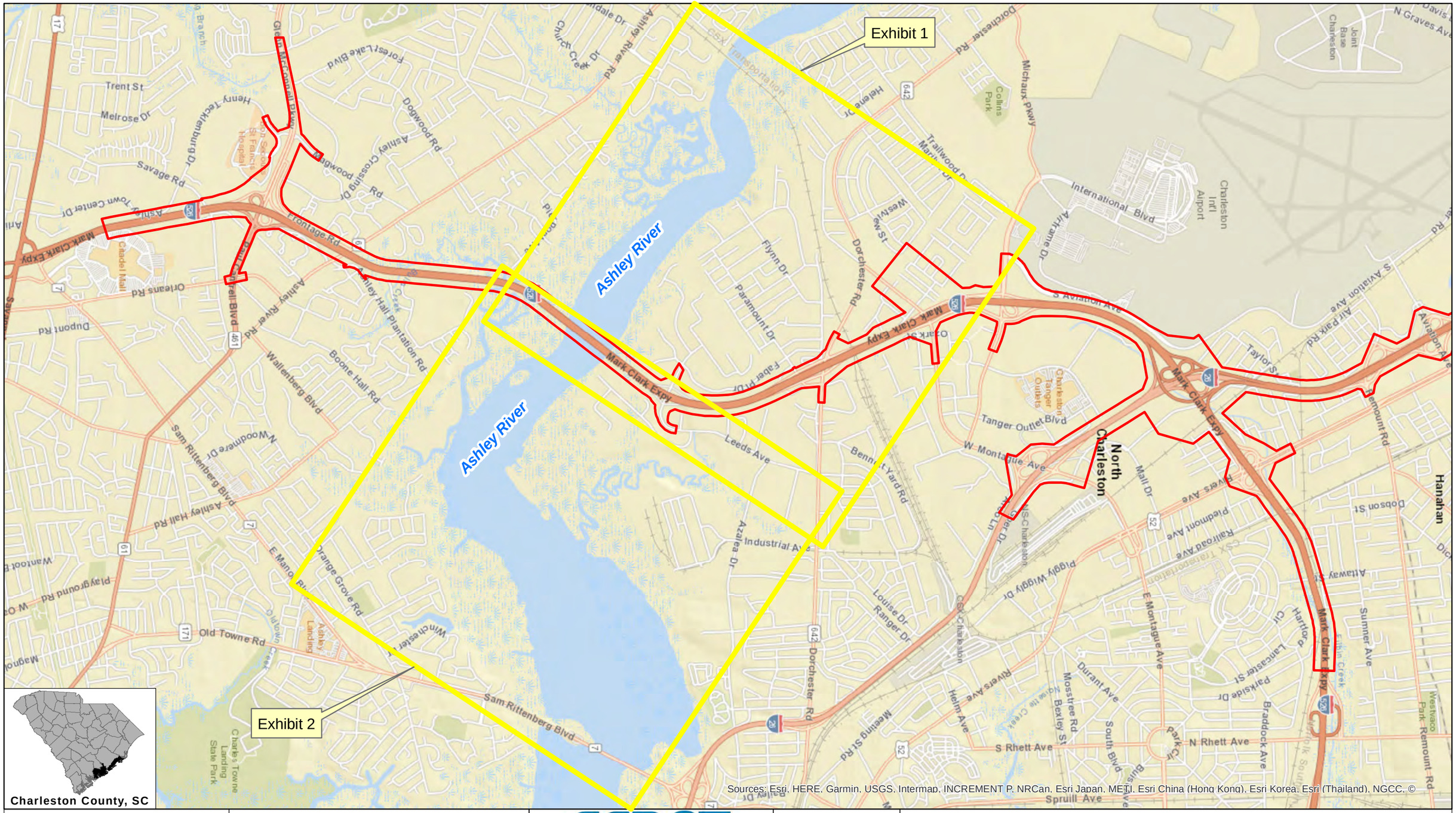
SCDOT
South Carolina Department of Transportation

CES Civil Engineering Consulting Services, Inc.

N

Legend

Project Study Area



Charleston County, SC

0 2,000 4,000 Feet

Figure 2. Bridges Index Sheet
I-526 West Lowcountry Corridor Improvements

SCDOT South Carolina Department of Transportation

CES Civil Engineering Consulting Services, Inc.

N

Legend

Project Study Area

0 500 1,000
Feet

Figure 2, Exhibit 1
I-526 West Lowcountry
Corridor Improvements

SCDOT
South Carolina Department of Transportation

C E
C S
Civil Engineering
Consulting Services, Inc.

N

Legend

- Project Study Area
- Marina
- Private Dock
- Public Dock
- Interstate
- Secondary Route
- SC Route
- US Route

0 500 1,000
Feet

Figure 2, Exhibit 2
I-526 West Lowcountry
Corridor Improvements

SCDOT
South Carolina Department of Transportation

CES Civil Engineering Consulting Services, Inc.

Legend

- Project Study Area
- Marina
- Private Dock
- Public Dock
- Interstate
- Secondary Route
- SC Route
- US Route

Appendix B

Conceptual Bridge Plan and Profile

BRIDGE PLANS ID	SHEET NO.
	1

INDEX OF SHEETS

South Carolina Department of Transportation

CONCEPTUAL PLANS
FOR
COAST GUARD PERMIT ONLY
WIDEN TWIN BRIDGES OVER
BULL CREEK AND ASHLEY RIVER
ALONG I-526
CHARLESTON COUNTY

Approximate Location of Bridge is	
Latitude	32°-50'-07" N
Longitude	80°-01'-28" W

WIDEN 3907'-6" BRIDGE ALONG
I-526 (MARK CLARK EXPY)

LAYOUT

-N-

REVIEWED				
DR.		BY	CHK	DATE

$$time$$
$$date$$
$$design-file-name$$

CONSULTING ENGINEERING FIRM

CIVIL ENGINEERING
CONSULTING SERVICES, INC.

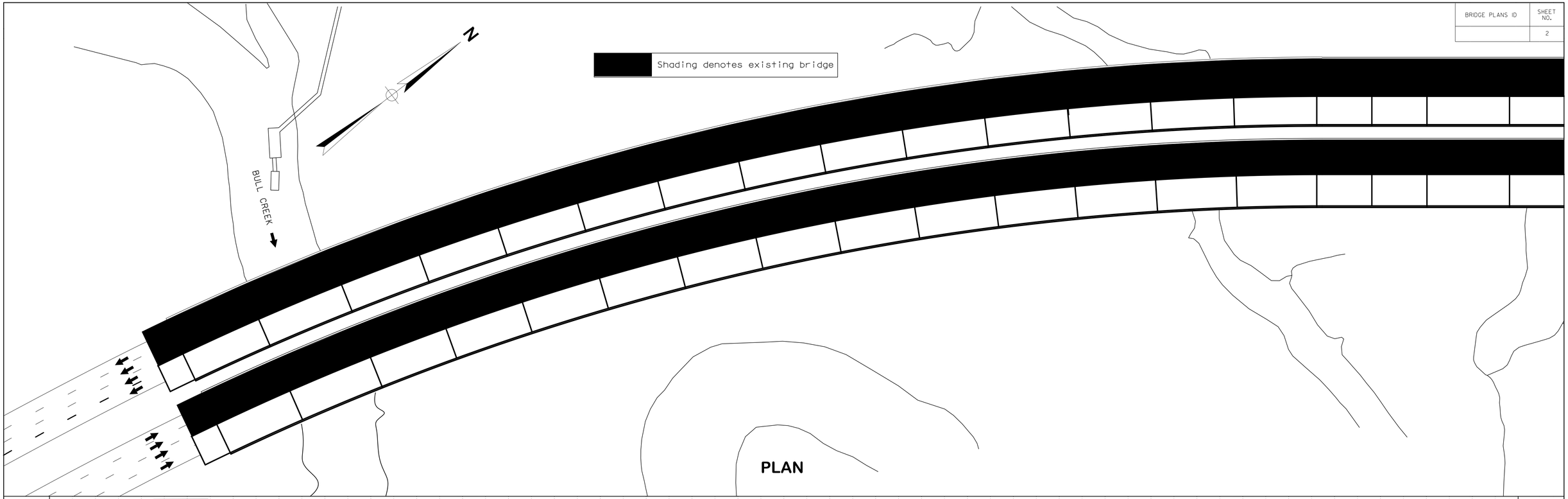
2000 PARK STREET
SUITE 201
COLUMBIA, S.C. 29201

ENGINEER OF RECORD

CONCEPTUAL PLANS
NOT FOR CONSTRUCTION

DRAWING NO. 700-02

BRIDGE PLANS ID	SHEET NO.
	2



PLAN

ELEVATION

CONCEPTU-L SUBSTRUCTURE:
Bents 1-3 & 6-48 - Driven Prestressed piles
Bents 4 & 5 - Concrete Columns

CONCEPTUAL PLANS FOR COAST GUARD PERMIT ONLY

	REV.	REV.	REV.
REVIEWED			
QUAN.			
DR.			
DES.			
BY / CHK. / DATE			

CE CS CIVIL ENGINEERING CONSULTING SERVICES, INC.

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

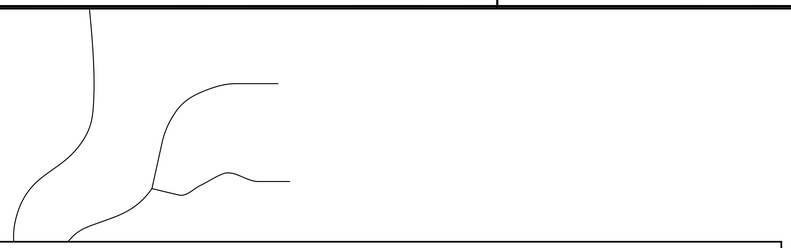
BRIDGE PLAN & PROFILE

WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

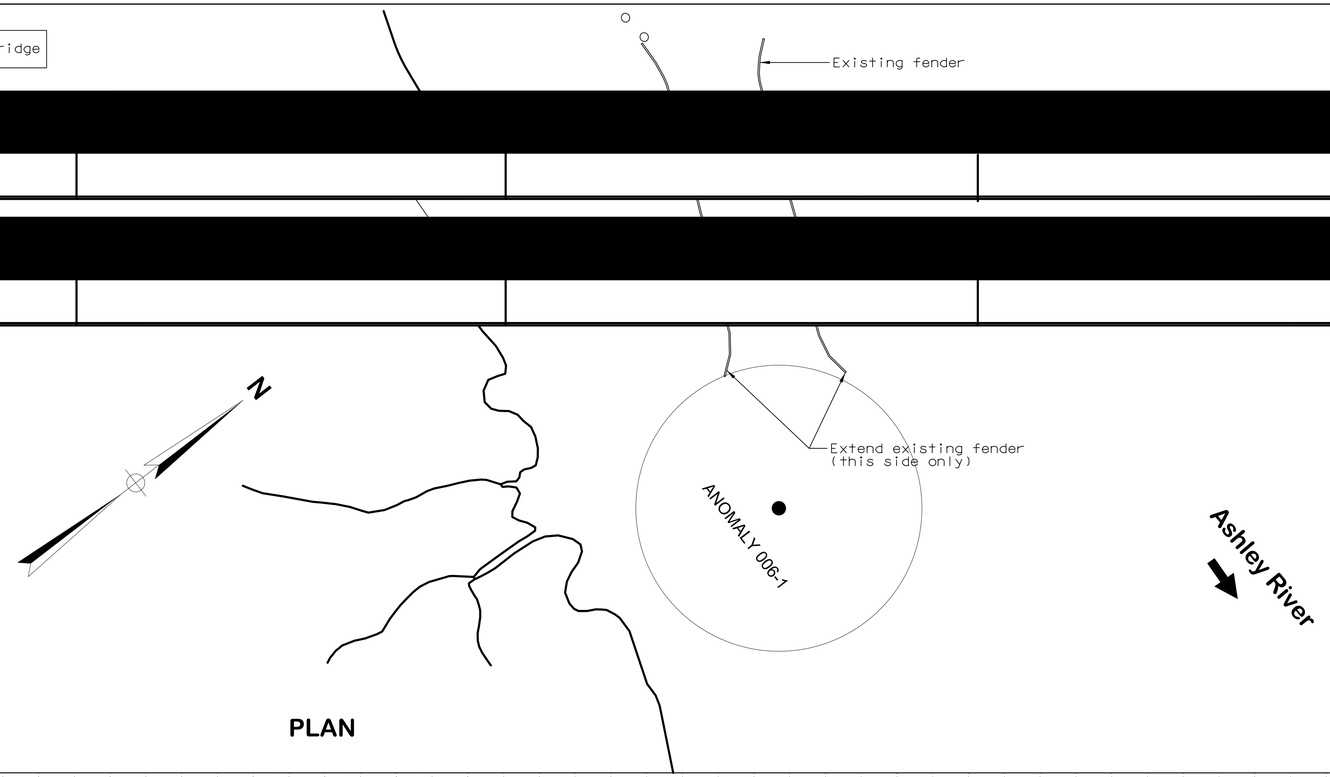
BRIDGE PLANS ID	SHEET NO.
	3

Shading denotes existing bridge

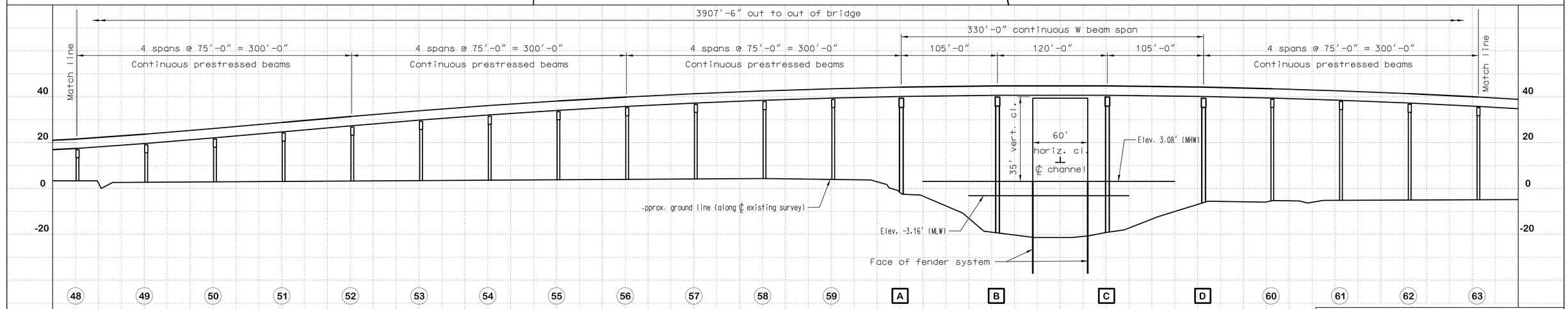


Widening schematic

Maintain 2 lanes of traffic in each direction during construction



PLAN



ELEVATION

CONCEPTUAL SUBSTRUCTURE:

Bents 48-63 Concrete Columns
Bents A,B,C, and D - Concrete Columns

CONCEPTUAL PLANS

FOR COAST GUARD PERMIT ONLY

REV.			
REV.			
REV.			
REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE

CIVIL ENGINEERING CONSULTING SERVICES, INC.

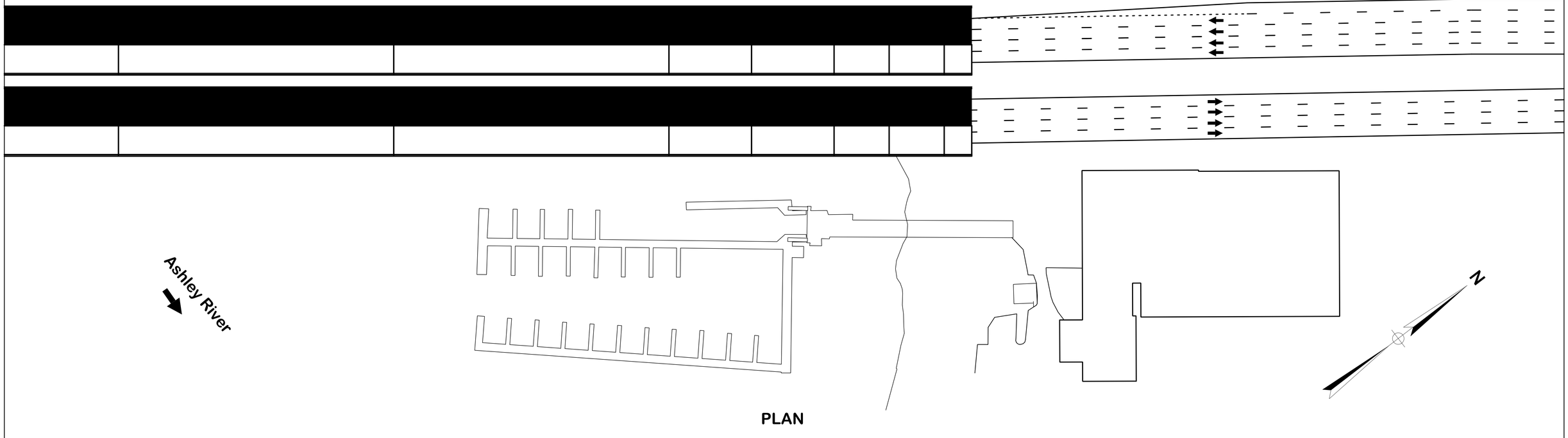
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

BRIDGE PLAN & PROFILE

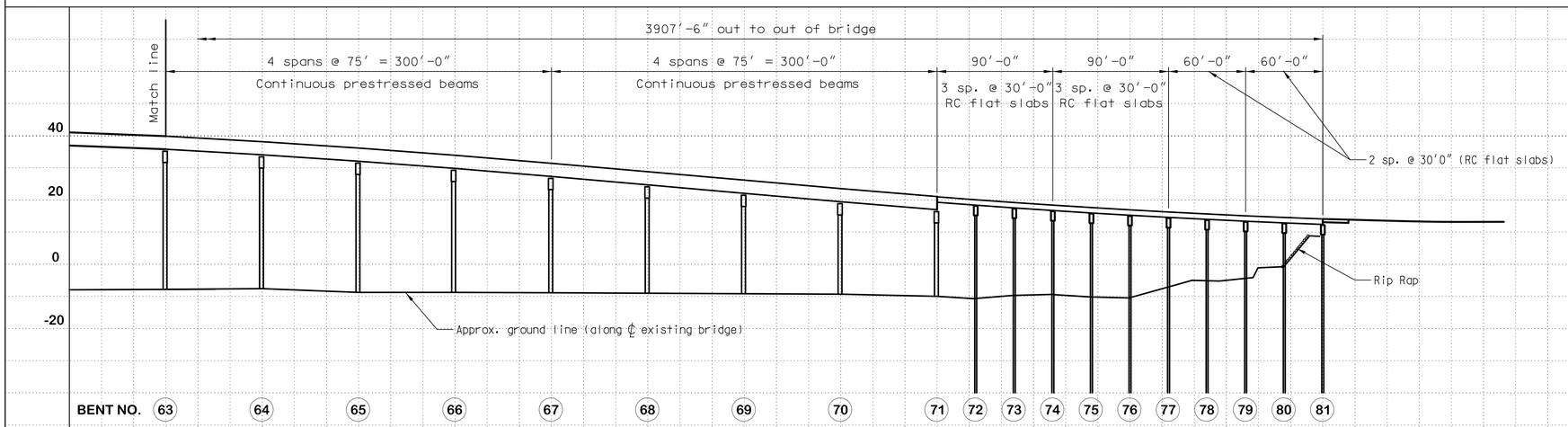
WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

BRIDGE PLANS ID	SHEET NO.
	4



PLAN



CONCEPTU-L SUBSTRUCTURE:

Bents 72-81- Driven Prestressed piles
Bents 63-71 - Concrete Columns

ELEVATION

CONCEPTUAL PLANS FOR COAST GUARD PERMIT ONLY

REV.			
REV.			
REV.			
REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE

CIVIL ENGINEERING CONSULTING SERVICES, INC.

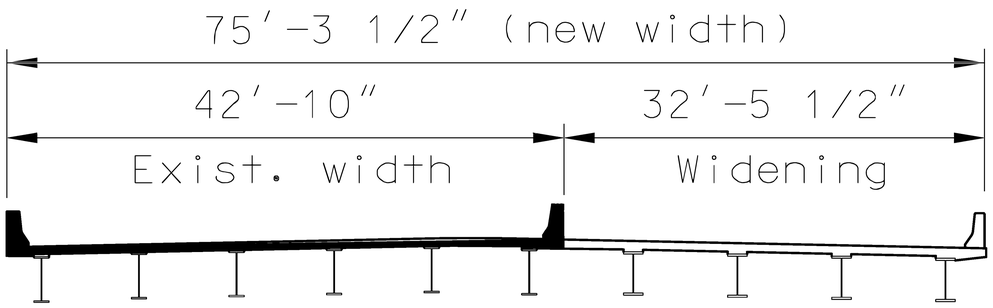
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

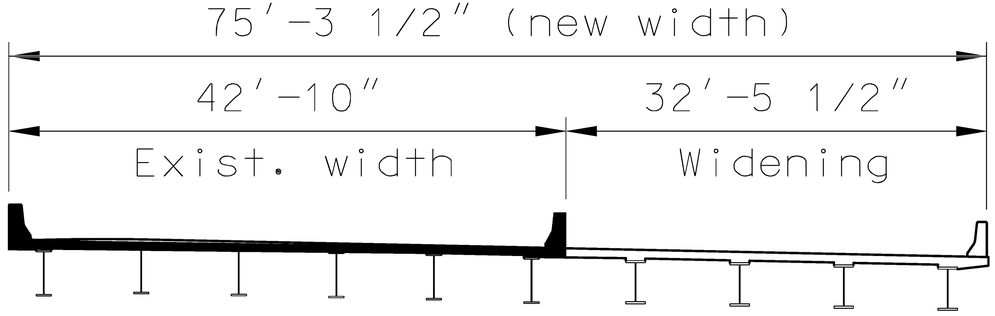
BRIDGE PLAN & PROFILE

WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

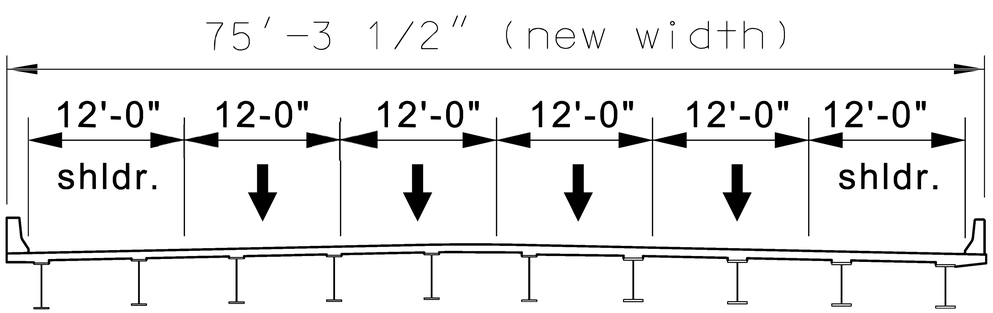
BRIDGE PLANS ID	SHEET NO.
	5

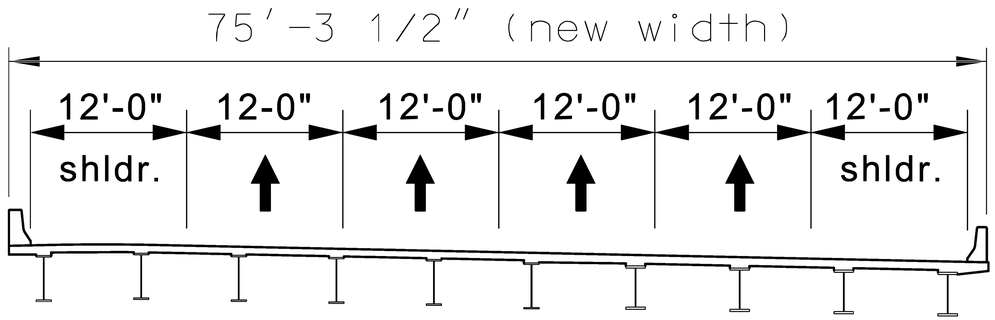




Widening Schematic

Maintain 2 lanes of traffic in each direction during construction





Final Configuration

CIVIL ENGINEERING CONSULTING SERVICES, INC.

CONCEPTUAL PLANS FOR COAST GUARD PERMIT ONLY

REV.			
REV.			
REV.			
REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

BRIDGE STAGING

WIDEN TWIN BRIDGES OVER BULL CREEK & ASHLEY RIVER

COUNTY	ROUTE
CHARLESTON	I-526

DRAWING NO.

Appendix C

Marina Phone Logs

Civil Engineering
Consulting Services, Inc.

3020 Devine Street, Suite D - Columbia, SC 29205
Telephone- (803) 779-0311 Fax- (803) 779-0528
Email: cecs@cecsinc.com

TELEPHONE LOG

JOB NO: 7714
DESCRIPTION: USCG Navigation Report

DATE: 4/5/2019

CALL FROM: Amanda Harris
COMPANY: CECS, Inc
PHONE #: 803-779-0311 ext 219

CALL TO: Salesperson - Jan
COMPANY: River's Edge Marina
PHONE #: (843) 554-8901

DISCUSSION:

How many dry spaces?

450 in warehouse.

How many slips?

58 wet slips.

ACTION REQUIRED:

None.

CC: _____

BY: _____

Civil Engineering
Consulting Services, Inc.

3020 Devine Street, Suite D - Columbia, SC 29205
Telephone- (803) 779-0311 Fax- (803) 779-0528
Email: cecs@cecsinc.com

TELEPHONE LOG

JOB NO: 7714
DESCRIPTION: USCG Navigation Report

DATE: 4/10/2019

CALL FROM: Amanda Harris
COMPANY: CECS, Inc
PHONE #: 803-779-0311 ext 219

CALL TO: Salesperson
COMPANY: Dolphin Cove Marina
PHONE #: (843) 744-2562

DISCUSSION:
How many dry spaces?
250 dry spaces.
How many slips?
125 wet slips.

ACTION REQUIRED:
None.

CC: _____

BY: _____

Appendix D

T. Allen LeGare Drawbridge Opening Logs

Report of Drawbridge Openings

April 2018

BRIDGE NUMBER New Ashley
REPORT FOR THE MONTH OF April 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sun	4-1	ON	8AM	—	—	—	—	—	—	Cooper
Sun	4-1	off	4PM	—	—	—	—	—	—	Cooper
Mon	4-2	ON	8AM	—	—	—	—	—	—	Cooper
Mon	4-2	1	904	913	✓		Sunny & Windy	Tug	Capt Sam	Cooper
Mon	4-2	2	955	1015		✓	Sunny Smoky	Tug & Barge	Capt Sam	Cooper
Mon	42	off	4PM	—						Cooper
MON	4-2	ON	4PM							Karen
MON	4-2	OFF	12:AM							Karen
Tues	4-3	on	8AM	—						Cooper
Tues	4-3	3	902	912	✓		Sunny Smoky	Tug	Capt Sam	Cooper
Tues	4-3	4	1205	1224		—	Sunny Smoky	Tug & Barge	Capt Sam	Cooper
Tues	4-3	off	4PM	—	—					Cooper
Wed	4-4	on	800 AM	—	—	—	—	—	—	Mike
Wed	4-4	off	400 PM	—	—	—	—	—	—	Mike
Wed	4-4	ON	4:PM							Karen
Wed	4-4	OFF	12:AM							Karen
Thurs	4-5	on	809 AM	—	—	—	—		—	Mike
Thurs	4-5	off	400 PM	—	—	—	—	—	—	Mike
Thurs	4-5	ON	4PM							Karen
Thurs	4-5	OFF	12:AM							Karen

14 openings 14 Boats

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF April 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Fri	4-6	on	8:00 Am							Mike
Fri	4-6	off	4:00 pm							Mike
FRI	4-6	ON	12: pm							Karren
FRI	4-6	OFF	12: Am							Karren
Sat	4-7	on	8:00 Am							Mike
Sat	4-7	5	11:40 Am	11:47 Am		✓	Cloudy	Fishing BT	Fugitive	"
Sat	4-7	off	4:00 pm							Mike
Sun	4-8	ON	8 AM							Coggins
Sun	4-8	Off	4PM							Coggins
Mon	4-9	ON	8							Coggins
Mon	4-9	Off	4							Coggins
Mon	4-9	ON	4: pm							Karren
Mon	4-9	OFF	12: Am							Karren
Tues	4-10	ON	8 Am							Coggins
Tues	4-10	off	4Pm							Coggins
Wed	4-11	on	8:00 Am							Mike
Wed	4-11	6	10:35 Am	10:42 Am		✓	Clear	yacht	N.V.	"
Wed	4-11	off	4:00 pm							Mike
Wed	4-11	ON	4: pm							Karren
Wed	4-11	OFF	12:00 Am							Karren

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF April 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Thurs	1-12	on	800 AM	—	—	—	—	—	—	Rutledge
Thurs	1-12	off	400 PM	—	—	—	—	—	—	Rutledge
Thur	4-12	ON	4: PM	—	—	→	—	—	—	Karrigan
Thur	4-12	OFF	12: AM	—	—	→	—	—	—	Karrigan
Fri	4-13	on	8:00 AM	—	—	—	—	—	—	Rutledge
Fri	4-13	off	4:00 PM	—	—	—	—	—	—	Rutledge
Sat	4-14	ON	8AM							Coggins
Sat	4-14	907	9 [illegible] AM	9 27 AM	-	✓	Sunny	Motor	Fin Allie	Coggins
Sat	4-14	8	10 32	10 43 AM	↘		Sunny	Motor	Fin Allie	Coggins
Sat	4-14	off	4 PM	—	—	—	—	—	—	Coggins
Sun	4-15	ON	8 AM	—		—	—	—	—	Coggins
Sun	4-15	OFF	4 PM	—	—	—	—	—	—	Coggins
Mon	4-16	ON	8 AM	—	—	—	—	—	—	Coggins
Mon	4-16	9	9 05 AM	10 18	—	✓	Sunny Cool	Motor	Dolce Vita	Coggins
Mon	4-16	off	4 PM	—	—	—	—	—	—	Coggins
Tue	4-17	ON	8: AM	—	—	→	—	—	—	Karrigan
Tue	4-17	OFF	4: PM	—	—	→	—	—	—	Karrigan
Wed	4-18	on	800 AM	—	—	—	—	—	—	Rutledge
Wed	4-18	9	1040		↗		Clear	Fishing Bt	Reel Wise	CT
Wed	4-18	—		10 48 AM	↘			Yacht	none	Rutledge

BRIDGE NUMBER 843-577-7605

REPORT FOR THE MONTH OF April 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	4-18	4 00 p	—	—			—	—	—	[illegible]
Wed	4-18	4pm	ON	—			—	—	—	Karren
Wed	4-18	12 AM	OFF	—			—	—	—	Karren
Thurs	4-19	on	8 00 Am	—	—	—	—	—	—	[illegible]
Thurs	4-19	10	10 30 Am	—	✓		Sunny	yacht	no Name (new)	//
Thurs	4-19	—	—	—	✓		Sunny	Sail	no Name (new)	//
Thurs	4-19	—	—	—	✓		Sunny	yacht	[illegible] Jolly	//
Thurs	4-19	—	—	—	✓		Sunny	yacht	no Name (new)	//
Thurs	4-19	—	—	10 40 Am	✓		Sunny	yacht	No Name (new)	//
Thur	4-19	off	4 00 pm	—		—	—	—	—	[illegible]
Thur	4-19	ON	4 pm	—			—		—	Karren
Thur	4-19	OFF	12 pm				—	—	—	Karren
Fri	4-20	on	—	—	—			—	—	[illegible]
Fri	4-20	off	—	—				—	—	[illegible]
FRI	4-20	ON	4 pm	—		—	—	—	—	Karren
FRI	4-20	OFF	12 AM	—	—		—	—	—	Karren
Sat	4-21	on	8 00 Am	—	—	—		—	—	[illegible]
Sat	4-21	off	4 00 pm	—	—		—	—	—	[illegible]
SUN	4-22	ON	8 am	—	—	—	—	—	—	Karren
SUN	4-22	OFF	4 pm		—	—	—	—	—	Karren

BRIDGE NUMBER (3543) 577- 7605
REPORT FOR THE MONTH OF April 2018
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Mon	4-23	ON			→		→	→		Karrieon
Mon	4-23	11	9:00 am	9:10 am	✓		Rainy	yacht	Prestige	Karrieon
Mon	4-23	12	10:30 am	10:45 am	✓		Rainy	yacht	Monte carlo 6	Karrieon
Mon	4-23	—			✓		Rainy	yacht	Flynn Fally	"
Mon	4-23	—			✓		Rainy	yacht	Real wish	"
Mon	4-23	—			✓		Rainy	Yacht	swift Trawler	"
Mon	4-23	—			✓		Rainy	Sail	Bonitor 38	Karrieon
Mon	4-23	OFF	4:pm	→	→		→	→	→	Karrieon
Tues	4-24	ON	8: am	→	→		→	→	→	Karrieon
Tues	4-24	off								"
Wed	4-25	on	8:00 am	—	—	—	—	—	—	Richardson
Wed	4-25	off	4:00 pm	—	—	—	—	—	—	Richardson
Thur	4-26	on	8:00 am	—	—	—	—	—	—	Richardson
Thurs	4-26	off	4:00 pm	—	—	—	—	—	—	Richardson
Fri	4-27	on	8:00 am	—	—	—	—	—	—	Richardson
Fri	4-27	off	4:00 pm	—	—	—	—	—	—	Richardson
Sat	4-28	ON	6:30 Am	→	→	→	→	S	→	Karrieon
Sat	4-28	13	6:50	7:04	✓		clear	Sport Fish	Finalli	Karrieon
Sat	4-28	14	5:48	6:05		✓	Sunny	Sport Fish	Finalli	Karrieon
Sat	4-28	OFF	6:15	→	→	→	→	→	→	Karrieon

BRIDGE NUMBER (843) 577-7665

REPORT FOR THE MONTH OF April 2018

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sun	4-29	ON	8:00 am	→		→	→	→	→	Karchem
Sun	4-29	OFF	4:00 pm		→		→		→	Karchem
Mon	4-30	on	8:00 am	~	~	~	~	~	~	Nutt
Mon	4-30	off	4:00 pm	~	~	~	~	~	~	Nutt
Tues										

Closed out Month

Report of Drawbridge Openings

May 2018

E NUMBER (843) 554-7665
REPORT FOR THE MONTH OF May 2018
NAME OF BRIDGE Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Tues	5-1	ON	8: am							Karriem
Tues	5 1	1	2:40 pm	2:55	✓		Clear	Sail Boat	Pagan wind	Karriem
Tues	5-1	2	3:30 pm	3:43		✓	Clear	yatch	Just Air	Karriem
Tues	5-1	OFF	4: pm							Karriem
Wed	5-2	ON	8: Am							Karriem
Wed	5-2	3	11:10	11:25		✓	Clear	Sport fish	Unchained	Karriem
Wed.	5-2	Off	4: pm							Karriem
Thurs	5-3	on	8:00 Am							Mitch
Thurs	5-3	3	11:20 Am	11:28 Am		✓	Clear	Sport fish	Fin ally	"
Thurs	5-3	off	4:00 pm							Mitch
Fri	5-4	on	8:00 Am							Mitch
Fri	5-4	off	4:00 pm							Mitch
Sat	5-5	on	8:00 Am							Mitch
Sat	5-5	off	4:00 pm							Mitch
SUN	5-6	ON	8: Am							Karriem
SUN	5-6	OFF	4: pm							Karriem
MON	5-7	ON	8: Am							Karriem
MON	5-7	OFF	4: pm							Karriem
Tues	5-8	on	8:00 Am							Mitch
Tues	5-8	off	4:00 pm							Mitch

9 openings 9 Boats

E NUMBER 843-577-7605

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

Form 3079 Rev.

REPORT OF DRAWBRIDGE OPENINGS

DBS

REPORT FOR THE MONTH OF May 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Tues	5-9	ON	8:12m							KARRIEM
Wed	5-9	OFF	4:pm							KARRIEM
Thurs	5-10	on	8:00 AM							Mitch
Thurs	5-10	off	4:00 pm							Mitch
Fri	5-11	on	8:00 AM							Mitch
Fri	5-11	off	4:00 pm							Mitch
SAT	5-12	ON	8: AM							KARRIEM
SAT	5-12	OFF	4PM							KARRIEM
SUN	5-13	ON	8: AM							KARRIEM
SUN	5-13	4	9:12	9:30	✓		Sunny	Sport Fish	N/A	KARRIEM
SUN	5-13	5	10:15	10:30		✓	SUNNY	Sport Fish	N/A.	KARRIEM
SUN	5-13	6	11:14	11-25	✓		SUNNY	Sport Fish	Tied up	KARRIEM
MON	5-14	ON	8:am							KARRIEM
Mon	5-14	OFF	4 pm							KARRIEM
Tues	5-15	on	8:00 AM							Mitch
Tues	5-15	7	11:55 AM	12:04 pm	✓		Fair	Motor BT	Manitou	11
Tues	5-15	off	4:00 pm							Mitch
Wed	5-16	ON	8:AM							KARRIEM
Wed	5-16	OFF	4pm							KARRIEM
Thurs	5-17	on	8:00 AM							Mitch

NUMBER 843-577-7605

...T FOR THE MONTH OF May 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Thurs	5-17	off	4 00 pm	—	—	—	—	—	—	[illegible]
Fri	5-18	on	8 00 AM	—	—	—	—	—	—	[illegible]
Fri	5-18	8	11 00 AM	11 08 AM		←	Cloudy	Fishing Bt	Tied up	11
Fri	5-18	off	4 00 pm	—	—	—	—	—	—	[illegible]
Sat	5-19	on	8 00 AM	—	—	—	—	—	—	[illegible]
Sat	5-19	off	4 00 pm	—	—	—	—	—	—	[illegible]
SUN	5-20	ON	8 00 AM	—	—	→	—	—	—	KARRIEM
SUN	5-20	OFF	4 pm	—	—	→	—	—	—	KARRIEM
MON	5-21	ON	8 AM	—	—	→	—	—	—	KARRIEM
MON	5-21	OFF	4 pm	—	—	→	—	—	—	KARRIEM
TUE	5-22	ON	8 AM	—	—	→	—	—	—	KARRIEM
~~THURS~~	5-22	off								KARRIEM
Wed	5-23	on	8 00 AM	—	—	—	—	—	—	[illegible]
Wed	5-23	9	3 00 pm	3 10 pm	✓		Clear	Sail	Meandor	11
Wed	5-23	off	4 00 pm	—	—	—	—	—	—	[illegible]
Thurs	5-24	on	8 00 AM	—	—	—	—	—	—	[illegible]
Thurs	5-24	off	4 00 pm	—	—	—	—	—	—	[illegible]
Fri	5-25	on	8 00 AM	—	—	—	—	—	—	[illegible]
Fri	5-25	off	4 00 pm	—	—	—	—	—	—	[illegible]
SAT	5-26	ON	8 AM	—	—	→	—	—	—	KARRIEM

915

BRIDGE NUMBER 848/577-7605

REPORT FOR THE MONTH OF May 2018

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
SAT	5/26	OFF	4: pm							Karrien
SUN	5/27	ON	8: AM							Karrien
SUN	5/27	OFF	4: pm							Karrien
MON	5/28	ON	8: AM							Karrien
MON	5/28	OFF	4: pm							Karrien
Tue	5/29	ON	8: AM							Karrien
Tue	5/29	OFF	4: pm							Karrien
Wed	5/30	on	800 AM							Rubb
Wed	5/30	off	4 00 pm							Rubb
Thurs	5-31	on	800 Am							Rubb
Thurs	5-31	off	4.00 pm							Rubb

Report of Drawbridge Openings

June 2018

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF June 20 18
NAME OF BRIDGE 843 - 577-7605
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Fri	6-1	on	8:00 Am							[illegible]
Fri	6-1	1	9:45 Am	9:52 Am		✓	Sunny	Sail	Meandor	"
Fri	6-2	on	8:00 Am	—	—	—	—	—	—	[illegible]
Fri	6-2	off	4:00 pm	—	—	—	—	—	—	[illegible]
SUN	6-3	ON	8: Am	—	—	→	—	—	→	KARRIEM
SUN	6-3	OFF	4! pm	—	—	→	—	—	→	KARRIEM
MON	6-4	ON	8: Am	→	→	—	—	→	—	KARRIEM
MON	6-4	OFF	4: pm	—	—	→	—	→	→	KARRIEM
Tue	6-5	ON	8: Am	—	—	→	—	—	→	KARRIEM
Tue	6-5	OFF	4: pm	—	—	→	—	—	→	KARRIEM
Wed	6-6	on	8:00 Am	—	—	—	—	—	—	[illegible]
wed	6-6	off	12:30 pm	—	—	—	—	—	—	[illegible]
Wed	6-6	ON	12:30 pm	—	—	→	—	—	→	KARRIEM
Wed	6-6	OFF	4: pm	—	—	→	—	—	→	KARRIEM
Thurs	6-7	on	8:00 Am	—	—	—	—	—	—	[illegible]
Thurs	6-7	off	4:00 pm	—	—	—	—	—	—	[illegible]
Fri	6-8	on	8:00 Am	—	—	—	—	—	—	[illegible]
Fri	6-8	off	4:00 pm	—	—	—	—	—	—	[illegible]
SAT	6-9	ON	8: Am	—	—	→	—	—	→	KARRIEM
SAT	6-9	OFF	4: pm	—	—	→	—	—	→	KARRIEM

8 openings

8 Boats

BRIDGE NUMBER (843) 577-7605
REPORT FOR THE MONTH OF June 2018
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sun	6-10	ON	8' Am	→					→	Karrien
Sun	6-10	OFF	4' pm	→					→	Karrien
Mon	6-11	ON	8' AM	→					→	Karrien
Mon	6-11	OFF	4' pM	→					→	Karrien
Tue	6-12	ON	8' AM	→					→	Karrien
Tue	6-12	OFF	4' pm	→					→	Karrien
Wed	6-13	on	8:00 Am	—	—	—	—	—	—	Mike
Wed	6-13	2	9:20 Am	9:30 Am	✓		Cloudy	Tug	Angela	"
Wed	6-13	3	10:05 Am	10:13 Am		✓	Cloudy	Tug	Angela	"
Thurs	6-14	on	8:00 AM	—	—	—	—	—	—	Mike
Thurs	6-14	off	4:00 pm	—	—	—	—	—	—	Mike
Fri	6-15	on	8:00 AM	—	—	—	—	—	—	Mike
Fri	6-15	off	4:00 pm	—	—	—	—	—	—	Mike
Sat	6-16	on	8:00 Am	—	—	—	—	—	—	Mike
Sat	6-16	4	3:00 pm	3:10 pm	✓		Sunny	Fishing BT	Margarita	"
Sat	6-16	5	3:50 pm	4:00 pm		✓	Cloudy	Fishing BT	Margarita	"
Sat	6-16	off	4:00 pm	—	—	—	—	—	—	Mike
Sun	6-17	ON	8' Am	→					→	Karrien
Sun	6-17	OFF	4' pm	→					→	Karrien
Mon	6-18	ON	8' Am	→					→	Karrien

BRIDGE NUMBER (843) 577-1605

REPORT FOR THE MONTH OF June 20 18

NAME OF BRIDGE New Ashley Bridge

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev. DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
MON	6-18	OFF	4: pm							KARRIEM
Tue	6-19	ON	8: AM							KARRIEM
Tues	6-19	OFF	4: PM							KARRIEM
Wed	6-20	on	8:00 am							Rick
Wed	6-20	off	4:00 pm							Rick
Thurs	6-21	on	8:00 AM							Rick
Thurs	6-21	6	10:30 AM	10:45 AM		✓	Sunny	Tug	KW	"
Thurs	6-21	7	12:40 pm	12:50 pm	✓		Sunny	Sail	Ariel	"
Fri	6-22	on	8:00 AM							Rick
Fri	6-22	off	4:00 pm							Rick
~~Fri~~	~~6-22~~									
~~Fri~~										
SAT	6-23	ON	8: AM							KARRIEM
SAT	6-23	OFF	4: pm							KARRIEM
SUN	6-24	ON	8: AM							KARRIEM
Sun	6-24	OFF	4: pm							KARRIEM
MON	6-25	ON	8: AM							KARRIEM
MON	6-25	8	1:30 pm				Sunny	Sail	Ariel	KARRIEM
Mon	6-25	OFF	4: pm							KARRIEM
Tues	6-26	ON	8: AM							KARRIEM

BRIDGE NUMBER (843) 577-7605
REPORT FOR THE MONTH OF June 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION		CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
					NORTH	SOUTH				
Tue	26-18	Off	4. pm	→	→	→	→	→	→	Karren
Wed	27-18	on	8 00 Am	—	—	—	—	—	—	[illegible]
Wed	27-18	off	4 00 pm	—		—		—	—	[illegible]
Thurs	28-18	on	8 00 Am	—	—		—	—	—	[illegible]
Thurs	28-18	off	4 00 pm	—	—	—	—	—	—	[illegible]
Fri	29-18	on	8 00 AM	—	—	—	—	—	—	[illegible]
Fri	29-18	OFF	4 00 pm	—	—	—	—	—	—	[illegible]
Sat	30-18	on	8 00 Am	—	—	—	—	—	—	[illegible]
Sat.	30-18	OFF	4 00 pm	—	—	—	—			

Report of Drawbridge Openings

July 2018

BRIDGE NUMBER 843-577-7605

REPORT FOR THE MONTH OF July 2018

NAME OF BRIDGE Ashley River Bridge

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sun	7-1	ON	8:00 AM							KARRIEM
SUN	7-1	OFF	4:00 PM							KARRIEM
MON	7-2	ON	8:00 AM							KARRIEM
MON	7-2	OFF	4:00 PM							KARRIEM
TUES	7-3	ON	8:00 AM							KARRIEM
TUES	7-3	OFF	4:00 PM							KARRIEM
Wed	7-4	on	8:00 AM							
Wed	7-4	off	4:00 PM							
Thurs	7-5	on	8:00 AM							
Thurs	7-5	off	4:00 PM							
Fri	7-6	on	8:00 AM							
Fri	7-6	off	4:00 PM							
SAT	7-7	ON	8:00 AM							KARRIEM
SAT	7-7	OFF	4:00 PM							KARRIEM
SUN	7-8	ON	8:00 AM							KARRIEM
SUN	7-8	OFF	4:00 PM							KARRIEM
MON	7-9	ON	8:00 AM							KARRIEM
MON	7-9	OFF	4:00 PM							KARRIEM
TUE	7-10	ON	8:00 AM							KARRIEM
TUE	7-10	OFF	4:00 PM							KARRIEM

