

Ashley River Crossing

FY 2019 BUILD Grant Application

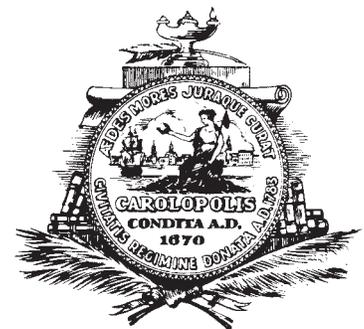


Urban Area Application

Total Project Cost: \$22,749,750
Local Match: \$4,600,000
Requested FY 2019 BUILD Funding: \$18,149,750

Submitted by the City of Charleston, South Carolina
to the United States Department of Transportation

DUNS # 077990786
July 15, 2019



Executive Summary

The Ashley River Crossing is an innovative multi-modal transportation initiative to enhance the connectivity between Downtown Charleston (the largest employer area) and West Ashley (the densest residential area) in Charleston, South Carolina. Separated by the Ashley River, commuters are limited to automobile travel due to unsafe intersections, narrow sidewalks, incomplete streets, and an antiquated signal system. The lack of alternative transportation options is not only a threat to the safety of citizens, but also to the economic growth of the metro area.

The project will be completed in two phases:

Phase 1

Improve the existing infrastructure of a regional bicycle and pedestrian network, which includes the 10.5-mile West Ashley Greenway, 2.5-mile West Ashley Bikeway, and now permitted Ashley River Walk in Downtown Charleston.

Phase 2

Construct a 0.4-mile standalone bridge parallel to the existing Ashley River Bridges to create a multi-use path for pedestrians, cyclists, and other non-motorized users.

Once completed, there will be 12 miles of a regional bicycle and pedestrian network. With over 13,000 citizens and 1,405 area businesses located within a 20-minute walk or bike to the project area, there is an estimated benefit of \$27 for every \$1 spent on the project. The total cost of the project \$22,749,750, of which the City of Charleston is requesting \$18,149,750 in BUILD funding from the United States Department of Transportation in addition to a local match of \$4,600,000. The project meets all BUILD primary selection criteria and is ready for implementation due to an unprecedented level of support from private-public partnerships.

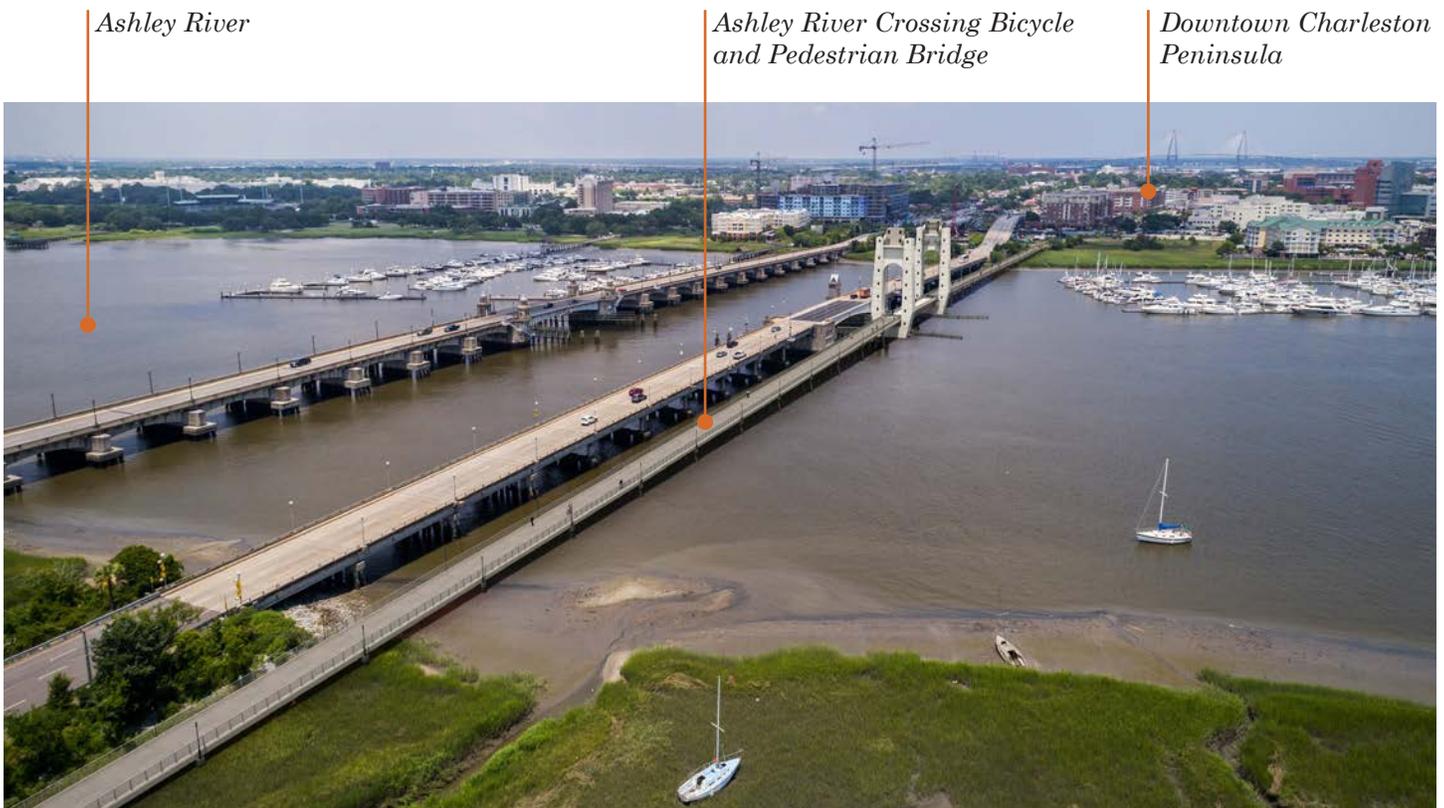


Figure 1 New Ashley River Crossing and existing bridges.

Table of Contents

- I. Project Description** 04
- II. Project Location** 07
- III. Grant Funds, Sources, and Uses of all Project Funding** 08
 - Phase I Budget Narrative 09
 - Phase II Budget Narrative 13
 - Local Leveraged Funding 15
- IV. Merit Criteria** 17
 - Safety 17
 - State of Good Repair 18
 - Economic Competitiveness 19
 - Environmental Protection 21
 - Quality of Life 22
 - Innovation 23
 - Partnership 24
- V. Project Readiness** 27
 - Proposed Project Timeline 27
 - Assessment of Project Risks and Mitigation Strategies .. 28
 - Required Approvals 28
- VI. Project Costs and Benefits** 29
 - Benefits by Selection Criteria 30
- Appendix** 31

The *Ashley River Crossing* is a nationally significant transportation initiative that demonstrates the value of creating livable, connected communities through large strategic infrastructure investments.

\$ 1 → \$ 27
Cost Benefit

220+
Letters of Support

Called for in
19 Plans & Studies
 Since **1976**

The 0.4 mile addition of bicycle and pedestrian crossing will connect West Ashley and Downtown Charleston. In addition to providing a safe and convenient crossing, the path will connect citizens to jobs without the use of a car, increase neighborhood desirability, improve retail business, support ongoing revitalization of West Ashley, and make Charleston a more attractive city for the next generation of innovative business owners and employees.



Figure 2 Organized Group Ride across the Ashley River Bridge.

I. Project Description

Overview

The Ashley River Crossing is an innovative, multi-modal transportation initiative to enhance the connectivity between Downtown Charleston (*the largest employer area*) and West Ashley (*the densest residential area*) in the Charleston, South Carolina Metro Area. A regionally significant project, the *Ashley River Crossing* will improve the existing infrastructure of the West Ashley Greenway/ Bikeway and construct a new 0.4 mile standalone bicycle-pedestrian bridge. Once completed, there will be nearly 12 miles of dedicated bicycle and pedestrian pathways to provide a safe and convenient crossing between downtown and West Ashley. The path will connect citizens to jobs without the use of a car, increase neighborhood desirability, support the ongoing revitalization of West Ashley, and make Charleston a more attractive city for the next generation of business owners and employees.

Challenge

Charleston's unique geography of waterways and marshes separates the City's land masses and creates a dependency on the use of bridges to connect various points of the city and region.

Currently, West Ashley comprises 45% of the City's population.¹ A recent study revealed that 84% of West Ashley residents commute elsewhere for work.² Commuters traveling from West Ashley to Downtown Charleston must cross the Ashley River via two parallel bridge structures that are 1,700 feet in length. Called the Ashley River Bridges, they each operate one-way traffic and are maintained by the South Carolina Department of Transportation (SCDOT). These bridges carry an estimated Average Annual Daily Traffic count of 63,600+ vehicles.³ The southbound bridge (World War I Memorial Bridge) has three 11-foot travel lanes with a 4.5-foot wide sidewalk on either side. The northbound bridge (T. Allen Legare Bridge) provides four 10-foot travel lanes with a 2-foot wide sidewalk. Given the narrow sidewalk space, commuters are limited to automobile travel. In the last five years, there have been over 100 bike and pedestrian related crashes. As growth, traffic congestion, and the costs of travel continue to dramatically increase in the Charleston region, there is a need for a comprehensive network of multi-modal transportation options.

1. Source: ESRI Business Analyst, 2016
2. Strategic Economics, Plan West Ashley Market Assessment, 2017
3. Source: SCDOT 2016 Traffic Counts, 2017



Figure 3 Existing conditions on current Ashley River bridge. Cyclists must compete with high-speed automobile traffic to cross the river. Pedestrians must use a two-foot sidewalk to cross the river on this bridge.



Figure 4 Map of the project area.

- 1 West Ashley
- 2 *Ashley River Crossing*
- 3 Downtown Charleston

Solution

The Ashley River Crossing leverages existing infrastructure with an unprecedented level of support from citizenry, private industry, and the public sector. Of the West Ashley population, 13,294 residents live within a twenty-minute bike ride of the *Ashley River Crossing* and 4,500 live within a six-minute bike of the West Ashley Greenway. Based on this data and forty years of planning, the City of Charleston proposes to enhance the connectivity of Downtown Charleston and West Ashley through a two-phase bicycle-pedestrian initiative.

Phase 1

Enhancing Connectivity: West Ashley Greenway / Bikeway and Peninsula

The 8.5-mile West Ashley Greenway and 2.5-mile West Ashley Bikeway would be better connected with renovations to two intersections: Wappoo Road / West Ashley Greenway and Folly Road / Wesley Drive / Windermere Drive.

Phase 2

Ashley River Crossing: Standalone Bridge

Build a new 0.4 mile standalone bicycle-pedestrian crossing to connect the West Ashley Greenway in West Ashley to Brittlebank Park in Downtown Charleston.

Outcomes

A *Safety*

Provide a safe, non-motorized, multi-use connection between Downtown Charleston and West Ashley to provide a critical missing link to a larger regional bicycle-pedestrian network.

B *State of Good Repair*

Increase savings in maintenance and operations by developing non-motorized transportation alternatives.

C *Economic Competitiveness*

Activate new mixed-use centers, businesses, and 73,636 jobs that are accessible from a 20-minute bike ride of the project site.

