

To ensure marine safety and security, the US Coast Guard (USCG) Bridge Program has the approval authority on the location and plans for modifications to existing bridges and all new bridges over navigable waterways through a permitting process. The USCG permit considers vertical and horizontal clearances of the structure over the navigable waterway to ensure that the clearance will provide for current and foreseeable navigation needs.

USCG authority for the permitting process is primarily found in 33 United States Code (USC) 401, 491, 525-533 and the International Bridge Act of 1972

5.1 USCG Coordination

On November 26, 2018 representatives from the Federal Highway Administration (FHWA) and USCG participated in a conference call to discuss the permit and navigational study and USCG's role in the development of the I-526 LCC WEST Draft Environmental Impact Statement (DEIS). The USCG agreed their agency would review the navigational study. FHWA sent a Cooperating Agency invitation to USCG on March 29, 2019 and USCG accepted the invitation on April 10, 2019, Appendix A. USCG is also involved in monthly agency coordination calls. The Navigation Report was submitted in May 2019 and a preliminary determination from the USCG was received on June 11, 2019 that the proposed clearances will meet the reasonable needs of navigation for the waterways, Appendix A.

5.2 Existing Bridge Clearances

The General William C. Westmoreland (Westmoreland) Bridge spans the Ashley River with a 3,908 foot long bridge constructed in 1980. Two independent structures, each 42-feet in width, comprise the Westmoreland Bridge. The horizontal clearance at the opening of the bridge that spans the navigable channel is 60 feet and the vertical clearance over the Ashley River is 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 four additional major upstream and downstream crossings over the Ashley River, as shown in Table 5.1 and Figure 5.1. 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 horizontal clearance (60 feet) of the five major bridge crossings.