1 opening 1 Boat

BRIDGE NUMBER (SB) 5T1-7605

REPORT FOR THE MONTH OF July 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	7-11	on	8:00 am							
Wed	7-11	off	4:00 pm							
Thurs	7-12	on	8:00 AM							
Thurs	7-12	off	4:00 pm							
Fri	7-13	on	8:00 AM							
Fri	7-13	off	4:00 pm							
Sat	7-14	on	8:00 AM							
Sat	7-14	off	4:00 pm							
SUN	7-15	ON	8:00 AM							KARRIEN
SUN	7-15	OFF	4:00 PM							KARRIEN
MON	7-16	ON	8:00 AM							KARRIEN
MON	7-16	OFF	4:00 PM							KARRIEN
Tue	7-17	ON	8 AM							KARRIEN
Tue	7-17	OFF	4:00 PM							KARRIEN
Wed	7-18	On	8:00 AM							
Wed	7-18	off	4:00 pm							
Thurs	7-19	on	8:00 AM							
Thurs	7-19	off	4:00 pm							
Fri	7-20	on	8:00 AM							
Fri	7-20	off	4:00 pm							

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF July 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sat	7-21	ON	8: AM			→			→	KARRIGAN
SAT	7-21	OFF	4: pm				→	→	→	KARRIGAN
SUN	7-22	ON	8: AM							KARRIGAN
SUN	7-22	OFF	4: pm			→			→	KARRIGAN
MON	7-23	ON	8: AM			→			→	KARRIGAN
MON	7-23	OFF	4: pm			→	→		→	KARRIGAN
TUE	7-24	ON	8: AM			→	→		→	KARRIGAN
TUE	7-24	OFF	4: PM			→			→	KARRIGAN
Wed	7-25	on	8 00 AM							
Wed	7-25	off	4 00 pm							
Thurs	7-26	on	8 00 AM							
Thurs	7-26	off	4 00 pm							
Fri	7-27	on	8 00 AM							
Fri	7-27	off	4 00 pm							
Sat	7-28	on	8 00 AM							
Sat	7-28	off	4 00 pm							
SUN	7-29	ON	8: AM							KARRIGAN
SUN	7-29	OFF	4: PM							KARRIGAN
MON	7-30	ON	8: AM							K
MON	7-30	OFF	4: pm			→	→		→	K

BRIDGE NUMBER (843) 577-765
REPORT FOR THE MONTH OF July 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Tues.	7-31	On	8:00 Am	—	—	—	—	—	—	[illegible]
Tues.	7-31	ON	9Am	—	—			—	—	Coggins
Tues	7-31	1	2 45	3 07	✓		sunny	Sail	UBiquotous	Coggins
Tues	7-31	off	4PM	—			—		—	Coggins

Report of Drawbridge Openings

August 2018

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Aug. 2018
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	8-1	on	8:00 am	—	—	—	—	—	—	Miller
Wed	8-1	off	4:00 pm	—	—	—	—	—	—	Miller
Thurs	8-2	on	8:00 am	—	—	—	—	—	—	Miller
Thurs	8-2	off	4:00 pm	—	—	—	—	—	—	Miller
Fri	8-3	on	8:00 am	—	—	—	—	—	—	Miller
Fri	8-3	off	4:00 pm	—	—	—	—	—	—	Miller
SAT	8-4	ON	8: AM	—	—	—	—	—	—	Kneeden
SAT	8-4	1	12:50	1:05pm	✓		Rainy	Sport Fish	Finallie	KARRIEN
SAT	8-4	OFF	4:PM	—	—	—	—	—	—	KARRIEN
Sat	8-4	ON	4 PM	—	—	—	—	—	—	COGGINS
Sunt	8-5	off	12AM	—	—	—	—	—	—	COGGINS
SUN	8-5	ON	8: AM	—	—	—	—	—	—	KARRIEN
SUN	8-5	OFF	4: pm	—	—	—	—	—	—	KARRIEN
Sun	8-5	on	4PM	—	—	—	—	—	—	Coggins
MON	8-6	off	12AM	—	—	—	—	—	—	Coggins
MON	8-6	ON	8: AM	—	—	—	—	—	—	KARRIEN
MON	8-6	OFF	4:pm	—	—	—	—	—	—	KARRIEN
Mon	8-6	on	4 PM	—	—	—	—	—	—	COGGINS
Tues	8-7	off	12AM	—	—	—	—	—	—	COGGINS
TUES	8-7	ON	8: AM	—	—	—	—	—	—	KARRIEN

4 openings

4 Boats

BRIDGE NUMBER 843) 577-7605
REPORT FOR THE MONTH OF Aug 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Tues	8-7	OFF	4: pM	—		—	—	—	—	Karriem
Tues	8-7	on	4 PM	—	—	—	—	—	—	Coggins
Wed	8-8	off	12 Am	—	—	—	—	—	—	Coggins
Wed	8-8	on	8:00 am	—	—	—	—	—	—	[illegible]
Wed	8-8	off	4:00 pm	—	—	—	—	—	—	[illegible]
Thurs	8-9	on	8:00 Am	—	—	—	—	—	—	[illegible]
Thurs	8-9	off	4:00 pm	—	—	—	—	—	—	[illegible]
fri	8-10	on	8:00 Am	—	—	—	—	—	—	[illegible]
Fri	8-10	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sat	8-11	on	8:00 Am	—	—	—	—	—	—	[illegible]
Sat	8-11	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sun	8-12	on	8 Am	—	—	—	—	—	—	Coggins
Sun	8-12	off	4 PM	—	—	—	—	—	—	Coggins
Sun	8-12	on	8:30 pm							[illegible]
Sun	8-12	2	9:30 pm	9:40 pm	✓		Clear	yacht	EGR	11
Sun	8-12	off	9:50 pm	—	—	—	—	—	—	[illegible]
Mon	8-13	on	8 Am	—	—	—	—	—	—	Coggins
Mon	8-13	off	4 PM	—	—	—	—	—	—	Coggins
MON	8-13	ON	4: pM	—	—	—	→	→	—	Karriem
MON	8-13	OFF	12: Am		—	—	—	—	—	Karriem

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Aug 2018
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Tues	8-14	ON	8 am	—	—	—	—	—	—	Coggins
Tues	8-14	OFF	4 pm	—	—	—	—	—	—	Coggins
Wed	8-15	on	8 00 AM	—	—	—	—	—	—	Miller
Wed	8-15	3	1 32 pm	1 40 pm	✓		Clear	Sail	Catalina	"
Wed	8-15	OFF	4 00 pm	—	—	—	—	—	—	Miller
Wed	8-15	ON	4: pm	—		—	—	—	—	Karriem
Wed	8-15	OFF	12: Am	—			—		—	Karriem
Wed	8-16	on	8 00 am	—	—	—	—	—	—	Miller
Wed	8-16	off	4 00 pm	—	—	—	—	—	—	Miller
Thur	8-16	ON	4: pm	—	—	—	—	—	—	Karriem
Thurs	8-16	OFF	12: pm	—	—	—	—	—	—	Karriem
Fri	8-17	on	8 00 AM	—	—	—	—	—	—	Miller
Fri	8-17	off	4 00 pm	—	—	—	—	—	—	Miller
SAT	8-18	ON	8: AM	—	—	—	—	—	—	Karriem
SAT	8-18	OFF	4: pm	—	—	—	—	—	—	Karriem
Sun	8-19	ON	8: Am	—	—	—	—	—	—	Karriem
SUN	8-19	OFF	4: pm	—	—	—	—	—	—	Karriem
Sun	8-19	on	4 pm	—	—	—	—	—	—	Coggins
Mon	8-20	off	12 AM							Coggins
MON	8-20	ON	8: Am	—	—	—	—	—	—	Karriem

BRIDGE NUMBER (843) 577-7605
REPORT FOR THE MONTH OF August 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Mon	8-20	OFF	4: pm	—	—	—	—	—	—	Karrion
Tues	8-21	on	8:00 Am	—	—	—	—	—	—	Miller
Tues	8-21	off	4:00 pm	—	—	—	—	—	—	Miller
Wed	8-22	ON	8: Am	—	—	—	—	—	—	Karrion
Wed	8-22	OFF	4: pm	—	—	—	—	—	—	Karrion
Thurs	8-23	on	8:00 Am	—	—	—	—	—	—	Miller
Thurs	8-23	off	4:00 pm	—	—	—	—	—	—	Miller
Fri	8-24	on	8:00 am	—	—	—	—	—	—	Miller
Fri	8-24	off	4:00 pm	—	—	—	—	—	—	Miller
Sat	8-25	on	8:00 am	—	—	—	—	—	—	Miller
Sat	8-25	off	4:00 pm	—	—	—	—	—	—	Miller
Sun	8-26	on	8 Am	—	—	—	—	—	—	Coggins
Sun	8-26	off	4 Pm	—	—	—	—	—	—	Coggins
Mon	8-27	ON	8 Am	—	—	—	—	—	—	Coggins
Mon	8-27	off	4 Pm	—	—	—	—	—	—	Coggins
Mon	8-27	ON	4 pm	—	—	—	—	—	—	Karrion
Tues	8-28	OFF	12: AM	—	—	—	—	—	—	Karrion
Tues	8-28	on	8 Am	—	—	—	—	—	—	Coggins
Tues	8-28	off	4 Pm	—	—	—	—	—	—	Coggins
Wed	8-29	on	8:00 Am	—	—	—	—	—	—	Miller

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Aug 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	8-29	off	4:00 pm	—	—	—	—	—	—	Mike
Wed	8-29	ON	4:1 pm	—	—	—	—	—	—	Karrion
Wed	8-29	OFF	12 AM	—	—	—	—	—	—	Karrion
Thurs	8-30	on	8:00 Am	—	—	—	—	—	—	Mike
Thurs	8-3	off	4:00 pm	—	—	—	—	—	—	Mike
Thur	8-30	ON	4:1 PM	—	—	—	—	—	—	Karrion
Thurs	8-30	OFF	12 AM	—	—	—	—	—	—	Karrion
Fri	8-31	on	8:00 Am							Mike
Fri	8-31	4	11:50 Am	11:58 pm		✓	Clear	yacht	EGR	//
Fri	8-31	off	4:00 pm	—	—	—	—	—	—	Mike

Report of Drawbridge Openings

September 2018

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Sept 20 28
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sat	9-1	ON	8:AM	—	—	—	—		— —	Karrem
SAT	9-1	1	10:00	10:10		✓	Clear	Sport Fish	Finalli	Karrem
SAT	9-1	OFF	4:pm	—	—		—	—	— —	Karrem
Sun	9-2	ON	8:am	—	—		—	—	— —	Karrem
Sun	9-2	OFF	4:pm	—	—		—	—	— —	Karrem
Mon	9-3	ON	8:AM	—	—		—	—	— —	Karrem
Mon	9-3	2	1:20	1:40	✓		Clear	Sport Fish	Finalli	Karrem
Mon	9-3	OFF	4:pm	—	—		—	—	—	Karrem
Tues	9-4	ON	8:AM	—	—		—	—	—	Karrem
Tues	9-4	OFF	4:pm	—	—		—	—	—	Karrem
Wed	9-5	on	8:00 AM	—	—		—	—	—	
Wed	9-5	off	4:00 PM	—	—		—	—	—	
Thurs	9-6	on	8:00 AM	—	—		—	—	—	
Thurs	9-6	off	4:00 PM	—	—		—	—	—	
Fri	9-7	on	8:00 AM	—	—		—	—	—	
Fri	9-7	off	4:00 PM	—	—		—	—	—	
Sat	9-8	on	8:00 AM	—	—		—	—	—	
Sat	9-8	off	4:00 PM	—	—		—	—	—	
Sun	9-9	on	1:30 PM	—	—		—	—	—	
Sun	9-9	3	11:40 AM	11:50 AM		✓	Fair	Sport Fish	Finalli.	

6 opening 6 Boats

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Sept 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sun	9-9-18	off	4:00 pm	—	—	—	—	—	—	[illegible]
mon	9-10	on	8:00 Am	—	—	—	—	—	—	[illegible]
mon	9-10	4	11:05 am	11:14 am	✓		fair	Spt fisher	fin Allie	"
mon	9-10	off	4:00 pm	—	—	—	—	—	—	[illegible]
Tues	9-11	on	8:05 Am	—	—	—	—	—	—	[illegible]
Tus	9-11	5	11:53 Am	12:05 pm		✓	fair	yt	FGR	"
Tues	9-11	off	4:00 pm	—	—	—		yt	—	[illegible]
Wed	9-12	on	8:30 Am	—	—	—	—	—	—	[illegible]
Wed	9-12	off								[illegible]
SUN	9-16	ON	8: AM	—	—	—	—	—	—	KARRIGAN
Sun	9-16	OFF	4 PM	—	—	—	—	—	—	KARRIGAN
MON	9-17	ON	8: AM	—	—	—	—	—	—	KARRIGAN
MON	9-17	6	3: 00pm	3:15 pm	—	—	Fair	yatch	EGR / —	KARRIGAN
MON	9-17	OFF	4: PM	—	—	—	—	—	—	KARRIGAN
Tues	9-18	ON	8: AM	—	—	—	—	—	—	KARRIGAN
Tue	9-18	OFF	4: pm	—	—	—	—	—	—	KARRIGAN
Wed	9-19	ON	8:00 am	—	—	—	—	—	—	[illegible]
Wed	9-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Thurs	9-20	on	8:01 am	—	—	—	—	—	—	[illegible]
Thur	9-20	off	4:01 pm	—	—	—	—	—	—	[illegible]

BRIDGE NUMBER 843-577-7605

REPORT FOR THE MONTH OF Sept 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES CROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Fri	9-21	on	8:00 am							
Fri	9-21	off	4:00 pm							
Sat	9-22	on	8:00 Am							
Sat	9-22	off	4:00 pm							
Sun	9-23	on	8:00 am							
Sun	9-23	off	4:00 pm							
Mon	9-24	on	8:00 Am							
Mon	9-24	off	4 pm							
Tue	9-25	on	8:00 Am							
Tue	9-25	off	4:00 pm							
Wed	9-26	on	8:00 am							
Wed	9-26	off	4:00 pm							
Thurs	9-27	on	8:00 am							
Thurs	9-27	off	4:00 pm							
Fri	9-28	on	8:00 Am							
Fri	9-28	off	4:00 pm							
Sat	9-29	on	8:00 Am							
Sat	9-29	off	4:00 pm							
Sun	9-30	on	8							
Sun	9-30	off	4							

Report of Drawbridge Openings

October 2018

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF October 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Mon	10-1	on	8 AM	—	—	—	—	—	—	Carolyn
Mon	10-1	off	4 PM	—	—	—	—	—	—	Carolyn
Tues	10-2	on	8 AM	—	—	—	—	—	—	Carolyn
Tues	10-2	off	4 PM	—	—	—	—	—	—	Carolyn
Wed	10-3	on	8 AM	—	—	—	—	—	—	Ruth
Wed	10-3	off	4 PM	—	—	—	—	—	—	Ruth
Thurs	10-4	on	8 AM	—	—	—	—	—	—	Ruth
Thurs	10-4	off	4 PM	—	—	—	—	—	—	Ruth
Fri	10-5	on	8 AM	—	—	—	—	—	—	Ruth
Fri	10-5	off	4 PM	—	—	—	—	—	—	Ruth
Sat	10-6	on	8 AM	—	—	—	—	—	—	Karrigan
Sat	10-6	off	4 PM	—	—	—	—	—	—	Karrigan
Sun	10-7	on	8 AM	—	—	—	—	—	—	Karrigan
Sun	10-7	off	4 PM	—	—	—	—	—	—	Karrigan
Mon	10-8	on	8 AM	—	—	—	—	—	—	Karrigan
Mon	10-8	off	4 PM	—	—	—	—	—	—	Karrigan
Tue	10-9	on	8 AM	—	—	—	—	—	—	Karrigan
Tue	10-9	1	10:15	10:30	✓		clear	Sailboat	Dancing Lion	Karrigan
Tue	10-9	2	1:00 PM	1:15		✓	cloudy	Sailboat	Soul	Karrigan
Tue	10-9	off	4 PM	—	—	—	—	—	—	Karrigan

11 Openings 11 Boats

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Oct. 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	10-10	on	8 00 AM	—			—	—	—	[illegible]
Wed	10-10	3	11 15 AM	11 23 AM		✓	Cloudy	Yakht	EGR	11
Wed	10-10	4	2 25 PM	2 34 PM	✓		Cloudy	Sail	Tramp	11
Wed	10-10	off	4 00 PM	—	—	—	—	—	—	[illegible]
Thurs	10-11	on	8 00 AM	—	—	—	—	—	—	[illegible]
Thurs	10-11	off	4 00 PM	—	—	—	—	—	—	[illegible]
Fri	10-12	on	8 00 AM	—	—	—	—	—	—	[illegible]
Fri	10-12	5	11 58 AM	11 58 AM		✓	Clear	Sail	Dancing Lion	11
Fri	10-12	6	1 40 PM	1 48 PM		✓	Clear	YT	Fin Allie	11
Fri	10-12	off	—	—	—	—	—	—	—	[illegible]
Sat	10-13	ON	8AM	—	—	—	—	—	—	Coggins
Sat	10X3	off	4PM	—	—	—	—	—	—	Coggins
Sun	10-14	ON	8AM	—	—	—	—	—	—	Coggins
Sun	10-14	off	4PM	—	—	—	—	—	—	Coggins
Mon	10-15	ON	8AM	—	—	—	—	—	—	Coggins
Mon	10-15	7	1 20 PM	1 31 PM	✓		Clear	YT	Fin Allie	Coggins
Mon	10-15	off	4PM	—	—	—	—	—	—	Coggins
Tues	10-16	ON	8AM	—	—	—	—	—	—	Coggins
Tues	10-16	Off	4PM	—	—	—	—	—	—	Coggins
Wed	10-17	on	8 00 AM	—	—	—	—	—	—	[illegible]

BRIDGE NUMBER 02.5M-7605

REPORT FOR THE MONTH OF October 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	10-17	off	400 pm							
Wed	10-17	ON	4: pm							KARRIEM
Wed	10-17	OFF	12: pm							KARRIEM
Thurs	10-18	on	800 AM							
Thurs	10-18	8	1245 pm	1254 pm	✓		Fair	Spt fisher	N.V.	"
Thurs	10-18	9	335 pm	344 pm		✓	Fair	Spt fish	N.V.	
Thurs	10-18	off	400 pm							
Thurs	10-18	ON	4: pm							KARRIEM
Thurs	10-18	OFF	12: AM							KARRIEM
Fri	10-19	on								
Fri	10-19	off	400 pm							
FRI	10-19	ON	4: pm							KARRIEM
FRI	10-19	OFF	12: AM							KARRIEM
SAT	10-20	on	800 AM							
SAT	10-20	off	400 pm							
SUN	10-21	ON	8: AM							KARRIEM
SUN	10-21	OFF	4: PM							KARRIEM
SUN	10-21	ON	4 PM							COOKIE
SUN	10-21	off	12PM							DEBBIE
MON	10-22	ON	8: AM							KARRIEM

BRIDGE NUMBER 843 / 577-7605

REPORT FOR THE MONTH OF OCT 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
MON	10-22	OFF	4:pm							KARRIEM
Mon	10-22	ON	4PM							Cooper
Mon	10-22	OFF	12M							Cooper
Tues	10-23	ON	8:Am							KARRIEM
Tues	10-23	OFF	4: pM							KARRIEM
Tues	10-23	ON	4PM							Cooper
Tues	10-23	off								Cooper
Wed	10-24	on	800 AM							Miller
Wed	10-24	off	400 pm							Miller
Thurs	10-25	on	800 AM							Miller
Thurs	10-25	off	400 pm							Miller
Fri.	10-26	on	800 AM							Miller
Fri.	10-26	off	400 pm							Miller
SAT	10-27	ON	8:1M							KARRIEM
SAT	10-27	OFF	4:1M							KARRIEM
Sat	10-27	ON	4PM							Cooper
Sat	10-27	off	12							Cooper
SUN	10-28	ON	8AM							Cooper
Sun	10-28	off	4PM							Cooper
MON	10-29	ON	8AM							Cooper

BRIDGE NUMBER 843 577-7605
REPORT FOR THE MONTH OF OCT 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

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Mon	10-29	10	10 23	10 34	✓		Sunny	Tug	Sea Pro 17	Coggins
Mon	10-29	Off	4PM	—	—			—	—	Coggins
MON	10-29	ON	4pm	—	—	—		—	—	Karrion
MON	10-29	OFF	12 AM	—	—	—	—	—	—	Karrion
Tues	10-30	ON	8 AM	—	—	—	—	—	—	Coggins
Tues	10-30	11	3 45PM	3 55		✓	Sunny	EGR	yatch	Coggins
Tues	10-30	off	4 PM	—	—	—	—	—	—	Coggins
Wed	10-31	on	8:00 AM	—	—	—	—	—	—	[illegible]
Wed	10-31	off	4:00 pm	—	—	—	—	—	—	[illegible]
Wed	10-31	ON	4:00 pM	—			—	—	—	Karrion
Wed	10-31	OFF	12 AM	—			—	—	—	Karrion

Report of Drawbridge Openings

November 2018

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Nov. 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
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Thurs	11-1	on	8:00 AM	—	—	—	—	—	—	[illegible]
Thurs	11-1	off	4:00 pm	—	—	—	—	—	—	[illegible]
Thurs	11-1	ON	4 pm	—	—	—	—	—	—	Karrem
Thur	11-1	OFF	12: AM	—	—	—	—	—	—	Karriem
Fri	11-2	on	8:00 AM	—	—	—	—	—	—	[illegible]
Fri	11-2	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sat	11-3	on	8:00 AM	—	—	—	—	—	—	[illegible]
Sat	11-3	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sun	11-4	ON	8 AM	—	—	—	—	—	—	Coggins
Sun	11-4	off	4:00 pm	—	—	—	—	—	—	Coggins
Mon	1-5	ON	8: Am	—	—	—	—	—	—	Karriem
Mon	1-5-18	OFF	4: pm	—	—	—	—	—	—	Karriem
Tues	1-6-18	ON	8: Am	—	—	—	—	—	—	Karriem
Tues	1-6-18	1	3:15 pm	3:15		✓	clear	Sport-Fs	1	Karriem
Tues	1-6-18	OFF	4: pm	—	—	—	—	—	—	Karriem
Wed	11-7	on	8:00 AM	—	—	—	—	—	—	[illegible]
Wed	11-7	off	4:00 pm	—	—	—	—	—	—	[illegible]
Wed	11-7	on	4pm	—	—	—	—	—	—	Coggins
Thurs.	11-8	off	4:00 pm	—	—	—	—	—	—	Coggins
Thurs	11-8	on	8:00 am	—	—	—	—	—	—	[illegible]

3 Openings 3 Boats

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Nov. 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Thurs	11-8	off	4 00 pm	—	—	—	—	—	—	[illegible]
Fri	11-9	on	8 00 am	—	—	—	—	—	—	[illegible]
Fri	11-9	off	4 00 pm	—	—	—	—	—	—	[illegible]
SAT	11-10	ON	8: AM	—	—	—	—	—	—	KARRIEM
SAT	11-10	OFF	4 pm	—	—	—	—	—	—	KARRIEM
SUN	11-11	ON	8: AM	—	—	—	—	—	—	KARRIEM
SUN	11-11	2	9:00AM	9:08		✓	Fair	Sport Fish	Atlantic Hunter	KARRIEM
SUN	11-11	OFF	4 pm	—	—	—	—	—	—	KARRIEM
MON	11-12	ON	8: AM	—	—	—	—	—	—	KARRIEM
MON	11-12	OFF	4: pm	—	—	—	—	—	—	KARRIEM
TUES	11-13	ON	8: AM	—	—	—	—	—	—	KARRIEM
TUE	11-13	OFF	4: pm	—	—	—	—	—	—	KARRIEM
Wed	11-14	on	8 00 AM	—	—	—	—	—	—	[illegible]
Wed	11-14	off	4 00 pm	—	—	—	—	—	—	[illegible]
Thurs	11-15	on	8 00 AM	—	—	—	—	—	—	[illegible]
Thurs	11-15	3	3 30 pm	3 40 pm	✓		Cloud/Spt	Fisher	NV	[illegible]
Thurs	11-15	off	4 00 pm	—	—	—	—	—	—	[illegible]
Fri	11-16	on	8 00 AM	—	—	—	—	—	—	[illegible]
Fri	11-16	off	4 00 pm	—	—	—	—	—	—	[illegible]
Sat	11-17	on	8 00 AM	—	—	—	—	—	—	[illegible]

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DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

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Sat	11-17	off	4:00 pm	—	—	—	—	—	—	[illegible]
SUN	11-18	ON	8: AM	—		—	—	—	—	KARRIEM
SUN	11-18	OFF	4: pm	—		—	—	—	—	KARRIEM
SUN	11-18	ON	4 PM	—	—	—	—	—	—	COOPER
SUN	11-18	off	12	—	—	—	—	—	—	COOPER
MON	11-19	ON	8: AM	—		—	—	—	—	KARRIEM
MON	11-19-18	OFF	4: PM	—		—	—	—	—	KARRIEM
TUE	11-20-18	ON	8: AM	—		—	—	—	—	KARRIEM
TUE	11-20-18	OFF	4: pm	—		—	—	—	—	KARRIEM
Wed	11-21-18	on	8:00 AM	—	—	—	—	—	—	[illegible]
Wed	11-21	off	4:00 PM	—	—	—	—	—	—	[illegible]
Thurs	11-22	on	8:00 AM	—	—	—	—	—	—	[illegible]
Thurs	11-22	off	4:00 pm	—	—	—	—	—	—	[illegible]
Fri	11-23	on	8:00 AM	—	—	—	—	—	—	[illegible]
Fri	11-23	off	4:00 pm	—	—	—	—	—	—	[illegible]
SAT	11-24	ON	8: AM	—		—	—	—	—	KARRIEM
SAT	11-24	OFF	4: PM	—		—	—	—	—	KARRIEM
SAT	11-24	on	4 PM	—	—	—	—	—	—	COOPER
Sat	11-24	off	12	—	—	—	—	—	—	COOPER
SUN	11-25	ON	8: AM	—		—	—	—	—	KARRIEM

BRIDGE NUMBER (843) 571-7605
REPORT FOR THE MONTH OF November 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
SUN	11-25	OFF	4pm	—			—		—	Karrien
Mon	11-26	on	8 Am	—	—	—	—	—	—	Coggins
Mon	11-26	off	4Pm	—	—	—	—	—	—	Coggins
Tue	11-27	ON	8: Am	—	—	—	—	—	—	Karrien
Tue	11-27	OFF	4: pm	—			—	—	—	Karrien
Wed	11-28	on	8:00 Am	—	—	—	—	—	—	Miller
Wed	11-28	off	4:00 pm	—	—	—	—	—	—	Miller
Wed	11-28	on	8 Am	—	—	—	—	—	—	Coggins
Wed	11-28	off	4Pm	—	—	—	—	—	—	Coggins
Thurs	11-29	on	8:00 Am	—	—	—	—	—	—	Miller
Thurs	11-29	off	4:00 pm	—	—	—	—	—	—	Miller
Thurs	11-29	on	8PM	—	—	—	—	—	—	Coggins
Thurs	11-29	off	12:	—	—	—	—	—	—	Coggins
Fri	11-30	on	8:00 am	—	—	—	—	—	—	Miller
Fri	11-30	off	4:00 pm	—	—	—	—	—	—	Miller

Report of Drawbridge Openings

December 2018

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Dec, 20 18
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev. DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sat	12-1	on	8:00 AM	—	—	—	—	—	—	Miller
Sat	12-1	off	4:00 pm	—	—	—	—	—	—	Rutt
Sun	12-2	ON	8: AM	—	—	—	—	—	—	Karrem
Sun	12-2	OFF	4: pm	—	—	—	—	—	—	Karrem
Mon	12-3	ON	8: AM	—	—	—	—	—	—	Karrem
Mon	12-3	OFF	4: pm	—	—	—	—	—	—	Karrem
Tue	12-4	ON	8: AM	—	—	—	—	—	—	Karrem
Tue	12-4	OFF	4: pm	—	—	—	—	—	—	Karrem
Wed	12-5	on	8:00 AM	—	—	—	—	—	—	Rutt
Wed	12-5	1	10:30 AM	11:40 AM	✓		Clear	YT	Liberty	"
Wed	12-5	2	12:20 pm	12:30 pm		✓	Clear	Sail	Ubiquitous	"
Wed	12-5	off	4:00 pm	—	—	—	—	—	—	Miller
Thurs	12-6	on	8:00 AM	—	—	—	—	—	—	Rutt
Thurs	12-6	off	4:00 pm	—	—	—	—	—	—	Rutt
Thur	12-6	ON	12:1: pm	—	—	—	—	—	—	Karrem
Thur	12-6	OFF	12: AM	—	—	—	—	—	—	Karrem
Fri	12-7	on	8:00 AM	—	—	—	—	—	—	Rutt
Fri	12-7	3	9:30 AM	9:30 AM		✓	Clear	yt	Liberty	"
Fri	12-7	4	11:30 AM	11:35 AM	✓		Clear	yt	Liberty	"
Fri	12-7	off	4:00 pm	—	—	—	—	—	—	Rutt

7 opening 7 Boats

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF December 2018
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev. DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sat	12-8-18	ON	8: AM	—			—		—	Karrlem
SAT	12-8-18	5	11: AM	11: 15AM		✓	Fair	Yacht	Liberty	Karrlem
SAT	12/8	OFF	4: PM	—			—	—	—	Karrlem
SUN	12/9	ON	8: AM	—			—		—	Karrlem
SUN	12/9	OFF	4: PM	—			—		—	Karrlem
MON	12-10	ON	8: AM	—			—		—	Karrlem
MON	12-10	OFF	4: PM	—			—		—	Karrlem
Tues	12-11	on	8:00 AM							Mikler
Tues	12-11	off	4:00 PM							Mikler
Wed	12-12	on	8:00 AM							Mikler
Wed	12-12	off	4:00 PM							Mikler
Thurs	12-13	on	8:00 AM							Mikler
Thurs	12-13	6	12:30 PM	12:38 PM	✓		Cloudy	Sail	Cae Sora	Mikler
Thurs	12-13	off	4:00 PM	—	—	—	—	—	—	Mikler
Fri	12-14	on	8:00 AM	—	—	—	—	—	—	Mikler
Fri	12-14	off	4:00 PM	—	—	—	—	—	—	Mikler
SAT	12-15	ON	8: AM	—			—	—	—	Karrlem
SAT	12-15	OFF	4: PM	—			—	—	—	Karrlem
SUN	12-16	ON	8: AM	—			—	—	—	Karrlem
SUN	12-16	OFF	4: PM	—			—	—	—	Karrlem

BRIDGE NUMBER (843)577-7665

REPORT FOR THE MONTH OF December 20 18

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev. DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
MON	12/17	ON	8' AM	—	—	—	—	—	—	KARRIEM
MON	12/17	7	3: PM	3: 12 PM		/	Clear	SportFish	Atlantic Hunter	KARRIEM
MON	12/17	OFF	4: PM	—		—	—	—	—	KARRIEM
TUE	12/18	ON	8: AM	—	—	—	—	—	—	KARRIEM
TUES	12/18	OFF	4: PM	—	—	—	—	—	—	KARRIEM
WED	12-19	on	8:00 AM	—	—	—	—	—	—	[illegible]
WED	12.19	off	4:50 PM	—	—	—	—	—	—	[illegible]
THUR	12.20	on	8:00 AM	—	—	—	—	—	—	[illegible]
THUR	0.20	off	4:00 PM	—	—	—	—	—	—	[illegible]
FRI	12.21	on	8:00 AM	—	—	—	—	—	—	[illegible]
FRI	12.21	off	4:00 PM	—	—	—	—	—	—	[illegible]
SAT	12-22	ON	8: AM	—	—	—	—	—	—	KARRIEM
SAT	12-22	OFF	4: PM	—	—	—	—	—	—	KARRIEM
SUN	12-23	ON	8: AM	—	—	—	—	—	—	KARRIEM
SUN	12-23	OFF	4: PM	—	—	—	—	—	—	KARRIEM
MON	12/24	ON	8: AM	—	—	—	—	—	—	KARRIEM
MON	12/24	OFF	4: PM	—	—	—	—	—	—	KARRIEM
TUE	12/25	ON	8' AM	—	—	—	—	—	—	KARRIEM
TUES	12/25	OFF	4: PM	—	—	—	—	—	—	KARRIEM
WED	12-26	ON	8:00 AM	—	—	—	—	—	—	[illegible]

BRIDGE NUMBER 843-577-2605
REPORT FOR THE MONTH OF Dec. 20____
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	12-26	off	4 00 pm	—	—	—	—		—	[illegible]
Thurs	12-27	on	8 08 AM	—	—	—	—	—	—	[illegible]
Thurs	12-27	off	4 02 pm	—	—	—	—	—	—	[illegible]
Fri	12-28	on	8 00 AM	—	—	—	—	—	—	[illegible]
Fri	12-28	off	4 02 pm	—	—	—	—	—	—	[illegible]
Sat	12-29	on	8 06 AM	—	—	—	—	—	—	[illegible]
Sat	12-29	off	4 00 pm	—	—	—	—	—	—	[illegible]
Sun	12-30	ON	8:1m	—		—	—	—	—	Karrigan
Sun	12-30	OFF	4 pm	—	—	—	—	—		Karrigan
Mon	12-31	ON	8:1m	—	—	—	—	—	—	Karrigan
Mon	12-31	OFF	4 pm	—	—	—	—	—	—	Karrigan.

Report of Drawbridge Openings

January 2019

BRIDGE NUMBER (843) 577-7605

REPORT FOR THE MONTH OF Jan 2019

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Tue	1/1/19	ON	8: AM							Karrium
Tue	1/1/19	OFF	4: PM							Karrium
Wed	1-2-19	on								Rubin
Wed	1-2-19	off								Rubin
Thurs	1-3-19	on								Rubin
Thurs	1-3-19	off								Rubin
Fri.	1-4-19	on								Rubin
Fri.	1-4-19	1	9 30 AM	9 37 AM		⌐	Cloudy	yt	Shumur	"
Fri	1-4-19	off	4 00							Rubin
SAT	1-5-19	ON	8: AM							Karrium
SAT	1-5-19	OFF	4: PM							Karrium
SUN	1-6-19	ON	8: AM							Karrium
SUN	1-6-19	OFF	4: PM							Karrium
MON	1-7-19	ON	8: AM							Karrium
MON	1-7-19	OFF	4: PM							Karrium
Tue	1-8-19	ON	8: AM							Karrium
Tue	1-8-19	OFF	4: PM							Karrium
Wed	1-9-19	on	800 AM							Rubin
Wed	1-9-19	off	400 PM							Rubin
Thurs	1-10-19	On	800 AM							Rubin

2 openings 2 Boats

BRIDGE NUMBER 843-577-7605

REPORT FOR THE MONTH OF Jan 20 19

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Thurs	1-10-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Fri	1-11-19	on	8:00 AM	—	—	—	—	—	—	[illegible]
Fri	1-11-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sat	1-12-19	on	8:00 AM	—	—	—	—	—	—	[illegible]
Sat	1-12-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sun	1-13-19	ON	8: AM	—	—	—	—	—	—	KARRIEM
Sun	1-13-19	OFF	4: PM	—	—	—	—	—	—	KARRIEM
Mon	1-14-19	ON	8: AM	—	—	—	—	—	—	KARRIEM
Mon	1-14-19	OFF	4: PM	—	—	—	—	—	—	KARRIEM
Tue	1-15-19	ON	8: AM	—	—	—	—	—	—	KARRIEM
Tue	1-15-19	2	1:2:25	12:40	✓		Fair	Sail	Sazumah	KARRIEM
Tue	1-15-19	OFF	4: PM	—		—	—	—	—	KARRIEM
Wed	1-16-19	on	8:00 AM	—	—	—	—	—	—	[illegible]
Wed	1-16-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Thurs	1-17-19	On	8:00 AM	—	—	—	—	—	—	[illegible]
Thurs	1-17-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Fri	1-18-19	on	8:00 AM	—	—	—	—	—	—	[illegible]
Fri	1-18-19	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sat	1-19-19	ON	8: AM	—	—	—	—	—	—	KARRIEM
Sat	1-19-19	OFF	4: PM	—	—	—	—	—	—	KARRIEM

BRIDGE NUMBER (843) 577-7605

REPORT FOR THE MONTH OF Jan 20 19

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Sun	1-20-19	ON	8: AM	—		—		—	—	Karrigan
Sun	1-20-19	OFF	4: PM	—	—		—	—	—	Karrigan
Mon	1-21-19	ON	8. AM	—	—		—		— —	Karrigan
Mon	1-21-19	OFF	4: PM	—	—		—	—	— —	Karrigan
Tue	1-22-19	ON	8. AM	—	—		—	—	— —	Karrigan
Tue	1-22-19	OFF	4: PM	—	—	—	—	—	— —	Karrigan
Wed	1-23-19	on	8 00 AM	—	—	—	—	—	—	Mills
Wed	1-23-19	off	4 00 PM	—	—	—	—	—	—	Mills
Thurs	1-24-19	on	8 00 AM	—	—	—	—	—	—	Mills
Thurs	1-24-19	off	4 00 PM	—	—	—	—	—	—	Mills
Fri	1-25-19	on	8 00 AM	—	—	—	—	—	—	Mills
Fri	1-25-19	off	4 00 PM	—	—	—	—	—	—	Mills
Sat	1-26-19	on	8 00 AM	—	—	—	—	—	—	Mills
Sat	1-26-19	off	4 00 PM	—	—	—	—	—	—	Mills
Sun	1-27-19	ON	8: AM	—	—	—	—	—	—	Karrigan
Sun	1-27-19	OFF	4! PM	—	—	—	—	—	— —	Karrigan
Mon	1-28-19	ON	8: AM	—	—	—	—	—	—	Karrigan
Mon	1-28-19	OFF	4: PM	—	—	—	—	—	—	Karrigan
Tue	1-29-19	ON	8: AM	—	—	—	—	—	—	Karrigan
Tue	1-29-19	OFF	4: PM	—	—	—	—	—	— —	Karrigan

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Jan 20 19
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	1-30	on	—	—	—	—	—	—	—	[illegible]
Wed	1-30	off	—	—	—	—	—	—	—	[illegible]
Thurs	1-31	on	—	—	—	—	—	—	—	[illegible]
Thurs	1-31	off	—	—	—	—	—	—	—	[illegible]
Fri										
Fri										

Report of Drawbridge Openings

February 2019

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Feb 20 19
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Fri	2-1	on								Miller
Fri	2-1	off	400 pm							
SAT	2-2-19	ON	8. AM							KARRIGAN
SAT	2-2-19	OFF	4: PM							KARRIGAN
SUN	2-3-19	ON	8. AM							KARRIGAN
SUN	2-3-19	OFF	4: PM							KARRIGAN
MON	2-4-19	ON	8. AM							KARRIGAN
MON	2-4-19	1	8:35 AM	8:45		V	Sunny	Tow	US TOW	KARRIGAN
MON	2-4-19	OFF	4: PM							KARRIGAN
TUE	2-5-19	ON	8. AM							KARRIGAN
TUE	2-5-19	OFF	4: PM							KARRIGAN
Wed	2-6-19	on	800 pm							Miller
Wed	2-6-19	off	400 pm							Miller
Thurs	2-7-19	on	800 am							Miller
Thurs	2-7-19	off	400 pm							Miller
Fri.	2-8-19	on	800 am							Miller
Fri.	2-8-19	off	400 pm							Miller
Sat	2-9-19	on	800 am							Miller
Sat	2-9-19	2	1130 am	11 35 AM		V	Clear	Fishing Dt	Sea Hawk	Miller
Sat	2-9-19	off	400 pm							Miller

3 Openings 3 Boats

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Feb 20 19
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
SUN	2/10/19	ON	8; AM							KARRIEM
SUN	2/10/19	OFF	4; PM							KARRIEM
MON	2/11/19	ON	8; AM							KARRIEM
MON	2/11/19	OFF	4; PM							KARRIEM
TUE	2/12/19	ON	8:00 AM							KARRIEM
TUE	2/12/19	OFF	4; PM							KARRIEM
WED	2-13-19	ON	8:00 AM							
WED	2-13-19	OFF	4:09 PM							
THURS	2-14-19	ON	8:00 AM							
THURS	2-14-19	OFF	4:00 PM							
FRI	2-15-19	ON	8:00 AM							
FRI	2-15-19	OFF	4:00 PM							
SAT	2-16-19	ON	8; AM							KARRIEM
SAT	2-16-19	OFF	4; PM							KARRIEM
SUN	2-17-19	ON	8; AM							KARRIEM
SUN	2-17-19	OFF	4; PM							KARRIEM
MON	2-18-19	ON	8; AM							KARRIEM
MON	2-18-19	OFF	4; PM							KARRIEM
TUE	2-19-19	ON	8; AM							KARRIEM
TUE	2-19-19	OFF	4; PM							KARRIEM

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF Feb 20 19
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	2-20	on	8:00 Am	—	—		—	—	—	Miller
Wed	2-20	off	4:00 pm	—	—	—	—	—	—	Miller
Thurs	2-21	on	8:00 Am	—	—	—	—	—	—	Miller
Thurs	2-21	off	4:00 pm	—	—	—	—	—	—	Miller
Fri	2-22	on	8:00 Am	—	—	—	—	—	—	Miller
Fri	2-22	off	4:00 pm	—	—	—	—	—	—	Miller
Sat	2-23	on	8:00 Am	—		—	—	—	—	Miller
Sat	2-23	off	4:00 pm	—		—	—	—	—	Miller
SUN	2-24	ON	8: AM	—	—		—		—	KARRIEM
SUN	2-24	OFF	4: PM	—	—	—	—	—	—	KARRIEM
MON	2-25-19	ON	8: AM	—	—	—	—	—	—	KARRIEM
MON	2-25-19	3	12:15	12:32		✓	Sunny	Sport Fish	Finnalley	KARRIEM
MON	2-25-19	OFF	4:00 PM	—		—	—	—	—	KARRIEM
Tue	2-26	ON	8: AM	—	—	—	—	—	—	KARRIEM
Tue	2-26	OFF	4: PM	—	—	—	—	—	—	KARRIEM
Wed	2-27	on	8:00 am	—	—	—	—	—	—	Miller
Wed	2-27	off	4:00 pm	—		—	—	—	—	Miller
Thurs	2-28	on	8:00 am	—	—	—	—	—	—	Miller
Thurs	2-28	off	4:00 pm	—	—	—	—	—	—	Miller
										Miller

Report of Drawbridge Openings

March 2019

BRIDGE NUMBER 843-577-7605

REPORT FOR THE MONTH OF March 20 19

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.

DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Fri	3-1	On	8:00 AM	—	—	—	—	—	—	Rubin
Fri	3-1	off	4:00 pm	—	—	—	—	—	—	Rubin
SAT	3-2	ON	8: AM	—			—		—	KARRION
SAT	3-2	OFF	4: PM	—		—		—	—	KARRION
SUN	3-3	ON	8: AM	—			—	—	—	KARRION
SUN	3-3	OFF	4: AM	—			—	—	—	KARRION
MON	3-4	ON	8: AM	—	—		—		—	KARRION
MON	3-4	OFF	4: PM	—		—		—	—	KARRION
TUE	3-5	ON	8: AM	—		—	—	—	—	KARRION
TUE	3-5	OFF	4: pm	—		—	—	—	—	KARRION
Wed	3-6	on	8:00 AM	—		—	—	—	—	Rubin
Wed	3-6	off	4:00 pm	—	—	—	—	—	—	Rubin
Thurs	3-7	on	8:00 AM	—	—		—	—	—	Rubin
Thurs	3-7	OFF	4:00 pm	—	—	—	—	—	—	Rubin
Fri	3-8	on	8:00 AM	—	—	—	—	—	—	Rubin
Fri	3-8	off	4:00 pm	—	—	—	—	—	—	Rubin
Sat	3-9	on	8:00 AM	—	—	—	—	—	—	Rubin
Sat	3-9	off	4:00 pm	—	—	—	—	—	—	Rubin
SUN	3-10	ON	8: AM	—		—	—	—	—	KARRION
SUN	3-10	OFF	4: pm	—			—	—		KARRION

6 Openings

6 Boats

BRIDGE NUMBER (843) 577-7605
REPORT FOR THE MONTH OF March 20 19
NAME OF BRIDGE New Ashby
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Mon	3-11	On	8: AM	—		—	—	—	—	Karriem
Mon	3-11	Off	4: PM	—			—	—	—	Karriem
Tue	3-12	On	8: AM	—		—		—	—	Karriem
Tue	3-12	1	9:43	9:58	✓		Sunny	Tug	Angela	Karriem
Tue	3-12	2	2:15	2:29		✓	Sunny	Tug	Angela	Karriem
Tue	3-12	Off	4: PM	—		—	—	—	—	Karriem
Wed	3-13	On	8:00 AM	—	—		—	—	—	Mihm
Wed	3-13	Off	4:00 PM	—	—	—	—	—	—	Mihm
Thurs	3-14	On	8:00 AM	—	—	—	—	—	—	Mihm
Thurs	3-14	Off	4:00 PM	—	—	—	—	—	—	Mihm
Fri.	3-15	On	8:00 AM	—	—	—	—	—	—	Mihm
Fri.	3-15	Off	4:00 PM	—	—	—	—	—	—	Mihm
Sat	3-16	On	8: AM	—			—		—	Karriem
Sat	3-16	Off	4: PM	—		—	—	—	—	Karriem
Sun	3-17	On	8: AM	—			—		—	Karriem
Sun	3-17	Off	4: PM	—			—		—	Karriem
Mon	3-18	On	8: AM	—			—		—	Karriem
Mon	3-18	Off	4: PM	—			—		—	Karriem
Tue	3-19	On	8: AM	—				—	—	Karriem
Tue	3-19	Off	4: PM			—	—	—	—	Karriem

BRIDGE NUMBER 843-577-7605
REPORT FOR THE MONTH OF March 20 19
NAME OF BRIDGE New Ashley
DRAWBRIDGE SERVICES, INC.

