



NEPA ENVIRONMENTAL COMMITMENTS

Date: 9/15/2022

Project ID: P027507	County: Charleston	District: District 6	Doc Type: EIS	Total # of Commitments: 65
Project Name: I-526 Lowcountry Corridor West				

The Environmental Commitment **Contractor Responsible** measures listed below **are to be included in the contract and must be implemented**. It is the responsibility of the Program Manager to make sure the Environmental Commitment **SCDOT Responsible** measures are adhered to. If there are questions regarding the commitments listed, contact:

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ENVIRONMENTAL COMMITMENTS FOR THE PROJECT

Special Populations	NEPA Doc Ref: Chapter 4, Section 4.3.4.3	Responsibility: SCDOT
Written translations of public involvement documents will be provided for Limited English Proficiency populations, as well as other measures determined by SCDOT to ensure meaningful access to project information during construction. Efforts will be made to ensure meaningful opportunities for public participation during construction. Additional meetings will be held when warranted to address community concerns.		

Environmental Justice – Organizational Training	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
SCDOT will provide organizational training for identified POC members and community members interested in creating a community advocacy group. The Community Office and its staff will be available to provide support and identify resources that support, at a minimum, the new group’s administrative and leadership development and strategic and community planning. The organizational training will be provided until 2024.		

Environmental Justice – Community Office	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will continue to operate and maintain a Community Office for the remainder of the project development phase and throughout the final design and right-of-way acquisition phases of the project. The Community Office will continue to be staffed with a full-time Office Manager, Community Liaisons/Outreach Specialists, and part-time Right-of-Way Specialists (transitions to full-time during Right-of-Way phase) who will be available to provide community residents with real-time project, relocation, and property acquisition information and assistance. After the FEIS-ROD is approved, the Community Office will serve as a location for residents to receive information on the proposed mitigation and the meeting place for the Project Oversight Committee and community advocacy groups. The Community Project Office will remain in operation in close proximity of the impacted EJ communities until project construction has been completed.</p>		

Environmental Justice – Community Center Facilities and Amenities; Programs and Activities	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will fund the construction of replacement recreational facilities and associated infrastructure to mitigate project impacts and satisfy Section 4(f) and Section 6(f) requirements. SCDOT and the City of North Charleston have developed an intergovernmental agreement (IGA) outlining the programs, services, structural components, and arrangements for long-term operation and maintenance of the replacement community centers and recreational facilities. Construction of the new, centrally-located community center and the pocket parks will be completed prior to the project construction impacting the existing community centers.</p>		

Environmental Justice – Community Center Facilities and Amenities; Programs and Activities	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will acquire parcels located within the affected neighborhoods and provide funding to the City of North Charleston who will oversee construction of one large, modern, centrally located community center complex with expanded programs and operating hours and two pocket parks, one within the Liberty Park neighborhood and one within the Russelldale neighborhood.</p>		

Environmental Justice – Mitigation Barriers	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT/Contractor
<p>SCDOT will construct mitigation barriers along the eastbound and westbound sides of I-26 between the I-526 and Remount Road interchanges to benefit the residents of the Highland Terrace and Liberty Park communities. SCDOT will construct mitigation barriers along the westbound side of I-526 between the Rivers Avenue and I-26 interchanges to benefit the residents of the Liberty Park community. SCDOT will construct mitigation barriers along the eastbound side of I-526 from the I-26 interchange to east of the CSX railroad tracks to benefit the residents of the Russelldale and Ferndale communities. SCDOT will construct a mitigation barrier along the eastbound side of I-526 and the eastbound exit ramp at the Montague Interchange to benefit the west side of the Camps community.</p>		

Environmental Justice – Community Air Quality Monitoring	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will develop a PM 2.5 monitoring program within the impacted EJ communities of Ferndale, Highland Terrace, Liberty Park, and Russelldale. SCDOT will provide results to their website where community members can access real time data/results. The POC will be updated on the results of this program.</p>		

Environmental Justice – Community History Preservation Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will fund a study to document the cultural history and character of the impacted EJ communities through the support of a qualified historian and photographer. The study efforts will include collecting oral history, archival research, collection of historic photography, and the development of a report that will be available for viewing online and at the community center. The Community History Preservation Study will be completed within two years of the FEIS-ROD.</p>		

Environmental Justice – Community History Preservation Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>The visual imagery components of the Community History Preservation Program will be implemented as part of the construction of the replacement community center and pocket parks.</p>		

Environmental Justice – School-to-Work Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will develop partnerships with organizations to implement school-to-work employment programs with the goal of enhancing employment opportunities within the fields of construction, planning, emerging technologies, engineering, and transportation. During the right-of-way acquisition phase, SCDOT will seek to hire up to twenty (20) high school or college students, or young adults 25 years of age or younger from the impacted neighborhoods to work as summer interns. High school and college students from the EJ neighborhoods that will be displaced and relocated by the proposed project would remain eligible for participation in the School-to-Work program. The School-to-Work Program will begin in 2023 and will end once twenty (20) students have participated in the program.</p>		

Environmental Justice – College Aid Initiative	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will establish and manage a scholarship fund of at least \$500,000. High school and college students from the impacted EJ communities that intend to or are currently attending institutions of higher education will be eligible for the scholarship. Residents of the EJ neighborhoods that will be displaced and relocated by the proposed project would remain eligible for the scholarship program. Members of the CAC will assist in the development of the selection criteria and members of the POC will assist in the selection of the scholarship recipients. The scholarships will be available for both technical and trade schools as well as four-year colleges. The College Aid Initiative will begin in 2023 and funds will be available through construction or until all scholarship funds have been awarded.</p>		

Environmental Justice – Pre-Employment Training	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>During the right-of-way acquisition phase of the project, SCDOT will identify and provide financial support for pre-employment training opportunities that encourage career placement in the transportation industry. The program will be administered through the Community Office and offered to residents of the impacted EJ communities prior to construction of the interstate improvements. Participants who successfully acquire relevant job readiness skills will be considered for the On-the-Job Training (OJT) Program implemented by the contractor selected to construct the project.</p>		
Environmental Justice – Summer Transportation Institute Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will provide skill building programs to create awareness of and expose high school students to career opportunities in the transportation industry. The program started in Summer 2022. SCDOT will provide the Summer Transportation Institute Program each summer throughout the project construction. SCDOT will prioritize students from the impacted EJ communities for up to 50% of the available slots annually during the life of the project sessions that will accommodate 15 - 20 students per program.</p>		
Environmental Justice – Careers in Transportation Education Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will provide an awareness program that increases the understanding of the transportation industry and the builds interest in the wide range of career opportunities available. This program will explore all levels of opportunities from entry level positions only requiring a high school diploma to the professional level opportunities. This program will be offered to middle school, high school, and young adults in the community. This program will begin in 2023 and will be available throughout the life of the project.</p>		
Environmental Justice – Small Business Development Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will develop an educational program to bring awareness to the generational wealth benefits that entrepreneurship can provide to the community members. SCDOT will partner with organizations and other disadvantaged business enterprises (DBE) in the state to develop and deliver an educational program that empowers those interested in learning more about starting a small business enterprise (SBE). This program will include awareness about how to access small business resources and orientation to the benefits and programs offered to SBE and DBEs through SCDOT, FHWA and other local organizations. SCDOT will also conduct DBE information sessions to provide information on opportunities to work on the I-526 LCC WEST project during design, right-of-way and construction. Additional recruitment, round table discussions and partnering sessions will be conducted once the potential prime contractors are identified for the project. This program will be begin in 2023 and will be available throughout the project until construction is substantially underway and all contracts are fulfilled.</p>		

Environmental Justice – Community Infrastructure Enhancement Plan	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will implement the Community Infrastructure Enhancement Plan (CIEP), which is a subset of improvements that will address identified infrastructure problems within Ferndale, Highland Terrace, Liberty Park, and Russelldale. Problems to be addressed include those associated with bicycle and pedestrian safety, access to community center/park amenities and transit, neighborhood entrance aesthetics, stormwater improvements, lack of bus shelter amenities, and traffic calming measures that would be implemented as part of the project. The majority of the CIEP components will be completed prior to the construction of the I-526 LCC WEST improvements. However, the schedule for construction of components such as the shared use path along Margaret Drive, the pedestrian bridges, and the pedestrian safety measures to be installed at the railroad crossing on Taylor Street may be dictated by the availability of railroad flagging operations for the I-526 LCC WEST Project, construction sequencing, and access needs.</p>		

Environmental Justice – Financial Literacy and First-Time Home Buyer Counseling	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will develop partnerships with the local organizations to provide financial literacy and first-time home buyer counseling/workshops to all residents of the impacted EJ communities. This educational offering is intended to assist participants as they attempt to secure residential loans and transition from renters to homeowners. The counseling will be initiated in 2023 and continue until the completion of the right-of-way phase in 2027.</p>		

Environmental Justice – Community Resource Guide	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will work with the CAC, Community Liaisons, and local non-profit organizations to develop a resource guide for EJ neighborhood residents. The purpose of the Community Resource Guide is to help sustain livability within affected EJ neighborhoods by increasing residents’ access to local organizations, resources, and other information on a variety of topics. The Community Resource Guide will be made available to all residents of the impacted EJ communities within six months of the approval of the FEIS-ROD. It will be updated yearly throughout the construction of the project.</p>		

Environmental Justice – Project Oversight Committee (POC)	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>A Project Oversight Committee (POC) will be established after the FEIS-ROD is approved. At that time, the POC will be tasked with overseeing the implementation of the EJ Community Mitigation Plan commitments. Prior CAC members and/or EJ neighborhood residents interested in getting involved with the project will be encouraged to participate on the POC. In addition to residents, the POC will consist of representatives of the agencies responsible for implementing the various components of the EJ Community Mitigation Plan including: SCDOT, FHWA, the City of North Charleston, North Charleston Housing Authority, and the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG). SCDOT will provide administrative support to the POC, consistent with the services provided to the CAC.</p>		

Environmental Justice - Community Meetings	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will conduct community meetings and distribute flyers throughout the implementation of the EJ Community Mitigation Plan to keep residents informed of the project schedule and to seek input on any mitigation-related commitments</p>		

Environmental Justice – Community Workshops & Information Sessions	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will work with the Community Liaisons and local non-profit organizations and community leaders to develop community workshops or information sessions of interest to tall EJ community members. These sessions will be free to residents and will provide useful resources and beneficial information on relevant topics. These workshops will be on-going throughout the life of the project to assist in maintaining regular engagement with the community.</p>		

Environmental Justice – Single-Family Affordable Replacement Housing Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will work to secure 45 vacant lots within the EJ communities and partner with a local non-profit that specializes in developing or constructing affordable housing to implement a Single-Family Affordable Replacement Housing Program. SCDOT will secure vacant lots within the EJ communities (or in close proximity), zoned for single-family or duplex homes for the purpose of constructing housing for displaced residents who would like to remain in their community. If SCDOT is unable to acquire all 45 lots within the EJ communities, additional lots for the program will be purchased in nearby communities. Some of these lots will be preserved for the construction of replacement market rate homes for displaced families that do not fall into the low-income category. The single-family housing units for qualified tenants will be built and ready for occupancy prior to these qualified residents being displaced by the project. Qualified displaced residents/tenants will be allowed to stay in their existing units until replacement housing is available.</p>		

Environmental Justice – Developer Incentive Affordable Multi-family Housing Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will partner with the South Carolina State Housing and Finance and Development Authority (SC Housing) to implement a multi-family housing program which will be funded by a minimum of \$1.5M in SCDOT grant funding, SC Housing low-income tax credits, and bond financing. The program will create a funding/finance opportunity for an affordable housing developer to submit a housing proposal that will meet housing priorities based on input from the CAC, SCDOT, POC, and SC Housing. The program will construct 100 affordable housing units with a mixture of unit sizes (1 – 3 bedrooms) for the lowest income level category within proximity of the impacted EJ communities. Multi-family housing units for qualified tenants will be built and ready for occupancy prior to these qualified residents being displaced by the project. Qualified tenants will be allowed to stay in their existing units until replacement housing is available.</p>		

Environmental Justice - Enhanced Right-of-Way Advisory Services	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will provide a full-time EJ Community Right-of-Way (ROW) Liaison to be available in the Community Office as a resource to the community. The liaison will provide advisory services to the impacted residents to ensure they fully understand their rights, benefits, responsibilities, and opportunities available. The liaison will be a resource to the residents when they need assistance in understanding any letters, offers, appraisals or other documents during the ROW process and will communicate what options may be available to the residents to address any concerns. Bilingual services for residents will be provided if required. The liaison will assist in resolving any issues or disputes that the residents may experience and assist in implementation of the Acquisition Fairness Program to ensure that appraisals are in compliance. The liaison will be available to the residents to answer any questions or concerns that arise during the right-of-way acquisition and relocation process.</p>		

Environmental Justice – First-Time Homebuyer Grant Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will implement a grant program for first-time home buyers that are residents of the impacted EJ communities and individuals relocated to other communities. SCDOT will partner with a state or federal agency or non-profit organization that is qualified to administer this type of program. SCDOT will provide funding for program administration as well as Grant funds as determined by estimated participation in the program. Since the program will be based on a sliding scale based on participant’s income, the initial budget would be based on reasonable estimates for participation rates and average income levels to initiate the program. This program will be established at the start of the right-of-way phase and be available throughout property acquisitions and relocations.</p>		

Environmental Justice - Enhanced Relocation Mitigation Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will assist displaced business owners by reimbursing reasonable moving costs, personal property losses, expenses in finding a replacement, and expenses in reestablishing their business. SCDOT will offer relocation counseling to employees of displaced businesses to minimize economic harm and provide information as to possible sources of funding and assistance from other local, state, and federal agencies. SCDOT will partner with career development and employment organizations to ensure that displaced employees are aware of and provided offerings including career development information, job search resources, and training programs. Any unanticipated business relocations in the EJ communities may also be eligible for an additional mitigation payment to cover the actual expenses in reestablishing their business above the maximum amounts allowed under state and federal law. Transportation to view comparable replacement properties will be provided for displaced business owners, residents and tenants requiring assistance. SCDOT will also assist displaced residential tenants by reimbursing reasonable moving costs and providing rent supplement payments in accordance with the Uniform Act. In addition to the benefits provided under the Uniform Act, the Enhanced Relocation Mitigation Program will allow for supplemental rental mitigation payments for up to an additional 18 months based on the displacee’s replacement rent and income.</p>		

Environmental Justice - Acquisition Fairness Program	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT will implement an Acquisition Fairness Program on this project to address community concerns over the fairness of property appraisals. SCDOT’s I-526 LCC Right-of-Way Liaison will review all property appraisals to ensure values are not decreased or damaged due to conditions that may have been created by previous public eminent domain acquisitions.</p>		

Environmental Justice – Community Mitigation Implementation Plan	NEPA Doc Ref: Chapter 4, Section 4.5.8.3	Responsibility: SCDOT
<p>SCDOT, in coordination with the FHWA, will develop a Community Mitigation Implementation Plan that provides details of the various components of the EJ Community Mitigation Plan. The Implementation Plan will include a detailed schedule that ensures the components of the Mitigation Plan are constructed to maximize the benefits to the impacted EJ communities and executed in a timely manner. The Implementation Plan will be shared with the Project Oversight Committee, evaluated yearly, and adjusted to maximize participation from residents of the impacted EJ communities.</p>		

Relocations - Environmental Justice Communities	NEPA Doc Ref: Chapter 4, Section 4.6	Responsibility: SCDOT/Contractor
<p>To the extent practicable, the contractor will attempt to limit changes in design that would result in additional displacements in Environmental Justice communities.</p>		

Relocation Assistance	NEPA Doc Ref: Chapter 4, Section 4.6	Responsibility: SCDOT
<p>Residential: SCDOT shall conduct right-of-way acquisition and relocation assistance in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (P.L. 91-646). Relocation resources would be made available to all eligible displaced residents, including tenants, without discrimination, consistent with the requirements of the Civil Rights Act of 1964 and the Housing and Urban Development Act of 1974.</p>		

Relocation Assistance	NEPA Doc Ref: Chapter 4, Section 4.6	Responsibility: SCDOT
<p>Housing of Last Resort: In accordance with the Uniform Act, comparable Decent, Safe, and Sanitary (DSS) replacement housing within a person’s financial means must be made available before that person may be displaced by SCDOT. When such housing cannot be provided under the provisions for replacement housing payments, SCDOT shall provide for Housing of Last Resort (HLR) payments in accordance with 49 CFR 24.404, which authorizes payments in excess of statutory maximums or the use of other methods of providing comparable housing.</p>		

Relocation Assistance	NEPA Doc Ref: Chapter 4, Section 4.6	Responsibility: SCDOT
<p>ROW Certification: In accordance with Federal regulations at 23 CFR 635.309, FHWA will not issue authorization to advertise the physical construction for bids or to proceed with force account construction until the SCDOT certifies that all individuals and families have been relocated to decent, safe, and sanitary housing OR that the State has made available to displacees adequate replacement housing in accordance with the provisions of the 49 CFR part 24 and that one of the criteria outlined in 23 CFR 635.309(c) applies.</p>		

Relocation Assistance	NEPA Doc Ref: Chapter 4, Section 4.6	Responsibility: SCDOT
<p>Business: SCDOT will assist displaced business owners and tenants by reimbursing reasonable moving costs, personal property losses, expenses in finding a replacement, and expenses in reestablishing the business. SCDOT will offer relocation counseling to employees of displaced businesses to minimize economic harm and provide information as to possible sources of funding and assistance from other local, state, and federal agencies. SCDOT will investigate partnerships with career development and employment organizations to ensure that displaced employees are aware of offerings including career development information, job search resources, and training programs.</p>		

Relocation Assistance – Enoch Chapel Methodist Church	NEPA Doc Ref: Chapter 4, Section 4.6	Responsibility: SCDOT
<p>To avoid the potential for additional impacts to Enoch Chapel Methodist Church, SCDOT will provide the church with elevated advisory assistance during the right-of-way acquisition phase which shall include a review of future transportation projects within the project study area.</p>		

Air Quality	NEPA Doc Ref: Chapter 4, Section 4.8	Responsibility: Contractor
<p>The contractor(s) will ensure particulate matter emissions will be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. Construction-related Mobile Source Air Toxics (MSAT) emissions will be minimized by using low emission diesel fuel for non-road diesel construction equipment. Contractor will be required to make every reasonable effort to minimize construction air quality impacts through abatement measures such as limiting construction equipment idling and other emission limitation techniques, as appropriate.</p> <p>The contractor(s) will ensure that all construction equipment is properly tuned and maintained. Idling time will be minimized to save fuel and reduce emissions. Water will be applied to control dust impacts off site. There will be no open burning of removed vegetation. Vegetation will be chipped or delivered to waste energy facilities.</p>		

Noise	NEPA Doc Ref: Chapter 4, Section 4.9	Responsibility: Contractor
<p>Based on the detailed noise analysis, the five noise barrier walls listed below were deemed reasonable and feasible. The contractor will ensure the walls are designed and constructed to provide the appropriate noise abatement based on the parameters stated in the noise assessment completed for this project, and in close coordination with SCDOT.</p> <ul style="list-style-type: none"> ▪ NW 4/6: west of I-526 between Paul Cantrell Boulevard and Ashley River Road in West Ashley ▪ NW 6a/8: west of I-526 between Ashley River Road and the Ashley River in West Ashley ▪ NW 5: east of I-526 and between Paul Cantrell Boulevard and Ashley River Road in West Ashley ▪ NW 7/9/10: east of I-526 between Ashley River Road and the Ashley River in West Ashley ▪ NW 25: east of I-526 and southwest of I-26 in North Charleston 		

Noise	NEPA Doc Ref: Chapter 4, Section 4.9	Responsibility: SCDOT
<p>SCDOT will inform local planning officials of future, generalized noise levels expected to occur in the project vicinity after FHWA has made a final decision on the Environmental document.</p>		

Water Quality	NEPA Doc Ref: Chapter 4, Section 4.10	Responsibility: Contractor
<p>During the construction process the contractor would avoid and minimize impacts resulting from stormwater runoff through implementation of Best Management Practices (BMPs), adhering to policies contained in 23 CFR 650 B and S.C. Code of Regulations 72-400. SCDOT has also issued an Engineering Directive Memorandum (Number 23), dated April 10, 2015, regarding Department procedures to be followed to ensure compliance with S.C. Code of 72-400, Standards for Stormwater Management and Sediment Reduction. Exposed areas would be stabilized by following the Department's Supplemental Technical Specification for Seeding (SCDOT Designation SC-M-810 (11-08)).</p>		

Water Resources	NEPA Doc Ref: Chapter 4, Section 4.11	Responsibility: Contractor
<p>Mitigation and other strategies as determined by requirements set forth in permits needed for the proposed project to go to construction will include SCDOT best management practices.</p>		

Floodplains	NEPA Doc Ref: Chapter 4, Section 4.12	Responsibility: Contractor
<p>The SCDOT Design Build team will coordinate with the local County Floodplain Administrator prior to the construction.</p> <p>Detailed hydraulic and hydrologic studies for each bridge crossing will be performed during final design to determine the correct sizing of bridges and culverts. The project will be designed to be consistent with local floodplain development plans. The Engineer of Record will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator prior to the project procurement date.</p>		

Floodplains	NEPA Doc Ref: Chapter 4, Section 4.12	Responsibility: SCDOT
<p>The project will be designed in an effort to meet “No-Rise” requirements. In the event a “No-Rise” condition cannot be achieved, coordination with FEMA will require the preparation of a CLOMR (Conditional Letter of Map Revision)/ LOMR (Letter of Map Revision) package for the encroachment. This includes a detailed hydraulic analysis, determination of floodplain impacts, and preparation of the CLOMR. Following construction, impacts to the floodplain would be verified prior to the issuance of the LOMR.</p>		

Floodplains	NEPA Doc Ref: Chapter 4, Section 4.12	Responsibility: SCDOT
<p>Where regulatory floodplains are defined, hydraulic structures will be designed to accommodate a 100-year (one percent annual chance) flood. Under the hurricane storm surge scenario, the project would not have a significant encroachment on the base floodplain. In a non-hurricane storm surge event, such as rainfall-driven flooding, the project would also not result in a significant encroachment on the base floodplain elevation. Where no regulatory floodplains are defined, culverts and bridges will be designed to accommodate a 50-year or greater magnitude flood event as required. Ongoing design efforts to minimize floodplain impacts will be coordinated with resource and regulatory agencies during the final design process.</p>		

Invasive Species	NEPA Doc Ref: Chapter 4, Section 4.13	Responsibility: Contractor
<p>Executive Order (EO) 13112, amended by EO 13751, sets guidelines for executive departments and agencies to take steps to prevent the introduction and spread of invasive species. To meet the intent of these EOs, the Department will ensure no invasive species shown by the USDA-SC Invasive Noxious Weeds list (https://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/weedlist.pdf) are planted as part of the revegetation and stabilization of the project site. The Contractor will follow the SCDOT Supplemental Technical Specification SC-M-810-3, as amended, in regard to all other aspects of seeding operations.</p>		

Migratory Birds	NEPA Doc Ref: Chapter 4, Section 4.13	Responsibility: Contractor
<p>The federal Migratory Bird Treaty Act, 16 USC § 703-711, states that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. The South Carolina Department of Transportation (SCDOT) will comply with the Migratory Bird Treaty Act of 1918 in regard to the avoidance of taking of individual migratory birds and the destruction of their active nests.</p> <p>The contractor shall notify the Resident Construction Engineer (RCE) at least four (4) weeks prior to construction/demolition/maintenance of bridges and box culverts. The RCE will coordinate with SCDOT Environmental Services Office (ESO), Compliance Division, to determine if there are any active birds using the structure. After this coordination, it will be determined when construction/demolition/maintenance can begin. If a nest is observed that was not discovered after construction/demolition/maintenance has begun, the contractor will cease work and immediately notify the RCE, who will notify the ESO Compliance Division. The ESO Compliance Division will determine the next course of action.</p> <p>The use of any deterrents by the contractor designed to prevent birds from nesting, shall be approved by the RCE with coordination from the ESO Compliance Division. The cost for any contractor provided deterrents will be provided at no additional cost to SCDOT.</p>		

Section 7 of the Endangered Species Act	NEPA Doc Ref: Chapter 4, Section 4.13	Responsibility: SCDOT/Contractor
<p>Obligations under Section 7 of the Endangered Species Act must be considered 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.</p>		

Essential Fish Habitat	NEPA Doc Ref: Chapter 4, Section 4.13	Responsibility: SCDOT/Contractor
<ul style="list-style-type: none"> ▪ Consultation with NOAA Fisheries will be re initiated if new information reveals impacts of this identified action may affect any essential fish habitat in a manner not previously considered; this action is subsequently modified in a manner, which was not considered in this assessment. ▪ The contractor will be responsible for ensuring causeways on temporary fill will not be utilized as the sole method of construction access for the proposed project. ▪ The contractor will be responsible for ensuring all temporary construction access methods, including temporary fill, timber mats, barges, and trestles and associated piles would be removed in their entirety upon completion of the bridges. ▪ 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. Contractor will be held to commitments through the life of the construction project. ▪ SCDOT will work with the contractor to ensure the use of EFH specific list of general best management practices (BMPs) to minimize construction-related impacts to EFH. ▪ A final mitigation plan will be developed for the Department of Army permit and will include consideration for impacts to EFH as part of that plan. This mitigation plan will be established as part of the Section 404 permitting phase of the project. SCDOT/FHWA will develop the mitigation plan in coordination with the appropriate resource agencies. The mitigation plan is to be completed as part of the Section 404 permit approval. 		

Marine Mammals	NEPA Doc Ref: Chapter 4, Section 4.13	Responsibility: Contractor/SCDOT
<p>If explosives are used for demolition, the contractor would be required to hire qualified personnel to evaluate the potential effect on protected species to submit to SCDOT. SCDOT would be responsible for re-initiating consultation with USFWS and NOAA Fisheries. The contractor would develop a blasting plan to include a marine wildlife watch plan to submit to SCDOT for approval.</p>		

Marine Mammals	NEPA Doc Ref: Chapter 4, Section 4.13	Responsibility: Contractor
<p>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.</p> <p>The SCDOT commits to implementing the following conservation measures, or actions, to minimize or compensate for effects to each species:</p> <ul style="list-style-type: none"> ▪ 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 H) 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. 		

Cultural Resources - Archaeology	NEPA Doc Ref: Chapter 4, Section 4.14	Responsibility: Contractor
<p>The contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations during the construction phase of the project, if any such remains are encountered, the Resident Construction Engineer (RCE) will be immediately notified and all work in the vicinity of the discovered materials and site work shall cease until the SCDOT Archaeologist directs otherwise.</p>		

Cultural Resources - Archaeology	NEPA Doc Ref: Chapter 4, Section 4.14	Responsibility: Contractor
<p>Resource 7806 and Ashley Hall Plantation will be clearly plotted on all construction plans along with an appropriate buffer of 25 feet around each resource. This zone will be clearly delineated in the field and all ground disturbance and construction staging activities would be conducted outside of this buffer area in order to avoid all possible impacts to these resources.</p>		

Cultural Resources - Archaeology	NEPA Doc Ref: Chapter 4, Section 4.14	Responsibility: Contractor
<p>SCDOT will coordinate with the Project Engineer to ensure the unknown underwater anomaly 006-1 in the Ashley River is delineated and a 100-ft radius is labeled on all plan sheets. This label shall include the following detail to Prime and Sub Contractors “Within a 100 ft radius from X coordinate 2299561.02 and Y coordinate 365570.49, the Contractor shall not place any permanent or temporary spud, anchoring device or other item that would impact the river bottom.” The protected area shall be noted in the environmental compliance inspection forms for the project and evaluated during each scheduled visit. If impacts to the river bottom are suspected, notification to SCDOT ESO Compliance office shall occur and additional investigations may be needed at the expense of the Contractor.</p>		

Hazardous Materials	NEPA Doc Ref: Chapter 4, Section 4.17	Responsibility: SCDOT
<p>Before design build contract procurement, SCDOT will perform Phase II Environmental Site Assessments (ESAs) on the Recognized Environmental Concern (REC) properties identified in the Phase 1 ESA report that fall within the construction footprint.</p>		

Hazardous Materials	NEPA Doc Ref: Chapter 4, Section 4.17	Responsibility: Contractor
<p>Asbestos Containing Material and/or Lead Based Paint testing will be assessed separately. Materials containing asbestos and lead-based paints will be managed and disposed of properly at an appropriate permitted facility to minimize impact during the construction and cleanup. Activities will be monitored by a professional that is certified in the removal, handling and disposal of lead-based paint and/or asbestos-containing materials.</p>		

Hazardous Materials	NEPA Doc Ref: Chapter 4, Section 4.17	Responsibility: SCDOT/Contractor
<p>SCDOT will ensure that hazardous materials sites are avoided where practicable or sufficiently remediated so that the public would not be exposed to health risk. Contractors will follow SCDOT’s Standard Specifications, which include provisions to protect the health and safety of persons in the proximity of construction and staging sites. Lead and asbestos testing would be conducted prior to demolition to ensure that these materials are handled appropriately.</p> <p>A hazardous waste management plan will be prepared for the handling of hazardous materials during construction, and an on-site health and safety plan will be developed for construction activities to protect human health (i.e. workers, residents, recreation and trespassers) and the environment within the project area. The hazardous waste management plan will also state that the disposal of waste materials will be disposed of in approved landfills.</p> <p>If avoidance of hazardous materials is not a viable alternative and soils that appear to be contaminated are encountered during construction, the South Carolina Department of Health and Environmental Control (SCDHEC) will be informed immediately. Hazardous materials will be tested and removed and/or treated in accordance with the United States Environmental Protection Agency and SCDHEC requirements, if necessary. SCDHEC Hazardous Waste Treatment, Storage, and Disposal compliance staff can be contacted at 803-898-0290.</p>		

Construction Noise	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: SCDOT
<ul style="list-style-type: none"> ▪ The Department will utilize the public involvement process to ensure the public is aware of the schedule of project activities that may create construction noise impacts. ▪ Construction noise impacts associated with earth removal, grading, hauling and paving activities should be thoroughly evaluated in conjunction with development of the construction plan. ▪ Pile-driving and impact hammer activities should be performed during weekday hours and should not be performed during evening and nighttime hours, or any hours during weekends and/or holidays. ▪ If meeting the project schedule requires that pile-driving and impact hammer activities must occur during evening, nighttime and / or weekend hours near residences within the project corridor, the Contractor shall notify SCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the mitigation of the predicted construction noise impacts upon the affected property owners and / or residents. 		

Public Information Strategy During Construction	NEPA Doc Ref: Chapter 4, Section 4.18 & 4.23	Responsibility: Contractor
<p>A public information plan will be implemented to notify the public of periods when construction is scheduled to take place, potential impacts to traffic operations, planned construction work hours, and alternate routes where applicable. To reduce peak hour impacts, night and weekend work could be scheduled. Motorists would also be notified about construction activities and changes in traffic patterns, such as detours by utilizing construction signs throughout the corridor.</p>		

Transportation and Traffic	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: SCDOT/Contractor
<p>SCDOT and the contractor would coordinate with emergency service providers such as police, fire protection, and ambulance services prior to the start of construction to ensure access for emergency vehicles would be maintained.</p>		

Transportation and Traffic	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: SCDOT/Contractor
<p>A maintenance-of-traffic plan will be developed to outline measures to minimize construction impacts on transportation and traffic. To the extent possible, the plan would require access to existing residential and commercial areas be maintained and existing roads be kept open unless an alternate route can be provided.</p>		

Stormwater Pollution Prevention	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: Contractor
<p>The contractor is responsible for development of a project specific stormwater pollution prevention plan (SWPPP) and for obtaining a Section 402 NPDES permit for the project before ground disturbing construction activities begin.</p>		

Individual Permit	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: SCDOT
<p>Impacts to waters of the US (WOUS) will be permitted under a Department of the Army permit from the U.S. Army Corps of Engineers. Based on preliminary design, it is anticipated that the proposed project would be permitted under an Individual Army Corps of Engineers Permit (IP).</p>		

Other Permits	NEPA Doc Ref: Chapter 4, Section 4.18 & 4.22	Responsibility: SCDOT/Contractor
<p>Other permits will be obtained as applicable. See Chapter 4, Section 4.18 and Section 4.22 for a detailed discussion of permit requirements.</p>		

Asbestos	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: Contractor
<p>During the demolition of existing bridge structures, construction activities would likely encounter lead-based paint (LBP) and asbestos containing materials (ACM). Hazardous materials should be managed and disposed of at an appropriate permitted facility to minimize impacts during the cleanup process. A professional certified in the removal, handling and disposal of LBP and/or ACM may monitor construction activities. Asbestos Containing Material and/or Lead Based Paint testing would be assessed only if deemed necessary on a site-specific account and separately from the Phase II ESAs as it outside of ASTM guidelines. SCDHEC would be informed if contaminated soils are encountered during construction and measures will be employed to avoid, reduce, or otherwise mitigate environmental impacts associated with the proposed project.</p>		

Spill Prevention	NEPA Doc Ref: Chapter 4, Section 4.18	Responsibility: SCDOT/Contractor
<p>The contractor will prepare a spill prevention, control, and countermeasures (SPCC) plan in accordance with 40 CFR 112, for the handling of oils or oil-based products during construction to prevent discharge of oil into navigable waters.</p>		
Environmental Compliance Plan	NEPA Doc Ref: Chapter 4, Section 4.23.3	Responsibility: Contractor
<p>A detailed Environmental Compliance Plan would be developed by the contractor and updated to include environmental commitments from the FEIS-ROD, environmental permits, and other environmental approvals. All coordination with state and federal agencies must be done through SCDOT's Environmental Services Office.</p>		
Navigation	NEPA Doc Ref: Chapter 5, Section 5.6	Responsibility: SCDOT
<p>During construction there is a potential for temporary closure to the navigational waterway. 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. Any affects to navigation will require coordination with the US Coast Guard.</p>		

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What is a Record of Decision?

The Record of Decision (ROD) is the documentation of Federal Highway Administration’s (FHWA) decision on the I-526 Lowcountry Corridor WEST project. This ROD has been prepared in accordance with the National Environmental Policy Act (NEPA), as amended, FHWA NEPA implementing regulations 23 Code of Federal Regulations (CFR) 771, Council on Environmental Quality (CEQ) regulations 40 CFR 1500-1508, and Section 4(f) of the Department of Transportation Act. The Notice of Intent for this project predates the 2020 updates to the Council on Environmental Quality regulations that went into effect on September 14, 2020. Therefore; the project has been developed under the provisions of the regulations in place at the time of the Notice of Intent (NOI).

What is the Purpose and Need of the Project?

The purpose of the project is to increase capacity at the I-26/I-526 interchange and along the I-526 mainline, thereby relieving traffic congestion and improving operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue. The proposed project consists of 3.5 miles of work on I-26 and 9.2 miles of work on I-526 for a total of 12.7 miles. The need for this project is derived from the following factors, which are detailed in Chapter 2 of the Final Environmental Impact Statement (FEIS).

- Strong growth in population and employment
- Decreased mobility and increased traffic congestion caused by base year traffic conditions and worsened by projected traffic conditions
- Geometric deficiencies such as acceleration and deceleration lanes that are not long enough, short distances between entrance and exit ramps, tight curves on loop ramps, and poor sight distance
- Pedestrian and bicycle connectivity and mobility needs

The project is being led by the FHWA in cooperation with the South Carolina Department of Transportation (SCDOT). FHWA is the lead federal agency and SCDOT is the project sponsor and lead state agency. The FHWA and SCDOT are joint lead agencies and are the primary entities responsible for compliance with NEPA. The project also includes three cooperating agencies and numerous participating agencies.

A Draft Environmental Impact Statement (DEIS) was developed for the project that documents the purpose and need for the project; presents a discussion of the alternatives and the analysis of them; describes the affected

Cooperating Agencies

- US Coast Guard (USCG)
- US Army Corps of Engineers (USACE)
- National Park Service (NPS)

Participating Agencies

- US Fish and Wildlife Service (USFWS)
- US Environmental Protection Agency (USEPA)
- National Oceanic and Atmospheric Administration (NOAA) Fisheries
- South Carolina Department of Archives and History (SCDAH)
- South Carolina Department of Health & Environmental Control (SCDHEC)
- SCDHEC Ocean & Coastal Resource Management (OCRM)
- South Carolina Department of Natural Resources (SCDNR)
- South Carolina Department of Parks, Recreation & Tourism (SCPRT)
- Catawba Indian Nation
- Eastern Shawnee Tribe
- Muscogee (Creek) Nation

environment, assessment of environmental, transportation, social, and economic impacts; identifies appropriate mitigation measures to offset impacts; and presents a Recommended Preferred Alternative. It also incorporates analysis and feedback from public and agency sources gathered during the various phases of the DEIS development.

- On October 22, 2020, the DEIS was approved and signed by the FHWA and SCDOT.
- On October 23, 2020, the DEIS was distributed to the cooperating and participating agencies.
- A Notice of Availability was published in the Federal Register on October 30, 2020, announcing the availability of the DEIS for public review and comment.
- Agencies and members of the public could submit comments on the DEIS during the comment period from October 30, 2020 to January 15, 2021.
- Three community drop-in meetings were held in November 2020 in the Liberty Park and Ferndale communities to present the DEIS, Recommended Preferred Alternative impact maps, and the Draft Environmental Justice (EJ) Community Mitigation Plan.
- One-on-one appointments for in-person sessions were held at the project's community office to review the Public Hearing maps and materials in November and December 2020.
- A live, virtual Public Hearing comment session was held on Tuesday, December 15, 2020.
- An Agency Coordination meeting was held on February 10, 2021 with the lead, cooperating, and participating agencies meeting to review and discuss comments received from the public on the DEIS.

FHWA has prepared this ROD in combination with the I-526 LCC West FEIS in accordance with 23 CFR Part 771.124, which provides that the FEIS and ROD should be combined unless:

1. The FEIS makes substantial changes to the proposed action that are relevant to environmental or safety concerns; or,
2. There are significant new circumstances or information relevant to environmental concerns that bear on the proposed action or the impacts of the proposed action.

Although minor refinements have been made, they are not substantial, and the general alignment remains the same as the Recommended Preferred Alternative identified in the DEIS. Furthermore, no significant new circumstances or information have become known since the DEIS was published. Therefore, a combined FEIS-ROD was determined to be appropriate for this project.

What is FHWA's Decision (Selected Alternative)?

Based on the information contained in the FEIS and ROD, the FHWA concludes that the Selected Alternative is:

- Alternative 1 from Paul Cantrell Boulevard to International Boulevard
- Alternative 2 from International Boulevard to Rivers Avenue
- Alternative 2A from Rivers Avenue to Virginia Avenue.