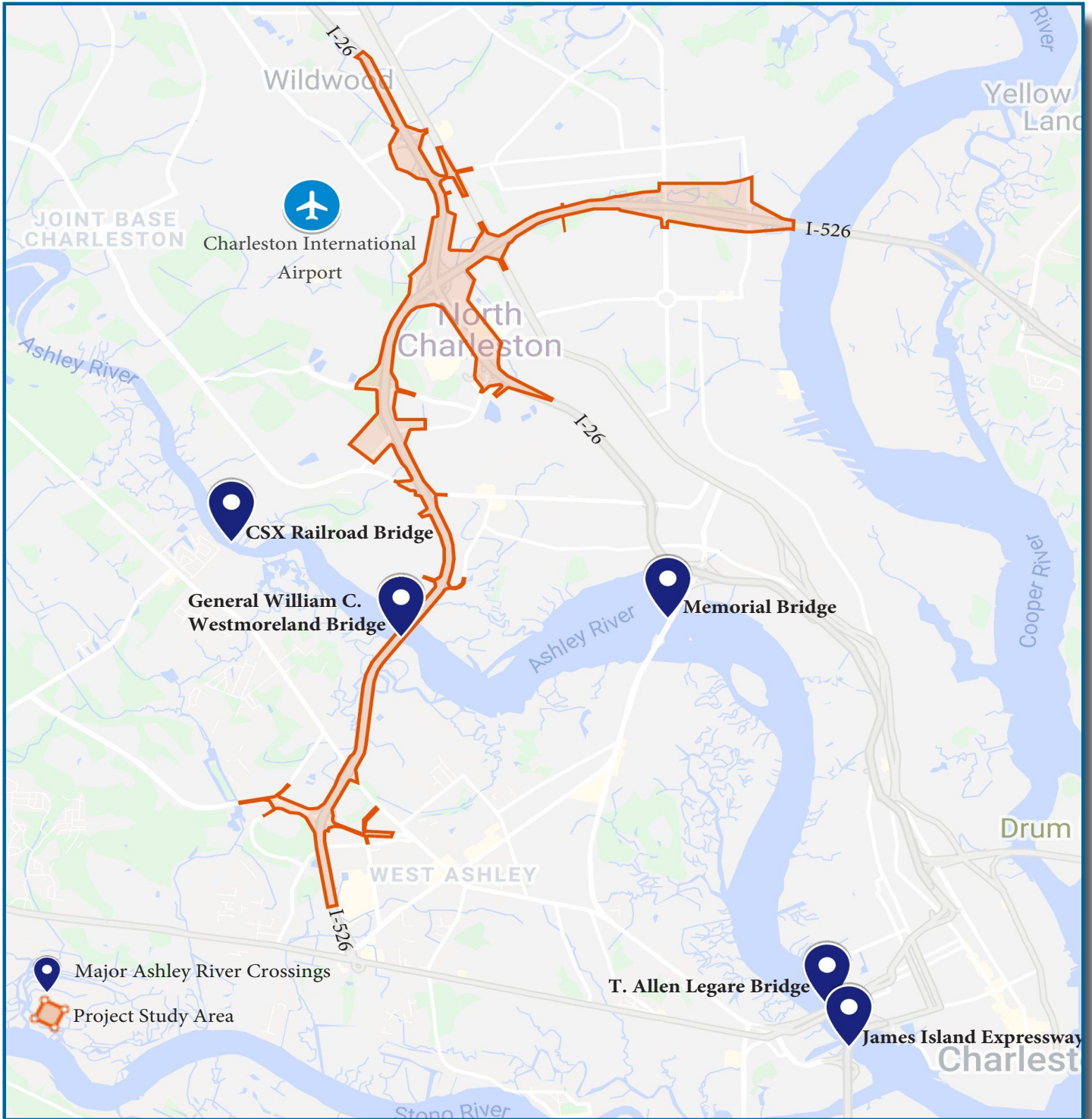


Figure 5.1 Major River Crossings

Table 5.1 Major Ashley River Crossings¹

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

All clearances measured from MHW

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 60 feet wide. 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. Mean High Water (MHW) is approximately 3.08 feet and Mean Low Water (MLW) is -3.16 feet at the center of the channel (datum is NAVD 88). The Ashley River drains to the east, to the Atlantic Ocean, Figure 5.2.

The Ashley River is a designated State Scenic River, largely in part to numerous historic properties located along the riverbanks.

¹ 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)