D *Quality of Life*

Improve the quality of life and make Charleston a more attractive city for the next generation of innovative business owners and employees.

E *Economic Development*

Provide a safe alternative mode of transportation for workforce commuters, residents, students, and visitors thereby mitigating congestion.

F *Environmental Sustainability*

Reduction in greenhouse gas emissions and 66,210,550 vehicle miles traveled in 30 years.

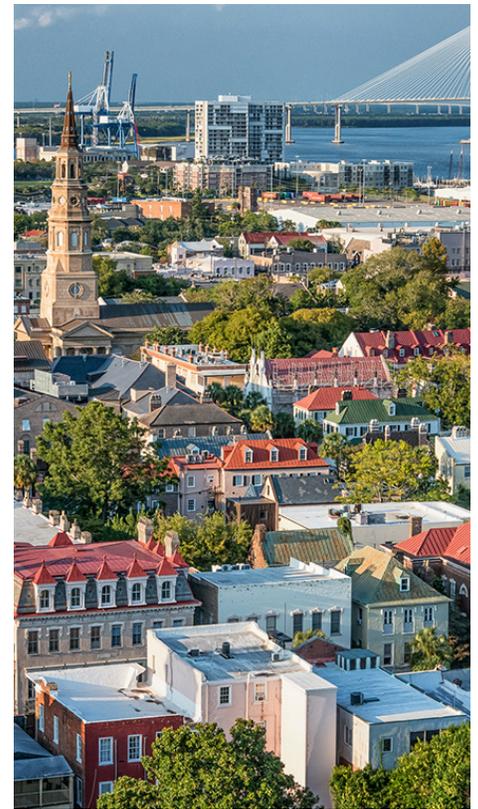


Figure 5 Charleston, South Carolina. The peninsula is compact, but only one safe pedestrian-bicycle crossing exists from surrounding suburbs.

Context

Over the last 40 years, a bicycle-pedestrian crossing between West Ashley and Downtown Charleston has been and is currently part of every major planning effort at the neighborhood, city, county, and regional levels. The concept of the *Ashley River Crossing* was first introduced by City of Charleston planners in 1976. Since then, the City has undertaken extensive planning, design, engineering, and public financing efforts to prepare for project implementation.

From 2010 to 2017, nearly \$2 million dollars were spent on traffic studies and plans under a three-party agreement between the City of Charleston, County of Charleston, and SCDOT to determine the feasibility of *Ashley River Crossing* options. In 2017, the City and County of Charleston agreed a stand-alone movable crossing would be the preferred infrastructure investment to pursue.

Plan West Ashley (the most recent master planning effort) supports the vision of a multimodal network that improves connectivity between West Ashley and prioritizes the Ashley River bicycle-pedestrian crossing.

The plan recommends, “Connect West Ashley to the wider region; improve safety in targeted locations; provide better pedestrian and bicycle safety; and expand the West Ashley Bikeway and Greenway.”

Support

The *Ashley River Crossing* has received an unprecedented level of support from both the private and public sectors. The project has brought together Federal and State elected officials, South Carolina Department of Transportation, private industry within the district, surrounding neighborhood councils, Berkeley Charleston Dorchester Council of Governments, Charleston Metro Chamber of Commerce, and the unanimous support of all jurisdictions within Charleston County, including County Council and City Council.

Letters of support for the *Ashley River Crossing* are included as an attachment to this application.

To date, more than \$40 million in private and public sector funding has been committed by the City of Charleston, County of Charleston, and the Medical University of South Carolina. The estimated cost to develop and construct this infrastructure project is \$22.75 million. The \$18.14 million in requested BUILD FY 2019 funds are essential in creating a world-class crossing that supports a more walkable, livable, and sustainable community with multimodal forms of transportation.

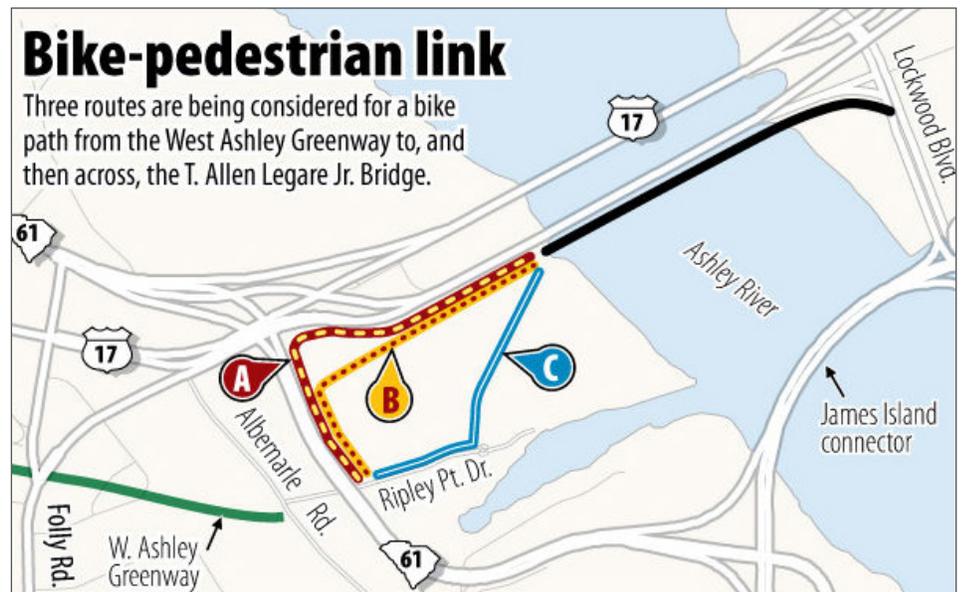


Figure 6 Local Newspaper headline about bicycle and pedestrian infrastructure across the Ashley River. Source: *Post and Courier*, 2011



Figure 7 Regional framework of bikeways and greenways. Source: *Walk-Bike BCD Plan*

II. Project Location

Charleston Metro Area

Founded in 1670, the City of Charleston is the largest city in South Carolina and the principal city in the Charleston-North Charleston metropolitan area as designated by the US Census (UA 15508). Charleston is known for its rich history, well-preserved architecture, cultural arts, and inimitable natural landscapes. These attributes attract over five million visitors annually boasting a \$3.7 billion dollar annual economic impact. In addition to tourism, Charleston averages 43 newcomers per day and has been ranked as one of the top ten places for US job seekers. Key employers in the City include the three hospitals, several universities, offices, automotive groups, the hospitality industry, the port, and an accelerating tech sector.

According to the Brookings Metro Monitor Report, which defines and measures inclusive economic growth across the 100 largest US metropolitan areas, from 2010 to 2015, the City of Charleston was one of only four cities to achieve growth, prosperity, and inclusion that benefited a majority of workers of all backgrounds.

West Ashley

West Ashley comprises 45% of the City's population and is known for its sense of community, reinforced through public spaces such as neighborhood parks and the popular farmers market. Public spaces with grand oaks and waterfront views contribute to the area's identity and appeal to families and tourists alike.

The West Ashley Greenway and Bikeway are unique resources with the potential for safer

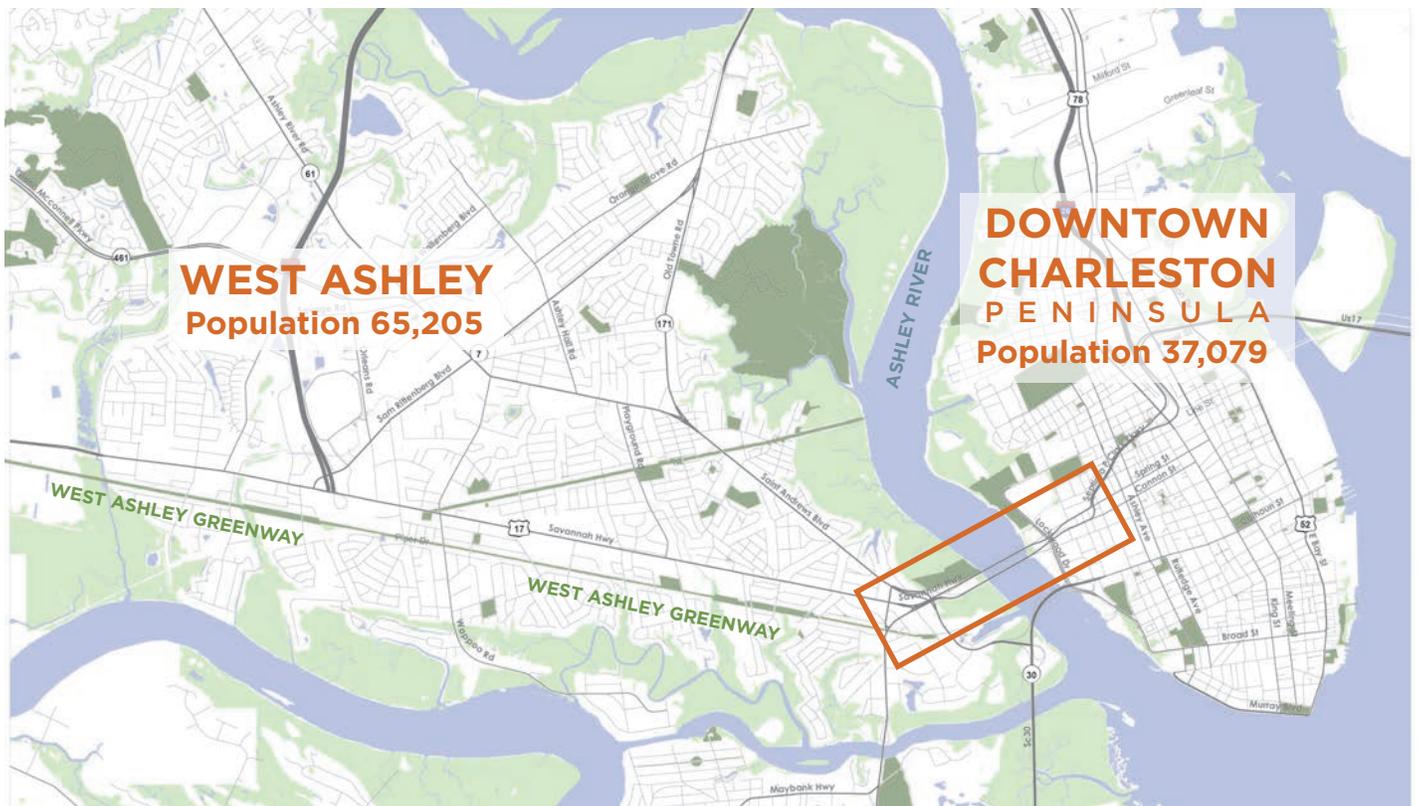


Figure 8 Context map of the *Ashley River Crossing* with West Ashley and Downtown Charleston populations.
Source: US Census Bureau.

access and connectivity to jobs, schools, and other amenities along the trails to further improve the quality of life for its ridership. The 8.5-mile West Ashley Greenway, a former railway abandoned in 1981, connects to a larger regional bike network, including the 2.5-mile West Ashley Bikeway. Also in connection to the West Ashley Greenway is the East Coast Greenway Route, a 3,000 mile urban trail that connects existing and planned shared-use trails to create a continuous route from Maine to Key West, Florida.