The Selected Alternative was identified because of the lower number of relocations based on direct impacts associated with the design, fewer potential impacts to traditionally under-represented populations, lower impacts to wetlands and streams, improved traffic operations, and the ability to resolve a high number of existing roadway deficiencies. For these reasons, the FHWA has determined that the Selected Alternative is also the Environmentally Preferred Alternative. The Selected Alternative also meets the purpose and need for the project and has incorporated numerous measures to avoid and minimize impacts. The FHWA also concludes that all practicable measures to minimize environmental harm have been incorporated into the project.

Based on the considerations identified in the Section 4(f) and Section 6(f) evaluations, the FHWA concludes that there are no feasible and prudent alternatives to the use of Section 4(f) and Section 6(f) resources and that the proposed action includes all possible measures to minimize harm to the identified Section 4(f) and Section 6(f) resources.

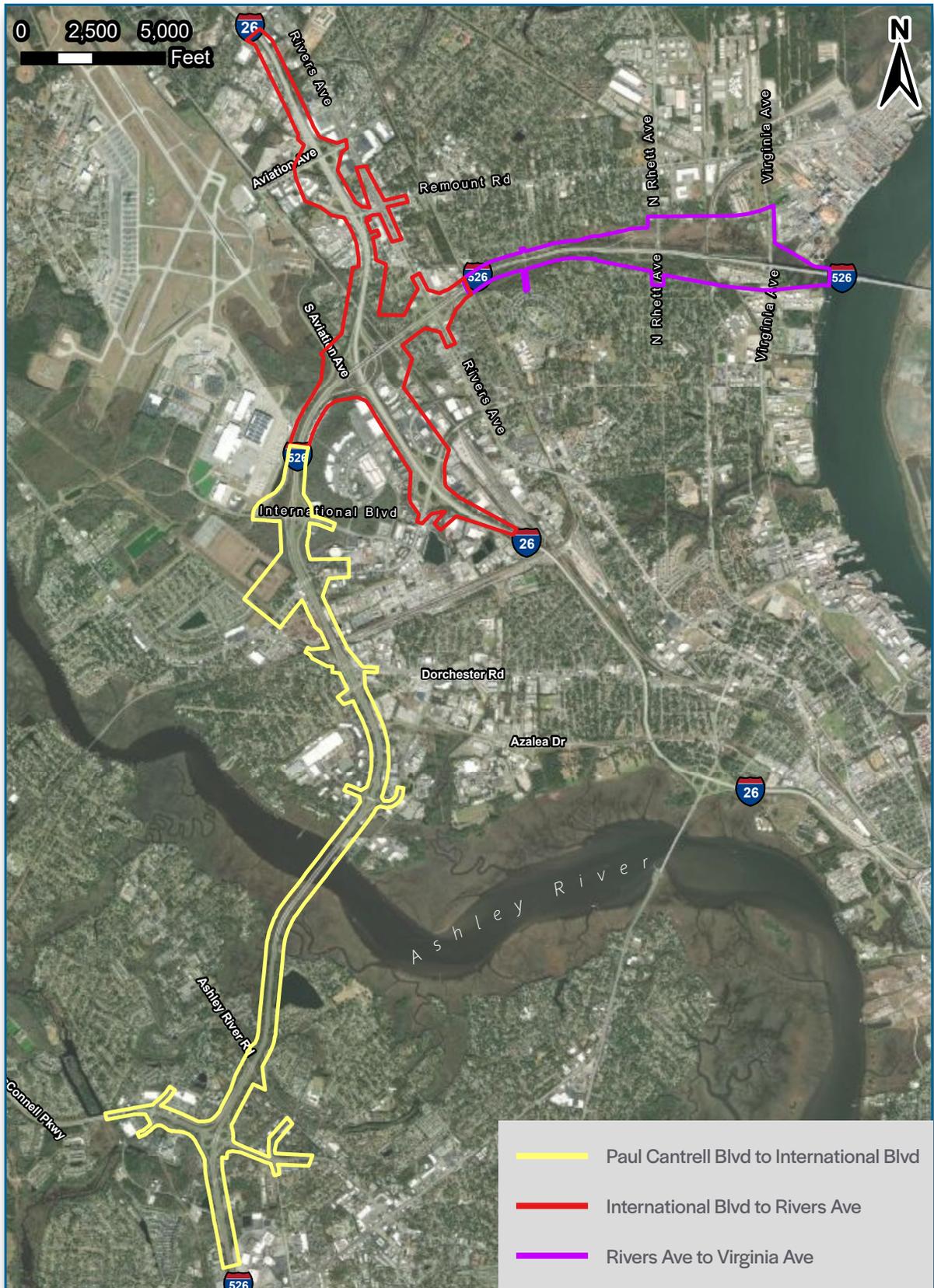


Figure ROD-1 Selected Alternative

What Alternatives were Considered?

Alternatives were developed based on a six-step alternatives development process. These steps are as follows:

- Step 1 – Preliminary Screening of the Range of Alternatives
- Step 2 – Identify Preliminary Alternatives
- Step 3 - Screening of Preliminary Alternatives
- Step 4 – Identify Proposed Reasonable Alternatives
- Step 5 – Detailed Impact Evaluation of Proposed Reasonable Alternatives
- Step 6 – Recommended Preferred Alternative

Throughout the six-step alternatives development process, numerous alternatives and options were considered and evaluated. The following sections provide brief summaries of the alternatives that were carried forward for detailed analysis in the EIS. Refer to Section 3.1 in Chapter 3 of the FEIS for more detailed information regarding the six-step alternatives development process.

No-Build/No Action

Under the provisions of NEPA, the effects of not implementing the proposed action must also be considered. The No-Build Alternative provides a baseline for comparing potential environmental impacts with the other reasonable alternatives. Analysis of the No-Build Alternative must discuss the existing conditions as well as what is reasonably expected to occur in the foreseeable future if the proposed action is not constructed.

The No-Build Alternative fails to meet the majority of the criteria identified in Chapter 3 of the FEIS as required to meet the purpose and need of the project. Notwithstanding, the No-Build Alternative was retained and carried forward as a Preliminary Alternative for further comparison in the alternatives practicability analysis in order to ensure a complete environmental impact evaluation, as well as provide a baseline comparison to other alternatives.

Proposed Reasonable Alternatives

The Proposed Reasonable Alternatives that were carried forward for analysis in the EIS include the following (Section 3.7.2 in Chapter 3 of FEIS):

- Mainline I-526 8-lane widening
- Interchange Alternatives
 - > One alternative at I-526 at Paul Cantrell Boulevard that includes the intersection at Magwood Drive
 - > Four alternatives at I-526 at I-26 and Rivers Avenue
 - Alternative 1
 - Alternative 1A
 - Alternative 2
 - Alternative 2A
 - > Five alternatives at I-526 at N Rhett/Virginia Avenue
 - Alternative 1
 - Alternative 2
 - Alternative 2A
 - Alternative 5
 - Alternative 6

In order to perform a detailed impact evaluation on the above alternatives, the widening of the mainline of I-526 to 8-lanes was combined with the interchange alternatives into the following three sections and are discussed below.

- Paul Cantrell Boulevard to International Boulevard
- International Boulevard to Rivers Avenue
- Rivers Avenue to Virginia Avenue

Paul Cantrell Boulevard to International Boulevard

One alternative was evaluated for the section from Paul Cantrell Boulevard to International Boulevard, and thus is the Recommend Preferred Alternative for this section. This alternative encompasses the interchange at Paul Cantrell Boulevard and I-526, the intersection at Paul Cantrell Boulevard and Magwood Drive, and the widening of I-526 from Paul Cantrell Boulevard to International Boulevard, refer to Figure 3.21 in Chapter 3 of the FEIS.

As shown in Table 3.7 in Chapter 3 of the FEIS, the proposed alternative would resolve 15 out of the 16 identified geometric deficiencies as compared to the No-Build Alternative. The proposed alternative would also reduce congestion by improving the level of service (LOS).

International Boulevard to Rivers Avenue

Chapter 3, Table 3.8 of the FEIS shows the detailed evaluation of the four Proposed Reasonable Alternatives from International Boulevard to Rivers Avenue, including the I-526/I-26 interchange and the widening of I-526, refer to Figure 3.22. Alternative 2 is recommended as the preferred alternative between International Boulevard and Rivers Avenue. Although Alternatives 1 and 2 would remove access from Rivers Avenue to I-26 via I-526, they would result in lower relocations and less potential impact to environmental justice populations than Alternative 1A or 2A. Alternative 1 would require a traffic movement or weave that may result in overcapacity and failing LOS in the segment. The over-congestion of this segment in Alternative 1 may cause upstream backups along I-526 eastbound and I-526 westbound. Alternative 2 does not require this traffic movement or weave, reducing the number of vehicles which must weave compared to Alternative 1. This results in traffic operations which are under capacity and with acceptable LOS. **Alternative 2 is the Recommended Preferred Alternative between International Boulevard and Rivers Avenue.**

Rivers Avenue to Virginia Avenue

The five Proposed Reasonable Alternatives from Rivers Avenue to Virginia Avenue, including the I-526 at N. Rhett interchange, and the widening of I-526, are shown in Table 3.9 and Figure 3.23 in Chapter 3 of the FEIS. Alternative 2A is estimated to have the lowest potential relocations and impacts to wetlands and streams as compared to the other four alternatives. **Alternative 2A is the Recommended Preferred Alternative between Rivers Avenue and Virginia Avenue.**

Is the Recommended Preferred Alternative the Selected Alternative?

Minor adjustments have been made to refine the Recommended Preferred Alternative presented in the DEIS and during the Public Hearing. Based on public input and additional technical analysis, the changes to the Recommended

Preferred Alternative are not substantial and the general alignment and function remain the same. Having considered the environmental records (i.e., the I-526 LCC West DEIS and all associated technical reports), the mitigation measures and the written and oral comments offered by agencies and the public, it has been determined that **the Recommended Preferred Alternative presented in the FEIS is the Selected Alternative.**

The Selected Alternative includes the components that best meet the purpose of the project while minimizing impacts and consists of:

- **Alternative 1 from Paul Cantrell Boulevard to International Boulevard**
- **Alternative 2 from International Boulevard to Rivers Avenue**
- **Alternative 2A from Rivers Avenue to Virginia Avenue.**

The Selected Alternative best meets the purpose and need of the project and has been chosen based on its overall benefits to traffic flow throughout the region and the ability to resolve a high number of existing roadway deficiencies. In addition, the Selected Alternative has a lower number of relocations, fewer potential impacts to traditionally under-represented populations, and lower impacts to wetlands.

Highlights of the Selected Alternative include:

- **More lanes on I-526.** To improve mobility and reduce traffic congestion, I-526 would be widened to include two additional lanes in each direction between Paul Cantrell Boulevard and North Rhett Avenue.
- **No more weaving at the I-526/I-26 System Interchange.** To eliminate weaving and improve mobility through the I-526/I-26 system interchange, tight, closely spaced, low-speed ramps would be replaced by long, sweeping, high-speed ramps.
- **Introduction of Collector-Distributor Roads.** The Recommended Preferred Alternative features collector-distributor (C-D) roads at all four legs of the I-526 and I-26 system interchange. Collector-distributor roads are lanes used to collect the most significant traffic movements and distribute them efficiently through congested areas to their destinations. These new, longer, separated ramps would add capacity to the system. They would allow the major traffic movements to be separated as they move throughout the system by guiding exiting vehicles to their destinations sooner. This would also prevent conflicts between entering and exiting traffic.
- **Improvements to the I-526 interchanges at both ends of the project.** At the east end of the project, the interchanges with North Rhett Avenue and Virginia Avenue would be improved to add access to the new collector-distributor (C-D) roads to eliminate weaving between Virginia Avenue and North Rhett Avenue and to replace the low-speed loop ramps with higher speed on- and off-ramps. At the west end of the project, an entrance ramp from Paul Cantrell Boulevard would be improved to eliminate the need to merge when heading toward North Charleston. The exit ramp would be improved for those commuters heading north on Glenn McConnel parkway by bridging over the Magwood Drive intersection.

What is the Environmentally Preferable Alternative?

The CEQ NEPA regulations state that the federal agency, in issuing its ROD, shall specify the alternative or alternatives that are considered environmentally preferable. The guidance issued by CEQ indicates that the environmentally preferred alternative is the one that meets the project purpose and need and causes the least harm to the natural and physical environment. For this project, based on the scoping and EIS process, the Selected Alternative is the

environmentally preferable alternative based on a thorough and careful consideration of all potential effects, mitigation of adverse effects, and satisfying the purpose, objectives, and need of the project.

Is Section 4(f) or Section 6(f) Approval Required for the Selected Alternative?

Both Section 4(f) and Section 6(f) approvals are required for the selected alternative, as discussed below.

Section 4(f)

Chapter 4, Section 4.15 of the FEIS provides an overview of the Section 4(f) process and an evaluation of Section 4(f) resources pursuant to Section 4(f) of the Department of Transportation Act. The Selected Alternative requires Section 4(f) approval for the use of two resources:

- Highland Terrace-Liberty Park Community Center
- Russelldale Community Center

A Section 4(f) Evaluation was performed for the four build alternatives within the International Boulevard to Rivers Avenue section of the project where the resources are located. All four build alternatives would impact the Section 4(f) resources, and as a result of the Section 4(f) evaluation, it was determined that there are no feasible and prudent alternatives to avoid impacts to these resources. The Recommended Preferred Alternative (Alternative 2) was identified as the "least overall harm" alternative with efforts to minimize and mitigate impacts, as shown in Table 6.1 of the Section 4(f) Evaluation in Appendix Q.

Proposed mitigation measures to address impacts to the Highland Terrace-Liberty Park and Russelldale Community Centers are detailed below. Details related to programs and amenities at the recreational facilities are included in the Final Section 4(f) Evaluation (Appendix Q) of the FEIS. Additional mitigation details can also be found in the EJ Community Mitigation Plan (Appendix H).

Replacement Recreational Facilities:

- Through coordination with the Community Advisory Council (CAC) and the City of North Charleston, SCDOT has identified parcels located within the affected neighborhoods to be acquired to construct one large, centrally located community center, a pocket park in Highland Terrace-Liberty Park, and a pocket park in Russelldale. Construction of the new centrally located community center and the pocket parks will be completed prior to the start of construction of the section of the I-526 LCC WEST improvements that will demolish the existing community centers.

Recreational Facility Programs and Activities:

- SCDOT and the City of North Charleston entered into an intergovernmental agreement outlining the programs, services, structural components, and arrangements for long-term operation and maintenance of the replacement community center and pocket parks. The agreement includes language that gives residents of the surrounding neighborhoods priority in areas such as program enrollment/participation, reserving facility space, and volunteer opportunities. SCDOT will provide funding for the replacement community center to be designed and equipped to facilitate the new programs. The City will provide staff and have committed to implement these programs into the operations of the replacement community center.

Connectivity and Bike & Pedestrian Safety:

- SCDOT will continue to work with the CAC and City of North Charleston to construct infrastructure improvements to improve bike and pedestrian connectivity, safety, and mobility between the replacement community center, pocket parks, surrounding EJ neighborhoods, and transit stops along Rivers Avenue. These improvements include:
 - > Replacement community center and pocket park approaches designed with pedestrian facilities, crosswalks, and traffic calming measures such as speed tables or speed bumps;
 - > Replacement community center to include a multiuse path to provide recreational opportunities for walking/ biking and connectivity to proposed Filbin Creek Greenway system;
 - > New sidewalks and improvements to existing neighborhood sidewalks;
 - > Lighting under I-526; neighborhood street lighting, traffic-calming measures, stop signs, and crosswalks;
 - > Construction of a pedestrian bridge over the Norfolk Southern Railroad tracks connecting West Deacon Street to the proposed replacement community center;
 - > Addition of amenities and improvements at the Charleston Area Transportation Authority (CARTA) bus stops along Rivers Avenue from just north of Taylor Street to just south of Rebecca Street; and,

Section 6(f)

The Selected Alternative also requires Section 6(f) approval for impacts to the Highland Terrace-Liberty Park Community Center, which was partially funded through the Land and Water Conservation Fund (LWCF) Act. Chapter 4, Section 4.16 of the FEIS provides an overview of the Section 6(f) process and an evaluation of Section 6(f) properties pursuant to Section 6(f) of the LWCF Act of 1965 (16 USC 4601-4).

As discussed in Section 4.15.6.1 in the FEIS, all Proposed Reasonable Alternatives for the I-526 LCC WEST project would displace the entire Highland Terrace-Liberty Park Community Center and its surrounding recreational facilities. Section 6(f) coordination included identifying a suitable replacement property for the Highland Terrace-Liberty Park Community Center and related amenities. The parcel at 5260 Deacon Street was selected, and environmental surveys were conducted to determine potential impacts on historic architectural resources, archaeological resources, and the natural environment at both the conversion property and the replacement property. Concurrence on effects determinations was received from US Fish and Wildlife Service and South Carolina State Historic Preservation Offices, and is included in the Section 6(f) Environmental Assessment (Appendix R of the FEIS). The Section 6(f) coordination with the National Park Service has been concluded with their approval of the Section 6(f) conversion package.

What are the Environmental Commitments for the Selected Alternative?

SCDOT and FHWA have committed to a list of mitigation measures to offset the impacts of the Selected Alternative. Sixty-five environmental commitments are described in detail in the FEIS and are contained in the Environmental Commitment form. The Environmental Commitments form contains all the project commitments; however, specific EJ mitigation items are detailed in the EJ Community Mitigation Plan in Appendix H. These commitments were developed to avoid, minimize, and compensate for environmental impacts resulting from the project. Commitments applicable to construction of the project will be incorporated into the Construction Specifications and Special Provisions for the project, such that the construction contractor will be contractually bound to carry out the commitments. All other commitments will be the responsibility of SCDOT to monitor and ensure compliance with through their existing

environmental compliance program. All practicable measures to minimize environmental harm have been incorporated into the project. FHWA will not close out the project until SCDOT has fulfilled all commitments.

What Benefits will be Provided for Displaced Residents and Businesses?

SCDOT will conduct all right-of-way acquisition and relocation assistance in accordance with the Uniform Act, which provides measures to minimize the hardships of relocation for individuals and businesses displaced as a result of a Federal-aid project. In accordance with the Uniform Act, comparable Decent, Safe, and Sanitary (DSS) replacement housing within a person's financial means must be made available before that person may be displaced. When such housing cannot be provided under the provisions for replacement housing payments, SCDOT shall provide for Housing of Last Resort (HLR) payments, which authorizes payments in excess of statutory maximums or the use of other methods of providing comparable housing. In addition, displaced individuals will be offered advisory services to help them successfully relocate. This includes assistance in determining relocation needs, information concerning replacement properties, and timely written notifications of payment eligibility. Businesses and non-profit organizations are also eligible for moving expenses and certain costs to reestablish their business or organization.

In addition to the benefits provided to individuals, businesses, and non-profits under the Uniform Act, SCDOT has committed to two affordable housing initiatives. Under the first initiative, SCDOT has a signed agreement with the South Carolina State Housing and Finance and Development Authority to construct 100 affordable housing units with a mixture of unit sizes for the lowest income level category within proximity of the impacted EJ communities. In addition, SCDOT will also secure 45 vacant lots within the EJ communities for the purpose of constructing housing for displaced residents who would like to remain in their community.

What Measures will be Incorporated to Avoid, Minimize, and Mitigate Impacts due to the Selected Alternative?

SCDOT and FHWA have committed to the following mitigation measures to offset the impacts summarized in Table 1 and detailed in the FEIS. The SCDOT Environmental Commitments form attached to this ROD contains all of the project commitments. The specific EJ mitigation items are detailed in the EJ Community Mitigation Plan in Appendix H.

Table 1. Mitigation Summary

Impact Areas	Selected Alternative
Land Use	<ul style="list-style-type: none"> • Provide funding for the construction of replacement recreational facility to mitigate land use impacts associated with displacing the Highland Terrace-Liberty Park and Russelldale Community Centers.
Farmlands	None
Socioeconomics & Communities	<ul style="list-style-type: none"> • Fund a modern, centrally located community center with expanded hours of access to community members and two pocket parks within the impacted EJ neighborhoods. • Intergovernmental agreement between SCDOT and the City of North Charleston outlining the programs, services, structural components, and arrangements for long-term operation and maintenance of the replacement community centers and recreational facilities. • Implement improvements, as outlined in the Community Infrastructure Enhancement Plan (CIEP) to address bicycle and pedestrian safety, access to community centers and transit stops, enhanced street aesthetics, project-related stormwater improvements, and traffic calming measures. • Fund a Community History Preservation Study to capture the history and culture of the EJ communities and provide recommendations for cultural exhibits to be incorporated into the proposed centralized replacement community center. • Implement an affordable replacement housing program to construct affordable housing for residents who will be displaced by the project to relocate within their neighborhoods. Early acquisition of parcels will be conducted prior to the right-of-way phase to ensure adequate parcels are available for the implementation of the housing program. • Provide up to at least \$500,000 to fund a scholarship program for high school and college students living in the EJ neighborhoods and develop a school-to-work program with the goal of enhancing employment opportunities for residents within the fields of construction and engineering. • Provide financial literacy and first-time home buyer training to assist first-time home buyers in securing loans and transitioning from renters to homeowners. • SCDOT will partner with organizations and other disadvantaged business enterprises (DBE) in the state to develop and deliver an educational program that empowers those interested in learning more about starting a small business enterprise (SBE). • SCDOT will assist in the creation of a Project Oversight Committee (POC) that is responsible for ensuring adherence to the commitments in the Environmental Justice Community Mitigation Plan. • SCDOT will construct mitigation barriers along the eastbound and westbound sides of I-26 between the I-526 and Remount Road interchanges to benefit the residents of the Highland Terrace and Liberty Park communities. SCDOT will construct mitigation barriers along the westbound side of I-526 between the Rivers Avenue and I-26 interchanges to benefit the residents of the Liberty Park community. SCDOT will construct mitigation barriers along the eastbound side of I-526 from the I-26 interchange to east of the CSX railroad tracks to benefit the residents of the Russelldale and Ferndale communities. SCDOT will construct a mitigation barrier along the eastbound side of I-526 and the eastbound exit ramp at the Montague Interchange to benefit the west side of the Camps community.
Environmental Justice and Special Populations	<ul style="list-style-type: none"> • The Environmental Justice (EJ) Community Mitigation Plan addresses mitigation measures for impacts to EJ communities/areas within the project area. See Appendix H for the EJ Community Mitigation Plan. • Outreach to special populations, including EJ and Limited English-Speaking Proficiency communities, will be provided during project construction.

Impact Areas	Selected Alternative
Relocations	<ul style="list-style-type: none"> The acquisition and relocation process shall be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act and the SCDOT Right-of-Way Manual. Comparable decent, safe and sanitary replacement housing within a person's financial means must be made available before that person may be displaced by SCDOT. When such housing cannot be provided, SCDOT will provide for Housing of Last Resort payments in accordance with 49 CFR 24.404. In accordance with Federal regulations at 23 CFR 635.309, authorization to advertise the physical construction for bids or to proceed with force account construction thereof shall not be issued until the SCDOT certifies that all individuals and families have been relocated to decent, safe, and sanitary housing or that the State has made available to relocatees in accordance with the provisions of the 49 CFR part 24 SCDOT will provide an enhanced relocation mitigation program for displaced business owners and employees to minimize economic harm. SCDOT will implement an acquisition fairness program that will pay for a third party appraiser to address community concerns over the fairness of property appraisals.
Air Quality	<ul style="list-style-type: none"> Ensure that all construction equipment is properly tuned and maintained; minimize idling time; apply water to control dust impacts off site; no open burning of removed vegetation, and vegetation will be chipped or delivered to waste energy facilities. SCDOT will develop a PM 2.5 monitoring program within the impacted EJ communities of Ferndale, Highland Terrace, Liberty Park, and Russelldale. SCDOT will provide results to their website where community members can access real time data/results. The POC will be updated on the results of this program.
Noise	<ul style="list-style-type: none"> Construct noise walls at five locations along the corridor. The Department will utilize the public involvement process to ensure the public is aware of the schedule of project activities that may create construction noise impacts. Construction noise impacts associated with earth removal, grading, hauling and paving activities should be thoroughly evaluated in conjunction with development of the construction plan. Pile-driving and impact hammer activities should be performed during weekday hours and should not be performed during evening and night time hours, or any hours during weekends and/or holidays. If meeting the project schedule requires that pile-driving and impact hammer activities must occur during evening, nighttime and / or weekend hours near residences within the project corridor, the Contractor shall notify SCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the mitigation of the predicted construction noise impacts upon the affected property owners and / or residents.
Water Quality	<ul style="list-style-type: none"> Implement best management practices (BMPs) during construction. Stabilize exposed areas by following the Department's Supplemental Technical Specification for Seeding. Develop project specific stormwater pollution prevention plan (SWPPP).
Water Resources	<ul style="list-style-type: none"> Following BMPs during final design using the Context Sensitive Solutions (CSS) process. Implement BMPs during construction. Compensatory wetland/stream mitigation through Section 404 permitting.
Floodplains	None (hydraulic analyses and modeling will be used to demonstrate avoidance of impacts to floodplains, i.e., no rise)

Impact Areas	Selected Alternative
<p>Natural Resources</p>	<ul style="list-style-type: none"> • Federal and State Protected Species <ul style="list-style-type: none"> ○ Implement BMPs during construction and maintenance. ○ Use drilled shafts in place of driven piles where possible. ○ Obtain National Pollutant Discharge Elimination System (NPDES) permit and prepare a project specific SWPPP. ○ 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. ○ Consider obligations under Section 7 of the Endangered Species Act. ○ All contractors involved in the construction will be required to comply with the USFWS Manatee Protection Guidelines for in-water work. ○ Inform all project personnel that manatees may be present in the project area. • Migratory Birds <ul style="list-style-type: none"> ○ Conduct required coordination prior to construction/demolition/maintenance of bridges and culverts to determine if active birds use structures.
<p>Natural Resources (cont)</p>	<ul style="list-style-type: none"> • Essential Fish Habitat (EFH) <ul style="list-style-type: none"> ○ Implement the EFH-specific list of general BMPs to minimize construction related impacts to EFH and water quality within the project watershed. ○ 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 contractor will be responsible for ensuring causeways on temporary fill will not be utilized as the sole method of construction access and that all temporary construction access methods will be removed in their entirety upon completion of construction of the widened bridge structures. ○ A final mitigation plan will be developed for the 404/401 permit and will include consideration for impacts to EFH as part of that plan. This mitigation plan will be established as part of the Section 404 permitting phase of the project. SCDOT/FHWA will develop the mitigation plan in coordination with the appropriate resource agencies. • Invasive Species <ul style="list-style-type: none"> ○ To meet the intent of Executive Order (EO) 13112, amended by EO 13751, the Department will ensure no invasive species shown by the US Department of Agriculture (USDA)-SC Invasive Noxious Weeds list [Link to list] are planted as part of the revegetation and stabilization of the project site. The Contractor will follow the SCDOT Supplemental Technical Specification SC-M-810-3, as amended, in regard to all other aspects of seeding operations.

Impact Areas	Selected Alternative
Cultural Resources	<ul style="list-style-type: none"> • Lookout for the presence of any prehistoric or historic remains during construction. If any remains are encountered, notify the Resident Construction Engineer (RCE) and cease work in the vicinity of the discovered materials. • Resource 7806 and Ashley Hall Plantation will be clearly plotted on all construction plans along with an appropriate buffer of 25 feet around each historic resource. This zone will be clearly delineated in the field and all ground disturbance and construction staging activities would be conducted outside of this buffer area in order to avoid all possible impacts to these resources. • SCDOT will coordinate with the Project Engineer to ensure the unknown underwater anomaly 006-1 in the Ashley River is delineated and a 100-ft radius is labeled on all plan sheets. This label shall include the following detail to Prime and Sub Contractors “Within a 100 ft radius from X coordinate 2299561.02 and Y coordinate 365570.49, the Contractor shall not place any permanent or temporary spud, anchoring device or other item that would impact the river bottom.” The protected area shall be noted in the environmental compliance inspection forms for the project and evaluated during each scheduled visit. If impacts to the river bottom are suspected, notification to SCDOT ESO Compliance office shall occur and additional investigations may be needed at the expense of the Contractor.
Section 4(f)	<ul style="list-style-type: none"> • Measures to mitigate impacts to affected Section 4(f) resources include the in-kind replacement of impacted facilities as well as the construction of additional recreational amenities.
Section 6(f)	<ul style="list-style-type: none"> • A new community center and pocket park facilities will be constructed that, in total, would replace the Section 6(f) facility affected by the proposed project.
Hazardous Materials	<ul style="list-style-type: none"> • Before design build contract procurement, SCDOT will perform Phase II Environmental Site Assessments (ESAs) on the Recognized Environmental Concern (REC) properties identified in the Phase 1 ESA report that fall within the construction footprint. • Assess Asbestos Containing Material and/or Lead Based Paint testing separately and dispose at a permitted facility. • Prepare a spill prevention, control, and countermeasures (SPCC) for the handling of oils or oil-based products during construction to prevent discharge of oil into navigable waters. • Prepare a hazardous waste management plan for the handling of hazardous materials during construction, and an on-site health and safety plan will be developed for construction activities to protect human health (i.e., workers, residents, recreation, and trespassers) and the environment within proximate to the site. • Dispose waste materials in approved landfills. • Inform SCDHEC if soils that appear to be contaminated are encountered during construction. Employ measures to avoid, reduce, or otherwise mitigate environmental impacts associated with the project. • Test and remove underground storage tanks (USTs) and other hazardous materials in accordance with USEPA and SCDHEC requirements.
Construction	<ul style="list-style-type: none"> • Develop a maintenance-of-traffic (MOT) plan that outline measures to minimize construction impacts on transportation and traffic. • Coordinate with emergency service providers prior to the start of construction to ensure access for emergency vehicles would be maintained. • Aim construction lights directly at the work area and/or shield the lights to avoid or reduce disturbance to nearby residences. • Maintain access to properties to the extent practicable. • Communicate any utility service interruptions to the public prior to temporary disruption.
Navigation	<ul style="list-style-type: none"> • Temporary closure of the navigation channel of the Ashley River, if necessary, 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.
Energy	None

What are the monitoring and enforcement programs for the Selected Alternative?

All project commitments documented in the ROD are mandatory. Tracking of the environmental commitments and associated activities will be the responsibility of SCDOT. SCDOT’s Environmental Compliance Division ensures all environmental commitments are adhered to during the construction phase and monitoring commitments are met post-construction. An Environmental Commitments tracking document will be utilized during final design, pre-construction, construction, and post-construction phases of the project. SCDOT will develop a Community Mitigation Implementation Schedule to deliver the community mitigation measures outlined in the EJ Community Mitigation Plan in a timeline that maximizes the benefits to the impacted EJ communities. In addition, a Community Mitigation Implementation Plan will be developed to outline specific details for each of the mitigation items.

Federal Actions required for the proposed project are outlined below. The Contractor(s) will be responsible for preparing and obtaining the necessary permits will be submitted based on the final design. Refer to the Environmental Commitments form for a complete list of commitments and monitoring programs.

A Project Oversight Committee (POC) will be formed when the project transitions from the project development phase to the design phase. The POC will consist of past Community Advisory Council (CAC) members, residents, and government staff that will be responsible for overseeing the implementation of the various EJ mitigation commitments.

Table 2 provides a list of permits and approvals that are required for the proposed project:

Table 2. Required Permits and Approvals

Permits and/or Approvals	Issuing Agency	When	Key Details
Section 404 of the Clean Water Act	U.S. Army Corps of Engineers	30 Days after approval of FEIS-ROD per permitting timetable	<ul style="list-style-type: none"> Requires a permit for impacts to Waters of the U.S. (WOUS). Requires a public review and comment period prior to issuance. Requires a compensatory mitigation plan.
Section 401 of the Clean Water Act Certification	South Carolina Department of Health and Environmental Control	Prior to issuance of the Section 404 permit	<ul style="list-style-type: none"> Water Quality Certification required for a federal permit involving activities which impact WOUS. Requires mitigation for potential water quality impacts. Jointly administered during the Section 404 permitting process.
Section 402 of the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Permit	South Carolina Department of Health and Environmental Control	Following Final Design, Prior to Construction	<ul style="list-style-type: none"> In coastal counties, NPDES permits are needed for projects \geq 0.5 ac within 0.5 mile of a receiving waterbody. A Stormwater Pollution Prevention Plan must also be developed.

Permits and/or Approvals	Issuing Agency	When	Key Details
Critical Area Permitting Pursuant to the South Carolina Coastal Zone Management Act	South Carolina Department of Health and Environmental Control – Ocean and Coastal Resource Management (SCDHEC-OCRM)	Prior to FEIS-ROD approval	<ul style="list-style-type: none"> Requires a permit for activities within the critical area and the coastal zone. Project is classified by SCDHEC-OCRM as a Major Activity.
Coastal Zone Consistency Certification	South Carolina Department of Health and Environmental Control	Following Final Design, Prior to Construction	<ul style="list-style-type: none"> A Coastal Zone Consistency (CZC) Certification is required for all land disturbing activities that required permit coverage located within any of the eight coastal counties (Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry and Jasper) prior to receiving coverage under the NPDES Permit Program. A CZC is required for projects that are considered to be: a Federal activity (federal properties and actions), requires a Federal license or permit; or receives Federal Assistance (funding to an entity).
Section 9 of the Rivers and Harbors Act	U.S. Coast Guard	60 Days after approval of FEIS-ROD per permitting timetable	<ul style="list-style-type: none"> Requires permit for any construction of a dam, dike, bridge, or causeway across navigable WOUS.
Section 10 of the Rivers and Harbors Act	U.S. Army Corps of Engineers	Concurrent with the issuance of the Section 404 permit	<ul style="list-style-type: none"> Requires a permit for any construction activities with the potential to obstruct the navigability or modify the channel of a navigable WOUS. Administered during the Section 404 permitting process.
Section 7 Consultation of the Endangered Species Act	U.S. Fish & Wildlife Service and National Oceanic and Atmospheric Administration (NOAA)	Consultation concluded	<ul style="list-style-type: none"> Requires federal agencies to consult with NOAA Fisheries when any action the agency carries out, funds, or authorizes may affect either a species listed as threatened or endangered under the Act, or any critical habitat designated for it.
Essential Fish Habitat (EFH) Consultation under the Magnuson-Stevens Act	National Oceanic and Atmospheric Administration (NOAA) Fisheries	Consultation concluded	<ul style="list-style-type: none"> Requires mitigation for impacts to EFH. Established as part of the Section 404 permitting and mitigation process.
Section 4(f) Evaluation of the US Department of Transportation Act	Federal Highway Administration and U.S. Department of Interior	Approval of FEIS-ROD	<ul style="list-style-type: none"> Requires least overall harm evaluation or Section 4(f) resources if no feasible and prudent avoidance alternative exists.

Permits and/or Approvals	Issuing Agency	When	Key Details
Section 106 of the National Historic Preservation Act	State Historic Preservation Office and Catawba Indian Nation	Consultation concluded	<ul style="list-style-type: none"> Requires federal agencies to take into account the effects of their undertakings on historic properties.
Section 6(f) Land Conversion of the Land and Water Conservation Fund	National Park Service	Section 6(f) conversion approved	<ul style="list-style-type: none"> Requires replacement of land and facilities of equivalent value, usefulness, and location.

What are the Next Steps?

Following issuance of the Record of Decision with a Selected Alternative, the official right-of-way acquisition process will start. SCDOT will develop final right-of-way plans and once finalized, SCDOT right-of-way agents will determine properties that will be acquired for the project. SCDOT is actively pursuing replacement housing options for residents who will be displaced by the project.

SCDOT will continue to engage the public through a comprehensive outreach plan that will be executed through the Community Office. Community Office staff will remain available to provide residents, property owners, and businesses up-to-date information on the mitigation plan elements, right-of-way acquisition, and construction related detours. Information about construction activities will include the periods when construction is scheduled to take place, work hours, and alternate routes. Construction signs will be used to notify motorists about work activities and changes in traffic patterns, such as detours. Construction signs will be used to notify motorists about work activities and changes in traffic patterns, such as detours. With a Selected Alternative and issuance of the Record of Decision, property acquisition can begin to obtain the necessary right of way for the project. Charleston County will administer the construction of the first phase of the project, the Montague Avenue interchange improvements, along with their Airport Connector Road project at this location. It is anticipated that Charleston County will start their procurement process for a contractor in Late 2023. Subsequent phases of the project will be administered by SCDOT. It is anticipated that SCDOT will begin right-of-way acquisition in Late 2023 with the contractor procurement process starting in 2028. The appropriate construction phasing to best complete the project will be at the discretion of SCDOT and the contractor(s).

Key Project Milestones					
Project Initiation	Community Kick-Off Meetings	Project Scoping, Initial Environmental Studies & Development of Preliminary Alternatives	Agency Coordination Kick-off, Development and Screening of Reasonable Alternatives	Notice of Intent	Proposed Reasonable Alternatives Public Information Meeting
2015	Q3 and Q4 2016	Q3 2016 through Q2 2019	Q1 2019	Q4 2019	Q4 2019 through Q1 2020
Key Project Milestones (continued)					
Begin Development of Draft Environmental Impact Statement (DEIS)	DEIS Issued	Public Hearing on DEIS and Recommended Preferred Alternative	Final Environmental Impact Statement & Record of Decision	Begin Right-of-Way Acquisition & Procurement of Contractor for First Phase*	Begin Right-of-Way Acquisition on Subsequent Phases
Q1 2020	Q4 2020	Q4 2020 - Q1 2021	Q3 2022 	2023	2023 & Beyond

Q1 = First Quarter, January-March; Q2 = Second Quarter, April-June; Q3 = Third Quarter, July-September;

Q4 = Fourth Quarter, October-December

*Charleston County will administer first phase of the project.

How and when will the remaining components of the EJ Community Mitigation Plan be implemented?