STATE OF SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

REPORT OF DRAWBRIDGE OPENINGS

Form 3079 Rev.
DBS

DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Wed	3-20	on	8:00 AM	—	—	—	—	—	—	[illegible]
Wed	3-20	off	4:00 pm	—	—	—	—	—	—	[illegible]
Thurs	3-21	On	8:00 AM	—	—	—	—	—	—	[illegible]
Thurs	3-21	off	4:00 pm	—	—	—	—	—	—	[illegible]
Fri	3-22	On	8:00 AM	—	—	—	—	—	—	[illegible]
Fri	3-22	off	4:00 pm	—	—	—	—	—	—	[illegible]
Sat	3-23	on	8:00 AM	—	—	—	—	—	—	[illegible]
Sat	3-23	off	4:00 pm	—	—	—	—	—	—	[illegible]
SUN	3-24	ON	8:00 AM	—	—	—	—	—	—	KARRIKER
SUN	3-24	3	10:42 AM	10:58 AM		✓	Fair	yacht	Moon Dance	KARRIKER
SUN	3-24	OFF	4: PM	—		—	—	—	—	KARRIKER
MON	3-25	ON	8: AM	—		—	—	—	—	KARRIKER
MON	3-25	OFF	4: PM	—		—	—	—	—	KARRIKER
TUE	3-26	ON	8: AM	—		—	—	—	—	KARRIKER
TUE	3-26	OFF	4: PM	—		—	—	—	—	KARRIKER
Wed	3-27	on	8:00 AM							[illegible]
Wed	3-27	4	10:30 AM		✓		Fair	yacht	none	"
Wed	3-27				✓		Fair	yacht	4 Knot	"
Wed	3-27				✓		Fair	Sail	none	"
Wed	3-27			10:42 AM	✓		Fair	yacht	none	[illegible]

BRIDGE NUMBER 843-572-7605

REPORT FOR THE MONTH OF March 2019

NAME OF BRIDGE New Ashley

DRAWBRIDGE SERVICES, INC.

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DAY OF WEEK	DATE	DRAW OPENING NUMBER	TIME GATES DROP AM OR PM	TIME GATES OPEN AM OR PM	DIRECTION NORTH	DIRECTION SOUTH	CONDITION OF WEATHER & RIVER	TYPE OF VESSEL PASSING THROUGH	NAME OR NUMBER OF VESSEL PASSING THROUGH	NAME OF TENDER IN CHARGE OF DRAW
Thurs	3-28	on	8:00 AM							[illegible]
Thurs	3-28	5	10:30 AM		↓		clear	yt	none	"
Thurs	3-28			10:40 AM	↓		clear	yt	none	"
Thurs	3-28	off	4:00 pm							[illegible]
Fri	on	8:00 AM								[illegible]
Fri	3-29	6	3:50 pm	3:59 pm	↓		clear	Sail	Meander	[illegible]
Fri	3-29	off	4:00 pm							[illegible]
Sat	330	ON	8:1M							KARRIEM
Sat	330	OFF	4: pm							KARRIEM
SUN	3-31	ON	8:AM							KARRIEM
SUN	3-3	OFF	4:PM							KARRIEM
Sun	3-31	on	7:00 PM							[illegible]
Sun	3-31	off	8:00 pm							[illegible]

Attachment E Draft Section 6(F) Environmental Assessment

Highland Terrace-Liberty Park Community Center Land Conversion

DRAFT
8-11-20

Environmental Assessment

Highland Terrace-Liberty Park Community Center Land Conversion
2401 Richardson Drive/5260 Deacon Street

A conversion of land protected under
Section 6(f)3 of the Land and Water Conservation Fund Act

August 10, 2020

For Information Contact:
Chad Long
Director of Environmental Services
South Carolina Department of Transportation
Post Office Box 191
Columbia, SC 29202-191

Submitted to:
Justin Hancock
Director of Recreation, Grants and Policy
SC Department of Parks, Recreation & Tourism
1205 Pendleton Street
Columbia, SC 29201

For:
Alexis John
Program Officer
National Park Service
Southeast Region, Recreation Programs Branch
100 Alabama Street, SW 1924 Building
Atlanta, GA 30303-8701

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The Land and Water Conservation Fund (LWCF), Stateside Assistance grant program, provides funds to states, and through states to local agencies, for the acquisition and development of outdoor recreation resources. Lands that have received funding through LWCF are protected by section 6(f)3 of the Act unless a conversion is approved by the Secretary of the Interior as delegated to the National Park Service.

DRAFT
8-11-20

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SUMMARY

North Charleston, South Carolina is a coastal city with incorporated areas in Berkeley, Charleston, and Dorchester Counties. With the continued growth of the Charleston metropolitan area, North Charleston has experienced a substantial increase in population over the last decade which is expected to continue as the area is further developed. Between 2017 and 2040, the City's population is projected to increase by approximately 46%. To accommodate recent and projected growth, the I-526 LCC WEST project proposes additional lanes on I-26 as part of improvements to the I-526/I-26 interchange improvements. These improvements would require the westward realignment of Taylor Street, which would encroach on Section 6(f) resources. The Section 6(f) property is located at 2401 Richardson Drive and referred to as the **Highland Terrace-Liberty Park Community Center**. SCDOT proposes to convert a portion of the Highland Terrace-Liberty Park Community Center to allow for permanent right-of-way acquisition.

In addition to evaluating the proposed replacement property, SCDOT evaluated other available land within the immediate vicinity of the affected Section 6(f) property, in an effort to replace the facility as close to the existing facility as possible. This evaluation included several City-owned and privately-owned parcels; however, these parcels were either too small or were comprised almost entirely of wetlands. After an extensive search, a privately-owned parcel located at 5260 Deacon Street, referred to as the **Anderson Tract**, was found to be a suitable location without notable environmental or cultural features. The no-build alternative was also evaluated; however, leaving the existing Section 6(f) property in its current state would not be compatible with the purpose of the I-526 LLC WEST project nor consistent with Section 6(f) regulatory requirements.

SCDOT proposes to acquire the Anderson Tract and convey ownership to the City of North Charleston in accordance with Section 6(f) requirements. SCDOT also proposes to replace recreational facilities with a pocket park on the remaining 0.64-acre at the Highland Terrace-Liberty Park Community Center. Public input on the proposed replacement facilities will occur concurrent to the public engagement being conducted for the I-526 LCC WEST Draft Environmental Impact Statement (DEIS) in the fall of 2020. The time frame for completing the recreational improvements is estimated at four years if conversion is approved.

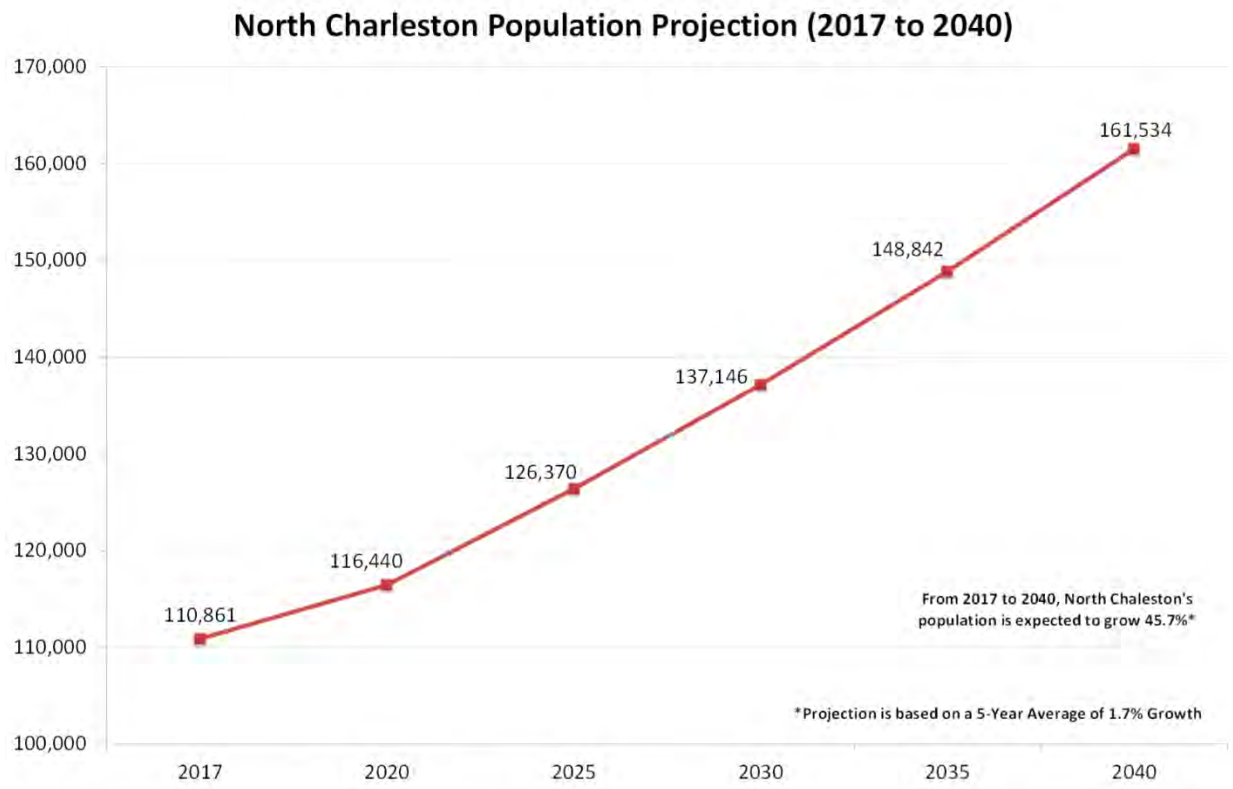
In light of proposed project and associated efforts to replace converted Section 6(f) property, SCDOT is requesting that SC Department of Parks, Recreation & Tourism forward a recommendation to the National Park Service (NPS) to approve the proposed conversion and replacement.

INTRODUCTION

In 1979, the City of North Charleston received a Land and Water Conservation Fund (LWCF) grant for the creation of the **Highland Terrace-Liberty Park Community Center**, located at 2401 Richardson Drive, protecting it for public outdoor recreation under Section 6(f)3 of the LWCF Act. Due to the proposed I-526 Lowcountry Corridor (LCC) WEST transportation improvement project, this location is needed for permanent right-of-way acquisition. SCDOT proposes to replace impacted facilities at the Highland Terrace-Liberty Park with replacement amenities constructed at 5260 Deacon Street (**Anderson Tract**). Approximately 4.90 acres of the Anderson Tract would be included within the Section 6(f) replacement boundary. The appended vicinity map shows the location of both properties.

PURPOSE, NEED AND BACKGROUND

North Charleston, South Carolina is a coastal city with incorporated areas in Berkeley, Charleston, and Dorchester Counties. With the continued growth of the Charleston metropolitan area, North Charleston has experienced a substantial increase in population over the last decade. The City's population grew by approximately 20% in ten years from 97,471 in 2010 to 116,440 in 2020. As shown in the chart below, the City's population is projected to increase by approximately 46% in 2040.



SOURCE: PRIME. North Charleston: Population & Demographics
http://www.northcharleston.org/residents/community/primenorthcharleston/the-data/population-demographics/

To accommodate recent and projected growth, the South Carolina Department of Transportation (SCDOT) proposes to convert land owned by the City of North Charleston and protected under Section 6(f) of the Land and Water Conservation Fund for permanent right-of-way acquisition as a part of the I-526 Lowcountry Corridor (LCC) WEST transportation improvement project. SCDOT proposes replacement of the converted land with the acquisition of nearby land currently in private ownership, development of the property to provide replacement amenities, and subsequent transfer of ownership to the City of North Charleston.

The purpose of this project is to convert a portion of the Highland Terrace-Liberty Park Community Center to allow for permanent right-of-way acquisition required by the proposed I-526 LCC WEST transportation improvement project. The community center and associated recreational facilities are located within close proximity to I-26 and would be impacted by the proposed transportation improvements. The I-526 LCC WEST project proposes additional lanes on I-26 as part of improvements to the I-526/I-26 interchange improvements and would require the westward realignment of Taylor Street, which would encroach on the Highland Terrace-Liberty Park property.

Description of the Highland Terrace-Liberty Park Community Center – The Highland Terrace-Liberty Park Community Center is a publicly-owned recreational area. It provides a forum for youth development programs and community gatherings and serves as a voting center. The 0.87-acre property consists of recreational amenities including a full-size basketball court, half-size basketball court, a playground, and a 1,947 square foot community center. See appended map and photos. The City of North Charleston purchased the property in 1979. Per the November 5, 2019 appraisal completed by Saunders & Associates, Inc., the property is valued at $385,000. See appended environmental features site map.

Description of the Anderson Tract – The Anderson Tract, owned by Hattie Ruth Levy Anderson, is a planned acquisition by SCDOT with the intent of conveying ownership to the City of North Charleston. The parcel is mostly wooded and contains one single-family residence along its southern boundary. The entire landholding is 5.53 acres, of which 4.90 acres is proposed as replacement Section 6(f) land. Per the July 6, 2020 appraisal completed by Saunders & Associates, Inc., the 4.90 acres including land and the existing residence are valued at $610,000. If the conversion is approved, this property would become a recreational complex that provides full replacement of amenities impacted at the Highland Terrace-Liberty Park Community Center. The appended vicinity map shows the location of both properties. See appended environmental features site map.

DESCRIPTION OF ALTERNATIVES

Alternative A (No Action) – This alternative would result in an absence of the need for the Taylor Street realignment, additional right-of-way for the I-526 LCC WEST project, and the development of replacement facilities on the Anderson Tract. Alternative A was not selected because it would not meet the purpose of and satisfy the need for improved transportation facilities in the area.

Alternative B (Build Alternative) – Alternative B includes construction of the I-526 LCC WEST project and would remove federal protection from 0.23-acre of the Highland Terrace-Liberty Park Community Center to allow for permanent right-of-way acquisition. This alternative includes the creation of an outdoor recreational complex on the Anderson Tract including a full size outdoor basketball court, educational wetlands, playground, multi-use field, and fitness loop. This alternative also includes the reconstruction of outdoor recreational facilities at the existing facility (Highland Terrace-Liberty Park pocket park). See appended figures showing proposed facilities at each location.

Alternatives Evaluated But Not Carried Forward – In addition to evaluating the proposed replacement property, SCDOT evaluated other available land within the immediate vicinity of the affected Section 6(f) property, in an effort to replace the facility as close to the existing facility as possible. This evaluation included several City-owned and privately-owned parcels; however, these parcels were either too small or were comprised almost entirely of wetlands and as such, were not carried forward as feasible alternatives.

AFFECTED ENVIRONMENT

Anderson Tract

- **Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.**
  Per the Phase I Environmental Site Assessment prepared by S&ME, Inc. on March 27, 2020, the project area is generally underlain by sandy and sandy loam soils. The Anderson Tract consists of predominantly wooded and open space areas. The tract is relatively flat and on grade with the road grade of Deacon Street.
- **Air quality**
  Per the Air Quality Impact Analysis performed by Stantec Consulting Services, Inc. dated May 2020, the project area is in attainment for all criteria pollutants.

Modeled concentrations of all MSAT pollutants are projected to experience significant reductions between 2015 and 2050 due to improvements in vehicle emission standards.

- **Sound (noise impacts)**
  The main sources of noise within the proposed recreational complex area include the adjacent rail corridor and noise from motor vehicles along I-526.
- **Water quality/quantity**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, the only aquatic habitat observed within this site is an approximately one-half acre freshwater pond.
- **Stream flow characteristics**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, no streams will be affected by the proposed land conversion.
- **Marine/estuarine features**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, the only aquatic habitat observed within this site is an approximately one-half acre freshwater pond.
- **Floodplains/wetlands**
  Per FEMA Floodplain Mapping, the entire property is located in Zone X (moderate flood hazard zone) and 0.3-acre is located in Zone AE (1% annual chance flooding). There are no wetlands on the Anderson Tract.
- **Land use/ownership patterns; property values; community livability**
  Mr. Samuel F. and Hattie Ruth Levy Anderson built the subject house in the 1960's. Mrs. Hattie Ruth Levy Anderson received title to the subject from Samuel F. Anderson a/k/a Samuel Anderson through Deed of Distribution on May 1, 2008. This is identified as Case Number: 2008-ES-10-00481 and recorded in the RMC Office for Charleston County in Deed Book Y658, Page 882.
- **Circulation, Transportation**
  There are approximately 650 linear feet of an unpaved private driveway extending from Deacon Street to a single-family residence. Visibility and access to the rear portion of the parcel are otherwise limited due to the presence of a rail line to the west and Filbin Creek to the south. The nearest public transportation option is the CARTA bus route along Rivers Avenue.
- **Plant/animal/fish species of special concern and habitat**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, there is no suitable habitat for species of special concern.

- **Federal listed species or species proposed for listing**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, there is no suitable habitat for federally-listed species or species proposed for listing.
- **Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.**
  No unique ecosystems, World Heritage sites, old growth forests, or other notable terrestrial communities were identified during the environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020.
- **Unique or important wildlife/ wildlife habitat**
  No unique or important wildlife or wildlife habitat was identified during the environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020.
- **Unique or important fish/habitat**
  No unique or important fish/habitat was identified during the environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020.
- **Introduce or promote invasive species (plant or animal)**
  There are no notable areas with invasive species currently on the property.
- **Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc.**
  The Anderson Tract does not contain any existing recreational resources, services, or opportunities for recreation.
- **Accessibility for populations with disabilities**
  The Anderson Tract is privately-owned and does not include facilities specifically for access by populations with disabilities.
- **Overall aesthetics, special characteristics/features**
  The property is mostly wooded, and a single-family residential structure is present. no special characteristics or features are present on the property.
- **Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc.**
  The Anderson Tract was surveyed for historic resources as part of the studies conducted for the proposed I-526 LCC WEST project. Based on the results of background research and field survey, there are no historic resources recommended eligible for listing on the National Register of Historic Places at the Anderson Tract. The Anderson Tract does not warrant intensive archaeological survey, as soils are defined as Urban land and located within the Filbin Creek drainage.

- **Socioeconomics, including employment, occupation, income changes, tax base, infrastructure**
  The Anderson Tract does not contain any facilities or provide functions that influence or otherwise affect local socioeconomic conditions.
- **Minority and low-income populations**
  The Anderson Tract does not contain any facilities or provide functions that provide services for minority and low-income populations.
- **Energy resources (geothermal, fossil fuels, etc.)**
  The Anderson Tract does not contain any energy resources such as geothermal energy or fossil fuels.
- **Other agency or tribal land use plans or policies**
  The Anderson Tract is not a focus area in any agency or tribal land use plans or polices.
- **Land/structures with history of contamination/hazardous materials even if remediated**
  Per the Phase I Environmental Site Assessment prepared by S&ME, Inc. on March 27, 2020, no sites of concern are located on the parcel.
- **Other important environmental resources to address**
  There are no other known environmental resources to address by the proposed land conversion.

Highland Terrace-Liberty Park Community Center

- **Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.**
  Per the Phase I Environmental Site Assessment prepared by S&ME, Inc. on March 27, 2020, the project area is generally underlain by sandy and sandy loam soils. The Highland Terrace-Liberty Park Community Center is a fully developed parcel that consists of predominantly open space recreational areas. The tract is flat and relatively on grade with the road grades of Richardson Drive.
- **Air quality**
  Per the Air Quality Impact Analysis performed by Stantec Consulting Services, Inc. dated May 2020, the project area is in attainment for all criteria pollutants. Modeled concentrations of all MSAT pollutants are projected to experience significant reductions between 2015 and 2050.
- **Sound (noise impacts)**
  The main sources of noise within the current property include a rail corridor to the north as well as motor vehicles along I-26.

- **Water quality/quantity**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, there are no streams or other water conveyances located on the property.
- **Stream flow characteristics**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, no streams will be affected by the proposed land conversion.
- **Marine/estuarine features**
  There are no known marine/estuarine features that will be affected in the proposed conversion area.
- **Floodplains/wetlands**
  Per FEMA Floodplain Mapping, the entire property is located in Zone X (moderate flood hazard zone). A small wetland area sits on the northern boundary of the parcel, as shown in the appended environmental features map.
- **Land use/ownership patterns; property values; community livability**
  Per an appraisal by Saunders & Associates, Inc. dated November 5, 2019, the current land use is recreational. The subject tract has primarily been designated for recreational use by the City of North Charleston since it was transferred on May 17, 1977. This transaction was recorded in the RMC Office of Charleston County in Deed Book L112, Page 371.
- **Circulation, Transportation**
  The main circulation/transportation is currently access from Richardson Drive and Taylor Street. The nearest public transportation option is the CARTA bus route along Rivers Avenue.
- **Plant/animal/fish species of special concern and habitat**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, there is no suitable habitat for species of special concern.
- **Federal listed or proposed for listing**
  According to an environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020, there is no suitable habitat for federally-listed species or species proposed for listing.
- **Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.**
- No unique ecosystems, World Heritage sites, old growth forests, or other notable terrestrial communities were identified during the environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020.

- **Unique or important wildlife/ wildlife habitat**
  Per an e-mail from USFWS dated July 28, 2020, USFWS concurs with findings that the proposed "land swap" will not alter the quality of the natural environment, and we do not offer any objections.
- **Unique or important fish/habitat**
  No unique or important fish/habitat was identified during the environmental survey performed by Civil Engineering Consulting Services, Inc. on July 23, 2020.
- **Introduce or promote invasive species (plant or animal)**
  There are no notable areas with invasive species currently on the property.
- **Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc.**
  Current recreational resources within the property will be impacted by the proposed land conversion. However, 0.64-acre of the 0.87-acre property not acquired for permanent right-of-way acquisition will be developed into a pocket park.
- **Accessibility for populations with disabilities**
  The Highland Terrace-Liberty Park Community Center includes access for populations with disabilities.
- **Overall aesthetics, special characteristics/features**
  The property is fully developed and contains a 1,947 square foot community center with recreational amenities. Outside of these facilities, there are no special characteristics or features on the property.
- **Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. Attach SHPO/THPO determination.**
  The Highland Terrace-Liberty Park Community Center was surveyed for historic resources as part of the studies conducted for the proposed I-526 LCC WEST project. Based on the results of background research and field survey, there are no historic resources recommended eligible for listing on the National Register of Historic Places at the Highland Terrace-Liberty Park Community Center. The Highland Terrace-Liberty Park Community Center does not warrant intensive archaeological survey, as soils are defined as Urban land and located within the Filbin Creek drainage.
- **Socioeconomics, including employment, occupation, income changes, tax base, infrastructure**
  The Highland Terrace-Liberty Park Community Center provides after school and summer programs which provide childcare options for neighborhood residents.
  Minority and low-income populations
- The Highland Terrace-Liberty Park Community Center provides programs for the surrounding neighborhoods which are identified as minority and low-income populations.

- **Energy resources (geothermal, fossil fuels, etc.)**
  The Highland Terrace-Liberty Park Community Center does not contain any energy resources such as geothermal energy or fossil fuels.
- **Other agency or tribal land use plans or policies**
  The Highland Terrace-Liberty Park Community Center is not a focus area in any agency or tribal land use plans or polices.
- **Land/structures with history of contamination/hazardous materials even if remediated**
- Per the Phase I Environmental Site Assessment prepared by S&ME, Inc. on March 27, 2020, no sites of concern are located on the parcel.
- **Other important environmental resources to address.**
  There are no other known environmental resources to address by the proposed land conversion.

ENVIRONMENTAL IMPACTS

Recreational resources, facilities, and recreation opportunities at Highland Terrace-Liberty Park Community Center would be impacted by the proposed I-526 LCC WEST project. No impacts to the human or natural environment are anticipated from the proposed land conversion and replacement of impacted recreational facilities.

This proposal is being prepared in conjunction with the I-526 LCC WEST transportation improvement project. The estimated time frame for construction of the I-526 LCC WEST project would be approximately four years if conversion is approved.

Anderson Tract

- **Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.**
  No measurable effects to geologic resources are expected as a result of the proposed land conversion.
- **Air quality**
  No measurable effects to air quality are expected as a result of the proposed land conversion.
- **Sound (noise impacts)**
  No measurable changes to existing or expected noise levels are anticipated as a result of the proposed conversion.
- **Water quality/quantity**
  The proposed replacement facility would increase the amount of impervious surface on the Anderson Tract; however, it is limited to the basketball court,

playground, and fitness loop. To manage stormwater, two stormwater detention basins are proposed on the Anderson Tract as part of the Section 6(f) replacement. These stormwater facilities will also serve as educational wetlands. No adverse impacts to water quality/quantity are anticipated by the proposed land conversion. No measurable effects to water quality or stream flow are expected as a result of the proposed land conversion.

- **Stream flow characteristics**
  No measurable effects to water quality or stream flow are expected as a result of the proposed land conversion.
- **Marine/estuarine features**
  No measurable effects to marine/estuarine features are expected as a result of the proposed land conversion.
- **Floodplains/wetlands**
  No measurable effects to floodplains or wetlands are expected as a result of the proposed land conversion. As noted above, the proposed replacement facility includes stormwater management measures.
- **Land use/ownership patterns; property values; community livability**
  The Anderson Tract is currently a planned acquisition by SCDOT with the intent of conveying ownership to the City of North Charleston as a result of the proposed land conversion. The creation of recreational facilities would have a positive effect on community livability and cohesion which may provide benefit for adjacent property values.
- **Circulation, Transportation**
  The proposed replacement property would include an access drive from Deacon Street as well as a driveway and parking lot which would be accessed from Elder Avenue.
- **Plant/animal/fish species of special concern and habitat**
  No measurable effects to plant/animal/fish species of special concern and habitat are expected as a result of the proposed land conversion. Per correspondence from USFWS dated July 28, 2020, USFWS concurs with findings that the proposed "land swap" will not alter the quality of the natural environment and does not object to the proposed conversion and replacement.
- **Federal listed species or species proposed for listing**
  No measurable effect to federal listed or proposed for listing are expected as a result of the proposed land conversion. Per correspondence from USFWS dated July 28, 2020, USFWS concurs with findings that the proposed "land swap" will not alter the quality of the natural environment and does not object to the proposed conversion and replacement.

- **Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.**
  No measurable effect to unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc. are expected as a result of the proposed land conversion. Per correspondence from USFWS dated July 28, 2020, USFWS concurs with findings that the proposed "land swap" will not alter the quality of the natural environment and does not object to the proposed conversion and replacement.
- **Unique or important wildlife/ wildlife habitat**
  No measurable effects to unique or important wildlife/wildlife habitat are expected as a result of the proposed land conversion. Per correspondence from USFWS dated July 28, 2020, USFWS concurs with findings that the proposed "land swap" will not alter the quality of the natural environment and does not object to the proposed conversion and replacement.
- **Unique or important fish/habitat**
  No measurable effects to unique or important fish/habitat are expected as a result of the proposed land conversion. Per correspondence from USFWS dated July 28, 2020, USFWS concurs with findings that the proposed "land swap" will not alter the quality of the natural environment and does not object to the proposed conversion and replacement.
- **Introduce or promote invasive species (plant or animal)**
  The proposed conversion would not create an opportunity to introduce or promote invasive species. The Anderson Tract would be landscaped and regularly maintained.
- **Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc.**
  The Anderson Tract would be Property will be developed as a recreational complex if the proposed land conversion is approved. Recreational resources in the area would be improved by the addition of the recreational complex on the Anderson Tract in addition to the remaining land at the Highland Terrace-Liberty Park Community Center being retained and redeveloped for outdoor recreational purposes.
- **Accessibility for populations with disabilities**
  The proposed replacement recreational facilities would be designed to ensure accessibility for populations with disabilities. No measurable effects on accessibility for populations with disabilities are expected as a result of the proposed land conversion.

- **Overall aesthetics, special characteristics/features**
  There are no special characteristics or features currently on the Anderson Tract. The property will be landscaped and maintained to provide a positive effect on overall aesthetics of the site.
- **Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc.**
  No measurable effects on historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. are expected as a result of the proposed land conversion.

  Per a letter dated July 27, 2020 from SHPO, there are no documented historic properties that are eligible for listing or listed in the National Register of Historic Places in the proposed Area of Potential Effect (APE) and no additional cultural resources/historic property identification survey are needed.

  On March 29, 2019, an invitation to be a consulting part on the I-526 LCC West project was sent via email to the Tribal Historic Preservation Officers (THPO) for the Catawba Indian Nation, Eastern Shawnee Indians, and Muscogee Creek Nation. The Catawba Indian Nation responded via email on May 6, 2019 indicating they wished to be a consulting party. On June 18, 2019, SCDOT transmitted electronic copies of the overall eligibility of resources in the project study area to the Muscogee (Creek) Nation and Eastern Shawnee Nation, and a physical copy of the report to the Catawba Indian Nation on behalf of FHWA. The Catawba Indian Nation returned a signed concurrence letter to SCDOT on June 26, 2019. On July 2, 2019, SCDOT received a concurrence letter from the Catawba Indian Nation on both the I-526 Lowcountry Corridor West Project, Charleston Co., SC Addendum II report and the I-526 West Cultural Resources Effect Determination Memo. Throughout the project a response was not received from the Eastern Shawnee Indians or Muscogee Creek Nation.
- **Socioeconomics, including employment, occupation, income changes, tax base, infrastructure**
  No measurable effects on socioeconomics, including employment, occupation, income changes, tax base, infrastructure are expected as a result of the proposed land conversion.
- **Minority and low-income populations**
  No measurable effects on minority and low-income populations are expected as a result of the proposed land conversion.
- **Energy resources (geothermal, fossil fuels, etc.)**
  No measurable effects on energy resources (geothermal, fossil fuels, etc.) are expected as a result of the proposed land conversion.

- **Other agency or tribal land use plans or policies**
  No measurable effects on other agency or tribal land use plans or policies are expected as a result of the proposed land conversion.
- **Land/structures with history of contamination/hazardous materials even if remediated**
  No measurable effects on land or structures with history of contamination/hazardous materials even if remediated are expected as a result of the proposed land conversion.
- **Other important environmental resources to address**
  No measurable effects on other important environmental resources to address are expected as a result of the proposed land conversion.

Highland Terrace-Liberty Park Community Center

- **Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.**
  No measurable effects to geologic resources are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Air quality**
  No measurable effects to air quality are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Sound (noise impacts)**
  No measurable changes to existing or expected noise levels anticipated as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Water quality/quantity**
  No measurable effects to water quality or quantity are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Stream flow characteristics**
  There are no streams at the existing site and no measurable effects to stream flow are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Marine/estuarine features**
  No measurable effects to marine/estuarine features are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.

- **Floodplains/wetlands**
  The small wetland along the northern boundary of the existing facility would not be impacted by the proposed conversion. No measurable effects to floodplains/wetlands are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Land use/ownership patterns; property values; community livability**
  The City of North Charleston currently owns the Highland Terrace-Liberty Park Community Center and would retain ownership of the remaining 0.64-acre pocket park. No changes to land use, ownership patterns, or other community effects would be created as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Circulation, Transportation**
  No measurable effects to circulation or transportation are expected as a result of the proposed land conversion. The proposed pocket park would be accessed from Richardson Drive and the Taylor Street relocation.
- **Plant/animal/fish species of special concern and habitat**
  No notable species of special concern or habitat were found during field surveys. No measurable effects on plant/animal/fish species of special concern and habitat are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Federal listed species or species proposed for listing**
  No protected species or habitat were identified during field surveys. No measurable effects to federal listed or proposed for listing are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.**
  There are no unique ecosystems located at the existing facility. No measurable effects to unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc. are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Unique or important wildlife/ wildlife habitat**
  There is no unique or important wildlife or wildlife habitat at the existing facility. No measurable effects to unique or important wildlife/wildlife habitat are expected as a result of the proposed land conversion.

- **Unique or important fish/habitat**
  There is no unique or important fish habitat at the existing facility. No measurable effects to unique or important fish/habitat are expected as a result of the proposed land conversion.
- **Introduce or promote invasive species (plant or animal)**
  The proposed conversion would not create an opportunity to introduce or promote invasive species. The Highland Terrace-Liberty Park Community Center would be landscaped and regularly maintained.
- **Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc.**
  Although amenities would be replaced at the proposed replacement property and on the remaining land at the existing facility, 0.23-acre containing recreational features would be converted to permanent transportation right-of-way.
- **Accessibility for populations with disabilities**
  No measurable effects on accessibility for populations with disabilities are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center. Accessibility will be included in the design of both the new recreational complex and the pocket park at the existing site.
- **Overall aesthetics, special characteristics/features**
  Outside of typical maintenance and a small amount of landscaping, there are no special aesthetic characteristics or features currently at the Highland Terrace-Liberty Park Community Center. The proposed pocket park would be landscaped and maintained to provide a positive effect on overall aesthetics of the site.
- **Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc.**
  No measurable effects on historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. are expected as a result of the proposed land conversion.

  Per a letter dated July 27, 2020 from SHPO, there are no documented historic properties that are eligible for listing or listed in the National Register of Historic Places in the proposed Area of Potential Effect (APE) and no additional cultural resources/historic property identification survey are needed.

  On March 29, 2019, an invitation to be a consulting part on the I-526 LCC West project was sent via email to the Tribal Historic Preservation Officers (THPO) for the Catawba Indian Nation, Eastern Shawnee Indians, and Muscogee Creek Nation. The Catawba Indian Nation responded via email on May 6, 2019

indicating they wished to be a consulting party. On June 18, 2019, SCDOT transmitted electronic copies of the overall eligibility of resources in the project study area to the Muscogee (Creek) Nation and Eastern Shawnee Nation, and a physical copy of the report to the Catawba Indian Nation on behalf of FHWA. The Catawba Indian Nation returned a signed concurrence letter to SCDOT on June 26, 2019. On July 2, 2019, SCDOT received a concurrence letter from the Catawba Indian Nation on both the I-526 Lowcountry Corridor West Project, Charleston Co., SC Addendum II report and the I-526 West Cultural Resources Effect Determination Memo. Throughout the project a response was not received from the Eastern Shawnee Indians or Muscogee Creek Nation.

- **Socioeconomics, including employment, occupation, income changes, tax base, infrastructure**
  No measurable effects on socioeconomics, including employment, occupation, income changes, tax base, infrastructure are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Minority and low-income populations**
  No measurable effects on minority and low-income populations are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Energy resources (geothermal, fossil fuels, etc.)**
  No measurable effects on energy resources (geothermal, fossil fuels, etc.) are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Other agency or tribal land use plans or policies**
  No measurable effects on other agency or tribal land use plans or policies are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Land/structures with history of contamination/hazardous materials even if remediated**
  No measurable effects on land or structures with a history of contamination/hazardous materials even if remediated are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.
- **Other important environmental resources to address**
  No measurable effects on other important environmental resources are expected as a result of the proposed land conversion and construction of a pocket park on the land remaining at the Highland Terrace-Liberty Park Community Center.

Coordination and Consultation

Relevant agency correspondence and technical reports are appended to this EA. The following agencies were contacted during the preparation of this document:

- Saunders & Associates, Inc., 106 Pitt Street, Mount Pleasant, SC 29464
- Civil Engineering Consulting Services, Inc., 2551 Oscar Johnson Drive, Suite B North Charleston, SC 29405
- SC Historic Preservation Office, 8301 Parklane Road, Columbia, SC 29223-4905
- Catawba Indian Nation, 1536 Tom Stevens Road, Rock Hill, SC 29730
- Eastern Band of Cherokee Indians, P. 0. Box 445, Cherokee, NC 28719
- Muscogee Creek Nation, P. 0. Box 580, Okmulgee, OK 74447
- U.S. Fish and Wildlife Service, 176 Croghan Spur Road, Suite 200, Charleston, SC 29407
- Department of the Army Corps of Engineers Regulatory Division, Strom Thurmond Federal Building, 1835 Assembly Street, Rm 865B-1, Columbia, SC 29201

This EA will be submitted to Justin Hancock, Director of Recreation, Grants and Policy, SC Department of Parks, Recreation & Tourism, 1205 Pendleton Street, Columbia, SC 29201 for review and recommendation.

Opportunities for Public Comment

Public input on the proposed replacement facilities will occur concurrent to the public engagement being conducted for the I-526 LCC WEST Draft Environmental Impact Statement (DEIS) in the fall of 2020. This Draft EA will be available for review and comment as part of the DEIS technical appendices. The DEIS and this EA will be available for review online at the project website and at the Project Community Office, located at 5627 Rivers Avenue (CARTA Route 10).

References Consulted

Saunders & Associates, Inc., Appraisal of 5260 Deacon Street, North Charleston, SC

Saunders & Associates, Inc., Appraisal of 2401 Richardson Drive, North Charleston, SC

Stantec Consulting Services, Inc., I-526 LCC WEST Air Quality Impact Analysis, Interstate 526 & Interstate 26 Interchange

Civil Engineering Consulting Services, Inc., Proposed Section 6(f) Conversion of the Highland Terrace-Liberty Park Community Center, Biological Survey

S&ME, Inc., Phase I Environmental Site Assessment, I-526 Corridor Improvements

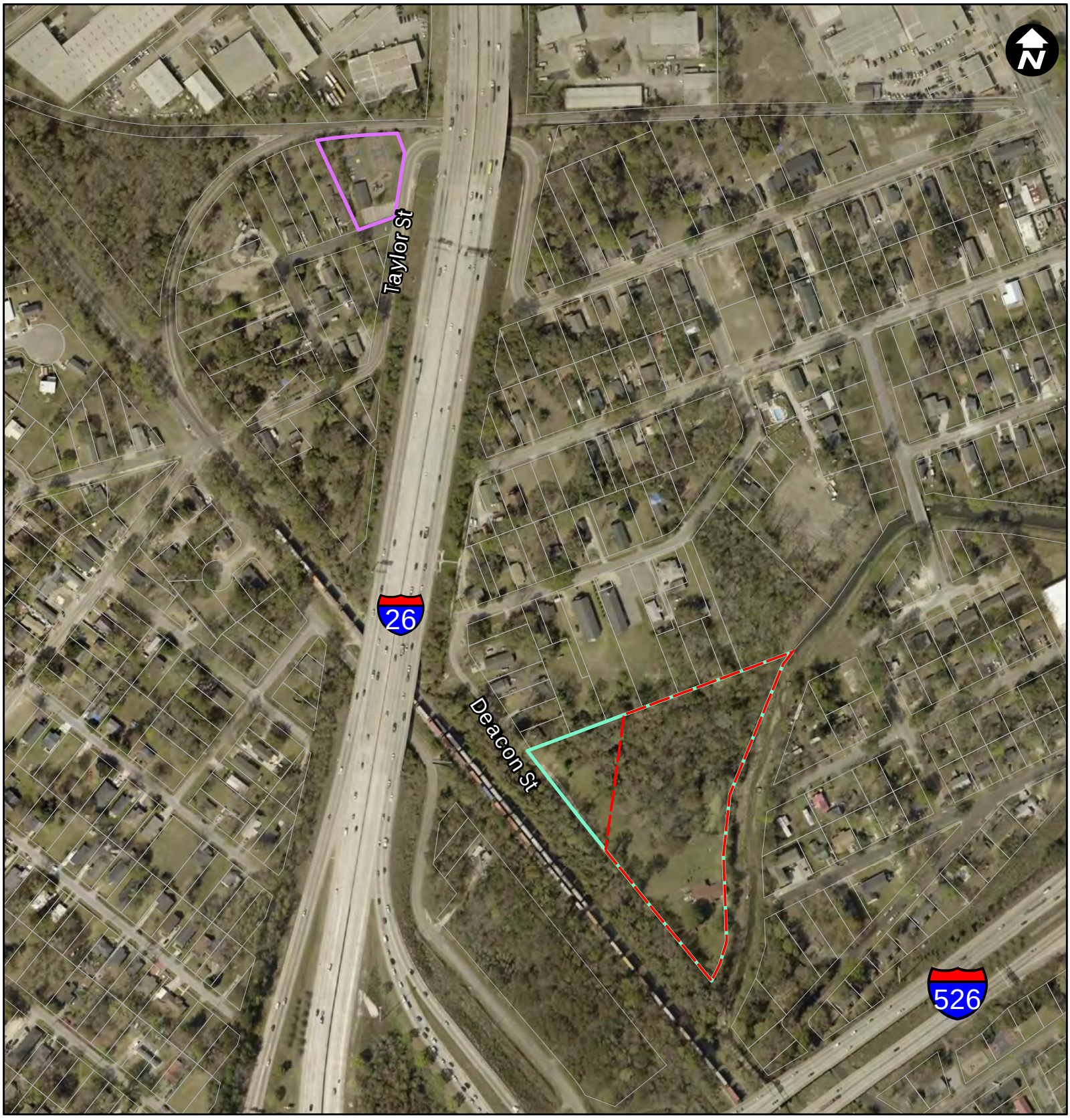
FEMA Floodplain Maps

List of Preparers

The following individual, firms, and resources contributed, directly or indirectly, to the development of this EA which was prepared in consultation with the National Park Service:

- Chad Long, Director of Environmental Services, SCDOT, Post Office Box 191, Columbia, SC 29202-191
- Amy Sackaroff, Senior Transportation Planner, Stantec, 801 Jones Franklin Road Suite 300, Raleigh, NC 27606-3394
- Michael Wray, Transportation Engineer, Stantec, 801 Jones Franklin Road Suite 300, Raleigh, NC 27606-3394
- Stuart M. Saunders, Appraiser, Saunders & Associates, Inc., 106 Pitt Street, Mount Pleasant, SC 29464
- Amanda Harris, Civil Engineering Consulting Services, Inc., 2551 Oscar Johnson Drive, Suite B, North Charleston, SC 29405

FIGURES



Legend

- Parcels
- Anderson Tract - Proposed 6(f) Boundary
- Highland Terrace-Liberty Park Community Center
- Anderson Tract

0 500 1,000 Feet

WEST 526 LOWCOUNTRY CORRIDOR

Vicinity Map

I-526 Lowcountry Corridor WEST
Charleston County

Last Updated by AK on 8/11/2020

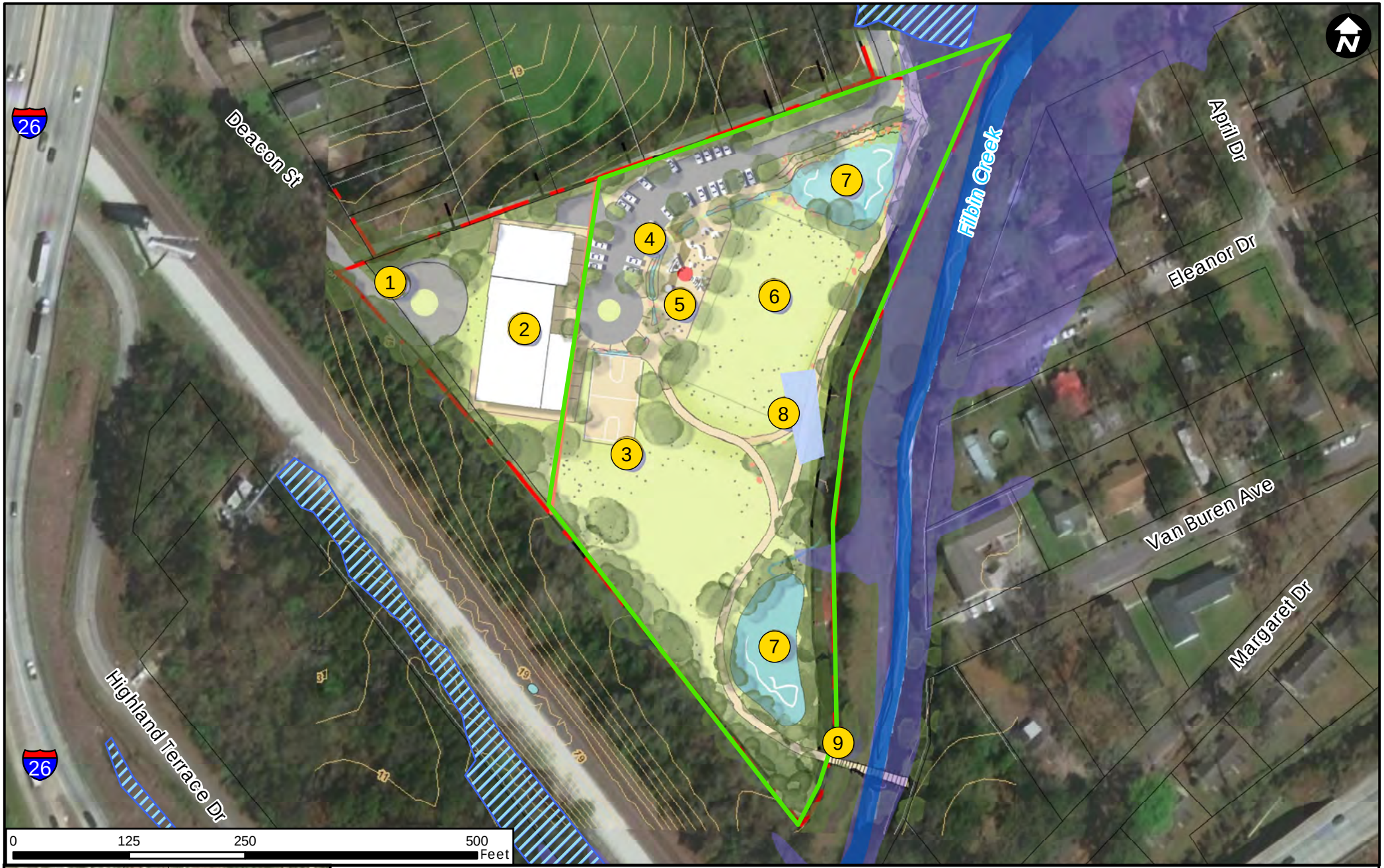
Legend

- Proposed Section 6(f) Boundary
- 100-Year Flood Zone
- Wetlands
- Pond
- 303d Impaired Streams

Replacement Property Site Map

Proposed Section 6(f) Conversion of
Highland Terrace-Liberty Park Community Center

I-526 Lowcountry Corridor WEST
Charleston County
Last Updated by AK on 7/21/2020



Legend

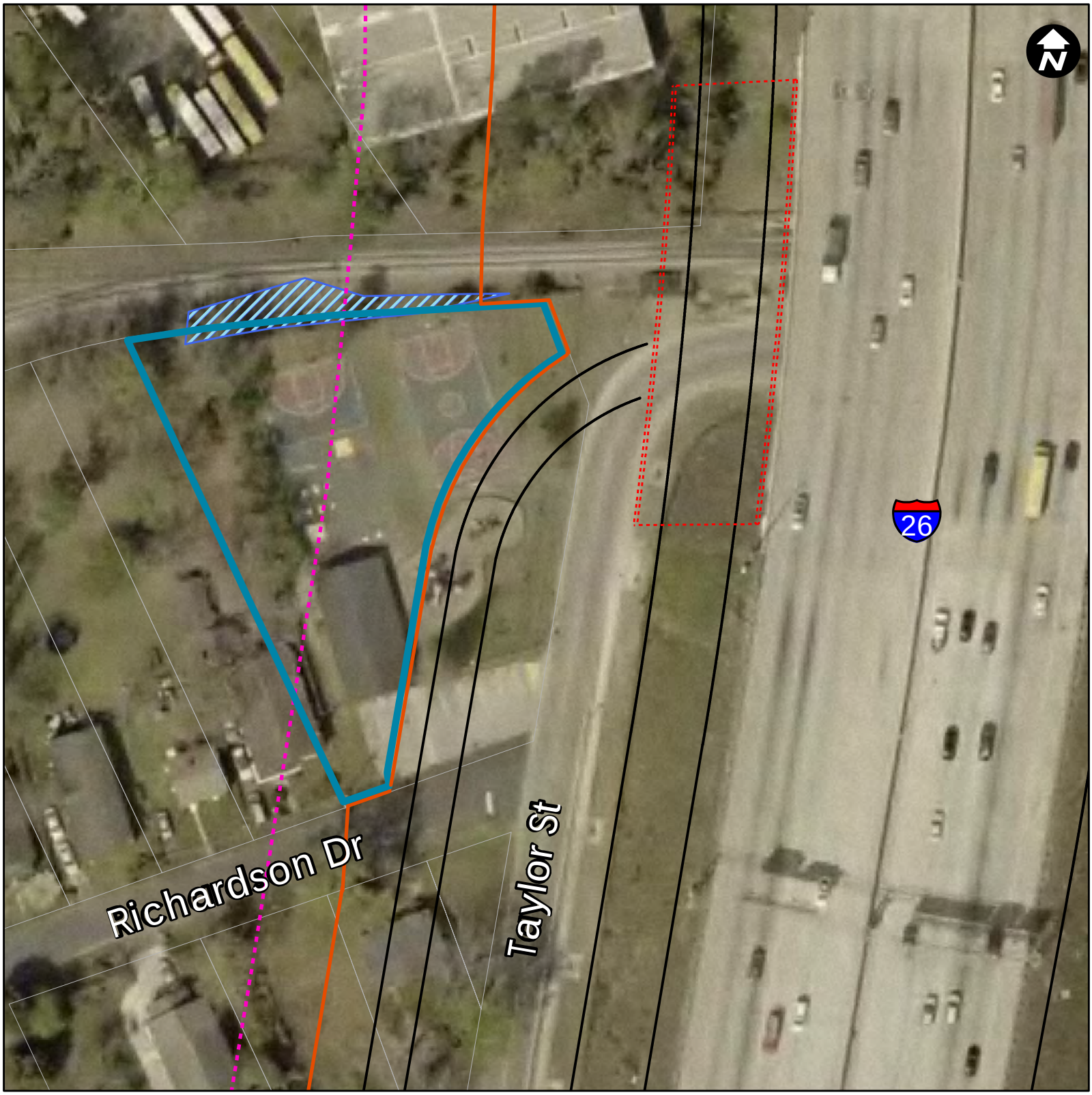
1. Access Drive TBD
2. Community Center Building
3. Outdoor Basketball Court
4. Rain Garden
5. 5,000 SF Playground
6. 120x210 Multi Use Field
7. Educational Wetland
8. Fitness Loop
9. Pedestrian Bridge

Proposed Section 6(f) Boundary
100-Year Flood Zone
Wetlands
Pond
303d Impaired Streams

Replacement Property Environmental Features Map

Proposed Section 6(f) Conversion of Highland Terrace-Liberty Park Community Center

I-526 Lowcountry Corridor WEST
Charleston County
Last Updated by AK on 7/21/2020



Legend

- Proposed Bridge
- Proposed Taylor St Relocation
- Proposed Right of Way
- Parcels
- Proposed Pocket Park
- Archaeology APE
- Wetlands

0 100 200 Feet

WEST 526 LOWCOUNTRY CORRIDOR

Highland Terrace-Liberty Park Community Center Environmental Features

I-526 Lowcountry Corridor WEST
Charleston County

Last Updated by AK on 7/24/2020

Legend

- Proposed Bridge
- Proposed Taylor St Relocation
- Proposed Right of Way
- Parcels
- Proposed Pocket Park
- Wetlands

0 100 200 Feet

I-526 WEST LOWCOUNTRY CORRIDOR

Highland Terrace-Liberty Park Community Center Environmental Features

I-526 Lowcountry Corridor WEST
Charleston County
Last Updated by AK on 8/11/2020

South Carolina
Department of Transportation

June 18, 2019

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office
South Carolina Department of Archives & History
8301 Parklane Road
Columbia, South Carolina 29223-4905

Re: ***Brockington and Associates' 1.) Cultural Resource Survey of the I-526 Corridor Improvements Project & 2.) Cultural Resource Survey of the I-526 Lowcountry Corridor West Project—Addendum Report,* Charleston County, SCDOT PIN P027507**

Dear Mr. Wilkinson:

The SCDOT proposes to improve I-526 from SC Route (SC-) 461 (Paul Cantrell Boulevard) to the SC-61 Spur (Glenn McConnell Parkway). Improvements along I-26 extend from West Montague Avenue west to Remount Road. The project may include adding a travel lane in each direction along I-526; interchange improvements at Leeds Avenue, SC-642 (Dorchester Road), West Montague Avenue, International Boulevard, and Paul Cantrell Boulevard; and the system-to-system connections at Glenn McConnell Parkway, I-26, and Rivers Avenue. Interchange improvements along I-26 may include West Montague Avenue. Improvements are also to be evaluated along Paul Cantrell Boulevard from S- 10-1373 (Tobias Gadson Boulevard) to Charlie Hall Boulevard. This segment of Paul Cantrell Boulevard includes the intersection of S-10-1863 (Magwood Drive), which will be evaluated for a grade separation to accommodate future traffic volumes.