Over 4,500 West Ashley residents and 613 area businesses are located within .25 miles of the West Ashley Greenway, providing opportunity for recreational, community, and economic use. As the

West Ashley Greenway and Bikeway have become a true transportation corridor for West Ashley beyond simply a recreational facility, it is vital to close the gap that currently exists between the facilities.

To accomplish this goal, three major barriers of street crossings were identified and concepts developed to address the safe and efficient crossing of the Greenway and Bikeway across these historically challenging street crossings. By addressing these crossings, the ridership of the facility can increase dramatically with the concurrent connection of the *Ashley River Crossing* to Downtown Charleston.

III. Grant Funds, Sources, and Uses of Project Funds

Project Funding

The total cost to construct the Ashley River Crossing is \$22,749,750. The amount of BUILD grant funds requested is \$18,149,750. A public-private partnership involving the City of Charleston (\$1,500,000 match by a unanimous vote of City Council), Charleston County (\$3,000,000 match by a unanimous vote of County Council), and the Medical University of South Carolina has committed \$100,000. The following table outlines grant funds, sources, and percentage of project costs.

Local Commitment to Project Implementation

The City of Charleston, Charleston County, private landholders, and local residents have demonstrated a political and financial commitment to implementing the principles and proposals contained in Phases I and II of the *Ashley River Crossing* Plan. Of the local funding sources, Charleston County funding is restricted to construction costs. All other commitments are unrestricted funds to be spent responsibly under the discretion of the City of Charleston in compliance with standards set by the United States Department of Transportation.

Ashley River Crossing Funding Summary

Phase	Project Area	Cost
I. Improve Mobility Options and Complete Streets	Ashley River Crossing Mobility Project	\$460,000
	Peninsula Street Connections	\$689,750
II. Enhance Connectivity	<i>Ashley River Crossing</i>	\$21,600,000
Total Project Cost		\$22,749,750
Local Match		\$4,600,000
Requested BUILD Funding		\$18,149,750

Budget Narrative

West Ashley Greenway to Ashley River Bike-Ped Bridge Mobility

Multimodal intersections operate with pedestrians, bicycles, cars, buses and trucks, and in some cases, trains. The diverse uses of intersections involve a high level of activity and shared space. Intersections have the unique characteristic of accommodating the almost constant occurrence of conflicts between all modes, and most collisions on thoroughfares take place at intersections. This characteristic is the basis for most intersection design standards, particularly for safety.

Designing multimodal intersections with the appropriate accommodations for all users occurs on a case-by-case basis. The design extends beyond the immediate intersection and encompasses the approaches, medians, street side and driveways, and adjacent land uses. In areas such as the Ashley River Bridge District, intersections have a significant place-making function

as well as a transportation function. Significant land uses and architecturally significant buildings are located at intersections and might provide pedestrian access directly from the corners. Intersections may also serve as gateways and are frequently the first thing visitors see when they enter a neighborhood.

Of all pedestrian fatalities, more than 50% died on arterial roadways, typically designed to be wide and fast. Roads like these are built to move cars and too often do not meet the needs of pedestrian or bicyclist safety. In SCDOT's Pedestrian-Involved Collision Objectives & Strategies, expanding and improving pedestrian facilities is a priority. Pedestrian fatalities account for, on average, 12% of all traffic-related deaths in South Carolina and since 2009, the number of pedestrian-involved fatal and severe injury collisions has increased each year.⁴ The establishment of the *Ashley River Crossing* provides dedicated infrastructure for non-motorized use, creating a level of

connectivity that is both reliable and safe. Choices of routes are a critical need in the City of Charleston. If there is more than one way to get to a location, traffic on each of those routes is more equalized and no particular route shares an undue burden. The connection from the Ashley River Bridge District/East Coast Greenway to the *Ashley River Crossing* provides the enhanced mobility needed.

Ashley River Crossing Mobility Project

In July 2018, the city of Charleston unanimously passed a citywide transportation plan that included an urban bikeway plan called People Pedal. In the fall of 2018, the West Ashley Greenway/Bikeway Master Plan was updated. Both plans became guideposts for the region on priority non-motorized projects to fund and build. To date, the Maryville midblock bikeway with rapid beacons at St. Andrews Boulevard (SC 61), the Savannah Highway (US 17) and Wappoo Road intersection and a number

West Ashley Greenway to Ashley River Crossing Project Costs

Element	Cost
Right-of-Way Acquisition	\$0
Construction	\$300,000
Engineering/Permitting	\$70,000
Mobilization & Contingency	\$90,000
Total	\$ 460,000



Figure 9 Wappoo and the West Ashley Greenway Concept, Credit: Alta Planning

4. Pedestrian-Involved Collision Objectives & Strategies www.dot.state.sc.us/inside/pdfs/publiccomment/multimodal_scstrategichighwaysafetyplan.pdf

of other projects have been funded through city and/or Charleston County Sales tax dollars creating a connect system for every user. The *Ashley River Crossing* is the last major puzzle piece to the over \$41 million dollars of local investment connecting over 12 miles of safer multimodal access.

1 *Wappoo Road and West Ashley Greenway Intersection*

Problem: Trail segments that interact with residential public right of ways should give proper safety indications to the motorized traffic and create a sense of comfort to those using the greenway/bikeway. This section of trail has a high concentration of residential backyards closer to the trail. There are also some commercial and office developments along this section of trail, but overall this section feels suburban. **Solution:** Widen to a 12' wide asphalt trail with 2' gravel shoulders, and should have space set aside at key areas for overlooks, pull-offs/conversations, and small gathering areas. Crossing should include raised crosswalks, bollards, and proper traffic management (ie. Camera activated/push button rapid beacon flashers.)

Solution: The crossing will utilize the existing traffic signal at the intersection but will add a median refuge island and landing areas on the Greenway Connector (east) side of the intersection. The concept also completes pedestrian crossings for all four quadrants of the intersection.

2 *Folly Road, Wesley Drive, and Windermere Drive*

Problem: Currently, users of the West Ashley Greenway are forced to make an almost 500' out of direction movement, traversing (and waiting for) two signalized crossings in the process. This gap becomes more critical with the construction of the *Ashley River Crossing* as it can be a serious impediment to users once the connection to the Peninsula is established.

Solution: A concept was developed that allows a straight-through crossing of the intersection as shown in the diagram. Under this scenario,

Greenway users could cross in the “shadow” of the Windermere Boulevard green phase of the signal; cyclists and runners could traverse the entire intersection during a single phase, and walkers could accomplish the crossing in two stages within the current timing of the signal. This crossing scheme has little to no impact on the vehicle operations while affording a much more direct, logical, and quick crossing for Greenway users.



Figure 10 Intersection design for Maryville Bikeway/ St. Andrews Boulevard (SC 61) funded by Charleston County Sales Tax
Credit: Alta Planning



Figure 11 Wappoo US17 Bikeway to Greenway Concept funded by City of Charleston and Charleston County Sales Tax.



Figure 12 Intersection design for Folly Road, Wesley Drive, and Windermere Drive. *Credit: Alta Planning*

Peninsula Street Connections

On August 19th, 2008, Charleston City Council passed a Complete Streets Resolution geared toward creating a network of streets that would form the backbone of healthy neighborhoods and a sustainable economy. The resolution affirmed that “in making decisions relating to the planning, design and maintenance of public street projects, the City shall ensure the accommodation of travel by pedestrians, bicyclists, public transit, and motorized vehicles and their passengers.”⁵ Complete Streets perform dual roles as vehicular and pedestrian corridors, as well as the community’s primary public spaces, destinations in and of themselves. The impact of their design on the safety and vitality of communities cannot be underestimated.

In the 2000 Census, over 15% of households, or over 18,000 people, not including tourists, in the City of Charleston were identified as not having a vehicle available for transportation and were dependent on walking, biking, riding public transportation, or carpooling.⁶ Unfortunately, in developed areas—such as downtowns and historic neighborhoods—adaptations to

5. Charleston Complete Streets Resolution www.charleston-sc.gov/DocumentCenter/View/1576
 6. Charleston Century V Plan www.charleston-sc.gov/DocumentCenter/View/12782



Figure 13 Map from the People Pedal Plan showing the Ashley River Crossing as an essential segment in a robust network of urban bikeways.



Figure 14 and 15 Before-after views of proposed complete intersection improvements at intersection of Bee and Lockwood, where the Ashley River Crossing meets Downtown Charleston.

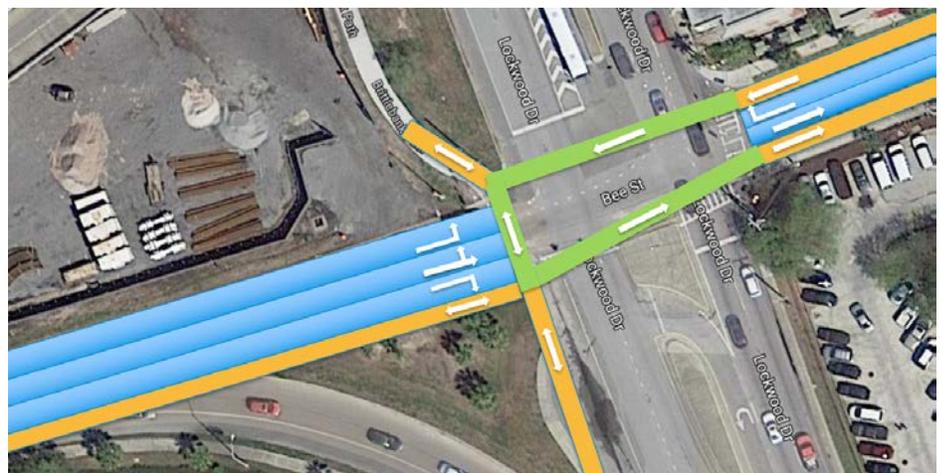


Figure 16 Ashley River Crossing landing area improvements at intersection of Bee and Lockwood. Result of a NACTO design charrette.

historic thoroughfares, including the removal of on-street parking, the narrowing of sidewalks, the integration of higher-speed one-way thoroughfares, and the insistence of maintaining high levels of service for motor vehicles only have prevented the revitalization and improved safety for non-motorized use in these areas.

For communities to be walkable, streets must be designed with pedestrian comfort and safety as critical goals along with the safe and efficient flow of traffic and other considerations, such as the accommodation of emergency vehicles, parking, utilities, and stormwater.

The focus for street design should be on design speed rather than the volume of traffic and the level of service, especially in urban areas.

In addition, streets should be typically narrower than conventional thoroughfares and arranged in an interconnected, gridded network; intersections should be carefully considered, and such design details as tighter curb radii should be implemented.

Per the City’s People Pedal Plan, the *Ashley River Crossing* will include Peninsula street connections.