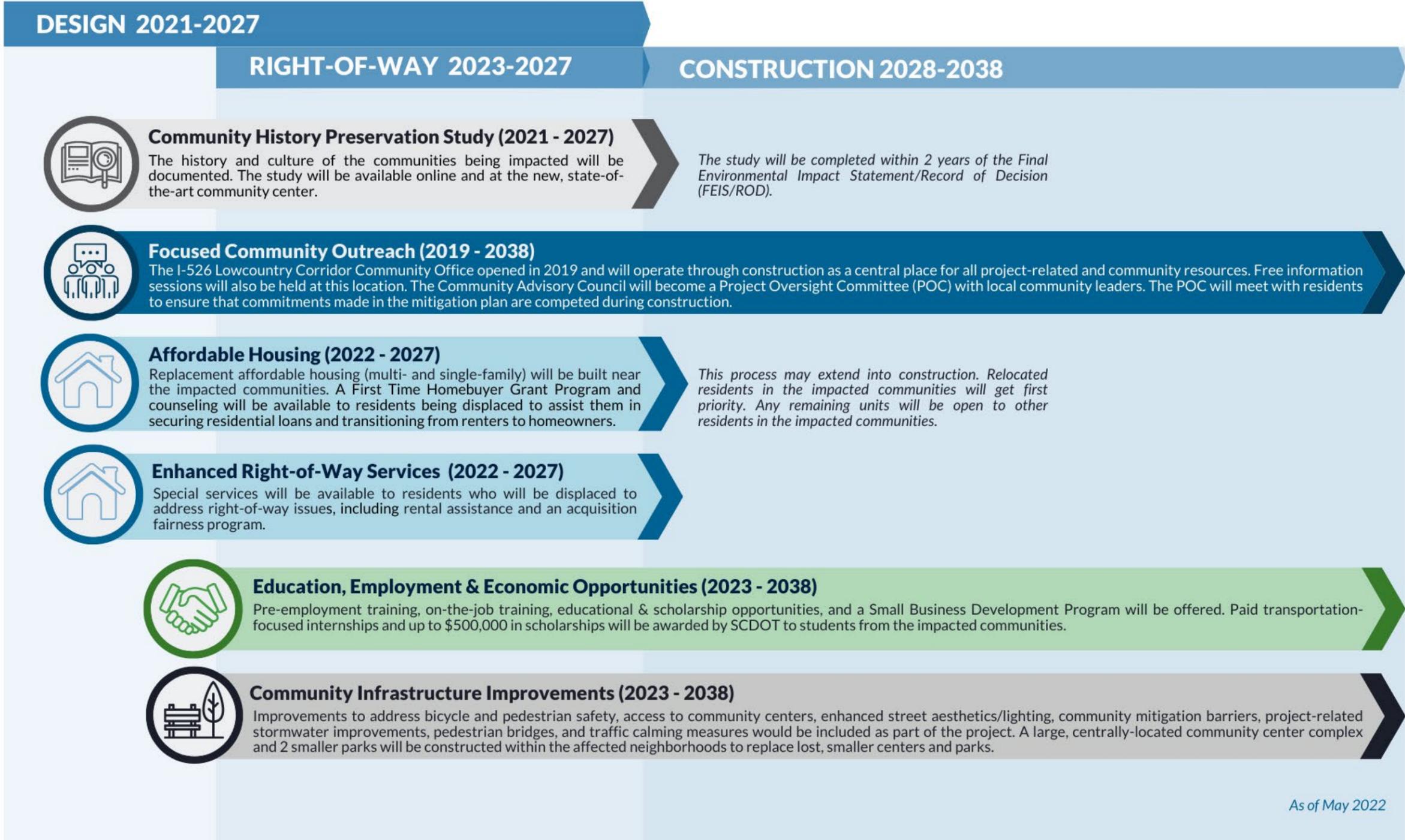
SCDOT initiated the process to acquire property to construct the modern, centrally located replacement community center and the Russelldale Pocket Park in Early 2021 and has already started outreach and engagement efforts for the Community History Preservation Program. With the issuance of the ROD, SCDOT will initiate the remaining components of the EJ Community Mitigation Plan. Components of the mitigation plan that will need to be constructed, such as the Community Infrastructure Enhancement Plan (CIEP) elements, community center, and pockets parks will immediately enter the preliminary design and environmental compliance phases. Additionally, mitigation plan elements such as establishing the Project Oversight Committee (POC), organizational training, and the workforce development and educational program will also be initiated. The POC will meet quarterly at the Community Office to receive updates on the various EJ Community Mitigation Plan components until the completion of all the components.

SCDOT will develop a Community Mitigation Implementation Plan to outline specific details for each of the mitigation items within the EJ Community Mitigation Plan. A Community Mitigation Implementation Schedule will also be developed to deliver the community mitigation measures outlined in the Plan in a timeline that maximizes the benefits to the impacted EJ communities. Implementation of the EJ Mitigation Plan components along with the proposed schedule and approximate time frames are shown below. The EJ mitigation schedule is based on approval of the ROD without legal challenge and is subject to change.

WHAT CHANGES WILL I SEE IN MY COMMUNITY? *And When?*

PROPOSED SCHEDULE

Mitigation Schedule is based on approval of environmental documentation without legal challenge; subject to change



As of May 2022

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A

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway Transportation Officials
ACE	Ashepoo-Combahee Edisto Basin
ACM	Asbestos Containing Materials
ACP	Agency Coordination Plan
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADTM	Alternatives Development Technical Memorandum
APHIS	Animal and Plant Health Inspection Service
ARS	At-Risk Species
ASTM	American Society for Testing and Materials
AVE	Area of Visual Effect

B

B-2	General Business
BCDCOG	Berkeley-Charleston-Dorchester Council of Governments
BFE	Base Flood Elevations
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best management practice
BRAC	Base Realignment and Closure
BRT	Bus Rapid Transit

C

C	Conservation
CAA	Clean Air Act
CAC	Community Advisory Council
CAP	Community Action Partnership
CARTA	Charleston Area Transportation Authority
CCPRC	Charleston County Park and Recreation Commission
CCSD	Charleston County School District
C-D	Collector-Distributor
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHATS	Charleston Area Transportation Study
CIA	Community Impact Assessment
CIEP	Community Infrastructure Enhancement Plan
CLOMR	Conditional Letter of Map Revision
CMMC	Charleston Mining and Manufacturing Company
CMP	Congestion Management Process
CRD	Commercial Redevelopment District
CSS	Context Sensitive Solutions
CWA	Clean Water Act

CWS Charleston Water System
CZC Coastal Zone Consistency

D

D/B Design Build
D/B/B Design Bid Build
DBE Disadvantaged Business Enterprise
DEIS Draft Environmental Impact Statement
DO Dissolved Oxygen
DSS Decent, Safe, and Sanitary

E

EA Environmental Assessment
EFH Essential Fish Habitat
EJ Environmental Justice
EIS Environmental Impact Statement
EO Executive Order
ESA Endangered Species Act
ESA Environmental Site Assessment
ESO Environmental Services Office

F

FAST Fixing America's Surface Transportation
FBFM Flood Boundary and Floodway Map
FEIS Final Environmental Impact Statement
FEMA Federal Emergency Management Agency
FHWA Federal Highway Administration
FIRM Flood Insurance Rate Map
FPPA Farmland Protection Policy Act

G

GARCO General Asbestos & Rubber Company
GB General Business
GIS Geographic Information Systems

H

HAPC Habitat Area of Particular Concern
HCT High Capacity Transit
HLR Housing of Last Resort
HOA Home Owners Association
HOT High Occupancy Toll
HOV High Occupancy Vehicle

HUC Hydrologic Unit Code
 HUD (US Department of) Housing and Urban Development

I

ICE Indirect and Cumulative Effects
 IGA Intergovernmental Agreement
 IP Individual Permit
 IPaC Information, Planning, and Conservation Online
 ITS Intelligent Transportation System

J

JBC Joint Base Charleston
 JD Jurisdictional Determination

L

LBP Lead-based Paint
 LCC Lowcountry Corridor
 LEDPA Least Environmentally Damaging Practicable Alternative
 LEP Limited English Proficiency
 LiDAR Light Detection and Ranging
 LOI Letter of Intent
 LOMR Letter of Map Revision
 LOS Level of Service
 LRTP Long Range Transportation Plan
 LUST Leaking Underground Storage Tank
 LWCF Land and Water Conservation Fund

M

M-1 Multi-Family Residential
 MAFMC Mid-Atlantic Fisheries Management Council
 MBTA Migratory Bird Treaty Act
 MHW Mean High Water
 MLW Mean Low Water
 MMPA Marine Mammal Protection Act
 MOA Memorandum of Agreement
 MOT Maintenance-of-Traffic
 MOU Memorandum of Understanding
 MPG Miles Per Gallon
 MPH Miles Per Hour
 MPO Metropolitan Planning Organization
 MRLC Multi-Resolution Land Characteristics Consortium
 MSA Metropolitan Statistical Area
 MSFA Magnuson-Stevens Fishery Conservation and Management Act

MSAT	Mobile Source Air Toxic
MU	Mixed-Use
MUSC	Medical University of South Carolina

N

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAN	National Action Network
NAVD 88	North American Vertical Datum of 1988
NCT	North Charleston Terminal
NEPA	National Environmental Policy Act
NHP	National Highway Performance
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NML	Noise Monitoring Location
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	National Rivers Inventory
NRTM	Natural Resources Technical Memorandum
NS	Norfolk Southern
NSA	Noise Study Area

O

OCRM	Ocean and Coastal Resource Management
OFD	One Federal Decision
OJT	On-the-Job Training

P

PDD	Planned Development District
PIM	Public Information Meeting
PIP	Public Involvement Plan
PJD	Preliminary Jurisdictional Determination
POC	Project Oversight Committee
PRM	Permittee Responsible Mitigation
PUD	Planned Unit Development

Q

QAPP	Quality Assurance Program Plan
------	--------------------------------

R

R-1	Single-Family Residential
R-2	Multi-Family Residential
RCE	Resident Construction Engineer
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Concern
RIBITS	Regulatory In-Lieu Fee and Bank Information Tracking System
ROD	Record of Decision
ROW or R/W	Right-of-Way

S

SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity At: A Legacy for Users
SAFMC	South Atlantic Fisheries Management Council
SARA	Superfund Amendments and Reauthorization Act
SBE	Small Business Enterprise
SCCZMP	States Coastal Zone Management Plan
SCDAH	South Carolina Department of Archives and History
SCDHEC	South Carolina Department of Health and Environmental Control
SCDHEC-OCRM	SCDHEC-Ocean and Coastal Resource Management
SCDNR	South Carolina Department of Natural Resources
SCDOT	South Carolina Department of Transportation
SCIAA	South Carolina Institute of Archaeology and Anthropology
SCPRT	South Carolina Department of Parks, Recreation and Tourism
SCSPA	South Carolina Ports Authority
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SNA	Social Needs Assessment
SPCC	Spill Prevention, Control, and Countermeasures
SR	Single-Family Residential
STIP	Statewide Transportation Improvement Plan
SUP	Shared Use Path
SWPPP	Stormwater Pollution Prevention Plan

T

TCP	Traditional Cultural Property
TDM	Transportation Demand Management
THPO	Tribal Historic Preservation Officer
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TNW	Traditional Navigable Waters
TSM	Transportation System Management

U

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

V

v/c	Volume to Capacity
VIA	Visual Impact Assessment
VISSIM	Verkehr in Städten-SIMulationsmodell
VMT	Vehicle Miles Traveled
VPIM	Virtual Public Information Meeting

W

WQC	Water Quality Certification
WOUS	Waters of the United States
WQMS	Water Quality Monitoring Stations
WSWQ-ICE	Wetlands, Streams, and Water Quality Indirect and Cumulative Effects

What is the I-526 Lowcountry Corridor WEST Project?

The South Carolina Department of Transportation (SCDOT), in cooperation with the Federal Highway Administration (FHWA), is preparing this Final Environmental Impact Statement (FEIS) 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 at the I-26/I-526 interchange and along the I-526 mainline, thereby relieving traffic congestion and improving operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue, Figure 1.

The I-526 and I-26 system interchange is a key interchange locally. It links downtown Charleston, Summerville, West Ashley, and Mount Pleasant. I-26 links the Charleston area with other major cities to the west like Columbia, Spartanburg, and Asheville, North Carolina, as well as with I-95, I-77, I-20, and I-85.

I-526 provides the only freeway access to two important port terminals, the North Charleston terminal, and the Wando Welch terminal. Wando Welch is the busiest terminal in the region and has no access to rail. I-526 is an important route for daily commuting traffic and is part of the network for transporting freight and commercial goods to and from the Port of Charleston and throughout the region. I-526 also provides freeway crossings over three major rivers. To the east of I-26, the route crosses the Cooper and Wando Rivers providing an important connection, as well as a hurricane evacuation route, for the growing Daniel Island and Mount Pleasant areas. To the west of I-26, the route crosses the Ashley River and provides a similar connection to the growing West Ashley area.

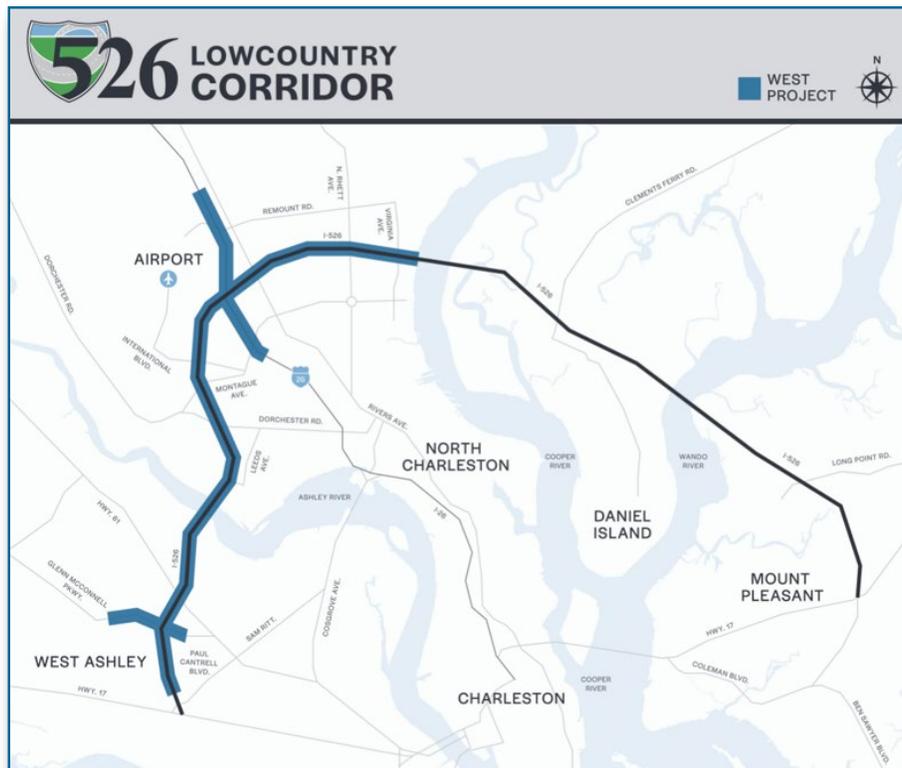


Figure S-1 I-526 LCC WEST Project Study Area

The following planned improvements were identified in the vicinity of the proposed project using the Berkeley-Charleston-Dorchester Council of Governments list of existing plus committed projects.

- I-26 Widening from Port Access Road Interchange to I-526 Interchange
- Palmetto Commerce Parkway (Phase III) from Ashley Phosphate Road to **Remount Road**
- **I-526/Montague Avenue Interchange Modification and** Airport Connector Road - West Montague Avenue to Michaux Parkway to Airport Terminal
- Glenn McConnell Parkway Widening from Bees Ferry Road to Rutherford Way
- Mark Clark Expressway Extension
- US 17/Main Road Intersection
- Main Road (Phase I) from Bees Ferry Road to River Road
- Dorchester Road Widening from Michaux Parkway to Patriot Boulevard
- Stromboli Avenue Extension from Spruill Avenue to Port Access Road
- I-26 Port Access Road Interchange
- Railroad Avenue Extension from Mabeline Road to Eagle Landing Drive
- Northside Drive realignment to intersect with Ashley Phosphate Road across from Spa Road
- Clements Ferry Road Widening from I-526 Interchange to Jack Primus Road (Phase 1) - **completed in August 2019**
- I-26 Palmetto Commerce Parkway (Weber Drive) Interchange
- SC Ports New Terminal Development at Hugh Leatherman Terminal and Wando Welch Terminal
- Charleston International Airport Expansion

What is the Final Environmental Impact Statement?

This FEIS is the culmination of technical studies and reports, interagency coordination, and community outreach and feedback. It is a document for you – the public, stakeholders, and decision makers. The FEIS documents the purpose and need for the project; presents a discussion of the alternatives and the analysis of them; describes the affected environment, assessment of environmental, transportation, social, and economic impacts; identifies appropriate mitigation measures to offset impacts; and presents a Recommended Preferred Alternative. It also incorporates analysis and feedback from public and agency sources gathered during the various phases of the **Draft Environmental Impact Statement (DEIS) and FEIS** development.

The FEIS was developed in accordance with the National Environmental Policy Act (NEPA) and corresponding regulations and guidelines of the FHWA, the lead federal agency (23 Code of Federal Regulations [CFR] 771 and 40 CFR 1500–1508). Technical studies, interagency coordination, community outreach, and feedback from the public and agencies were all incorporated into the FEIS.

What is the Purpose of the Project and Why is it Needed?

The purpose of the project is to increase capacity at the I-26/I-526 interchange and along the I-526 mainline, thereby relieving traffic congestion and improving operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue.

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 most congested corridors. Forecasts show that without improvements,

segments of the corridor will continue to be among the state's most congested in 2040. Due to geometric deficiencies, the interchange of I-526 and I-26 is the major source of the congestion (refer to Section 2.1.5 for additional information).

The I-526/I-26 interchange is listed as the #2 project in the 2035 Charleston Area Transportation Study (CHATS) Long Range Transportation Plan (LRTP) Ranked List of Candidate Transportation Projects, is the #6 project on SCDOT's Act 114 Interstate Capacity List, and is listed in SCDOT's Statewide Transportation Improvement Program 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 2040 Multimodal Transportation Plan, which lists seven segments within this project corridor among the top 20 most congested interstate segments.

Act 114 of 2007 changed the SC Code of Laws to require SCDOT to rank and prioritize transportation projects based on specific criteria.

The need of this project is derived from the following factors, which are detailed further in Chapter 2:

- Growth in population and employment
- Decreased mobility and increased traffic congestion
- Existing traffic conditions
- Projected traffic conditions
- Geometric Deficiencies

What are the Alternatives for the Project and How were they Evaluated?

A six-step process was developed to identify alternatives and to determine which alternatives minimize potential impacts to the human and natural environment, while satisfying the purpose and need, Figure 2. Detailed information regarding the alternatives development and evaluation can be found in Chapter 3.

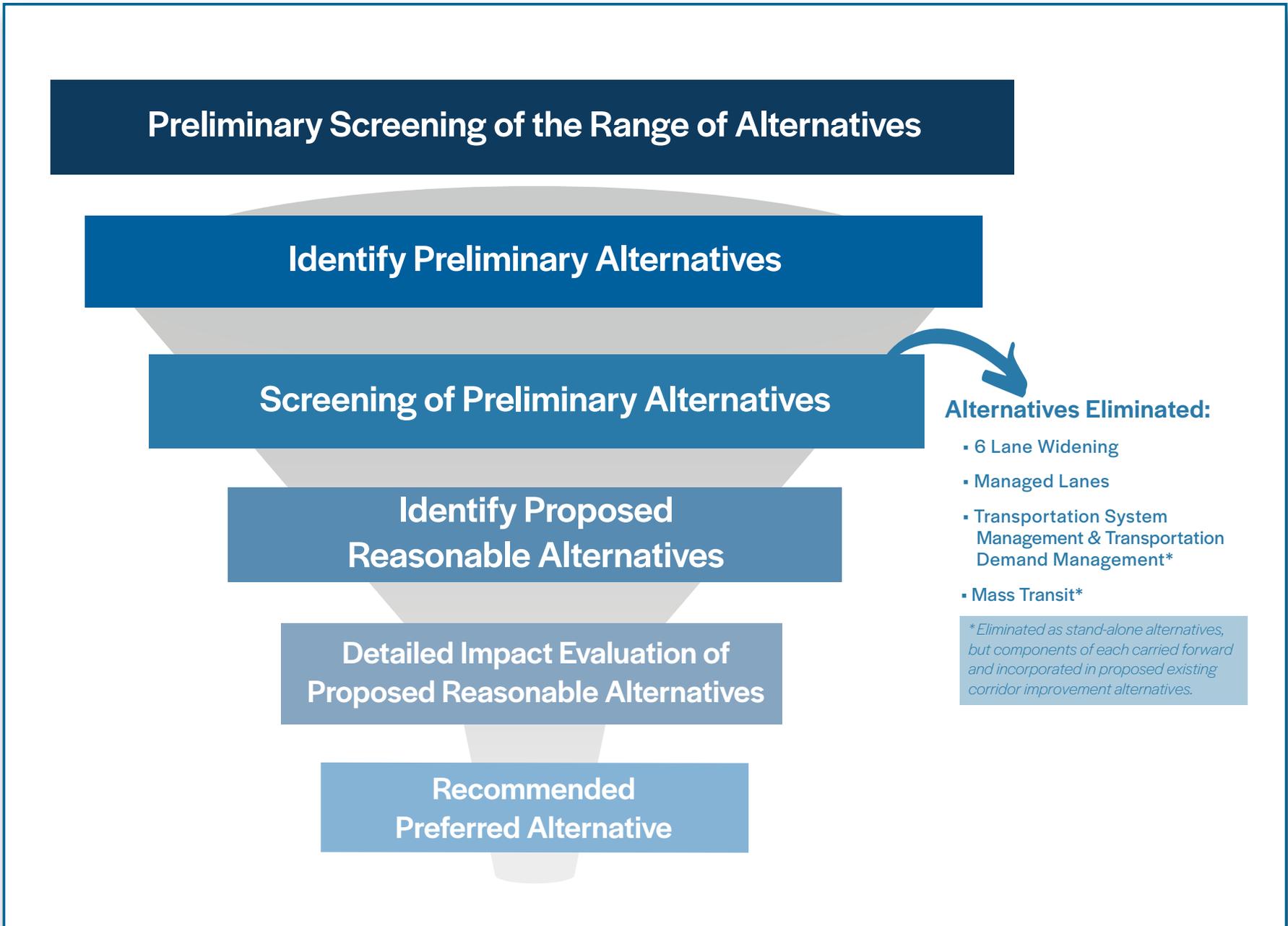


Figure S-2 Alternatives Development Flowchart

Step 1: Preliminary Screening of the Range of Alternatives

Ten alternatives were initially developed based on a combination of the findings of the 2013 Corridor Study, CHATS Congestion Management Process (CMP), SCDOT goals and priorities, further evaluation of the corridor, and input from the public and agencies. The ten initial alternatives were general in nature and were evaluated based on the ability to satisfy the purpose and need of the I-526 LCC WEST project, Table 1. The preliminary range of alternatives were developed to include the following:

- No-Build
- **Alternative Alignment Improvements**
 - > East Montague Avenue
 - > Remount Road
 - > US 78 to Virginia Avenue
 - > Ashley Phosphate Road to Virginia Avenue
 - > Bees Ferry Road to Dorchester Road
- Managed Lanes
- Transportation System Management (TSM) and Transportation Demand Management (TDM) Strategies
- Mass Transit
- Existing Corridor Improvements

No-Build - the existing facility and any funded improvements; it serves as a baseline for the comparison of future conditions and impacts and, therefore, may not be screened out of the range of alternatives at this step

Managed Lanes - highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions

TSM/TDM - improvements to efficiency or safety, or strategies to reduce the number of vehicle trips during high congestion periods

Capacity - the maximum amount of traffic a road can accommodate at a given speed without delay

Table S-1 Preliminary Screening of the Range of Alternatives

	No Build	Improvements to Existing Local Facilities		New Location			Managed Lanes*	TSM/TDM*	Mass Transit*	Existing Corridor Improvements
		East Montague Ave	Remount Rd	US 78 to Virginia Ave	Ashley Phosphate Rd to Virginia Ave	Bees Ferry Rd to Dorchester Rd				
Satisfies I-526 LCC WEST Purpose & Need	-									
Carried Forward as Preliminary Alternatives										

* Eliminated as stand-alone alternatives, but components of each carried forward and incorporated in proposed existing corridor improvement alternatives.

TSM/TDM, Modal strategies, and managed lanes were eliminated as stand-alone alternatives for the I-526 LCC WEST project because their combined potential reduction in congestion is not substantial enough to meet the purpose and need of the project. Project grouping strategies considered in the 2013 Corridor Study still recommended widening I-526 and improving the I-26/I-526 interchange in the year 2020. As a result of this Corridor Study, SCDOT has funded numerous projects identified in the study in an effort to reduce congestion and improve operations along the corridor. Therefore, forecasts of future traffic in the I-526 LCC WEST corridor already consider these strategies to be implemented.

Step 2: Identify Preliminary Alternatives

The two alternatives that advanced from the preliminary screening in Step 1 are considered Preliminary Alternatives and moved on to the next level of screening in Step 2. The existing corridor improvements alternative was expanded to include options for improving both the mainline interstate and associated interchanges, resulting in the following 25 alternatives being identified as Preliminary Alternatives:

- No-Build
- Existing Corridor Improvements
 - > Mainline Interstate Alternatives
 - 6-lane widening
 - 8-lane widening
 - > Interchange Alternatives
 - I-526 at Paul Cantrell Boulevard - Five alternatives were evaluated at this interchange:
 1. Triple Lefts to I-526 eastbound with Improved Loops
 2. Semi-Directional Ramp to I-526 eastbound with Improved Loops
 3. Diverging Diamond Interchange
 4. Single Point Interchange with Semi-Directional Ramp to I-526 eastbound
 5. Semi-Directional Ramp to I-526 eastbound
 - Paul Cantrell Boulevard at Magwood Drive - Seven alternatives were evaluated at this intersection:
 1. Diamond
 2. Diamond with Braided Ramps
 3. Single Point Interchange
 4. Compressed Diamond with Phase Overlap
 5. Interchange with Separated Overpass Bridge
 6. Maximized At-Grade Intersection
 7. Continuous Flow Intersection
 - I-26/I-526 System - Four alternatives were evaluated at this interchange:
 1. Semi-Directional Interchange
 2. Semi-Directional Interchange with One Loop Ramp Retained
 3. Semi-Directional Turbine Interchange
 4. Semi-Directional Interchange with Three Levels of Ramping
 - I-526 at Rivers Avenue - Two alternatives were evaluated at this interchange:
 1. Relocated Partial Cloverleaf
 2. Basic Build, **additional capacity lanes elevated over existing interchange**
 - I-526 at N Rhett Avenue and Virginia Avenue (Due to proximity, these interchanges are combined.)
Four alternatives were evaluated at this interchange:
 1. On-ramp from N Rhett Avenue to I-526 eastbound and westbound through one intersection along N Rhett Avenue with separate access to Virginia Avenue
 2. Diamond Interchange with access to Virginia Avenue
 3. Improve existing Loop Ramps
 4. Directional ramps from northbound to southbound N Rhett Avenue traffic

The eight alternatives that were eliminated in this step would not substantially reduce congestion and/or improve traffic operations, or would have unacceptable environmental impacts.

Step 3: Screening of Preliminary Alternatives

The 25 Preliminary Alternatives were then evaluated by screening criteria at a qualitative level. If a Preliminary Alternative was unable to meet the criteria, then it was considered not practicable or feasible. The ten alternatives that met the screening criteria are identified as Proposed Reasonable Alternatives, Table 2. The Preliminary Alternatives were evaluated by the following screening criteria:

- Acceptable level of service (LOS)
- Compatible with Adjacent Interchange
- Geometric Deficiencies Resolved
- Flexibility with Don Holt Bridge Replacement
- Constructability

Table S-2 Screening of the Preliminary Alternatives

	No-Build	Mainline		I-526 at Paul Cantrell Blvd					Paul Cantrell Blvd at Magwood Dr							I-26/I-526 System				I-526 at Rivers Ave		I-526 at N Rhett/Virginia Ave			
		6-lane	8-lane	1	2	3	4	5*	1	2	3	4	5*	6	7	1	2	3	4	1	2	1	2	3	4
Acceptable LOS	✗	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compatible with Adjacent Interchange	-	-	-	✗	✓	✗	✓	✓	✗	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
Geometric Deficiencies Resolved	✗	-	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓
Flexibility with Don Holt Bridge Replacement	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓
Constructability	-	✓	✓	✓	✗	✓	✗	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✗	✓
Carried Forward as Reasonable Alternatives	✓	✗	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗	✓	✗	✗	✓	✓	✗	✗	✓	✓	✓	✓	✗	✗

* Based on further analysis and prior to the selection of an alternative for the I-526 at Paul Cantrell Boulevard interchange and at the Paul Cantrell Boulevard at Magwood Drive interchange, Alternative 5 for both interchanges were modified to meet the refined project goals.

Step 4: Identify Proposed Reasonable Alternatives

The Preliminary Alternatives that met the screening criteria and purpose and need of the project were carried forward as the Proposed Reasonable Alternatives. Two alternatives at the I-26/I-526 system interchange and two alternatives at the Rivers Avenue interchange met the screening criteria and the purpose and need of the project. However, due to the proximity of I-526 at I-26 and Rivers Avenue, these interchanges were combined, resulting in four alternatives being carried forward as Proposed Reasonable Alternatives. The following Proposed Reasonable Alternatives were presented at the November 2019 I-526 LCC WEST Public Information Meeting (PIM) for public and agency review and comment:

- No-Build
- Mainline Interstate 8-lane widening
- Interchange Alternatives
 - > One alternative at I-526 at Paul Cantrell Boulevard that includes the intersection at Magwood Drive
 - > Four alternatives at I-526 at I-26 and Rivers Avenue
 - Alternative 1
 - Alternative 1A
 - Alternative 2
 - Alternative 2A
 - > **Two** alternatives at I-526 at N Rhett/Virginia Avenue
 - Alternative 1
 - Alternative 2

Following the PIM, three additional interchange alternatives (*) were developed at N Rhett/Virginia Avenue based on public and agency input, resulting in the following Proposed Reasonable Alternatives:

- No-Build
- Mainline Interstate 8-lane widening
- Interchange Alternatives
 - > One alternative at I-526 at Paul Cantrell Boulevard that includes the intersection at Magwood Drive
 - > Four alternatives at I-526 at I-26 and Rivers Avenue
 - Alternative 1
 - Alternative 1A
 - Alternative 2
 - Alternative 2A
 - > Five alternatives at I-526 at N Rhett/Virginia Avenue
 - Alternative 1
 - Alternative 2
 - Alternative 2A*
 - Alternative 5*
 - Alternative 6*

Step 5: Detailed Impact Evaluation of Proposed Reasonable Alternatives

The Proposed Reasonable Alternatives that came out of Step 4 were evaluated based on more detailed evaluation criteria:

- Purpose & Need
 - > Traffic
 - AADT
 - v/c Ratio
 - LOS
- Essential Fish Habitat
- Hazardous Materials
- Cultural Resources
- Noise
- Delineated Wetlands
- Relocations
- Environmental Justice
- Threatened & Endangered Species
- Utilities
- Cost
- Section 4(f) & 6(f)
- Reduce/Eliminate Geometric Deficiencies to Improve Safety
- Hurricane Evacuation Route Compatibility

AADT = Average Annual Daily Traffic

v/c Ratio = volume to capacity ratio - Compares roadway demand (volume) with roadway supply (capacity)

LOS = level of service - Way to describe roadway operating conditions based on speed, travel time, maneuverability, delay and safety

Environmental Justice (EJ) = the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin, or educational level with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Section 4(f) = the original section within the Department of Transportation Act of 1966 which provided for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development.

Section 6(f) = refers to federal law ensuring that any recreational lands that have received Land and Water Conservation Fund (LWCF) money cannot be converted to non-recreational purposes without approval by the US Department of the Interior National Park Service. Section 6(f) also requires that any applicable land converted to non-recreational uses must be replaced with land of equal or greater value, location, and usefulness.

In order to perform a detailed impact evaluation on the Proposed Reasonable Alternatives identified in Step 4, the widening of the mainline to 8-lanes was combined with the interchange alternatives into the following three sections as shown in Figure S-3.

- Paul Cantrell Boulevard to International Boulevard
- International Boulevard to Rivers Avenue
- Rivers Avenue to Virginia Avenue

Step 6: Recommended Preferred Alternative

In developing the Recommended Preferred Alternative, further detailed evaluations of the Proposed Reasonable Alternatives from Step 5 were conducted to determine if any of the alternatives were not reasonable and, therefore, could be eliminated from further consideration. An alternative was determined not reasonable if:

1. The alternative does not satisfy the purpose of and need for the project.
2. The alternative is determined to be not practical or feasible from a technical and/or economic standpoint.
3. The alternative substantially duplicates another alternative.

After applying these additional evaluation criteria, the Proposed Reasonable Alternative that best balanced the potential impacts to the human and natural environment was identified as the Recommended Preferred Alternative:

- The interchange at Paul Cantrell Boulevard and I-526, the intersection at Paul Cantrell Boulevard and Magwood Drive, and the widening to 8-lanes of I-526 from Paul Cantrell Boulevard to International Boulevard.
- Alternative 2 at I-526 at I-26 and Rivers Avenue and the widening to 8-lanes from International Boulevard to Rivers Avenue.
- Alternative 2A at I-526 at N Rhett/Virginia Avenue and the widening to 8-lanes from Rivers Avenue to Virginia Avenue.

The Recommended Preferred Alternative proposes to widen I-526 from Paul Cantrell Boulevard to I-26 to an eight-lane facility (four lanes in each direction). Additionally, the project would reconfigure the interchange of I-26 and I-526 to add directional ramps to increase capacity, add a collector-distributor facility (a way of connecting closely spaced interchanges) to I-526, and expand the existing collector-distributor on I-26 to further improve operations. Improvements would also be made to the interchanges of I-26 and Aviation Avenue and Montague Avenue. The project would make other operational improvements at the interchanges along I-526. Specifically, the interchanges at Paul Cantrell Boulevard (including the adjacent intersection with Magwood Drive), International Boulevard, and N Rhett Avenue/Virginia Avenue would undergo various types of reconfiguration. A detailed description of the proposed changes, along with the traffic engineering analysis of the changes, can be found in Appendix B, beginning on page 5-14.

This combination of Proposed Reasonable Alternatives was selected as the Recommended Preferred Alternative because of the lower number of relocations, lower potential impact to environmental justice populations, lower impact to wetlands and streams, improved traffic operations, and the ability to resolve a large number of existing geometric deficiencies. Following the designation of the Recommended Preferred Alternative, the design was further evaluated by the project team and the potential impacts were revised as shown in Table S-3 and Table S-4.

The DEIS published on October 30, 2020 documented the assessment of impacts and identification of the Recommended Preferred Alternative for public review. Comments on the DEIS were received between October 30, 2020 and January 15, 2021. The DEIS, Recommended Preferred Alternative, and Draft Environmental Justice (EJ) Community Mitigation Plan were presented for feedback during the Public Hearing comment period through multiple outreach efforts. Three community drop-in meetings were held during this time period. One-on-one appointments for in-person sessions were held at the project's community office in November and December 2020. A live, virtual Comment Session was held on December 15, 2020 from 6:00pm to 8:00pm. In addition, comments were solicited via email and the project website, www.526lowcountrycorridor.com.

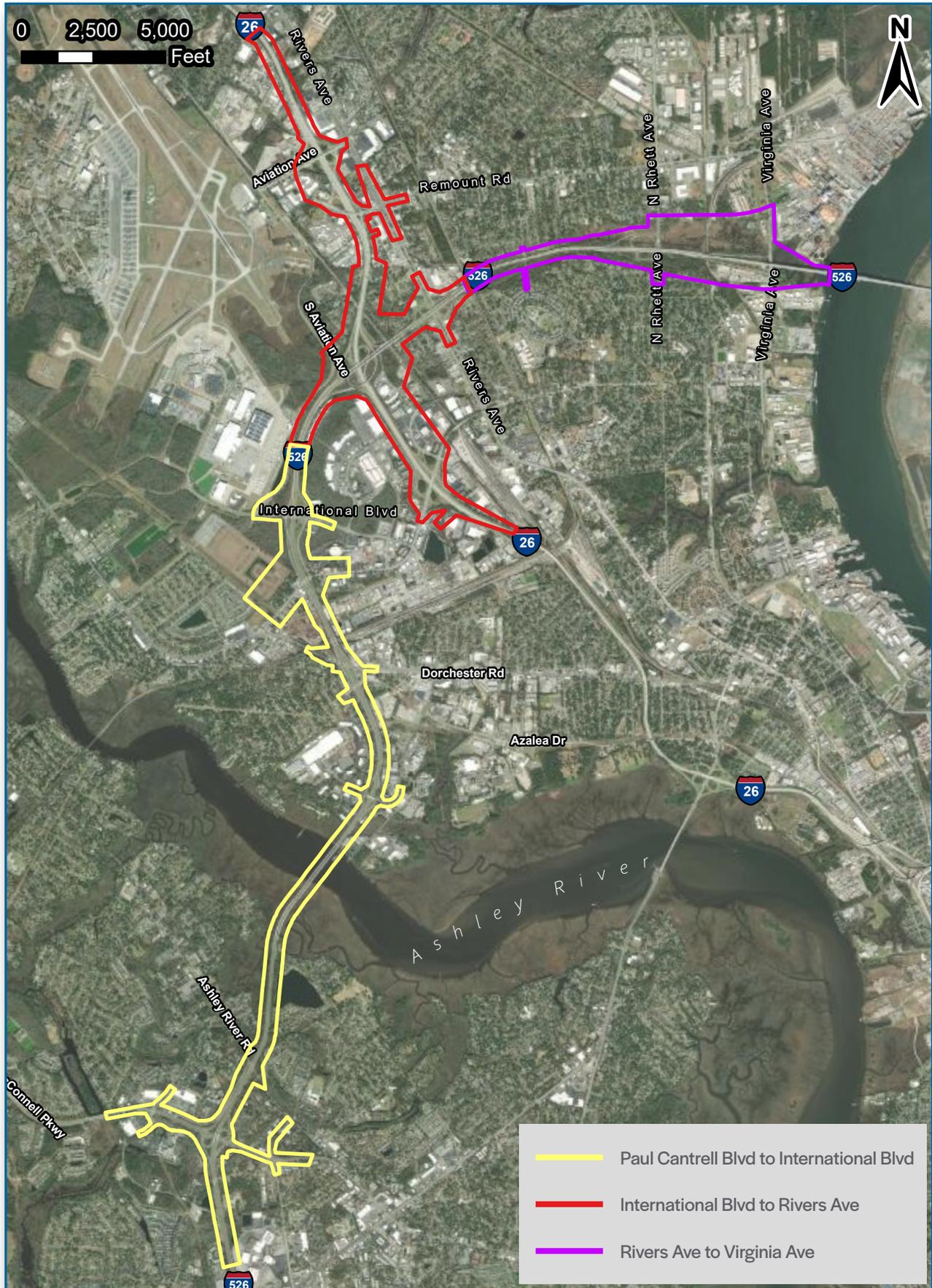


Figure S-3 Recommended Preferred Alternative

Table S-3 Proposed Reasonable Alternatives Screening Matrix : Recommended Preferred Alternative Sections

		No-Build	Paul Cantrell Blvd to International Blvd	International Blvd to Rivers Ave: Alternative 2	Rivers Ave to Virginia Ave: Alternative 2A		
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/30	15/16	8/11	3/3		
	Provides Direct Access to/from I-526 (Yes/No)	Yes	Yes	Yes	526 EB to Virginia No 526 WB to Virginia Yes Virginia to 526 EB Yes Virginia to 526 WB Yes		
	Provides Direct Access to/from I-26 (Yes/No)	N/A	N/A	No	N/A		
	Weighted v/c Ratio	> 1.00	0.72 0.75 0.72 0.67	0.71	0.91		
	Intersection Delay/LOS	N/A	N/A	N/A	N/A	AM Peak Hour	PM Peak Hour
						EB C/30.1	WB B/18.6
Mainline LOS	F	D/D/C/C	C	C/D			
Freshwater Wetland Impact Based on R/W	(Acres)	0	19.3	28.5	49.9		
Critical Area Impact Based on R/W	(Acres)	0	19.6	0	2.4		
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	0	9.1	N/A	N/A		
Pond Impact Based on R/W	(Acres)	0	0.03	0	0		
Freshwater Stream Impact Based on R/W	(Feet)	0	327.0	13,327.1	4,977.6		
Floodplains	(Acres)	0	393	419	153		
Relocations	Residential	0	2 Single-Family homes; 6 Multi-Family Complexes; 15 Units Total	40 Single-Family Homes; 2 Mobile Homes; 14 Multi-Family Complexes; 47 Units Total; 30 Potential Long Term Hotel Units*	1 Single-Family Home; 9 Mobile Homes; 2 Multi-Family Complexes; 10 Units Total		
	Businesses	0	9 Commercial Buildings; 16 Units Total	18 Commercial Buildings; 54 Units Total	1 Commercial Building; 1 Unit Total		
	Churches/Institutions	0	1 Speech-language pathology office at Medical University of South Carolina's Children's Hospital	1 - Enoch Chapel Methodist	0		
	Community Facilities	0	0	2 - Highland Terrace-Liberty Park Community Center, Russelldale Community Center	0		
	Total	0	34	176	21		
Environmental Justice	Yes/No	No	Yes	Yes	Yes		
Threatened & Endangered Species		0	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect		
Essential Fish Habitat	Yes/No	No	Yes	No	Yes		
Cultural Resources	Eligibility for Listing on NRHP	No Effect	No Effect: Potentially Eligible Underwater Resource 006-1	No Adverse Effect: Resource 7806 & Resource 7916	No Effect: No Potentially Eligible Resources		
Section 4(f) & 6(f)	Yes/No	No	No	Yes Highland Terrace-Liberty Park Community Center - 4(f) & 6(f); Russelldale Community Center - 4(f)	No		
Utilities	\$	\$0	\$12,901,540	\$22,312,257	\$13,016,217		
Cost	\$	\$0	\$600M-\$710M	\$850M-\$1.3B	\$775M-\$912M		
Preferred Alternative	Yes/No	No	Yes	Yes	Yes		

*Denotes 30 potential long term tenants: 15 at the Double Tree Hilton Hotel next to the eastbound on-ramp to I-526 at International Boulevard and 15 at the Budget Inn Charleston at the I-26/Aviation Avenue interchange.