The two cultural resources reports referenced above cover the full Area of Potential Effect (APE) for the proposed project. This correspondence addresses the combined results of those two reports and therefore the entirety of the project APE. The purpose of this correspondence is only to establish National Register of Historic Places (NRHP) eligibility for cultural resources documented as part of the subject surveys. Additional Section 106 coordination to determine project effects upon cultural resources will be initiated when a preferred alignment for the project is developed.

Archaeological investigations for the project revisited one (1) previously identified archaeological site (38CH17) and identified one new site (38CH2523). Neither of these sites is recommended eligible for the NRHP. Underwater archaeological survey was also conducted within the project APE, and two anomalies (006-1 and 010-1) were identified. Anomaly 006-1 is recommended eligible for the NRHP. Anomaly 010-1 is recommended as not eligible for the NRHP.

The historic architectural survey identified several survey-eligible neighborhoods, individual resources, and landscape features within the APE (refer to attached reports for specifics). Only one (1) aboveground resource identified in the studies (site 7806, Bethune Elementary) is recommended eligible for the NRHP. Other aboveground resources documented in the reports are recommended (or previously recommended) as NRHP-eligible but do not fall within the project APE as currently defined.

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Please provide your concurrence with or comment on the eligibility findings of the two subject reports.

In accordance the memorandum of agreement approved by the Federal Highway Administration (FHWA), November 29, 2011, SCDOT is providing this information as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence with SCDOT findings. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,

David P. Kelly
NEPA Coordinator, RPG 4

DPK:dk
Enclosures: Cultural resources reports, aboveground survey forms, photographs

I (~~do not~~) concur in the above determinations.

Signed: Wenonah G. Haire, PhD Date: 6/26/19

ec: Shane Belcher, FHWA
LeeAnne Wendt, Muscogee (Creek) Nation
Brett Barnes, Eastern Shawnee

cc: Wenonah G. Haire, Catawba Nation THPO
Keith Derting, SCIAA

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U.S.Department
of Transportation
Federal Highway Administration

South Carolina

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

March 29, 2019

In Reply Refer To:
HDA-SC

Mr. Brett Barnes
Tribal Historic Preservation Officer
Eastern Shawnee Tribe of OK
127 W. Oneida St.
Seneca, MO 64865

Subject: Invitation to Become a Participating Agency for the Preparation of an Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements Project in Charleston County, South Carolina; Federal Project Number P027507

Dear Mr. Barnes:

The Federal Highway Administration (FHWA), in cooperation with the South Carolina Department of Transportation (SCDOT), is preparing an Environmental Impact Statement (EIS) for the I-526 West Lowcountry Corridor Improvements Project. The proposed project would make improvements to the I-526 corridor from Virginia Avenue to Paul Cantrell Boulevard in Charleston County, South Carolina. The purpose of the proposed project is to increase capacity and improve operations at the I-26/526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard (see study area map on enclosed project information sheet). The Ashley River bridge crossing would be widened to accommodate the improvements on the I-526 mainline. Since this is a major infrastructure project that is starting after August 15, 2017, it will adhere to the One Federal Decision guidance and tracked on the federal permitting dashboard.

Pursuant to Section 6002 of SAFETEA-LU, as amended by Section 1304 of the Fixing America's Surface Transportation (FAST) Act, cooperating and participating agencies are responsible for identifying, as early as possible, any issues of concern regarding the project's potential environmental, social, or economic impacts. Section 6002 is intended to assure that agencies are fully engaged in the scoping of the project and the decisions regarding alternatives to be evaluated in detail in the NEPA analysis. In accordance with the SAFETEA-LU Section 6002, FHWA is in the process of identifying local, state, and federal agencies that may have an interest in the project. This same guidance is in the Memorandum of Understanding for Implementing One Federal Decision (issued April 9, 2018), as well as the One Federal Decision Working Agreement.

The FHWA would like to take this opportunity to formally invite you to become a Participating Agency in the development of the EIS. Areas of concern to be emphasized in the EIS will include potential environmental impacts upon existing ecological resources, wetlands, water resources,

historic and archaeological resources, parks and recreation facilities, noise and air, social and community character, hazardous/contaminated materials, cumulative and indirect impacts, and potential impacts due to project construction.

Your involvement in the proposed project would entail those areas under its jurisdiction or area of expertise. No direct writing or analysis by your agency will be necessary for this document unless you request to do so. We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Participate in coordination meetings as appropriate.
2. Consultation on any relevant technical studies that may be required for the project.
3. Timely review and comment on the environment document to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

To become a Participating Agency with the FHWA, please respond to this office in writing with an acceptance or denial of the invitation within 30 days. If you accept, please identify the appropriate contact person(s) within your organization for coordination. If your agency declines, please provide a written response that states your reason for declining the invitation, such as:

- Has no jurisdiction or authority with respect to the project;
- Has no expertise or information relevant to the project; and
- Does not intend to submit comments on the project.

If you have any questions or would like to discuss in more detail the project or each agency's respective roles and responsibilities during the preparation of the EIS, please contact Ms. Michelle Herrell at 803-765-5460 or by email at michelle.herrell@dot.gov; or Mr. J. Shane Belcher at 803-253-3187 or by e-mail at jeffrey.belcher@dot.gov.

Sincerely,

Emily O. Lawton
Division Administrator

Enclosures

ec: Mr. Chad Long, SCDOT Environmental Division Manager
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build NEPA/Permitting Coordinator
Ms. Joy Riley, SCDOT Program Manager

U.S. Department of Transportation
Federal Highway Administration

South Carolina

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

March 29, 2019

In Reply Refer To:
HDA-SC

Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
Muscogee (Creek) Nation of OK
1008 East Eufaula Street
Okmulgee, OK 74447

Subject: Invitation to Become a Participating Agency for the Preparation of an Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements Project in Charleston County, South Carolina; Federal Project Number P027507

Dear Ms. Lowe-Zepeda:

The Federal Highway Administration (FHWA), in cooperation with the South Carolina Department of Transportation (SCDOT), is preparing an Environmental Impact Statement (EIS) for the I-526 West Lowcountry Corridor Improvements Project. The proposed project would make improvements to the I-526 corridor from Virginia Avenue to Paul Cantrell Boulevard in Charleston County, South Carolina. The purpose of the proposed project is to increase capacity and improve operations at the I-26/526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard (see study area map on enclosed project information sheet). The Ashley River bridge crossing would be widened to accommodate the improvements on the I-526 mainline. Since this is a major infrastructure project that is starting after August 15, 2017, it will adhere to the One Federal Decision guidance and tracked on the federal permitting dashboard.

Pursuant to Section 6002 of SAFETEA-LU, as amended by Section 1304 of the Fixing America's Surface Transportation (FAST) Act, cooperating and participating agencies are responsible for identifying, as early as possible, any issues of concern regarding the project's potential environmental, social, or economic impacts. Section 6002 is intended to assure that agencies are fully engaged in the scoping of the project and the decisions regarding alternatives to be evaluated in detail in the NEPA analysis. In accordance with the SAFETEA-LU Section 6002, FHWA is in the process of identifying local, state, and federal agencies that may have an interest in the project. This same guidance is in the Memorandum of Understanding for Implementing One Federal Decision (issued April 9, 2018), as well as the One Federal Decision Working Agreement.

The FHWA would like to take this opportunity to formally invite you to become a Participating Agency in the development of the EIS. Areas of concern to be emphasized in the EIS will include potential environmental impacts upon existing ecological resources, wetlands, water resources,

historic and archaeological resources, parks and recreation facilities, noise and air, social and community character, hazardous/contaminated materials, cumulative and indirect impacts, and potential impacts due to project construction.

Your involvement in the proposed project would entail those areas under its jurisdiction or area of expertise. No direct writing or analysis by your agency will be necessary for this document unless you request to do so. We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Participate in coordination meetings as appropriate.
2. Consultation on any relevant technical studies that may be required for the project.
3. Timely review and comment on the environment document to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

To become a Participating Agency with the FHWA, please respond to this office in writing with an acceptance or denial of the invitation within 30 days. If you accept, please identify the appropriate contact person(s) within your organization for coordination. If your agency declines, please provide a written response that states your reason for declining the invitation, such as:

- Has no jurisdiction or authority with respect to the project;
- Has no expertise or information relevant to the project; and
- Does not intend to submit comments on the project.

If you have any questions or would like to discuss in more detail the project or each agency's respective roles and responsibilities during the preparation of the EIS, please contact Ms. Michelle Herrell at 803-765-5460 or by email at michelle.herrell@dot.gov; or Mr. J. Shane Belcher at 803-253-3187 or by e-mail at jeffrey.belcher@dot.gov.

Sincerely,

Emily O. Lawton
Division Administrator

Enclosures

ec: Ms. LeeAnne Wendt, Muscogee (Creek) Nation
Mr. Chad Long, SCDOT Environmental Division Manager
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build NEPA/Permitting Coordinator
Ms. Joy Riley, SCDOT Program Manager

SCDOT
South Carolina
Department of Transportation

July 27, 2020

Ms. Elizabeth Johnson
Deputy State Historic Preservation Officer
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

Subject: Cultural Resources Survey for Section 6(f)(3) Partial Land Conversion (2401 Richardson Drive) on the Proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS) in Charleston County, South Carolina; Federal Project Number P027507

Dear Ms. Johnson:

The South Carolina Department of Transportation (the Department) seeks to convert a portion of the Highland Terrace-Liberty Park Community Center, a Land and Water Conservation Fund (LWCF) Section 6(f) resource located at 2401 Richardson Drive in North Charleston, from its current recreational use to permanent right-of-way as part of the proposed I-526 Lowcountry Corridor (LCC) WEST project. The proposed replacement property, located at 5260 Deacon Street, is shown in the attached mapping.

An Environmental Assessment (EA) is being prepared to evaluate impacts associated with replacing the impacted Section 6(f) resource. The properties at Richardson Drive and Deacon Street have been surveyed for historic resources as part of the studies conducted for the proposed I-526 LCC WEST project. The I-526 LCC WEST Cultural Resources report is attached for reference. Based on the results of background research and field survey, there are no historic resources recommended eligible for listing on the National Register of Historic Places at 2401 Richardson Drive or 5260 Deacon Street. Neither the 2401 Richardson Drive nor the 5260 Deacon Street tracts warranted archaeological survey, as soils at both tracts are defined as Urban land and located within the Filbin Creek drainage. Therefore, **no historic properties or archaeological resources would be affected** by construction of the proposed replacement recreational facilities.

In accordance with the memorandum of agreement approved by the Federal Highway Administration, March 16, 1993, the Department is providing this information as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

Post Office Box 191
Columbia, South Carolina 29202-0191

Phone: (803) 737-2314
TTY: (803) 737-3870

SCDOT
South Carolina
Department of Transportation

Per the terms of the Section 106 Programmatic Agreement, the Department is providing this information on behalf of the Federal Highway Administration. It is requested that you review the enclosed material and, if appropriate, indicate your concurrence with the Department's findings, thus completing the Section 106 consultation process. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,

Tracy Martin
Chief Archaeologist

CCL:ccl
Enclosure

I (~~do not~~) concur in the above determination.

Signed: Elizabeth M. Johnson Date: 7/27/2020

ec: Mr. J. Shane Belcher, FHWA Environmental Coordinator
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build Environmental Coordinator
Ms. Joy Riley, SCDOT Program Manager
Ms. LeeAnne Wendt, Muscogee (Creek) Nation
Mr. Brett Barnes, Eastern Shawnee

cc. Ms. Wenonah G. Haire, Catawba Nation
Mr. Keith Derting, SCIAA

Post Office Box 191
Columbia, South Carolina 29202-0191

Phone: (803) 737-2314
TTY: (803) 737-3870

From:	Wray, Michael
To:	Wray, Michael
Subject:	ESA Concurrence
Date:	Friday, July 31, 2020 5:24:40 PM

From: Caldwell, Mark <mark_caldwell@fws.gov>
Sent: Tuesday, July 28, 2020 2:11 PM
To: Long, Chad C. <LongCC@scdot.org>
Cc: Ledwin, Jane <jane_ledwin@fws.gov>
Subject: FW: [EXTERNAL] 526 Lowcountry Corridor 6f ESA Consultation

Chad,

I have no concerns with SCDOT's determination of no effect for this particular 6(f) conversion associated with the I-526 LCC project (attached).

Mark

Mark A. Caldwell
Deputy Field Supervisor
US Fish and Wildlife Service
South Atlantic-Gulf Region
South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
843-300-0426 (direct line)
843-870-0041 (cell)
843-300-0189 – facsimile

From: Long, Chad C. <LongCC@scdot.org>
Sent: Tuesday, July 28, 2020 1:49 PM
To: Caldwell, Mark <mark_caldwell@fws.gov>
Cc: Belcher, Jeffery - FHWA <Jeffrey.Belcher@dot.gov>
Subject: [EXTERNAL] 526 Lowcountry Corridor 6f ESA Consultation

opening attachments, or responding.

Mark,

We are preparing an environmental assessment for the proposed Section 6(f) conversion associated with the 526 WEST Lowcountry Corridor project. Our consultant recently conducted an endangered species survey for the proposed community center replacement property (see attached).

Please review and let me know if you have any comments/questions regarding the "no effect" determination.

Regards,

Chad C. Long | Director
Environmental Services Office
South Carolina Department of Transportation
955 Park Street | Room 509
Columbia, South Carolina 29201
Phone 803.737.1396 (office)| 803.420.8115 (mobile)

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Let 'em Work, Let 'em Live!

APPENDICES

APPENDIX A

AGENCY COORDINATION

SCDOT
South Carolina
Department of Transportation

July 27, 2020

Ms. Elizabeth Johnson
Deputy State Historic Preservation Officer
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

Subject: Cultural Resources Survey for Section 6(f)(3) Partial Land Conversion (2401 Richardson Drive) on the Proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS) in Charleston County, South Carolina; Federal Project Number P027507

Dear Ms. Johnson:

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SCDOT
South Carolina
Department of Transportation

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Sincerely,

Tracy Martin
Chief Archaeologist

CCL:ccl
Enclosure

I (~~do not~~) concur in the above determination.

Signed: Elizabeth M. Johnson Date: 7/27/2020

ec: Mr. J. Shane Belcher, FHWA Environmental Coordinator
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build Environmental Coordinator
Ms. Joy Riley, SCDOT Program Manager
Ms. LeeAnne Wendt, Muscogee (Creek) Nation
Mr. Brett Barnes, Eastern Shawnee

cc. Ms. Wenonah G. Haire, Catawba Nation
Mr. Keith Derting, SCIAA

Post Office Box 191
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Phone: (803) 737-2314
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Mark

Mark A. Caldwell
Deputy Field Supervisor
US Fish and Wildlife Service
South Atlantic-Gulf Region
South Carolina Ecological Services
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Subject: [EXTERNAL] 526 Lowcountry Corridor 6f ESA Consultation

opening attachments, or responding.

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Regards,

Chad C. Long | Director
Environmental Services Office
South Carolina Department of Transportation
955 Park Street | Room 509
Columbia, South Carolina 29201
Phone 803.737.1396 (office)| 803.420.8115 (mobile)

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Let 'em Work, Let 'em Live!

From:	Belcher, Jeffrey (FHWA)
To:	Kelly, David P. (KellyDP@scdot.org); Herrell, Michelle (FHWA)
Cc:	Heather Robbins
Subject:	FW: Consulting Party for I-526 West and US 278
Date:	Monday, May 6, 2019 7:18:35 AM

For your files. Since the Catawba Indian Nation did not provide a letter please keep this e-mail for your official record for both projects.

Thanks,

J. Shane Belcher
Environmental Coordinator
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, SC 29201
Phone: 803-253-3187
Fax: 803-253-3989

From: Caitlin Rogers [mailto:caitlinh@ccppcrafts.com]
Sent: Friday, May 03, 2019 2:35 PM
To: Belcher, Jeffrey (FHWA) <Jeffrey.Belcher@dot.gov>
Subject: Consulting Party

Mr. Belcher,

The Catawba wish to be a consulting party for the Proposed I-526 West Lowcountry Corridor Improvements and the Proposed US 278 Corridor Improvements. If you need anything else from us let me know. Thanks

Caitlin

--
Caitlin Rogers
Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, SC 29730

803-328-2427 ext. 226
Caitlinh@ccppcrafts.com

Please Note: We CANNOT accept Section 106 forms via e-mail, unless requested. Please send us hard copies. Thank you for your understanding

U.S.Department
of Transportation
Federal Highway Administration

South Carolina

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

March 29, 2019

In Reply Refer To:
HDA-SC

Ms. Wenonah Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

Subject: Invitation to Become a Participating Agency for the Preparation of an Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements Project in Charleston County, South Carolina; Federal Project Number P027507

Dear Ms. Haire:

The Federal Highway Administration (FHWA), in cooperation with the South Carolina Department of Transportation (SCDOT), is preparing an Environmental Impact Statement (EIS) for the I-526 West Lowcountry Corridor Improvements Project. The proposed project would make improvements to the I-526 corridor from Virginia Avenue to Paul Cantrell Boulevard in Charleston County, South Carolina. The purpose of the proposed project is to increase capacity and improve operations at the I-26/526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard (see study area map on enclosed project information sheet). The Ashley River bridge crossing would be widened to accommodate the improvements on the I-526 mainline. Since this is a major infrastructure project that is starting after August 15, 2017, it will adhere to the One Federal Decision guidance and tracked on the federal permitting dashboard.

Pursuant to Section 6002 of SAFETEA-LU, as amended by Section 1304 of the Fixing America's Surface Transportation (FAST) Act, cooperating and participating agencies are responsible for identifying, as early as possible, any issues of concern regarding the project's potential environmental, social, or economic impacts. Section 6002 is intended to assure that agencies are fully engaged in the scoping of the project and the decisions regarding alternatives to be evaluated in detail in the NEPA analysis. In accordance with the SAFETEA-LU Section 6002, FHWA is in the process of identifying local, state, and federal agencies that may have an interest in the project. This same guidance is in the Memorandum of Understanding for Implementing One Federal Decision (issued April 9, 2018), as well as the One Federal Decision Working Agreement.

The FHWA would like to take this opportunity to formally invite you to become a Participating Agency in the development of the EIS. Areas of concern to be emphasized in the EIS will include potential environmental impacts upon existing ecological resources, wetlands, water resources,

historic and archaeological resources, parks and recreation facilities, noise and air, social and community character, hazardous/contaminated materials, cumulative and indirect impacts, and potential impacts due to project construction.

Your involvement in the proposed project would entail those areas under its jurisdiction or area of expertise. No direct writing or analysis by your agency will be necessary for this document unless you request to do so. We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Participate in coordination meetings as appropriate.
2. Consultation on any relevant technical studies that may be required for the project.
3. Timely review and comment on the environment document to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

To become a Participating Agency with the FHWA, please respond to this office in writing with an acceptance or denial of the invitation within 30 days. If you accept, please identify the appropriate contact person(s) within your organization for coordination. If your agency declines, please provide a written response that states your reason for declining the invitation, such as:

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- Has no expertise or information relevant to the project; and
- Does not intend to submit comments on the project.

If you have any questions or would like to discuss in more detail the project or each agency's respective roles and responsibilities during the preparation of the EIS, please contact Ms. Michelle Herrell at 803-765-5460 or by email at michelle.herrell@dot.gov; or Mr. J. Shane Belcher at 803-253-3187 or by e-mail at jeffrey.belcher@dot.gov.

Sincerely,

Emily O. Lawton
Division Administrator

Enclosures

ec: Ms. Caitlin Totherow, Catawba Indian Nation
Mr. Chad Long, SCDOT Environmental Division Manager
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build NEPA/Permitting Coordinator
Ms. Joy Riley, SCDOT Program Manager

South Carolina
Department of Transportation

June 18, 2019

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office
South Carolina Department of Archives & History
8301 Parklane Road
Columbia, South Carolina 29223-4905

Re: ***Brockington and Associates' 1.) Cultural Resource Survey of the I-526 Corridor Improvements Project & 2.) Cultural Resource Survey of the I-526 Lowcountry Corridor West Project—Addendum Report,* Charleston County, SCDOT PIN P027507**

Dear Mr. Wilkinson:

The SCDOT proposes to improve I-526 from SC Route (SC-) 461 (Paul Cantrell Boulevard) to the SC-61 Spur (Glenn McConnell Parkway). Improvements along I-26 extend from West Montague Avenue west to Remount Road. The project may include adding a travel lane in each direction along I-526; interchange improvements at Leeds Avenue, SC-642 (Dorchester Road), West Montague Avenue, International Boulevard, and Paul Cantrell Boulevard; and the system-to-system connections at Glenn McConnell Parkway, I-26, and Rivers Avenue. Interchange improvements along I-26 may include West Montague Avenue. Improvements are also to be evaluated along Paul Cantrell Boulevard from S- 10-1373 (Tobias Gadson Boulevard) to Charlie Hall Boulevard. This segment of Paul Cantrell Boulevard includes the intersection of S-10-1863 (Magwood Drive), which will be evaluated for a grade separation to accommodate future traffic volumes.

The two cultural resources reports referenced above cover the full Area of Potential Effect (APE) for the proposed project. This correspondence addresses the combined results of those two reports and therefore the entirety of the project APE. The purpose of this correspondence is only to establish National Register of Historic Places (NRHP) eligibility for cultural resources documented as part of the subject surveys. Additional Section 106 coordination to determine project effects upon cultural resources will be initiated when a preferred alignment for the project is developed.

Archaeological investigations for the project revisited one (1) previously identified archaeological site (38CH17) and identified one new site (38CH2523). Neither of these sites is recommended eligible for the NRHP. Underwater archaeological survey was also conducted within the project APE, and two anomalies (006-1 and 010-1) were identified. Anomaly 006-1 is recommended eligible for the NRHP. Anomaly 010-1 is recommended as not eligible for the NRHP.

The historic architectural survey identified several survey-eligible neighborhoods, individual resources, and landscape features within the APE (refer to attached reports for specifics). Only one (1) aboveground resource identified in the studies (site 7806, Bethune Elementary) is recommended eligible for the NRHP. Other aboveground resources documented in the reports are recommended (or previously recommended) as NRHP-eligible but do not fall within the project APE as currently defined.

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Please provide your concurrence with or comment on the eligibility findings of the two subject reports.

In accordance the memorandum of agreement approved by the Federal Highway Administration (FHWA), November 29, 2011, SCDOT is providing this information as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence with SCDOT findings. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,

David P. Kelly
NEPA Coordinator, RPG 4

DPK:dk
Enclosures: Cultural resources reports, aboveground survey forms, photographs

I (~~do not~~) concur in the above determinations.

Signed: Wenonah G. Haire, PhD Date: 6/26/19

ec: Shane Belcher, FHWA
LeeAnne Wendt, Muscogee (Creek) Nation
Brett Barnes, Eastern Shawnee

cc: Wenonah G. Haire, Catawba Nation THPO
Keith Derting, SCIAA

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U.S.Department
of Transportation
Federal Highway Administration

South Carolina

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

March 29, 2019

In Reply Refer To:
HDA-SC

Mr. Brett Barnes
Tribal Historic Preservation Officer
Eastern Shawnee Tribe of OK
127 W. Oneida St.
Seneca, MO 64865

Subject: Invitation to Become a Participating Agency for the Preparation of an Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements Project in Charleston County, South Carolina; Federal Project Number P027507

Dear Mr. Barnes:

The Federal Highway Administration (FHWA), in cooperation with the South Carolina Department of Transportation (SCDOT), is preparing an Environmental Impact Statement (EIS) for the I-526 West Lowcountry Corridor Improvements Project. The proposed project would make improvements to the I-526 corridor from Virginia Avenue to Paul Cantrell Boulevard in Charleston County, South Carolina. The purpose of the proposed project is to increase capacity and improve operations at the I-26/526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard (see study area map on enclosed project information sheet). The Ashley River bridge crossing would be widened to accommodate the improvements on the I-526 mainline. Since this is a major infrastructure project that is starting after August 15, 2017, it will adhere to the One Federal Decision guidance and tracked on the federal permitting dashboard.

Pursuant to Section 6002 of SAFETEA-LU, as amended by Section 1304 of the Fixing America's Surface Transportation (FAST) Act, cooperating and participating agencies are responsible for identifying, as early as possible, any issues of concern regarding the project's potential environmental, social, or economic impacts. Section 6002 is intended to assure that agencies are fully engaged in the scoping of the project and the decisions regarding alternatives to be evaluated in detail in the NEPA analysis. In accordance with the SAFETEA-LU Section 6002, FHWA is in the process of identifying local, state, and federal agencies that may have an interest in the project. This same guidance is in the Memorandum of Understanding for Implementing One Federal Decision (issued April 9, 2018), as well as the One Federal Decision Working Agreement.

The FHWA would like to take this opportunity to formally invite you to become a Participating Agency in the development of the EIS. Areas of concern to be emphasized in the EIS will include potential environmental impacts upon existing ecological resources, wetlands, water resources,

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Sincerely,

Emily O. Lawton
Division Administrator

Enclosures

ec: Mr. Chad Long, SCDOT Environmental Division Manager
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build NEPA/Permitting Coordinator
Ms. Joy Riley, SCDOT Program Manager

U.S. Department of Transportation
Federal Highway Administration

South Carolina

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

March 29, 2019

In Reply Refer To:
HDA-SC

Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
Muscogee (Creek) Nation of OK
1008 East Eufaula Street
Okmulgee, OK 74447

Subject: Invitation to Become a Participating Agency for the Preparation of an Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements Project in Charleston County, South Carolina; Federal Project Number P027507

Dear Ms. Lowe-Zepeda:

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Sincerely,

Emily O. Lawton
Division Administrator

Enclosures

ec: Ms. LeeAnne Wendt, Muscogee (Creek) Nation
Mr. Chad Long, SCDOT Environmental Division Manager
Mr. David Kelly, SCDOT RPG 1 NEPA Coordinator
Mr. Will McGoldrick, SCDOT Design-Build NEPA/Permitting Coordinator
Ms. Joy Riley, SCDOT Program Manager

Attachment F I-526 West Lowcountry Corridor Biological Assessment for USFWS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

April 6, 2020

Mr. Will McGoldrick
Design Build Environmental Coordinator
S.C. Department of Transportation
P.O. Box 191
Columbia, South Carolina 29202-0191

Re: S.C. Department of Transportation, I-526 Low Country Corridor West, Charleston County, FWS Log # 2016-CPA-0062

Dear Mr. McGoldrick:

The South Carolina Ecological Services Field Office for the U.S. Fish and Wildlife Service (Service) received the South Carolina Department of Transportation's (SCDOT) biological assessment (BA), and other project documentation for the I-526 Low Country Corridor West (I-526 West) in Charleston County, SC. The BA has evaluated potential impacts to threatened and endangered (T&E) species protected under the Endangered Species Act of 1973 (ESA). The SCDOT is seeking our review of the BA and its findings for inclusion into an Environmental Impact Statement (EIS) being developed for I-526 West project the pursuant to the National Environmental Policy Act of 1969.

The proposed I-526 West project extends approximately 11 miles from near Paul Cantrell Boulevard in West Ashley to Virginia Avenue in North Charleston in Charleston County, SC. Two travel lanes ae proposed to be added in each direction along I-526 as well as upgrade the current interchange between I-526 and I-26. Improvements to access I-526 from Paul Cantrell Boulevard, North Rhett Avenue, and Virginia Avenue are also proposed. Proposed improvements also include widening of the existing bridge over the Ashley River to match the upland improvements.

The BA provided a list of all T&E species known to occur in Charleston County, including species in offshore waters. A more in depth review was afforded to T&E that may occur in project area based upon habitat within the project area. The SCDOT identified eight species under the jurisdiction of the Service that may occur in the project area; the Bachman's warbler, piping plover, eastern black rail, West Indian manatee, pondberry, Canby's dropwort, northern long-eared bat, and American wood stork. Field reconnaissance by SCDOT personnel did not find any T&E species in the corridor but did find suitable habitat for the eight species.

Therefore, a determination of "may effect, not likely to adversely affect" was made for all eight T&E species that may occur in the project area.

Upon review of your information the Service concurs with SCDOT's determination. For those species in which SCDOT determined the project would have "no effect", no further consultation is required. Please note that obligations under the ESA must be reconsidered if: (1) new information reveals impacts of this identified action may affect any federally listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

For SCDOT's convenience the Service has included with this letter a list of species that may occur in Charleston County and are currently protected under the Endangered Species Act of 1973 (ESA). This list also includes species that are considered At Risk Species (ARS) that are either candidates for listing or have been petitioned for listing under the ESA. Appropriate survey time frames or windows for each species are included in the list. Although there are no Federal protections afforded to ARS, please consider including them in your project efforts. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at: http://www.fws.gov/southeast/candidateconservation.

The Service appreciates the opportunity to provide input at this early stage of the projects' development. If you have any questions regarding our comments, please do not hesitate to contact Mr. Mark Caldwell of the South Carolina Ecological Services Field Office at (843) 727-4707 ext. 215 and reference FWS Log# 2016-CPA-0062.

Sincerely,

Thomas D. McCoy
Field Supervisor

TDM/MAC
EC: Jane Ledwin, USFWS HQ

BIOLOGICAL ASSESSMENT

FOR US FISH AND WILDLIFE SERVICE

Prepared For:

SCDOT
South Carolina Department of Transportation

Prepared By:

Civil Engineering
Consulting Services, Inc.

March 27, 2020

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Appendices

1. Project Overview

1.1 Federal Nexus

The purpose of this Biological Assessment (BA) is to address the effect of the I-526 Lowcountry Corridor West project on U.S. Endangered Species Act (ESA) listed species, listed as endangered or threatened, or their designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). Those species under the jurisdiction of the National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NOAA-NMFS) are addressed in a separate BA.

The South Carolina Department of Transportation (SCDOT), on behalf of the Federal Highway Administration (FHWA), is pursuing informal consultation under Section 7 of the ESA on the impacts to species that will result from the proposed I-526 West project. Section 7 of the ESA assures that, through consultation with USFWS, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat.

1.2 Project Description

The proposed I-526 Lowcountry Corridor West project extends approximately 11.4 miles from near Paul Cantrell Boulevard in West Ashley to Virginia Avenue in North Charleston in Charleston County, SC. SCDOT currently ranks the segment of I-526 between I-26 and Virginia Avenue as the most congested segment of interstate highway in the state. The remainder of the I-526 LCC West project, from I-26 to Paul Cantrell Boulevard, ranks among the top ten of the state's existing most congested corridors. Traffic forecasts show that segments of that corridor will continue to be among the state's most congested in 2040. The interchange of I-526 and I-26 is the major source of the congestion.

Through various reasonable build alternatives, SCDOT proposes to add two travel lanes in each direction along I-526 and to upgrade the interchange of I-526 and I-26. Improvements to access I-526 from Paul Cantrell Boulevard, North Rhett Avenue, and Virginia Avenue are also proposed. Proposed improvements to I-526 would include providing additional travel lanes over the Ashley River, through widening the existing bridges. An Environmental Impact Statement (EIS) is being completed that outlines alternatives to satisfy the purpose and need of the project.

1.3 Project Area and Setting

The area surrounding the project study area (PSA) is a densely populated region to the west of the City of Charleston, South Carolina (Appendix A, Figure 1). Based on the size of this project and the density of development in greater Charleston, the land use with this vicinity varied greatly. A large portion of the land within this PSA has been developed for residential, commercial, and industrial uses. Undeveloped

land primarily consists of maintained rights of way, landscaped lawns, wooded forests, and tidal marshes. Filbin Creek and its floodplain parallel and cross through the PSA, flowing to the Cooper River; this area is largely undeveloped forested wetlands. The Ashley River flows through the PSA and is surrounded by tidal mudflats and vegetated marshes. Numerous streams and wetlands are present in the PSA, including forested wetlands, emergent wetlands, tidally influenced streams, and freshwater streams.

1.4 Consultation History

A Letter of Intent (LOI) was sent to the USFWS and NOAA-NMFS by SCDOT on January 27, 2016. The USFWS provided a response to the LOI on February 1, 2016 (Appendix B). A Notice of Intent was published in the Federal Register on November 11, 2019. The project has been discussed at several Agency Coordination Effort meetings with the USFWS, NOAA-NMFS, U.S. Environmental Protection Agency (EPA), FHWA, U.S. Army Corps of Engineers (USACE), South Carolina Department of Natural Resources (SCDNR), and FHWA on March 14, 2019; April 23, 2019; July 10, 2019; September 11, 2019; October 9, 2019; November 13, 2019; December 11, 2019; January 8, 2020; February 12, 2020; and March 11, 2020.

2. Federally Proposed & Listed Species & Designated Critical Habitat

The PSA is located within the range of twenty-four species listed under the ESA within the jurisdiction of USFWS (Table 1). One of these twenty-four species, Eastern black rail, is listed as "proposed" threatened for the ESA. Proposed species are those candidate species that were found to warrant listing as either threatened or endangered, after completion of a status review and consideration of other protective conservation measures. Two additional listed species (shortnose sturgeon and Atlantic sturgeon) fall within the jurisdiction of NOAA-NMFS. These species are being coordinated directly with NOAA – NMFS. There is no Critical Habitat within the PSA.

Table 1. Species Protected under the Federal ESA.

Species	Federal Protection Status
Flatwoods salamander (*Ambystoma cingulatum)*	Threatened
American wood stork (*Mycteria americana*)	Threatened
Bachman's warbler (*Vermivora bachmanii*)	Endangered
Eastern Black rail (*Laterallus jamaicensis*)	Threatened (proposed)
Piping plover (*Charadrius melodus)*	Threatened

Species	Federal Protection Status
Red-cockaded woodpecker (*Picoides borealis)*	Endangered
Red knot *(Calidris canutus rufa)*	Threatened
Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)	Endangered
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Finback whale *(Balaenoptera physalus)*	Endangered
Humpback whale *(Megaptera novaengliae)*	Endangered
Northern long-eared bat (*Myotis septentrionalis*)	Threatened
Right whale *(Balaena glacialis)*	Endangered
Sei whale *(Balaenoptera borealis)*	Endangered
Sperm whale *(Physeter macrocephalus)*	Endangered
West Indian manatee (*Trichechus manatus)*	Threatened
American chaff seed *(Schwalbea americana)*	Endangered
Canby's dropwort (*Oxypolis canbyi*)	Endangered
Pondberry (*Lindera melissifolia*)	Endangered
Seabeach amaranth *(Amaranthus pumilus)*	Threatened
Green sea turtle *(Chelonia mydas)*	Threatened
Kemp's ridley sea turtle *(Lepidochelys kempii)*	Endangered
Leatherback sea turtle (D*ermochelys coriacea)*	Endangered
Loggerhead sea turtle *(Carretta carretta)*	Threatened

NOAA-NMFS has sole jurisdiction over the Atlantic sturgeon and shortnose sturgeon; these species are evaluated under a separate BA that has been provided to NOAA-NMFS. The bald eagle (*Haliaeetus leucocephalus*) is also protected under the Bald and Golden Eagle Protection Act (BGEPA) and Migratory Bird Treaty Act (MBTA). The following sections detail the eight species that were noted to have suitable

habitat within the PSA. Additional detail regarding remaining species can be found within the "I-526 Lowcountry Corridor West Natural Resources Technical Memorandum" (Appendix F).

2.1 American wood stork

American wood storks (*Mycteria americana*) are the largest wading bird and only stork species that breeds in the United States. These birds are large, long legged with a head to tail length of up to 45 inches and a wingspan of up to 65 inches. Adult wood storks are white except for the primary and secondary wing feathers and the tail feathers, which are black with a greenish sheen. Adults also have an unfeathered head and neck with a long, thick black bill. The breeding range of the wood stork extends down the southeastern coast of the United States, including South Carolina. American wood storks are colonial nesters with colonies ranging from less than 12 to more than 500 in size. Nesting occurs in small to large trees typically on small islands surrounded by standing water, or in extensive forested and flooded wetlands. The species generally forages in water six to ten inches deep. They feed in freshwater marshes, narrow tidal creeks, or flooded tidal pools. Suitable habitat and foraging habitat exists within the forested wetlands near open water located within the PSA including open ponds, wetlands, the Ashley River, and other smaller streams. During surveys, American wood storks were documented foraging in freshwater wetlands near Faber Place Drive and I-526. No active nesting rookeries were found during surveys. The closest known nesting population is approximately 3 miles north of the PSA.

American wood stork foraging in the I-526 PSA.

2.2 Bachman's warbler

Bachman's warbler (*Vermivora bachmanii*) is presumed to be extinct, historically occurring in the southeastern U.S. during its breeding season. Historically, the bird inhabited seasonally flooded swamp forests, especially with cane thickets and containing variable amounts of water, but usually with some permanent water. The Bachman's warbler is a small bird with olive-green upperparts, yellow forehead, throat, and underparts, and a faint white eye-ring and black crown and bib. The bird was last observed in

the United States in 1962 near Charleston, South Carolina. Suitable habitat for Bachman's warbler exists within the PSA. Small areas of cane thickets and seasonally flooded swamp forests with variable amounts of water were observed. Evidence of Bachman's warbler was not noted within the PSA.

2.3 Eastern Black rail

The Eastern black rail (*Laterallus jamaicensis*) is currently proposed by USFWS for listing as a threatened species. No critical habitat is proposed for designation. In addition to proposing threatened species status for the eastern black rail, USFWS is also proposing a special rule under Section 4(d) of the ESA that would tailor protections for the bird. If finalized, this 4(d) rule would exempt certain activities such as mowing from the take prohibitions of the ESA. The Eastern black rail is a small rail species that is usually grey or black-grey in color. It breeds in a wide diversity of habitats such as fresh and saline marshes, wet meadows, and savannas. Eastern black rail habitat can be tidally or non-tidally influenced, and range in salinity from salt to brackish to fresh. Its natural history is the best known in its genus due to work in temperate North America where it primarily feeds on small aquatic and terrestrial invertebrates. Suitable habitat for Eastern black rail exists in the marshes associated with the Ashley River and with other smaller stream systems. No black rails were identified during field surveys and there are no known populations within the PSA.

2.4 Piping plover

The piping plover (*Charadrius melodus*) is a small and stocky sparrow sized bird that is pale or sandy white with a black breast band and yellow bill and legs. Breeding birds have a prominent black collar and black band that runs across the forehead. The piping plover inhabits sandy beaches, mudflats and sandbars along rivers and lakes. In South Carolina, the piping plover occurs from August to April and generally overwinters in the southern United States from North Carolina to the Gulf of Mexico. Suitable foraging habitat for piping plover may exist on mudflats and sandbars associated with the Ashley and the Cooper Rivers. No piping plovers were identified during field surveys and there are no known populations within the PSA.

2.5 Northern long-eared bat

The northern long-eared bat (*Myotis septentrionalis*) is a medium-sized bat that is medium to dark brown on the back and tawny to pale-brown on the underside. The species is distinguished by its long ears. During the winter months, the northern long-eared bat can be found hibernating in caves and mines. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, northern long-eared bats roost underneath bark and in cavities or in crevices of both

live trees and dead trees. Individuals of the species have also been found rarely roosting in structures, like barns and sheds. Habitat conducive to seasonal occupation for northern long-eared bat is located within the PSA. The PSA contains potentially suitable summer roosting and foraging habitat for this species within forested areas. The preferred winter hibernation habitat for this species does not exist within the PSA or its immediate vicinity. While the forested areas onsite could be considered suitable habitat, the narrow nature of these areas is a limiting factor for the suitability of this habitat. No northern long-eared bats were identified during pedestrian field surveys and there are no known populations or hibernacula within the PSA.

2.6 West Indian Manatee

The West Indian manatee (*Trichechus manatus)* is a large gray to brown aquatic mammal, averaging about ten feet in length and 1,000 pounds in weight. This mammal has no hind limbs, and the forelimbs are modified flippers. West Indian manatees have flattened horizontal and rounded tails used for locomotion. Manatees inhabit both fresh and salt water, including canals, rivers, estuarine habitats and saltwater bays, throughout their range. West Indian manatees concentrate in areas of warm water, primarily the Florida Gulf Coast waters, from October to April. In the summer months, the West Indian manatee will migrate as far north as coastal Virginia on the east coast and coastal Louisiana on the Gulf of Mexico. Suitable habitat for the West Indian manatee exists in the PSA within the Ashley River. West Indian manatees migrate into estuarine waters off the coast of South Carolina during the warmer, summer months and early fall from May to September, typically when water temperatures exceed 70 degrees Fahrenheit. Particular care and consideration should be taken during construction in summer months or early fall as this is when the waterways provide favorable habitat. There are known occurrences of manatees within the Cooper River near the WestRock paper facility located just outside the PSA, as well as within the Ashley River.