Peninsula Street Connections

Element	Cost
Right-of-Way Acquisition	\$0
Construction	\$ 485,000
Engineering/Permitting	\$ 117,000
Contingency & Mobilization	\$ 87,750
Total	\$ 689,750

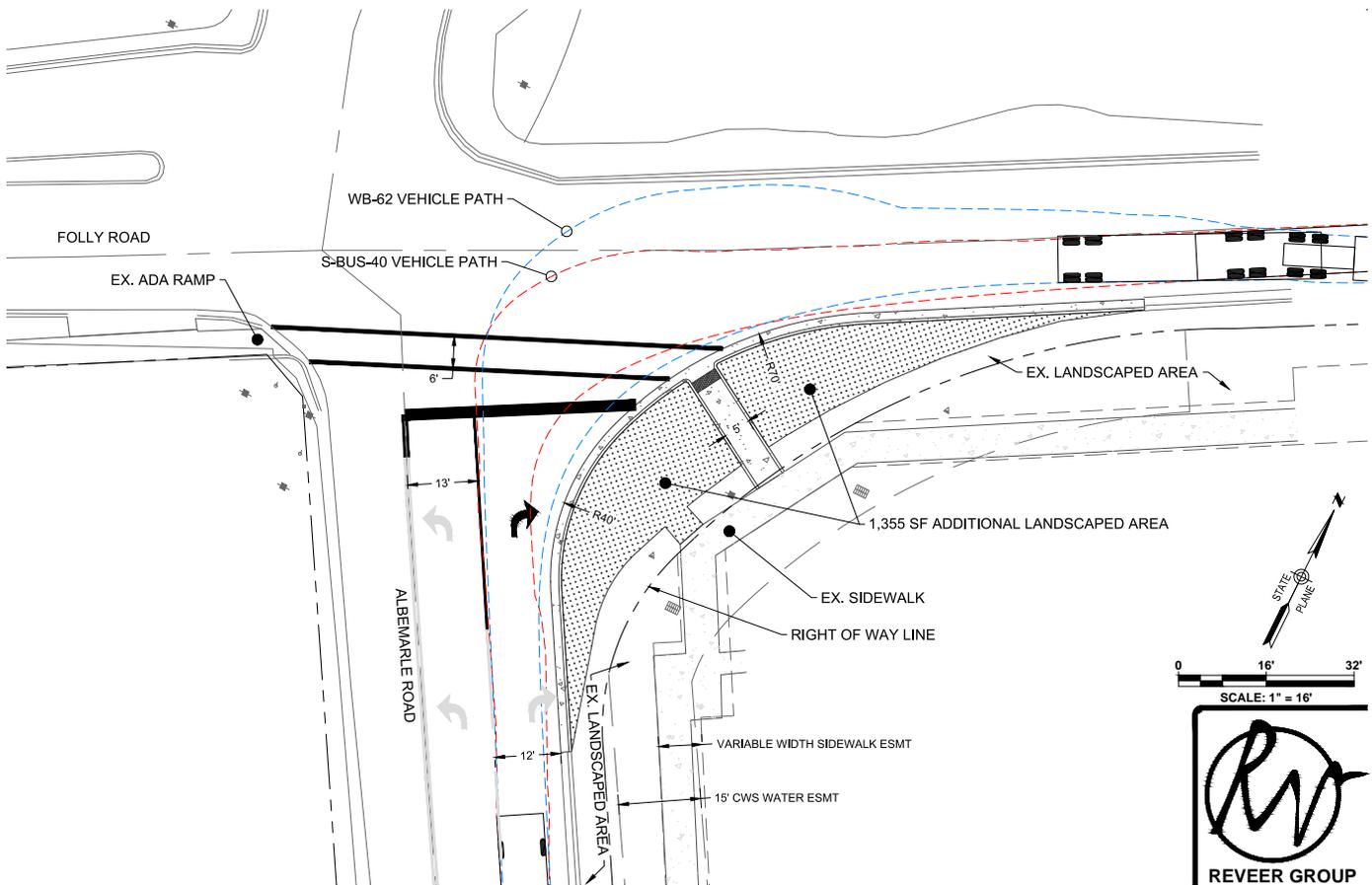


Figure 17 City of Charleston 2018 request: Charleston County Sales Tax funded intersection improvement. *Credit: Reveer Group*

Budget Narrative

In Charleston, the Charleston Regional Development Alliance’s recently completed One Region Global Competitiveness Strategy specifically recommends for additional bikeways and streets designed for pedestrian, bicycle, motorist and transit use.

The Ashley River Crossing is the anchor that ensures significant connections not just in the city of Charleston but the region.

The West Ashley Greenway currently terminates at Albemarle Drive and has no connection to the proposed Ashley River Bicycle and Pedestrian Bridge. The Greenway will connect to the existing eight-foot wide path that traverses the perimeter of the 35 Folly Apartments. The City has planned a park on the backside of the apartments and it is proposed to connect a 12’ wide path to the existing eight-foot path. The path would then wind through the City property before connecting with the proposed 20’ wide marsh boardwalk. The boardwalk would

bridge the marsh for around 1,800’ before elevating to a 1,600’ bridge over the waters of the Ashley River. The main feature of the *Ashley River Crossing* over the Ashley River will be a 160’ long lift span bridge that will raise the bridge to a minimum vertical clearance of 55’ over the Ashley River. The bridge will touch down on the Downtown Charleston side of the river and will connect to a 12’ wide path. There is an existing slip ramp off the US 17 bridge that directs drivers to southbound Lockwood Drive. The slip ramp creates a dangerous crossing for bicyclists and pedestrians. The slip ramp is proposed to be removed and double right turn lanes added to the intersection of Bee Street and

Lockwood Drive.

Once users of the path have reached Downtown Charleston, they will have the decision to go south on Lockwood toward the Battery, or continue to a signalized intersection of Bee Street and Lockwood Drive, where they could choose to cross Bee Street to head north along Lockwood toward the West Edge development and Brittlebank Park, or cross Lockwood to head east on Bee Street toward the Medical District.

A safe crossing for the Ashley River will link these key paths and parks to Downtown Charleston and the larger region.

Ashley River Crossing Costs

Element	Cost
Right-of-Way Acquisition	\$0
Construction	\$ 17,060,000
Engineering/Permitting	\$ 2,380,000
Contingency	\$ 2,160,000
Total	\$ 21,600,000



Figure 18
Conceptual rendering of stand-alone pedestrian-bicycle bridge alongside existing bridges.



Figure 19 Raised or pivoted bridge opening would be controlled by existing bridgetender operations.

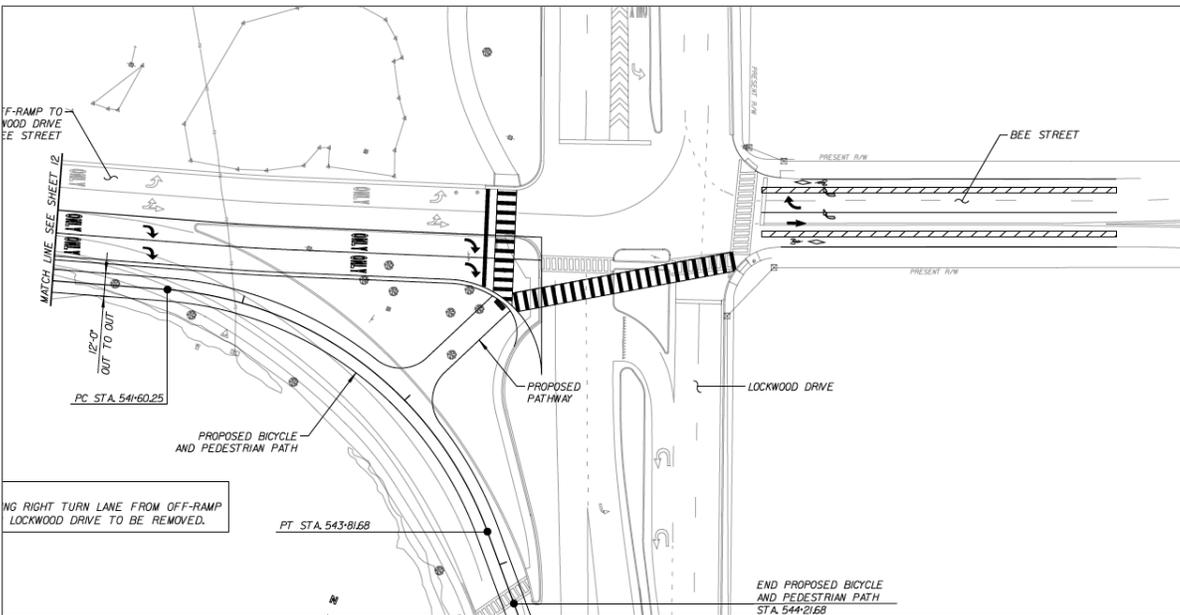


Figure 20 Ashley River Crossing landing area improvements at intersection of Bee and Lockwood.



Figure 21 Lift span with lightweight FRP Deck system supported on two steel Deck Girders with steel diaphragms and lifting girders.

Local Leveraged Funding

Over \$41 million in local bike and pedestrian project funded by the City of Charleston and Charleston County.

The West Ashley Tax Improvement Fund

On December 6, 2016, Charleston City Council passed the West Ashley Tax Increment Financing (“TIF”), a funding method and economic development tool that reallocates taxes generated from increased property values in a designated TIF district to make public investments and stimulate private investment within the district area. Funding public investments within the West Ashley TIF District through tax increment financing will enable the City of Charleston to make the necessary infrastructure and public realm improvements that will, in turn, catalyze private reinvestment in the area which will result in increased revenue

flows to all taxing entities. With a term of 25 years, the TIF District is comprised of 155 parcels and is roughly 425 acres, sixty-one percent (61%) of this area is commercial, ten percent (10%) is office, ten (10%) percent is vacant, and the remaining is residential. The West Ashley TIF redevelopment plan promotes a new vision for the area and establishes a revitalization framework for creating public spaces, recreational facilities and parks; streetscaping improvements; mobility options, improved transportation infrastructure and drainage; and mixed-use developments including commercial, office and residential. TIF is necessary to bring this revitalization plan to fruition. The 2016 assessed property values within the proposed West Ashley TIF District was \$18,216,020 and the 2041 estimated assessed property values increase to \$55,911,344. Public investment projects within

West Ashley like the West Ashley Greenway/Bikeway leading to the *Ashley River Crossing*, will help facilitate the transformation of obsolete land uses and aging corridors into vibrant redevelopment opportunities and thereby increase the tax base.

2016 Half-Cent Sales Tax Referendum

In November 2016, the citizens of Charleston County voted to add a second half-cent sales tax. The passing of this ordinance adds an additional half-cent to purchases made within the County beginning May 2017 for twenty-five (25) years, or until \$2.1 billion is collected. It is estimated that \$1.890 billion of the total will be collected for transportation-related projects with the rest going to rural and mass transit. Typically, there is \$10.5 million annually that local municipalities send request letters for in January of every year. (Resurfacing \$4 mil, Intersection \$2mil, Drainage \$.5 mil, Local Paving (dirt to pave) \$2mil, Bike / Ped \$2mil, Public Works \$1mil) Projects are ranked using an objective evaluation and prioritization process and prepared by a Transportation Advisory Board for County Council approval. The \$3 million in match dollars from Charleston County comes from the Half-Cent Sales Tax. We expect this to be an optional source for maintenance and enhancements over the life span of the bridge.