Updated impacts and costs associated with the Recommended Preferred Alternative since the DEIS was completed are noted in Table S-4. Increased relocation impacts noted are due to additional right-of-way studies that were conducted once the Recommended Preferred Alternative was selected to consider the degree of encroachment, accessibility, and setback requirements for the Recommended Preferred Alternative. Additional right-of-way studies also provided further clarification on the number of tenants within each commercial or business relocation. The increase in business relocations for the FEIS-ROD reflects a count of actual tenants, not just commercial buildings.

Based on the Recommended Preferred Alternative, it is anticipated that there will be approximately 156 residential relocations and 28 commercial building relocations that account for 71 commercial unit relocations along the project corridor, as described in the FEIS-ROD Relocation Impact Study, Appendix I. This is an increase of 62 residential relocations and 55 total commercial units since the DEIS was published. These additional residential and commercial relocations are due in part to a supplementary right-of-way field study that was conducted in July 2021, which counted displacements within the proposed right-of-way boundary, identified additional displacements that were not previously visible from aerial imagery, and verified multi-family or single-family residence status. In addition to the field study, access and drainage impacts were evaluated which resulted in additional relocations. Thirty (30) residential relocations were also added since the DEIS was published due to potential long-term occupants of the Double Tree Hilton and Budget Inn Charleston hotels that will be impacted by the I-526 LCC WEST project. Business/commercial relocations were also re-evaluated to provide a count of actual tenants, rather than the number of commercial building displacements.

It is noted that relocation impact numbers for all of the Proposed Reasonable Alternatives would increase to reflect these updates. Final relocation impacts will be based on negotiations with each property owner as a part of the appraisal process during the right of way phases. These counts will be refined as the project advances and additional measures are evaluated to minimize impacts. Relocation details, including a comparison of impacts for the Proposed Reasonable Alternatives, can be found in Chapter 3 and in the updated Relocation Impact Study, Appendix I.

The project costs have greatly increased due to several factors, the most significant was a change to the schedule and packaging of construction packages on the project. The construction start date shifted approximately 4 years and the project construction packages were phased over a 10 year period. This one change had the most significant impact on the project cost estimates. Other impacts to the costs were due to refinements in the design of the Recommended Preferred Alternative after the DEIS was published which were incorporated to address comments received from the public during the development of the FEIS.

Table S-4 Proposed Reasonable Alternatives Screening Matrix: Recommended Preferred Alternative

		No-Build	Recommended Preferred Alternative (DEIS)	Recommended Preferred Alternative (Updated)
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/30	26/30	26/30
	Provides Direct Access to/from I-526 (Yes/No)	Yes	Yes	Yes
	Provides Direct Access to/from I-26 (Yes/No)	Yes	No	No
	Weighted v/c Ratio	> 1.00	< 1.00	< 1.00
	Intersection Delay/LOS	N/A	N Rhett/Virginia Ave, Refer to Table S-3	N Rhett/Virginia Ave, Refer to Table S-3
	Mainline LOS	F	D/D/C/C/C/C/D	D/D/C/C/C/C/D
Freshwater Wetland Impact Based on R/W	(Acres)	0	97.7	97.7
Critical Area Impact Based on R/W	(Acres)	0	22	22
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	0	9.1	9.1
Pond Impact Based on R/W	(Acres)	0	0.03	0.03
Freshwater Stream Impact Based on R/W	(Feet)	0	18,631.7	18,631.7
Floodplains	(Acres)	0	957	965
Relocations*	Residential	0	94	156
	Businesses	0	16	71
	Churches/Institutions	0	1 church	1 church; 1 institution
	Community Facilities	0	2	2
	Total	0	113	231
Environmental Justice	Yes/No	No	Yes	Yes
Threatened & Endangered Species		0	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect
Essential Fish Habitat	Yes/No	No	Yes	Yes
Cultural Resources	Eligibility for Listing on NRHP	No Effect	No Adverse Effect	No Adverse Effect
Section 4(f) & 6(f)	Yes/No	No	Yes	Yes
Utilities	\$	\$0	\$53.5M	\$48.2 M
Cost	\$	\$0	\$1.43B	\$2.5B-\$3B

* The increase in the number of relocations since the DEIS is due to a supplementary right-of-way field study (Spring/Summer 2021) that took into account displacements that were not visible from aerial imagery, verified multi-family or single-family residence status, and considered access, mitigation, and drainage design impacts. The majority of the increase in business relocations can be attributed to a count of actual tenants, rather than the number of commercial building displacements. Thirty (30) residential relocations were also added to account for potential long-term occupants of the Double Tree Hilton Hotel and Budget Inn Charleston.

Pedestrian and Cyclist Accommodations

To address pedestrian and cyclist mobility needs within the I-526 LCC WEST project corridor, the addition of potential bicycle and pedestrian improvements documented in local and regional transportation plans within the I-526 corridor was evaluated in the development of this DEIS and FEIS. It was determined that incorporating plans for accommodating a shared use path (SUP) parallel to I-526 across the Ashley River into the I-526 LCC WEST project offers the benefit of consolidating the construction costs and impacts of a river crossing into a single undertaking. Various options were evaluated for how to accommodate a 14-foot wide SUP for pedestrian and bicycle traffic to the corridor crossing the river. The SUP footprint incorporated into the Recommended Preferred Alternative would:

- Widen I-526 across the Ashley River to the west (upstream) side of both the eastbound and westbound bridges
- Route the SUP footprint on the west (upstream) side of the westbound bridge.

The decision to accommodate an SUP for only Segment 2 of the I-526 LCC WEST project is in accordance with the SCDOT's Complete Streets Departmental Directive. This directive, dated February 4, 2021, established that funding for walking and bicycle accommodations should be considered on interstate capacity projects at major river crossings. Accommodations for pedestrians and cyclists parallel to high-speed interstates are not recommended when there are alternative non-interstate routes available as an alternative. The project team evaluated all crossing routes to the I-526 LCC WEST project corridor to ensure adequate space is available for future planned pedestrian and bicycle facilities. Further planning is required to fully implement the SUP connection to the Ashley River Bridge crossing. Berkeley-Charleston-Dorchester Council of Governments (BCDCOGG) in partnership with local municipalities are coordinating to develop more detailed plans for these planned future connections to the Ashley River Bridge crossing.

What Changes have been made to the Recommended Preferred Alternative since the DEIS and Public Hearing?

Based on feedback received during the DEIS and Public Hearing comment period, minor adjustments were made to the design of the Recommended Preferred Alternative. Only minimal changes occurred to the overall footprint of the project. Figure 4 shows the locations where design changes have been made since the completion of the DEIS. A description detailing the specific changes at each location are detailed in Section 3.9. of Chapter 3.

The project cost have increased substantially since the DEIS was published. A cost and schedule risk analysis workshop was held in December 2019 and a report was completed in March 2020 which provided updated costs for the reasonable alternatives in the development of the DEIS. Once the Recommended Preferred Alternative was identified for the project, an updated cost and schedule risk analysis workshop was held in April 2021. The project costs increased due to several factors, with the most significant factor being a change to the schedule and packaging of construction packages on the project. The construction start date shifted approximately 4 years and the project construction packages were phased over a 10 year period. This one change had the most significant impact on the project cost estimates. Other impacts to the costs were due to refinements in the design of the preferred alternative after the DEIS which were incorporated to address comments received from the public during the development of the EIS.

As noted in Table S-4, the total number of relocations increased from 113 to 231 since the DEIS was published. As noted previously, a supplementary right-of-way field study was conducted in July 2021. The study identified displacements that were not previously visible from aerial imagery, verified multi-family or single-family residence status, and considered access, mitigation, and drainage design impacts for a more accurate count. Thirty (30)

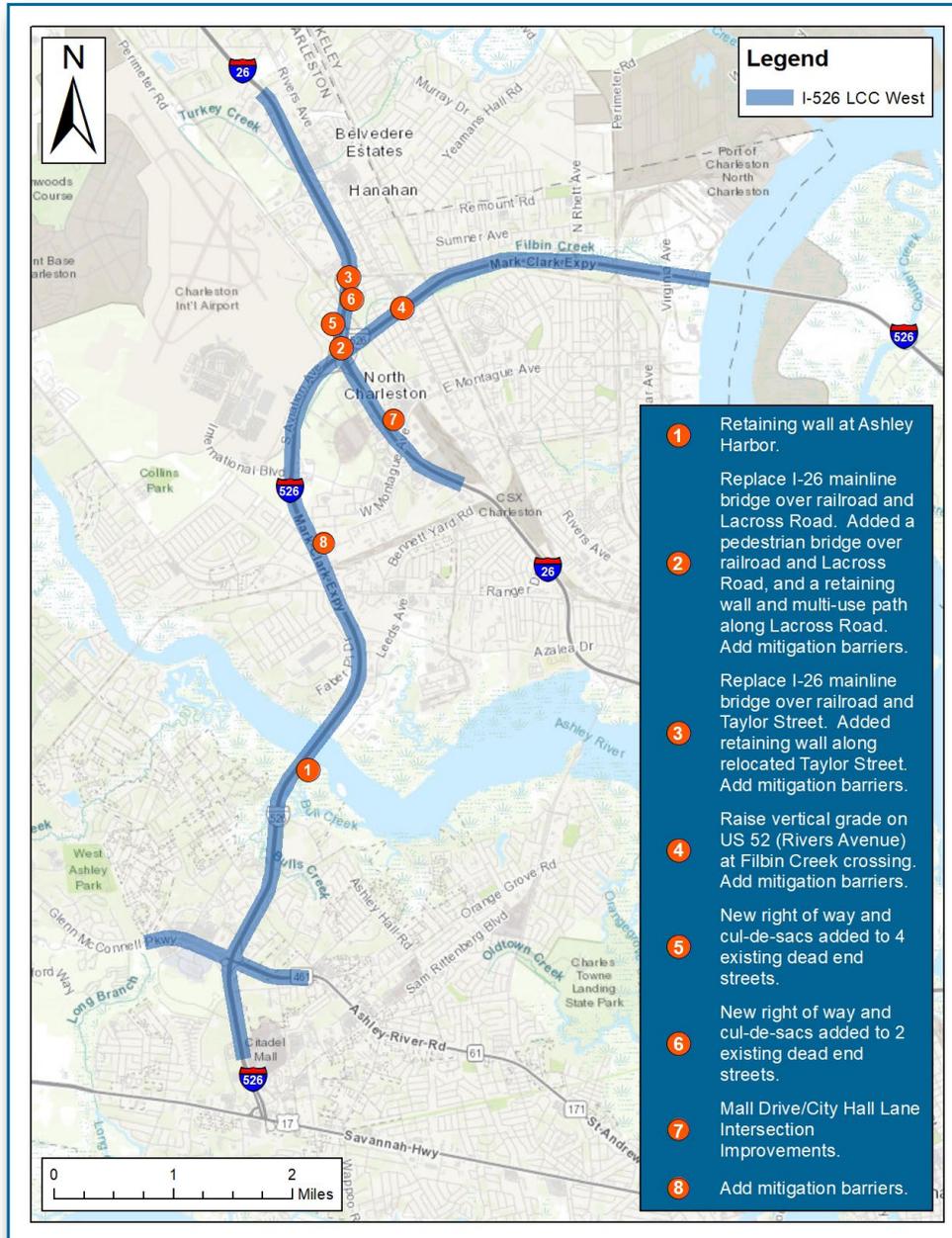


Figure S-4 Design Refinements to Recommended Preferred Alternative since the DEIS

residential relocations were also added to account for potential long-term occupants of the Double Tree Hilton Hotel and Budget Inn Charleston. Actual tenants were also counted, rather than the number of displaced commercial buildings, which resulted in a substantial increase in business relocations. Relocation details, including a comparison of impacts for the Proposed Reasonable Alternatives can be found in Chapter 3 of this document and further evaluated in the Relocation Impact Study, Appendix I.

Although minor adjustments have been made to refine the Recommended Preferred Alternative since the DEIS based on additional technical analysis and public input, the general alignment remains the same. The environmental impacts, mitigation measures, comments offered by agencies and the public have been reviewed and considered and it has been determined that the Recommended Preferred Alternative identified in the DEIS, with the minor refinements, is the Refined Recommended Preferred Alternative in the FEIS. The Refined Recommended Preferred

Alternative best meets the purpose and need of the project and has been chosen based on its overall function and benefits to traffic flow throughout the region and on findings of a comprehensive environmental impact evaluation.

What are the Environmental Consequences of the I-526 LCC WEST Project?

Potential impacts to the natural and human environment were evaluated in detail for the Proposed Reasonable Alternatives and the No-Build Alternative. No impacts to historic properties, farmlands, coastal zones or coastal barriers, or affects to air quality attainment status in the region are anticipated from the Proposed Reasonable Alternatives. In addition, the Proposed Reasonable Alternatives are in conformance with local and regional land use plans.

All Proposed Reasonable Alternatives would impact the Highland Terrace-Liberty Park Community Center and associated recreational facilities, a resource that receives protection under Section 4(f) of the Department of Transportation Act of 1966. The displacement of the community center would impact local community cohesion because this facility is often used to host events or group gatherings by residents living in the Highland Terrace and Liberty Park neighborhoods, which are Environmental Justice (EJ) communities. The Highland Terrace-Liberty Park Community Center in North Charleston was partially funded through the Land and Water Conservation Fund (LWCF) Act, also qualifying it as a Section 6(f) resource. SCDOT developed mitigation measures in coordination with the affected communities, the Community Advisory Council and the City of North Charleston that would utilize the remaining land to replace the amenities and services impacted by the proposed project. Refer to Appendix H for additional details on project impacts and proposed mitigation.

All of the Proposed Reasonable Alternatives would have potential impacts to socioeconomic, communities, water quality, wetlands and streams, floodplains, threatened and endangered species, relocations, noise, and indirect and cumulative impacts.

All Proposed Reasonable Alternatives would also impact the Russelldale Community Center and its surrounding recreational facilities, a Section 4(f) resource. The displacement of the community center would impact local community cohesion because this facility is often used to host events or gather as a group by residents living in the Russelldale neighborhood, **an EJ community**.

In addition, all Proposed Reasonable Alternatives would create relocation impacts to residents, businesses, and institutions due to the close proximity of these structures to the existing I-526 and I-26 corridors. These impacts were evaluated using the designs developed for the Proposed Reasonable Alternatives presented in the DEIS to select a Recommended Preferred Alternative with the fewest relocation impacts. Once the Recommended Preferred Alternative was selected, additional right-of-way studies were conducted to consider the degree of encroachment, accessibility, and setback requirements which resulted in an increased number of relocations for the Recommended Preferred Alternative as noted in the FEIS. Furthermore, per request from the Community Advisory Council (CAC), cul-de-sacs have been added at the end of previously bisected roads in the Highland Terrace and Liberty Park neighborhoods which resulted in additional, yet minor, property impacts. It is SCDOT's desire to leave in place remaining homes and parcels with an adequate front yard and space for parking, so final relocation impacts will be based on negotiations with each individual property owner. It is noted that relocation impact numbers for all of the Proposed Reasonable Alternatives would increase across the board as a result of the more conservative right-of-way estimate associated with these considerations. Relocation details, including a comparison of impacts for the Proposed Reasonable Alternatives can be found in Chapter 3 of this document and further evaluated in the Relocation Impact Study, Appendix I.

Due to the nature of the proposed project study area, complete avoidance of all impacts is not possible. Mitigation measures are proposed that would minimize or mitigate the potential impacts from the Recommended Preferred Alternative. A list of these can be found in the Environmental Commitments form and in the discussion of each resource in Chapter 4 of the FEIS.

How were the Agencies and Public Involved?

For the development of this project, FHWA and SCDOT coordinated with the following three distinct groups to ensure meaningful involvement and input:

- Federal, state, and local agencies
- The public
- Stakeholders, including public officials, business owners, and other groups with an interest in this project

Public and agency involvement are critical components of the transportation planning process. Engaging these groups at the very early stages helps ensure decisions consider and benefit public needs and preferences, while developing potential alternatives for the proposed project area. Chapter 6 describes all the public and agency involvement efforts used throughout all phases of the project to date.

Agencies

Federal agencies agreed to actively participate in environmental reviews and communicate with one another in a structured process that started early in the project development so that they can “identify concerns, raise potential issues early in the review process, and identify solutions.” The following relevant goals for this project were agreed to by the federal agencies:

- Completion of all environmental reviews and permitting within two years;
- Active communication between agencies;
- Concurrent reviews;
- Development of a permitting timetable; and
- A commitment to the process and improvements of the process

Council on Environmental Quality Regulations (40 CFR 1501.5) require that a Lead Federal Agency oversees the preparation of the EIS and that cooperating agencies are identified. For any transportation project requiring US Department of Transportation approval, 23 USC 139 calls for FHWA to serve as the Lead Agency and allows the project sponsor, SCDOT, to serve as the Joint Lead Agency. Effective interagency coordination is the key to achieving environmentally responsible transportation decisions. FHWA and SCDOT invited Federal and State agencies to be involved in the project as cooperating or participating agencies. Cooperating agencies are agencies with jurisdiction by law or by virtue of special expertise (40 CFR 1501.6) that, at the request of the Lead Agency, assume responsibility for developing information and preparing environmental analyses for which the agency has special expertise. Participating agencies are federal, state, tribal, regional, and local agencies with an interest in the project and specific responsibilities in the process. In accordance with 23 USC 139 participating agencies were to provide information and identify/resolve issues.

An Agency Coordination Plan, found in Appendix A, was developed to establish a framework for regular communication among the agencies involved in the environmental review process and to ensure an interdisciplinary approach to decision-making. Coordination occurred at the following major concurrence points:

A total of 29 agency meetings have taken place to date, refer to Appendix A for more detailed information.

- Agency Coordination Plan/Purpose and Need Statement
- Permitting/Milestone Timetable
- Range of Alternatives/Alternatives Carried Forward
- Preferred Alternative

The permitting/milestone timetable, although not an official concurrence point, was reviewed by the agencies and added to the process to facilitate tracking the project schedule. In addition to coordination at these concurrence points, monthly discussions were held regarding key topics such as draft document review, mitigation, general project concerns, and updates on public involvement efforts.

Public

The public involvement effort is intended to establish and maintain communication between the community, SCDOT, and FHWA. To establish an action plan for community involvement, a Public Involvement Plan and an EJ Outreach Strategy were developed.

The key communication tools include:

- Community Project Office
 - > Opened Fall 2019 in Gas Lite Square to display up to date project information
 - > Hosted first open house in Fall 2019 and a second open house in January of 2020
 - > Displayed Public Hearing Maps and Draft EJ Community Mitigation Plan after DEIS was published at the end of October 2020
 - > Approximately 450 visitors between Fall 2019 and Fall 2021; however, community office was closed from March 16, 2020 through October 5, 2020 due to public health concerns. Over 500 visitors have visited the community office since it re-opened in October 2020 through Summer 2022.
- Community Advisory Council (CAC) - 21 meetings held as of September 2020 through June 2022; formed from community members from each of the potentially impacted EJ neighborhoods
- Project Hotline - project information available verbally at any hour of the day
- Scoping and Public Information Meeting - November 2019
- Public Information Meeting - project information made available online from November 2019 through January 2020
- Stakeholder Meetings - 12 meetings with local business leaders through June 2022
- Community Meetings and Pop-up meetings
 - > 8 Community Meetings in North Charleston and 1 in West Ashley in July and October 2016
 - > 4 Community Meetings in North Charleston and 1 in West Ashley in November 2019
 - > 12 Pop-up Meetings in 2019
 - > 3 Community Meetings in North Charleston in November 2020
 - > 1 Community Meeting in North Charleston in March 2021
 - > 1 Community Drop-In Meeting in North Charleston in August 2022
- Flyers - June 2019 to January 2021 over 1700 flyers were distributed
- Website - www.526lowcountrycorridor.com in English or Spanish
- Social Media - Project-specific Facebook and Twitter accounts
- Newsletters - distributed to property owners within the public outreach area via mail and/or email
- Speakers Bureau - 49 Presentations
- Door-to-door canvassing - to alert the potentially impacted EJ communities about ways to participate such as Community Drop-Ins or the Community Office Open House

- Public Hearing materials – available on-line from November 12, 2020 through January 15, 2021 and a live, virtual Comment Session held on December 15, 2020. Additionally, the public could engage and ask questions of the project team by live chatting with a team member on the project website.
- One-on-one appointments for in-person sessions were held at the project’s community office on the following days:
 - > Thursday, November 19, 2020 from 10 am – 7 pm
 - > Saturday, December 5, 2020 from 9 am – 4 pm
 - > Tuesday, December 8, 2020 from 9 am – 6 pm
 - > Wednesday, December 9, 2020 from 10 am – 7 am

Stakeholders

The stakeholder group is comprised of representatives from local public agencies (county staffs, municipal staffs, planning organizations, first responders, etc.); local colleges and universities; non-profits; major employers (Boeing, Joint Base Charleston, etc.); owners/operators of local small businesses; owners of substantial numbers of residential rental units in the project area; **local special interest groups such as Charleston Moves and National Action Network (NAN)**; and some neighborhood representatives. The stakeholder group met two to three times per year over the life of the project. Participants were provided a project update and asked to share information and concerns relevant to the project.

Are there any Areas of Controversy?

The primary area of concern for this project is the impacts to the EJ communities: **Russelldale, Liberty Park, Ferndale, and Highland Terrace**. The past and foreseeable impacts to these communities have been a major focus of discussion between FHWA, SCDOT, the affected communities, and the CAC. Refer to Chapter 4, Section 4.5 and Appendix G. The following items are areas of controversy **identified in the DEIS**:

- Gentrification fears
- Government trust and accountability
 - > Unaddressed issues related to the original I-26 and I-526 construction
 - > Long-term accountability and stewardship after the project is constructed
 - > Fears of future construction projects **displacing** the EJ communities completely

Are there any Remaining Unresolved Issues?

All unresolved issues identified in the DEIS have been resolved.

Environmental Justice Community Mitigation Plan: A draft plan was developed with input from residents via a social needs assessment survey and input from the CAC. **The final EJ Community Mitigation Plan catalogs all agreements and plans required to implement the agreed upon mitigation commitments for impacts to EJ communities as a result of the I-526 LCC WEST project. The following unresolved issues related to the draft plan that were documented in the DEIS have been resolved:**

1. Project Oversight Committee (POC) for **Implementation of the EJ Community Mitigation Elements**
2. Affordable Housing
3. Financial Literacy and First-Time Home Buyer Counseling
4. Replacement Recreational Facilities and Amenities
5. **Intergovernmental Agency agreement (IGA)** for Recreational Programs and Amenities

6. **Community Infrastructure Enhancement Plan (CIEP)**
7. College Aid Initiative
8. School-to-Work Program
9. Pre-Employment Training
10. Community History Preservation Study

Section 6(f) Mitigation:

- Addressed by items 4 and 5 under EJ Community Mitigation

Section 4(f) Mitigation:

- Addressed by items 4 and 5 under EJ Community Mitigation

See Appendix H for the EJ Community Mitigation Plan.

What Federal/State Actions are Required for the Proposed Project?

The following actions are needed for the proposed project:

- Section 7 of the Endangered Species Act consultation
- Essential Fish Habitat consultation under the Magnuson-Stevens Act;
- Section 106 consultation;
- Section 4(f) evaluation;
- Land conversion under the Section 6(f) of the Land and Water Conservation Fund;
- **Critical Area permitting pursuant to the South Carolina Coastal Zone Management Act;**
- Section 402 (Clean Water Act of 1972, as amended) National Pollutant Discharge Elimination System permit;
- Sections 401 and 404 (Clean Water Act) wetland and stream impact permit;
- Section 9 of the Rivers and Harbors Act of 1899 coordination with the US Coast Guard (USCG); and
- Section 10 of the Rivers and Harbors Act of 1899 compliance.

What are the Next Steps?

Following issuance of the Record of Decision with a Selected Alternative, the official right-of-way acquisition process will start. SCDOT will develop final right-of-way plans and once finalized, SCDOT right-of-way agents will determine properties that will be acquired for the project. SCDOT is actively pursuing replacement housing options for residents who will be displaced by the project. Right-of-way acquisition on the first phase of the project, from just north of Dorchester Road to International Boulevard, will start in Late 2023 and the procurement process for a contractor will start in 2028. It is anticipated that right-of-way acquisition for subsequent phases of the project will start in 2024 and the contractor procurement process starting after 2028. The appropriate construction phasing to best complete the project will be at the discretion of SCDOT and the contractor(s).

SCDOT initiated the process to acquire property to construct the modern, centrally located replacement community center and the Russelldale Pocket Park in Early 2021 and has already started outreach and engagement efforts for the Community History Preservation Program. With the issuance of the ROD, SCDOT will initiate the remaining components of the EJ Community Mitigation Plan. SCDOT will develop a Community Mitigation Implementation Plan to outline specific details for each of the mitigation items with

the EJ Community Mitigation Plan. A Community Mitigation Implementation Schedule will also be developed to deliver the community mitigation measures outlined in the Plan in a timeline that maximizes the benefits to the impacted EJ communities. Components of the mitigation plan that will need to be constructed, such as the Community Infrastructure Enhancement Plan (CIEP) elements, community center, and pockets parks will immediately enter the preliminary design and environmental compliance phases. Additionally, mitigation plan elements such as establishing the Project Oversight Committee (POC), organizational training, and the workforce development and educational program will also be initiated. Once established, it is anticipated that the POC would meet on a quarterly basis until the completion of all EJ Community Mitigation components.

SCDOT will continue to engage the public through a comprehensive outreach plan that will be executed through the Community Office. Community Office staff will remain available to provide residents, property owners, and businesses up-to-date information on the mitigation plan elements, right-of-way acquisition, and construction related detours. Information about construction activities will include the periods when construction is scheduled to take place, work hours, and alternate routes. Construction signs will be used to notify motorists about work activities and changes in traffic patterns, such as detours. Construction signs will be used to notify motorists about work activities and changes in traffic patterns, such as detours.

The following changes and updates have been made to the Final Environmental Impact Statement (FEIS) for the I-526 Lowcountry Corridor WEST project since the Draft Environmental Impact Statement (DEIS). Minor changes to grammar, spelling, and punctuation and references to FEIS have been incorporated. Updated information and changes made in response to public and agency comments on the DEIS are highlighted in blue in the FEIS.

Summary

What is the I-526 Lowcountry Corridor WEST Project?

- Updated list of planned improvements based on Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) list of existing plus committed projects.

What is the Purpose of the Project and Why is it Needed?

- Noted updates reflected in South Carolina Department of Transportation's (SCDOT) 2040 Multimodal Transportation Plan

What are the Alternatives for the Project and How were they Evaluated?

- Step 1: Preliminary Screening of the Range of Alternatives - Added information about Transportation System Management/Transportation Demand Management (TSM/TDM), Modal strategies, and managed lanes.
- Step 4: Identify Proposed Reasonable Alternatives - Correction made for two interchange alternatives at I-526 at N Rhett/Virginia Avenue.
- Step 6: Recommended Preferred Alternative – Added information regarding the DEIS being published documenting the assessment of impacts and identification of the Recommended Preferred Alternative and the public hearing; added text about the addition of width necessary to accommodate a shared use path (SUP) across the Ashley river bridge and SCDOT's Complete Streets Departmental Directive.
- Updated Tables S-3 and S-4 to reflect updated floodplain impacts, relocation numbers, and costs.

What Changes have been made to the Recommended Preferred Alternative since the DEIS and Public Hearing?

- New section added with text and figures describing changes to the design since the DEIS.

What are the Environmental Consequences of the I-526 LCC WEST Project?

- Added paragraph explaining increased relocation impact numbers.

How were the Agencies and Public Involved?

- Agencies – Removed language related to One Federal Decision (OFD) and the Memorandum of Understanding (MOU) associated with Executive Order 13807 that was revoked on January 20, 2021. Rephrased text regarding agency participation in environmental reviews and coordination associated with the project.
- Public – Added information about public hearing, Community and pop-up meetings, and one-on-one appointments for in-person sessions at community office.

Are there any Areas of Controversy?

- Rephrased text to state that impacts to the four EJ communities are the primary area of concern for FHWA and SCDOT.

Are there any Remaining Unresolved Issues?

- Added sentence that all unresolved issues have been resolved.

What Federal/State Actions are Required for the Proposed Project?

- Added State actions required for project.

What are the Next Steps?

- Updated text to include next steps after issuance of the Record of Decision (ROD).
- Added information about the development of a Community Mitigation Implementation Plan to implement the EJ Community Mitigation Plan elements. Added information about a comprehensive outreach plan to keep the public engaged during the next phases of the project.

Chapter 1: Introduction

- Removed language related to OFD and the MOU associated with Executive Order 13807 that was revoked on January 21, 2021. Rephrased text regarding agency participation in environmental reviews and coordination associated with the project.

1.4 Availability of Funding

- Added NHP program funds that have been obligated for this project's preliminary engineering.
- Updated text and links to reflect updated plans.

Chapter 2: Purpose and Need

- Noted updates reflected in SCDOT's 2040 Multimodal Transportation Plan.
- Revised text for volume to capacity (v/c) ratio.

Chapter 3: Alternatives

3.1 What are the Steps of the Alternative Analysis?

- Figure 3.1 - Revised note in figure regarding TSM/TDM, Mass Transit.

3.5 Preliminary Screening of the Range of Alternatives

- Included information for realigning the interstate.
- Included information that TSM/TDM, Modal strategies, and managed lanes have been included in forecasts for future traffic in the I-526 LCC WEST corridor.
- Sections 3.5.2 and 3.5.3 have been combined into one section, Section 3.5.2 Alternative Alignment Improvements. Added additional information to each subsection.
- 3.5.2 - Revised Figure 3.2 to include scale and north arrow.

- 3.5.3 - Previously Section 3.5.4 - added additional information on managed lanes discussion.
- 3.5.5 - Previously Section 3.5.6 - added Park and Ride strategy to Table 3.4.

3.8 Recommended Preferred Alternative in the DEIS

- Added text for increased relocation impacts and updated costs.
- Updated Table 3.11 - added an additional column showing the updated impacts for the Recommended Preferred Alternative since the DEIS.

3.9 Changes to the Recommended Preferred Alternative since the DEIS and Public Hearing

- This is a new section added to Chapter 3 to note the changes and updates made since the DEIS was published. This include the increase in the number of relocations as well as an increase in the project cost for the Recommended Preferred Alternative with an explanation for these increases. In addition, this section also notes the following design changes that have been incorporated into the Recommended Preferred Alternative:
 - > Construct a retaining wall at Ashley Harbor.
 - > Replace the I-26 mainline bridge over Norfolk Southern (NS) railroad and Lacross Road.
 - > Construct a pedestrian bridge over Lacross Road and the NS Railroad.
 - > Replace the I-26 mainline bridge over NS railroad and Taylor Street.
 - > Raise elevation of Rivers Avenue at the Filbin Creek culvert crossing.
 - > Construct cul-de-sacs at four existing dead-end street in the Highland Terrace community and at two dead-end streets in the Liberty Park community.
 - > Construct mitigation barriers.
 - > Incorporate improvements to Mall Drive/City Hall Lane intersection near the I-26 interchange with E. Montague Avenue.

3.10 Pedestrian and Bicycle Accommodations

- 3.10.1 – Revised text related to shared use path (SUP) and added text for SCDOT’s Complete Streets Departmental Directive.
- 3.10.2 – Included proposed bicycle and pedestrian safety improvements developed as part of the Environmental Justice (EJ) community mitigation as detailed in the Community Infrastructure Enhancement Plan (CIEP).

Chapter 4: Existing Conditions and Environmental Consequences

4.1 Land Use

- 4.1.3 – Added history of roadway; call out box updated to clarify predominate land uses in North Charleston.
- 4.1.4 – Language updated to reflect DEIS comments and updated formatting and links to references.
- 4.1.5 – Updated future land use text for North Charleston; Replaced Figure 4.2 to show updated future land use mapping provided by the City of North Charleston.
- 4.1.6 - Added column to Table 4.1 showing land use conversions for the refined Recommended Preferred Alternative.
- 4.1.7 – Updated with finalized EJ Community Mitigation Plan components.

4.2 Farmlands

- No changes.

4.3 Communities

- 4.3.1 – Updated to clarify demographic profile location.
- 4.3.2 – Revised text to clarify Community Impact Assessment (CIA) study area location and add a heading to describe the West Ashley Neighborhoods Areas.
- 4.3.4 – Added a reference to Appendix D, clarified language based on DEIS comments, revised grammatical typos and tense verbiage.
 - > Table 4.3 Population of Disabled Persons – Added source for data.
- 4.3.6 – Updated text for No-Build Alternative impact to communities; revised text based on updated future land use mapping for North Charleston; updated and/or added text related to Community Cohesion and Visual and Aesthetic Impact in West Ashley and North Charleston; moved EJ communities information to Section 4.5 including Table 4.4.
- 4.3.7 – Updated to include changes to land use and increased noise levels as indirect effect.
- 4.3.8 – Added references to Environmental Justice communities for clarity; added updated land use text and updated number of relocations.
- 4.3.9 – Changed section heading; updated text as noted in final EJ Community Mitigation Plan and added text for avoidance, minimization and mitigation efforts.

4.4 Socioeconomics

- 4.4.2 – Added additional information about Joint Base Charleston.

4.5 Environmental Justice Analysis

- 4.5.1 and 4.5.2 - Revised text for updated USDOT Order 5610.2C
- 4.5.3 – Table 4.5 in DEIS is now Table 4.4 - removed Disproportionately High and Adverse Effects Anticipated column and updated Census Block Group numbers; moved all text about Disproportionately High and Adverse Effects that were in Section 4.3 in the DEIS to this section; noted there are minority and low income populations within the project study area and defined what that means.
- 4.5.5 – Updated to include 2020-2022 outreach efforts and references to Appendix H, U, and X.
- 4.5.6 – Section was renamed to “Do EJ Neighborhoods Face Adverse and/or Beneficial Impacts from the Project?”; added/revised text for Beneficial Impacts, Direct Adverse Impacts, Indirect Adverse Effects, Cumulative Adverse Effects; Table 4.4 from DEIS moved to this section and is now Table 4.5; created a new Table 4.6 that shows updated relocation impacts within EJ neighborhoods and areas for the Recommended Preferred Alternative.
- 4.5.7 – Section was renamed to “Are the EJ Impacts Disproportionately High and Adverse?”; added Table 4.7: Anticipated Disproportionately High and Adverse Effects to EJ Communities with text explaining determinations.
- 4.5.8 – Previously Section 4.5.7 in DEIS; added additional information to Avoidance, Minimization, and Mitigation sections and added a high level summary of the EJ Community Mitigation Plan components; Table 4.7 shown in DEIS is now Table 4.8 with updated information on information received from CAC/SNA and SCDOT’s community mitigation measures.
- 4.5.9 - Previously Section 4.5.8 in DEIS; updated number of residential units within four of the EJ neighborhoods that will be impacted based on updated Relocation Impact Study; provided more information for the EJ analysis conclusion.

4.6 Relocations

- Table 4.8 shown in DEIS is now Table 4.9.
- Added a column to show relocation numbers of Recommended Preferred Alternative shown in DEIS.
- Added text and table note to explain increase in relocations since the DEIS.
- Updated relocation numbers as per updated Relocation Impact Study.
- Added commitment language for Housing of Last Resort, ROW Certification, and implementation of SCDOT's affordable housing program.
- Added commitment language for SCDOT's enhanced relocation mitigation program and educational program for starting a small business enterprise (SBE).
- Added commitment language for construction of replacement recreational facilities to mitigate project impacts.
- Added language about billboard relocation process.

4.7 Considerations Relating to Pedestrians and Bicyclists

- 4.7.1 – Added information regarding the SCDOT's Complete Streets Department Directive; added information about Community Infrastructure Enhancement Plan (CIEP) related to bike and pedestrian safety improvements.
- 4.7.2 – Added revised language for providing accommodations for a future shared use path for the Ashley River crossing.

4.8 Air Quality

- 4.8.1 – Added text regarding attainment.
- Added commitment language for air quality monitoring program for the impacted EJ communities.

4.9 Noise

- 4.9.2 - Revised date for SCDOT's Traffic Noise Abatement Policy; added TNM model validation information.
- 4.9.3 - Added information regarding predicted traffic noise levels and existing land use.
- 4.9.4 - Added more detail for measures that were considered to reduce or eliminate traffic noise impacts; added information about SCDOT's Noise Abatement Policy for impacted receptors; removed Figures 4.11 and 4.12 since they are in Appendix K Detailed Noise Analysis; added information about the balloting process and commitment language for noise barrier walls to be constructed.