2.7 Canby's Dropwort

Canby's dropwort (*Oxypolis canbyi*) is a perennial herbaceous plant with tuberous roots and pale, fleshy rhizomes and erect stems up to 39 inches tall. The flowers are small and white with five petals and grow in umbels or flat-topped clusters. Canby's dropwort grows in moist areas in the coastal plain and sandhills, including wet meadows, wet pineland savannas, ditches, sloughs, and around the edges of Cypress-pine ponds. The plant seems to be more prolific when the habitat has been burned. Suitable habitat for Canby's dropwort exists within ditches and other open wet areas (i.e., grass and sedge fields) located within the PSA. Surveys were conducted during the flowering period and this species was not observed.

2.8 Pondberry

Pondberry is a deciduous shrub that grows up to six feet tall and spreads by underground stolons. The leaves are ovately to elliptically shaped, thin, membranaceous and drooping and have a strong sassafras-like odor when brushed. The flowers are pale yellow and bloom in the spring before the appearance of leaves. Fruits are bright red and oval-shaped and mature in the fall. Pondberry generally occupies wetland habitats that are normally flooded or saturated during the dormant season, but infrequently flooded during the growing season for extended periods. The plant is typically associated with bottomland hardwoods in the inner coastal plain, and margins of sinks, ponds, and other depressions in the outer coastal plain. Suitable habitat for pondberry exists within freshwater depressional wetlands and along the margins of ponds located within the PSA. Surveys were conducted during the flowering period and this species was not observed.

3. Environmental Baseline

The majority of PSA is comprised of existing roadway. Areas which are not developed were classified based upon vegetation and land form types. Vegetative terrestrial communities within the PSA were distinguished by dominant plant species and community types, location in the landscape, past disturbances, and hydrologic characteristics. Only those habitats which were located directly within the PSA are characterized. The PSA was examined through current and historical Google Earth imagery, USDA ortho imagery, and USGS topographic maps to discern areas with similar signatures, and the data were verified and classified through on-site field review. Essential Fish Habitat (EFH) is also present within the PSA and is addressed in a separate EFH Assessment.

Specific surveys for commonly occurring wildlife species were not conducted; however, wildlife readily observed and documented during the field reviews, or those likely to occur within the PSA, are summarized below.

Common bird species either observed during field reviews or known to occur within the PSA include Carolina chickadee, northern mockingbird, blue jay, northern cardinal, brown thrasher, common grackle, American crow, American goldfinch, American robin, eastern towhee, Carolina wren, eastern bluebird, chipping sparrow, red-bellied woodpecker, barred owl, red-tailed hawk, red-shouldered hawk, turkey vulture, and osprey. Wading birds and waterfowl include Canada goose, Muscovy duck, mallard, great egret, green heron, and great blue heron.

Some crayfish, common fishes, and other aquatic organisms were readily observed in the PSA in both brackish and freshwater areas. Those species, as well as others that are likely to be present in the PSA include marsh fiddler crab, periwinkle snail, eastern mudsnail, mosquito fish, channel catfish, sailfin molly, bluegill, silver perch, Atlantic menhaden, and bay anchovy.

There are many common reptile and amphibian species that could occur in the PSA including American alligator, green tree frog, various leopard frog species, skink, Carolina anole, eastern glass lizard, eastern garter snake, eastern king snake, black racer, pond sliders, eastern box turtle, snapping turtle, and American toad.

Common mammal species likely to occur in the PSA include white-tailed deer, striped skunk, river otter, raccoon, bats, cotton mouse, opossum, eastern gray squirrel, and eastern cottontail rabbit. Bottlenose dolphin are likely to occur within the Ashley River.

3.1 Aquatic and open water habitats:

3.1.1 Ashley River:

The Ashley River is a tidally influenced river within the headwaters originating in Dorchester County. The river runs for approximately 30 miles, eventually joining the Cooper River to form the Charleston Harbor before discharging eastward into the Atlantic Ocean. The entire drainage of the Ashley River system, including its headwaters in Cypress and Wassamassaw swamps, extends approximately 60 river miles. At the project site, the width of the main deeper-water navigational channel of the Ashley River is approximately 15 feet wide. The full width of the Ashley River at the project site is approximately 1,500 feet wide. Water depths in the river range from approximately 0 to 20 feet. The Ashley River is a designated State Scenic River, largely in part to numerous historic properties located along the riverbanks. Per the NOAA Ashley River bridge station (Station ID 8665099) the mean tidal range is 5.68 feet and the diurnal range is 6.23 feet. Mean high water is approximately 3.08 feet and mean low water is -3.16 feet at the center of the channel. Salinity at the PSA ranges from 12 to 17 parts per thousand (ppt).

The South Carolina Department of Health and Environmental Control (SCDHEC) has classified the waterbodies (streams and rivers) of South Carolina based on the desired uses of each waterbody. SCDHEC has established standards for various parameters to protect all uses within each waterbody classification. The Ashley River is classified as salt water (Appendix A, Figure 2). Monitoring station MD-049 is located upstream of the PSA, along the Ashley River (Appendix A, Figure 3). Aquatic life uses are not supported at MD-049 based on pH and turbidity. The term pH is a measure of the hydrogen ion concentration of

water, and is used to indicate degree of acidity. The pH scale ranges from 0 to 14. A pH of 7 is considered neutral, with values less than 7 being acidic, and values greater than 7 being basic. Low pH values are found in natural waters rich in dissolved organic matter, especially in coastal plain swamps and black water rivers. Turbidity is an expression of the scattering and absorption of light through water. The presence of clay, silt, fine organic and inorganic matter, plankton, and other microscopic organisms increases turbidity. Increasing turbidity can be an indication of increased runoff from land. Recreation is only partially supported at this same site (MD-049), based on elevated fecal coliform levels. A fish consumption advisory due to elevated mercury levels in certain types of fish is in place for the Ashley River, including the area at the I-526/General William C. Westmoreland Bridge and northwards/upstream of the project to SC 165.

A Total Maximum Daily Load (TMDL) has been developed for the Charleston Harbor, Cooper, Ashley, and Wando Rivers and approved by the EPA to identify opportunities to increase dissolved oxygen (DO) in the watershed[1]. Many coastal waters in South Carolina have DO levels below the established DO criteria. Wastewater dischargers and other anthropogenic influences may contribute to low DO in coastal waters. Natural factors such as organic loading and reduced oxygen levels from wetlands and marshes and estuarine dynamics in the mixing zone where freshwater and saltwater come together can create naturally low DO conditions. The waters in and around Charleston Harbor are considered to be both naturally low in DO and further impacted by wastewater dischargers. Potential sources of oxygen demand loading that were considered include National Pollutant Discharge Elimination System (NPDES) wastewater discharges (continuous point sources), NPDES stormwater discharges (noncontinuous point sources), non-point sources, and natural background sources.

A large portion of the PSA is within Shellfish Growing Area 10B (Appendix A, Figure 4). This area encompasses the Charleston Harbor, Ashley River, Cooper River, and their tributaries that support shellfish. Waters within this management area in the PSA have been given the classification of "prohibited" and as such, these areas are closed to all human consumption. Prohibited areas are those that are administratively closed for the harvesting of shellfish for any purposes related to human consumption. These closures are established adjacent to permitted wastewater discharges, marina facilities, or areas containing multiple point sources of pollution. This classification is not based upon violation of a bacteriological standard.

[1] https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Chas_Hbr_DO_TMDL.pdf

There are various types of navigational activities by numerous vessel types that occur along the Ashley River. To determine the types and extents of activity in the channel, existing documentation was reviewed regarding known vessel use. This included a review of bridge opening records of a nearby moveable downstream facility, the T. Allen Legare bridges, located at mile points 2.4 and 2.5. A large portion of marine traffic in the area surrounding the proposed project constitutes recreational and commercial (fishing) boating.

3.1.2 Filbin Creek

Filbin Creek is another major drainage located within the PSA. Within the PSA this tributary flows along I-526 between the Charleston International Airport and Tanger Outlets, a commercial shopping center. Filbin Creek flows southwest to northeast crossing the project corridor in several locations and terminating at the Cooper River. This feature flows along I-526 for approximately 4.5 miles of the over 11 mile project corridor. It is an urban stream that has been channelized in portions, and suffers from low water quality as a result of proximity to heavy development and runoff. An SCDHEC water quality monitoring station is located at the mouth of Filbin Creek where it flows into the Cooper River (MD-249). The latest reported data from this station notes that aquatic life uses are partially supported due to dissolved oxygen excursions. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

3.1.3 Other Streams

Additional named and unnamed streams traverse the PSA. Over 37,900 linear feet (7.18 miles) of streams were identified and delineated within the project area. Additionally, 9,559.21 (1.81 miles) linear feet of tidally influenced stream were identified and delineated within the project area. Project activities such as roadway fill and culvert extension would result in impacts to a portion of these streams.

Bulls Creek

3.1.4 Open Ponds

Open freshwater communities within the PSA include man-made ponds and naturalized borrow pits. These areas typically consist of open and deeper water within the central portion and vegetated, shallow water along the outer portion of the pond. Several man-made freshwater ponds exist throughout the study area and are often hydrologically connected to other wetlands, streams, and ditches. Plant species

common to the shallow, vegetated portions of the ponds and borrow pits include black willow (*Salix nigra)*, wax myrtle (*Morella cerifera)*, duckweed (*Lemna* sp.), and various species of cattail (*Typha* sp.).

3.2 Terrestrial and mixed aquatic habitats:

3.2.1 Maintained Development

Maintained developments were classified as areas or regions which have altered the native state of the land for consumptive human use. Man-maintained and disturbed communities within the PSA also include roadside shoulders and utility rights of way. Most of the naturally-occurring plants associated with these maintained or disturbed communities have been eliminated and/or replaced with cultivated grasses or taken over by naturally occurring opportunistic species characteristic of disturbed areas. These areas encompassed land uses such as residential homes, commercial developments, roadway surfaces, and parking lots. Most of the disturbed roadway edges are comprised of herbaceous species and sparse shrubs, including various grasses such as common fescue (*Festuca* sp.), ryegrass (*Lolium perenne*), bahia grass (*Paspalum notatum*), and bluegrass (*Poa* sp.).

3.2.2 Mixed Pine/Hardwood Forest

Mixed pine/hardwood forest is a dominant community type located throughout the majority of the PSA. Dominant vegetation consists of pine species including loblolly pine (*Pinus taeda*), long-leaf pine (*Pinus palustris*), and pond pine (*Pinus serotina*). Hardwood species observed include sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), and tulip poplar (*Liriodendron tulipifera*). Smaller hardwood/ sapling species include eastern red cedar (*Juniperus virginiana*), American holly (*Ilex opaca*), and wax myrtle. Groundcover and vine strata include saw palmetto (*Serenoa repens*), blueberry (*Vaccinium* sp.), greenbrier (*Smilax* sp.), and partridge berry (*Michella repens*).

3.2.3 Scrub/ Shrub

Scrub shrub habitat is characterized as being cleared within the past five years. These areas do not have the established species found in the mixed hardwood forest but are not frequently mowed like roadsides and lawns. Notable areas include dry drainages, areas beneath overpasses and interchanges, and spaces that have been maintained in the past but have been allowed to lie fallow. These communities often include ruderal and non-native species. These species tend to be more widespread and occupy numerous habitat types. These areas include an early diverse array of herbaceous species within the initial phases of disturbance and transition towards the climax community, replacing primary colonizers. Species observed in the PSA include sweetgum, Chinese tallow tree (*Triadica sebifera*), blackberry (*Rubus sp.*),

eastern baccharis (*Baccharis halimifolia*), Chinese privet (*Ligustrum sinense*), Autumn olive (*Eleagnus umbellata*), honey suckle (*Lonicera japonica*), and broomsedge (*Andropogon sp.*).

3.2.4 Bottomland Hardwood Forest

Bottomland hardwood forest habitat is present in small locations within the limits of the PSA. These areas are confined to the floodplain zones of creeks and perennial tributaries where out of bank flooding seasonally inundates benches and terraces. These areas are typically mapped within flood zones of waterways. This community type within the PSA is comprised of dominant vegetation of hardwood tree species that includes red maple, tulip poplar, sweetgum, and water oak. Mid canopy species comprise a low-density layer of younger individuals where gaps within the upper canopy allow for sunlight to penetrate. Shrub components within the community may be comprised of Chinese privet and giant cane (*Arundinaria gigantea*). Herbaceous ground cover is sparse to bare, with a dense duff layer holding moisture within the soil column for extended periods.

3.2.5 Tidal Wetlands

The tidal wetland communities are characterized by being periodically inundated in correlation with ocean tides. Soils consist of soft organics and alluvial deposits and support a variety of herbaceous vegetation. Species observed include smooth cordgrass (*Spartina alterniflora*), black needlerush (*Juncus roemerianus*), and saltmeadow cordgrass (*Spartina patens*), occurring in tidally flooded areas. Along the banks, Eastern baccharis and wax myrtle were observed.

3.2.6 Brackish Marsh

Brackish marshes are representative of an estuarine transition zone where a mixture of fresh and saltwater occurs, resulting in brackish water with lower salinity levels, and thereby allowing the presence of both fresh and saltwater plant species. Other species that may be found in the brackish marsh community include big cordgrass (*Spartina cynosuroides*), narrow-leaf cattail (*Typha angustifolia*), saltmeadow cordgrass, bulrush (*Scirpus spp.*), salt grass (*Distichlis spicata*), annual wildrice (*Zizania aquatica*), and Jamaica sawgrass (*Cladium mariscus*).

3.2.7 Freshwater Herbaceous Wetlands

This habitat type does not support woody vegetation but is characterized by a mix of herbaceous species often growing in standing or perennially moist soils. These areas are not tidally influenced and within the project area were commonly noted along margins of larger water bodies or as stormwater retention areas. Cattail, wool grass (*Scirpu s*), sedges (*Carex* sp.), rushes (*Juncus* sp., *Eleocharis* sp.) were common in these

areas. Margins of these open areas are often lined with sapling woody species such as alder (*Alnus serrulata*), birch (*Betula nigra*), and black willow.

3.2.8 Forested Wetlands

This is the most common wetland type throughout the site. These features have hydric soils and may or may not have evidence of periodic standing surface water. Canopy species are mixed hardwood with a sapling and shrub stratum. Ground cover may or may not be present. Notable species include: sweet gum, red maple and southern magnolia (*Magnolia grandiflora*) as canopy species with water oak, yaupon (*Ilex vomitoria*) and cabbage palmetto (*Sabal palmetto*) composing a sampling stratum. Shrubs include Chinese privet, fetterbush (*Lyonia lucida*), and giant cane. Herbaceous species include rushes, and a mix of sedges. Vines such as greenbrier and honey suckle were often observed in this habitat type.

3.2.9 Cypress-tupelo Wetlands

This is a mature forested habitat type characterized by an overstory of bald cypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*). Other species present include swamp tupelo (*Nyssa biflora*), red maple, swamp cottonwood (*Populus eterophylla*), and Carolina ash (*Fraxinus caroliniana*). Shrub and herbaceous layers are less diverse or absent. This habitat type is open and may have standing water for all or part of the year.

4. Project Details

4.1 Construction

This project is expected to be delivered either via the design build or bid build process and final construction and design plans would be determined by the contractor and/or SCDOT. To maintain competitiveness during the bid process, means and methods of construction may not be final, giving contractors the ability to propose specific methods and equipment. The following is an outline of the likely construction activities and project designs. This may vary slightly depending on the selected contractor and bid process. Any modifications from those proposed in this document that could impact effects to listed species would require additional coordination with SCDOT and federal agencies.

4.1.1 Roadway Construction

Road construction generally entails the addition of two 12-foot lanes of paved roadway and additional right-of-way. Improvements to local connecting streets, interstate on and off ramps, and roadway drainage would also be constructed. In many areas these impacts would occur to upland maintained habitat that is already disturbed. In some areas, such as bridge approaches, additional habitat would be converted to road right of way.

4.1.2 Ashley River Bridge Construction

The widened bridge structures would each be approximately 32 feet, 5.5 inches wide (Appendix B, Conceptual Design Plans). During construction of the widened bridge, traffic would be maintained on the existing facility. Maintenance and improvements would be made to the existing Westmoreland bridges and the structure would be retained at its existing height and length.

The proposed minimum horizontal clearance for the main navigational opening would be 60 feet between fenders. This configuration will be similar to the existing bridge, or would be less restrictive. The vertical clearance of the proposed fixed span bridge would be a minimum of 35 feet from the MHW datum to meet the needs of mariners in the area.

Generally, the project improvements would consist of the following components:

- Widening of the northbound and southbound roadway approaches to the Westmoreland Bridges.
- Construction of temporary access areas to include matting, barges, and work trestles.
- Construction of a new structure to the south, or downstream side, of the existing Westmoreland Bridges on a mix of concrete prestressed piles and drilled shafts with poured concrete support.
- Construction of a new structure within the center of the existing northbound and southbound Westmoreland Bridges on a mix of concrete prestressed piles and drilled shafts.
- Extension of the existing fender system to the south of the existing Westmoreland Bridge.
- Painting existing and new bridge structures.
- Lighting to be installed for navigation and to meet SCDOT urban interstate lighting requirements ("Roadway Lighting on Interstate Routes in South Carolina").

4.1.2.1 Temporary Bridge Access

Temporary work trestles would be placed in marsh and wetland areas for construction access outside of the existing eastbound bridge (Appendix B, Conceptual Design Plans). Temporary trestle would be approximately 30 feet wide and would be supported by steel pipe piles. The steel piles would be approximately 24-inches in diameter and would be installed using a vibratory hammer. It is estimated that 240 24-inch steel pipe piles would be needed for temporary work trestle. With one work crew performing installation, approximately 4 piles would be driven per day with an average of 350 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day.

For access over marsh areas between the existing bridges either trestle or a combination of barge, barge mats, and timber mats would be needed due to the limited space between the structures. Deeper water and the main channel of the Ashley River would be accessed via barges for construction. Barges may be delivered and moved via water and transport vessels or via land on flatbed trucks with cranes and other heavy equipment. At no point would barges in the Ashley River block more than 50% of the channel.

4.1.2.2 Prestressed Concrete Pile Installation

Prestressed concrete piles will be installed outside of the main channel of the Ashley River. These piles would have an H-pile steel "stinger" at the end of the concrete pile to prevent damage to the pile as it is driven into hard subsurface materials. Piles would be installed with a hammer or vibratory hammer. Within the Ashely River, Bents 72 through 79 would be supported by prestressed concrete piles. Additional concrete piles would be installed in the adjacent marshes, outside of the boundaries of the Ashley River. It is estimated that 580 24-inch prestressed concrete piles would be needed for bridge widening. With one work crew performing installation, approximately 6 piles would be driven per day with an average of 300 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day.

4.1.2.3 Drilled Shaft Installation

At the approaches to, and over the main channel of the Ashley River, drilled shafts are proposed to support the new bridge structures. Each shaft would be approximately 7 feet in diameter. To install, steel casing would be installed at each location using a vibratory or pile driving hammer. Inside of that casing would be drilled so that rebar cage can be installed. Concrete would then be poured into the casing to create a large support structure in the water. Approximately 120 drilled shafts would be needed for the bridge widening. One shaft per day would be constructed by one work crew, but multiple crews could install supports concurrently. Within the Ashley River, these drilled shafts would be installed at bents 48 through 71, and at bents A, B, C, and D. Bents 48 through 59 are located at the southerly or westerly (West Ashley) approach to the Ashley River. Bents A through D are at the deepest portion of the main channel of the Ashley River. Bents 60 through 71 are located at the northerly or easterly (North Charleston) approach to the Ashley River. Bents 59 through 79 and bents A through D are located within the Ashley River and are the focus of this analysis.

4.1.2.4 Fender System

The existing fender system will be extended with a system that can accommodate all required uses of the waterway. The proposed fender system will be designed for both recreational watercraft, as well as larger vessels such as commercial fishing boats and tug boats. The fender elements would likely consist of

rubber fenders, with a steel panel and polyethylene facing. Additional prestressed concrete piles will be required to support the new fender systems. These piles would not be load bearing and would not require extensive pile strikes such as those on the permanent bridge system.

4.1.2.5 Drainage

Drainage of stormwater from surface runoff from the newly constructed bridges is proposed to be discharged via open scuppers.

4.1.3 Project Timeline

Construction is expected to begin in 2022. Construction of the bridge phase over the Ashley River would last approximately three years, with road construction extending beyond this three-year period. Within that three-year period, in-water work of an estimated 5 months would be needed for prestressed pile bents and 16 months would be needed for drilled shaft bents. This project is expected to be delivered via the design build process and final construction sequencing will be determined by the contractor. The following is an outline of the likely construction sequence. This sequence may vary slightly depending on the selected contractor. Any modifications from this proposed by the contractor that could impact effects to listed species would require additional coordination with SCDOT and federal agencies.

4.1.4 Site Preparation

After additional right-of-way is acquired, surveys are conducted, and utility location work will begin. Site clearing and grubbing will be necessary for some areas outside of the already maintained right-of-way. These specific areas are not known until a Preferred Alternative is selected and the roadway design is finalized. Grading of slopes will be required and will follow the established Stormwater Pollution Prevention Plan (SWPPP).

4.1.5 Construction Access and Staging

Areas for staging, laydown and equipment would primarily be sited outside of aquatic habitats. Best management practices (BMPs), along with other proven procedures would be implemented to mitigate potential temporary impacts from construction. In addition, detailed engineering and construction plans would be developed for the Preferred Alternative, which would specify procedures to mitigate potentially adverse impacts.

4.1.5 Potential Impacts on Water Quality

Ashley River and Filbin Creek may see a temporary increase in turbidity as a result of the in-water work such as driving piles and staging materials from barges. Outside of small repairs no major demolition is planned. BMPs should be followed to avoid paint, solvents and other chemicals from entering the

waterway. Steel girders would be used in the construction of the new bridge spans over the main channel of the Ashley River and would need to be surface prepped and painted to withstand impacts from weather and the marine environment. The contractor would be required to submit a painting operation plan to include timing, methodologies to prohibit overspray into waters or adjacent vegetation, and weather and wind thresholds for painting operations.

Migration of fill material in stormwater runoff would be minimized by following the SWPPP and utilizing BMPs such as double rows of silt fence, sediment basins, turbidity curtains, immediate seeding and matting of slopes, and check dams.

4.2 Operations and Maintenance

Once construction is complete, much of the operations and maintenance of the roadway will take place in upland, maintained roadside habitat. Tasks such as routine mowing, guard rail repairs, road surface repairs, and stormwater infrastructure maintenance would be needed. Routine maintenance is expected on the existing and proposed new bridges including sanding/painting, deck resurfacing, concrete patching, lighting replacement, and periodic fender and dolphin repair from exposure and/or vessel strikes. SCDOT Maintenance would utilize best management practices to limit sediment and non-point source runoff resulting from maintenance activities.

5. Project Action Area

5.1 Project Action Area

The action area, as defined under 50 CFR §402.02, includes all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The project roadway action area includes approximately 1,600 acres, as shown in Appendix A, Figure 1. The action area at the Ashley River bridge, as it relates to potential West Indian manatee impacts, extends 500 meters (1,650 feet) upstream and downstream of the proposed project. The basis for the selection of the 1,650 feet upstream and downstream of the proposed project was due to the limits of the proposed action and potential turbidity effects in the Ashley River. Although sedimentation is not expected to be long lasting or severe based on the velocity of currents in the area, the effects from sedimentation are expected to be wider ranging than noise effects.

5.2 Limits of an Action Area

The limits of the action area are within the PSA. The PSA would likely be refined once a Preferred Alternative is selected. The action area may be slightly modified again as the design team begins final

road, bridge, and drainage design. Any activities that could potentially impact protected species, other than those already outlined in this document may require additional Section 7 coordination.

6. Effects Analysis

6.1 Direct and Indirect Effects

Direct and indirect effects to species will be avoided and minimized to maximum extent practicable. There are no known populations of threatened or endangered species residing in the project area. In the case of the wildlife species, the anticipated direct impacts are to potential foraging habitat, as opposed to known nesting, roosting, or spawning habitat. Generally, secondary or indirect impacts are induced by the initial action. They may be comprised of a variety of effects such as changes in land use, development patterns, water quality, wildlife habitat, and other natural systems. Transportation projects may influence development in localized areas and have environmental impacts resulting from land use changes. Risk factors include being struck by construction equipment or materials (piles, barges, trestles, heavy equipment), construction-associated noise and turbidity, temporary or permanent loss of habitat, and temporary disruption of spawning/migratory behaviors. In the case of the plant species, surveys were conducted within the survey window and no protected species were identified. Activities associated with the widening of I-526 West would cause temporary impacts to the natural environment in the form of noise, habitat conversion, shading, and potential temporary sedimentation. These activities would be avoided and minimized to the maximum extent possible. Potential impacts are as listed:

American wood stork: Three American wood storks were observed feeding within the PSA. There are no known wood stork rookeries within the PSA. The proposed project would affect wood stork foraging habitat. While impacts would be minimized, areas of open waters and wetlands would be filled with widened bridge approaches and widened roadways. Foraging wood storks would likely avoid the construction area when activity and noise increases. The project area contains a system of wetlands, tidal creeks, and marshes, which provide alternative feeding habitats nearby. **Therefore, the proposed project may affect, but is not likely to adversely affect American wood stork.**

Bachman's warbler: Suitable habitat for Bachman's warbler exists within the PSA. Small areas of cane thickets and seasonally flooded swamp forests with variable amounts of water were observed. Evidence of Bachman's warbler was not noted within the PSA. The bird was last observed in the U.S. in 1962 near Charleston, South Carolina. **Therefore, the proposed project may affect, but is not likely to adversely affect Bachman's warbler.**

Eastern black rail: Suitable habitat for Eastern black rail exists in the marshes associated with the Ashley River and other streams within the PSA. No black rails were identified during field surveys and there are no known populations within the PSA. **Therefore, the proposed project may affect, but is not likely to adversely affect Eastern black rail.**

Piping plover: Suitable foraging habitat for piping plover may exist on mudflats and sandbars associated with the Ashley and the Cooper Rivers. No piping plovers were identified during field surveys and there are no known populations within the PSA. **Therefore, the proposed project may affect, but is not likely to adversely affect piping plover.**

Northern long-eared bat: Habitat conducive to seasonal occupation for northern long-eared bat is located within the PSA. The PSA contains potentially suitable summer roosting and foraging habitat for this species within forested areas. The preferred winter hibernation habitat for this species does not exist within the PSA or its immediate vicinity. In addition, the narrow range of forested woodlands within the PSA is a limiting factor to its suitability for this species. No northern long-eared bats were identified during pedestrian field surveys and there are no known populations or hibernacula within the PSA. Federal agencies often utilize the "Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form" regarding potential impacts to this species. This framework allows federal agencies to rely upon the USFWS January 5, 2016, intra-Service Programmatic Biological Opinion on the final 4(d) rule for section 7(a)(2) compliance. According to the 4(d) rule, the proposed project may affect the northern long-eared bat, but any resulting incidental take of the species is not prohibited by the final 4(d) rule. A draft version of this form is included in Appendix D. **Therefore, the proposed project may affect, but is not likely to adversely affect this species and incidental take is not prohibited by the 4(d) rule.**

West Indian manatee: Suitable habitat for the West Indian manatee exists in the PSA within the Ashley River. West Indian manatees migrate into estuarine water off the coast of South Carolina during the warmer, summer months and early fall from May to September. There are known occurrences of manatees within the Cooper River near the WestRock paper facility located just outside the PSA, as well as within the Ashley River. Vessel strikes pose a serious threat to the slow-moving manatee (USFWS 2001b). Care and consideration should be taken during construction in summer months or early fall as this is when the waterways would likely support increasing numbers of manatee. The USFWS North Florida Field Office has created Manatee Protection Guidelines (Appendix E) which, if incorporated into construction activities, could reduce the potential of vessel strikes. A trained spotter would be needed from May to October for in-water work in the Ashley River. Other conditions, such as operating vessels

as slow speeds and halting in-water work if a manatee is spotted would reduce the potential to animal strikes.

An additional risk to manatees is created through the generation of in-water construction noise. Manatee's functional hearing range and responsiveness to noise has been disputed in recent studies (Gerstein et al. 2008; Gerstein et al. 1999). Impact thresholds for manatees have not been developed at this time. Bridge construction activities such as impact pile driving and drilled shaft installation could harm manatees if individuals are close to the noise source for prolonged periods. Differing types of installation of support structures could reduce impacts to manatees. Fewer impacts are seen from vibratory installation of casing for drilled shafts as opposed to higher impact pile driving. Vibratory driving of new piles or bridge support structures generates a continuous but low-level noise that is unlikely to cause more than non-injurious, insignificant behavioral effects to the species. During construction, the potential effect of underwater noise impacts would also be minimized through the use of "slow starts", where pile driving ramps up slowly in an effort to deter manatees from the work area. In accordance with Manatee Protection Guidelines, if manatees are observed within 50 feet of active construction equipment, that equipment would be shut down. Utilizing these guidelines would minimize potential adverse effects of underwater construction noise on manatees in the project area.

A minor threat to manatees may be created through increased turbidity during construction. This may come as the result of the placement of bridge pilings and would be temporary. Best management practices would be implemented to minimize turbidity. The indirect effect on manatees would be minimal because manatees often inhabit areas with turbid conditions (FWC 2007). In accordance with Manatee Protection Guidelines, if siltation or turbidity barriers are used, they would be made of material in which manatees cannot become entangled, would be properly secured, and would be regularly monitored to avoid manatee entanglement or entrapment.

Adverse effects on manatees are not expected to occur within the project area because construction operations would follow the Manatee Protection Guidelines. Furthermore, manatees would likely avoid the construction area given the increased vessel traffic and noise. **Therefore, the proposed project may affect, but is not likely to adversely affect West Indian manatee.**

Canby's dropwort: This plant grows in moist areas in the coastal plain and sandhills, including wet meadows, wet pineland savannas, ditches, sloughs, and around the edges of Cypress-pine ponds. Canby's dropwort seems to be more prolific when the habitat has been burned. Suitable habitat for Canby's

dropwort exists within ditches and other open wet areas (i.e., grass and sedge fields) located within the PSA. Surveys were conducted during the flowering period and this species was not observed. **Therefore, the proposed project may affect, but is not likely to adversely affect Canby's dropwort.**

Pondberry: This plant is typically associated with bottomland hardwoods in the inner coastal plain, and margins of sinks, ponds, and other depressions in the outer coastal plain. Suitable habitat for pondberry exists within freshwater depressional wetlands and along the margins of ponds located within the PSA. Surveys were conducted during the flowering period and this species was not observed. **Therefore, the proposed project may affect, but is not likely to adversely affect pondberry.**

6.2 Interrelated and Interdependent Actions and Activities

Interrelated and interdependent actions are those that are part of a larger action and depend on the larger action for their justification. There are no related or dependent actions to the I-526 West project.

7. Effect Determinations

This section includes effect determinations to listed species (Table 2). There are no candidate species, or critical habitat within or near the PSA. There is one proposed threatened species, the Eastern black rail. Proposed threatened species are not protected by the take prohibitions of Section 7, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the USFWS if their action will jeopardize the continued existence of a proposed species.

Table 2. Protected Species Effect Determinations

Species	Protection Status	Biological Conclusion
Flatwoods salamander (*Ambystoma cingulatum)*	Threatened	No effect
American wood stork (*Mycteria americana*)	Threatened	May affect, not likely to adversely affect
Bachman's warbler (*Vermivora bachmanii*)	Endangered	May affect, not likely to adversely affect
Eastern Black rail (*Laterallus jamaicensis*)	Threatened (proposed)	May affect, not likely to adversely affect
Piping plover (*Charadrius melodus)*	Threatened	May affect, not likely to adversely affect
Red-cockaded woodpecker (*Picoides borealis)*	Endangered	No effect
Red knot *(Calidris canutus rufa)*	Threatened	No effect
Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)	Endangered	May affect, not likely to adversely affect

Species	Protection Status	Biological Conclusion
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	May affect, not likely to adversely affect
Finback whale *(Balaenoptera physalus)*	Endangered	No effect
Humpback whale *(Megaptera novaengliae)*	Endangered	No effect
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	May affect, but any resulting incidental take is not prohibited by the final 4(d) rule
Right whale *(Balaena glacialis)*	Endangered	No effect
Sei whale *(Balaenoptera borealis)*	Endangered	No effect
Sperm whale *(Physeter macrocephalus)*	Endangered	No effect
West Indian manatee (*Trichechus manatus)*	Threatened	May affect, not likely to adversely affect
American chaff seed *(Schwalbea americana)*	Endangered	No effect
Canby's dropwort (*Oxypolis canbyi*)	Endangered	May affect, not likely to adversely affect
Pondberry (*Lindera melissifolia*)	Endangered	May affect, not likely to adversely affect
Seabeach amaranth *(Amaranthus pumilus)*	Threatened	No effect
Green sea turtle *(Chelonia mydas)*	Threatened	No effect
Kemp's ridley sea turtle *(Lepidochelys kempii)*	Endangered	No effect
Leatherback sea turtle (D*ermochelys coriacea)*	Endangered	No effect
Loggerhead sea turtle *(Carretta carretta)*	Threatened	No effect

An ESA Section 7 project affect determination on bald eagle is not necessary as the species is no longer protected by the ESA and does not require Section 7 consultation. As proposed, there would be no impacts to bald eagle.

8. Conservation Measures and Environmental Commitments

Steps should be taken to avoid impacts to wetlands and aquatic areas to minimize the potential to impact West Indian manatee and American wood stork. The aforementioned species rely on wetland and open water areas for habitat and as such habitat degradation and elimination should be minimized.

Drilled shafts should be used in place of driven piles where possible. Equipment and materials used during the construction of the bridge would not obstruct or impede passage through more than 50 percent of the channel. Underwater noise impacts would also be minimized through the use of "slow starts", where pile-driving ramps up slowly in an effort to deter marine species from the work area.

The SCDOT commits to implementing the following conservation measures, or actions, to minimize or compensate for effects to each species:

- Follow SCDOT Best Management Practices during construction
- Obtain NPDES permit and prepare a Stormwater Pollution Prevention Plan
- Ensure equipment does not obstruct or impede passage through more than 50 percent of the Ashley River.
- Use of "slow starts" for pile driving, barge movement, and other vessel movement where activity ramps up slowly in an effort to deter marine species from the work area.
- Avoid demolition of existing in-water structures.
- Obligations under Section 7 of the Endangered Species Act must be considered if (1) new information reveals impacts associated with this project may affect listed species or critical habitat in a manner not previously considered, (2) the project is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is determined that may be affected by the proposed improvements."
- All contractors involved in the construction will be required to comply with the USFWS Manatee Protection Guidelines (Appendix E) for in-water work.
    - Conservation measures would be undertaken to minimize the three predominate risks to manatees including vessel strikes, noise, and turbidity. The contractor would adhere to the USFWS Manatee Protection Guidelines during project construction to eliminate the possibility of construction related manatee injury or death. To avoid striking manatees, construction vessels would operate at low speeds (no-wake or idle) within the project area and when operating with less than a 4-foot clearance from the bottom. The use of a designated spotter between May 15 and October 15 would provide reasonable assurance against impacts resulting from in-water work. In-water moving equipment would be halted if a manatee is spotted within 50 feet of the in-water construction area. Any collision or injury to manatees will be reported immediately to the USFWS South Carolina Field Office.
    - The project manager and/or contractor would inform all project personnel that manatees may be present in the project area. The project manager would ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water.

9. References

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Attachment G Draft I-526 West Lowcountry Corridor Biological Assessment for NOAA-NMFS

South Carolina
Department of Transportation

April 1, 2020

Mr. Andrew Herndon
Atlantic and Shortnose Sturgeon Recovery Coordinator
Protected Resources Division
NOAA Fisheries - Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

RE Section 7 NOAA-NMFS Consultation Request for I-526 Lowcountry Corridor, Charleston County, South Carolina; SCDOT PIN P027507

Dear Mr. Herndon:

The South Carolina Department of Transportation (SCDOT) on behalf of the Federal Highway Administration (FHWA), is requesting consultation with NOAA-NMFS for species under their jurisdiction in compliance with Section 7 of the Endangered Species Act (ESA) for the above referenced project. The project's Environmental Impact Statement (EIS) is being developed under the One Federal Decision/FAST Act 41 guidance.

This submittal is being provided directly to you for your review and comment. Another package is being submitted via the online web link for official tracking and documentation per our coordination earlier. Attached you should find a copy of a Biological Assessment and accompanying Appendix describing construction activities with effects determinations based upon the described activities, a copy of the EIS's Natural Resource Technical Memorandum (NRTM) documenting all federal and state threatened or endangered species, and a completed Section 7 checklist for quick reference.

As noted above, this request is being provided per the One Federal Decision guidance under which this project falls. Per the schedule agreement with NOAA, this request is being submitted to your agency for a timely and complete review. Please contact myself or Shane Belcher with FHWA with any questions or comments.

Sincerely,

Chris Beckham

Chris Beckham
Environmental Permits Coordinator

CB/wm

enclosures
Biological Assessment with Appendix
NOAA-NMFS S7 Checklist
Copy of EIS Natural Resource Technical Memorandum

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File: Env/DesignBuild

BIOLOGICAL ASSESSMENT

FOR NATIONAL OCEANIC AND ATMOSTPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE

Prepared For:

South Carolina Department of Transportation

Prepared By:

Civil Engineering Consulting Services, Inc.

DRAFT March 27, 2020

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Appendices

1. Project Overview

1.1 Federal Nexus

The purpose of this Biological Assessment (BA) is to address the effect of the I-526 Lowcountry Corridor West project on U.S. Endangered Species Act (ESA) listed species, listed as endangered or threatened, or their designated critical habitat, under the jurisdiction of the National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NOAA-NMFS). Those species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) are addressed in a separate BA.

The South Carolina Department of Transportation (SCDOT), on behalf of the Federal Highway Administration (FHWA), is pursuing informal consultation under Section 7 of the ESA on the impacts to species that will result from the proposed I-526 West project. Section 7 of the ESA assures that, through consultation with NOAA-NMFS and/or the USFWS, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat.

1.2 Project Description

The proposed I-526 Lowcountry Corridor West project extends approximately 11.4 miles from near Paul Cantrell Boulevard in West Ashley to Virginia Avenue in North Charleston in Charleston County, SC. SCDOT currently ranks the segment of I-526 between I-26 and Virginia Avenue as the most congested segment of interstate highway in the state. The remainder of the I-526 LCC West project, from I-26 to Paul Cantrell Boulevard, ranks among the top ten of the state's existing most congested corridors. Traffic forecasts show that segments of that corridor will continue to be among the state's most congested in 2040. The interchange of I-526 and I-26 is the major source of the congestion.

Through various reasonable build alternatives, SCDOT proposes to add two travel lanes in each direction along I-526 and to upgrade the interchange of I-526 and I-26. Improvements to access I-526 from Paul Cantrell Boulevard, North Rhett Avenue, and Virginia Avenue are also proposed. Proposed improvements to I-526 would include providing additional travel lanes over the Ashley River, through widening the existing bridges. An EIS is being completed that outlines potential alternatives to satisfy the purpose and need of the project.

1.3 Project Area and Setting

The area surrounding the project study area (PSA) is a densely populated region to the west of the City of Charleston, South Carolina (Figure 1). Based on the size of this project and the density of development in greater Charleston, the land use with this vicinity varies greatly. A large portion of the land within this

buffer has been developed for residential, commercial, and industrial uses. Undeveloped land primarily consists of maintained rights of way, landscaped lawns, wooded forests, and tidal marshes. Filbin Creek and its floodplain parallel and cross through the PSA, flowing to the Cooper River; this area is largely undeveloped forested wetlands. The Ashley River flows through the PSA and is surrounded by tidal mudflats and vegetated marshes. Within the PSA, the Ashley River Watershed extends approximately 1,800 feet (0.3 mile) north of Paul Cantrell Boulevard, north across the Ashley River, to 2,500 feet (0.5 mile) north of International Boulevard. It includes portions of two named water bodies including the Ashley River and Bulls Creek. Numerous streams and wetlands are present in the PSA in the Ashley River Watershed, including forested wetlands, emergent wetlands, tidally influenced streams, and freshwater streams.

The General William C. Westmoreland bridge (Westmoreland bridge) is located along I-526 and connects the city of North Charleston with the West Ashley area of Charleston. The twin span bridge carries two lanes of I-526 in each direction across the Ashley River and the surrounding tidal marshes and creeks. The 3,908-foot long bridge was constructed in 1980 and each bridge is 42 feet wide. The existing bridge deck consists of two 12-foot travel lanes, two in each direction, a 5.5-foot inside shoulder, and a 10-foot outside shoulder. The Westmoreland bridge spans the Ashley River with a horizontal clearance of 60 feet and a vertical clearance of 35 feet when measured from mean high water (MHW). This is a twin span fixed bridge with four main spans. The longest span is approximately 120 feet. The concrete deck is approximately 43 feet wide.

General William C. Westmoreland Bridge over the Ashley River.

1.4 Consultation History

A Letter of Intent was sent to the USFWS and NOAA-NMFS by SCDOT on January 27, 2016. A Notice of Intent was published in the Federal Register on November 11, 2019. The project has been discussed at

several Agency Coordination Effort meetings with the USFWS, NOAA-NMFS, U.S. Environmental Protection Agency, FHWA, U.S. Army Corps of Engineers, South Carolina Department of Natural Resources (SCDNR), and FHWA on March 14, 2019; July 10, 2019; July 25, 2019; August 14, 2019; September 11, 2019; October 9, 2019; November 13, 2019; December 11, 2019; January 8, 2020; February 12, 2020; and March 11, 2020. The project was also discussed via telephone with Andrew Herndon, NOAA-NMFS and SCDOT and via email with Bill Post, SCNDR (March 23, 2020).

2. Federally Proposed & Listed Species & Designated Critical Habitat

The project is located within the range of two species listed under the ESA within the jurisdiction of NOAA-NMFS. There are no proposed or candidate species and no Critical Habitat in or near the PSA.

Fish

Shortnose sturgeon (*Acipenser brevirostrum*) (32 Federal Register (FR) 4001; Recovery plan: NMFS 1998)

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) (77 FR 5880 and 77 FR 5914)

2.1 Shortnose Sturgeon

The shortnose sturgeon is an anadromous fish species which spends most of the year in brackish or salt water and moves into fresh water only to spawn. The shortnose sturgeon was listed as endangered in 1967 and remained on the list with enactment of the ESA in 1974 when NOAA-NMFS assumed its jurisdiction. There are 19 Distinct Population Segments (DPS) rangewide with 11 DPS occurring in the Southeastern U.S. A recovery plan exists for this species and was issued in 1998. Spawning season for the shortnose sturgeon occurs from late winter to early spring. The shortnose sturgeon is dark-colored on its dorsal side and light on the ventral side. This species of sturgeon has a wide mouth pointed downward beneath a short snout and can grow up to three feet long. The shortnose sturgeon inhabits the lower portions of large rivers and coastal rivers along the Atlantic Coast. Shortnose sturgeon feed on invertebrates and the stems and leaves of macrophytes. Adults forage at night in shallows immediately adjacent to deep-water areas occupied during the day. Juveniles generally remain in deep-water areas throughout the day. In South Carolina shortnose sturgeon have been found in the Great Pee Dee, Waccamaw, Edisto, Cooper, Santee, and Savannah Rivers. They may also be found in the Black, Sampit, and Ashley Rivers. Suitable freshwater spawning habitat for this species is not present within the PSA however, suitable foraging habitat for the shortnose sturgeon exists within the Ashley River within the PSA. The shortnose sturgeon may use Filbin Creek up to Virginia Avenue for foraging by way of the Cooper River but would not likely not use it for spawning.

2.2 Atlantic Sturgeon

The Atlantic sturgeon is an anadromous fish species, similar in habitat requirements and appearance to the shortnose sturgeon. In 2007, NOAA-NMFS conducted a status review for the Atlantic sturgeon and determined at least three of the distinct population segments (DPS) warranted listing under the ESA. In 2012, NOAA-NMFS issued the final rule to list the Carolina DPS and South Atlantic DPS as endangered. The Atlantic sturgeon can be distinguished by their large size, snout shape, and bony plates called scutes. They can grow up to 14 feet in length and weigh up to 800 pounds. The Atlantic sturgeon is bluish-black or olive brown dorsally with paler sides and a white belly. The sides of its body also contain five rows of scutes. Adults are commonly found in brackish and estuarine waters along the coastline. The adult Atlantic sturgeon will migrate upstream to fresh water to spawn in the spring, and can go as far inland as the fall line in South Carolina to spawn, as long the stream is unobstructed. Following spawning, Atlantic sturgeon typically inhabit coastal estuarine waters with gravel or sand substrate. Adult sturgeon typically feed on benthic invertebrates such as mussels, worms, and shrimp. In South Carolina, Atlantic sturgeon have been captured in the Great Pee Dee, Waccamaw, Santee, Cooper, Edisto, Combahee, and Savannah Rivers. Suitable freshwater spawning habitat for this species is not present within the PSA however, suitable foraging habitat for the Atlantic sturgeon exists within the Ashley River within the PSA. The Atlantic sturgeon may use Filbin Creek up to Virginia Avenue for foraging by way of the Cooper River but would not likely not use it for spawning.

3. Environmental Baseline

The Ashley River is a tidally influenced river with the headwaters originating in Dorchester County. The river eventually joins the Cooper River to form the Charleston Harbor before discharging eastward into the Atlantic Ocean. The entire drainage of the Ashley River system, including its headwaters in Cypress and Wassamassaw swamps, extends approximately 60 river miles. At the project site, the width of the main deeper-water navigational channel of the Ashley River is approximately 15 feet wide. The full width of the Ashley River at the project site is approximately 1,500 feet wide. Water depths in the river range from approximately 0 to 20 feet. The Ashley River is a designated State Scenic River, largely in part to numerous historic properties located along the riverbanks. Per the NOAA Ashley River bridge station (Station ID 8665099) the mean tidal range is 5.68 feet and the diurnal range is 6.23 feet. Mean high water is approximately 3.08 feet and mean low water is -3.16 feet at the center of the channel. Salinity at the PSA ranges from 12 to 17 parts per thousand (ppt).