Figure 22 Public meeting for West Ashley Greenway/ Bikeway master plan.
Photo: Alta Planning

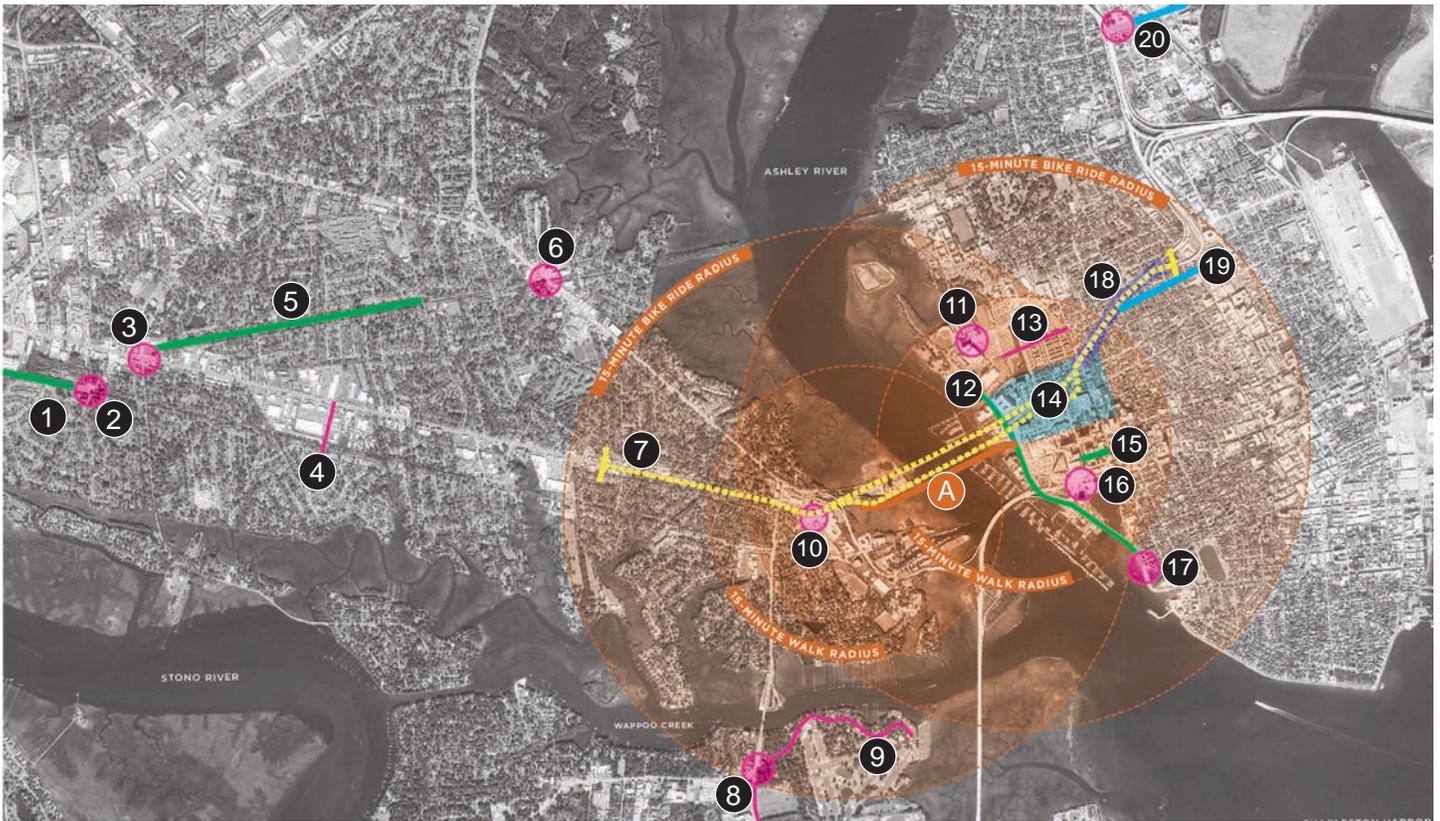


Figure 23 This map highlights investment in local bicycle and pedestrian projects.

A The Ashley River Crossing in the missing link that unlocks a cohesive network of locally funded bicycle and pedestrian projects on and off the Charleston peninsula.

Project	Improvement Type	Investment
1 West Ashley Greenway (Stinson to Parkdale)	Multi-Use Path	\$549,016
2 Stinson Street (West Ashley Greenway)	Pedestrian	\$204,000
3 West Ashley Bikeway Connector	Bikeway	\$453,481
4 Markfield Drive Sidewalk (West Ashley Greenway)	Pedestrian	\$95,000
5 West Ashley Bikeway (Plaground to Wappoo)	Bikeway	\$480,000
6 West Ashley Bikeway Crossing (US Hwy 61)	Bikeway	\$280,000
7 US-17 Corridor Study	Multi-Modal Study	\$2,000,000
8 Folly Road Sidewalk Connection (McLeod Plantation)	Pedestrian	\$225,000
9 Country Club Drive Sidewalk	Pedestrian	\$205,000
10 Folly Road at Albermarle Pedestrian Improvements	Pedestrian	\$75,000
11 Ped. Crossing with Rapid Beacon Flashers (Fishburn at Horizion)	Pedestrian	\$30,000
12 Ashley River Walk (Design and Engineering)	Multi-Use Path	\$300,000
13 Line Street Sidewalk	Pedestrian	\$20,310
14 Medical District Connector (Microsimulation Study)	Multi-Modal Study	\$100,000
15 Medical University of South Carolina Greenway	Pedestrian/Bikeway	\$30,000,000
16 Pedestrian Improvements (James Island Connector and Calhoun)	Pedestrian	\$5,000,000
17 Intersection Improvements (Lockwood and Beauvain)	Pedestrian	\$125,000
18 Advanced Ped. Signal Re-Timing (Septima Clark Pwky)	Pedestrian	\$108,000
19 Line Street Two-Way Conversion	Pedestrian/Bikeway	\$24,000
20 Brigade Street Bicycle and Pedestrian Improvements	Pedestrian/Bikeway	\$740,000
Total Local Investment in Bicycle and Pedestrian Projects		\$41,013,807

IV. Merit Criteria

Primary Selection Criteria:

A Safety

The Ashley River Crossing is designed to improve mobility safety for all transportation users, yielding a reduction in accidents for automobile users, pedestrians, and bicyclists.

In December of 2014, South Carolina Department of Transportation (SCDOT) unveiled the 2040 Multimodal Transportation Plan. In that plan, a set of goals and guiding principles were outlined including Safety and Security. The goal states to, “Better integrate safety improvements for bicycle, pedestrian, and other non-vehicular modes in preservation programs by identifying opportunities to accommodate vulnerable users when improvements are included in an adopted local or state plan.”

The numbers regarding the lack of safety for non-motorized users at the state and local level are staggering. According to the Governors Highway Safety Association, South Carolina is third in the nation for pedestrian fatalities per 100,000 population.⁷ From 2011 to 2015, the city of Charleston has had the highest rate of pedestrian fatalities in the entire state.⁸ According to the city

Police Department’s bicycle and pedestrian crash data from 2015 to 2017, we have had 14 deaths and 510 injuries. To put that in perspective, our metro region has a higher Pedestrian Danger Index than large cities like Los Angeles, Denver, Philadelphia Chicago and Washington DC.⁹

Beyond walking and bicycle use, the Ashley River Crossing Plan is designed to enhance mobility safety for all transportation users and yield a reduction in accidents for automobile users.

The study area in its current state is unsafe for pedestrians and cyclists. During the Ashley River Crossing Planning process, it was noted that the current bridge facility with its existing narrow sidewalk is unsafe for pedestrians and bicyclists. If a pedestrian or cyclist currently uses the facilities, their safety is compromised. With no other multi-modal options to connect these land masses, a safe alternative is highly needed.

Mobility safety for all transportation users.

Safety

Accident reduction due to mobility safety for all transportation users.

BENEFIT

\$153,931,744

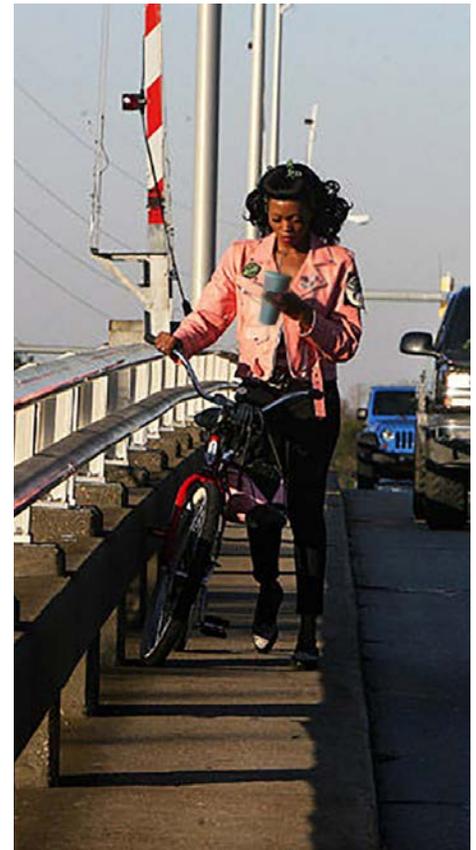


Figure 24
The current condition is unsafe.

7. Pedestrian Traffic Fatalities by State, Governors Highway Safety Association 2017 https://www.ghsa.org/sites/default/files/2018-03/pedestrians_18.pdf
8. South Carolina’s Highway Safety Plan FFY 2018, Office of Highway Safety and Justice Programs SC Department of Public Safety Updated August 30, 2017 https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/south_carolina_fy2018_hsp.pdf
9. Dangerous By Design 2016 Smart Growth America <https://nextcity.org/pdf/dangerous-by-design-2016.pdf>

Primary Selection Criteria:

B State of Good Repair

The Ashley River Crossing Plan is consistent with long-term transportation objectives in the region and nation by encouraging maintenance and operation savings.

The proposed improvements to the *Ashley River Crossing* study area will improve existing, substandard roadway conditions. The majority of the existing roadway conditions within the study area need immediate repair and repaving in order to sustain an elongated lifespan. Intersection approaches should permit motorists, pedestrians, and bicyclists to observe and react to each other. Intersection approaches should, therefore, be as straight and flat as possible, and adequate sight distances should be maintained. Motorists traveling at slower speeds have more time to perceive and react to conflicts at intersections.

Prime examples of the substandard roadway conditions include Bee Street and Lockwood Drive in Downtown Charleston as well as various sections of

Savannah Highway (US 17), Folly Road, and Albemarle in West Ashley. Specifically, Folly Road is a regional road that is overdue for repaving and maintenance. The proposed improvements to these roadways will increase the pavement lifespan as well as decrease the lifecycle costs associated with the existing and proposed roadways within the study area.

Improve efficiency through network capacity and reduce maintenance costs by encouraging non-motorized transportation alternatives.

The Ashley River Crossing Plan is consistent with the long-term transportation objectives in the region and nation. The plan will improve efficiency through an

increase in network capacity and a reduction in maintenance costs by encouraging non-motorized transportation alternatives. Completion of all phases of the project will have far reaching impacts on maintenance and lifecycle costs as well as user mobility options for residents and visitors. At the local level, the plan will serve as a regional connection between the east and west corridors of the metropolitan area.

State of Good Repair
Maintenance and operations savings attributed to the *Ashley River Crossing*.