4.10 Water Quality

- No changes.

4.11 Water Resources

- 4.11.2 – Added text on Waters of the US (WOUS) delineations and the preliminary jurisdictional determination (PJD).
- 4.11.6 – Updated Indirect and Cumulative Effects (ICE) Assessment appendix cross reference; added additional text describing indirect effects as related to construction for consistency with ICE appendix.
- 4.11.8 – Added additional text describing mitigation added for consistency with ICE appendix.

4.12 Floodplains

- 4.12.5 – Updated Floodplain impacts shown in Table 4.19 (Table 4.18 in DEIS).
- 4.12.6 - Added 100-year flood elevation and commitment language for storm surge scenarios.

4.13 Natural Resources

- Added text regarding the official listing of the Eastern black rail as “threatened” and the US Fish and Wildlife Service (USFWS) concurrence on potential species effects for all federally protected species under their review and National Oceanic Atmospheric Administration (NOAA) Fisheries concurrence on the potential effects for two sturgeon fish species under their review since completion of DEIS.
- 4.13.3 – Added information and commitment regarding invasive species.
- 4.13.5 – Updated note for Table 4.20 (Table 4.19 in DEIS) with USFWS and NOAA Fisheries concurrence.
- 4.13.8 – Updated language regarding USFWS and NOAA Fisheries coordination and concurrence.
- 4.13.9 – Updated Table 4.23 (Table 4.22 in DEIS) Essential Fish Habitat (EFH) Impacts.

4.14 Cultural Resources

- No changes.

4.15 Section 4(f) Resources

- 4.15.6 – Updated Figures 4.20 and 4.21 to show proposed right-of-way changes at the Highland Terrace-Liberty Park Community Center. The proposed right-of-way was reduced to include a smaller portion of the parcel in an effort to retain more of the land for recreational use post-construction. Added information on impacts related to realignment of the interstate; added additional information on managed lanes.
- 4.15.7 – Revised text for measures to mitigate Section 4(f) resources; added information about intergovernmental agreement (IGA) being executed between SCDOT and City of North Charleston.

4.16 Section 6(f) Resources

- 4.16.3 – Revised text for project encroaching on Highland Terrace-Liberty Park Community Center.

4.17 Hazardous Materials

- 4.17.7 – Revised Environmental Commitment that SCDOT will conduct Phase 2 Environmental Site Assessments (ESAs) before D/B procurement.

4.18 Construction

- 4.18.3 - Added information on jet fuel line relocation under I-26 at Remount Road Interchange; added information related to Section 4(f).

4.19 Energy

- 4.19.2 – This section was modified to include fuel efficiency information in Table 4.27 and updated text explaining that the overall reduction in energy consumption in 2050 results from improved fuel efficiency rather than operational improvements.

4.20 Short-Term Uses Versus Long-Term Productivity

- No changes

4.21 Irreversible and Irrecoverable Commitment of Resources

- No changes

4.22 Permits

- 4.22.1 – Added additional text to the Section 404 permit requirements and mitigation and USACE and South Carolina Department of Health & Environmental Control (SCDHEC) issuance of the Joint Public Notice for the project pursuant to Section 10 of the Rivers and Harbors Act of 1899, Sections 401 and 404 of the Clean Water Act, and the South Carolina Coastal Zone Management Act.
- 4.22.2 – Updated text related to the Section 401 Water Quality Certification and added text for USACE and SCDHEC issuance of the Joint Public Notice for the project pursuant to Section 401 of the Clean Water Act.
- 4.22.4 – Added additional text for critical area permitting requirements and USACE and SCDHEC issuance of the Joint Public Notice for the project pursuant to the South Carolina Coastal Zone Management Act.
- 4.22.5 – Added text stating that a separate Construction in Navigable Waters Permits is not required for this project.
- 4.22.6 – Added text regarding issuance of the Public Notice for this project for the US Coast Guard (USCG) permit pursuant to Section 9 of the Rivers and Harbors Act.
- 4.2.10 – Added text regarding USACE and SCDHEC issuance of the Joint Public Notice for the project pursuant to Section 10 of the Rivers and Harbors Act.

4.23 Sustainability

- No changes.

4.24 404(b)1 Guidelines

- Updated the reference to Section 4.22 for the Section 404 Individual Permit.
- 4.24.1 – Updated the reference to Section 4.24.1.1 for the 404(b)1 Guidelines and additional clarification text.

Chapter 5: Navigation

5.3 Proposed Bridge Dimensions

- Updated bridge dimensions to accommodate additional lanes and refinement of shared use path (SUP) design on westbound structure.

5.5 Federal & State Navigation Permits Required

- Added text for permit application submitted to U.S. Coast Guard and the project was placed on public notice; added text that comments received during public notice comment period can be found in Appendix Z.

5.6 Navigation During Construction

- Added text that existing bridge will be retained but modified to accommodate widened bridge structure.

Chapter 6: Public and Agency Involvement

6.1 What are the Goals and Objectives of Resource and Regulatory Agency Involvement?

- 6.1.2 – Update Table 6.1 to reflect current contact person information.
- 6.1.3 – Update Table 6.3 to include Agency Meetings held since DEIS.
- 6.1.4 – Removed language related to OFD and the MOU associated with Executive Order 13807 that was revoked on January 21, 2021. Rephrased text regarding agency participation in environmental reviews and coordination associated with the project.

6.3 How is the Public Engaged in the Proposed Project?

- 6.3.1 – Update Table 6.5 to reflect public hearing and additional community meetings held since the DEIS; updated section on Public Hearing, Meeting Notifications.
- 6.3.2 – Update section on meeting materials used.
- 6.3.3 – Update section on what other sources of information are available to the public including the website, Table 6.8 Speakers Bureau Presentations, created Table 6.9 to list CAC meetings and added meetings held since the DEIS, updated information on community meetings and the Community Office.
- 6.3.4 – Updated text for how FHWA and SCDOT reached out to traditionally under-represented communities; updated Community Advisory Council and pop-up/community meetings that were held since the DEIS; added information regarding outreach mapping analysis.

6.5 How are Public and Agency Comments Incorporated into the Project?

- Replaced Figure 6.4 with a new figure.
- 6.5.1 – added additional text and figures for the public hearing comments received; added information on improvements made to Recommended Preferred Alternative based on input received from public and agencies.
- Added Section 6.5.2 Public Hearing Comments containing information about the public hearing.
- Added Figures 6.7 & 6.8 with summary of types of comments received and by geography.

6.6 What Changes were made to the Recommended Preferred Alternative since the Public Hearing?

- Added details on adjustments made to Recommended Preferred Alternative based on input received.

6.7 What are the Next Steps in Agency and Public Involvement?

- Added information on continued agency and public engagement efforts.

Chapter 7: List of Preparers

- Updated list of preparers

Chapter 8: Distribution List

- Updated distribution list with recently elected officials
- Section 8.1.4 Added City of Charleston and City of North Charleston to receive notification and electronic copy of FEIS

Appendices

Appendix A – Agency Coordination Plan, Letters and Responses

- Updated agency meeting summaries since DEIS
- Added notification letters to agencies and tribes for issuance of DEIS
- Added letter from U.S. Department of Interior (USDOl) on review of DEIS and Section 4(f) Evaluation

Appendix B – Alternatives Development Traffic Analysis Report

- Section 3.1 Travel Demand Model Validation - revised text to further address imbalances in CHATS model volumes and peak hour volumes
- Section 3.2 2050 Design Year Traffic Volume Projections - removed redundant text and one table (Table 10 was removed and reference added to Table 5); add graph (Figure 20) to show comparison between historical trendlines and recommended growth rates; added additional text for development of design hour volumes

Appendix C – Alternatives Evaluation

- Section 3.1.2 - Added additional information about 2013 Corridor Study Improvements.
- Section 4.1 - Added information about the BCDCOG CHATS Travel Demand Model.
- Section 4.1.1 - Added information about the CHATS Model setup.
- Section 4.1.2 - Added information about restrictions for feasible alternative route development due to regional landmarks and environmental features. Replaced Figure 4.1 to show Alternative Corridor Improvements and added more detailed information to each Alternative evaluated in this section, including new tables comparing traffic modeling results.

Appendix D – Community Impact Assessment (CIA)

- Updated with references to FEIS-ROD sections and appendices
- Updated tables with updated number of relocations for North Charleston and West Ashley
- Include CIEP Open House information
- Updated Community information

Appendix E – Abbreviated Visual Impact Assessment

- Updated references to FEIS-ROD
- Added information about mitigation barriers

Appendix F – Indirect and Cumulative Effects Assessment

- Updated number of potential residential displacements

Appendix G – Environmental Justice Analysis

- Added information from public meetings
- Added section 6.1 explaining alternatives effects on EJ communities
- Added information about Charleston Farms neighborhood

Appendix H – Environmental Justice Community Mitigation Plan

- Updated section 2 Mitigation Outreach Summary

- Updated with Final EJ Community Mitigation Plan
- Added information about Social Needs Assessment Summary
- Updated with Community Infrastructure Enhancement Plan
- Updated References

Appendix I – Relocation Impact Study

- Added updated Relocation Impact Study

Appendix J – Air Quality Impact Analysis

- No Updates

Appendix K – Detailed Noise Analysis

- Updated Detailed Noise Analysis with information on Noise Wall polling efforts and results.

Appendix L – Natural Resources Technical Memorandum, NOAA Biological Assessment, USFWS Biological Assessment, and NOAA & USFWS Consultation

- NOAA Sturgeon approval letter, USFWS Eastern Black Rail and SUP coordination and approval

Appendix M – Preliminary Jurisdictional Determination and Critical Area Plat

- No Updates

Appendix N – Bridge Replacement Scoping Trip Risk Assessment Form and Floodplain Maps

- No Updates

Appendix O – Essential Fish Habitat Assessment and NOAA Consultation

- Included EFH Assessment from December 2020 that includes NOAA concurrence letter February 2021

Appendix P – Cultural Resources Survey and SHPO/THPO Consultation

- No Updates

Appendix Q – Section 4(f) Evaluation

- Updated with Final Section 4(f) Evaluation
- Added letter from USDOT on review of DEIS and Section 4(f) Evaluation

Appendix R – Section 6(f) Evaluation

- Updated with Final Section 6(f) Environmental Assessment (EA)

Appendix S – Phase I Environmental Site Assessment

- No updates

Appendix T – USCG Permit Application & Navigation Report

- Added USCG Permit Application
- Added and USCG Public Notice

Appendix U – Public Involvement

- Updated contact list
- Added updated CAC meeting packets and summaries for meetings held through September 2021.

Appendix V – Advertising Summary

- Updated to include all advertising methods

Appendix W – Informational Pop-up Meeting Outreach Summary

- Added Section 3.2 for 2020 events

Appendix X – Environmental Justice Outreach Strategy and Tools

- Updated to include additional outreach efforts and meetings held since DEIS.

Appendix Y – Stakeholder Meeting Plans and Summaries and Stakeholder List

- Added meeting summaries for meetings held after the DEIS.

Appendix Z – Comment Tracking and Responses and Public Hearing Certification Package

- Added comment-response tracking spreadsheets for comments received from the public during Public Hearing comment period, and comments received from interest groups on the DEIS.
- Added Public Hearing transcript and certification package

South Carolina Department of Transportation (SCDOT), in cooperation with the Federal Highway Administration (FHWA), is preparing this Final Environmental Impact Statement (FEIS) 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 Notice of Intent (NOI) for this project predates the 2020 updates to the Council on Environmental Quality regulations that went into effect on September 14, 2020. Therefore; the project has been developed under the provisions of the regulations in place at the time of the NOI. The purpose and need for the proposed I-526 LCC WEST project was prepared according to the provisions of the National Environmental Policy Act (NEPA) and corresponding regulations and guidelines of the FHWA, the lead federal agency (23 Code of Federal Regulations [CFR] 771 and 40 CFR 1500–1508). In addition, FHWA invited agencies to be cooperating or participating based on their area of specific expertise; refer to Section 1.1 and 1.2 for more information.

As lead agencies, FHWA and SCDOT are responsible for the FEIS being prepared for the proposed I-526 LCC WEST project.

To provide for more efficient environmental reviews for project decision-making, Section 6002 of Public Law 104-59, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), as amended by Section 1304 of Fixing America’s Surface Transportation (FAST) Act and codified in 23 U.S. Code (USC) 139, requires lead agencies to develop and implement a plan for coordinating public and agency involvement during the environmental review process.

The I-526 LCC WEST project set out following the One Federal Decision (OFD) process in accordance with Executive Order (EO) 13807: Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects (August 15, 2017). Federal agencies agreed to actively participate in environmental reviews and communicate with one another in a structured process that started early in the project development process so agencies can “identify concerns, raise potential issues early in the review process, and identify solutions.” EO 13807 was revoked on January 20, 2021; however, all participating and cooperating agencies concurred to continue following the agreements set forth by the MOU and the Working Agreement.

An Agency Coordination Plan was developed using the coordination guidance outlined in the Working Agreement. The plan, included in Appendix A, established the framework for regular communication among all the agencies involved in the environmental review process and ensured an interdisciplinary approach in planning and decision-making for any action that potentially impacted the environment. Elements of this plan included: identification of the participating and cooperating agencies for the project and their responsibilities; major coordination points and tasks; impact assessment methodologies; and a schedule for the project. The Agency Coordination Plan addressed the development of the EIS in compliance with NEPA. The plan was modified throughout the progression of the environmental review process. FHWA and SCDOT sent letters to agencies requesting their involvement as a participating or cooperating agency, refer to Table 1.1. Appendix A includes copies of the agency coordination letters and responses.

1.1 Cooperating Agencies

A distinguishing feature of a Cooperating Agency is that the Council on Environmental Quality (CEQ) regulations (40 CFR 1501.6) permit a Cooperating Agency to, at the request of the Lead Agency, assume responsibility for developing information and preparing environmental analyses, including portions of the EIS, for which the Cooperating Agency has special expertise. Additionally, pursuant to 40 CFR 1506.3, if the Classification of Action for the project is an EIS, “a Cooperating Agency may adopt without re-circulating the environmental impact statement of a Lead Agency when, after an independent review of the statement, the Cooperating Agency concludes that its comments and suggestions have been satisfied.”

Cooperating agencies are agencies with jurisdiction by law or by virtue of special expertise (40 CFR 1501.6).

Per the Memorandum of Understanding (MOU), cooperating agencies are to identify information they need to complete their review, limit their comments to their areas of expertise, make personnel and/or expertise available to the lead agency, and complete their reviews in accordance with the agreed upon project schedule. They are also asked to provide reviews and comments on the EIS and provide concurrence on the four concurrence points outlined in the Agency Coordination Plan.

1.2 Participating Agencies

Participating agencies, identified in accordance with 23 USC 139, are to provide information and identify and resolve issues. Several federal and state agencies were asked to serve as participating agencies by virtue of their areas of expertise. These agencies are asked to provide review and comments on the EIS and provide concurrence on the four concurrence points outlined in the Agency Coordination Plan.

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

Agency coordination will be a continuous process throughout the development of the EIS and any required permit applications.

Table 1.1 Cooperating and Participating Agencies for the I-526 LCC WEST FEIS

Agency or Local Government	Type of Agency Involvement	
	Cooperating	Participating
Federal Agencies		
US Coast Guard (USCG)	√	
US Army Corps of Engineers (USACE)	√	
National Park Service (NPS)	√	
US Fish and Wildlife Service (USFWS)		√
US Environmental Protection Agency (USEPA)		√
National Oceanic and Atmospheric Administration (NOAA) Fisheries		√
State Agencies		
South Carolina Department of Archives and History (SCDAH)		√
South Carolina Department of Health & Environmental Control (SCDHEC)		√
SCDHEC Ocean and Coastal Resource Management (OCRM)		√
South Carolina Department of Natural Resources (SCDNR)		√
South Carolina Department of Parks, Recreation & Tourism (SCPRT)		√
Sovereign Nations		
Catawba Indian Nation		√
Eastern Shawnee Tribe		Section 106 Consultation
Muscogee (Creek) Nation		Section 106 Consultation

1.3 Project Limits

The I-526 and I-26 system interchange is a key interchange in the local transportation system. It links downtown Charleston, Summerville, West Ashley, and Mount Pleasant. I-26 links the Charleston area with other major cities to the west like Columbia, Spartanburg, and Asheville, North Carolina, as well as with I-95, I-77, I-20, and I-85; refer to Figure 1.1.

I-526 provides the only freeway access to two important port terminals, the North Charleston terminal, and the Wando Welch terminal. Wando Welch is the busiest terminal in the region and has no access to rail. I-526 is an important route for daily commuting traffic and is part of the network for transporting freight and commercial goods to and from the Port of Charleston and throughout the region. I-526 also provides freeway crossings over three major rivers. To the east of I-26, the route crosses the Cooper and Wando Rivers providing an important connection, not to mention hurricane evacuation route, for the growing Daniel Island and Mount Pleasant areas. To the west of I-26, the route crosses the Ashley River and provides a similar connection to the growing West Ashley area.

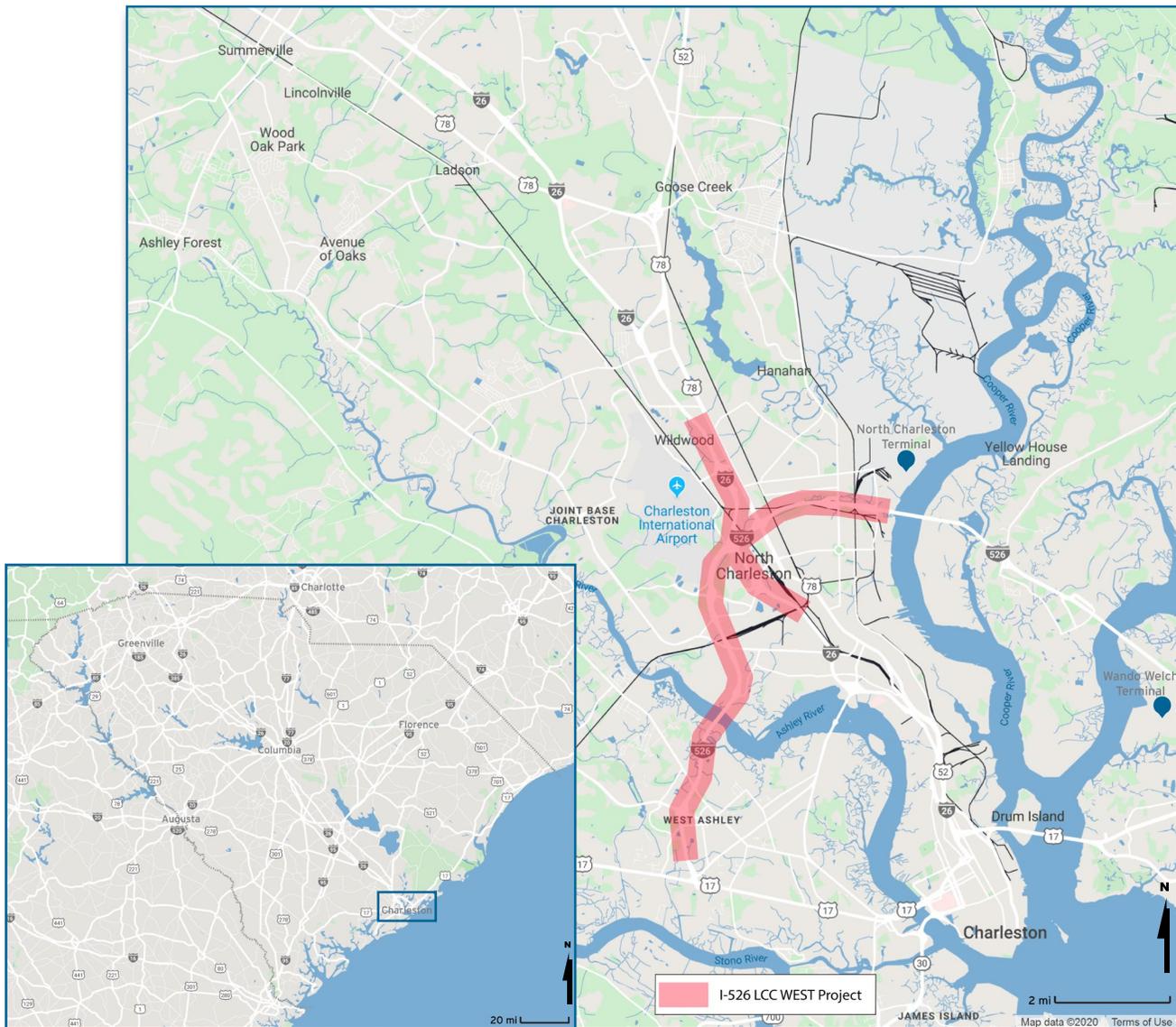


Figure 1.1 Regional Overview

The proposed project consists of 3.5 miles of work on I-26 and 9.2 miles of work on I-526 for a total of 12.7 miles. The boundaries of the study area, shown in Figure 1.2, generally follows the section of I-526 from Paul Cantrell Boulevard to Virginia Avenue including the I-26/I-526 **system** 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** interchange; the I-526 at Rivers Avenue; the I-526 at N Rhett Avenue and the I-526 at Virginia Avenue interchange. The project limits for these interchange modifications 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, refer to Appendix B.



Figure 1.2 I-526 LCC WEST Project Study Area

1.4 Availability of Funding

The proposed project is consistent with the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) Charleston Area Transportation Study (CHATS) **2040** Long Range Transportation Plan (LRTP) [[Link to LRTP](#)] and the **CHATS 2017-2022** Transportation Improvement Program (TIP) [[Link to TIP](#)]. This project is also identified in SCDOT’s **2021-2027** Statewide Transportation Improvement Program (STIP) [[Link to STIP](#)] “with additional interstate funding approved in the 2013 legislative session for SCDOT and the State Infrastructure Bank.” **\$33.3** million of National Highway Performance (NHP) program funds have been **obligated** for the project’s preliminary engineering. The STIP has identified approximately **\$190** million for **additional Preliminary engineering and environmental justice (EJ) community mitigation in the current**

TIP/STIP. The next phase of work will include implementation of the EJ community mitigation items that are proposed outside of the interstate project footprint and right-of-way activities in the environmental justice (EJ) communities. The first phase of EJ mitigation includes some right-of-way acquisitions and relocations of EJ residential communities. This EJ right-of-way included within the EJ community mitigation phase is critical to ensuring the maximum benefit to displaced persons by ensuring access to affordable housing mitigation as an option for replacement housing. The remaining project costs of \$2.76 Billion is cost constrained in the CHATS Long Range Transportation Plan and are currently reflected in the TIP/STIP as remaining costs. These costs will be included in a future TIP/STIP.

This project will likely be broken into smaller packages as determined by the market conditions for construction at the time of delivery. SCDOT will develop a detailed Project Financial Plan, as required by FHWA for major projects, which will outline the cash flow and financing plans for the project packages.

The purpose of the project is to increase capacity at the I-26/I-526 interchange and along the I-526 mainline, thereby relieving traffic congestion and improving operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue.

South Carolina Department of Transportation (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 Lowcountry Corridor WEST (I-526 LCC WEST) project, from I-26 to Paul Cantrell Boulevard, ranks among the top ten of the state's most congested corridors. Forecasts show that segments of that corridor will continue to be among the state's most congested in 2040. Due to Geometric Deficiencies, the interchange of I-526 and I-26 is the major source of the congestion (refer to Section 2.1.5 for additional information). The provisions of the 2040 South Carolina Multimodal Transportation Plan, Interstate Plan are incorporated by reference.

2.1 Project Need

The I-526/I-26 interchange is listed as the #2 project in the 2035 Charleston Area Transportation Study (CHATS) Long Range Transportation Plan (LRTP) Ranked List of Candidate Transportation Projects, is the #6 project on SCDOT's Act 114 Interstate Capacity List, and is listed in SCDOT's State Transportation Improvement Plan (STIP) 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 2040 Multimodal Transportation Plan, which lists seven segments within this project corridor among the top 20 most congested interstate segments. **I-526 between I-26 to Virginia Ave is listed as the #1 most congested and I-526 from Paul Cantrell to I-26 is listed as #10.**

Act 114 requires SCDOT to establish specific criteria to be used in prioritizing projects.

The need of this project is derived from the following factors, which are detailed further in the sections below:

- Growth in population and employment
- Decreased mobility and increased traffic congestion
- Base year traffic conditions
- Projected traffic conditions
- Geometric Deficiencies
- Pedestrian and bicycle connectivity

2.1.1 Growth in Population and Employment

Population size in the Charleston Metropolitan Statistical Area (MSA) is growing three times faster than the US average.¹ Population growth for the Charleston MSA was 18.5 percent, while growth in South Carolina generally was 6.6 percent, and the US average was 6 percent, between 2010 and 2018.² Based on U.S. Census data, Charleston County's population is expected to increase 17.05 percent by 2030.³ The increase in population has been accompanied by strong growth in employment.

1 <https://www.crda.org/local-data/population-demographics/>

2 *ibid.*

3 abstract.sc.gov/chapter14/pop5.html

2.1.2 Decreased Mobility and Increased Traffic Congestion

Current traffic volumes result in congestion during peak travel times.⁴ Deficiencies in the current interchange designs, including inadequate ramp lengths and low design speeds on the ramps, contribute to congestion, longer travel times, and an increased rate of vehicular collisions. Future large-scale developments along the I-526 corridor are projected to further increase traffic.⁵

Congestion in the I-526 corridor is not caused by an increase in volume alone. The closely spaced interchanges, coupled with the travel paths (origin-destination patterns), generate substantial numbers of vehicles weaving between lanes to either enter or exit the freeway. This weaving, and the conflicts that it creates between vehicles, contributes to the level of congestion.

One way to measure the congestion of a roadway is the level of service (LOS). LOS is an industry standard measurement that is based on either time of delay (for intersections) or traffic density (for freeway segments), which is measured in passenger cars per lane per mile (pc/ln/mi) for freeway segments. Poor LOS ratings are caused by a high density of traffic on the freeway or excessive delay at the intersections. The LOS range is from A to F, with free flow conditions represented by LOS A, and LOS F representing congested conditions with slower speeds and severely restricted ability to change lanes, refer to Figure 2.1.

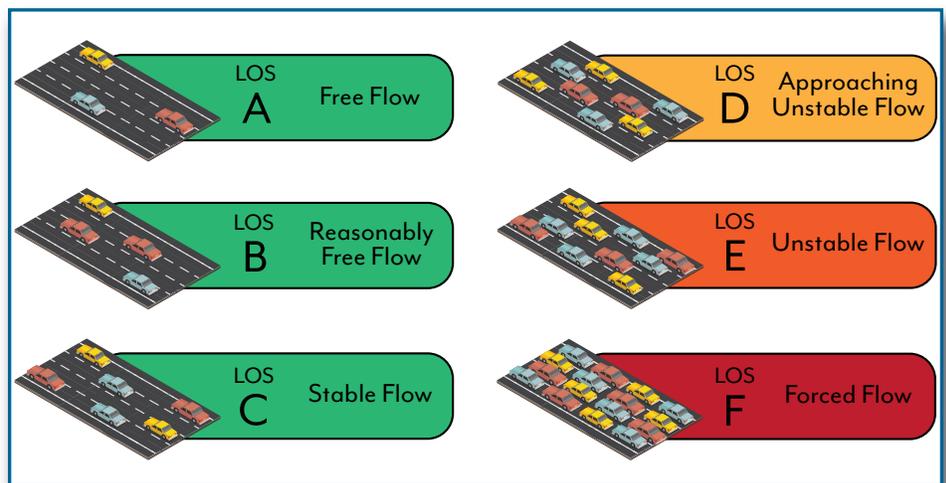


Figure 2.1 Level of Service (LOS)

A second way to analyze traffic congestion on roadways is the volume to capacity ratio (v/c ratio). The v/c ratio is a measure which compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). Simply stated, the v/c ratio is a measure of how many vehicles are on a section of the roadway as compared to how many vehicles the roadway can carry. For more detailed traffic information refer to the Alternatives Development Traffic Analysis Report in Appendix B.

- AADT - Annual Average Daily Traffic
- v/c ratio - a measure which compares actual or forecast traffic to the available roadway capacity (vehicles per hour)
- A v/c ratio of 1.0 indicates that the roadway is at 100% capacity
- Travel Demand Management - Strategies to reduce the overall travel demand or shift demand out of peak travel periods

Source: Highway Capacity Manual

4 Population Projections 2000-2035. South Carolina Revenue and Fiscal Affairs Office. November 2019. abstract.sc.gov/chapter14/pop5.html

5 Stantec Consulting Services, Inc. 2013. Corridor Analysis for I-526 Between North Charleston and West Ashley.

2.1.3 Base Year Traffic Conditions

Traffic models show that current traffic volumes result in congestion along the I-526 corridor. These models measure the congestion along the corridor in terms of v/c ratio and LOS.

Multiple segments along I-526 currently experience undesirable levels of service of E and F (indicating unstable or forced flow) and which are approaching or beyond capacity, as shown in Table 2.1. These segments include those between Paul Cantrell Boulevard and Leeds Avenue, between International Boulevard and I-26, as well as those segments east of Rivers Avenue, refer to Appendix B the Alternatives Development Traffic Analysis Report.

Table 2.1 I-526 LCC WEST Base Year Traffic Volumes and Levels of Service by Segment

Segment		2015 AADT	AM Peak					
			Eastbound			Westbound		
			Available Capacity (%)	v/c ratio	LOS	Available Capacity (%)	v/c ratio	LOS
1	SC 7 (Sam Rittenberg Blvd) to Paul Cantrell Blvd	39,400	78%	0.22	A	47%	0.53	C
2	Paul Cantrell Blvd to Leeds Ave	79,200	18%	0.82	E	47%	0.53	C
3	Leeds Ave to Dorchester Rd	78,800	52%	0.48	C	56%	0.44	B
4	Dorchester Rd to Montague Ave	80,700	54%	0.46	C	48%	0.52	C
5	Montague Ave to International Blvd	67,400	62%	0.38	B	37%	0.63	D
6	International Blvd to I-26	89,000	54%	0.46	C	52%	0.48	C
7	I-26 to Rivers Ave	77,200	26%	0.74	D	31%	0.69	D
8	Rivers Ave to N Rhett Ave	75,600	0%	2.09	F	23%	0.77	D
9	N Rhett Ave to Virginia Ave	80,500	0%	1.90	F	0%	1.61	F

Segment		2015 AADT	PM Peak					
			Eastbound			Westbound		
			Available Capacity (%)	v/c ratio	LOS	Available Capacity (%)	v/c ratio	LOS
1	SC 7 (Sam Rittenberg Blvd) to Paul Cantrell Blvd	39,400	73%	0.27	B	78%	0.22	A
2	Paul Cantrell Blvd to Leeds Ave	79,200	45%	0.55	C	0%	1.07	F
3	Leeds Ave to Dorchester Rd	78,800	47%	0.53	C	0%	1.57	F
4	Dorchester Rd to Montague Ave	80,700	52%	0.48	C	32%	0.68	D
5	Montague Ave to International Blvd	67,400	46%	0.54	C	56%	0.44	C
6	International Blvd to I-26	89,000	14%	0.86	E	61%	0.39	B
7	I-26 to Rivers Ave	77,200	34%	0.66	D	49%	0.51	C
8	Rivers Ave to N Rhett Ave	75,600	12%	0.88	E	0%	2.08	F
9	N Rhett Ave to Virginia Ave	80,500	22%	0.78	E	0%	2.02	F

Source: Stantec, December 2019

2.1.4 Projected Traffic Conditions

The I-526 LCC WEST carries large volumes of traffic each day, and those volumes are expected to increase substantially through the design horizon year of 2050, refer to Figure 2.2.

The growth in AADT over the next 28 years is shown on a segment by segment basis in Table 2.2. Methods used to project the 2050 AADT Traffic were derived from two sources: historical growth in daily traffic volumes, and the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) travel demand model. Travel demand in this corridor is related to 1) expected growth in the commercial aviation industry around the Charleston International Airport, 2) expected growth in residential and commercial development on the Glenn McConnell Parkway corridor, 3) expected growth at the Charleston area port terminals 4) expected growth in rail-based freight volumes, and 5) general growth in the region.

Table 2.2 shows the projected v/c ratios for traffic in 2050 for the No-Build Alternative, which assumes no improvements are made. Future traffic analyses indicate that if no improvements are made to the existing corridor, then traffic operations will continue to deteriorate and will cause most of the project corridor to function at an unacceptable LOS F in the design year 2050, confirmed by a v/c ratio greater than 1.0. Figure 2.3 shows the corridor segments referred to in Table 2.1 and Table 2.2. For more detailed traffic information refer to Appendix B the Alternatives Development Traffic Analysis Report.

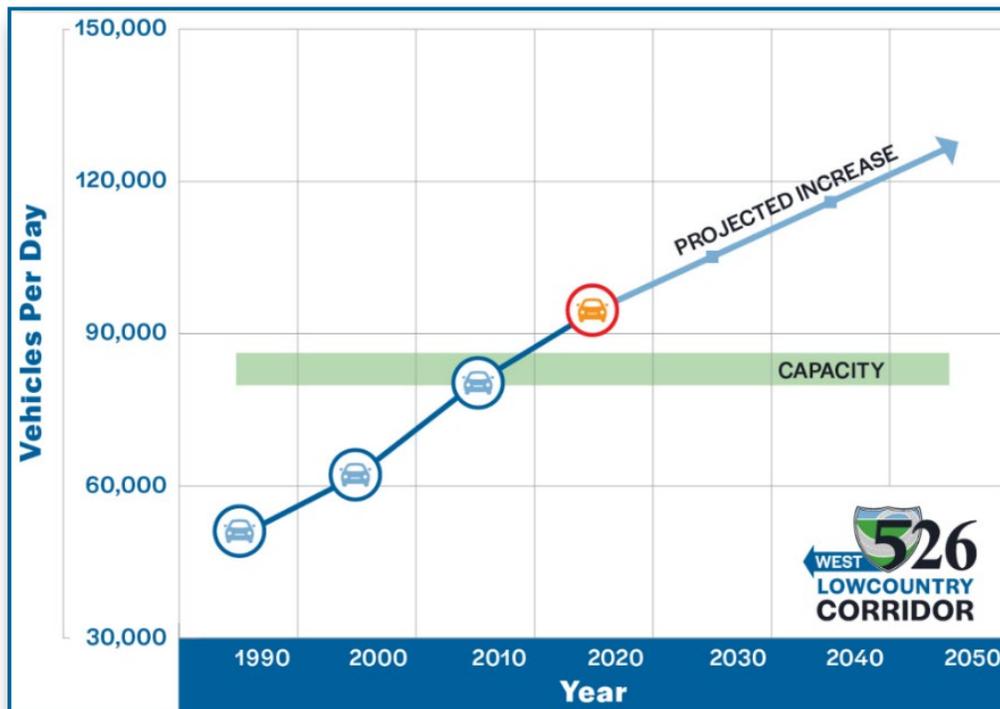


Figure 2.2 Projected Traffic



Figure 2.3 I-526 LCC WEST Segments

Table 2.2 I-526 LCC WEST 2050 No-Build Traffic Volumes and Levels of Service by Segment

Segment		No-Build 2050 AADT	AM Peak					
			Eastbound			Westbound		
			Available Capacity (%)	v/c ratio	LOS	Available Capacity (%)	v/c ratio	LOS
1	SC 7 (Sam Rittenberg Blvd) to Paul Cantrell Blvd	59,800	67%	0.33	B	43%	0.57	D
2	Paul Cantrell Blvd to Leeds Ave	106,900	16%	0.84	E	0%	1.50	F
3	Leeds Ave to Dorchester Rd	106,400	46%	0.54	C	0%	1.11	F
4	Dorchester Rd to Montague Ave	108,900	56%	0.44	B	39%	0.61	D
5	Montague Ave to International Blvd	91,000	18%	0.82	E	12%	0.88	E
6	International Blvd to I-26	120,200	31%	0.69	D	15%	0.85	E
7	I-26 to Rivers Ave	104,200	0%	1.92	F	36%	0.64	D
8	Rivers Ave to N Rhett Ave	104,400	0%	2.33	F	34%	0.66	D
9	N Rhett Ave to Virginia Ave	122,200	0%	2.00	F	0%	2.28	F

Segment		No-Build 2050 AADT	PM Peak					
			Eastbound			Westbound		
			Available Capacity (%)	v/c ratio	LOS	Available Capacity (%)	v/c ratio	LOS
1	SC 7 (Sam Rittenberg Blvd) to Paul Cantrell Blvd	59,800	58%	0.42	B	48%	0.52	C
2	Paul Cantrell Blvd to Leeds Ave	106,900	0%	1.52	F	0%	1.74	F
3	Leeds Ave to Dorchester Rd	106,400	0%	2.42	F	0%	2.50	F
4	Dorchester Rd to Montague Ave	108,900	33%	0.67	D	0%	2.90	F
5	Montague Ave to International Blvd	91,000	0%	1.42	F	0%	3.11	F
6	International Blvd to I-26	120,200	0%	1.46	F	0%	2.21	F
7	I-26 to Rivers Ave	104,200	0%	1.19	F	0%	1.78	F
8	Rivers Ave to N Rhett Ave	104,400	0%	1.21	F	0%	2.17	F
9	N Rhett Ave to Virginia Ave	122,200	0%	2.14	F	0%	2.46	F

Source: Stantec, February 2020

2.1.5 Geometric Deficiencies

The 2017 SCDOT Roadway Design Manual provides guidance on geometric design based on the American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets (SCDOT Roadway Design Manual).⁶ There are elements of the existing I-526 LCC WEST that are geometrically deficient, which result in congestion and poor safety conditions. These elements include: the acceleration and deceleration lanes that are not long enough, short distances between entrance and exit ramps that result in tight vehicle merging, tight curves on loop ramps, and poor sight distance that a driver needs to see ahead to react to traffic conditions and come to a stop if necessary. These deficiencies are described for each of the following interchanges.