SCDHEC has classified the waterbodies (streams and rivers) of South Carolina based on the desired uses of each waterbody. SCDHEC has established standards for various parameters to protect all uses within each waterbody classification. The Ashley River is classified as salt water (Figure 2). Monitoring station MD-049 is located upstream of the PSA, along the Ashley River (Figure 3). Aquatic life uses are not supported at MD-049 based on pH and turbidity. The term pH is a measure of the hydrogen ion concentration of water, and is used to indicate degree of acidity. The pH scale ranges from 0 to 14. A pH of 7 is considered neutral, with values less than 7 being acidic, and values greater than 7 being basic. Low pH values are found in natural waters rich in dissolved organic matter, especially in coastal plain swamps and black water rivers. Turbidity is an expression of the scattering and absorption of light through water. The presence of clay, silt, fine organic and inorganic matter, plankton, and other microscopic organisms increases turbidity. Increasing turbidity can be an indication of increased runoff from land. Recreation is only partially supported at this same site (MD-049), based on elevated fecal coliform levels. A fish consumption advisory due to elevated mercury levels in certain types of fish is in place for the Ashley River, including the area at the I-526/General William C. Westmoreland Bridge and northwards/upstream of the project to SC 165.

A Total Maximum Daily Load (TMDL) has been developed for the Charleston Harbor, Cooper, Ashley, and Wando Rivers and approved by the EPA to identify opportunities to increase dissolved oxygen (DO) in the watershed[1]. Many coastal waters in South Carolina have DO levels below the established DO criteria. Wastewater discharges and other anthropogenic influences may contribute to low DO in coastal waters. Natural factors such as organic loading and reduced oxygen levels from wetlands and marshes and estuarine dynamics in the mixing zone where freshwater and saltwater come together can create naturally low DO conditions. The waters in and around Charleston Harbor are considered to be both naturally low in DO and further impacted by wastewater dischargers. Potential sources of oxygen demand loading that were considered include National Pollutant Discharge Elimination System (NPDES) wastewater discharges (continuous point sources), NPDES stormwater discharges (noncontinuous point sources), non-point sources, and natural background sources.

A large portion of the PSA is within Shellfish Growing Area 10B (Figure 4) as designated by SCDHEC. This area encompasses the Charleston Harbor, Ashley River, Cooper River, and their tributaries that support shellfish. Waters within this management area in the PSA have been given the classification of "prohibited" and as such, these areas are closed to all human consumption. Prohibited areas are those

[1] https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Chas_Hbr_DO_TMDL.pdf

that are administratively closed for the harvesting of shellfish for any purposes related to human consumption. These closures are established adjacent to permitted wastewater discharges, marina facilities, or areas containing multiple point sources of pollution. This classification is not based upon violation of a bacteriological standard.

There are various types of navigational activities by numerous vessel types that occur along the Ashley River. To determine the types and extents of activity in the channel, existing documentation was reviewed regarding known vessel use. This included a review of bridge opening records of a nearby moveable downstream facility, the T. Allen Legare bridges, located at milepoints 2.4 and 2.5. A large portion of marine traffic in the area surrounding the proposed project constitutes recreational and commercial (fishing) boating. The W.O. Thomas Jr. Boat Landing is a public boat ramp managed by the Charleston County Park and Recreation Commission. This facility is located approximately 500 feet southeast or downstream of the proposed project. The landing is used by private recreational and commercial boats. There is a private marina located adjacent to the proposed project (Rivers Edge Marina Sales). The marina is used to launch, store, maintain and fuel private, recreational boats. Emergency operations are conducted by the USCG, SCDNR, Charleston County, and the City of Charleston Fire Department Marine Units in the Ashley River. The Charleston County Volunteer Rescue Squad responds to waterway incidents with a variety of light, medium and heavy rescue vehicles. This includes a variety of boats including an air boat and vessels equipped with specialty equipment such as side scan sonar. The Charleston Fire Department operates one Fireboat, Marine 101. The responding vessel features a 980-horsepower engine, is 40 feet long, and has the capacity to pump 3,800 gallons of water a minute.

4. Project Details

4.1 Construction

4.1.1 Construction Overview

This project is expected to be delivered either via the design build or bid build process and final construction and design plans would be determined by the contractor and/or SCDOT. To maintain competitiveness during the bid process, means and methods of construction may not be final, giving contractors the ability to propose specific methods and equipment. The following is an outline of the likely construction activities and project designs. This may vary slightly depending on the selected contractor and bid process. Any modifications from those proposed in this document that could impact effects to listed species would require additional coordination with SCDOT and federal agencies.

The widened bridge structures would each be approximately 32 feet, 5.5 inches wide (Appendix B, Conceptual Design Plans). During construction of the widened bridge, traffic would be maintained on the existing facility. Maintenance and improvements would be made to the existing Westmoreland bridges and the structure would be retained at its existing height and length.

The proposed minimum horizontal clearance for the main navigational opening would be 60 feet between fenders. This configuration will be similar to the existing bridge, or would be less restrictive. The vertical clearance of the proposed fixed span bridge would be a minimum of 35 feet from the MHW datum to meet the needs of mariners in the area.

Generally, the project improvements would consist of the following components:

- Widening of the northbound and southbound roadway approaches to the Westmoreland Bridges.
- Construction of temporary access areas to include matting, barges, and work trestles.
- Construction of a new structure to the south, or downstream side, of the existing Westmoreland Bridges on a mix of concrete prestressed piles and drilled shafts with poured concrete support.
- Construction of a new structure within the center of the existing northbound and southbound Westmoreland Bridges on a mix of concrete prestressed piles and drilled shafts.
- Extension of the existing fender system to the south of the existing Westmoreland Bridge.
- Painting existing and new bridge structures.
- Lighting to be installed for navigation and to meet SCDOT urban interstate lighting requirements ("Roadway Lighting on Interstate Routes in South Carolina").

4.1.2 Temporary Access

Temporary work trestles would be placed in marsh and wetland areas for construction access outside of the existing eastbound bridge (Appendix B, Conceptual Design Plans). Temporary trestle would be approximately 30 feet wide and would be supported by steel pipe piles. The steel piles would be approximately 24-inches in diameter and would be installed using a vibratory hammer. It is estimated that 240 24-inch steel pipe piles would be needed for temporary work trestle. With one work crew performing installation, approximately 4 piles would be driven per day with an average of 350 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day.

For access over marsh areas between the existing bridges either trestle or a combination of barge, barge mats, and timber mats would be needed due to the limited space between the structures. Deeper water and the main channel of the Ashley River would be accessed via barges for construction. Barges may be delivered and moved via water and transport vessels or via land on flatbed trucks with cranes and other heavy equipment. At no point would barges in the Ashley River block more than 50% of the channel.

4.1.3 Prestressed Concrete Pile Installation

Prestressed concrete piles will be installed outside of the main channel of the Ashley River. These piles would have an H-pile steel "stinger" at the end of the concrete pile to prevent damage to the pile as it is driven into hard subsurface materials. Piles would be installed with a hammer or vibratory hammer. Within the Ashely River, Bents 72 through 79 would be supported by prestressed concrete piles. Additional concrete piles would be installed in the adjacent marshes, outside of the boundaries of the Ashley River. It is estimated that 580 24-inch prestressed concrete piles would be needed for bridge widening. With one work crew performing installation, approximately 6 piles would be driven per day with an average of 300 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day.

4.1.4 Drilled Shaft Installation

At the approaches to, and over the main channel of the Ashley River, drilled shafts are proposed to support the new bridge structures. Each shaft would be approximately 7 feet in diameter. To install, steel casing would be installed at each location using a vibratory or pile driving hammer. Inside of that casing would be drilled so that rebar cage can be installed. Concrete would then be poured into the casing to create a large support structure in the water. Approximately 120 drilled shafts would be needed for the bridge widening. One shaft per day would be constructed by one work crew, but multiple crews could install supports concurrently. Within the Ashley River, these drilled shafts would be installed at bents 48 through 71, and at bents A, B, C, and D. Bents 48 through 59 are located at the southerly or westerly (West Ashley) approach to the Ashley River. Bents A through D are at the deepest portion of the main channel of the Ashley River. Bents 60 through 71 are located at the northerly or easterly (North Charleston) approach to the Ashley River. Bents 59 through 79 and bents A through D are located within the Ashley River and are the focus of this analysis.

4.1.5 Fender System

The existing fender system will be extended with a system that can accommodate all required uses of the waterway. The proposed fender system will be designed for both recreational watercraft, as well as larger

vessels such as commercial fishing boats and tug boats. The fender elements would likely consist of rubber fenders, with a steel panel and polyethylene facing. Additional prestressed concrete piles will be required to support the new fender systems. These piles would not be load bearing and would not require extensive pile strikes such as those on the permanent bridge system.

4.1.6 Drainage

Drainage of stormwater from surface runoff from the newly constructed bridges is proposed to be discharged via open scuppers.

4.1.7 Painting

Steel girders would be used in the construction of the new bridge spans over the main channel of the Ashley River and would need to be surface prepped and painted to withstand impacts from weather and the marine environment. The contractor would be required to submit a painting operation plan to include timing, methodologies to prohibit overspray into waters or adjacent vegetation, and weather and wind thresholds for painting operations.

4.1.8 Project Timeline

Construction is expected to begin in 2022. Construction of the bridge phase over the Ashley River would last approximately 3 years. Within that 3-year period, in-water work of an estimated 5 months would be needed for prestressed pile bents and 16 months would be needed for drilled shaft bents. This project is expected to be delivered via the design build process and final construction sequencing will be determined by the contractor. The following is an outline of the likely construction sequence. This sequence may vary slightly depending on the selected contractor. Any modifications from this proposed by the contractor that could impact effects to listed species would require additional coordination with SCDOT and federal agencies.

4.2 Operations and Maintenance

Routine maintenance is expected on the existing and proposed new bridges including sanding/painting, deck resurfacing, concrete patching, lighting replacement, and periodic fender and dolphin repair from exposure and/or vessel strikes.

5. Project Action Area

5.1 Project Action Area

The action area, as defined under 50 CFR §402.02, includes all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The nearshore action

area, as currently proposed, extends 500 meters (1,650 feet) upstream and downstream of the proposed project. The basis for the selection of the 1,650 feet upstream and downstream of the proposed project was due to the limits of the proposed action and potential turbidity effects in the Ashley River. Although sedimentation is not expected to be long lasting or severe based on the velocity of currents in the area, the effects from sedimentation are expected to be wider ranging than noise effects.

The area near the Cooper River is included in the PSA, however there is no proposed in-water work and there are no effects expected to the Cooper River.

6. Effects Analysis

6.1 Direct and Indirect Effects

6.1.1 Hydroacoustic Noise

A temporary increase in underwater noise from construction could cause behavioral changes in surgeon. Loud levels of intermittent or continuous construction noise from drilled shaft installation and work trestle pile driving could harm sturgeon if they were close to the noise source for prolonged periods. Depending on the duration and intensity of sound produced during construction, aquatic organisms could suffer hearing loss, ranging from temporary to permanent. Other potential percussion injuries include bruising, damage to internal organs, or death.

Typical metrics used to evaluate construction noise impacts for impulsive or non-impulsive activities include peak sound pressure level (dB_{peak}), root mean square (RMS), and sound exposure level (SEL). SEL can be expressed as a value for a single strike and for multiple strikes. SEL is commonly referred to as the cumulative SEL or $SEL_{CUMULATIVE}$.

The Greater Atlantic Regional Fisheries Office (GARFO) Acoustic Tool (2019) and Appendix I (Compendium of Pile Driving Sound Data) from the California Department of Transportation (Caltrans) Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish (2015) were used to estimate underwater sound pressure levels caused by in-water pile driving during construction. These references include data from major and minor projects that used un-attenuated pile driving with varying pile size, pile type, and water depths. Noise levels are generally higher if impact pile driving is used, as compared to vibratory hammer driving or extraction. Impact pile driving creates an impulsive sound, while vibratory hammers generate a continuous, low-level noise that is generally considered non-impulsive.

Table 1 provides a summary of the potential un-attenuated sound pressure levels that may occur during the proposed bridge construction sound pressure levels caused by in-water pile driving during construction. The expected pile sizes for the I-526 West project do not exactly correlate with the guidance documents; therefore, the data was best fit or overestimated. The assumed pile sizes that were used to estimate the potential average sound pressure levels are noted in Table 1.

Table 1. Potential Average Sound Pressure Levels (dB) in the Ashley River during Construction.

Bridge Element	Diameter	Assumed Installation Method	Average Sound Pressure Level (dB)		
			dB (peak)	RMS	SEL
Concrete Drilled Shafts[1]	7 feet	Vibratory Hammer	195	180	180
Concrete Piles[2]	24 inches	Impact Hammer	185	170	160
Temporary Trestle Steel Pipe Piles[3]	24 inches	Impact Hammer	203	189	178
Sturgeon Thresholds:					
			206	*150*	*183 (Fish<2g)* *187 (Fish>2g)*

Source: NOAA Greater Atlantic Regional Fisheries Office Acoustics Tool (Updated 9/23/2019) and Caltrans, 2015.
[1] Based on 6-foot steel pipe piles (loudest measurement) at an average of 5-meters relative water depth.
[2] Based on 24-inch concrete piles at an average of 5-meters relative water depth.
[3] Based on 24-inch steel pipe piles at an average of 5-meters relative water depth.

Construction noise can cause behavioral changes for sturgeon. NOAA-NMFS generally uses 150 dB root mean square (RMS) as the threshold for behavioral effects to listed fish species (Caltrans 2015). Use of the vibratory hammer to install the bridge columns and temporary work trestle may exceed 150 dB and cause a behavioral disturbance or stress. Noise from the vibratory hammer would be intermittent. Permanent piles would require a total of 16 days for installation and temporary trestle piles would require additional auditory strikes. It is reasonable to assume that a sturgeon, upon detecting underwater levels of noise would modify its behavior such that it redirects its course of movement away from the ensonified area. These movements would not amount to substantial changes to essential sturgeon foraging behaviors.

In 2008, the Fisheries Habitat Working Group (FHWG) developed the *Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities*, which identifies the following thresholds for onset of physical injury to fish: 206 decibels (dB) peak; 187 dB cumulative SEL for fish 2 grams or greater; and 183

dB cumulative SEL for fish of less than 2 grams (FHWG 2008). As shown in Table 1, the SEL thresholds are not expected to be exceeded by the project activities.

6.1.2 Construction Material Strikes or Vessel Strikes

If sturgeon were present within the project area, potential impacts to sturgeon could result from direct strikes by construction equipment (piles, casings, etc) or by construction vessels (work boats or barges). The factors relevant to determining the risk to fish from vessel strikes vary but may be related to the size and speed of the vessels, navigational clearance (i.e., depth of water and draft of the vessel) in the area where the vessel is operating, and the behavior of individuals in the area. No evidence of ship strike interactions with sturgeon on the Ashley River is available. The use of construction vessels during the construction period will not meaningfully increase the risk of interactions between listed species and vessels in the action area when added to baseline conditions. As such, any increased risk of a vessel strike caused by the project would be too small to be meaningfully measured or detected. As a result, the increased risk of a vessel strike on listed species in the action area is not expected to be substantial.

6.1.3 Water Quality

Turbidity associated with construction may be increased through the placement of fill for bridge approaches and pile driving or construction of drilled shafts. Turbidity from pile driving may temporarily decrease water quality. Pouring concrete into the drilled shaft casings would require a sequencing plan from the contractor to ensure that no spills of material into nearby waters would occur. Temporary formwork for the bent construction and superstructure would need to be removed over the water. The contractor would provide a staged plan for removing the formwork, and would utilize Best Management Practices (BMPs) such as netting, floating barges, and/or other containment measures. The contractor would be required to submit a painting operation plan to include timing, methodologies to prohibit overspray into waters or adjacent vegetation, and weather and wind thresholds for painting operations. Temporary clearing within the salt marsh adjacent to the Ashley River may occur to install erosion and sediment control measures. The contractor would utilize SCDOT BMPs for soil and erosion control, which may include seeding of slopes, silt fences, turbidity curtains, and sediment basins as appropriate, and prepare a spill prevention and pollution control plan to minimize the potential impact on adjacent wetlands. Timber mats and/or barges may cause temporary impacts to salt marsh grasses during construction. However, the SCDOT would minimize these temporary impacts by regularly moving mats and barges to limit compaction of marsh soils and shading of marsh grasses.

6.3 Interrelated and Interdependent Actions and Activities

Interrelated and interdependent actions are those that are part of a larger action and depend on the larger action for their justification. There are no related or dependent actions to the I-526 West project.

7. Effect Determinations

This section includes effect determinations to listed species. There are no proposed species, candidate species, or critical habitat within or near the PSA. **The proposed project may affect, but is not likely to adversely affect, shortnose sturgeon or Atlantic sturgeon.** This biological assessment analyzes the proposed action to determine the potential adverse effects to these species as a result of bridge construction. Risk factors include being struck by construction equipment (piles, barges, trestles), construction-associated noise and turbidity, temporary or permanent loss of habitat, and temporary disruption of spawning/migratory behaviors.

8. Environmental Commitments and Conservation Measures

The SCDOT commits to implementing the following conservation measures, or actions, to minimize or compensate for effects to each species:

- Follow SCDOT Best Management Practices during construction
- Obtain NPDES permit and prepare a Stormwater Pollution Prevention Plan
- Ensure equipment does not obstruct or impede passage through more than 50 percent of the Ashley River.
- Use of “slow starts” for pile driving, barge movement, and other vessel movement where activity ramps up slowly in an effort to deter marine species from the work area.
- Avoid demolition of existing in-water structures.

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Attachment H Essential Fish Habitat Assessment, I-526 Lowcountry Corridor WEST

CONFIDENTIAL DRAFT

Essential Fish Habitat Assessment

I-526 Lowcountry Corridor WEST

Charleston County, South Carolina

May 8, 2020

Project ID: P027507

Prepared for:

SCDOT

Table of Contents

1. Introduction

The South Carolina Department of Transportation (SCDOT), in cooperation with the Federal Highway Administration (FHWA), is preparing an Environmental Impact Statement (EIS) for the proposed I-526 Lowcountry Corridor WEST Project (I-526 LCC WEST) to address the existing and future transportation demands on the I-526 corridor from Paul Cantrell Boulevard to Virginia Avenue in North Charleston, South Carolina. The purpose of the project is to increase capacity and improve operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue.

The project is subject to regulations protecting essential fish habitat (EFH) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) of 1976 (as amended 1996). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 USC 1802, 50 CFR 600.10). Waters designated as EFH by the South Atlantic Fisheries Management Council (SAFMC) and the Mid-Atlantic Fisheries Management Council (MAFMC) occur within the boundaries of the project. SCDOT is coordinating with the National Marine Fisheries Service (NMFS) to ensure proper assessment of EFH and to communicate efforts to minimize and mitigate EFH impacts.

This document describes the existing conditions of EFH within the project area and the potential impacts to EFH by the proposed action.

Figure 1-1. I-526 LCC WEST Project Study Area

2. Proposed Action

The proposed project consists of 3.5 miles and 9.2 miles of improvements to 1-26 and I-526 respectively for a total of 12.7 miles. The boundaries of the project study area (PSA), shown in Figure 1, generally follow the section of I-526 from Paul Cantrell Boulevard to Virginia Avenue including the I-26/I-526 interchange. The I-526 LCC WEST project also proposes upgrades/changes to five interchanges along I-526; the I-526 at Paul Cantrell Boulevard interchange; the I-26/I-526 system-to-system interchange; the I-526 at Rivers Avenue; the I-526 at N Rhett Avenue and the I-526 at Virginia Avenue interchange. These project limits were selected as the rational end points for the transportation improvements and the environmental review, also referred to as logical termini. The western terminus of Paul Cantrell and the eastern terminus of Virginia Avenue are major points of congestion based on traffic analyses for the project. Construction activities are scheduled to begin in 2023.

The proposed project occurs within the Cooper River watershed [8-digit Hydrologic Unit Code (HUC) 03050201] and may impact EFH associated with two main waterbodies, the Ashley River of the Ashley River Watershed [10-digit HUC 03050201-06] and Filbin Creek of the Cooper River Watershed [10-digit HUC 03050201-07]. I-526 crosses the Ashley River between North Charleston and West Ashley. This portion of the project occurs between the coordinates 32.837486°, -80.022572° and 32.828582°, -80.029641°. I-526 passes through the Filbin Creek floodplain from Attaway Street to its confluence with the Cooper River. This portion of the project occurs between the coordinates 32.893394°, -80.000548° and 32.891651°, -79.967041°. Figure 2 depicts the two areas of the project where EFH is present.

Components of the proposed action that will result in impacts to EFH include construction of additional bridge structures over the Ashley River to accommodate the proposed widening of I-526, construction of new structures for collector distributor (C-D) roads over portions of Filbin Creek and its associated floodplain, and construction of improved interchange access for the I-526 connections at North Rhett Avenue and Virginia Avenue.

3. Existing Environment

The project area was assessed for the presence of EFH and two main areas were identified; the portion that crosses the Ashley River and the portion that crosses Filbin Creek near North Rhett Avenue to its junction with the Cooper River. These two areas are described in this section as two separate EFH evaluation areas, as shown in Figure 3-1. The total area of EFH within the project area is summarized at the end of this section.

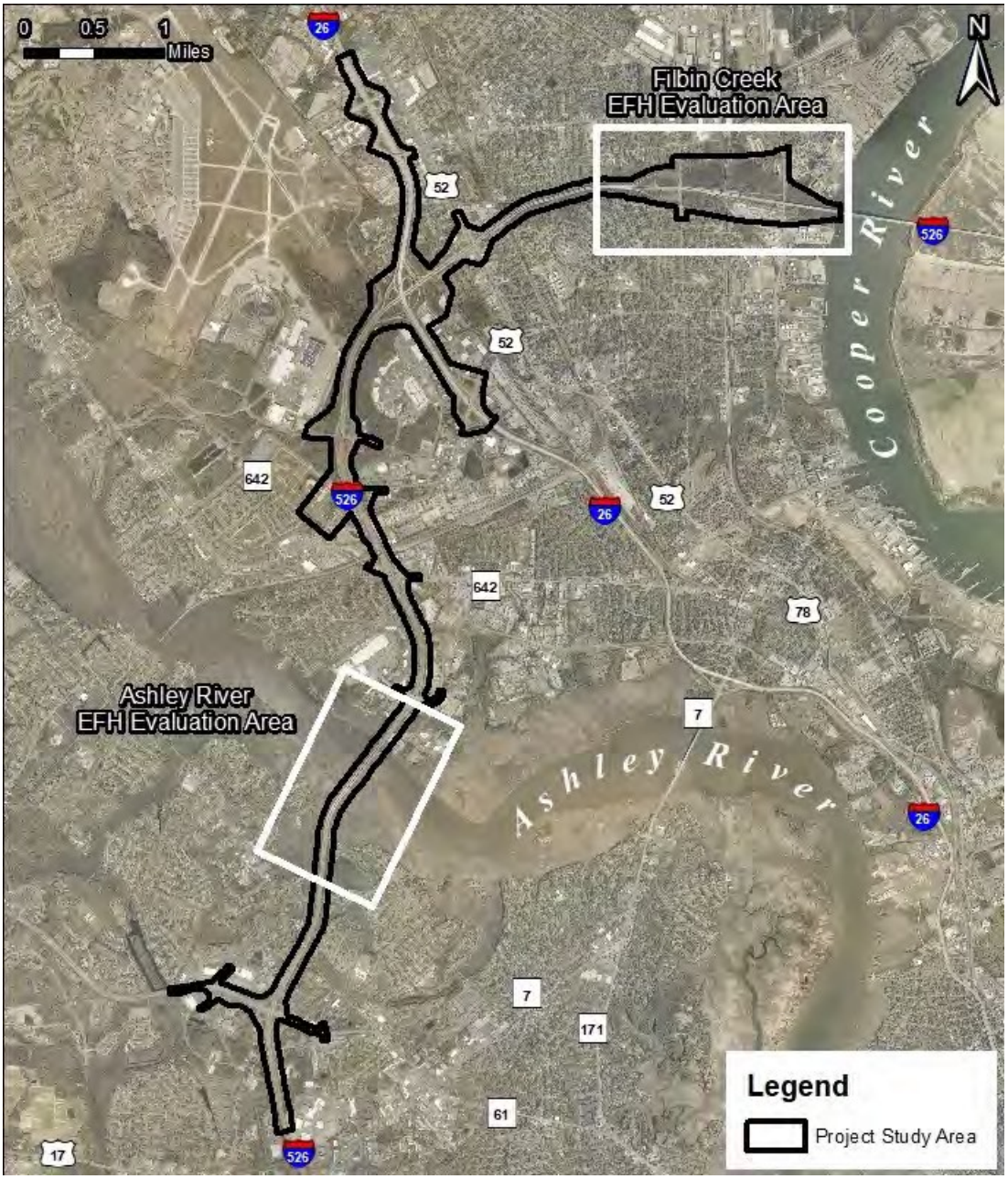

Figure 3-1. Project Study Area and EFH Evaluation Areas

Each essential fish habitat type provides ecosystem services necessary for a variety of species. Differences between habitat types pertain to vegetative cover, flood regime, salinity, and sediment. Six different types of EFH were identified within the project boundary: estuarine emergent wetlands, estuarine tidal creeks, intertidal non-vegetated flats, palustrine emergent wetlands, riverine tidal creeks, unconsolidated bottom, and oysters. Maps of the different types of EFH existing in the Ashley River evaluation area and Filbin Creek evaluation area are displayed in Figure 3-2 and Figure 3-3, respectively.

Using GIS software and recent aerial imagery (2019), GIS shapefiles were produced of all predicted habitat type boundaries within the EFH evaluation areas based on their photographic signatures.

Using GIS software and recent aerial imagery (2019), GIS shapefiles were produced of all predicted habitat type boundaries within the EFH evaluation areas based on their photographic signatures. These shapefiles were uploaded to a Trimble Geo7x GPS unit and printed maps were generated to ground truth the predicted habitat boundaries in the field from December 9th to December 12th, 2019. Field assessments were conducted during low tide to allow for all potential habitat types to be evaluated. During the ground truthing process, qualitative and quantitative data was collected at sample sites to either confirm predicted habitats or indicate a needed change of the predicted habitat in that area. Data collected include habitat type, vegetation composition, current tidal conditions, and salinity. The extent of the EFH habitat boundaries was recorded using the GPS unit. The location of these data collection sites was collected using the GPS unit. The shapefiles of the predicted habitat boundaries were then refined using the GPS locations and data collected in the field.

3.1. Ashley River EFH

The Ashley River evaluation area occurs between Paul Cantrell Boulevard and Leeds Avenue and extends 300 feet from both sides of the existing I-526 centerline. This section of the project occurs within the Ashley River Watershed (HUC 03050201-06). Within this evaluation area is the Ashley River, Bulls Creek, and their respective wetlands and tributaries. There are two water quality monitoring stations within the Ashley River watershed, including Station MD-049 upstream of the EFH evaluation area and Station MD-135 downstream of the evaluation area. Station MD-049 is listed on SCDHEC's Section 303(d) list due to impairments related to elevated levels of Enterococcus bacteria, turbidity, and pH. Station MD-135 is not listed as impaired on the 2016 and draft 2018 303(d) lists.

Table 3-1 provides a summary of the EFH types and approximate acreage identified within the Ashley River evaluation area based on aerial photography review and ground truthing efforts. Figure 3-2 provides an overview of the different EFH types associated with the Ashley River and Bulls Creek. Figure 3-3 displays the qualitative determination of EFH within the evaluation area.

Table 3-1: Ashley River EFH Evaluation Area

EFH Type	Quality	Acres
Estuarine Emergent Wetland	High	48.3
Estuarine Tidal Creek	High	4.1
Intertidal Non-Vegetated Flat	High	0.6
Unconsolidated Bottom	High	21.1
Oyster Reef	High	0.5
Total		**74.6**

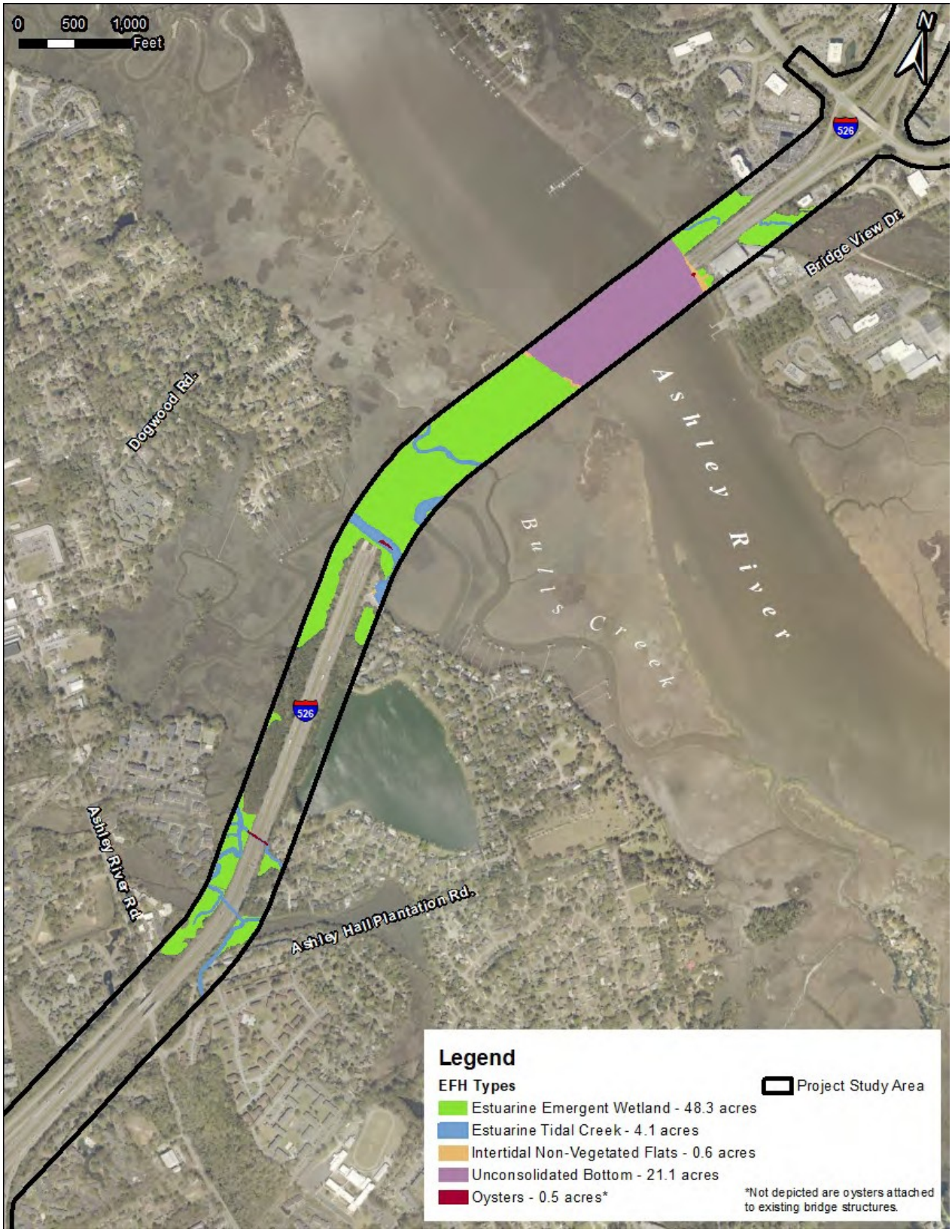

Figure 3-2. Ashley River Evaluation Area – EFH Types

Figure 3-3 Ashley River Evaluation Area - EFH Quality

Estuarine Emergent Wetland

Estuarine emergent wetland. Taken next to I-526 near Bulls Creek, facing southwest. (Photo by Three Oaks Engineering)

Estuarine emergent wetlands are salt or brackish marshlands that are intertidal, or regularly inundated by the tide cycle. The vegetation of these wetlands is typically dominated by one or two plant species that remain standing at least until the beginning of the next growing season (USFWS, 1979). This habitat serves as a nursery for many fish and other aquatic organisms. The high primary productivity of estuarine emergent wetlands provides abundant food stores for prey species and larval fish in the form of detritus. The shallow water column of these wetlands during high tides provides both a low-energy environment away from wave action and currents as well as a refuge for these organisms to avoid predation by larger predators. Other ecosystem services provided by estuarine emergent wetlands are the trapping of pollutants, storing of sediment, and the attenuation of floodwaters (SAFMC, 2016a).

This habitat makes up the majority of EFH within the Ashley River evaluation area, covering 48.3 acres. These estuarine emergent wetlands are saltmarsh, mostly dominated by smooth cordgrass (*Sporobolus alterniflora*). In areas of slightly higher elevation that receive less saltwater flooding during the tide cycle, the vegetation is dominated by black needlerush (*Juncus roemerianus*). These estuarine emergent wetlands are fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The estuarine emergent wetlands surrounding Bulls Creek and the Ashley River are functioning as high quality EFH.

Intertidal Non-Vegetated Flat

An intertidal area is a subsystem of an estuarine environment that lies between the high and low tide lines (USFWS, 1979). Intertidal non-vegetated flats are sediment deposits that occur across areas of gentle slope within the intertidal zone. These are dynamic habitats because of the drastic changes in salinity and temperature that occur each tide cycle (SAFMC, 2020c). Despite being called “non-vegetated”, these flats can have extensive communities of microalgae that benefit macroinvertebrates and other benthic feeders.

Intertidal non-vegetated flat. Taken from mouth of Filbin Creek, facing south. (Photo by Three Oaks Engineering)

Along the South Atlantic coast, these flats typically have very fine sediments, which are inhabitable by benthic organisms such as nematodes, copepods, annelids, bivalves, etc. High tide brings food and predators onto the flat while low tide provides residents a temporal refuge from the mobile predators (SAFMC, 2020c). Therefore, intertidal non-vegetated flats are important foraging habitat for managed species. Intertidal non-vegetated flats cover a combined 0.6 acres of the Ashley River evaluation area. These intertidal non-vegetated flats are fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The intertidal flats located within the project area are functioning as high quality EFH.

Estuarine Tidal Creek

Estuarine tidal creek. Taken from within Bulls Creek, facing east. (Photo by Three Oaks Engineering)

Estuarine tidal creeks are sinuous drainage channels that are subject to the ebb and flow of each tide cycle. As the tide rises, tidal waters flow upstream filling the channel before spilling into the surrounding marshlands. The depths of tidal creeks vary depending on tide range, land use, and distance upstream from coastal inlet channels. Shallow depths of tidal creeks serve as nurseries for fish, crustaceans, and mollusks because they are inaccessible to larger predators (SAFMC, 2016a). Tidal creeks also have soft-bottom substrate that provides benefits like those provided by intertidal flats.

The only named estuarine tidal creek system identified within the Ashley River EFH evaluation area is Bulls Creek. Bulls Creek varies in width from approximately 80 feet near the confluence with the Ashley River to less than 2 feet in its uppermost extents. Bull Creek and its tributaries are estuarine tidal creeks, with an observed salinity range of 4-20 parts per thousand. There is 4.1 acres of estuarine tidal creek habitat identified within the Ashley River evaluation area. Bulls Creek and its tributaries are fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The sections of Bulls Creek that are within and adjacent to the project area are functioning as high quality EFH.

Unconsolidated Bottom

Unconsolidated bottom includes all wetland and deep-water habitats with at least 25% cover of particles smaller than stones, less than 30% vegetative cover, and subtidal, permanently flooded, intermittently exposed, or semi-permanently flooded water regimes (USFWS, 1979). This designation was chosen to describe the group of habitats that are permanently to semi-permanently beneath tidal waters. Within the Ashley River evaluation area, unconsolidated bottom habitat is associated with the main channel of the Ashley River.

The Ashley River drains to the Charleston Harbor and receives seawaters from the Atlantic Ocean during high tides. The channel of the Ashley River within the project area ranges from 3-20 feet deep (NOAA, 2020b). The depth of the water level fluctuates with the range of the tide. The Ashley River has a soft-bottom substrate and a stable water column that provides spawning and foraging habitat for benthic and pelagic organisms. Unconsolidated bottom accounts for 21.1 acres within the Ashley River Evaluation area. This habitat is fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The unconsolidated bottom located within the project area is functioning as high quality EFH.

Unconsolidated bottom. Taken from western bank of Ashley River, facing southeast. (Photo by Three Oaks Engineering)

Oysters

Oysters on existing bridge structures in the Ashley River. (Photo by Three Oaks Engineering)

The Eastern oyster (*Crassostrea virginica*) is harvested along the coast of South Carolina. Oysters primarily settle and develop in intertidal habitats creating beds, reefs, or banks. These reefs contain live oysters as well as remaining shells from previous generations (NOAA, 2020d). The waters of the Ashley River are classified as Shellfish Management Growing Areas (SMGA) by the South Carolina Department of Health and Environmental Control (SCDHEC) and is within SCDHEC Shellfish Management Growing Area 10B. Shellfish harvesting is prohibited throughout the waters of Charleston Harbor including the portion of the Ashley River in the project area. No commercial culture, grant, or mariculture permits, or recreational shellfish grounds are located within the evaluation area (SCDHEC, 2019). Furthermore, SCDNR does not have any managed state or recreational shellfish grounds within the Ashley River evaluation area (SCDNR, 2019). Spatial data from 2015 of intertidal oyster reefs and shell deposits located by SCDNR did not depict any occurrences within the Ashley River evaluation area.

During field investigations clusters of oysters were found occupying a variety of surfaces (bridge piles, riprap, culverts, and natural surfaces) within the Ashley River evaluation area. Oysters that were present along riprap or other horizontal surfaces were captured with point data and logged on a GPS. Oysters attached to existing bridge structures were observed around the entire circumference or perimeter of the structures. It was estimated oysters were on average three feet

in height and generally two to three oysters in thickness. Using the data logged with GPS points and accounting for oysters present on existing bridge structure sizes at an average height of three feet an estimated 0.5 acres of oysters are present in the Ashley River EFH evaluation area. The oysters in the Ashley River EFH evaluation area are high quality EFH.

3.2. Filbin Creek Evaluation Area

The boundaries of the Filbin Creek evaluation area are more variable than the Ashley River evaluation area due to proposed interchange improvements at North Rhett Avenue and Virginia Avenue. Beginning at Attaway Street, this evaluation area has a width of 300 feet from both sides of the existing I-526 centerline. From Attaway Street to North Rhett Avenue, the evaluation area expands to approximately 1,200 feet from the existing I-526 centerline. This section of the project occurs within the Cooper River Watershed (HUC 03050201-07). Within this evaluation area is the main channel of Filbin Creek, surrounding wetlands and tributaries of Filbin Creek, and the confluence of Filbin Creek and the Cooper River. There is one water quality monitoring station found within the Filbin Creek evaluation area. Station MD-249 is located along Filbin Creek and is listed on SCDHEC's 2016 and draft 2018 Section 303(d) lists due to impairments related to elevated levels of *Enterococcus* bacteria. Two other water quality monitoring stations are found nearby within the Cooper River. Station MD-044 and Station MD-248 are located upstream and downstream of the project, respectively. Neither MD-248 nor MD-044 are listed on the 303(d) list.

Table 3-2 provides a summary of the EFH types and acreage identified within the Filbin Creek evaluation area based on aerial photography review and ground truthing efforts. Figure 3-4 provides an overview of the different EFH types associated with Filbin Creek. Figure 3-5 displays the qualitative differences in EFH throughout the evaluation area.

Table 3-2: Filbin Creek Evaluation Area

EFH Type	Quality	Acres
Estuarine Emergent Wetland	High	24.1
	Low	35.2
Estuarine Tidal Creek	High	7.5
	Low	7.8
Intertidal Non-Vegetated Flats	High	2.4
Palustrine Emergent Wetland	Low	59.8
Riverine Tidal Creek	Low	1.3
Unconsolidated Bottom	High	3.9
Oyster Reef	High	0.3
Total		**142.3**

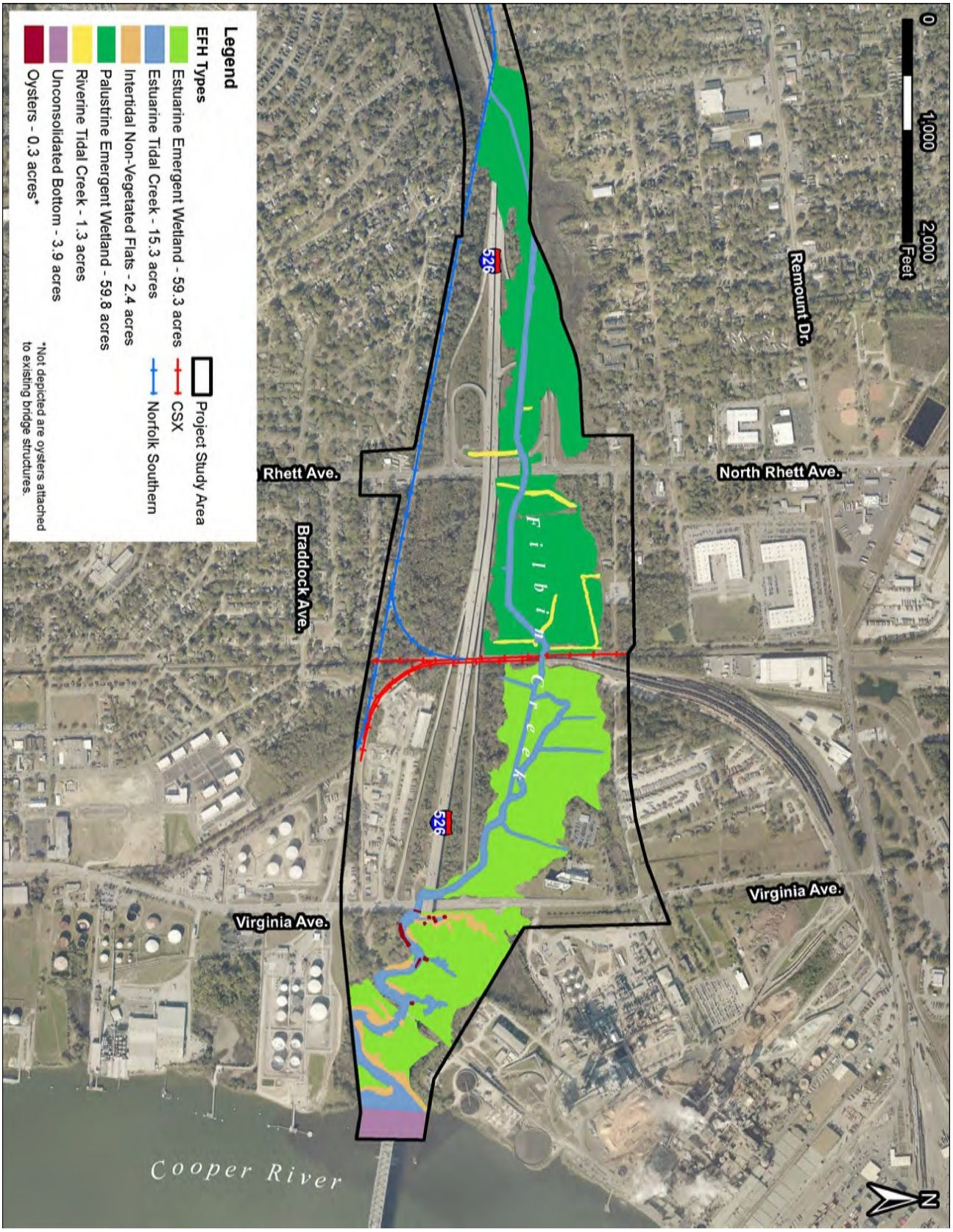

Figure 3-4. Filbin Creek EFH Evaluation Area

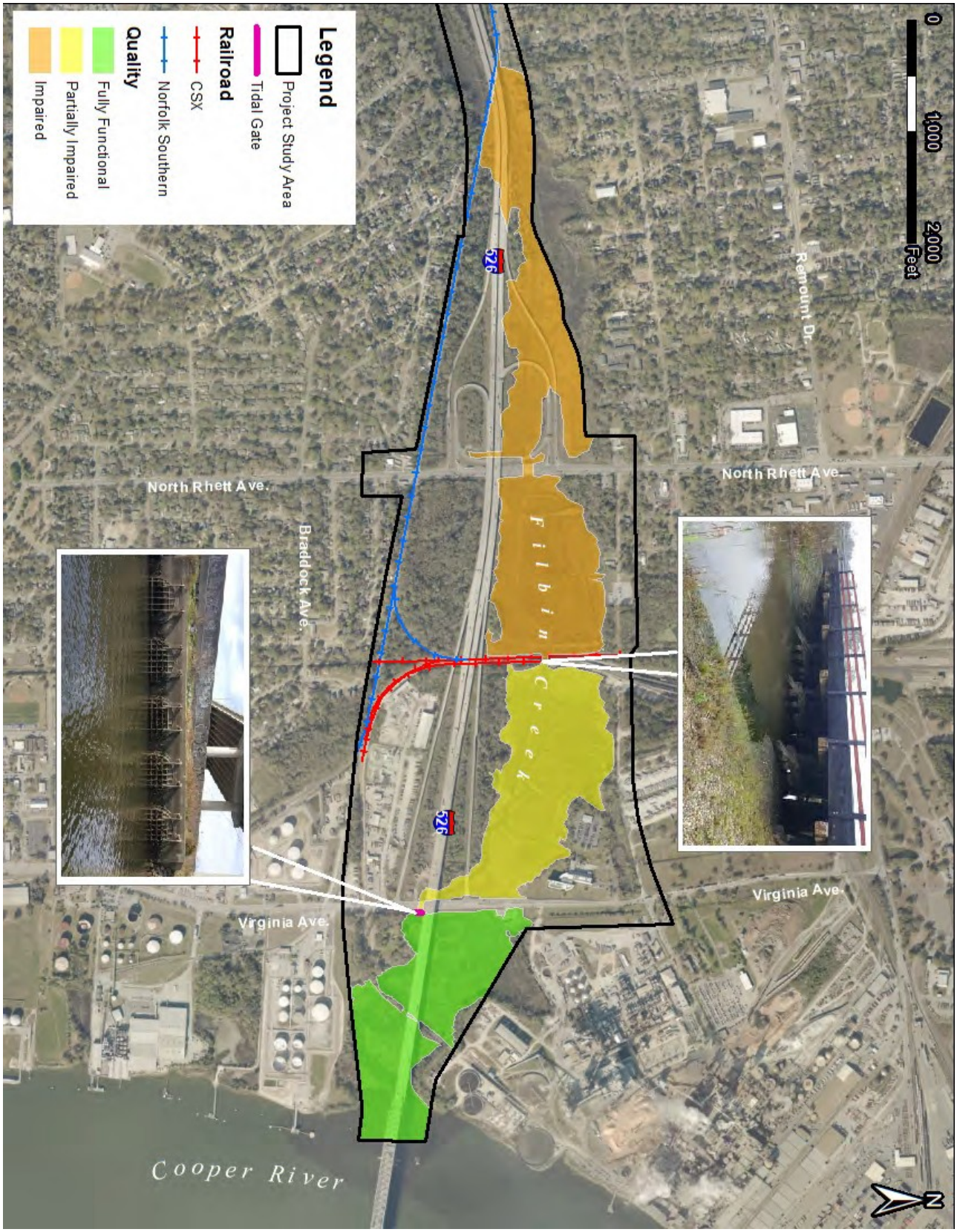

Figure 3-5. Filbin Creek EFH Quality

Estuarine Emergent Wetland

Estuarine emergent wetland.
(Photo by Three Oaks Engineering)

Estuarine emergent wetland habitat makes a large portion of EFH within the Filbin Creek Evaluation Area, covering 59.3 acres in total. Estuarine emergent wetlands within the Filbin Creek evaluation area can be qualitatively separated into two different plant communities with respect to tidal regime: east of Virginia Avenue and west of Virginia Avenue. The section of Filbin Creek east of Virginia Avenue to the Cooper River, is similar in quality and function to the estuarine emergent wetlands described in the Ashley River evaluation area. These wetlands receive an uninhibited tidal regime and the vegetative community is dominated by smooth cordgrass (*Sporobolus alterniflora*) and black needlerush (*Juncus roemerianus*). Sea oxeye daisy (*Borrichia frutescens*) and saltgrass (*Sporobolus pumilus*) are found along the fringes of this habitat. These estuarine emergent wetlands are fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The estuarine emergent wetlands to the east of Virginia Avenue are high quality EFH.