BENEFIT
\$25,498,120



Figures 25 Existing conditions in West Ashley near the *Ashley River Crossing*. Intersections are incomplete and dangerous.

Primary Selection Criteria:

C Economic Competitiveness

The Ashley River Crossing Plan will make a positive impact the economic competitiveness of all areas in the study area.

Commuters

Employees commuting from their homes in West Ashley to their jobs downtown, can expect savings on fuel and vehicle repair through a car-free connection. Transportation cost savings can be beneficial as the average pay for all occupations in the Charleston metropolitan area is \$43,560 according to the most recent data from the U.S Department of Labor. The average pay for a restaurant cook is \$23,700, and with over 40% of those workers living in West Ashley, they are crossing the Ashley River every day to get to work.

Mobility options and access improvement to employment centers also reduces transportation costs per household through the reduction of VMT. These household cost savings directly result in a more efficient use of dollars, translating into an economic advantage. Employees can also benefit from a reduction in travel times and an increase in accessibility to employment centers. By doing so, the regional economy can expect a boost in worker productivity and improvement in the overall quality of life.

Revitalization of West Ashley

The investment in the *Ashley River Crossing* includes the supporting infrastructure for the projects and the immediately surrounding street network. Continued support for revitalizing the study area by transforming the transportation and connectivity will further encourage private investment and redevelopment. Public and private redevelopment investments will create new employment opportunities and maximize appreciated land and quality of life value for the city. Walkable, compact development creates efficiency in public services by reducing the additional resources consumed by sprawl.

In a study completed by the Victoria Transport Policy Institute, the cost to service a lot with a density of 1 unit/acre is estimated at \$5,052/year per unit. Correspondingly, servicing a density of .5 units/acre is estimated at \$10,104/year per unit. In the Study Area, more compact development is expected to provide a cost savings in infrastructure (e.g., roads, utilities) and governmental services (e.g., schools, public safety). These savings can then be used on other projects in the region, thus improving the economic competitiveness of the region. The sum total of the infrastructure calculations is based on the efficiency of resources for the study area.

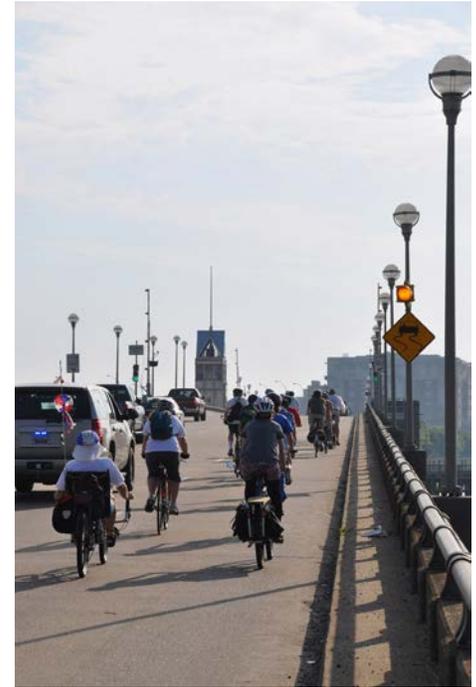


Figure 26
Organized ride across the T. Allen Legare Bridge for Bike-to-Work Day, 2011.

Economic Competitiveness

Increase in savings on fuel, savings on vehicle repair, value created by bicycle commuting, value created in relation to parking, land values by activating new mixed-use centers, and wages of created jobs.

BENEFIT

\$416,916,398

Downtown Charleston

In total, 73,636 jobs are accessible from a 20-minute bike ride of the bike path from Downtown Charleston.

Collectively, 5,250 people are employed at the College of Charleston, the Citadel, the School District, Charleston County offices, and the City of Charleston. Additionally, a combined 18,125 students attend MUSC, the College of Charleston and the Citadel. Looking toward future growth, Charleston is becoming a prime location for information technology jobs and corporations, thanks in part to the Charleston Digital Corridor. Notable companies include

SnagAJob, BoomTown, and Blue Acorn. The developing West Edge district will, at completion, house 2,500 new residents, have 4,280 new jobs, 1,000 hotel rooms and over 1 million square feet of office and retail space all located at the base of the proposed *Ashley River Crossing*.

In addition, several major hospitals are located in the downtown area: Medical University of South Carolina Medical Center (MUSC), Ralph H. Johnson VA Medical Center, and Roper Hospital. The downtown medical district is experiencing rapid growth of biotechnology and medical research industries coupled with substantial expansions of all

the major hospitals. Together 20,000 employees work at MUSC, Roper Hospital and the Veterans Affairs Hospital, the largest concentration of employees in the Charleston region. These institutions are all located immediately adjacent to the proposed *Ashley River Crossing*.

Finally, the Downtown Charleston area has 345 food and beverage establishments and 45 hotels. The hospitality industry employs 7,700 workers. 60% live outside Downtown Charleston. Regardless of where they live, 80% drive their cars to work.

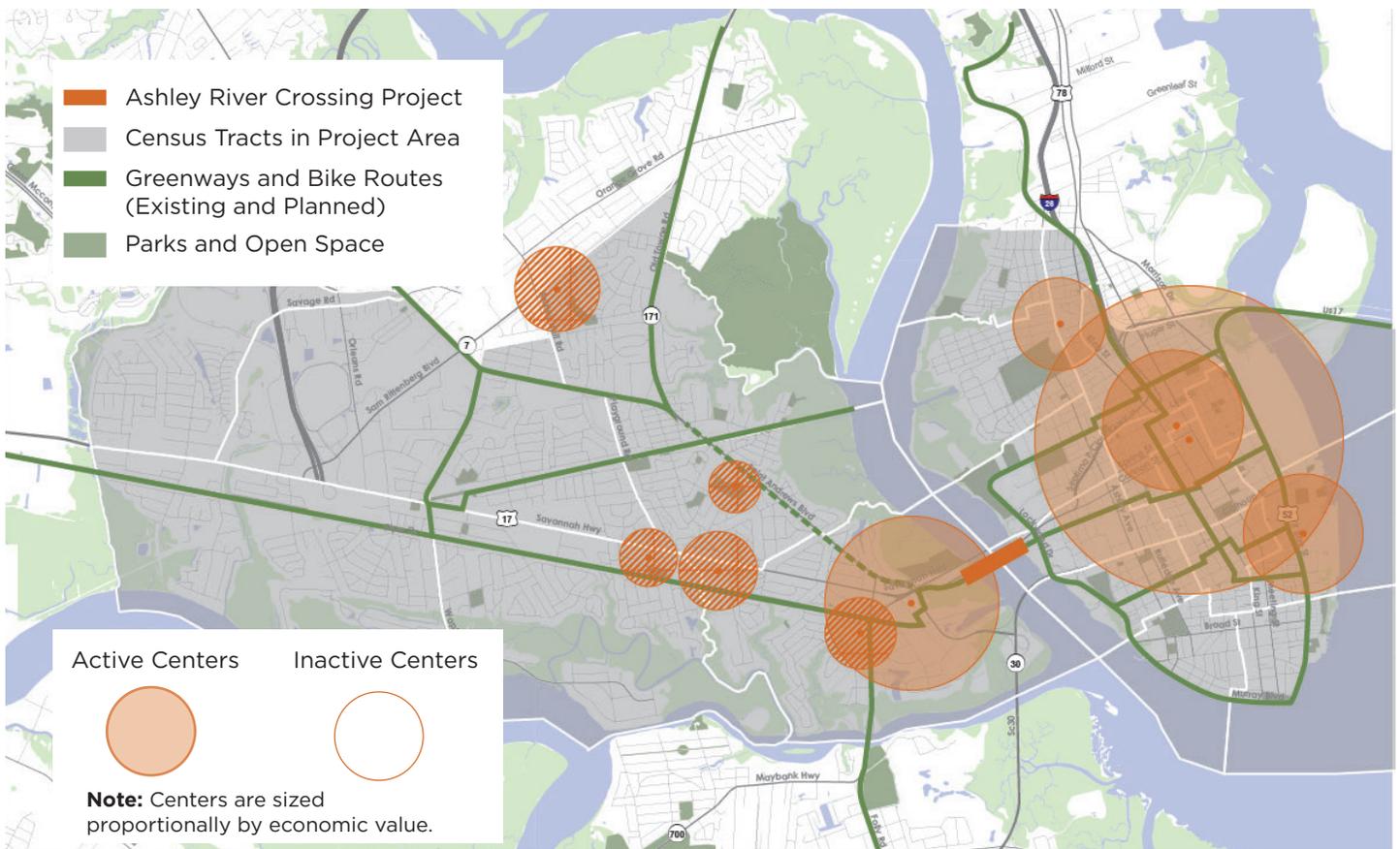


Figure 27 This map highlights inactive centers in the study area that will become revitalized as part of this project.

Primary Selection Criteria:

D Environmental Protection

A sustainable Ashley River Crossing will save over 66,210,550 vehicle miles traveled in 30 years.

The Crossing will reduce greenhouse gas emissions in diverse activity centers on both sides of Ashley River. Using the calculations provided by the Congestion Mitigation and Air Quality Improvement guidelines for Charleston County, it is presumed that by constructing the *Ashley River Crossing*, there will be a direct reduction of over 66,210,550 vehicle miles traveled over a 30-year life-cycle from the user growth of pedestrian and bike users parallel to/from West Ashley and Downtown Charleston. This is based on an average multi-use path trip of 4.275 miles (the average of a daily bike trip and pedestrian trip). In addition to the VMT reduction from an increase in bicycle and pedestrian use, there is also a reduction that occurs from the change in land

use in the Ashley River Bridge Redevelopment District.

A recent study completed by the Urban Land Institute conservatively estimated that there will be a 20% decrease in VMT as a result of developing land in a walkable, compact form. By applying this figure to the study area, there is a reduction of over 39,643,000 VMT over 30 years. This translates into over \$3,278,782 dollars in savings through the reduction of greenhouse gas emissions.

The Crossing will reduce greenhouse gas emissions.

The City of Charleston recognizes that compact development, as prescribed by the approved land use code, can be achieved by creating a multi-modal transportation network. The City of Charleston Comprehensive Plan and Zoning Ordinance recommends walkable, compact, and mobility friendly

development patterns that are dependent on a walkable street network. The boundaries of the study area include street sections and building types that will transform the area into a complete, compact, connected community. *The Ashley River Crossing* is a critical step to achieve the transformation and facilitate these land use changes and further encourage walkability and connectivity.

Creating a multi-modal transportation network will facilitate compact development prescribed by the approved land use code.

Environmental Protection

Reduction in pollutants by constructing the Ashley River Crossing.