Geometric Deficiency is the consideration of the inadequacies of roadway design

2.1.5.1 I-526 at Paul Cantrell Boulevard

The I-526 & Paul Cantrell Boulevard interchange is the western terminus of the I-526 LCC WEST project. I-526 passes over Paul Cantrell Boulevard at Exit 11, where the partial cloverleaf interchange uses a combination of ramps and loops to provide connections between the two highways. Refer to Figure 2.4. Geometric deficiencies at the existing interchange include:

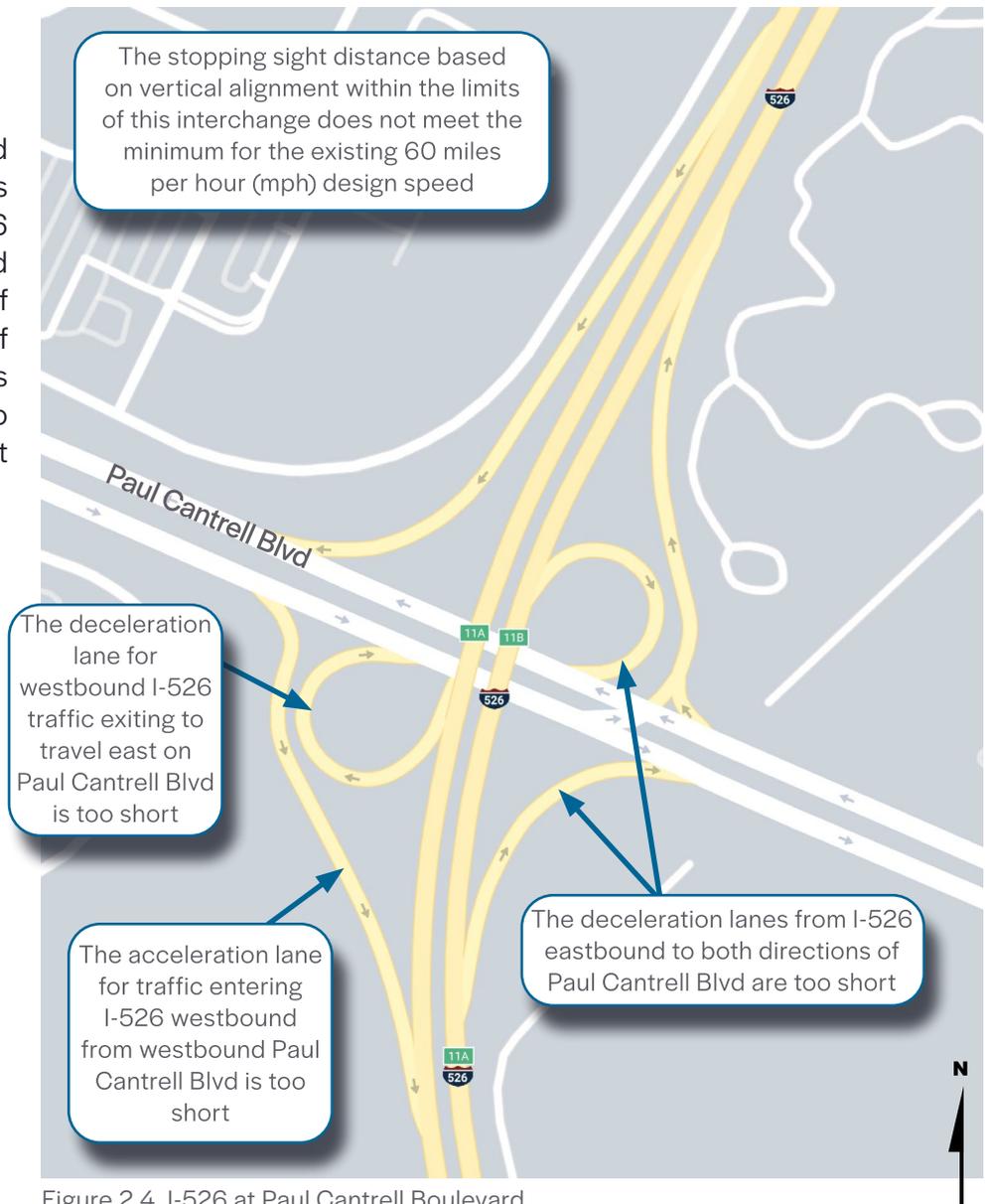


Figure 2.4 I-526 at Paul Cantrell Boulevard

6 Roadway Design Manual. SCDOT. March 2017. https://www.scdot.org/business/pdf/roadway/2017_SCDOT_Roadway_Design_Manual.pdf

2.1.5.2 I-26/I-526 System Interchange

The I-26/I-526 interchange is a partial cloverleaf interchange that includes loop ramps in three quadrants, a fly-over ramp that connects I-526 East to I-26 West, a ramp connection between I-526 West and I-26 East, and a collector-distributor (C-D) road in the northwest and southwest quadrants, refer to Figure 2.5. Geometric deficiencies throughout this interchange system include:

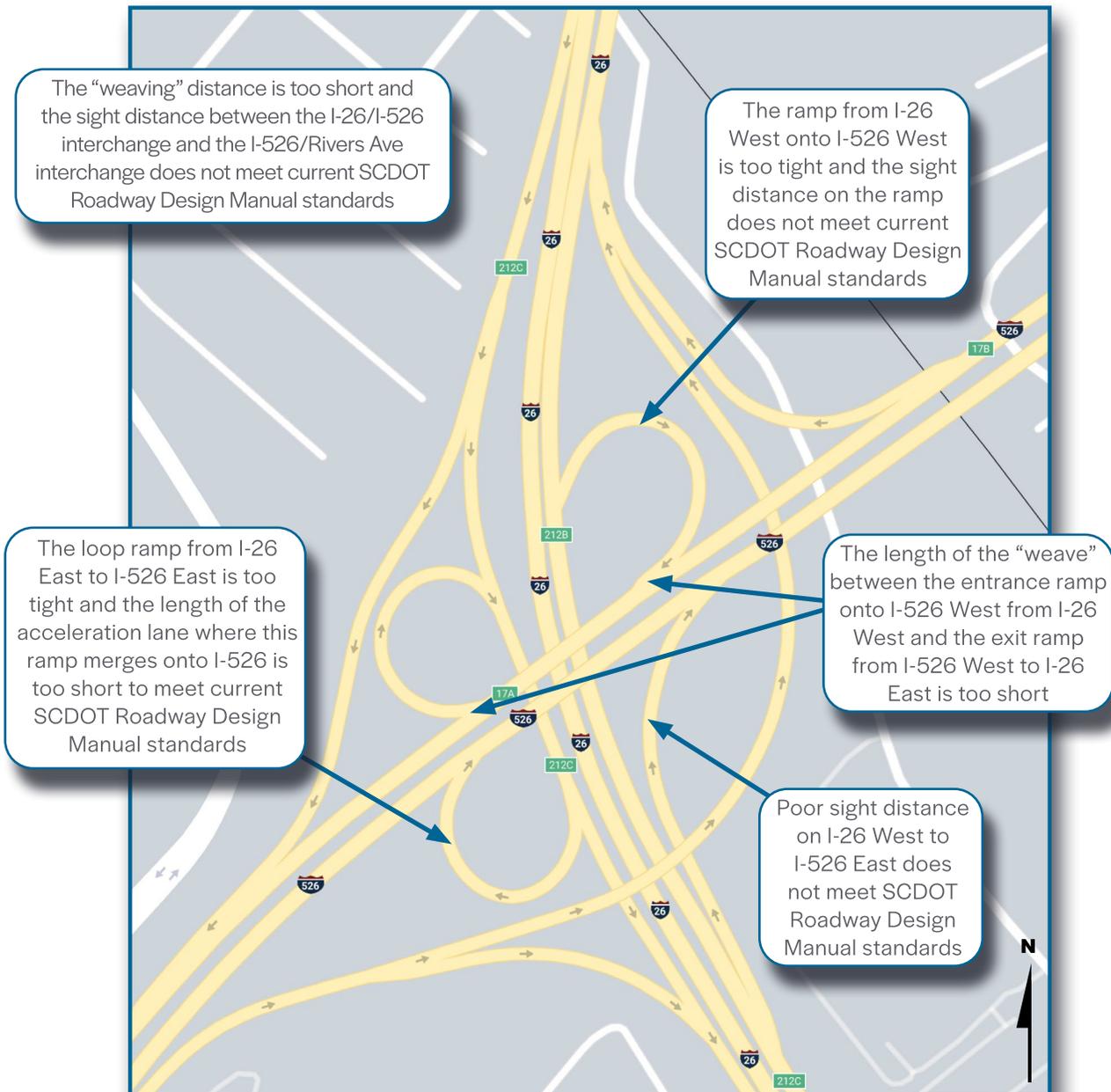


Figure 2.5 I-26/I-526 System

2.1.5.3 I-526 at Rivers Avenue

I-526 at Rivers Avenue is a partial cloverleaf interchange, refer to Figure 2.6. Geometric deficiencies noted at this interchange include:

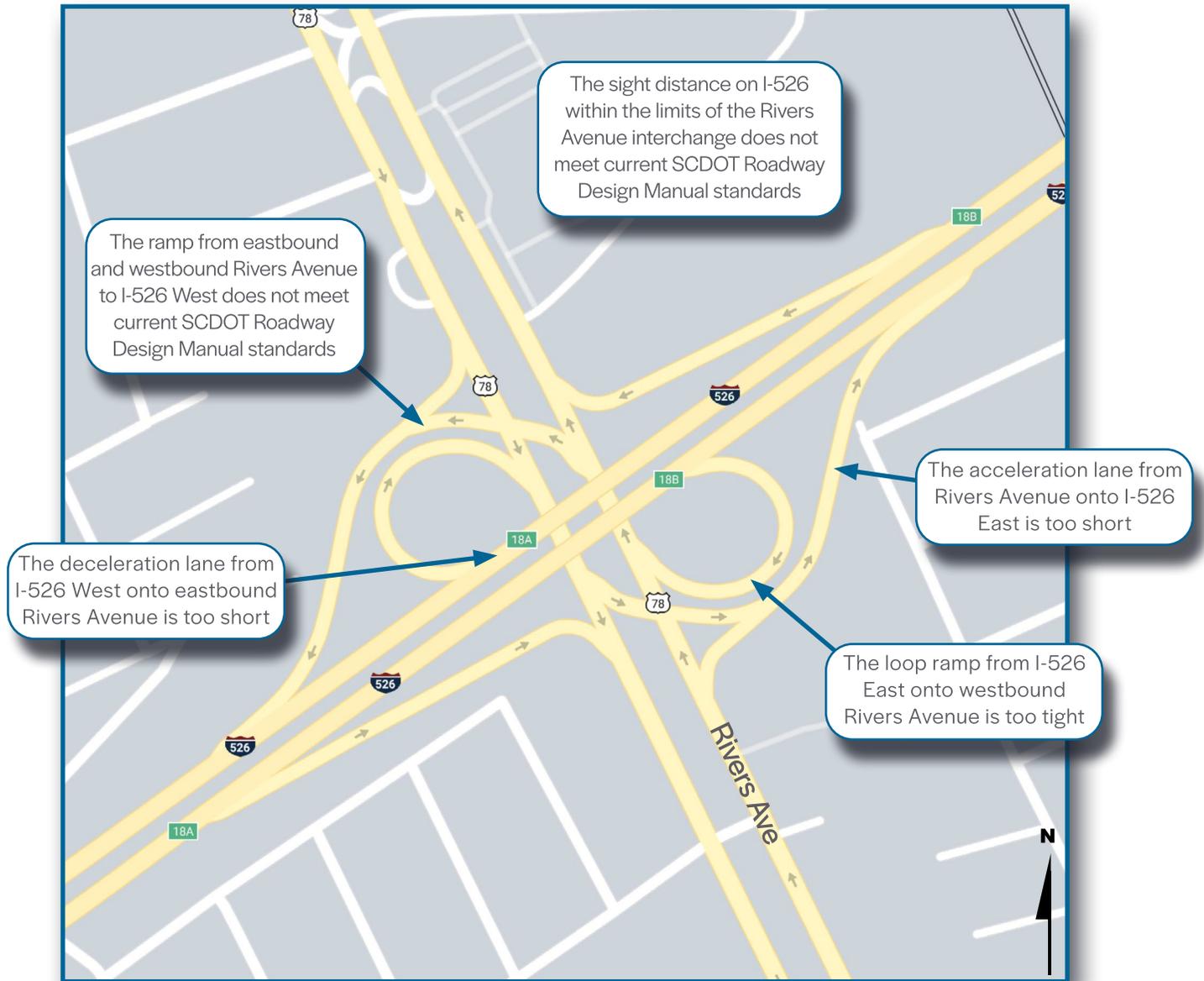


Figure 2.6 I-526 at Rivers Avenue

2.1.5.4 I-526 at N Rhett/Virginia Avenue

The I-526 at N Rhett/Virginia Avenue interchange is the eastern terminus of the I-526 LCC WEST project with loop ramps to provide access in each direction, refer to Figure 2.7. The geometric deficiencies of the existing loop ramps of this interchange consist of:

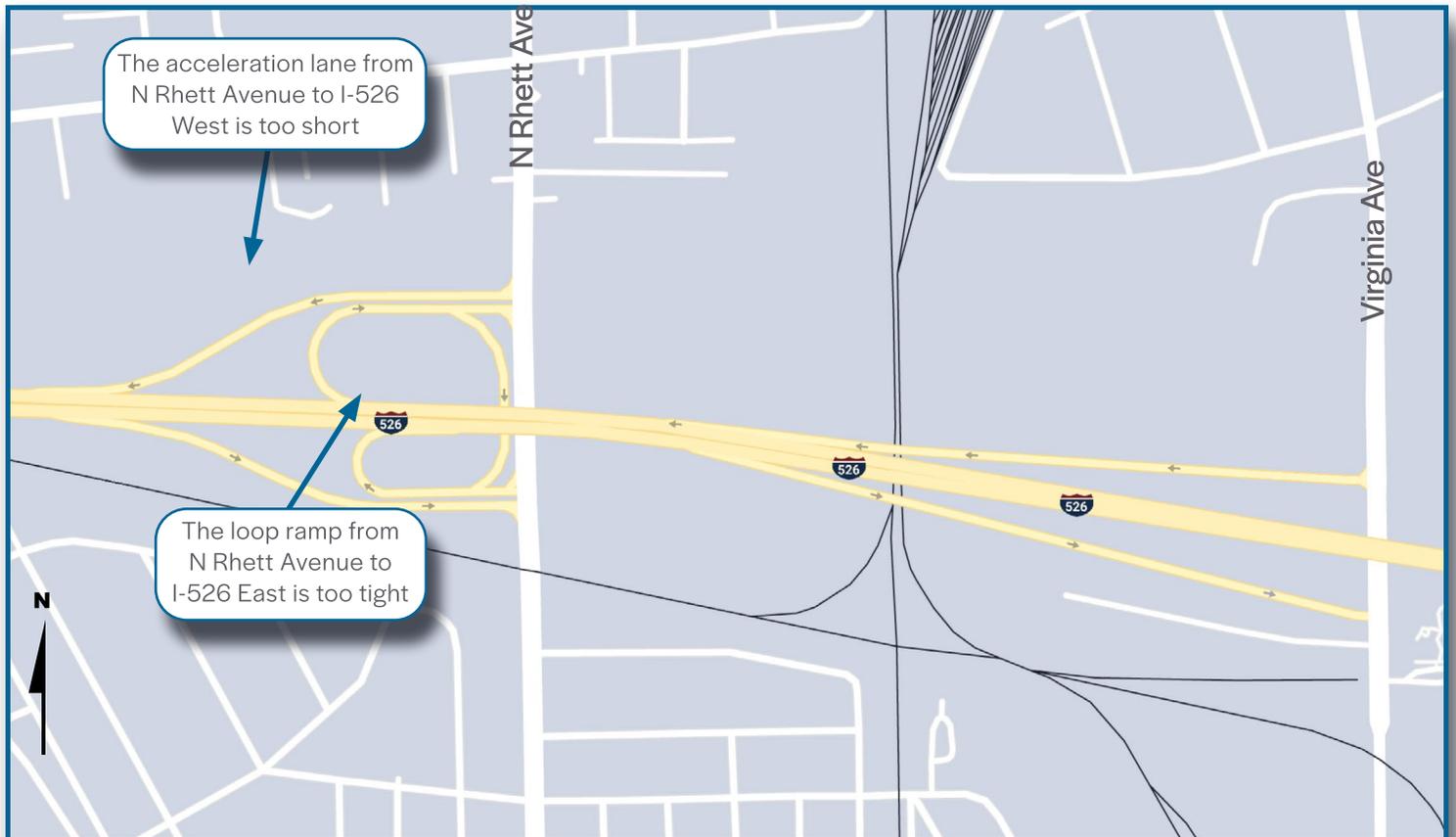


Figure 2.7 I-526 at N Rhett/Virginia Avenue

2.1.6 Pedestrian and Bicycle Connectivity

Pedestrian and bicycle connectivity and mobility needs within the I-526 LCC WEST Project corridor are documented in local and regional transportation plans. The BCDCOG 2040 LRTP⁷ collected public input on the pedestrian and bicycle mobility needs of the region and referenced previous studies, including the WalkBike BCD⁸ (BCD Plan).

The BCDCOG LRTP classifies the projects recommended by the WalkBike BCD and People Pedal plans as “Priority” or “Complimentary.” Priority projects were determined to be independently eligible for one of several federal funding sources and were not necessarily associated with a separate road project. Complimentary projects were determined to be pedestrian and bicycle needs that coincide with LRTP roadway projects. All LRTP pedestrian and bicycle improvements that fall within the I-526 LCC WEST project are in the Complimentary Project category. These projects are described in Table 2.3. The termini shown for each pedestrian or bicycle improvement may be beyond the limits of the project, and the project response description applies only to that portion of the improvement within the project limits.

Table 2.3 BCDCOG 2040 LRTP Pedestrian & Bicycle Improvements within the I-526 LCC WEST Corridor

Roadway Corridor	From	To	Improvement Type
I-526 (Parallel)	Paul Cantrell Blvd	3,350 ft east of Virginia Ave	Shared Use Path
Glenn McConnell Pkwy	I-526	Magwood Dr	Paved Shoulder
Glenn McConnell Pkwy	Mary Ader Ave	Magwood Dr	Paved Shoulder
Glenn McConnell Pkwy	W Wildcat Blvd	Henry Tecklenburg Dr	Shared Use Path
Ashley River Rd	Frontage Rd	Tobias Gadson Blvd	Shared Use Path
			Paved Shoulder
N Rhett Ave	Remount Rd	Exit 19 Ramp	Shared Use Path
			Paved Shoulder
US Hwy 52	I-526	Goodmall Dr/Hwy 52 Ramp	Improve Existing Sidewalk
			Separated Bike Lane
US Hwy 52	I-526	Rebecca St	Paved Shoulder
US Hwy 52	Taylor St/Harley St	Exit 18B	Improve Existing Sidewalk
			Separated Bike Lane

7 “CHATS 2040 LRTP-Pedestrian & Bicycle Mobility,” Berkeley-Charleston-Dorchester Council of Governments, January 2019.

8 “Walk+Bike BCD, Planning for a Walkable & Bikeable Region,” Berkeley-Charleston-Dorchester Council of Governments, May 2017.

2.2 USACE Purpose and Need

US Army Corps of Engineers (USACE) is responsible for ensuring compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, as well as National Environmental Policy Act (NEPA).

2.2.1 USACE’s Purpose of the Proposed Project

Through careful evaluation, the USACE concurs that the overall project purpose is to increase capacity and improve operations at the I-26 and I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue. The USACE concurrence letter is included in Appendix A.

USACE was invited by Federal Highway Administration (FHWA) and SCDOT to act as a cooperating agency throughout the entire NEPA process.

2.2.2 Why the USACE’s Project Purpose is Important

The US Environmental Protection Agency (USEPA), in conjunction with the USACE, developed guidelines under Section 404(b)(1) of the Clean Water Act, to ensure compliance with Section 404 of the Clean Water Act when evaluating permit applications. These guidelines prohibit the discharge of dredged or fill material unless it can be shown that there is no practicable alternative which would have less adverse impact on the aquatic ecosystem.⁹ A practicable alternative is one that is “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.” (40 Code of Federal Regulations [CFR] 230.10(a)(2)). The USACE must evaluate the full range of practicable alternatives to determine whether the overall project purpose is met by each alternative, and whether the applicant’s proposed alternative represents the least environmentally damaging practicable alternative.

2.2.3 The Responsibility of USACE to Review the Statement of Need

The USACE has general policies that guide the review of Department of the Army permits.¹⁰ The public interest policy is a component of the overall permit evaluation that takes into consideration both public and private need for the proposed project. 33 CFR 320.4(a)(2) states that the public interest review must balance the reasonably expected benefits from the proposed project against its reasonably foreseeable detriments. The outcome of the general balancing process determines the decision whether to authorize a project proposal, and if so, the conditions under which it will be allowed to occur.

2.3 Public and Agency Involvement in the Purpose and Need

State and Federal agencies discussed the draft purpose and need during a project scoping meeting held on March 14, 2019. A Community Advisory Council (CAC) was established for the I-526 LCC WEST project to ensure community engagement. At the first CAC meeting on September 30, 2019 the proposed purpose and need was discussed and general comments

Input on the purpose and need for the I-526 LCC WEST project was obtained through a variety of methods.

9 Section 404 of the Clean Water Act - CWA Section 404(b)(1) Guidelines (40 CFR 230). USEPA. 2010. <https://www.epa.gov/cwa-404/cwa-section-404b1-guidelines-40-cfr-230>

10 Corps of Engineers, Dept. of the Army 33 CFR Part 320. Federal Register. <https://www.govinfo.gov/content/pkg/CFR-2012-title33-vol3/pdf/CFR-2012-title33-vol3-part320.pdf>

were received in support of reducing congestion, but minimizing impacts to the neighboring communities. A Public Involvement Plan (PIP) was developed to outline and ensure public involvement at various stages of the project and to include review and comment on the proposed purpose and need. During the November 21, 2019 in person Public Information Meeting and the Virtual Public Information Meeting (VPIM), the public was encouraged to provide feedback on the proposed purpose and need of the project. 553 comments were received from the Public Information Meeting.

2.4 Public Interest Review Factors

The USACE’s Public Interest Factors were also used to evaluate the potential impacts upon wetlands/streams and how this impact would affect the interests of the public. Many of the USACE’s Public Interest Factors were quantified and compared during the designation of the reasonable alternatives, including: land use; consideration of property ownership; wetlands; fish and wildlife; water quality; floodplains; historic properties; and recreation, Table 2.4. Some factors, such as mineral needs and shore erosion and accretion would not be impacted by the project.

Table 2.4 USACE Public Interest Review Factors

Public Interest Review Factor	Reference
Conservation	Chapter 4 - Section 4.1.5, 4.1.6
Economics	Chapter 4 - Section 4.4
Aesthetics	Chapter 4 - Section 4.3, 4.5; Appendix E
General environmental concerns	Chapter 4
Wetlands	Chapter 4 - Section 4.11
Historic properties	Chapter 4 - Section 4.14; Appendix P
Fish and wildlife	Chapter 4 - Section 4.13
Flood hazards	Chapter 4 - Section 4.12
Floodplains	Chapter 4 - Section 4.12; Appendix N
Land use	Chapter 4 - Section 4.1
Navigation	Chapter 5
Recreation	Chapter 4 - Section 4.1, 4.3, 4.5, 4.6, 4.7, 4.15, 4.16
Water supply	Chapter 4 - Section 4.10, 4.11
Water quality	Chapter 4 - Section 4.10
Energy needs	Chapter 4 - Section 4.19
Safety	Chapter 2 - Section 2.1; Chapter 3
Food and fiber production	Chapter 4 - Section 4.2
Consideration of property ownership	Chapter 4 - Section 4.3, 4.6

An Alternatives Development Technical Memorandum (ADTM), Appendix C, was prepared according to the provisions of the National Environmental Policy Act (NEPA) and corresponding regulations and guidelines of the Federal Highway Administration (FHWA), the lead federal agency (23 Code of Federal Regulations [CFR] 771 and 40 CFR 1500–1508) as well as the requirements of South Carolina Department of Transportation (SCDOT), the project sponsor and lead state agency.

The purpose of the technical memo was to clearly document the alternatives development and screening process for the proposed I-526 LCC WEST Environmental Impact Statement (EIS).

To address the existing and future congestion and operational issues of the I-526 corridor in Charleston County, SCDOT commissioned a study to develop a long-range plan for the corridor. The Corridor Analysis for I-526 Between North Charleston and West Ashley (2013 Corridor Study) was completed in 2013 and is hereby incorporated by reference.¹ The 2013 Corridor Study documents the travel conditions at the I-526/I-26 system interchange and along I-526 between US 17 at Savannah Highway and US 52 at Rivers Avenue. The purpose of the study was to evaluate potential improvement strategies for the corridor in a holistic manner, as opposed to evaluating widening as the sole potential improvement. Several strategies to reduce future congestion were studied, including travel demand management, modal improvements for both passengers and freight, traffic operations improvements, and capacity improvements. The 2013 Corridor Study was used to develop alternatives for the I-526 Lowcountry Corridor (LCC) WEST project, which are discussed in detail in Appendix C.

The Berkeley-Charleston-Dorchester Council of Governments (BCDCOG), which serves as the Charleston Area Transportation Study (CHATS) Metropolitan Planning Organization (MPO), developed the Congestion Management Process (CMP) to assess conditions, identify deficiencies, and make recommendations.² The CMP identifies five strategies for the I-526 WEST corridor that were evaluated during the alternative development process. These five strategies from the CMP are outlined below.

- Parallel Pedestrian Facilities/Greenways - the creation or enhancement of access for pedestrians and bicyclists
- Education/Enforcement - addresses dangerous traffic behaviors and improved safety behaviors
- Enhanced Operations - includes ramp metering, traffic signal prioritization, and other technology-based improvements
- Bus on Shoulder/Bus Rapid Transit (BRT) - creates a corridor for buses that is separated, has signal prioritization, and fewer stops
- Congestion Pricing/Tolling - High Occupancy Vehicle(HOV)/Transit (HOT) lane to reflect the price of improved mobility on congested roads

3.1 What are the Steps of the Alternative Analysis?

Step 1: Preliminary Screening of the Range of Alternatives

Alternatives were developed based on the findings of the 2013 Corridor Study, CHATS CMP, SCDOT goals and priorities, further evaluation of the corridor, and input from the public and agencies. The alternatives are general in nature and are evaluated based on the ability to satisfy the purpose and need of the I-526 LCC WEST project.

¹ Corridor Analysis for I-526 Between North Charleston and West Ashley, SCDOT, October 2013, available at: <https://www.526lowcountrycorridor.com/west/planning-studies/>

² Congestion Management Process, Berkeley-Charleston-Dorchester Council of Governments, January 2019

Step 2: Identify Preliminary Alternatives

Alternatives that advance from the preliminary screening are considered Preliminary Alternatives and move on to the next screening.

Step 3: Screening of Preliminary Alternatives

The Preliminary Alternatives are then evaluated by the following screening criteria at a qualitative level:

- Acceptable level of service (LOS)
- Compatible with Adjacent Interchange
- Geometric Deficiencies Resolved
- Flexibility with Don Holt Bridge Replacement
- Constructability

If a Preliminary Alternative is unable to meet the criteria above, then it is not considered practicable or feasible. The alternatives that meet the screening criteria are identified as Proposed Reasonable Alternatives.

Step 4: Identify Proposed Reasonable Alternatives

The Preliminary Alternatives that meet the purpose & need of the project, as well as the overall project purpose, are carried forward as the Proposed Reasonable Alternatives.

Step 5: Detailed Impact Evaluation of Proposed Reasonable Alternatives

The Proposed Reasonable Alternatives are being evaluated based on the following evaluation criteria:

- Purpose & Need
 - > Traffic
 - Average Annual Daily Traffic (AADT)
 - volume to capacity (v/c) Ratio
 - LOS
- Essential Fish Habitat
- Hazardous Materials
- Cultural Resources
- Noise
- Delineated Wetlands
- Relocations
- Environmental Justice
- Threatened & Endangered Species
- Utilities
- Cost
- Section 4(f) & 6(f)
- Reduce/Eliminate Geometric Deficiencies to Improve Safety
- Hurricane Evacuation Route Compatibility

Step 6: Recommended Preferred Alternative

The Proposed Reasonable Alternative that best balances the potential impacts to the human and natural environment will be recommended as the Preferred Alternative.

The Recommended Preferred Alternative proposes to widen I-526 from Paul Cantrell Boulevard to I-26 to an eight-lane facility (four lanes in each direction). Additionally, the project would reconfigure the interchange of I-26 and I-526 to add directional ramps to increase capacity, add a collector-distributor facility (a way of connecting closely spaced interchanges) to I-526, and expand the existing collector-distributor on I-26 to further improve operations. Improvements would also be made to the interchanges of I-26 and Aviation Avenue and Montague Avenue. The project would make other operational improvements at the interchanges along I-526. Specifically, the interchanges at Paul Cantrell Boulevard (including the adjacent intersection with Magwood Drive), International Boulevard, and N Rhett Avenue/Virginia Avenue would undergo various types of reconfiguration. A detailed description of the proposed changes, along with the traffic engineering analysis of the changes, can be found in Appendix B.

LOS - Way to describe roadway operating conditions based on speed, travel time, maneuverability, delay and safety
 v/c Ratio - Compares roadway demand (volume) with roadway supply (capacity)

Source: Highway Capacity Manual

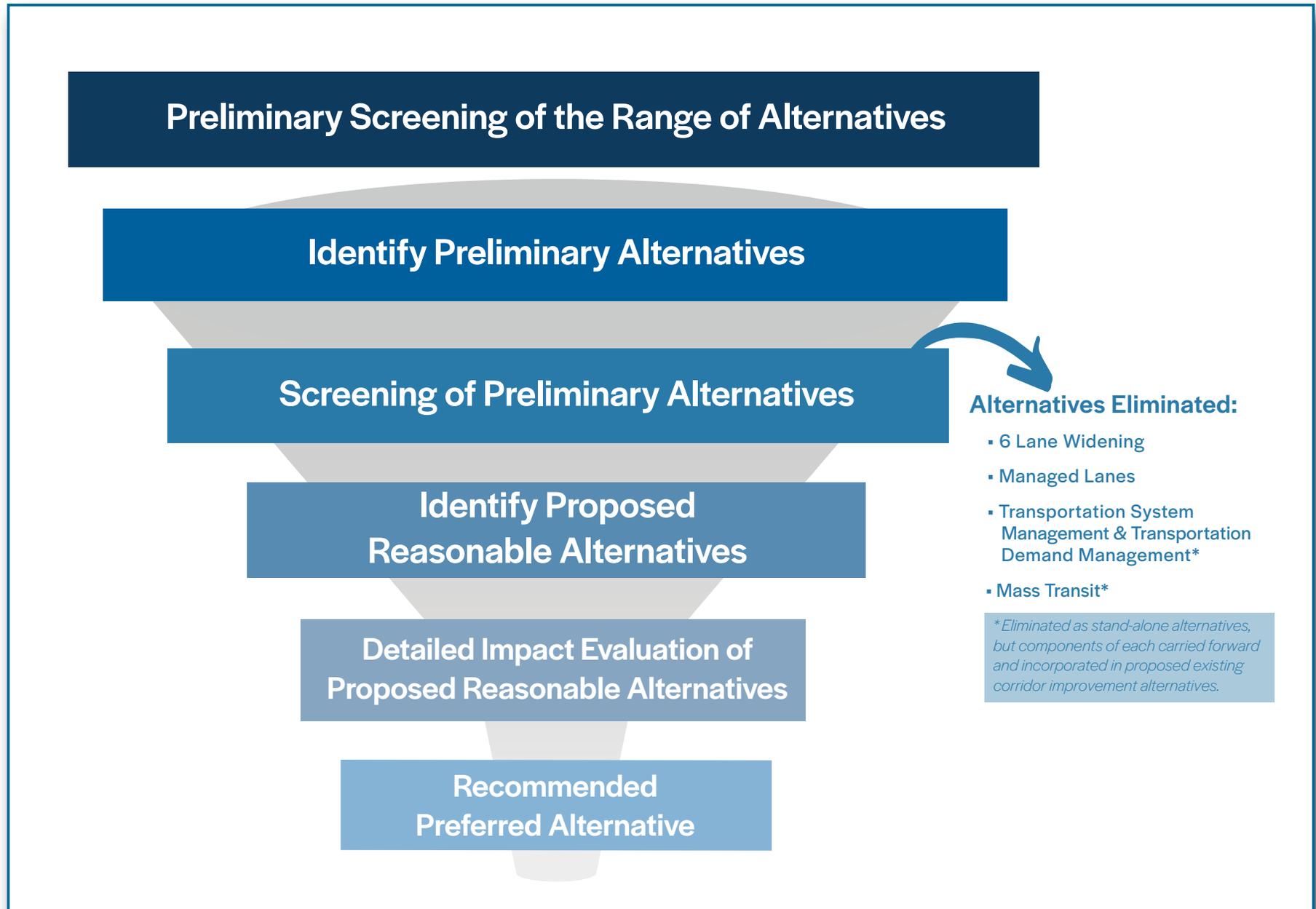


Figure 3.1 Alternatives Development Flowchart

3.2 How were the Range of Alternatives Developed?

NEPA regulations and guidance from FHWA and the Council on Environmental Quality (CEQ) stipulate three primary reasons why an alternative might be determined to be not reasonable and eliminated from further consideration.

- The alternative does not satisfy the purpose of and need for the project
- The alternative is determined to be not practical or feasible from a technical and/or economic standpoint
- The alternative substantially duplicates another alternative

During the development of the range of alternatives for this Final Environmental Impact Statement (FEIS), the October 2013 Corridor Study was used in conjunction with the following goals and priorities provided by SCDOT, input from the public, comments from the agencies, and coordination with SCDOT staff.

- Provide congestion relief by improving I-26/I-526 interchange and I-526 mainline operation
- Reduce/eliminate geometric deficiencies to improve safety
- Financial constraints of available funding

3.3 October 2013 Corridor Study

In 2013, SCDOT completed a study of I-526 in order to produce a long-range plan for the corridor and is hereby incorporated by reference. The 2013 Corridor Study documented travel conditions along an eight-mile section of I-526 between US 17 (Savannah Highway) and US 52 (Rivers Avenue) including the system interchange between I-526 and I-26. According to the study, increased congestion is forecasted for the I-526 Corridor. The existing route is a four-lane, divided interstate serving as a freeway around the Charleston area connecting West Ashley to Mount Pleasant and is widely used by commuters and various commercial and industrial operations. A number of the recommendations from the 2013 Corridor Study were programmed into the Statewide Transportation Improvement Program (STIP).

The I-526 Corridor has been identified as one of the most congested in the state and has been designated as a “Mega Project” in the State Long-Range Interstate Plan, which indicates construction costs exceed multiple years of the state’s interstate program funding.

The purpose of the 2013 Corridor Study was to look at all-inclusive improvement strategies for the corridor which have the best benefit for the public, rather than looking solely at widening as the only potential improvement. Improvement strategies were organized into four categories: 1) Transportation Demand Management (TDM), 2) Modal (transit/freight), 3) Traffic Operations, and 4) Capacity Improvement. TDM improvements consisted of rideshares, employer-based incentives, flexible work schedules, and public outreach programs. Modal improvements included new and improved transit routes and facilities as well as public/private partnerships. Traffic Operation strategies focused on a series of improvements to geometric deficiencies along the corridor, upgrades to pavement marking and signing, and intelligent transportation system (ITS) implementation. Capacity Improvement options incorporated both the widening of I-526 to a six-lane section from Paul Cantrell Boulevard to Rivers Avenue and interchange improvements to I-26/I-526 as well as improvements to other interchanges, collector-distributor (C-D) systems, braided ramps, and barrier-separated lanes.

During the October 2013 Corridor Study, public involvement in the local Charleston community was crucial in developing the alternatives. To engage the community, a project steering committee and a project stakeholder committee were developed as well as a project website, surveys and public information meetings. Appendix C includes more detailed information on the [2013 Corridor Analysis for I-526 Between North Charleston and West Ashley](#).

3.4 What are the Range of Alternatives?

Based on the 2013 Corridor Study, a wide range of alternatives were developed and analyzed to see if they met the primary purpose and need of the project.³ The goal of this process is to identify and consider the broadest range of possible alternatives, working to narrow the scope of alternatives to the range of reasonable and practicable alternatives that could meet the overall purpose of the project. Through the process of developing the purpose and need, the Applicant applied the basic project concepts to the full array of available alternatives in order to guide the identification of a “reasonable range” of alternatives as required by NEPA. As described above, under NEPA, reasonable alternatives include those that are practical or feasible from a technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the Applicant, 46 Federal Register 18026 (March 23, 1981). In an effort to address the existing and future congestion and operational issues identified for the corridor, a range of alternatives were developed to include the following:

- No-Build
- **Alternative Alignment Improvements**
 - > East Montague Avenue
 - > Remount Road
 - > US 78 to Virginia Avenue
 - > Ashley Phosphate Road to Virginia Avenue
 - > Bees Ferry Road to Dorchester Road
- Managed Lanes
- Transportation System Management (TSM) and TDM Strategies
- Mass Transit
- Existing Corridor Improvements

3.5 Preliminary Screening of the Range of Alternatives

The Range of Alternatives are evaluated using the purpose and need of the project. Table 3.1 summarizes the preliminary screening and the details are included in Sections 3.5.1 through 3.5.7.

Did the Project Team Consider Interstate Realignment?

SCDOT considered realigning the interstate with the intention of complete avoidance of the Environmental Justice (EJ) communities. This concept was not carried forward because realignment of the interstate would be restricted by the lack of open land and presence of dense existing development, regional landmarks and environmental features. Any option for interstate realignment would cause massive impacts to developed and undeveloped areas including additional EJ neighborhoods, the Charleston International Airport, the Cooper River, and many other community features. The severity of such impacts was deemed unfeasible and unreasonable for improving congestion along I-526.

³ The NEPA alternatives analysis required consideration of all alternatives for a project has its roots in the fact that NEPA is a procedural statute, rather than one dictating substantive analysis or mandating a particular outcome. At its core, NEPA is a “stop, look, and listen” statute that is intended to result in an informed agency decision making process. The Guidelines impose a stricter, substantive standard to the range of reasonable alternatives identified under NEPA that is designed to arrive at a practicable alternative that has the least adverse impact on the aquatic ecosystem.

Table 3.1 Preliminary Screening of the Range of Alternatives

	No-Build	Improvements to Existing Local Facilities		New Location			Managed Lanes*	TSM/TDM*	Mass Transit*	Existing Corridor Improvements
		East Montague Ave	Remount Rd	US 78 to Virginia Ave	Ashley Phosphate Rd to Virginia Ave	Bees Ferry Rd to Dorchester Rd				
Satisfies I-526 LCC WEST Purpose & Need	-									
Carried Forward as Preliminary Alternatives										

* Eliminated as stand-alone alternatives, but components of each carried forward and incorporated in proposed existing corridor improvement alternatives.

TSM/TDM, Modal strategies, and managed lanes were eliminated as stand-alone alternatives for the I-526 LCC WEST project because their combined potential reduction in congestion is not substantial enough to meet the purpose and need of the project. Project grouping strategies considered in the 2013 Corridor Study still recommended widening I-526 and improving the I-26/I-526 interchange in the year 2020. As a result of this Corridor Study, SCDOT has funded numerous projects identified in the study in an effort to reduce congestion and improve operations along the corridor. Therefore, forecasts of future traffic in the I-526 LCC WEST corridor already consider these strategies to be implemented.