Upstream of the tidal gate, west of Virginia Avenue and east of the CSX railroad causeway, is also classified as estuarine emergent wetland. The estuarine emergent wetlands in this section of the evaluation area are dominated by giant cordgrass (*Sporobolus cynosuroides*) and common reed (*Phragmites australis*) in areas that appear to receive regular tidal influence. In areas of slightly higher elevation that receive even less saltwater during the tidal flooding events, the vegetation is dominated by marsh alder (*Iva frutescens*), groundsel bush (*Baccharis halimifolia*), and rattlebox (*Sesbania punicea*). This change in vegetative community can be attributed to the altering of saltwater flood regime by the tidal gate at Virginia Avenue. Salinity measurements taken from waters in this section of the evaluation area ranged between 3-12 parts per thousand. The presence of saline waters and the vegetation indicate that some tidal connectivity remains despite the tidal gate. However, there appears to be a natural transition from highly salt tolerant vegetation to a more brackish and less salt tolerant vegetation. This likely a function of limited connectivity to tidal flows because of the functional tide gate at Virginia Avenue. This section of estuarine emergent wetlands is considered partially impaired in that some ecosystem services essential to fisheries have been diminished. Specifically, regular tidal exchange is effectively limited by the tidal gate. It is expected the tidal gate will remain in place and thus, the ecosystem services provided by the estuarine emergent wetland habitat type are not expected to function at a high level and will likely continue to see a transition to a more brackish vegetative community. Access to this habitat by managed fishery species is considered restricted due to the tidal gate limiting tidal exchange. While salinity levels remain high, this habitat is still considered partially impaired. Due to partial

impairment and the obvious vegetative succession, the area west of Virginia Avenue and east of the CSX railroad causeway is considered low quality estuarine emergent wetland EFH.

Estuarine Tidal Creek

Riverine tidal creek adjacent to Filbin Creek. (Photo by Three Oaks Engineering).

Filbin Creek and its tributaries are largely a system of estuarine (saltwater) tidal creeks that drain to the Cooper River. A total of 15.3 acres of estuarine tidal creeks are present in the Filbin Creek evaluation area. The Filbin Creek estuarine system is complicated by the tidal gate at Virginia Avenue and two railroad causeways west of Virginia Avenue. However, from the east of Virginia Avenue to the Cooper River is a fully functional estuarine tidal creek. The width of Filbin Creek varies from 70-90 feet and the observed salinity in this section ranged from 4-15 parts per thousand. This section of Filbin Creek is fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The estuarine tidal creeks east of Virginia Avenue are considered high quality EFH.

Tidal gate at Virginia Avenue. (Photo by Three Oaks Engineering)

West of Virginia Avenue, Filbin Creek flow is considerably altered by the tidal gate which limits the amount of tidal exchange upstream during normal tidal cycles. West of Virginia Avenue and east of the CSX railroad causeway, salinity measurements taken from Filbin Creek and its tributaries ranged from 4-8 parts per thousand. Because these measurements exceed 0.5 parts per thousand, these waters are still considered estuarine tidal creeks (USFWS, 1979). The estuarine tidal creeks, including the main channel of Filbin Creek, in this section of the evaluation area are partially impaired because of the restricted connectivity to downstream EFH and the limited access by managed fishery species. However, this impairment does not result a complete degradation of the quality of EFH in the context of estuarine tidal creek habitat. Enough tidal influence is still present that the main channel of Filbin Creek west of Virginia Avenue to the CSX railroad causeway is still considered high quality EFH.

CSX railroad causeway and bridge. (Photo by Three Oaks Engineering)

West of the CSX railroad causeway to the western-most limits of EFH in the Filbin Creek evaluation area the main channel of Filbin Creek remains an estuarine tidal creek because of its direct connection to the tidal gate and obvious tidal influence. Salinity measurements at the surface of Filbin Creek in this segment of the evaluation area were consistently documented as 0 parts per thousand despite visual evidence of tidal influence. This can likely be attributed to stormwater runoff having a more regular influence than saline waters infiltrating the tidal gate this far upstream. Samples taken from the bottom of the channel contained salinity in quantities more than the 0.5 parts per thousand required to maintain estuarine tidal creek designation. The main channel of Filbin Creek in this section west of the CSX railroad causeway is considered impaired because some ecosystem services essential to fisheries have been diminished or lost. The presence of the tidal gate at Virginia Ave restricts tidal flow and access to this habitat by managed fishery species is therefore more restricted. Additionally, stormwater runoff having a more regular influence than saline waters would suggest that this portion of Filbin Creek, while tidally influenced, receives more influence from stormwater runoff and freshwater flows from headwaters further upstream than through tidal exchanges. Although some tidal action still reaches this area, the ecological integrity is impaired. Therefore, estuarine tidal creek areas west of the CSX railroad causeway are considered low-quality EFH.

Intertidal Non-Vegetated Flat

Intertidal non-vegetated flat. Taken from mouth of Filbin Creek, facing south. (Photo by Three Oaks Engineering)

An intertidal area is a subsystem of an estuarine environment that lies between the high and low tide lines (USFWS, 1979). Intertidal non-vegetated flats are sediment deposits that occur across areas of gentle slope within the intertidal zone. These are dynamic habitats because of the drastic changes in salinity and temperature that occur each tide cycle (SAFMC, 2020c). Despite being called "non-vegetated", these flats can have extensive communities of microalgae that benefit macroinvertebrates and other benthic feeders. Along the South Atlantic coast, these flats typically have very fine sediments, which are inhabitable by benthic organisms such as nematodes, copepods, annelids, bivalves, etc. High tide brings food and predators onto the flat while low tide provides residents a temporal refuge from the mobile

predators (SAFMC, 2020c). Therefore, intertidal non-vegetated flats are important foraging habitat for managed species. Intertidal non-vegetated flats cover 2.4 acres of the Filbin Creek portion of the project area. These intertidal non-vegetated flats are fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The intertidal non-vegetated flats in the Filbin Creek EFH evaluation area are high quality EFH.

Palustrine Emergent Wetland

Palustrine emergent wetlands are like estuarine emergent wetlands in that their vegetative community is dominated by one or more annual plant species. However, these freshwater marshlands have a salinity of less than 0.5 parts per thousand (USFWS, 1979). These wetlands, where present, occur upstream of the estuarine emergent wetlands and receive less tidal influence. Although the low salinity of these waters limits its use by several managed fish species, tidal freshwater plays an important role as the transition zone between freshwater habitats upstream and the tidal saltwater habitats downstream. Palustrine emergent wetlands provide nursery habitat for managed species as well as the prey of managed species (SAFMC, 2016a). Like other wetland habitats, palustrine emergent wetlands provide important ecosystem services of absorbing pollutants, storing sediments, and attenuating floodwaters.

Palustrine emergent wetland. (Photo by Three Oaks Engineering)

Palustrine emergent wetland habitat was only found within the Filbin Creek Evaluation Area, occurring west of the CSX railroad causeway and east of the Norfolk Southern railroad causeway. There are 59.8 acres of palustrine emergent wetlands in the Filbin Creek evaluation area. These wetlands are a monoculture plant community dominated by the non-native common reed (*Phragmites australis*). All salinity recordings of waters in this area were 0 parts per thousand. These characteristics can be attributed to the restricted connectivity to other EFH waters caused by the existing causeway associated with North Rhett Avenue, CSX railroad causeway and the tidal gate at Virginia Avenue. Additionally, multiple outfall pipes that appear to carry local stormwater to Filbin Creek are present in this section of the evaluation area. The regular influx of freshwater runoff further weakens the tidal exchange received by these wetlands.

The palustrine emergent wetlands in the Filbin Creek evaluation area are impaired because multiple ecosystem services essential to fisheries have been diminished or lost. The monoculture of the invasive common reed, the restricted flows resulting from the tidal gate and CSX railroad causeway,

and regular flushing of freshwater stormwater runoff all contribute to impairment of this section of Filbin Creek. Although some tidal action still reaches this area in the main channel of Filbin Creek, the ecological integrity of the adjacent wetlands is ultimately impaired in the context of EFH. Therefore, the palustrine emergent wetlands associated with Filbin Creek are considered low-quality EFH.

Riverine Tidal Creek

Riverine tidal creeks are sinuous drainage channels that are subject to the ebb and flow of each tide cycle. However, these tidal creeks have a salinity of less than 0.5 parts per thousand (USFWS, 1979). As the tide rises, tidal waters flow upstream filling the channel before spilling into the surrounding wetlands. The depths of tidal creeks vary depending on tide range, land use, and distance upstream from coastal inlet channels. Shallow depths of tidal creeks serve as nurseries for fish, crustaceans, and mollusks because they are inaccessible to larger predators (SAFMC, 2016a).

Riverine tidal creek adjacent to Filbin Creek (Photo by Three Oaks Engineering)

Riverine tidal creeks account for 1.3 acres in the Filbin Creek evaluation area. Located west of the CSX railroad causeway are multiple small tributaries that feed into the main channel of Filbin Creek. Salinity measurements of these tributaries were consistently documented as 0 parts per thousand despite visual evidence of tidal influence. This can be attributed to stormwater runoff having a more regular influence than saline waters infiltrating from the main channel of Filbin Creek. These tributaries are therefore designated as riverine tidal creeks based on the lack of salinity but obvious tidal influence. The riverine tidal creeks are impaired because some ecosystem services essential to managed fisheries have been diminished or lost. No salt tolerant species were observed in these waters during field surveys. The presence of the tidal gate at Virginia Ave restricts tidal flow and access to this habitat by managed fishery species is therefore more restricted. Additionally, stormwater runoff having a more prevalent influence than saline waters serves as an impairment for some managed fishery species. Therefore, the riverine tidal creeks within the Filbin Creek evaluation area are considered low quality EFH.

Unconsolidated Bottom

Unconsolidated bottom includes all wetland and deep-water habitats with at least 25% cover of particles smaller than stones, less than 30% vegetative cover, and subtidal, permanently flooded, intermittently exposed, or semi-permanently flooded water regimes (USFWS, 1979). This designation was chosen to describe the group of habitats that are permanently to semi-permanently beneath tidal waters.

Unconsolidated bottom. Taken from mouth of Filbin Creek (Photo by Three Oaks Engineering)

The Cooper River is a coastal river that drains to Charleston Harbor and receives seawater from the Atlantic Ocean during tidal exchange. Channel depth of the Cooper River at the mouth of Filbin Creek ranges from 2-30 feet (NOAA, 2020b). The depth of the water level fluctuates with the range of the tide. This habitat has a soft-bottom substrate and a stable water column that provides spawning and foraging habitat for benthic and pelagic organisms. Unconsolidated bottom habitat accounts for 24.2 acres within the Filbin Creek Evaluation Area. This habitat is fully functional in that all ecosystem services essential to fisheries are present. Existing disturbances, such as the existing I-526 structures, have not significantly altered functions of this habitat. The unconsolidated bottom in the Filbin Creek evaluation area is functioning as high quality EFH.

Oysters

Oyster reef in Filbin Creek at low tide. (Photo by Three Oaks Engineering)

The Eastern oyster is harvested along the coast of South Carolina. Oysters primarily settle and develop in intertidal habitats creating beds, reefs, or banks. These reefs contain live oysters as well as remaining shells from previous generations (NOAA, 2020d). The waters of the Ashley River and Filbin Creek are within an area classified as Shellfish Management Growing Areas (SMGA) by the South Carolina Department of Health and Environmental Control (SCDHEC). Both evaluation areas are within SCDHEC Shellfish Management Growing Area 10B. Shellfish harvesting is prohibited throughout the waters of Charleston Harbor. No commercial culture, grant, or mariculture permits, or recreational shellfish grounds are located within the evaluation area (SCDHEC, 2019). SCDNR does not have any managed state or recreational shellfish grounds within the Filbin Creek evaluation area (SCDNR,

2019). Spatial data from 2015 of intertidal oyster reefs and shell deposits previously located by SCDNR does not show any occurrences within either evaluation area.

During field investigations clusters of oysters were found occupying a variety of surfaces (bridge piles, riprap, tidal gate, natural surfaces) within the Filbin Creek evaluation area east of Virginia Avenue. Oysters that were present along riprap or other horizontal surfaces were captured with point data and logged on a GPS. Oysters attached to existing bridge structures were observed around the entire circumference of the structures. It was estimated oysters were three feet in height and generally two to three oysters in thickness. Using the data logged with GPS points and accounting for oysters present on existing bridge shaft diameters at an average height of three feet an estimated 0.3 acres of oysters are present in this section in the Filbin Creek EFH evaluation area. The oysters in the Filbin Creek EFH evaluation area are high quality EFH.

3.3. Existing EFH Summary

EFH within the project area is found in both the Ashley River and Filbin Creek Evaluation Areas. Both systems are tidally influenced and have similar habitats. Table 3-3 provides a total acreage for each EFH type and quality found within the project area.

Table 3-3: EFH Habitat Acreage

EFH Type	Quality	Acres
Estuarine Emergent Wetland	High	72.4
	Low	35.2
Estuarine Tidal Creek	High	11.6
	Low	7.8
Intertidal Non-Vegetated Flats	High	3
Palustrine Emergent Wetland	Low	59.8
Riverine Tidal Creek	Low	1.3
Unconsolidated Bottom	High	25
Oysters	High	0.8
TOTAL EFH Area		***216.9***

4. Essential Fish Habitat Species

As mandated by the Magnuson-Stevens Act, the eight regional councils are tasked with identifying, describing, mapping and protecting EFH in their respective jurisdictions. The SAFMC is tasked with conserving and managing fisheries for the South Atlantic region, which includes the coast of South Carolina (SAFMC, 2020a). Some fisheries managed by the MAFMC also have designated EFH along the coast of South Carolina. Species habitat descriptions provided by SAFMC and MAFMC and geospatial data from the NOAA EFH Mapper were used to assist in the identification of which managed fisheries may be affected by any potential impacts to either of the habitat types listed in the previous section as a result of the proposed project. The following species or groups of species have designated EFH present within the project area.

4.1. Habitat Areas of Particular Concern

Habitat areas of particular concern (HAPC) are discreet subsets of EFH that are considered high priority areas for conservation, management, or research. HAPCs receive such designation because they are rare, sensitive, stressed by development, or important to overall ecosystem function (SAFMC, 2020b). HAPC for a given fishery can include intertidal habitats, estuarine habitats, and deep-water habitats used for migration, spawning, and rearing of fish or other managed organisms. "At the interface of NOAA trust resources and SCDOT projects, oyster reefs are the most common HAPC in South Carolina. Coastal inlets and other designated HAPCs are present in the state but will rarely be encountered by SCDOT (SCDOT SCREENING FORM CITATION)." HAPCs present within the project area include all oysters found within the Ashley River and Filbin Creek evaluation areas.

4.2. Federally Managed Species

Penaeid Shrimp

Essential habitat for white shrimp (*Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus aztecas*) is present within the project area. These penaeid shrimp species are managed by the SAFMC because of their economic and ecological significance (SAFMC, 2020d). These shrimp species, like all penaeid shrimp, have an annual life cycle. Penaeid shrimp spawn year-round in deepwater habitats offshore, larval shrimp move to estuarine areas, and new adults return to offshore areas to spawn. White shrimp begin to migrate to estuarine waters in April and May, whereas brown shrimp migrate to estuarine waters from February to April (NOAA). Juvenile shrimp forage and mature in tidally influenced nursery areas where the mud-silt substrate and salinity range provide a suitable feeding environment. Once maturity is reached, Brown shrimp egress to offshore areas between May and August. White shrimp egress from August to December (NOAA). Some smaller adult individuals may remain in the estuary over the winter (SAFMC). According to the fishery management plan (FMP) for shrimp, essential habitat for White and Brown shrimp includes estuarine emergent wetlands, palustrine emergent wetlands, intertidal non-vegetated flats, riverine tidal creeks, estuarine tidal creeks, and coastal inlets (SAFMC, 1993). HAPC for these shrimp species is identified as all coastal inlets, which is not present within the project area (SAFMC, 2016c).

Snapper-Grouper Complex

The snapper-grouper complex managed by the SAFMC is made up of 59 species across ten families: sea basses and groupers (*Serranidae*), wreckfish (*Polyprionidae*), snappers (*Lutjanidae*), porgies (*Sparidae*) grunts (*Haemulidae*), jacks (*Carangidae*), tilefishes (*Malacanthidae*), triggerfishes (*Balistidae*), wrasses, (*Labridae*), and spadefishes (*Eppiphidae*) (SAFMC). Species in the complex spawn offshore in hard-bottom areas (SAFMC, 2016d). Snapper-grouper larvae are transported to estuarine areas by tides and currents where they grow to maturity. The nursery areas of estuarine waters and wetlands provide shelter from predation as well as an abundance of food. Snapper-grouper species are predatory, feeding on smaller fish and invertebrates. Adult snapper-groupers can be found feeding in estuarine environments (SAFMC, 2016c). Several species within the complex, such as the gray snapper (*Lutjanus griseus*), are known to use tidal freshwaters as well.

According to the FMP for the snapper-grouper complex, EFH for all life stages includes estuarine emergent wetlands, riverine tidal creeks, estuarine tidal creeks, and coastal inlets. HAPC for the snapper-grouper complex is identified as all coastal inlets and oyster beds (SAFMC, 2016b). All oysters present within the project area are considered HAPC for the snapper-grouper complex.

Bluefish

Bluefish (*Pomatomus saltatrix*) is a fish species managed the MAFMC (MAFMC, 1989). Bluefish live up to 12 years, reaching maturity at 2 years of age. Spawning occurs multiple times a year in the offshore waters of the South Atlantic and Mid-Atlantic Bights. Juvenile bluefish are known to occur in estuarine environments where they feed on smaller fish and avoid predation by larger fish in the offshore waters (MAFMC, 2020). According to the EFH spatial data from NOAA, EFH for the juvenile life stage of bluefish includes estuarine tidal creeks and coastal inlets (NOAA, 2019). No HAPC are designated for Bluefish.

Summer Flounder

Summer flounder (*Paralichthys dentatus*) is a fish species managed by summer flounder, scup, and black seabass FMP of the MAFMC. Summer flounder live up to 14 years, reaching maturity between 2-3 years of age. Spawning occurs several times during the fall and early winter in offshore waters of the continental shelf (NOAA, 2020a). Larval summer flounder are transported by tides and currents from offshore areas to estuarine areas where they grow to maturity. Summer flounder stay along the bottom of the water column where they hide against the substrate to hunt and ambush their prey. Larval summer flounder feed on zooplankton and small invertebrates while juveniles and adults feed on invertebrates and fish. Larvae, juvenile, and adult summer flounder are known to commonly occur in estuarine environments, venturing into offshore waters during spawning season. According to the FMP for summer flounder, intertidal non-vegetated flats, estuarine tidal creeks, and coastal inlets are designated as EFH for the larval, juvenile, and adult life stages of summer flounder. HAPC for summer flounder includes submerged aquatic vegetation, which is not present within the project area (MAFMC, 1987).

Other Fishes

The waters of the Ashley River and Filbin Creek evaluation areas also serve as nursery and forage habitat for other species including red drum (*Sciaenops ocellatus*). Red drum is an important state-managed fishery and estuarine environments within the project area provide habitat necessary for the development and survival of several life stages of red drum. Highly migratory pelagic species such as Atlantic blacktip shark (*Carcharhinus limbatus*) are managed by the NMFS. Spatial data from the EFH mapper indicates the presence of EFH for highly migratory pelagic species within the project boundary (NOAA, 2019). Estuarine environments within the project area may also be of importance to the Atlantic blacktip shark.

5. Alternatives Analysis

The sections below discuss the No-Build Alternative and the potential impacts from the Recommended Preferred Alternative on EFH for recreational and commercial fisheries and federally managed species. Adverse effects analyzed of the Proposed Project Alternative include direct and indirect physical, chemical, or biological alterations resulting in the reduction to quality and quantity of EFH and managed species.

5.1. No Build Alternative

Under the No Build Alternative, EFH would remain as described in Section 3. The existing roadway and bridges would remain in place with no additional structures being placed in EFH. No long-term effects are expected from the No Build Alternative.

5.2. Recommended Preferred Alternative

Under the Recommend Preferred Alternative there are two additional bridge structures to be constructed over the Ashley River to accommodate the widening of I-526, construction of new structures C-D roads over portions of Filbin Creek and its associated floodplain, and construction of improved interchange access for the I-526 connections at North Rhett Avenue and Virginia Avenue.

Most of the EFH within the project area is proposed to be spanned with bridges. Due to the project being in the early stages of design, the exact methods used to construct the proposed bridges have not been determined. Additionally, since the construction of the project will be awarded as a design-build contract, the specific construction methods and extent and duration of impacts would ultimately be determined by the design-build contractor based on guidelines and conditions established by SCDOT, FHWA, and state and federal regulatory agencies including SCDHEC-OCRM, USACE, USFWS, and NOAA-NMFS.

5.3. Construction Methods

Choosing which bridge construction method to use can be a complicated endeavor dependent on several factors. Construction schedule, bridge layout and complexity, material costs, soil conditions, and contracting methods must be compared against wetland impacts, mitigation requirements, benefits, and costs.

Due to the wetland and stream crossings that function as EFH and the corresponding challenges these crossings present to bridge construction, a range of construction methods will be evaluated. From a construction standpoint, the soft soils encountered in EFH environments do not support construction equipment, material delivery trucks, or material storage and can settle significantly under load. Therefore, the soils generally require very deep foundations to support bridge loads. These types of foundations require larger equipment and extra effort to install as compared to similar size bridges in firmer soil conditions. Construction access points will likely also be limited, complicating the logistics of equipment usage, material storage, and delivery potentially resulting in longer construction times.
Building bridges over EFH environments as found in the project area can be accomplished with multiple methods. Some methods are more cost effective by maximizing construction efficiency,

while other methods sacrifice some level of building efficiency to provide a lesser impact on the environment. The duration of temporary impacts associated with the potential construction access methods noted below will ultimately be determined by the final design established by the design-build contractor in coordination with SCDOT and will also be dependent upon uncontrollable variables including weather and other unanticipated environmental conditions. In South Carolina, four different methods, or a combination thereof, are typically used to build bridges over sensitive environments such EFH. These methods include causeway on temporary fill, causeway on barges and/or timber mats, temporary bridge or trestle, and top-down construction. A brief explanation of these construction methods and temporary impacts associated with each are discussed below.

Causeway on Temporary Fill

This construction method would involve placing a geotextile mat topped with dirt or stone fill on the marsh to create a temporary embankment causeway or access road alongside the proposed bridge alignment. The fill causeway provides access for material delivery and support for cranes and other construction equipment, typically extending from the nearest adjacent upland or haul road. Once construction of the bridge is complete, the fill is removed, and the marsh is allowed to restore itself naturally. Prior to the placement of fill, a geotextile fabric is typically placed over the marsh/wetland surface thus allowing all or most of the discharged fill material to be removed from the area and limiting the disruption of the native soils and vegetative root mass. Silt fencing would be installed along the toe of the fill slopes to prevent runoff and displacement of fill material into adjacent waters.

Impacts to EFH associated with a fill causeway would be temporary and may include the smothering of aquatic organisms, subsidence/compaction of the marsh ground surface, and the disruption/inhibition of hydrology and tidal flows on either side of the fill causeway. Depending on the size of the bridge being constructed, temporary fill causeways would likely need to be in place for six to 24 months.

Causeways on temporary fill will not be utilized as the sole method of construction access for the proposed project. This construction method may be utilized adjacent to existing fill or to establish access to other construction methods discussed below. The preliminary design and identified construction access areas minimize the use of causeway on temporary fill. The design-build contractor will coordinate with SCDOT to determine where causeways on temporary fill are allowable.

Causeway on Barges and/or Timber Mats

This construction method would involve placing floating barges and/or portable timber mats over the waterway or marsh alongside/adjacent the proposed bridge alignment. These type barges are designed to link together and would be placed side by side to produce a temporary access causeway. This method provides similar benefits as a fill causeway; however, once construction is completed, the barges or timber mats are more easily removed from the site. Temporary impacts to the marsh caused by floatable barges or timber mats would be similar to placing temporary fill but is generally considered less damaging to the environment due to the potential displacement or runoff of sediment associated with fill dirt.

Impacts to the tidal salt marsh environment associated with the placement of barges and/or timber mats would be temporary and may include the smothering of aquatic organisms, subsidence/compaction of the marsh ground surface, and the disruption/inhibition of hydrology and tidal flows on either side of the barge or mat. Depending on the size of the bridge being constructed, the barges and/or timber mats would likely need to be in place for six to 24 months. This construction method may be utilized adjacent to existing fill or to establish access to other construction methods discussed below.

Temporary Bridge/Trestles

This construction method involves the utilization of a temporary bridge or pile supported trestles constructed alongside the proposed bridge alignment. Once construction is completed on the new permanent bridge, the temporary bridge/trestles are removed. Typically, the piles are either pulled out of the ground or cut or snapped off below ground level. Impacts to the marsh environment from temporary trestle bridges are less than the previous two methods (causeway on barges/timber mats or causeway on temporary fill), since the only point of contact between the temporary bridge/working area and the marsh is at the pile locations. However, this method generally includes longer construction times, and subsequently more project costs, due to the construction of temporary bridge structures.

Impacts to the tidal salt marsh environment associated with the construction of a temporary bridge or pile supported trestle would be temporary and may include an increase in noise levels during pile driving activities, scouring or deposition of sediment around the piles, shading of marsh vegetation, and localized mortality of aquatic organisms. Movements of aquatic species within the tidal salt marsh and feeder creeks would be less affected by this construction method than the other methods discussed. Depending on the size of the bridge being constructed, the temporary bridge or trestle structures would likely need to be in place for six to 24 months.

Top-Down Construction

This construction method involves utilizing completed portions of the new bridge structure to construct the bridge. The ends (outer bents) of the new bridge are constructed from existing adjacent upland areas, if available, or from the roadway approach fills. The remainder of the bridge is then constructed from the completed end portions. The top-down construction method would result in little to no temporary impacts to the marsh environment; however, the duration of construction is generally longer as the contractor is restricted to working from the nearest upland embankment or from the ends of the finished bridge structure rather than at multiple points along the proposed alignment. Due to these restrictions, top-down construction is not considered as a practicable sole alternative for building long bridge structures.

Top-down methods may not be particularly suitable for all construction access for this project due to the multiple bridges and the need to set up and break down the construction system at each site. Due to proposed project interchanges also being built on bridge structure, top-down construction methods would not be practical in these situations due to the variations in deck geometry and the

multiple bridge alignments. It is anticipated that top-down will be utilized during construction but will not be the sole method used by the design-build contractor.

Selection of a Construction Method

The project construction schedule will largely affect which construction method is the most advantageous. For instance, a tight construction schedule will favor the use of barge/timber mat causeways as these can be disassembled and mobilized to multiple sites relatively rapidly. A longer construction schedule would favor the use of temporary construction bridges since these structures require extra time to put in place. The proposed project necessitates cost effectiveness, flexibility with multiple bridge sites, alignment curvature, intersections on structure and minimization of EFH impacts. Based on the consideration of all these variables, the proposed construction of the bridges over the main channel of the Ashley River and associated EFH would most likely involve the utilization of timber mats, trestles, and barges for construction access, although existing approaches may also be used as construction access areas for top-down construction if determined by the design-build contractor to be feasible. Additionally, due to the intricate network of tidal creek feeder channels located within the tidal salt marsh wetlands, pile supported trestles would likely be used to minimize impacts and maintain the movement of tidal waters and aquatic organisms to the upper reaches of the marsh.

Construction Sequencing

The following describes the general sequence of events that are anticipated to take place during construction based on the conceptual design of the two proposed Ashley River bridges, new structures for C-D roads over portions of Filbin Creek and its associated floodplain, and new interchange access for the I-526 connections at North Rhett Avenue and Virginia Avenue. Site preparation would begin with the clearing of vegetation from the approach embankments for equipment access. The embankments would then be graded as necessary for the roadway approaches and abutments and used for the placement of cranes and other construction equipment. Steel piles would likely be installed at the end bents and drilled shafts (approximately six-foot in diameter) installed at all interior bents within the waterway and adjacent tidal salt marsh wetlands. End bent piles would likely not be installed in the waterway or wetlands but rather within the upland embankments. Bridge construction access areas for the end bents would be located within existing upland areas to the maximum extent practicable.

Within the marsh, the bridge foundations would be installed from either temporary pile supported trestles, ballasted/floating barges, timber mats, or a combination of these methods. Floatable barge or temporary trestle sections would also likely be used as “fingers” to access the interior bent locations and construct the drilled shafts, bent columns, and caps and to erect the prestressed concrete beams. These sections will be moved from bent to bent as construction progresses.

The drilled shafts for the interior bents would likely be installed using a wet-construction method utilizing steel casings to protect the integrity of the shaft, as well as, to contain spoils during excavation of the shafts. The casing would also be used to contain slurry used to stabilize the excavation. The slurry would be captured and contained during placement of the shaft and reinforcing concrete columns. During this operation, permanent fixtures, including the drilled shafts and associated columns, would be placed. Once the drilled shafts are installed, column and cap

construction would be performed from the barges or temporary trestles to complete the interior piers. After completion of the bents, cranes operating from the barges or temporary trestles would be utilized to construct the superstructure of the bridges, which entails placement of the beams, deck, and railings. All timber mats, barges, and trestles and associated piles would be removed in their entirety upon completion of the bridges.

6. Potential Impacts to Essential Fish Habitat

Construction and demolition are expected to begin in 2023. Construction methods cannot be finalized because the project is still in the conceptual design phase. Final design and construction will occur once SCDOT has selected a Design Build team to complete the project. However, under the Recommended Preferred Alternative there are two additional bridge structures to be constructed over the Ashley River to accommodate the widening of I-526, construction of new structures for C-D roads over portions of Filbin Creek and its associated floodplain, and construction of improved interchange access for the I-526 connections at North Rhett Avenue and Virginia Avenue. Figures 6-1 and 6-2 depict a typical section of the proposed structures over the Ashley River and the C-D roads over Filbin Creek, respectively.

Most of the EFH within the project area is proposed to be spanned with bridges. Due to the project being in the early stages of design, the exact methods used to construct the proposed bridges have not been determined. Additionally, since the construction of the project will be awarded as a design-build contract, the specific construction methods and extent and duration of impacts would ultimately be determined by the design-build contractor based on guidelines and conditions established by SCDOT, FHWA, and state and federal regulatory agencies including SCDHEC-OCRM, USACE, USFWS, and NOAA-NMFS.

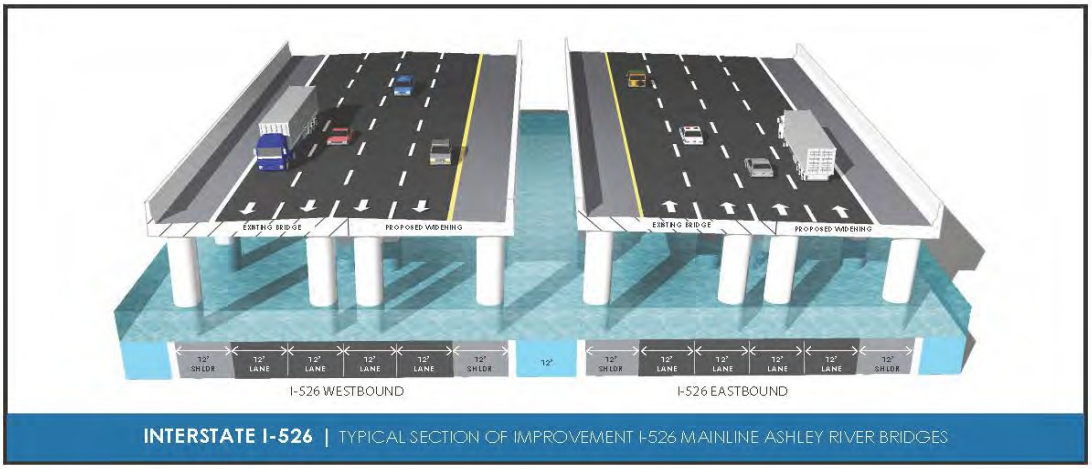

Figure 6-1. Typical Section of Improvements over Ashley River

Construction of the proposed structures would likely include a combination of drilling shafts and pile driving for the bridge support structures. Bridge construction access will be in upland areas to the maximum extent practicable. Work in deep water habitats will likely occur from barges. Temporary work trestles may be installed over the tidal marsh using pile driving. Timber mats and/or barges may be used over salt marsh areas also.

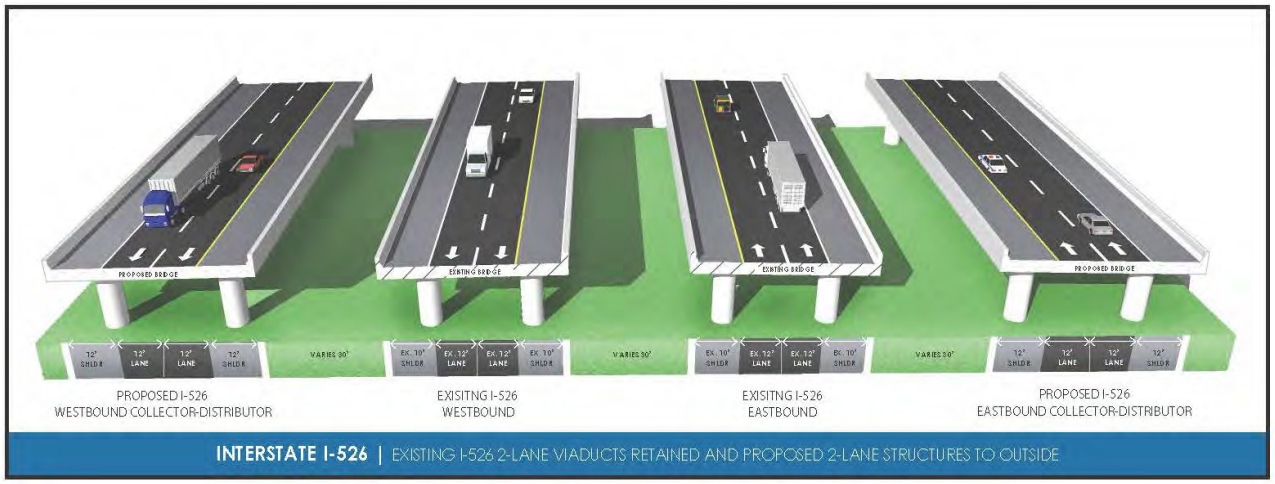

Figure 6-2. Typical Section of Improvements and New Viaduct Over Filbin Creek

SCDOT has assumed the contractor will utilize temporary trestle to the greatest extent practical to avoid impacts to EFH and tidal wetlands. Utilization of temporary fill causeways were not considered practicable alternatives due to extremely high impacts to EFH. This scenario is based on conceptual plans and represents a worst-case scenario established for threatened and endangered species and was applied to this EFH evaluation. The conceptual plan includes a conservative combination of pile driving techniques to install bridge support structures and a temporary trestle to be used during construction and drilled shafts for bridge support structures in the main channel of the Ashley River. During final design and permitting, the Design-Build contractor would be responsible for coordinating with SCDOT and NOAA-NMFS regarding design changes that would alter the effects on EFH.

This analysis is based on the conceptual design of the preferred alternative**.** The preferred alternative is depicted in relation to Ashley River evaluation area EFH in Figure 6-3 and in relation to Filbin Creek evaluation area EFH in Figure 6-4. Due to the conceptual level of design the final construction limits and final bridge span arrangements are not known at this time. The proposed impacts discussed in subsequent sub-sections are the best attempt to quantify potential impacts to EFH based on the conceptual design. Additionally, the potential impact to managed species will vary based on life stage, habitat use, distribution, and abundance. Table 6-1 summarizes possible temporary and permanent impacts to EFH in the project area.

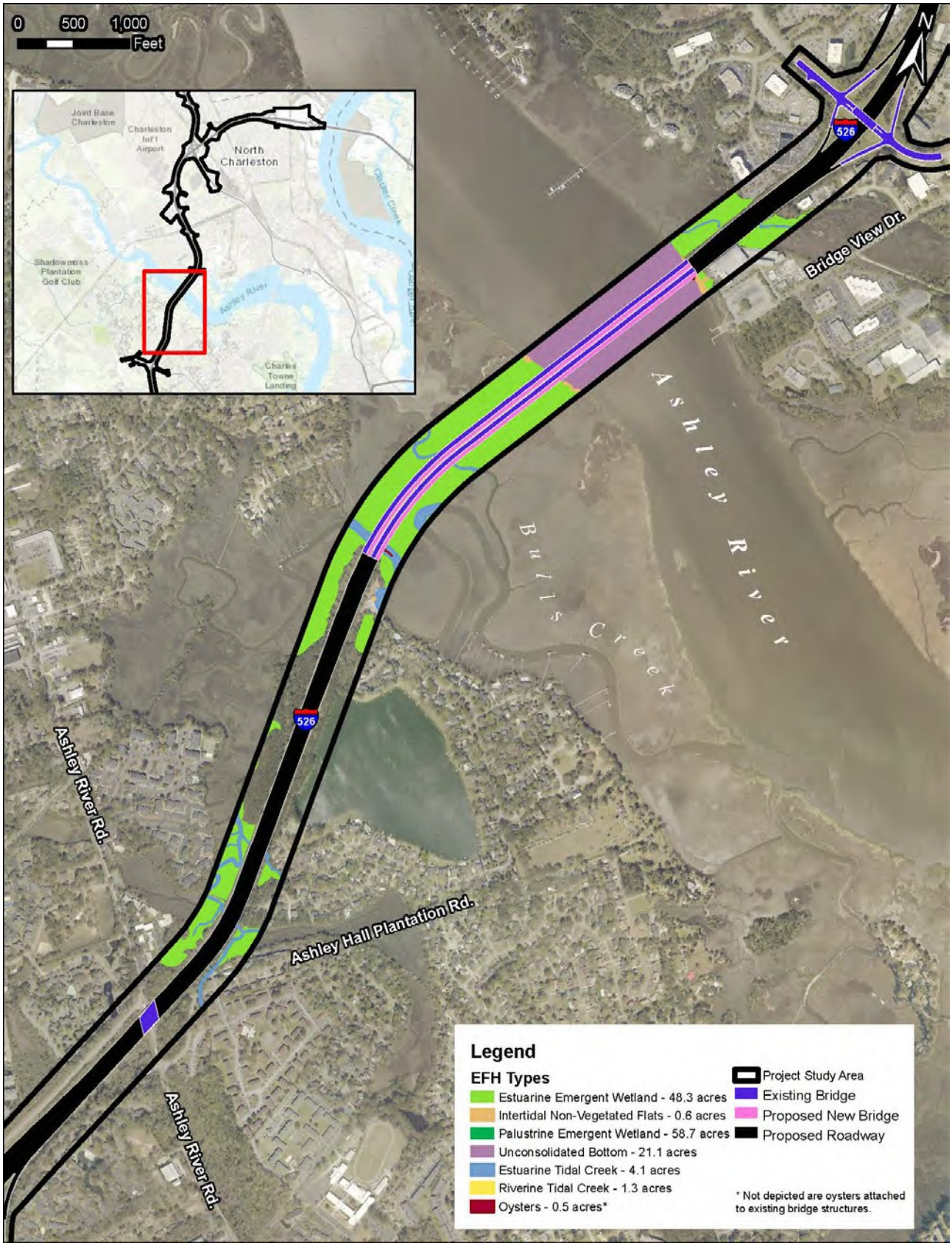

Figure 6-3. Preferred Alternative Over Ashley River EFH

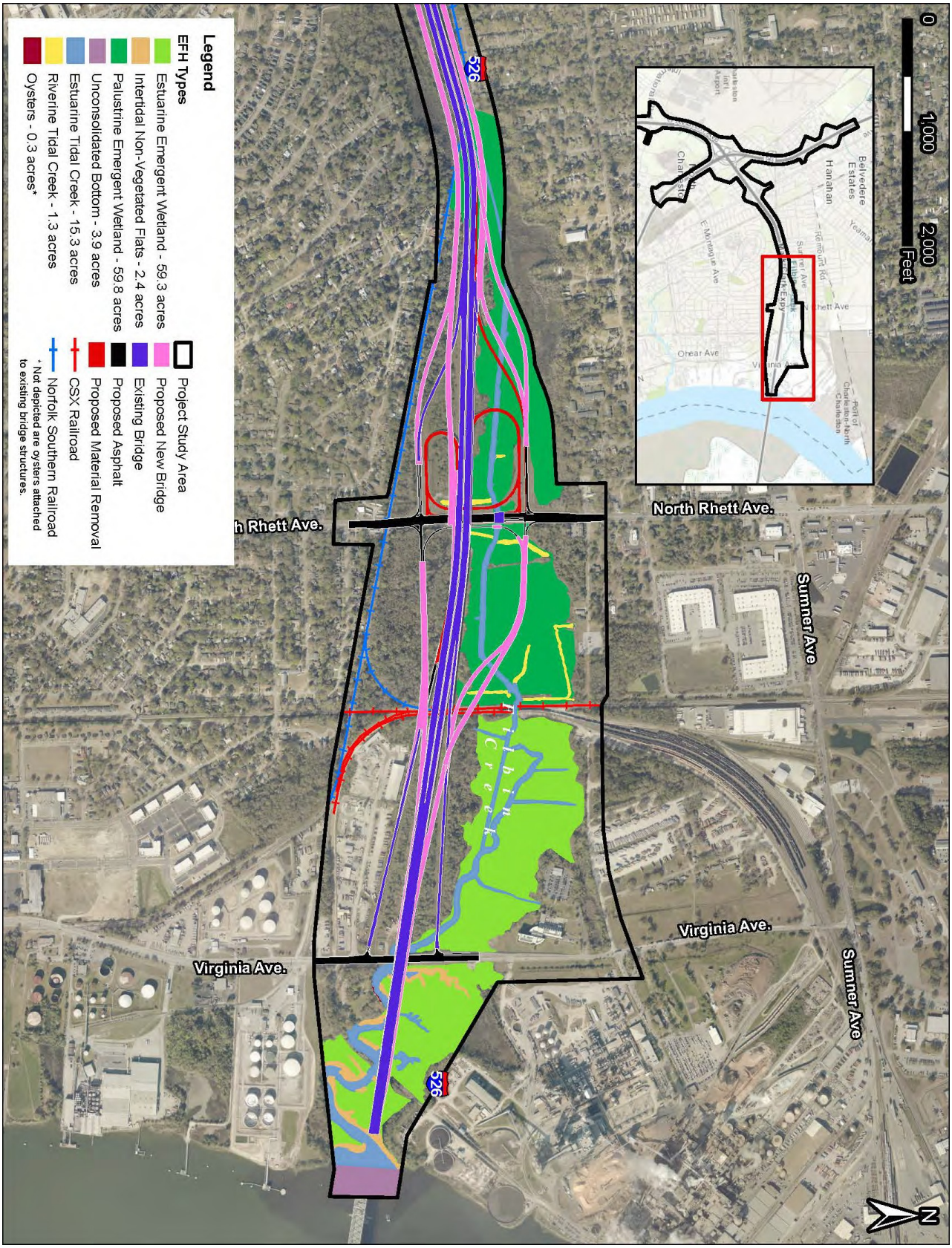

Figure 6-4. Preferred Alternative Over Filbin Creek EFH

Table 6-1. Potential Impacts to EFH

Habitat Type	Permanent Impacts		Temporary Impacts	
	Direct	Indirect	Direct	Indirect
Estuarine Emergent Wetlands	Fill, Columns	Shading	Temporary Trestle Pilings, Barges, Timber Mats*	Shading, Siltation
Estuarine Tidal Creek	None	None	Temporary Trestle Pilings, Barges, Timber Mats*	Siltation
Intertidal Non-Vegetated Flats	Fill, Columns	None	Temporary Trestle Pilings, Barges, Timber Mats*	Siltation
Palustrine Emergent Wetlands	Fill, Columns, Removal of Fill	Shading	Temporary Trestle Pilings, Barges, Timber Mats*	Shading, Siltation
Riverine Tidal Creek	None	None	Temporary Trestle Pilings, Barges, Timber Mats*	Siltation
Unconsolidated Bottom	Fill, Columns	None	Temporary Trestle Pilings, Barges, Timber Mats*	Siltation
Oysters	Fill, Columns	Additional Surface Area for Oysters	Temporary Trestle Pilings, Barges, Timber Mats*	Siltation

* Impacts are estimated based on a conceptual design. The final design, location, and use of temporary trestle piles or barges is unknown at this time of this report.