**BENEFIT
\$5,580,865**

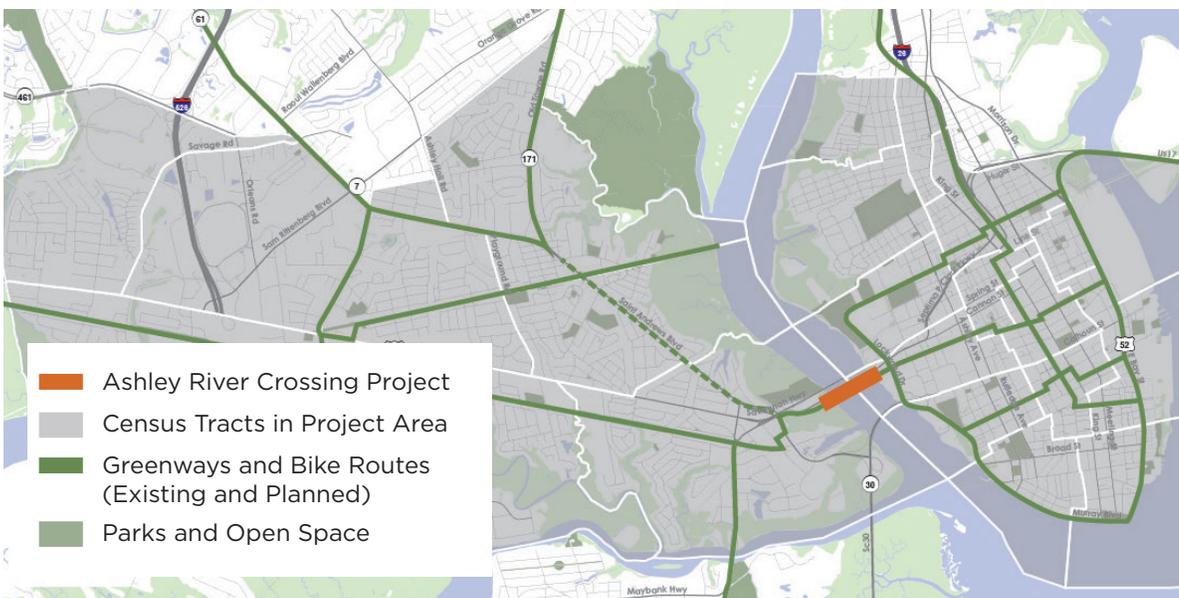


Figure 28 Green network in the study area.

Primary Selection Criteria:

E Quality of Life

Improve livability through compact, connected, walkable development while providing more transportation choices.

The Ashley River Crossing expands transportation choice by adding intersection improvements connecting the West Ashley Greenway to the Ashley River Bike-Ped Bridge, constructing Peninsula Street Connections, and a new standalone non-motorized bikeped bridge connecting residents to a variety of services and daily needs. These improvements will reduce the overall VMT in the study area by a combined 39,643,000 miles. This translates to more dollars spent in the local economy on goods and services as opposed to transportation.

Promote equitable, affordable housing.

It is estimated at a 30-year build out, the study area will add 1,125 additional housing units by improving the transportation and aesthetics of the area. These units will be models of compact, complete, and connected development. Balancing daily needs with housing and transportation costs creates an inequitable environment in these households. Reducing the cost of transportation for the study area population will relieve disposable income for use in other sectors, including housing.

Enhance economic competitiveness.

Economic development opportunities are enhanced through the value of compact, walkable development. The employment base of the Charleston MSA is one of the fastest growing in the Nation. Substantial numbers of competitively priced employees, with a variety of skills, training, and high educational attainment, are available to new, expanding, or relocating business and industry.

The project will improve transportation equity for disadvantaged residents.

As previously discussed, the study area serves an area that includes a number of disadvantaged residents. This directly correlates to limited transportation options and a greater percentage of household income spent on transportation. Creating a walkable, multimodal district will improve transportation equity for surrounding residents and link them to important resources and the largest employer in the Charleston Region: The Medical District.

In addition to providing mobility options to the economically disadvantaged the *Ashley River Crossing* provides options for residents who do not have other means of transportation

including children and senior citizens. By providing options, these residents can access recreation, local shops, and other services.

Coordinate and leverage federal policies and investment.

The Ashley River Crossing is a public-private partnership that includes \$7.7 million of already leveraged investment in public and private dollars for transportation improvements and private developer investment. The investment in the study area shows a commitment from the region to make smarter infrastructure choices that build on the principles of the *Ashley River Crossing*.

Quality of Life

Health benefits to commuters from switching to active modes of transport, health benefits to other active transportation users, reduction in chauffeuring, and reinvestment of savings on vehicle costs in the community.

BENEFIT

\$84,359,278

Secondary Selection Criteria:

F Innovation

Innovative Technology: Adaptive Signal Control

In order to improve vehicular mobility throughout Downtown Charleston, signal operations must be optimized through state of the art signal management systems. The most promising is the Adaptive Signal System, which adjusts signal phase order and duration based on real time measured traffic demand. The second generation, In-Sync version of this new technology is well suited to Downtown Charleston. Conventional operating procedure involves field data collection of traffic demand data, tabulated by 15-minute periods for selected days. Timing plans are then synthetically modeled and optimized to serve both routine and special periods. Daily, weekly, and seasonal patterns are developed, at significant expense, by trained staff and inserted into the signal controllers.

The City of Charleston's Department of Traffic and Transportation through a maintenance agreement with SCDOT manages the all of signals within the city boundaries. In 2017, the department competed the signal retiming in all of West Ashley and along US Hwy 17 known as the Septima P. Clark Parkway, or simply the Crosstown. The primary thoroughfare connecting the Peninsula and West Ashley, traffic counts for both automobile and pedestrian traffic was measured to better understand signaling and roadway design

needs. In anticipation of the *Ashley River Crossing*, this knowledge helps identify focal points for new signal technology. Adaptive Signal Control Technology [ASCT helps by adjusting these initial timing patterns. Real time data collection, second by second, can detect deviations from the traffic pattern measured manually, up to several years earlier. The ability to adapt to the best timing sequence and duration from measured real time conditions is the main strength of the second generation of ASCT.

Innovative Technology: Conceptual Bridge Structure, Mechanics and Integration

The Bridge approaches through the marsh area will consist of a cast-in-place concrete superstructure supported by concrete piling. Metal railing will be provided per ADA requirements for pedestrians and bicycle traffic. Upon reaching the *Ashley River Crossing* the bridge span lengths will increase to approximately 70' in length to match the existing Ashley River Bridge. This will allow for minimal changes to the existing river hydraulics due to the new and old substructures aligning. The superstructure across the Ashley River will consist of pre-cast, pre-stressed concrete cored slabs supported by concrete piling. At the movable lift span, concrete towers will support a steel superstructure. The lift span will consist of a lightweight FRP Deck system supported on

two steel Deck Girders with steel diaphragms and lifting girders. The bridge towers are proposed to be pre-cast segmental concrete. Mechanical and Electrical equipment is located at the top of the towers which can be accessed by interior staircases inside the concrete towers.

Innovative Project Delivery and Financing

Upon implementation of the *Ashley River Crossing*, the City of Charleston will deliver an innovative project delivery method through private-public partnerships as demonstrated in the Primary Selection Criteria Section: Partnerships. The City of Charleston has incorporated both traditional and innovative financial management practices as described in the Primary Selection Criteria Section: Non-Federal Revenue for Transportation Infrastructure Investments.



Figure 29 City of Charleston Department of Traffic and Transportation Signals staff retiming a major intersection.

Secondary Selection Criteria:

G Partnership

The Ashley River Crossing is a model public-private partnership.

No other innovative transportation project in the region has brought together multiple jurisdictions like the *Ashley River Crossing*. With the support of Governor Henry McMaster and the Secretary of SCDOT to improve the efficiency of all modes of transportation, the City of Charleston and County of Charleston Councils unanimously approved the standalone concept. Through the effort of those governing bodies and the support of the Medical University of South Carolina, \$4.6 million in local matching funds has been allocated. Additional support by the Berkeley Charleston Dorchester Council of Governments, and Charleston Area Regional Transportation Authority, state and federal officials acknowledge both the opportunity and precedence the *Ashley River Crossing* will set for the State of South Carolina.

The many studies that have been done on connecting West Ashley and Downtown Charleston are clear that creating safe and connected opportunities for mode

shift will decrease stress on the existing network, increase the investment potential of the City of Charleston, and improve the mobility of our workforce.

Partnership with the National Association of City Transportation Officials

As a member of the National Association of City Transportation Officials (NACTO), the City of Charleston held a Digital Design Charrette in July 2017 to present the *Ashley River Crossing Plan* to transportation and planning officials from the cities of New York and Vancouver. The city officials made a thorough assessment of previous plans, especially on the option of a standalone structure as well as the needed improvements to connect the West Ashley Greenway with intersections on both sides of the land masses. As cities that have accomplished establishing innovative dedicated infrastructure for non-motorized use, the City of Charleston garnered best practices from their work in anticipation of the BUILD FY 2019 grant process.

Regional Advocacy Partners

Though the overwhelming support for the *Ashley River Crossing* has included bike and pedestrian advocacy groups, the leaders in this effort with the City of Charleston have primarily been community leaders, major employers and developers. With the support of organizations like the Charleston Metro Chamber of Commerce, the Charleston Regional Development Alliance, Charleston Housing Authority, Charleston Convention and Visitors Bureau, and the Historic



Figure 30 City of Charleston Mayor with recently-launched bike share program bicycle. The City partnered with MUSC and Gotcha Bikes in a public-private partnership to deliver the system. Photo: SEVEN Design

PARTNERSHIP

BENEFIT

\$4,600,000

Charleston Foundation, there is a clear understanding of the importance of the missing piece in our roadway network. As a result, we are able to move forward with the *Ashley River Crossing* as a public-private partnership.

Charleston Parks Conservancy

Founded in 2007, the Charleston Parks Conservancy unites local resources, leverages support, and organizes volunteers to be stewards of Charleston’s urban parks. In 2009, they completed the West Ashley Greenway Master Plan, a conceptual framework for future improvement of the Greenway, including improvements to the Greenway corridor as well as definition of nodes and connections to the surrounding neighborhoods. From June 4th to 7th 2018, the Charleston Parks and the City of Charleston hosted the West Ashley Greenway & Bikeway Community Design Workshop for the public to help shape future improvements of

the Greenway and Bikeway. Out of this process new concept designs and cost estimates were derived to both update the West Ashley Greenway Master Plan as well as support the “West Ashley Greenway to Ashley River Bike-Ped Bridge Mobility Project” outlined in the Improved Mobility Options portion of this application. The design process also includes a public art program. Last year, the Charleston Parks Conservancy received a \$50,000 grant from the National Endowment for the Arts for a project that would add public art activities along the West Ashley Greenway and Bikeway. Temporary public art and arts programming will be incorporated into the master plan.

Charleston Moves

Charleston Moves is a nonprofit organization advocating for enhanced conditions for walking and riding a bike in Charleston County. Their work hinges on three approaches to creating a safe, connected, and livable

environment: advocacy, safety and community. Charleston Moves was formed in the mid-1990s as the Charleston Bicycle Advisory Group (CBAG) with the goal of bike and pedestrian accommodation on the Ravenel Bridge to connect Mt. Pleasant and Downtown Charleston. Since then, the dedicated 2.5-mile lane has undoubtedly become the most popular bike and pedestrian facility in the state of South Carolina. CBAG changed its name and adopted pedestrian advocacy into its mission to form what is now Charleston Moves. Charleston Moves provides advocacy and community leadership to transform Charleston into a bike and pedestrian-friendly region. With 350 members in business, development, and community leadership, and over 14,000 activists, they have led the charge on ensuring that the *Ashley River Crossing* is an example a public-private partnership for major nonmotorized transportation infrastructure. With over 220 support letters from local governments, small businesses, neighborhood councils, schools, public agencies, medical facilities and advocacy groups, garnered through the leadership efforts of Charleston Moves, a clear outcry for safer mobility across the Ashley River in indisputable.