3.5.1 No-Build/No Action

Under the provisions of NEPA, the effects of not implementing the proposed action must also be considered. The No-Build Alternative provides a baseline for comparing potential environmental impacts with the other reasonable alternatives. Analysis of the No-Build Alternative must discuss the existing conditions as well as what is reasonably expected to occur in the foreseeable future if the proposed action is not constructed. For example, the No-Build Alternative must include nearby transportation projects that can reasonably be expected to be in place for the design year. Reasonably foreseeable projects typically come from the fiscally constrained list of projects in the STIP and in the local MPO long-range plans, as well as other programming documents from the municipalities in which the project occurs.

While the No-Build Alternative does not meet the purpose and need of the project, it is carried forward as it provides a foundation for comparing the benefits and environmental impacts of the other alternatives.

3.5.2 Alternative Alignment Improvements

SCDOT initiated an evaluation of alternate routes that satisfy the purpose and need of the I-526 LCC WEST project. The study evaluated the enhancement of existing roadway facilities along with the creation of new alignment corridors. The enhancements include the development of alternate alignments which could be used to decrease interstate traffic volumes. The corridors listed do not include any options which provide an alternate route between I-26 and the Cooper River, refer to Figure 3.2.

During the process of assessing feasible alternate routes, additional route development is restricted by several regional landmarks and environmental features. These include the Charleston International Airport, the Cooper River the Goose Creek Reservoir, and the Francis Marion National Forest/Bonneau Ferry Wildlife Management Area. Impacts to these points of interest are detrimental to the community as a whole; and any alternate route containing such impacts are deemed unreasonable for improving congestion along I-526. Refer to the Alternatives Development Technical Memorandum in Appendix C for more information about these landmarks and Appendix B for detailed traffic analysis results in the Alternatives Development Traffic Analysis Report.

3.5.2.1 Improvements to East Montague Avenue

This existing route runs nearly parallel to I-526 from I-26 to Virginia Avenue, and serves as a minor arterial facility connecting I-26 to the Park Circle area. East Montague Avenue, known as the old “Main Street”, weaves through two of the city’s most historic neighborhoods. Recognizing the nature of the East Montague Avenue corridor, particularly the level of access to the local street network and individual properties, this alternative was modeled as a separate, limited access direct connector between I-26 and I-526 with two lanes in each direction.

The improvements to existing East Montague Avenue were eliminated as a potential stand-alone alternative because it does not meet the purpose and need for the I-526 LCC WEST project.

Traffic modeling results indicate that I-526 east of Rivers Avenue remains over capacity, while the Existing Corridor Improvements (Build) accommodates the traffic demand using only 74 percent of its capacity. Comparing all sections of I-26 affected by the project, the Existing Corridor Improvements provide a greater reduction in the

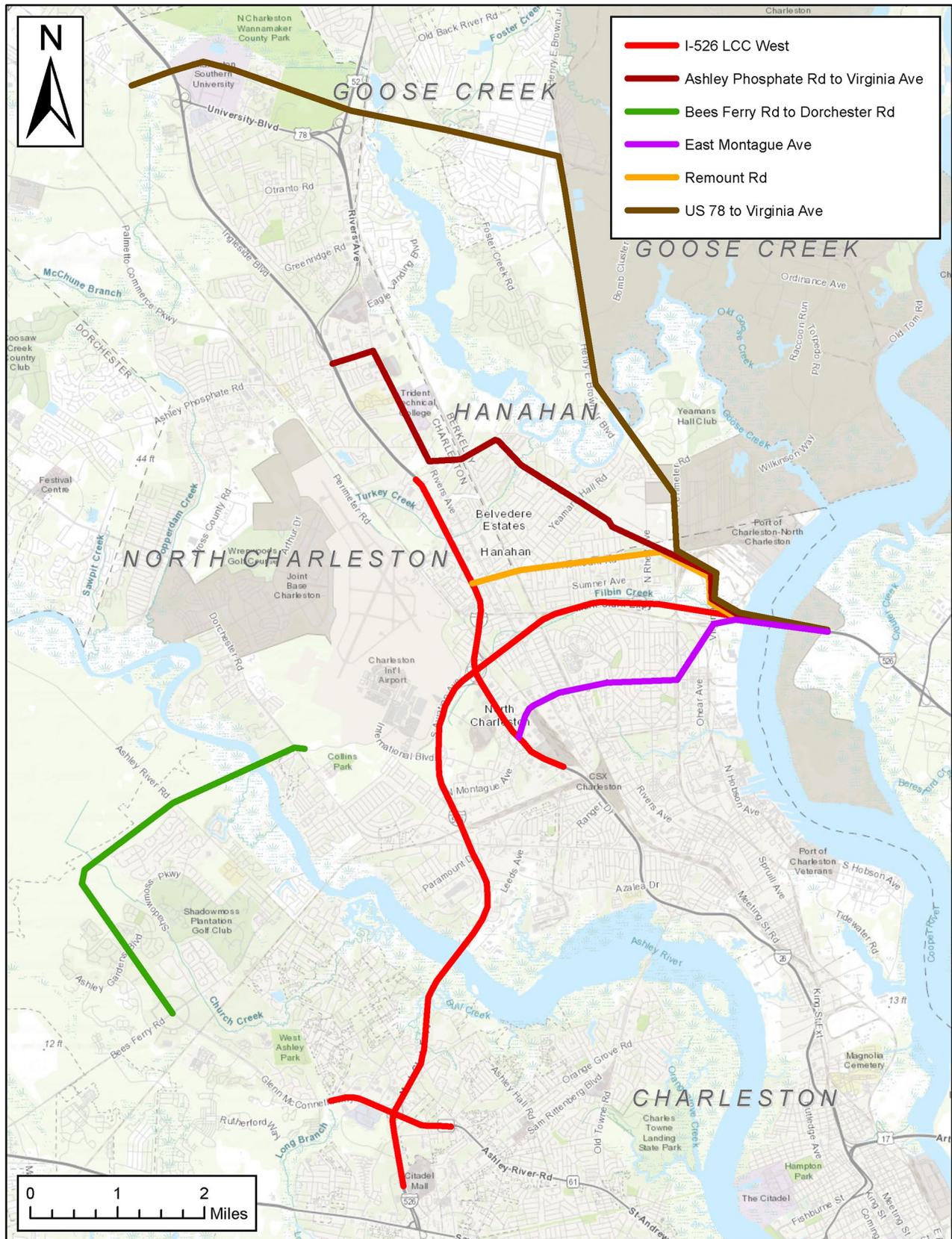


Figure 3.2 Alternative Alignment Improvements

volume to capacity ratio for most of the segments. The proposed alternative route attracts only 35,800 vehicles per day, using only 47 percent of its capacity. Since the model included a separate, limited access facility along the Montague Avenue corridor, the associated impacts to businesses and residential properties would be significant for this limited benefit. This alternative does not attract a sufficient amount of traffic demand to eliminate the need for improvements to I-526; therefore, it does not meet the purpose and need for the I-526 LCC WEST project.

3.5.2.2 Improvements to Remount Road

This existing route serves the area just north of the I-526 corridor and connects I-26 to the North Charleston Terminal (NCT) and its associated facilities along the Cooper River. The NCT sits on over 200 acres and handles nearly one-fourth of the Port of Charleston’s total container volume, necessitating a large volume of truck traffic along the roadway. Recognizing the nature of the Remount Road corridor, particularly the level of access to the local street network and individual properties, this alternative was modeled as a separate, limited access direct connector between I-26 and I-526 with two lanes in each direction.

The improvements to existing Remount Road were eliminated as a potential stand-alone alternative because it does not meet the purpose and need for the I-526 LCC WEST project.

Traffic modeling results indicate that I-526 east of Rivers Avenue remains over capacity, while the Existing Corridor Improvements (Build) accommodates the traffic demand using only 74 percent of its capacity. Comparing all sections of I-26 affected by the project, the Existing Corridor Improvements provide a greater reduction in the volume to capacity ratio for most of the segments. The proposed alternative route attracts only 49,100 vehicles per day, using only 64 percent of its capacity. Since the model included a separate, limited access facility along the Remount Road corridor, the associated impacts to businesses and residential properties would be significant for a limited benefit. This alternative does not attract a sufficient amount of traffic demand to eliminate the need for improvements to I-526; therefore, it does not meet the purpose and need for the I-526 LCC WEST project.

3.5.2.3 US 78 to Virginia Avenue

This proposed new alignment is established to connect key points along I-26 and I-526 in the vicinity of the existing Cooper River crossing at the Don Holt Bridge. The US 78 to Virginia Avenue route utilizes portions of Red Bank Road and N Rhett Avenue to create a four-lane, controlled access facility with new interchanges. A new location roadway section running north of Charleston Southern University and North Charleston Wannamaker County Park connects US 78 west of I-26 to the Red Bank Road corridor. Upgrading the existing roadway impacts commercial and residential development along Red Bank Road and potentially impacts the NCT facilities of the South Carolina Ports Authority. This alternative was modeled as a limited-access direct connector between I-26 and I-526 with two lanes in each direction and no intermediate interchanges.

The US 78 to Virginia Avenue route is eliminated as a potential stand-alone alternative because it does not meet the purpose and need for the I-526 LCC WEST project.

Traffic modeling results indicate that I-526 east of Rivers Avenue remains over capacity, while the Existing Corridor Improvements (Build) accommodates the traffic demand using only 74 percent of its capacity. Comparing all sections of I-26 affected by the project, the Existing Corridor Improvements provide a greater reduction in the volume to capacity ratio for most of the segments. The proposed alternative route attracts only 42,800 vehicles per day, using only 54 percent of its capacity. Since the model included a separate, limited access facility that is approximately 12.1 miles in length, the associated environmental and property impacts would be significant for

this limited benefit. This alternative does not attract a sufficient amount of traffic demand to eliminate the need for improvements to I-526; therefore, it does not meet the purpose and need for the I-526 LCC WEST project.

3.5.2.4 Ashley Phosphate Road to Virginia Avenue

This proposed new alignment is a four-lane, controlled access facility which follows a short section of Ashley Phosphate Road east of I-26, then connects to Railroad Avenue and heads south before traversing on new location to run parallel to Murray Drive along the existing utility easement. A variety of features are impacted by this proposed route, including but not limited to commercial and residential development along Ashley Phosphate Road and Murray Drive, Hanahan Elementary School and Trident Technical College, and the City of Hanahan Recreation Center and its associated park areas. In addition, major utility relocations are required. This alternative was modeled as a limited-access direct connector between I-26 and I-526 with two lanes in each direction and no intermediate interchanges.

The Ashley Phosphate Road to Virginia Avenue route is eliminated as a potential stand-alone alternative because it does not meet the purpose and need for the I-526 LCC WEST project.

Traffic modeling results indicate that I-526 east of Rivers Avenue remains over capacity, while the Existing Corridor Improvements (Build) accommodates the traffic demand using only 74 percent of its capacity. Comparing all sections of I-26 affected by the project, the Existing Corridor Improvements provide a greater reduction in the volume to capacity ratio for most of the segments. The proposed alternative route attracts only 38,000 vehicles per day, using only 48 percent of its capacity. Since the model included a separate, limited access facility that is approximately 7.5 miles in length, the associated environmental and property impacts would be significant for this limited benefit. This alternative does not attract a sufficient amount of traffic demand to eliminate the need for improvements to I-526; therefore, it does not meet the purpose and need for the I-526 LCC WEST project.

3.5.2.5 Bees Ferry Road to Dorchester Road

This proposed new alignment route to the west of I-26 establishes a new connector across the Ashley River. The proposed roadway is four lanes with controlled access but does not include an interchange at Ashley River Road. This alternative was modeled by adding to the network the proposed Ashley Phosphate Road to Virginia Avenue new alignment segment to connect the existing Bees Ferry Road and New Dorchester Road and crossing the Ashley River. This alternative alignment requires a new bridge over the Ashley River that could potentially impact the existing Shadowmoss Plantation residential development.

The Bees Ferry Road to Dorchester Road new alignment route is eliminated as a potential stand-alone alternative because it does not meet the purpose and need for the I-526 LCC WEST project.

Traffic modeling results indicate that I-526 east of Rivers Avenue remains over capacity, while the Existing Corridor Improvements (Build) accommodates the traffic demand using only 74 percent of its capacity. Comparing all sections of I-26 affected by the project, the Existing Corridor Improvements provide a greater reduction in the volume to capacity ratio for most of the segments. The proposed alternative route over the Ashley River attracts only 24,600 vehicles per day and does not significantly impact volumes along I-526 directly west of I-26. Associated environmental and property impacts would be significant for this limited benefit. This alternative does not attract a sufficient amount of traffic demand to eliminate the need for improvements to I-526; therefore, it does not meet the purpose and need for the I-526 LCC WEST project.

3.5.3 Managed Lanes

Managed lanes is one of the TDM strategies evaluated. The 2013 Corridor Study included an evaluation of managed lanes in the I-526 corridor and predicted the study area is not a long enough corridor to realize the potential of HOV or HOT lanes, and that a more regional plan including the I-26 corridor should be examined to increase the feasibility of managed lanes.

More recent managed lane studies (included in the current I-26 Corridor Study and associated “I-26 Corridor Management Plan Traffic Study of Managed Lanes” Kimley-Horn and Associates, Inc. March 2021) concluded that managed lanes may be feasible on I-526 if they extended westward on I-26 at least as far as the US 52 Connector near Ashley Phosphate Road. A regional managed lane study was conducted as part of the I-26 Corridor Study that included all of I-526 and I-26 from US 17 to Exit 187-Ridgeville. A suggested improvement from the plan is the implementation of HOT managed lanes from Exit 199 (US 17 Alt – Summerville) to I-26 Terminus at US 17 and along I-526 the entire section. There are currently no programmed improvements to I-26 between I-526 and the US 52 Connector; therefore, managed lanes cannot be justified based on a committed improvement ensuring their functionality upon completion of the I-526 LCC WEST Project.

Existing geometric and operational deficiencies on the I-526 corridor limit the ability to incorporate managed lanes without making necessary improvements to address these deficiencies. Whereas managed lanes alone do not meet the project’s purpose and need and are therefore not considered a viable stand-alone alternative, the 12-foot shoulders included in the proposed footprint of the I-526 improvements should allow for future modifications to accommodate a future managed lane options or potential for bus on shoulder transfer between the two interstates.

3.5.4 Transportation System Management and Transportation Demand Management

The Transportation System Management (TSM) and TDM strategies evaluated in the 2013 Corridor Study are listed in Table 3.2. A total reduction of 5.2 percent of total overall traffic can be expected with the implementation of all 10 of the TDM programs evaluated in the 2013 Corridor Study. TSM includes lower cost improvements to improve efficiency and safety. A few examples of TSM consist of improving signal timing, adding high occupancy vehicle lanes as well as adding turn lanes. TDM regional strategies may include strategies such as encouraging drivers to carpool or ride the bus, and/or encouraging employers to allow non-standard work hours or telecommuting options for employees.

TDM focuses on lessening travel demand by reducing the number of vehicle trips and vehicle miles traveled on a roadway or redistributing this demand in space or time to decrease system deficiency.

The following documents were also reviewed to determine if additional TSM and TDM studies provide better estimates of travel demand reduction. These studies did not reference reductions in travel demand related to single occupancy vehicles.

- The Public Transportation element of the CHATS Long-Range Transportation Plan (LRTP), January 2019
- Appendix D of the CHATS LRTP, Transit Needs Assessment, January 2019
- Travel Market Analysis element of the BCDCOG Regional Transit Framework Plan, March 2018
- Corridor Alternatives Evaluation & Recommendations element of the BCDCOG Regional Transit Framework Plan, March 2018
- CMP report, BCDCOG, January 2019

According to the US Census Bureau American Community Survey, the percentage of commuters driving alone to work has only reduced by 0.4 percent between 2013 and 2019. The percentage of carpoolers and public transit users also declined by an average of less than one percent. This data indicated an increase in telecommuters, but not substantial enough to reduce congestion given the current and future traffic demand for the corridor. I-526 from Mount Pleasant to Savannah Highway was identified in the Regional Transit Framework Plan as a high capacity transit (HCT) corridor. This plan establishes the needs and makes recommendations based on public and stakeholder input, operations, and available funding. However, the plan does not provide forecasts. Based on the American Community Survey data through 2019 and the document review described above, the TSM and TDM recommendations from the 2013 Corridor Study are still applicable.

As a standalone alternative, TSM and TDM improvements do not adequately improve the corridor or meet the purpose and need to increase capacity and reduce congestion given the current and future LOS. While TSM and TDM strategies alone do not meet the project’s purpose and need and therefore are not being considered as a viable stand-alone alternative, TSM and TDM alternatives to shift commuter behavior are being considered as future regional projects.

Table 3.2 Transportation Demand Management Strategies

Strategy	Traffic Reduction Potential
Carpools/Rideshare Matching Vanpools	2.0 %
Transit Pass Incentives Financial Incentives	1.5 %
Telecommuting Compressed Work Week	0.1 %
Work Flex Time Staggered Work Hours	0.5 %
Bike/Walk Enhancements	0.1 %
Education, Promotion	1.0 %
Total Reduction Potential	5.2 %

Source: Adapted from I-526 Corridor Analysis Between North Charleston and West Ashley, Table ES3

Note: All strategies with the exception of Bike/Walk Enhancements have been funded by FHWA

3.5.5 Mass Transit

The measure of effectiveness for the proposed transit strategies are based on the potential reduction in traffic along the I-526 corridor. Mass transit options are a growing topic of interest in the Charleston area as evidenced by 17 percent of comments received at the initial public information meeting indicated a desire to have available transit and an additional 3 percent cited the desire for bus lanes. In addition to public desire, FHWA also recommends that mass transit alternatives be considered on proposed highway projects in urbanized areas with populations of over 200,000 people (FHWA Technical Advisory 6640.8A). Specific modal strategies studied for the I-526 corridor in the 2013 Corridor Study are listed in Table 3.3. If implemented as a stand-alone alternative, expanding and/or improving mass transit infrastructure does not meet the purpose and need of the project by increasing adequate capacity or improving operations. The total potential reduction of these improvement strategies is estimated to be

7.4 percent with the implementation of short-term transit and freight improvements. The addition of mass transit does not enhance safety, nor improve freight mobility. Because mass transit does not meet the purpose and need as a standalone alternative, it is not carried forward as an alternative for the I-526 LCC WEST Corridor project.

While mass transit is not carried forward as a reasonable alternative based on its ability to meet the purpose and need on its own, Charleston County and BCDCOG are proactively funding a BRT project which will include a bus within a dedicated lane or right-of-way. The design work for this project is currently being scoped. The BRT corridor crosses the I-526 corridor within the median of Rivers Avenue. The I-526 LCC WEST alternatives are developing an assumed clearance envelope for the BRT corridor where it is expected to pass through the I-526 LCC WEST study area. Infrastructure improvements are needed to support adding additional buses. Continued coordination with Charleston County will be required to fully implement as a successful mass transit system. Table 3.4 shows the travel demand alternatives which have been funded and implemented or are under development.

Assumptions have been made about the BRT corridor width for purposes of providing adequate clearances with the I-526 improvement alternatives.

Table 3.3 Modal Strategies

Strategy	Traffic Reduction Potential
Improve Existing Transit Routes	0.3 percent
New Transit Routes	1.1 percent
Improve Connectivity to/from Transit	0.3 percent
Improve Transit Facilities and Equipment	0.3 percent
Public/Private Partnerships	0.6 percent
BRT, Commuter Rail, Light Rail	3.4 percent
Zoning/Transit Oriented Developments	0.0 percent
Increase Intermodal Split to Rail	3.5 percent
Expand Port Operating Hours	0.0 percent
Construct Near-Terminal Staging Areas	0.2 percent
Peak-Hour Incentives/Disincentives	0.2 percent
Truck Routes away from I-526	0.9 percent
Total Modal Reduction Potential	7.4 percent

Source: Adapted from *I-526 Corridor Analysis Between North Charleston and West Ashley*, Table ES4

Note: The BRT, Commuter Rail, Light Rail strategy is not included in the Total Modal Reduction Potential as it is being funded by Charleston County. The Zoning/Transit-Oriented Developments strategy is also not included.

Table 3.4 Travel Demand Alternatives Evaluated & Implemented from 2013 Corridor Study

Strategy	Status
Carpools/Rideshare Matching Vanpools	Funded & Implemented
Telecommuting Compressed Work Week	Funded & Implemented
Work Flex Time Staggered Work Hours	Funded & Implemented
Education, Promotion	Funded & Implemented
Bus Rapid Transit (BRT)	Project Under Development
Signal Improvements & Re-Timing	Funded & Implemented
Park and Ride	Funded & Under Development

3.5.6 Existing Corridor Improvements

Improving the existing I-526 LCC WEST mainline from Paul Cantrell Boulevard to Virginia Avenue is proposed to accommodate the current and future vehicular demands, as well as population and employment increases. This alternative could meet the purpose and need by increasing capacity and thereby reducing congestion. Improving the existing corridor is advanced to the next level of this analysis and multiple options are being developed, including two widening alternatives as well as five interchanges along I-526: the I-526 at Paul Cantrell Boulevard interchange; the I-26/I-526 System interchange; the I-526 at Rivers Avenue interchange; the I-526 at N Rhett Avenue interchange; and the I-526 at Virginia Avenue interchange.

3.6 What are the Preliminary Alternatives and how were they Evaluated?

Based on the screening previously described, the range of alternatives are evaluated based on their ability to meet the purpose and need of the I-526 LCC WEST project. The following alternatives are identified as Preliminary Alternatives:

- No-Build
- Existing Corridor Improvements
 - > Mainline Interstate Alternatives
 - 6-lane widening
 - 8-lane widening
 - > Interchange Alternatives
 - I-526 at Paul Cantrell Boulevard
 - I-26/I-526 System
 - I-526 at Rivers Avenue
 - I-526 at N Rhett Avenue and Virginia Avenue (Due to proximity, these interchanges are combined.)

The Preliminary Alternatives are evaluated using the purpose and need of the project and the following criteria at a qualitative level:

- Acceptable LOS
- Compatible with Adjacent Interchange
- Geometric Deficiencies Resolved
- Flexibility with Don Holt Bridge Replacement
- Constructability

Table 3.5 summarizes the screening of the Preliminary Alternatives and the details are included in Sections 3.6.1 through 3.6.3.

Table 3.5 Screening of the Preliminary Alternatives

	No-Build	Mainline		I-526 at Paul Cantrell Blvd					Paul Cantrell Blvd at Magwood Dr							I-26/I-526 System				I-526 at Rivers Ave		I-526 at N Rhett/Virginia Ave			
		6-lane	8-lane	1	2	3	4	5*	1	2	3	4	5*	6	7	1	2	3	4	1	2	1	2	3	4
Acceptable LOS	✗	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compatible with Adjacent Interchange	-	-	-	✗	✓	✗	✓	✓	✗	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
Geometric Deficiencies Resolved	✗	-	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓
Flexibility with Don Holt Bridge Replacement	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓
Constructability	-	✓	✓	✓	✗	✓	✗	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✗	✓
Carried Forward as Reasonable Alternatives	✓	✗	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗	✓	✗	✗	✓	✓	✗	✗	✓	✓	✓	✓	✗	✗

* Based on further analysis and prior to the selection of an alternative for the I-526 at Paul Cantrell Boulevard interchange and at the Paul Cantrell Boulevard at Magwood Drive interchange, Alternative 5 for both interchanges were modified to meet the refined project goals.

3.6.1 No-Build

The No-Build Alternative fails to meet the majority of the criteria identified as required to meet the purpose and need of the project. Notwithstanding, the No-Build Alternative is retained and carried forward as a Preliminary Alternative for further comparison in the alternatives practicability analysis in order to ensure a complete environmental impact evaluation, as well as provide a baseline comparison to other alternatives. For additional information on the No-Build Alternative, refer to Section 3.5.1.

3.6.2 Mainline Interstate (I-526) Alternatives

3.6.2.1 6-Lane Widening

The 2013 Corridor Study recommended adding one lane in each direction on I-526, resulting in a 6-lane cross section through the study area. Subsequently, the CHATS model was updated to reflect higher regional growth, resulting in higher predicted traffic volumes in the corridor. The 6-lane widening alternative (3 lanes in each direction) is determined to be inadequate in providing an acceptable improvement in capacity. Based on traffic analysis, the 6-lane widening does not meet the purpose and need of the project to increase capacity and improve operations. Portions of I-526 would operate at a LOS E or F approximately five years after construction. As shown in Table 3.6, traffic analysis is being used to compare the 6-lane and 8-lane alternatives. The 6-lane widening alternative is not carried forward for further evaluation because of a failing LOS. Refer to Figure 3.3 for description of LOS.

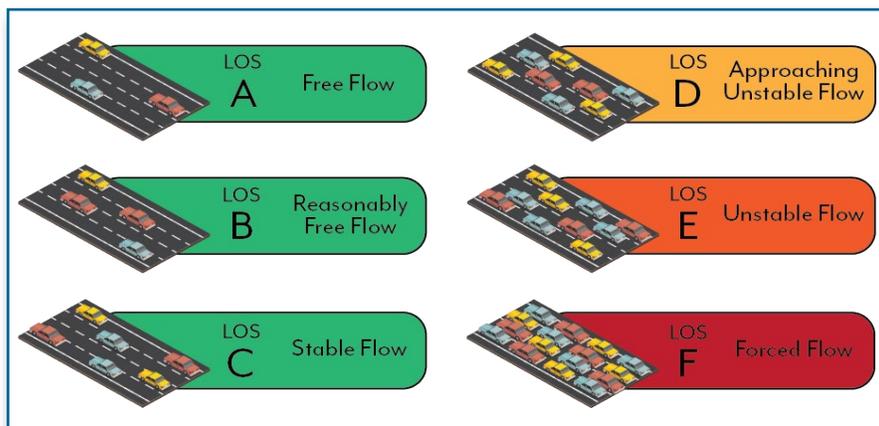


Figure 3.3 Level of Service (LOS)

Portions of I-526 would operate at a LOS E or F approximately five years after construction. As shown in Table 3.6, traffic analysis is being used to compare the 6-lane and 8-lane alternatives. The 6-lane widening alternative is not carried forward for further evaluation because of a failing LOS. Refer to Figure 3.3 for description of LOS.

Table 3.6 Traffic Analysis of I-526 LCC WEST

Segment Description	2015 AADT	No-Build 2050 AADT	LOS	Build 2050 AADT	LOS	
					6-Lane	8-Lane
Sam Rittenberg to Paul Cantrell Blvd	39,400	59,800	C	68,500	B	B
Paul Cantrell Blvd to Leeds Ave	79,200	106,900	F	136,900	F	D
Leeds Ave to Dorchester Rd	78,800	106,400	F	134,000	F	D
Dorchester Rd to Montague Ave	80,700	108,900	F	127,300	E	C
Montague Ave to International Blvd	67,400	91,000	F	109,600	D	C
International Blvd to I-26	89,000	120,200	F	126,700	E	C
I-26 to Rivers Ave	77,200	104,200	F	116,100	D	C
Rivers Ave to N Rhett Ave	75,600	104,400	F	126,700	E	C
N Rhett Ave to Virginia Ave	80,500	122,200	F	148,400	F	D
East of Virginia Ave	68,900	110,100	F	133,800	F	D

3.6.2.2 8-Lane Widening

West of I-26: Paul Cantrell Boulevard (Glenn McConnell Parkway) is a major arterial/expressway facility near the western end of I-526. The I-526 interchange at Paul Cantrell Boulevard is a logical terminus for the I-526 LCC WEST because of the volume of traffic that enters eastbound I-526 and exits westbound I-526 at this point. In the eastbound direction, the mainline widening begins at this location with a two-lane entrance ramp adding the lanes which comprise the four-lane eastbound lanes toward I-26. In the westbound direction, the widened four-lane mainline concept ends at this interchange. A new bridge carries the westbound lanes of Paul Cantrell Boulevard over the intersection with Magwood Drive and touches down on Glenn McConnell Parkway.

The westbound exit ramp from I-526 is being widened and uses this new bridge to bypass the Magwood intersection, which currently causes traffic to back up onto I-526. The 8-lane widening of I-526 extends from Paul Cantrell Boulevard to I-26.

At I-26/I-526 System Interchange: Two of the four eastbound mainline lanes on I-526 serve as the westbound connection to eastbound and westbound I-26. The remaining two lanes extend through onto the existing alignment over I-26 and continue eastbound. In the westbound direction, two lanes are proposed as the ramp lanes from eastbound I-26.

East of I-26: The volume of traffic entering eastbound I-526 from I-26 is similar to the volume of through traffic coming over I-26. Similarly, the westbound I-526 traffic approaching I-26 is well balanced between the volume of traffic that continues west on I-526 and that which is destined for either eastbound or westbound I-26. For these reasons, the extension of C-D roads from the system interchange eastward toward the Cooper River works well in reducing the weaving-related congestion that is currently prevalent today on I-526 from I-26, through the Rivers Avenue, N Rhett Avenue and Virginia Avenue interchanges.

I-526 east of Rivers Avenue: The eastern project terminus of Virginia Avenue is being selected based on the closely connected N Rhett Avenue interchange and the extensive traffic that backs onto I-526 from N Rhett Avenue. I-526 east of Rivers Avenue is on an elevated structure until it reaches Daniel Island. The existing structure continues to carry two through lanes for eastbound and westbound traffic on I-526, while the new C-D roads provide the needed additional capacity. The C-D roads also provide critical access after a major seismic event if the existing I-526 structure is not serviceable. The portion of elevated structure between Rivers Avenue and the Don Holt Bridge is not designed to resist seismic forces.

The 8-lane widening alternative is being carried forward for a detailed impact evaluation. The additional two lanes in each direction meets the project purpose and need.

3.6.3 Interchange Alternatives

3.6.3.1 I-526 at Paul Cantrell Boulevard

The interchange at the I-526 and Paul Cantrell Boulevard contributes to the congestion along on I-526 LCC WEST. Figure 3.4 shows the alternative carried forward for the interchange of Paul Cantrell Boulevard at I-526. Refer to Appendix C for figures of the following interchange alternatives that were not carried forward.

Alternative 1: Triple Lefts to I-526 eastbound with Improved Loops

- Failed to provide an acceptable LOS
- Not compatible with adjacent interchange
- Not carried forward

Alternative 2: Semi-Directional Ramp to I-526 eastbound with Improved Loops

- Constructability issues with the westbound off-ramp system and the eastbound directional flyover on-ramp
- Not carried forward

Alternative 3: Diverging Diamond Interchange

- Not compatible with adjacent interchange
- Not carried forward

Alternative 4: Single Point Interchange with Semi-Directional Ramp to I-526 eastbound

- Constructability requires extensive redesign and construction of the interchange
- Not carried forward

Alternative 5: Semi-Directional Ramp to I-526 eastbound with Improved Loop Ramps and Left Turn to I-526 eastbound

- Acceptable LOS
- Compatible with adjacent interchange
- Carried Forward

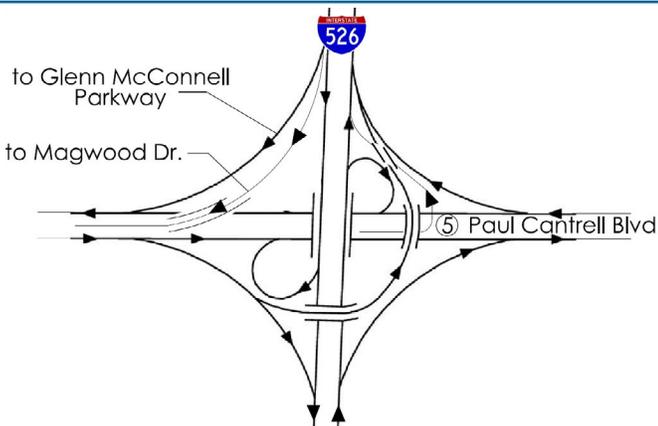


Figure 3.4 I-526 at Paul Cantrell Boulevard Alternative 5

Prior to selection of an alternative for I-526 & Paul Cantrell Boulevard based on further analysis, the project goals were refined by SCDOT. These goals prioritized (1) I-526 mainline capacity, (2) improvement of the I-26 & I-526 system interchange, and (3) ensuring queues from ramp termini and adjacent intersections did not spill back onto the mainline. These priorities led to the selection of a modified Alternative 5, such that the westbound off-ramp system (with two-lanes to the separated overpass and one lane to the Paul Cantrell Boulevard surface street) was retained, but the eastbound directional flyover on-ramp was eliminated. The existing signalized intersection of Paul Cantrell Boulevard & I-526 EB on-ramp was retained. Refer to Figure 3.5 for the modified Alternative 5.

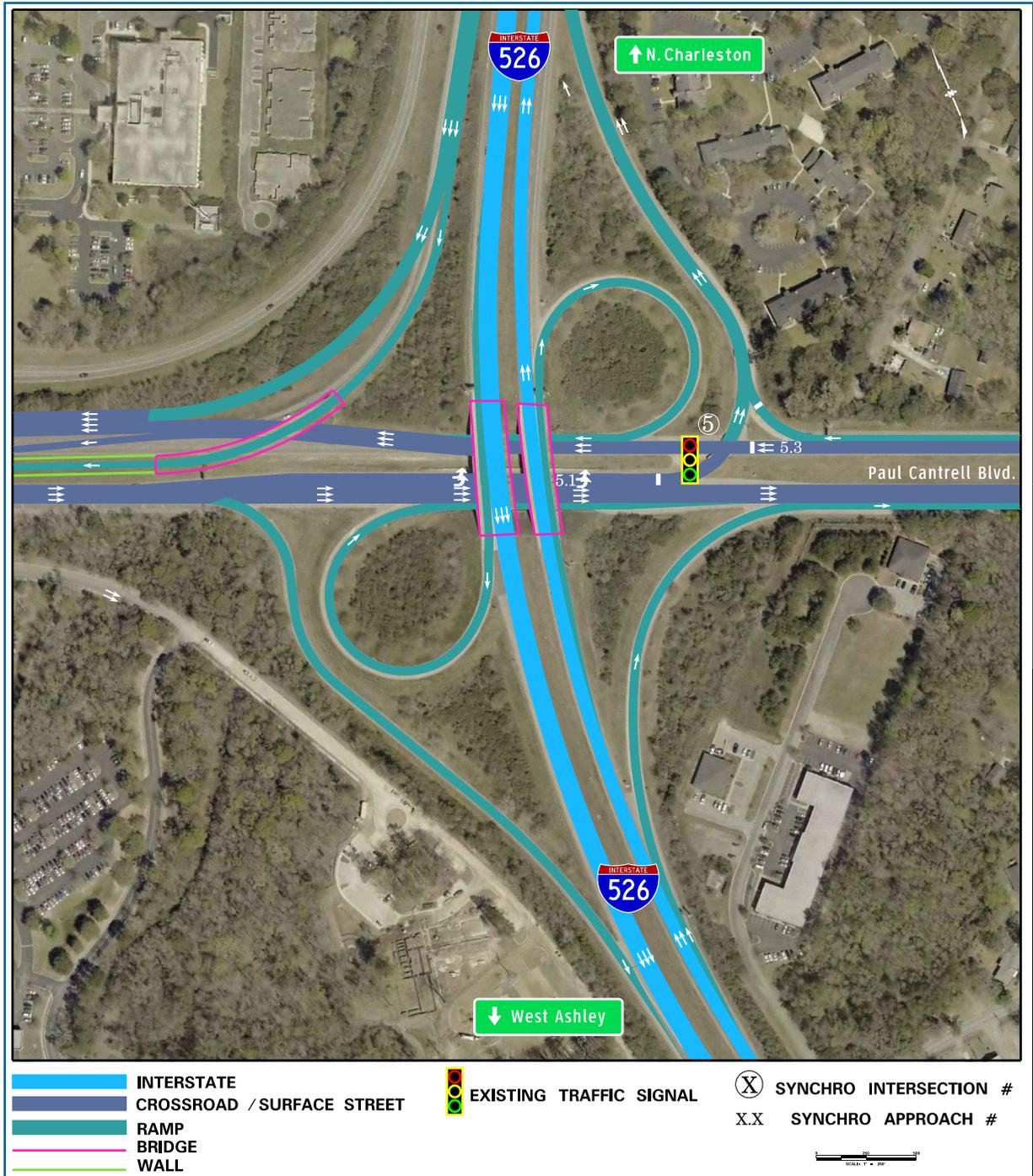


Figure 3.5 I-526 & Paul Cantrell Boulevard Interchange Improvement Alternative (Carried Forward)

3.6.3.2 Paul Cantrell Boulevard at Magwood Drive

Due to the proximity of Magwood Drive to the I-526 at Paul Cantrell interchange, alternatives were developed and screened to mitigate the existing congestion. Figure 3.6 shows the alternative carried forward for the intersection of Paul Cantrell Boulevard at Magwood Drive. Refer to Appendix C for figures of the following interchange alternatives that were not carried forward.

Alternative 1: Diamond

- Not compatible with adjacent interchange
- Not carried forward

Alternative 2: Diamond with Braided Ramps

- Constructability issues with the replacement of the westbound overpass bridge to provide a free-flow exit
- Not carried forward

Alternative 3: Single Point Interchange

- Not compatible with adjacent interchange
- Not carried forward

Alternative 4: Compressed Diamond with Phase Overlap

- Not compatible with adjacent interchange
- Not carried forward

Alternative 5: Interchange with Separated Overpass Bridge

- Acceptable LOS
- Compatible with adjacent interchange
- Carried forward

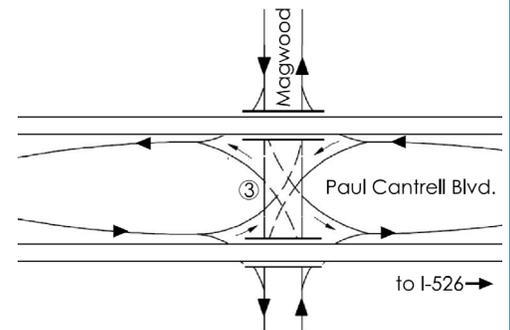


Figure 3.6 Paul Cantrell Boulevard at Magwood Drive Alternative 5

Alternative 6: Maximized At Grade Intersection

- Does not provide acceptable LOS
- Not carried forward

Alternative 7: Continuous Flow Intersection

- Does not provide acceptable LOS
- Not compatible with adjacent interchange
- Not carried forward

Prior to selection of a preferred alternative for Paul Cantrell Boulevard & Magwood Drive based on further analysis, the project goals were refined by SCDOT. These goals prioritized (1) I-526 mainline capacity, (2) improvement of the I-26 & I-526 system interchange, and (3) ensuring queues from ramps did not spill back onto the mainline. These priorities altered the alternative screening process for this interchange, leading to the selection of a modified Alternative 5, such that the westbound overpass bridge was retained (to provide free-flow for traffic exiting I-526) but the eastbound overpass bridge was eliminated (as it did not contribute to the three priorities). This geometry is shown in Figure 3.7.