6.1. Permanent Impacts - Direct

Direct impacts to EFH will result from the placement of permanent fill for bridge approaches or bridge structures and sub-structures, such as concrete bridge pilings or shafts. Bridge approaches and existing causeways will generally align with existing roadway alignments but may be required to expand to accommodate additional lanes and shoulders of the proposed widening. Bridge structure and sub-structure will consist of prestressed concrete piles and shafts that are drilled and poured in place. The prestressed piles would have an H-pile steel “stinger” at the end of the concrete pile to prevent damage to the pile as it is driven into hard subsurface materials. Piles would be installed with a hammer or vibratory hammer. Bridge shafts or columns would be installed using drilled shaft construction, which typically includes the following process: install steel casing using vibratory hammer, drill inside casing to remove material, install rebar cage, pour concrete inside casing. Bridge piles and drilled shafts will impact EFH as permanent fill.

All EFH types identified within the project study boundary may be impacted with the placement of permanent fill in some form during construction of the project. Final construction limits and final bridge span arrangements are not finalized at this stage in the conceptual design. Therefore, the following potential impacts represent an estimation of the worst-case scenario for the placement of new fill for bridge approaches, bridge structure, and bridge sub-structure.

Ashley River Evaluation Area

SCDOT proposes to widen the existing two bridges over the Ashley River to the east of the existing structures. The additional structure will be tied into the existing to accommodate the proposed 8-lane widening. The permanent direct impacts to EFH associated with the Ashley River bridges will impact high quality estuarine emergent wetlands, high quality intertidal non-vegetated flats, oysters, and high quality unconsolidated bottom EFH.

It is estimated that 580 24-inch prestressed concrete piles would be needed for the bridge widening over the Ashley River. With one work crew performing installation, approximately 6 piles would be driven per day with an average of 300 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day. The placement of the 580 24-inch concrete piles may result in permanent impacts to ≤0.1 acres to high quality estuarine emergent wetlands, ≤0.1 acres to high quality estuarine tidal creek, ≤0.1 acres to high quality intertidal non-vegetated flats, ≤0.1 acres to high quality unconsolidated bottom, and≤0.1 acres to high quality oysters.

At the approaches to, and over the main channel of the Ashley River, drilled shafts are proposed to support the new bridge structures. Each shaft would be approximately 7 feet in diameter. Approximately 120 drilled shafts would be needed for the bridge widening. One shaft per day would be constructed by one work crew, but multiple crews could install supports concurrently. The placement of 120 7-foot concrete shafts will result in approximately ≤0.1 acres to high quality estuarine emergent wetlands, ≤0.1 acres to high quality estuarine tidal creek, ≤0.1 acres to high quality intertidal non-vegetated flats, ≤0.1 acres to high quality unconsolidated bottom, and ≤0.1 acres to high quality oysters.

Expansion of existing bridge approaches and the possible widening of existing causeway adjacent to EFH may occur as part of the widening of I-526 LCC WEST. The proposed widening will utilize the existing median and shoulders to the greatest extent practicable and attempt to limit permanent direct impacts to EFH. Based on EFH types adjacent to existing bridge approaches and causeways in the Ashley River evaluation area it can be assumed that some impacts to estuarine emergent wetlands, estuarine tidal creeks, and intertidal non-vegetated flats may occur. If the existing toe of fill is extended by approximately 20 feet an estimated impact to approximately 0.8 acres of high quality estuarine emergent wetlands, ≤0.1 acres to high quality estuarine tidal creek, 0.2 acres to high quality intertidal non-vegetated flats, and ≤0.1 acres to high quality oysters may occur.

Table 6-2 summarizes the potential permanent direct impacts to EFH within the Ashley River evaluation area. The total impacts represent an estimation of the worst-case scenario for the placement of new fill for bridge approaches, bridge structure, and bridge sub-structure associated with the preferred alternative. Quality areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-2. Estimated Direct Impacts to Ashley River EFH

	EFH Type				
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Unconsolidated Bottom	Oyster
Concrete Piles	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤ 0.1 acres (HQ)	≤0.1 acres (HQ)
Drilled Shafts	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤ 0.1 acres (HQ)	≤0.1 acres (HQ)
Approach/Causeway Fill	0.8 acres (HQ)	≤0.1 acres (HQ)	0.2 acres (HQ)	0 acres	≤0.1 acres (HQ)
Total	**1 acre**	**0.3 acres**	**0.4 acres**	**0.2 acres**	**0.3 acres**

Filbin Creek Evaluation Area

SCDOT proposes to construct multiple new viaduct bridges to provide access to new C-D routes and to modify interchanges at I-526 and North Rhett Avenue and at I-526 and Virginia Avenue. The permanent direct impacts to EFH associated with these new structures will permanently impact high and low quality estuarine emergent wetlands, high and low quality estuarine tidal creeks, high quality intertidal non-vegetated flats, low quality palustrine emergent wetlands, high quality riverine tidal creeks, and high quality oysters.

It is estimated that 35 24-inch prestressed concrete piles would be placed in EFH for the new bridges for C-D routes and modified interchanges adjacent to Filbin Creek EFH. With one work crew performing installation, approximately 10 piles could be driven per day with an average of 400 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day. The placement of the 35 24-inch concrete piles would result in permanent impacts to ≤0.1 acres of high quality estuarine tidal creek, ≤0.1 acres of low quality palustrine emergent wetland, and ≤0.1 acres of low quality riverine tidal creek EFH.

The conceptual design also calls for a total of 112 concrete shafts to be placed in EFH for the construction of the new bridges for C-D routes and modified interchanges adjacent to Filbin Creek. There will be multiple sized drilled shafts ranging from 6-foot in diameter to 10-foot in diameter. A maximum of 2 shafts could be installed per day by one crew, but multiple crews could install supports concurrently. The placement of the 13 of the 112 drilled shafts are located east of Virginia Avenue and may result in the permanent impact to ≤0.1 acres of high quality estuarine emergent wetlands, ≤0.1 acres of high quality estuarine tidal creek, ≤0.1 acres of high quality intertidal non-vegetated flats, and ≤0.1 acres of high quality oysters. The placement of the 99 of the 112 drilled shafts in EFH will be located to the west of the CSX railroad causeway. The placement of these 99 shafts will result in permanent impacts to ≤0.1 acres of low quality estuarine tidal creek, ≤0.1 acres of low quality palustrine emergent wetlands, and ≤0.1 acres of low quality riverine tidal creek EFH.

Alteration of existing approaches and addition of new ramps associated with the I-526 and North Rhett Avenue interchange may require expanding existing causeway adjacent to EFH as part of the

project. The proposed alteration of the interchange will utilize upland areas to the greatest extent practicable and attempt to limit permanent direct impacts to EFH. However, based on EFH types adjacent to existing interchange it can be assumed that some impacts to low quality estuarine tidal creeks, low quality palustrine emergent wetlands, and low quality riverine tidal creeks may occur. There is a proposed ramp connection to the east of the existing North Rhett Avenue causeway that allows for access to I-526 East from Virginia Avenue that is required for the preferred alternative. If this connection is assumed to be on causeway to match the existing grades of the adjacent roadways and to meet vertical height requirements of the existing I-526 mainline bridges. Additionally, if the existing toe of fill along the North Rhett Avenue causeway is extended by approximately 20 feet, this would represent the worst-case scenario of placement of permanent roadway fill in EFH. The placement of fill for the ramp connection to I-526 East and additional fill added to the North Rhett Avenue causeway would result in permanent impacts to ≤0.1 acres of low quality estuarine tidal creeks, approximately 1.2 acres of low quality palustrine emergent wetlands, and ≤0.1 acres of low quality riverine tidal creeks EFH.

The conceptual plans call also for the existing ramps associated with the existing North Rhett Avenue interchange to be removed at the completion of construction. The footprint for this proposed removal of material from EFH is approximately 2 acres. This may allow for the re-establishment of EFH in these previously impacted areas. However, this is part of the conceptual design and may be altered by the Design-Build contractor once a final design is established.

Table 6-3 summarizes the potential permanent direct impacts to EFH within the Filbin Creek evaluation area. The total impacts represent an estimation of the worst-case scenario for the placement of new fill for interchange improvements and bridge structure and sub-structure associated with the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6.3 Estimated Permanent Direct Impacts Filbin Creek EFH

	EFH Type						
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Palustrine Emergent Wetlands	Riverine Tidal Creek	Unconsolidated Bottom	Oysters
Concrete Piles	0 acres	≤0.1 acres (HQ) ≤0.1 acres (LQ)	0 acres	≤0.1 acres (LQ)	≤0.1 acres (LQ)	0 acres	≤0.1 acres (HQ)
Drilled Shafts	≤0.1 acres (HQ)	≤0.1 acres (HQ) ≤0.1 acres (LQ)	≤0.1 acres (HQ)	≤0.1 acres (LQ)	≤0.1 acres (LQ)	0 acres	≤0.1 acres (HQ)
Approach/Causeway Fill	0 acres	≤0.1 acres (LQ)	0 acres	1.2 acres (LQ)	≤0.1 acres (LQ)	0 acres	0 acres
Potential Existing Material Removal	0 acres	1 acre	0 acres	2 acres (LQ)	0 acres	0 acres	0 acres
Total	**0.1 acres**	**1.5 acres**	**0.1 acres**	**3.4 acres**	**0.3 acres**	**0 acres**	**0.2 acres**

6.2. Permanent Impacts - Indirect

Permanent indirect impacts to EFH include the possible conversion of EFH due to loss of vegetation from shading. The proposed project would indirectly impact EFH by shading salt marsh grasses and freshwater wetland vegetation underneath the proposed bridges. The shading effects could potentially result in areas of sparse vegetation or the existing vegetation dying off. The extent of adverse indirect impact is dependent on several factors, including the proposed bridge orientation and height to width ratio. Impacts to salt marsh vegetation generally occur when the bridge height to bridge width ratio is less than 0.70 (Broome et al, 2005). No permanent loss of EFH is anticipated, but rather an anticipated loss of functions associated with vegetated EFH. These impacts were estimated under the assumption that only estuarine emergent wetlands and palustrine emergent wetlands would be impacted by shading.

A second indirect impact associated from the placement of new bridge structure and sub-structure in tidally influenced waters is the creation of suitable habitat for oyster propagation. The creation of oyster habitat may provide a net improvement to EFH as oysters are considered HAPC. While the new structures may provide similar surface areas for oysters to attach, it is not guaranteed they will attach to the new structures. However, based on existing conditions observed in the field the likelihood of oysters attaching and colonizing on new bridge structures and sub-structures is high. Therefore, creation of oyster habitat is evaluated as a permanent indirect impact for the project. It is assumed that oysters are the only habitat that will potentially benefit from the placement of new or additional bridge structures in EFH.

Ashley River Evaluation Area

Based on field assessments of EFH in the Ashley River evaluation area vegetation occurs from the western bank of the Ashley River and continues westward to the causeway adjacent to Bulls Creek. No vegetation was noted on the eastern banks of the Ashley River within the project area. Areas below the existing structures were observed as being shaded by the existing bridges and it is assumed that the new structure will also shade out vegetation and therefore impact EFH. Shading impacts are only assumed to occur to vegetated EFH which is limited to only estuarine emergent wetlands in the Ashley River evaluation area.

The existing bridge structures are approximately 1,700 feet long and 42 feet 10 inches wide over vegetated areas from the western bank of the Ashley River to the existing I-526 causeway. An additional structure that is 32 feet 5.5 inches wide will be constructed and attached to each existing bridge. The final bridge widths at the end of construction will be 75 feet 3.5 inches and will match existing bridge lengths. Based on the 0.7 bridge height to bridge width ratio (Broome et al, 2005), indirect impacts to vegetated salt marsh may occur in areas where the bridge height is approximately 53 feet or lower. The conceptual plans depict the bridge height above existing ground elevations staying below this 53-foot threshold for the entire length of the bridges. Therefore, it is assumed the entire footprint of the bridges will result in permanent impacts from shading. This equates to approximately 5.9 acres of shade impacts. However, the existing bridges already shade approximately 3.3 acres of EFH. Therefore, a total of 2.6 acres of permanent shade impacts to estuarine emergent wetlands are anticipated from the project.

The placement of new bridge structure within the main channel of the Ashley River are anticipated to have a positive impact on oyster beds. The existing structures within the Ashley River currently serve as hard structure for oysters to attach and colonize. An estimated 14,000 square feet (0.3 acres) of surface area of existing bridge structure was observed with oysters present in the Ashley River Since the existing structures will be maintained, no loss of oyster habitat is anticipated. A net increase in oyster habitat is anticipated from the placement of bridge structures within the Ashley River. While the new structures may provide similar surface areas for oysters to attach, it is not guaranteed they will attach to the new structures. Assuming an average height of three feet of oyster growth on each new bridge structure it is anticipated approximately 22,000 square feet (0.5 acres) of new surface area will be available for oysters to colonize once construction is completed.

Table 6-4 summarizes the potential permanent indirect impacts to EFH within the Ashley River evaluation area. The total impacts represent an estimation of the worst-case scenario for the permanent shading and new oyster habitat associated with the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-4. Estimated Permanent Indirect Impacts Ashley River EFH

	EFH Type				
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Unconsolidated Bottom	Oyster
Shading Impact	2.6 acres (HQ)	0 acres	0 acres	0 acres	0 acres
Total	**2.6 acres**	**0 acres**	**0 acres**	**0 acres**	**0 acres**
Potential Benefit	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Unconsolidated Bottom	Oyster
Potential New Oyster Habitat	0 acres	0 acres	0 acres	0 acres	0.5 acres (HQ)
Total	**0 acres**	**0 acres**	**0 acres**	**0 acres**	**0.5 acres**

Filbin Creek Evaluation Area

The proposed bridge widths vary throughout Filbin Creek EFH due to the construction of new interchange ramps and connections to the proposed C-D routes. While bridge heights are not currently established for all structures during this conceptual design phase it is assumed that bridges located to the east of Virginia Avenue will match existing bridge heights. No existing shading effects were observed in the field for this section of the Filbin Creek evaluation area. Therefore, no shading impacts to high quality estuarine emergent wetlands in the Filbin Creek evaluation area are anticipated.

From the west of the CSX railroad causeway the proposed interchange ramp bridges are approximately 36-50 feet wide and split in multiple locations to create connections to the proposed C-D routes. Shading impacts were quantified based on an average bridge of width of 42 feet. Based on the 0.7 bridge height to bridge width ratio (Broome et al, 2005), indirect impacts to vegetated EFH may occur in areas where the bridge height is 30 feet or lower. Since bridge heights are not

currently established for all structures during this conceptual design phase it was assumed that all bridges over vegetated EFH in the Filbin Creek evaluation area are 30 feet or less to evaluate a worst-case scenario for shading impacts to EFH. The proposed bridges west of the CSX railroad causeway would result in permanent shading impacts to approximately 10.3 acres of low quality palustrine emergent wetlands.

A second indirect impact associated from the placement of new bridge structure and sub-structure in tidally influenced waters is the creation of suitable habitat for oyster propagation. The placement of new bridge structure in EFH to the east of Virginia Ave are may have a positive impact on oyster beds. The existing structures within EFH to the east of Virginia Avenue currently serve as hard structure for oysters to attach and colonize. Since the existing structures will be maintained, no loss of oyster habitat is anticipated. A net increase in oyster habitat is anticipated from the placement of bridge structures east of Virginia Avenue. While the new structures may not result in exactly the same surface area for oysters to attach, assuming an average height of three feet of oyster growth on each new bridge structure it is anticipated <0.1 acres of new surface area will be available for oysters to colonize once construction is completed. No oyster presence was observed in Filbin Creek west of Virginia Avenue.

Table 6-5 summarizes the potential permanent indirect impacts to EFH within the Filbin Creek evaluation area. The total impacts represent an estimation of the worst-case scenario for the permanent shading and new oyster habitat associated with the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-5. Estimated Permanent Indirect Impacts to Filbin Creek EFH

	EFH Type						
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Palustrine Emergent Wetlands	Riverine Tidal Creek	Unconsolidated Bottom	Oysters
Shading Impact	0 acres	0 acres	0 acres	10.3 acres (LQ)	0 acres	0 acres	0 acres
Total	**0 acres**	**0 acres**	**0 acres**	**10.3 acres**	**0 acres**	**0 acres**	**0 acres**
Potential Benefit	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Palustrine Emergent Wetlands	Riverine Tidal Creek	Unconsolidated Bottom	Oysters
Potential New Oyster Habitat	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	<0.1 acres (HQ)
Total	**0 acres**	**0 acres**	**0 acres**	**0 acres**	**0 acres**	**0 acres**	**<0.1 acres**

6.3. Temporary Impacts - Direct

Temporary direct impacts to EFH will result from the placement of temporary fill for construction access for the project. Bridge construction access would be in upland areas to the maximum extent practicable. However, for access over marsh areas between the existing bridges either trestle or a

combination of barge, barge mats, and timber mats would be needed due to the limited space between the structures. Deeper water and the main channel of the Ashley River and Filbin Creek will likely be accessed via barges for construction. Barges may be delivered and moved via water and transport vessels or via land on flatbed trucks with cranes and other heavy equipment. The piles required to construct the temporary trestle would act as temporary fill to EFH.

Ashley River Evaluation Area

Temporary trestle would be approximately 30 feet wide and would be supported by steel pipe piles. The steel piles would be approximately 24-inches in diameter and would be installed using a vibratory hammer. It is estimated that 240 24-inch steel pipe piles would be needed for temporary work trestle. With one work crew performing installation, approximately 4 piles would be driven per day with an average of 350 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day.

The placement of temporary piles will act as fill and will result in a temporary loss of EFH. The use of temporary trestles in the EFH associated with the Ashley River will result in temporary fill impacts to approximately ≤0.1 acres of high quality estuarine emergent wetlands, ≤0.1 acres of high quality estuarine tidal creek, ≤0.1 acres of high quality intertidal non-vegetated flats, ≤0.1 acres of high quality unconsolidated bottom, and ≤0.1 acres of high quality oysters EFH.

Table 6-6 summarizes the potential temporary direct impacts to EFH within the Ashley River evaluation area. The total impacts represent an estimation of the worst-case scenario for the temporary fill associated with placement of temporary trestle piles to construct the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-6. Estimated Temporary Direct Impacts to Ashley River EFH

	EFH Type				
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Unconsolidated Bottom	Oyster
Temporary Trestle Piles	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)
Total	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**

Filbin Creek Evaluation Area

Since the design for the temporary work trestle will not be completed until the project is awarded to a Design-Build contractor, these impacts represent an estimated worst-case scenario. Temporary trestle would be approximately 36 feet wide and would be supported by steel pipe piles. The steel piles would be approximately 24-inches in diameter and would be installed using a vibratory hammer. It is estimated that 650 24-inch steel pipe piles would be needed for temporary work trestle. With one work crew performing installation, approximately 10 piles would be driven per day with an average of 400 impact hammer strikes per pile. If additional crews are utilized, more piles would be driven per day.

The placement of temporary piles will act as fill and will result in a temporary loss of EFH. It is anticipated that the use of temporary trestles of temporary trestles will result in temporary fill impacts to ≤0.1 acres of high quality estuarine emergent wetland, to ≤0.1 acres of low quality estuarine emergent wetland, ≤0.1 acres of high quality estuarine tidal creek, ≤0.1 acres of low quality estuarine tidal creek, ≤0.1 acres of high quality intertidal non-vegetated flats, ≤0.1 acres low quality palustrine emergent wetlands, ≤0.1 acres of low quality riverine tidal creek, ≤0.1 acres of high quality unconsolidated bottom, and ≤0.1 acres of high quality oysters EFH.

Table 6-7 summarizes the potential temporary direct impacts to EFH within the Filbin Creek evaluation area. The total impacts represent an estimation of the worst-case scenario for the temporary fill associated with placement of temporary trestle piles to construct the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-7. Estimated Temporary Direct Impacts to Filbin Creek EFH

	EFH Type						
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Palustrine Emergent Wetlands	Riverine Tidal Creek	Unconsolidated Bottom	Oysters
Temporary Trestle Piles	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (LQ)	≤0.1 acres (LQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)
	≤0.1 acres (LQ)	≤0.1 acres (LQ)					
Total	**0.2 acres**	**0.2 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**

6.4. Temporary Impacts – Indirect

During construction activities and demolition of the existing bridge, temporary indirect impacts such siltation may occur along the margins of the estuarine emergent wetland, estuarine tidal creek, intertidal non-vegetated flats, palustrine emergent wetland, riverine tidal creek, unconsolidated bottom, and oyster reef habitats. Temporary siltation may cause indirect impacts by affecting thermal loading in the environment as well as temporarily increasing turbidity. Alterations in light attenuation in the water column can cause decreased visibility for organisms, affecting feeding, movement, and predator avoidance. Redistribution of sediments can alter nutrient distribution, dissolved oxygen levels, and primary productivity locally and throughout the estuarine waters. When suspended sediments begin to settle on the floor of the estuary, this can cause indirect impacts to benthic communities by smothering and burying organisms (Berry et al., 2003). Since turbidity is a natural condition along South Carolina's coast, impacts from the proposed project are expected to be relatively minor. Impacts should be minimal and would be limited to the immediate area of the construction.

Timber mats and/or barges may cause temporary impacts to vegetation during construction. Vegetation will likely die while covered by mats or barges. These areas are expected to regenerate vegetation once construction is completed, but there may be a lag due to compaction of the marsh from the weight of construction equipment. Additionally, possible conversion of EFH due to loss of vegetation from shading of vegetation from construction access. The proposed project would

indirectly impact EFH by shading salt marsh grasses and freshwater wetland vegetation underneath the proposed temporary trestles. Due to the conceptual design it is difficult to quantify an area of EFH that may be impacted by temporary placement of timber mats and barges. During final design and permitting, the Design-Build contractor would be responsible for coordinating with NOAA-NMFS regarding design changes that would alter the effects on EFH.

Ashley River Evaluation Area

Temporary trestle would be approximately 30 feet wide, approximately 2000 feet long and would be supported by steel pipe piles. Based on the 0.7 bridge height to bridge width ratio (Broome et al, 2005), indirect impacts to vegetated EFH may occur in areas where the bridge height is 21 feet or lower Trestle heights are anticipated to be below 20 feet for the length of the structure which would result in shading impacts to the high quality estuarine emergent wetland vegetation. Two trestles would be required, one for construction of each bridge over the Ashley River. Additionally, fingers of additional trestle or combination of barges or mats will be utilized to construct each bent of the new bridge. The proposed temporary trestle would result in the temporary shading impact to approximately 2.5 acres of high quality estuarine emergent wetlands.

Table 6-8 summarizes the potential temporary indirect impacts to EFH within the Ashley River evaluation area. The total impacts represent an estimation of the worst-case scenario for the temporary shading associated with placement of temporary trestle, barges, or timber mats to construct the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-8. Estimated Temporary Direct Impacts to Ashley River EFH

	EFH Type				
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Unconsolidated Bottom	Oyster
Temporary Trestle, Barge, or Timber Mat Shading	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)
Total	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**

Filbin Creek Evaluation Area

Temporary trestle would be approximately 36 feet wide and would be supported by steel pipe piles. Trestle heights are anticipated to be below 20 feet for the length of the structure which would result in shading impacts to the palustrine emergent vegetation and estuarine emergent wetlands associated with Filbin Creek. Multiple trestles will be required during construction with the estimated need for to be 12,000 feet of temporary structure. The proposed temporary trestle would shade approximately 2.9 acres of high quality estuarine emergent wetlands and approximately 7 acres of low quality palustrine emergent wetlands EFH.

Table 6-9 summarizes the potential temporary indirect impacts to EFH within the Filbin Creek evaluation area. The total impacts represent an estimation of the worst-case scenario for the

temporary shading associated with placement of temporary trestle, barges, or timber mats to construct the preferred alternative. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-9. Estimated Temporary Indirect Impacts to Filbin Creek EFH

	EFH Type						
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Palustrine Emergent Wetlands	Riverine Tidal Creek	Unconsolidated Bottom	Oysters
Temporary Trestle, Barge, or Timber Mat Shading	≤0.1 acres (HQ) ≤0.1 acres (LQ)	≤0.1 acres (HQ) ≤0.1 acres (LQ)	≤0.1 acres (HQ)	≤0.1 acres (LQ)	≤0.1 acres (LQ)	≤0.1 acres (HQ)	≤0.1 acres (HQ)
Total	**0.2 acres**	**0.2 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**	**0.1 acres**

6.5. EFH Impacts Summary

Permanent direct impacts to EFH will result from the placement of permanent fill for bridge approaches or bridge structures and sub-structures, such as concrete bridge pilings or shafts. The permanent direct impacts to EFH associated with the Ashley River bridges will impact high quality estuarine emergent wetlands, high quality intertidal non-vegetated flats, oysters, and high quality unconsolidated bottom EFH. The permanent direct impacts to EFH associated with Filbin Creek will permanently impact high quality and low quality estuarine emergent wetlands, high quality and low quality estuarine tidal creeks, high quality intertidal non-vegetated flats, low quality palustrine emergent wetlands, low quality riverine tidal creeks, and high quality oysters.

Permanent indirect impacts to EFH include the possible conversion of EFH due to loss of vegetation from shading. Permanent shading impacts are expected to occur to high quality estuarine emergent wetlands in the Ashley River evaluation area and low quality palustrine emergent wetlands in the Filbin Creek evaluation area. A second indirect impact associated from the placement of new bridge structure and sub-structure in tidally influenced waters is the creation of suitable habitat for oyster propagation. This may result in a net benefit to oysters in both evaluation areas within the project limits.

Temporary direct impacts to EFH will result from the placement of temporary fill for construction access for the project. The piles required to construct the temporary trestle would act as temporary fill to EFH. The use of temporary trestles in the EFH associated with the Ashley River will result in temporary direct impacts to high quality estuarine emergent wetlands, high quality estuarine tidal creek, high quality intertidal non-vegetated flats, high quality unconsolidated bottom, and high quality oysters. The use of temporary trestles in Filbin Creek EFH will temporarily impact high quality and low quality estuarine emergent wetlands, high quality and low quality estuarine tidal creeks, high quality intertidal non-vegetated flats, low quality palustrine emergent wetlands, low quality riverine tidal creeks, and high quality oysters.

During construction activities and demolition of the existing bridge, temporary indirect impacts such

siltation may occur in EFH. Additionally, the proposed project would result in temporary indirect impacts to EFH from shading or loss of vegetation associated with construction access. The proposed temporary trestle would shade approximately high quality estuarine emergent wetlands and low quality palustrine emergent wetlands EFH.

Table 6-10 summarizes all impacts to EFH within the project limits. The total impacts represent an estimation of the worst-case scenario for the respective impact types discussed in previous sections. Quality of areas impacted are designated as HQ for high quality and LQ for low quality.

Table 6-10. Estimated Temporary Indirect Impacts to Filbin Creek EFH

	EFH Type						
Impact Type	Estuarine Emergent Wetlands	Estuarine Tidal Creek	Intertidal Non-Vegetated Flats	Palustrine Emergent Wetlands	Riverine Tidal Creek	Unconsolidated Bottom	Oysters
Permanent Direct (Concrete Piles, Drilled Shafts, Approach/Causeway Fill, Potential Existing Material Removal)	1.1 acres (HQ)	0.5 acres (HQ) 1.3 acres (LQ)	0.5 acres (HQ)	3.4 acres (LQ)	0.3 acres (LQ)	0.2 acres (HQ)	0.5 acres (HQ)
Permanent Indirect (Shading, Additional Surface Area for Oysters)	2.6 acres (HQ)	0 acres	0 acres	10.3 acres (LQ)	0 acres	0 acres	0.6 acres (HQ)
Temporary Direct (Temporary Trestle Pilings, Barges, Timber Mats)	0.2 acres (HQ) 0.1 acres (LQ)	0.2 acres (HQ) 0.1 acres (LQ)	0.2 acres (HQ)	0.1 acres (LQ)	0.1 acres (LQ)	0.2 acres (HQ)	0.2 acres (HQ)
Temporary Indirect (Shading, Siltation)	0.2 acres (HQ) 0.1 acres (LQ)	0.2 acres (HQ) 0.1 acres (LQ)	0.1 acres (HQ)	0.1 acres (LQ)	0.1 acres (LQ)	0.2 acres (HQ)	0.2 acres (HQ)
Total	**4.3 acres**	**2.4 acres**	**0.8 acres**	**13.9 acres**	**0.5 acres**	**0.6 acres**	**1.5 acres**

7. Avoidance and Minimization

Impacts to EFH would be minimized to the maximum extent practicable. As the project design progresses, the actual construction limits will be refined, and further avoidance and minimization measures taken to reduce the amount of impact to EFH. The concepts for bridges over both estuarine and riverine tidal creeks have been designed to span the entire creek channels and avoid any roadway fill impacts to the channels where practicable. In addition, maximizing the length of spans and the distance between bents and columns where practicable will minimize the amount of fill being placed in EFH.

Through coordination efforts with NOAA-NMFS, the SCDOT and NOAA-NMFS have developed the following EFH-specific list of general best management practices (BMPs) to minimize construction-related impacts to

EFH and water quality within the project watershed. It is anticipated that many of these BMPs will be incorporated as conditions/commitments to the Section 404/401 permit. 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. The following avoidance and minimization methods and BMPs will be implemented to the greatest extent practicable during the construction of the project:

7.1. During construction or post-construction, the impairment of the hydrologic flow of any creek system would be minimized to the maximum extent practicable.

7.2. Construction BMPs must include measures to avoid or minimize temporary impacts including turbidity and sedimentation. For example, temporary sediment and runoff control fences (e.g., a silt fence consisting of geotextile fabric installed between supporting posts) would be installed along approaches adjacent to EFH; floating turbidity barriers would also be used when activities may result in increased turbidity downstream of the work site.

7.3. To the maximum extent practicable, construction activities impacting EFH would be conducted during low biological use periods (during the winter from November 1 to February 28).

7.4. To the maximum extent practicable, plan the stages of development so that only the areas that are actively being developed are exposed. All other areas should have a good cover of either temporary or permanent vegetation.

7.5. No work would be conducted in a manner that results in permanent bank erosion or decreased stabilization to the maximum extent practicable. Sediment entering the waterway due to equipment presence and operation must be avoided to the maximum extent practicable. Double-row silt fencing will be installed along the toe of fill slopes and the limits of clearing to capture sediment runoff and avoid sediment form entering wetlands or channels.

7.6. Grading should be completed as soon as possible after it has begun.

7.7. Runoff velocities would be kept low and retained on-site using sediment and erosion control BMPs to the maximum extent practicable.

7.8. No excavated material would be disposed of in adjacent waterways or sidecast into adjacent marsh.

7.9. To the maximum extent practicable, project areas that are excavated adjacent to the marsh would be graded down to adjacent marsh levels.

7.10. Where necessary, banks should be stabilized with bioengineering material (e.g., biologs, fiber matting, etc.).

7.11. Raw or live concrete, which is toxic to aquatic life, may not come in contact with wetlands or open water until the concrete has cured.

7.12. At the end of the workday, remove any debris that may enter EFH by wind, tides, etc.

7.13. The area of temporary impacts associated with work mats will be minimized/avoided to the maximum extent practicable.

7.14. Riprap would be minimized to the least amount practicable. Riprap placed within tidal wetlands should consist of clean rock or masonry clean of pollutants and debris.

7.15. Material (e.g., riprap, pilings) would not be placed in large waterways/tidal rivers such that it impairs the hydrologic flow at mean low tide unless the riprap is needed to support the integrity of the bridge abutment or roadway that is susceptible to scour. Regarding smaller tidal creek channels, bridge pilings will be located outside of the outer (normal high tide) limits to the maximum extent feasible to avoid potential hydrological and scour impacts.

7.16. Any impact pile driving would be conducted out-of-water wholly or during low tide where practicable.

7.17. Appropriate soil erosion and sediment controls would be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Work within waters of the United States would be performed during periods of low-flow or no- flow when practicable.

7.18. All steps necessary would be taken to prevent oil, tar, trash, debris and other pollutants from entering adjacent wetlands and/or waterways.

7.19. Once initiated, construction activities would be carried to completion in an expeditious manner in order to minimize the period of disturbance and upon completion, all disturbed areas would be permanently stabilized with vegetative cover and/or riprap, as appropriate. Native vegetation and/or native seed mixtures would be utilized.

7.20. Construction access areas would be clearly identified in the permit application. Construction access would consist of minimal clearing for the installation of elevated working platform(s), timber mat(s), or barge(s). Impacts would be temporary and minor in nature.

- No mechanized equipment would operate within jurisdictional areas unless clearly identified and authorized in the approved plans.

8. Conclusions

The proposed project is a design-build project that will require further evaluation and analysis as the project design develops. As such, SCDOT will be responsible for coordinating with NOAA-NMFS regarding design changes that would alter the effects on EFH.

The project will result in unavoidable impacts to EFH. The placement of fill for the widening of I-526 LCC WEST, bridge approaches, and new bridge structure and sub-structure will result in permanent direct impacts to EFH. Shading associated with permanent bridge structures will result in the permanent indirect impacts to EFH. Temporary impacts associated with construction access will result in temporary direct and indirect impacts. The permanent loss of EFH and the temporal lag for restoration to existing conditions from temporary impacts may take months or years. Therefore, it is the determination of SCDOT that the proposed project would adversely impact the EFH in the project area.

Since there will be impacts to the EFH and possibly aquatic species managed by the SAFMC, an EFH Mitigation Plan will be established. 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) methods such as causeway removal, living shorelines, oyster bed restoration, and/or other methods of mitigating for EFH impacts. SCDOT/FHWA will develop the mitigation plan in coordination with the appropriate resource agencies.

9. References

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Attachment I Section 106 Correspondence

SOUTH CAROLINA DEPARTMENT OF
ARCHIVES & HISTORY
EST. 1905

April 2, 2020

Mr. Shane Belcher
Federal Highways Administration
1835 Assembly Street, Suite 1270
Columbia, SC 29201

Subject: Proposed I-526 West Lowcountry Corridor Improvements, Alternatives for Environmental Impact Statement (EIS)
Charleston County, South Carolina
SHPO Project No.:19-JW0014 Federal Project Number P027507

Dear Shane Belcher:

We received your letter of March 12 requesting concurrence with the proposed alternatives to be carried forward for detailed evaluation in the Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements. Thank you for providing a time extension for a response. We previously received a cultural resources survey as supporting documentation for this undertaking, as well as participated in regular agency coordination efforts over the past year. The State Historic Preservation Office (SHPO) is providing comments to the Federal Highways Administration pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

The proposed project as described in your letter "would make improvements to the I-526 corridor from Virginia Avenue to Paul Cantrell Boulevard in Charleston County, South Carolina. The purpose of the proposed project is to increase capacity and improve operations at the I-26/526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard. The Ashley River bridge crossing would be widened to accommodate the improvements on the I-526 mainline."

We concur with the proposed alternatives to be carried forward in the EIS for this project.

Thank you for the opportunity to provide comments. Please refer to SHPO Project No. 19-JW0014 in future correspondence regarding this project. If you have any questions about our comments please contact me at ejohnson@scdah.sc.gov, 803-896-6168.

Sincerely,

Elizabeth M. Johnson

Elizabeth M. Johnson
Director, Historical Services, D-SHPO
State Historic Preservation Office

SOUTH CAROLINA DEPARTMENT OF
ARCHIVES • HISTORY

August 21, 2019

J. Shane Belcher
U.S. Department of Transportation
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201

Re: Request for Concurrence on Permitting Timetable/Agency Milestones for the Proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS) in Charleston County, South Carolina; Federal Project Number P027507; SHPO Project No. 19-JW0014

Dear Mr. Belcher:

Our Office has received the documentation dated August 19th, that you submitted for review by our office for the project referenced above, including the Permitting Timetable and the Agency Milestones Table. Thank you for involving us in this process as a Participating Agency.

We have reviewed the Permitting Timetable and the Agency Milestones Table. Our official role within this process is the review of identified historic resources, their recommended eligibility status for the National Register of Historic Places, and effects of this project on those resources. The Permitting Timetable and the Agency Milestones Table are agreeable to us per our involvement, and we concur with both.

We are aware of documented historic properties that are eligible for listing in the National Register of Historic Places adjacent to the proposed project area, and have appreciated the continued coordination with the SCDOT per our review of these resources. We look forward to further coordination as to potential effects of this project on these resources as this project progresses per the proposed timetable.

We appreciate being included in this process and look forward to further consultation regarding historic resources. Please refer to SHPO Project Number 19-JW0014 in any future correspondence regarding this project. If you have any questions, please contact me at (803) 896-6184 or at jwilkinson@scdah.sc.gov.

Sincerely,

Joseph E. Wilkinson

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office

South Carolina
Department of Transportation

July 16, 2019

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office
South Carolina Department of Archives & History
8301 Parklane Road
Columbia, South Carolina 29223-4905

Re: ***Brockington and Associates' 1.) Cultural Resource Survey of the I-526 Corridor Improvements Project & 2.) Cultural Resource Survey of the I-526 Lowcountry Corridor West Project—Addendum Report,*** **Charleston County, SCDOT PIN P027507**

Dear Mr. Wilkinson:

The SCDOT proposes to improve I-526 from SC Route (SC-) 461 (Paul Cantrell Boulevard) to the SC-61 Spur (Glenn McConnell Parkway). Improvements along I-26 extend from West Montague Avenue west to Remount Road. The project may include adding a travel lane in each direction along I-526; interchange improvements at Leeds Avenue, SC-642 (Dorchester Road), West Montague Avenue, International Boulevard, and Paul Cantrell Boulevard; and the system-to-system connections at Glenn McConnell Parkway, I-26, and Rivers Avenue. Interchange improvements along I-26 may include West Montague Avenue. Improvements are also to be evaluated along Paul Cantrell Boulevard from S- 10-1373 (Tobias Gadson Boulevard) to Charlie Hall Boulevard. This segment of Paul Cantrell Boulevard includes the intersection of S-10-1863 (Magwood Drive), which will be evaluated for a grade separation to accommodate future traffic volumes.

The two cultural resources reports referenced above cover the full Area of Potential Effect (APE) for the proposed project. This correspondence addresses the combined results of those two reports and therefore the entirety of the project APE. The purpose of this correspondence is only to establish National Register of Historic Places (NRHP) eligibility for cultural resources documented as part of the subject surveys. Additional Section 106 coordination to determine project effects upon cultural resources will be initiated when a preferred alignment for the project is developed.

Archaeological investigations for the project revisited one (1) previously identified archaeological site (38CH17) and identified one new site (38CH2523). Neither of these sites is recommended eligible for the NRHP. Underwater archaeological survey was also conducted within the project APE, and two anomalies (006-1 and 010-1) were identified. Anomaly 006-1 is recommended for further analysis to determine eligibility if it is located within a refined APE generated later in the project design process. Anomaly 010-1 is recommended as not eligible for the NRHP.

The historic architectural survey identified several survey-eligible neighborhoods, individual resources, and landscape features within the APE (refer to attached reports for specifics). Only one (1) aboveground resource identified in the studies (site 7806, Bethune Elementary) is recommended eligible for the NRHP.

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olumbia, SC 29202-0191

Site 7916.01 (hand excavated mines), site 7916.02 (mechanically excavated mines), and site 38CH2468 are recommended as not eligible for individual listing in the NRHP and as non-contributing to the eligibility of site 7916. These are the elements of eligible resource 7916 that fall within the I-526 West APE.

Please provide your concurrence with or comment on the eligibility findings of the two subject reports.

In accordance the memorandum of agreement approved by the Federal Highway Administration (FHWA), November 29, 2011, SCDOT is providing this information as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence with SCDOT findings. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,

David P. Kelly
NEPA Coordinator, RPG 4

DPK:dk
Enclosures: Cultural resources reports, aboveground survey forms, photographs

I (~~do not~~) concur in the above determinations.

Signed: Joseph E. Wilkinson Date: _____

ec: Shane Belcher, FHWA
LeeAnne Wendt, Muscogee (Creek) Nation
Brett Barnes, Eastern Shawnee

cc: Wenonah G. Haire, Catawba Nation THPO
Keith Derting, SCIAA

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From:	Kelly, David P.
To:	Heather Robbins
Subject:	FW: Agency Concurrence Points on I-526 West Project SCDAH
Date:	Tuesday, June 4, 2019 2:35:01 PM
Attachments:	image001.png SHPO Purpose and Need Concurrence Reponse.pdf

FYI

From: Wilkinson, Joseph E. [mailto:JWilkinson@scdah.sc.gov]
Sent: Tuesday, June 04, 2019 2:23 PM
To: Herrell, Michelle
Cc: Belcher, Jeffery - FHWA; Long, Chad C.; Riley, Joy S.; McGoldrick, Will; Kelly, David P.
Subject: RE: Agency Concurrence Points on I-526 West Project SCDAH

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Ms. Herrell,

Please see attached our agency's letter response.

Thanks,

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office
SC Department of Archives & History
8301 Parklane Road
Columbia, SC 29223
Ph: 803.896.6184 Fax: 803.896.6167 https://scdah.sc.gov/historic-preservation
jwilkinson@scdah.sc.gov

From: Herrell, Michelle (FHWA) [mailto:michelle.herrell@dot.gov]
Sent: Thursday, May 30, 2019 10:55 AM
To: Wilkinson, Joseph E. <JWilkinson@scdah.sc.gov>
Cc: Belcher, Jeffrey (FHWA) <Jeffrey.Belcher@dot.gov>; Long, Chad C. <LongCC@scdot.org>; Riley, Joy S. <RileyJ@scdot.org>; McGoldrick, Will <McGoldriWR@scdot.org>; Kelly, David P. <KellyDP@scdot.org>
Subject: Agency Concurrence Points on I-526 West Project SCDAH

Hi Joseph,

Attached is a letter requesting agency concurrence on the I-526 Lowcountry Corridor West project on the agency coordination plan, permitting timetable, and the purpose and need statement. The most updated agency coordination plan (with dispute resolution process) and permitting timetable are attached for your review. The purpose statement has stayed the same

that is in the attached I-526 ACE meeting handout:

The purpose of this project is to increase capacity and improve operations at the I-26/I-526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard. The need for this project was identified in several different documents. The I-526/I-26 interchange is listed as the #2 project in the 2035 CHATS Long Range Transportation Plan Ranked List of Candidate Transportation Projects, the #6 project on SCDOT's ACT 114 Interstate Capacity List, and it is listed in SCDOT's State Transportation Improvement Plan 2017-2022. Congestion was detailed in SCDOT's Corridor Analysis for I-526 Between North Charleston and West Ashley, and in the Interstate Plan portion of SCDOT's 2014 Multimodal Transportation Plan, where four segments within this project corridor are listed in the top 20 most congested Interstate segments.

If you are a participating agency, concurrence is not required, but we would like concurrence from the participating agencies so that we know everyone is comfortable with the information we have developed thus far and due to our compressed time schedule for this project. We understand based on previous email (5/2/2019) that your agency will be providing a customized response with regards to the concurrence points. If you have any questions about this information or concurrence, please feel free to contact me, Shane Belcher, Chad Long, or David Kelly.

Note, if we don't receive any comments/concerns by June 7 from the agencies, we will be canceling the June 12th monthly agency call for this project.

Thanks,

Michelle Herrell
Environmental Protection Specialist
Federal Highway Administration |South Carolina Division Office
1835 Assembly Street, Suite 1270|Columbia, SC 29201
P: (803) 765-5460 | F: (803) 253-3787
michelle.herrell@dot.gov

SOUTH CAROLINA DEPARTMENT OF
ARCHIVES • HISTORY
EST. 1905

June 4, 2019

Michelle L. Herrell
U.S. Department of Transportation
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, South Carolina 29201

Re: Request for Concurrence on Agency Coordination Plan, Purpose & Need Statement, and Permitting Timetable for the Proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS) in Charleston County, South Carolina; Federal Project Number P027507; SHPO Project No. 19-JW0014

Dear Ms. Herrell:

Our Office has received the documentation dated May 30th, that you submitted for review by our office for the project referenced above, including the Agency Coordination Plan, the Purpose & Need Statement, and the Permitting Timetable. Thank you for involving us in this process as a Participating Agency.

We have reviewed the Agency Coordination Plan, the Purpose & Need Statement, and the Permitting Timetable. Our official role within this process is the review of identified historic resources, their recommended eligibility status for the National Register of Historic Places, and effects of this project on those resources. While we do not have the expertise to evaluate the data supporting, or arguments within, the Purpose and Need statement, we believe the agencies that do have this expertise will sufficiently review and concur with the Purpose and Need. The Agency Coordination Plan and the Permitting Timetable are agreeable to us per our involvement, and we concur with both.

We are aware of documented historic properties that are eligible for listing in the National Register of Historic Places adjacent to the proposed project area, and have appreciated the continued coordination with the SCDOT per our review of these resources. We look forward to further coordination as to potential effects of this project on these resources as this project progresses per the proposed timetable.

We appreciate being included in this process and look forward to further consultation regarding historic resources. Please refer to SHPO Project Number 19-JW0014 in any future correspondence regarding this project. If you have any questions, please contact me at (803) 896-6184 or at jwilkinson@scdah.sc.gov.

Sincerely,

Joseph E. Wilkinson

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office

SOUTH CAROLINA DEPARTMENT OF
ARCHIVES • HISTORY
EST. 1905

April 9, 2019

Emily O. Lawton
Division Administrator
Federal Highway Administration
1835 Assembly Street, Suite 1270
Columbia, SC 29201
SENT VIA EMAIL

Re: **Invitation to Become a Participating Agency for the Preparation of an Environmental Impact Statement (EIS) for the Proposed I-526 West Lowcountry Corridor Improvements Project in Charleston County, South Carolina; Federal Project Number P027507 (SHPO Project No. 19-JW0014)**

Dear Ms. Lawton:

Thank you for your letter of March 29, which we received on April 4, regarding the invitation to become a participating agency for the preparation of an Environmental Impact Statement (EIS) for the proposed I-526 West Lowcountry Corridor Improvements Project. We also received a copy of the ACE meeting handout with project details.

We accept the invitation to become a participating agency during the preparation of the Environmental Impact Statement for the above referenced project. Our agencies responsibility will be to review compliance with section 106 of the National Historic Preservation Act, as codified at 36 CFR 800.2(c), and provide federal agencies with advice and assistance to ensure historic properties are taken into consideration at all levels of planning and development.

For future coordination with our office regarding this project, we request that I, Joseph Wilkinson, be considered the primary contact.

If you have any questions about our participation, please contact me at (803) 896-6184, or by email at jwilkinson@scdah.sc.gov.

Sincerely,

Joseph E. Wilkinson

Joseph E. Wilkinson
Review Coordinator for Transportation Projects
State Historic Preservation Office

cc. Mr. J. Shane Belcher, FHWA