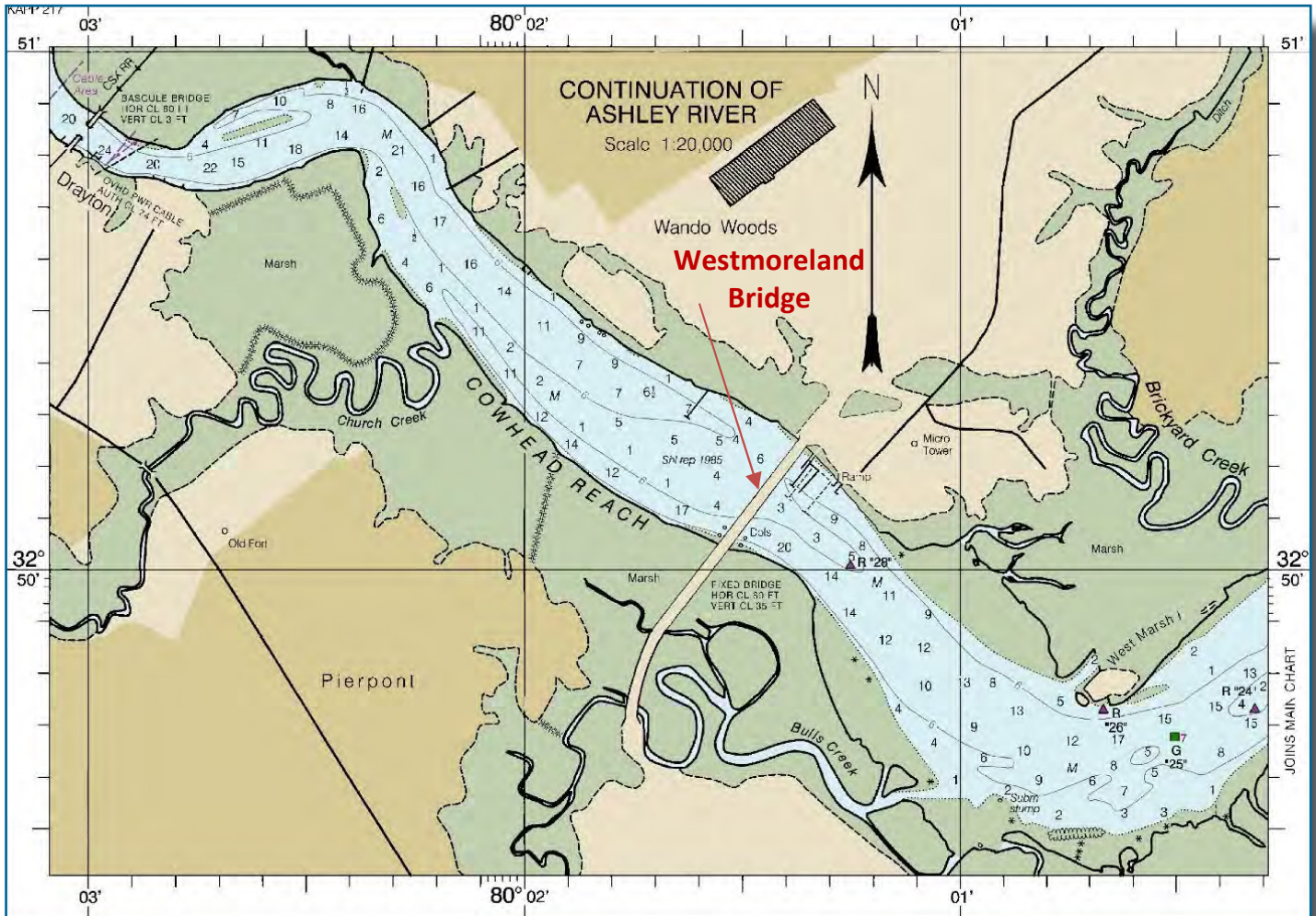


Figure 5.2 NOAA Navigation Chart - Charleston Harbor. 54th Edition, June 2015. Last Correction 2/5/2019.

5.3 Proposed Bridge Dimensions

As part of the proposed project, South Carolina Department of Transportation (SCDOT) proposes to widen the existing bridge over the Ashley River. Additionally, a 14-foot shared use path (SUP) to accommodate pedestrians and cyclists would be added to the upstream side of the existing bridges. The 14-foot SUP would be separated from the motorized travel lanes. There would be a raised barrier separating the path from the outside 12-foot paved shoulder. The SUP would be located on the north side of the existing bridges, adjacent to the westbound travel lanes. Maintenance and improvements would be made to the existing Westmoreland Bridge and the structure would be retained at its existing height and length.

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.

The current bridges are approximately 42 feet, 10 inches wide. The existing bridge deck consists of two 12-foot travel lanes, a five-foot, six-inch inside left shoulder, and a ten-foot outside right shoulder. Additionally, there are barriers on each side of the bridge (two total) that are one-foot, eight-inches wide each. There are no existing facilities for pedestrians or bicyclists. 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. The width of the additional bridges would be 32 feet, 5.5 inches wide in each direction. The total final bridge width for motorized vehicles would be 75 feet, 3.5 inches. The final dimensions of the widened bridge structure needed to support the path would be determined following additional detailed design. The final dimensions of the widened bridge structure needed to support the path would be determined following additional detailed design.

5.4 Navigation Study Summary

The proposed bridge clearances were coordinated with USCG through the Navigation Study. The Navigation Study is based on current facts, and if circumstances of the project change during the USCG permit application or public notice process it may be amended.

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.

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 reduced by the proposed project.

Charleston Harbor is considered to be a “harbor of refuge”, which 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 horizontal or vertical clearances of the bridge. The proposed project will not prohibit the entry of a vessel to Charleston Harbor. 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.

The recreational and commercial usage, as well as navigational safety were considered in the Navigational Study. 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. Local boat ramps, private boat docks, marinas, and marine dependent businesses were identified (Appendix T, Navigational Study). This portion of the Ashley River is not a part of commercial largescale cargo routes.

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 Pierpoint Public Boat Landing is managed by CCPRC and is located upstream of the project site, just off of Church Creek.
- Northbridge Park is considered a “gateway park” based on its location at the entrance to West Ashley from I-26. Northbridge Park is located over 2.5 “river miles” east or downstream of the proposed project.

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

- The Wando Woods/Flynn Drive boat ramp is also open to the public. This provides access to the Ashley River in North Charleston from a residential street, Flynn Drive.
- 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, 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.

5.5 Federal & State Navigation Permits Required

A USCG Bridge Permit is required in compliance with Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. During final design, a USCG Bridge Permit application will be completed. A South Carolina Department of Health and Environmental Control (SCDHEC) navigable waters permit is typically required for construction in/above state navigable waters. However, a separate application for the SCDHEC state navigable waters permit will not be required for this project, as it will be included in the Section 401 and Section 404 Clean Water Act permits.

5.6 Navigation During Construction

During construction there is potential for temporary closure of the navigation channel of the Ashley River. If a closure is necessary, it would 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. SCDOT would ensure that there would not be an unreasonable interference with navigation because the vertical and horizontal clearances would remain sufficient during construction. Waterway users would experience minimal impacts and mitigation is not recommended. The existing bridge will be retained but modified for the new bridge to tie-in.

Based on all of the information presented herein and in the Navigation Study, SCDOT determined that the project design would meet the reasonable needs of navigation.