Figure 31 2019 Bike To Work Day across the Ashley River Bridge.
Photo: SEVEN Design / Charleston Moves

The Medical University of South Carolina

The Medical University of South Carolina (MUSC) is South Carolina's only comprehensive academic health science center. Founded in 1824 as the first medical institution in the southern United States, MUSC's main campus is located on more than 50 acres in the city of Charleston. Since its founding, the university has awarded more than 36,000 degrees and grown from a small medical school to an academic health science center comprised of a 700-bed referral and teaching hospital and six colleges with more than 1,700 faculty educating approximately 3,000 students annually.

As the largest non-federal employer in Charleston, the university and its affiliates have collective annual budgets in excess of \$2.3 billion, with an annual economic impact of more than \$3.8 billion and annual research funding in excess of \$250 million. MUSC accounts for 12 percent of the Charleston area economy, being directly or indirectly responsible for one in every 12 jobs.

In January 2017, Roper St. Francis Healthcare, MUSC Health, and Trident United Way launched Healthy Tri-County, a multi-sector regional initiative to improve health outcomes in Berkeley, Charleston, and Dorchester counties. With more than 80 volunteers representing 60 organizations investing roughly 2,300 hours in the development of

the Tri-County Health Improvement Plan (TCHIP) a goal was set to improve the health and well-being of every person and community within the Tri-County area.

One of the goals included increasing access to quality health care and services (including medical, clinical preventative, behavioral health and dental) by supporting the reduction of transportation barriers. MUSC's commitment of a \$100,000 private match is indicative of the importance of this project and its impact on both the community, business, and health sector.



Figure 32 Roper Hospital CEO Stephen Porter, MUSC President David Cole, Charleston Mayor John Tecklenburg and Ralph H. Johnson VA Medical Center Assistant Director Felissa Koernig on the Medical District Greenway. (Photo: Sarah Pack)



Figure 33 Master Plan for the Medical District Greenway. Credit: Design Works

V. Project Readiness

With the finalized engineering plans and an unprecedented level of regional support, the *Ashley River Crossing* is ready for project implementation.

Project Timeline

- **June 2018**
Project Approval from City Council
West Ashley Planning Charrette Completed
- **July 2018**
Ashley River Crossing Conceptual Design and Engineering Completed, City Wide Transportation Plan Approved by City Council
- **September 2018**
City Council Approval of the amended West Ashley Master Plan
- **July 2019**
Submission of BUILD FY 2019 Grant Application
- **November 2019**
Notification of BUILD FY 2019 Grant Award
- **January 2020**
Begin Phase I, “Enhancing Connectivity: West Ashley Greenway/ Bikeway and Peninsula
Procurement and begin the labor process.
- **February 2020**
Procurement of Retiming Signal for Peninsula through SCDOT and City agreement
- **April 2020**
Completion of Phase I

June 2020

Begin Phase II, Ashley River Crossing: Standalone Bridge

- Permits Secured and Construction Begins (24-month construction period expected)
- NEPA Approval
- Meet all federal requirements to move forward
- Mobilization: two weeks
- Install fifty drilled shafts (construct eight for movable span first): thirty weeks
- Columns and caps would start early, but finish twenty weeks after last drilled shaft
- Superstructure erection time would depend on type selected, but assume one prefabricated or pre-cast unit per span: ten weeks after last cap complete, incorporating lead time
- Erect Movable Span: six weeks, assumes fabrication and delivery can be accomplished in the prior 42 months)
- Install Electrical, Mechanical, and Lighting:
 - six weeks
 - Install controls, balance and test/trouble shoot movable span: four weeks
- Demobilization: two weeks

June 2023

Completion of Phase II

Technical Feasibility

Though no portion of the Ashley River Crossing bridge has begun construction, investments in intersection improvements at the approaches have occurred. With various stages of planning and design in place, project partners are ready to proceed and, if awarded, all BUILD funds will be obligated during the years 2019—2021, with total project completion estimated by 2023 with assistance from the South Carolina Department of Transportation (SCDOT).

Assessment of Project Risks and Mitigation Strategies

With over 220 support letters for this project from elected officials, businesses, neighborhood councils, and advocacy groups, the desire for safe access along the Ashley River for non-motorized use is overwhelming.

The local funding for the project along with our grant request enables us to move diligently even as Charleston Moves and its partners meet their pledge. Charleston City Council approved \$1.5 million, as well as \$120,000 of funding towards conceptual designs and engineering for the *Ashley River Crossing* which are incorporated in this application.

The conceptual designs for the West Ashley Greenway/ Bikeway improvements, thanks to the partnership of Charleston Parks Conservancy, also included in this application, are ready for final design and construction.

Charleston County has been a big supporter of this project having already allocated a \$3 million match to construction, added projects like the 61 West Ashley Bikeway Crossing to the sales tax funding for 2020, and left the door open to increase the match to \$5 million pending awarding of this application.

To minimize project delivery delays, the City of Charleston, SC, will work with the South Carolina Department of Transportation (SCDOT), who will serve as the grant administrator, to ensure compliance with all Federal and state requirements are met to allow the project to be obligated in advance of the September 30, 2021 obligation deadline.

Moreover, the City of Charleston is confident that all BUILD grant funds will be expended well in advance of the September 30, 2026 expenditure deadline. We are excited at the prospect of the *Ashley River Crossing* being an example of a public private partnership but also acknowledge that we must be diligent in our risk mitigation strategy.

Required Approvals

At this time, the City of Charleston has not built any portion of the *Ashley River Crossing* with federal funds that would require them to comply with the National Environmental Policy Act (NEPA). A preliminary examination of the impacts involved in the *Ashley River Crossing* proposal, and discussions with the Federal Highway Administration's (FHWA) South Carolina Division,

indicates that the project will require, at a minimum, a Section 6002 Environmental Assessment to obtain FHWA approval, especially given the fact that the project includes construction of a crossing across a navigable waterway. As part of the NEPA process, the City of Charleston, with assistance from the SCDOT, will coordinate with the U.S. Coast Guard, the Army Corps of Engineers, the State Historic Preservation Office (SHP), and all other state and Federal agencies with interest in this project.

The City owns Brittlebank Park and has an easement agreement for the walkway at the Bristol Marina. The City has moved forward with the Ashley River Walk, a combination of bikeway and promenade that will ultimately link the City's baseball stadium on the Ashley River with the South Carolina Aquarium on the Cooper River. The City has obtained a permit from the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (OCRM) for the project.

With this addition, and existing relationships with permitting officials, the city is confident that the *Ashley River Crossing* will be permitted within the September 30, 2021 obligation deadline.

VI. Project Costs and Benefits

The Project Cost and Benefit Analysis focuses primarily on the project components that can be measured in terms of quantitative data and monetary value. The analysis includes the following aspects of the BUILD proposal, which are described in more detail in other sections of this proposal:

Phase 1

Build and improve pedestrian, equine, and cycling infrastructure to create a connection between the West Ashley Greenway, Bikeway, and new *Ashley River Crossing*.

Phase 2

Build the new, modern *Ashley River Crossing* over the Ashley River to carry non-motorized traffic safely across for the first time since ferry service was discontinued in the 1920's, without disturbing motorized traffic.

For the purposes of this analysis, the costs and benefits were measured for a 33-year time

frame (2019 – 2052). BUILD project funding is assumed to be procured in the baseline year (2019). Accounting for contracting, permitting, and other start-up logistics, BUILD project work is assumed to begin in 2019. All future benefits and costs are discounted to present values at 7% and 3% discount rates. As explained in the BCA Methodology in the appendix, all benefit estimates are deeply conservative. The benefit-cost analysis addresses the primary selection criteria, but several key benefits are highlighted here.

No safe crossing of the Ashley River now exists for non-motorized traffic. The proposed improvements represent an essential upgrade that will encourage increased cycling and walking for both commuting and recreation, while dramatically improving safety for all users and ADA accessibility for a total benefit in safety of \$153,931,744.

This project also represents a partnership between the public sector at multiple levels and the private sector. Many businesses will benefit economically from the changes in transportation modeshare, of course, but private foundations and advocacy groups have been some of the strongest advocates of this project, and have backed their words with pledges of funds. Additionally, the City of Charleston and Charleston County have pledged a local match for federal dollars. The total value of this essential Public-Private Partnership is \$4,600,000.



Figure 34 Existing bicycle conditions on the Ashley River Bridge.

Ashley River Crossing Costs

Projects	Right-of-Way Acquisition	Construction	Engineering/Permitting	Mobilization and Contingency	Total
Improved Mobility Options					
West Ashley Greenway to <i>Ashley River Crossing</i>	\$0	\$300,000	\$70,000	\$90,000	\$460,000
Complete Streets					
Peninsula Street Connections	\$0	\$485,000	\$117,000	\$87,750	\$689,750
Enhanced Connectivity					
<i>Ashley River Crossing</i>	\$0	\$17,060,000	\$2,380,000	\$2,160,000	\$21,600,000
Total Project Cost					\$22,749,750
Local Match					\$4,600,000
Requested BUILD Funding					\$18,149,750

Benefits by Selection Criteria	Total Discounted Benefits over 20-Year Period
Safety	
Mobility Safety – Vehicle Transportation Users	\$2,562,116
Reduction in Automobile Accidents	\$4,219,956
ADA-Accessible Trail	Qualitative
Safety Benefits to Pedestrians and Cyclists	\$153,931,744
State of Good Repair	
Construction and Ancillary Improvement Cost	(\$22,749,750)
Preventative and General Maintenance	(\$2,748,370)
Hazard to Navigation in Construction Period	Qualitative
Residual Value of Bridge and Infrastructure	\$13,649,850
Economic Competitiveness	
Fuel Savings	\$6,356,213
Vehicle Repair Savings	\$4,551,104
New Value of Bicycle Commuting	\$4,298,116
Parking Benefit	\$1,055,494
Land Value Change at all Activity Centers	\$400,655,471
Wages of Direct, Indirect, and 1st Order Induced Jobs	Qualitative
New Job Access	Qualitative
Environmental Protection	
NOx Reduction	\$209,439
Particulate Reduction	\$5,311,677
VOC Reduction	\$59,749
Quality of Life	
Health and Recreation Value- Bicycling	\$68,791,160
Health Benefit- Bicycling (Commute)	\$207,206
Health Value- Walking (Commute and Recreation)	\$6,760,351
Reduction in Chauffeuring	\$5,124,233
Reinvestment in Community	\$3,413,328
Innovation	
Savings Compared to Other Bridge Types	Qualitative
Partnership	
Local match for Project Costs	\$4,600,000
Non-Federal Revenue for Transportation Infrastructure Investment	
Accrued Tourism Benefit	\$1,963,994
TIF Benefits	Unquantifiable
TOTAL BENEFIT (less costs)	\$662,286,082
Ratio of Benefit to Cost	\$26.97
Ratio of Benefit to Grant Requested Funds	\$56.26
TOTAL BENEFIT Discounted 7%	\$662,788,973
TOTAL BENEFIT Discounted 3%	\$667,751,652