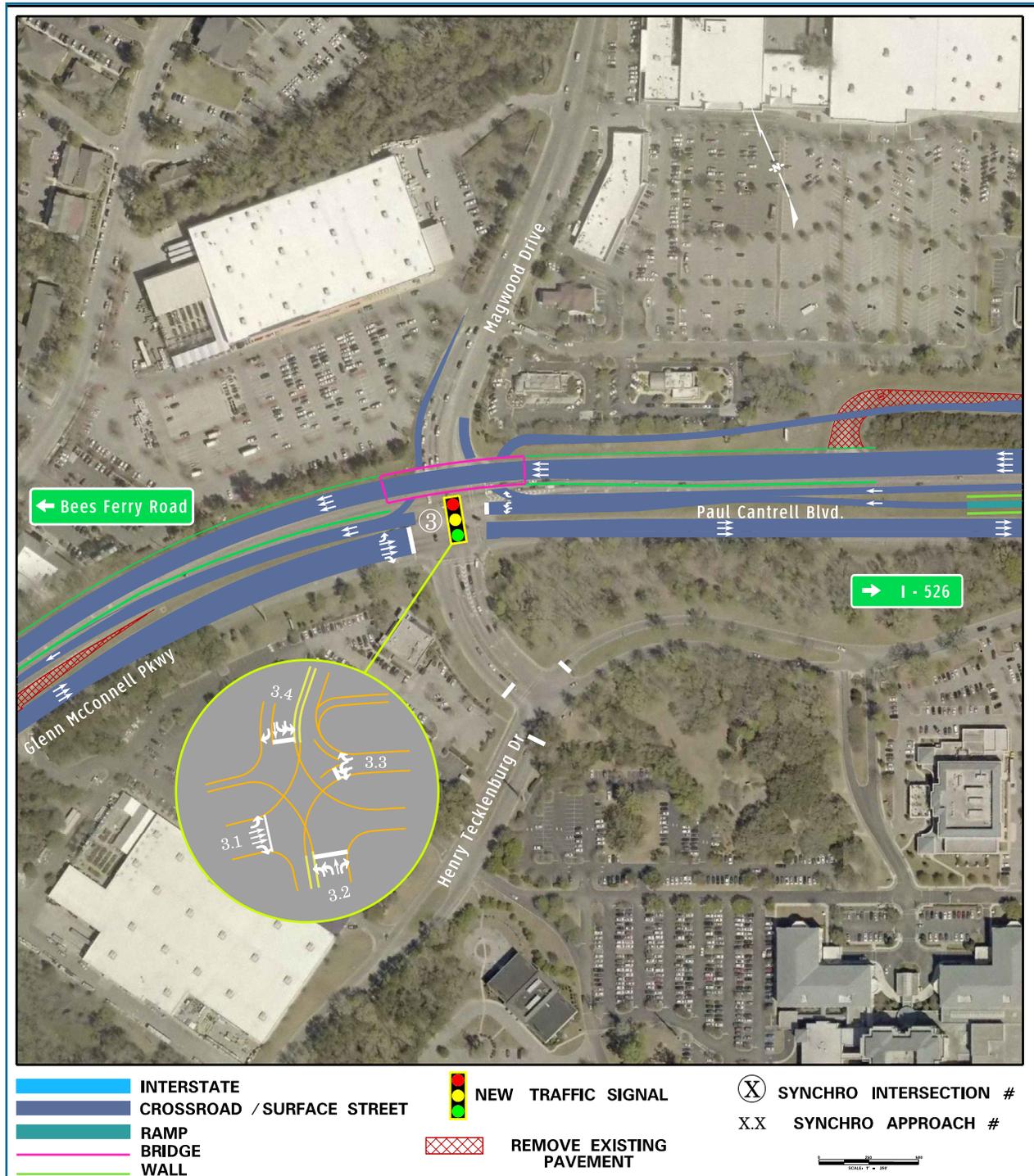


Figure 3.7 Paul Cantrell Boulevard & Magwood Drive Interchange Improvement Alternative (Carried Forward)

3.6.3.3 I-26/I-526 System Interchange

Alternatives were developed based on separating movements that create congestion caused by closely spaced ramps and inadequate lengths of merges and weaves. Refer to Appendix C for figures of the following interchange alternatives that were not carried forward.

Alternative 1: Semi-Directional Interchange

- C-D roads added to the north and south side of I-526 through Rivers Avenue interchange and on N Rhett/Virginia Avenue
- Eastbound I-526 to westbound I-26 directional ramp moved to cross over I-26 north of I-526
- Carried forward as it meets an acceptable LOS, resolves existing geometric deficiencies and is compatible with adjacent interchanges

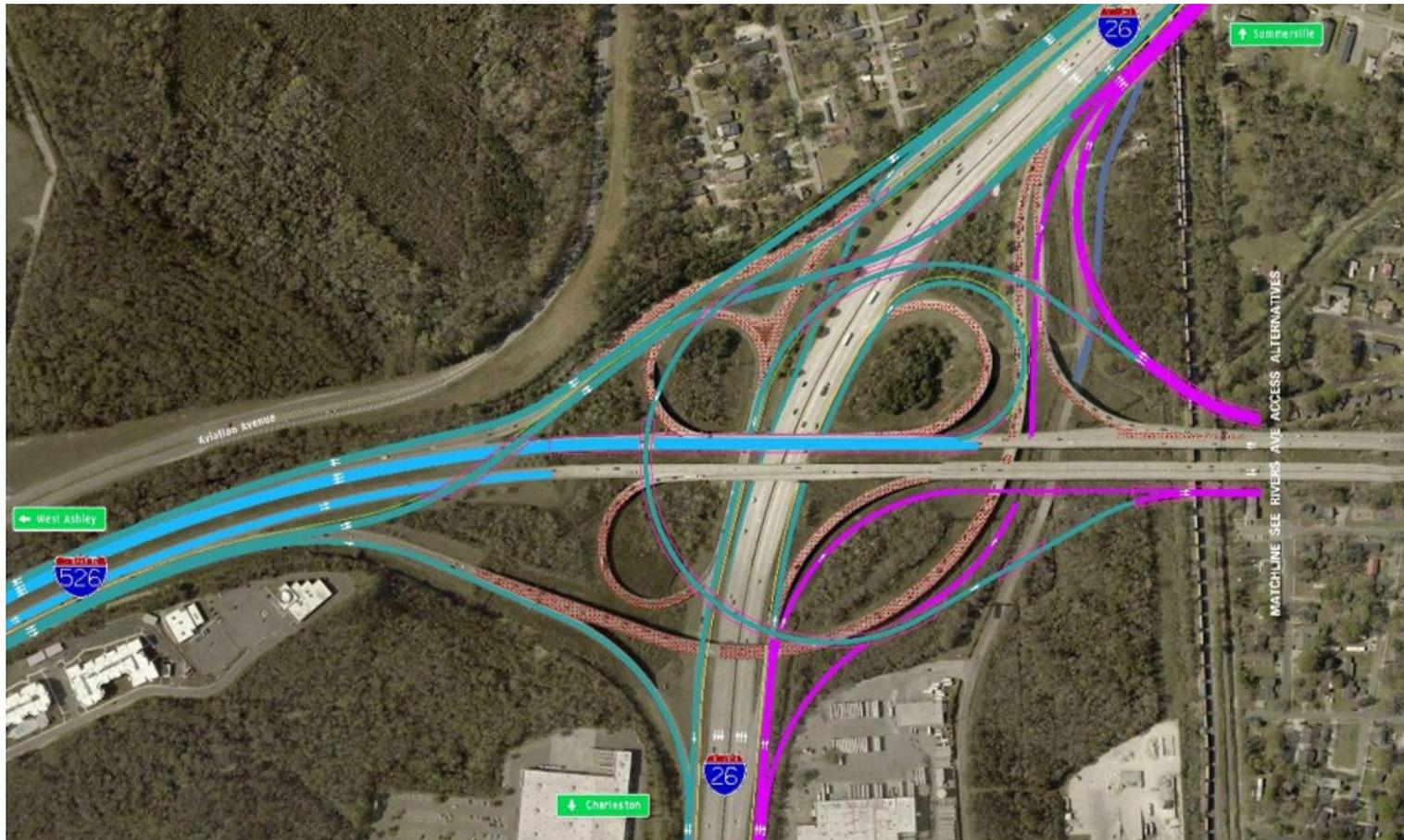


Figure 3.8 I-26/I-526 Alternative 1

Alternative 2: Semi-Directional Interchange with 1 Loop Ramp Retained

- C-D roads added to the north and south side of I-526 through Rivers Avenue interchange
- Eastbound I-526 to westbound I-26 uses existing directional ramp
- Carried forward as it has an acceptable LOS, resolves existing geometric deficiencies and is compatible with adjacent interchanges

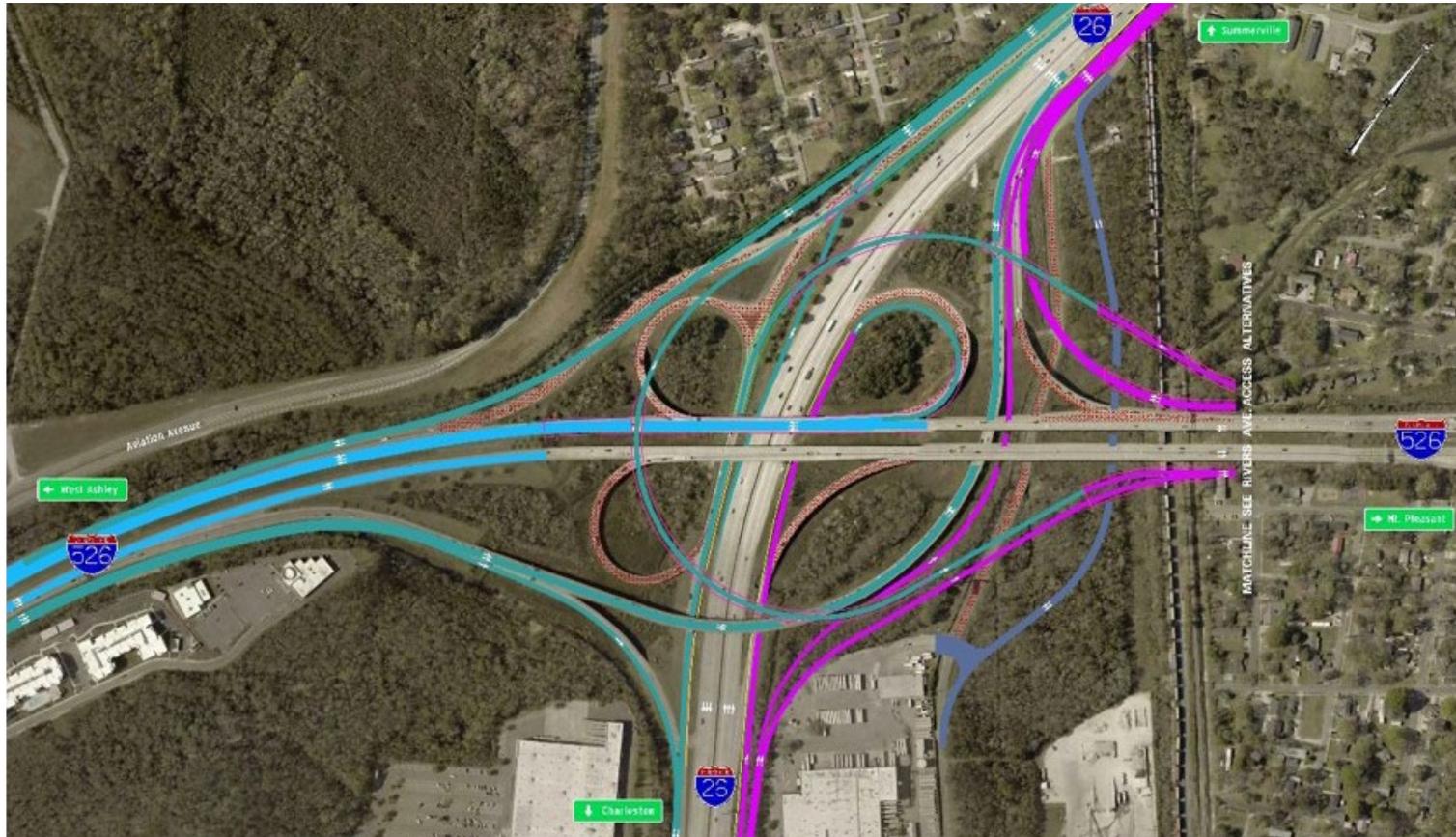


Figure 3.9 I-26/I-526 Alternative 2

Alternative 3: Semi-Directional Turbine Interchange

- Not carried forward due to significantly larger footprint and impacts to federal properties as well as airport flight paths.

Alternative 4: Semi-Directional with 3 Levels of Ramping

- Westbound I-26 to westbound I-526 loop ramp replaced with a directional ramp, creating 3-level-high interchange
- Not carried forward due to complex constructability

3.6.3.4 I-526 at Rivers Avenue

One interchange alternative was developed from the 2013 Corridor Study, the Partial Cloverleaf Rebuild. This alternative was developed based on separating movements that create congestion caused by closely spaced ramps and inadequate lengths of merges and weaves. The second alternative is a basic build scenario that proposes new C-D roads, but no improvements to the existing interchange.

Rivers Avenue: Relocated Partial Cloverleaf

- New C-D system constructed over Rivers Avenue
- Additional ramps constructed between Rivers Avenue and C-D system to maintain access to I-26 via I-526 from Rivers Avenue
- Carried forward as it has acceptable LOS, resolves geometric deficiencies and is compatible with adjacent interchanges

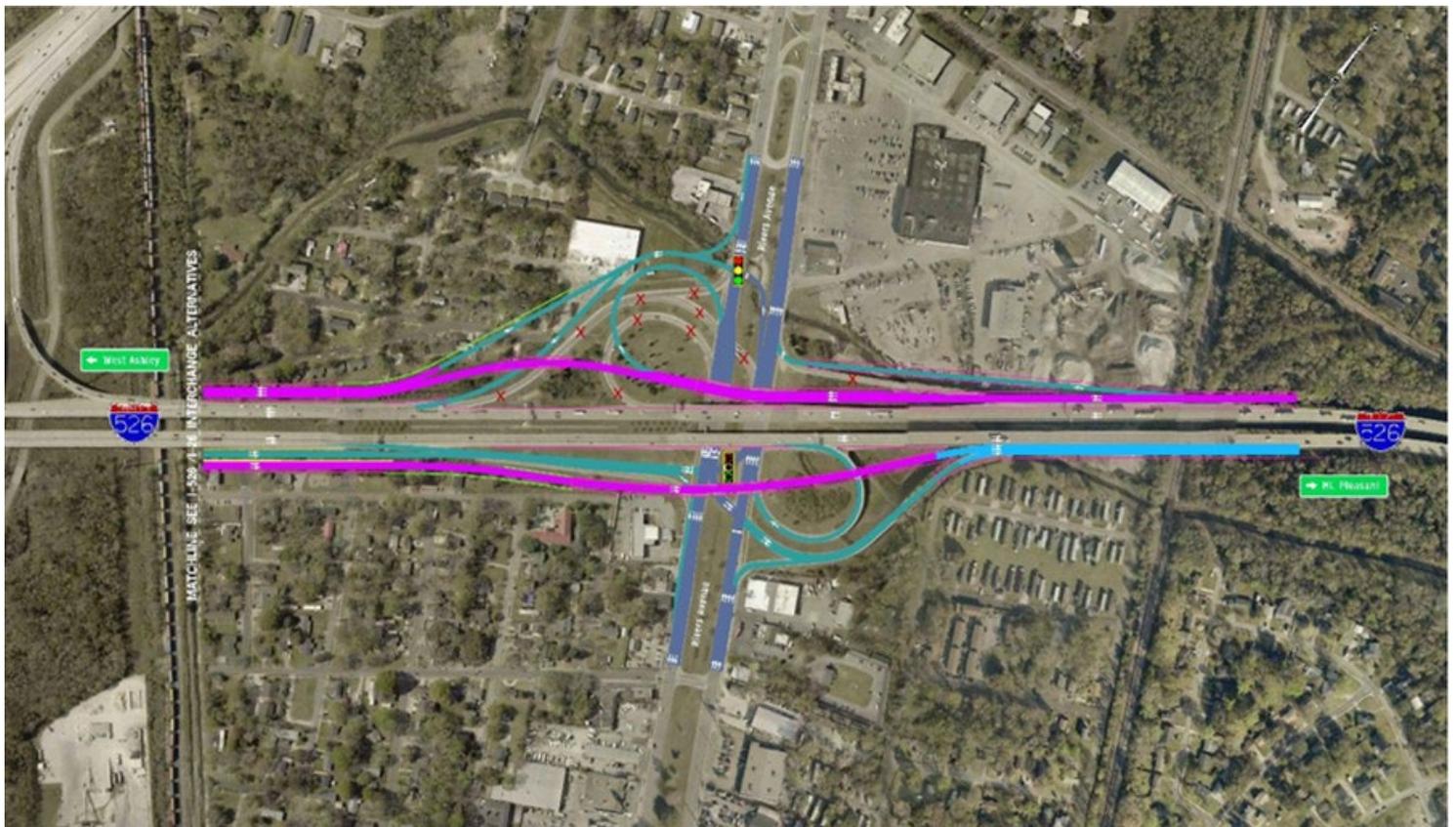


Figure 3.10 I-526 at Rivers Avenue Relocated Partial Cloverleaf

Rivers Avenue: Basic Build

- New C-D roads constructed over the existing eastbound and westbound Rivers Avenue interchange
- Direct access from Rivers Avenue to I-26 via I-526 is removed; access I-26 from the I-26 at Remount Road interchange to the north or at I-26 at Montague Avenue to the south
- Carried forward as it has acceptable LOS, resolves geometric deficiencies and is compatible with adjacent interchanges.

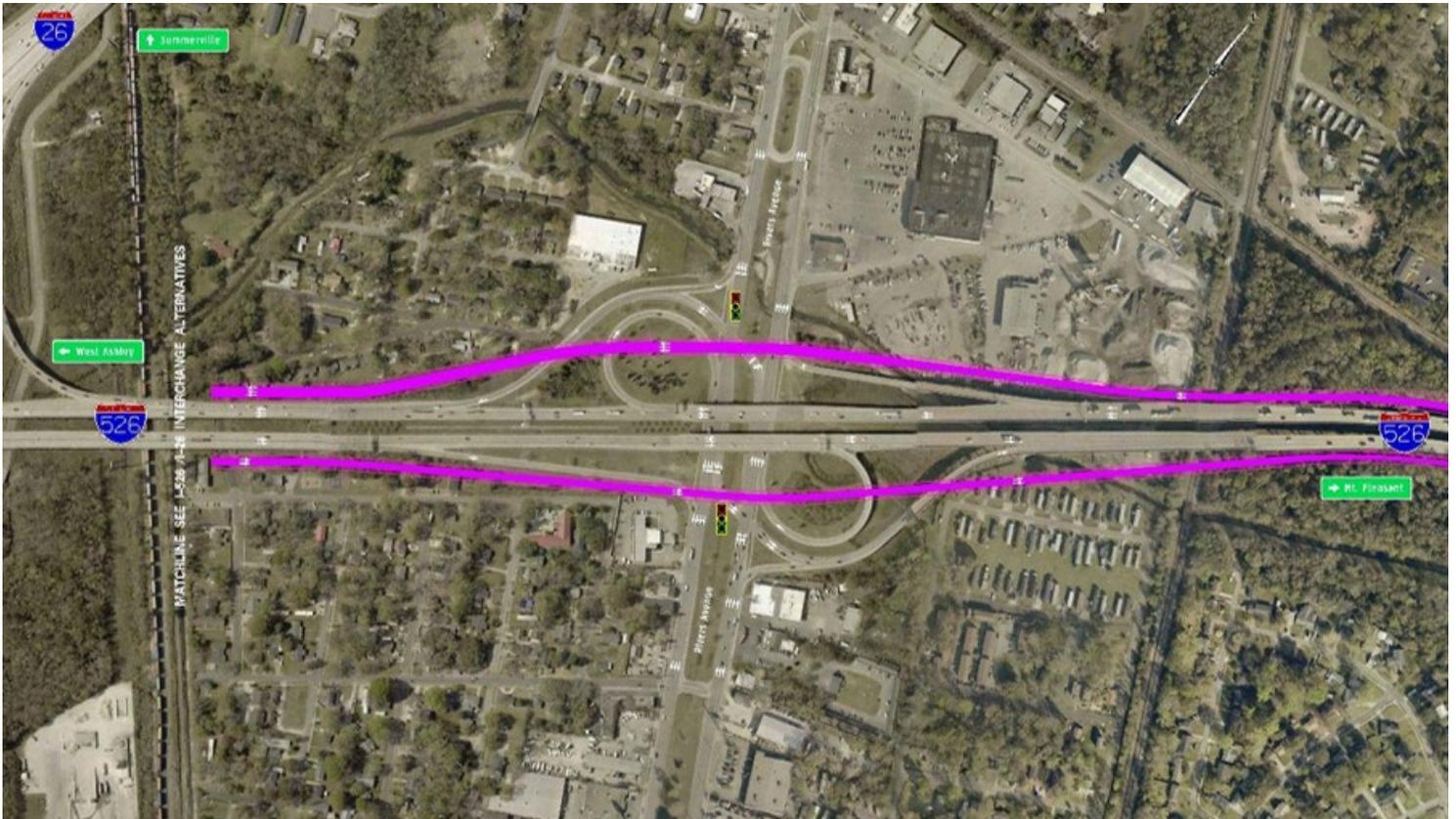


Figure 3.11 I-526 at Rivers Avenue Basic Build

3.6.3.5 I-526 at N Rhett/Virginia Avenue

Traffic patterns between the Don Holt Bridge and I-26 led the development of the N Rhett/Virginia Avenue interchange alternatives. Traffic projections indicate one-third of westbound traffic exits at N Rhett/Virginia Avenues, one-third exits to I-26 and one-third continues west on I-526 past I-26. Eastbound traffic over the Don Holt Bridge shows similar forecast comparisons with one-third originating west of I-526, one-third coming from I-26, and one-third from N Rhett/Virginia Avenues. Entering and exiting traffic at Rivers Avenue comprises a nominal portion of the traffic in each direction. A key component of the N Rhett/Virginia Avenue interchange concept development is providing connections to the C-D roads in a manner that accommodates forecasted traffic patterns.

The forecasted traffic patterns support the use of C-D roads to provide additional capacity between I-26 and the Cooper River.

The capacity of the existing N Rhett/Virginia Avenue interchange is limited by geometric deficiencies. The existing loop ramps of the interchange have a 25-mph design speed with very short weave distances in both eastbound and westbound directions. To address these deficiencies and respond to future traffic demand, interchange improvement alternatives were developed for this interchange as part of the I-526 LCC WEST project. The major design constraints considered during alternative development included existing CSX and Norfolk Southern rail lines running adjacent to and underneath the interstate, as well as Filbin Creek, a major tributary to the Cooper River, flowing adjacent to the I-526 mainline and crossing under I-526 just west of N Rhett Avenue.

Four alternatives were developed for the initial screening process to accommodate anticipated traffic demand to a design LOS D or better. Traffic volumes utilizing Virginia Avenue on- and off-ramps, particularly trucks accessing the South Carolina Ports Authority’s (SCSPA) NCT and other industrial land uses have expressed the need to retain access. Refer to Figure 3.12 and 3.13 for descriptions of the alternatives carried forward. Refer to Appendix C for figures of the following interchange alternatives that were not carried forward.

Alternative 1: On-ramp from N Rhett Avenue to I-526 eastbound and westbound through one intersection along N Rhett Avenue with separate access to Virginia Avenue

- Compatible with adjacent interchange
- Flexible with Don Holt bridge replacement
- Does not provide direct access between Virginia Avenue and I-526 (traffic must travel through N Rhett Avenue intersection)
- Carried forward

Figure 3.12 I-526 at N Rhett/Virginia Avenue Alternative 1

Alternative 2: Diamond Interchange with access to Virginia Avenue

- Compatible with adjacent interchange
- Flexible with Don Holt bridge replacement
- Does not provide direct access between Virginia Avenue and I-526 (traffic must travel through N Rhett Avenue intersection)
- Carried forward

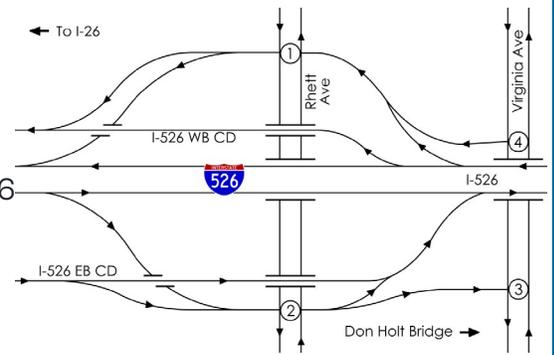


Figure 3.13 I-526 at N Rhett/Virginia Avenue Alternative 2

Alternative 3: Improve existing Loop Ramps

- Not compatible with adjacent interchange
- Does not provide direct access between Virginia Avenue and I-526 (constructability issue due to removing the direct access to/from I-526 and Virginia Avenue, requiring these movements to be made via parallel routes)
- Not carried forward

Alternative 4: Directional ramps from northbound to southbound N Rhett Avenue traffic

- Not compatible with adjacent interchange
- Does not provide direct access between Virginia Avenue and I-526 (traffic must travel through N Rhett Avenue intersection)
- Not carried forward

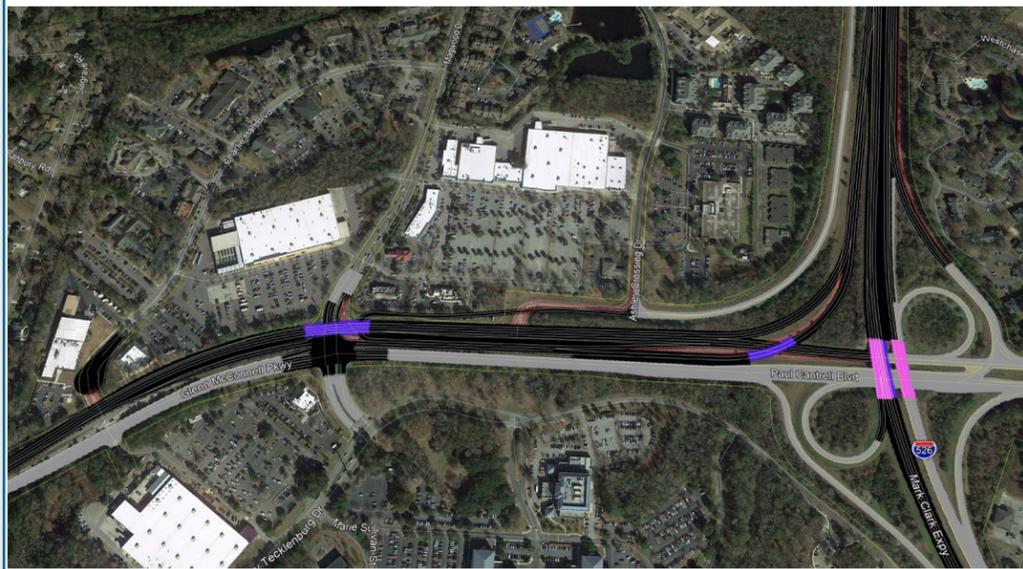
3.7 What Proposed Reasonable Alternatives were Presented at the Public Information Meeting?

Based on the screening previously described, the preliminary alternatives are evaluated based on their ability to meet the purpose and need, as well as additional criteria. Prior to the public meeting the following alternatives were identified as Proposed Reasonable Alternatives:

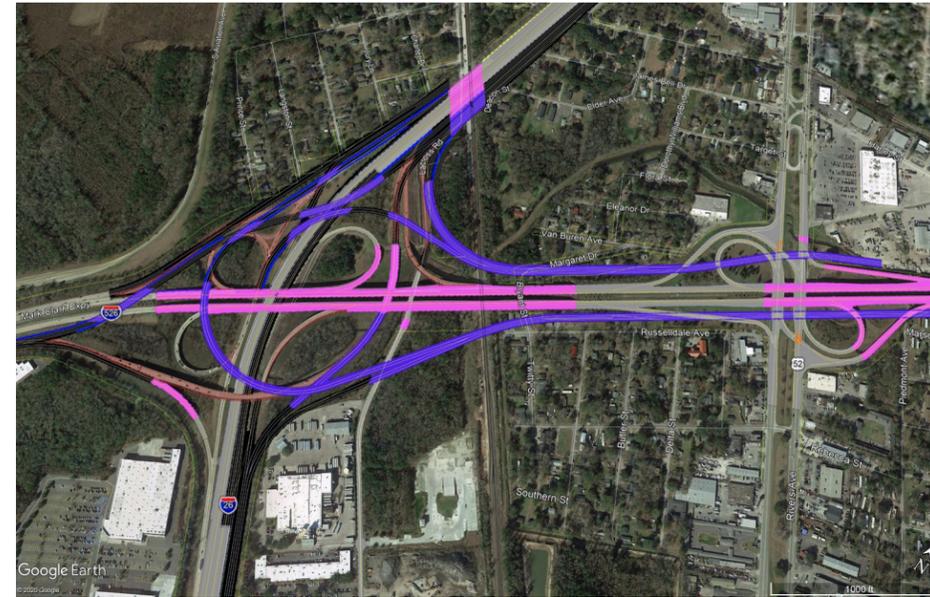
- No-Build
- Existing Corridor Improvements
 - > Mainline Interstate Alternatives
 - 8-lane widening
 - > Interchange Alternatives (Refer to Figure 3.14)
 - One alternative at I-526 at Paul Cantrell Boulevard that includes the intersection at Magwood Drive
 - Due to proximity of I-526 at I-26 and Rivers Avenue, these interchanges are combined. Four alternatives are being carried forward as Reasonable Alternatives
 - Two alternatives at I-526 at N Rhett/Virginia Avenue

Preliminary Alternatives Screening Criteria:

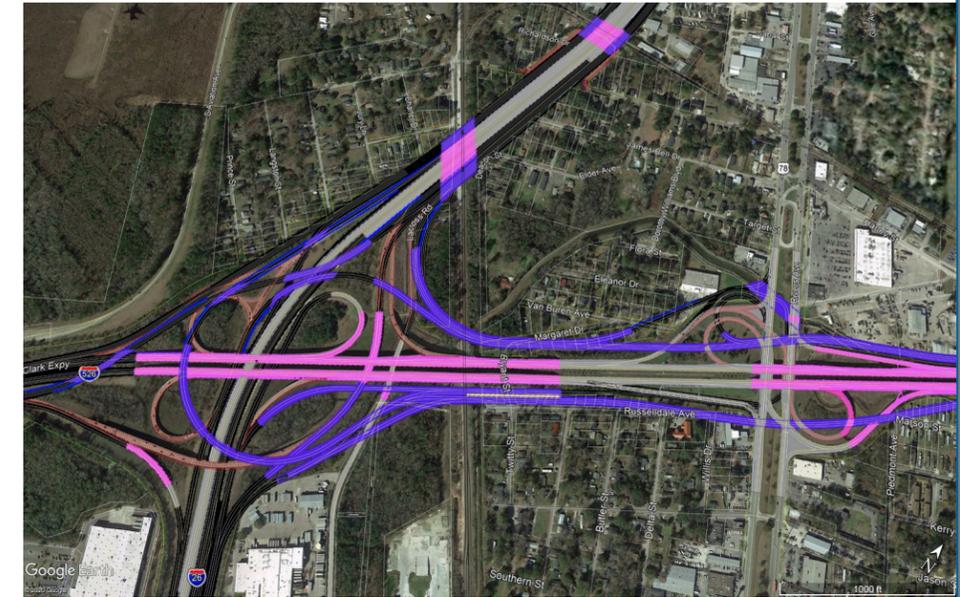
- Acceptable LOS
- Compatible with Adjacent Interchange
- Geometric Deficiencies Resolved
- Flexibility with Don Holt Bridge Replacement
- Constructability



I-526 at Paul Cantrell Blvd



I-526 at I-26 and Rivers Ave: Alternative 1



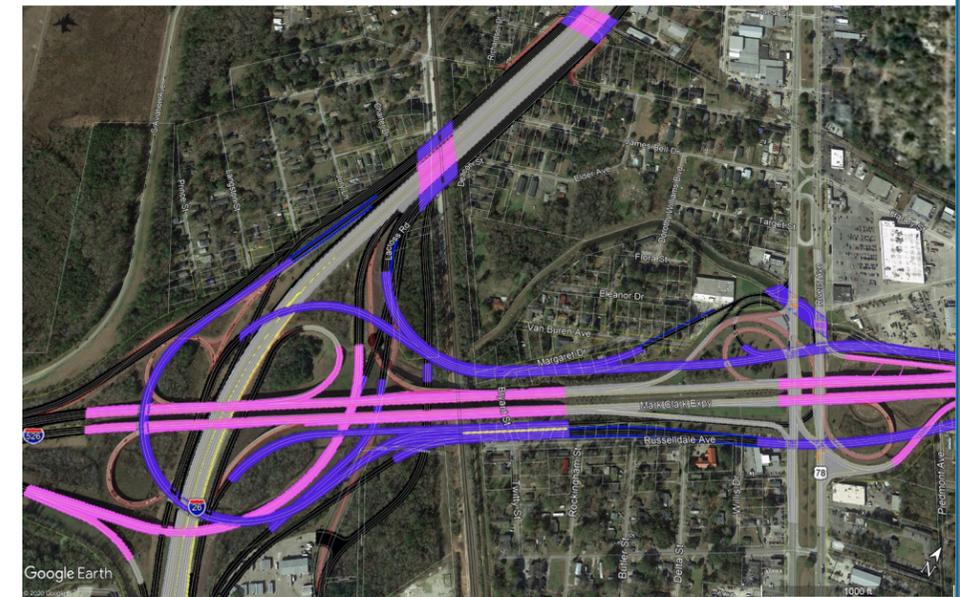
I-526 at I-26 and Rivers Ave: Alternative 1A



I-526 at N Rhett/Virginia Ave: Alternative 1



I-526 at I-26 and Rivers Ave: Alternative 2



I-526 at I-26 and Rivers Ave: Alternative 2A



I-526 at N Rhett/Virginia Ave: Alternative 2



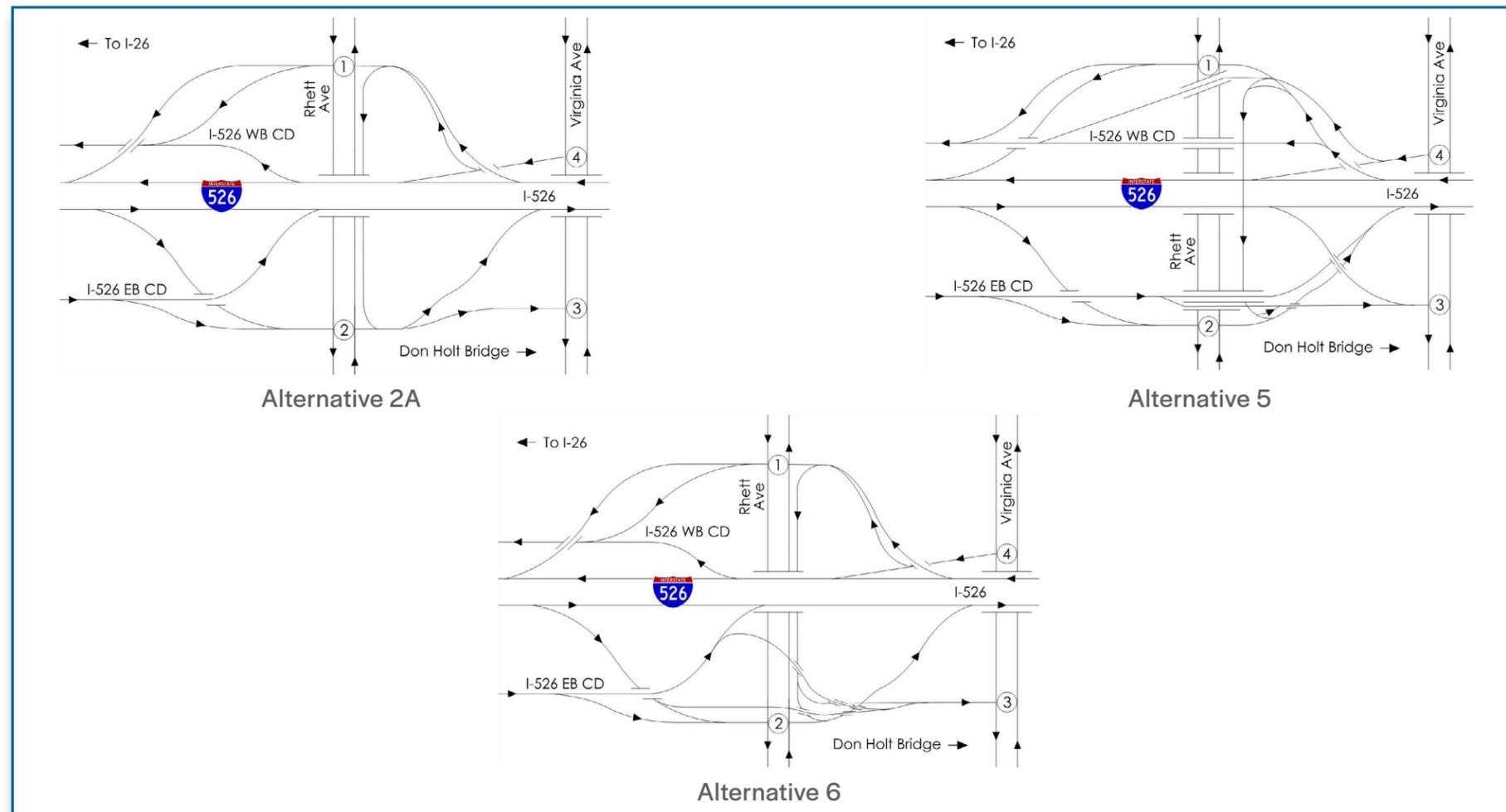
Figure 3.14 I-526 LCC WEST Proposed Reasonable Interchange Alternatives

3.7.1 Public Input on Proposed Reasonable Alternatives

Following the I-526 LCC WEST Public Information Meeting (PIM), feedback was received about the I-526 / North Rhett Avenue and I-526 / Virginia Avenue interchange alternatives. Joint Base Charleston, the South Carolina Ports Authority, and the City of North Charleston expressed concerns over the removal of direct access between Virginia Avenue and I-526 in the proposed alternatives. In the two alternatives presented at the I-526 WEST PIM, access to/from Virginia Avenue from/to I-526 required processing through the ramp terminal intersections on N Rhett Avenue. Alternatives 5 and 6 were developed to include a Texas U-Turn style ramp that traveled from Virginia Avenue, back to the west and under I-526 adjacent to N Rhett Avenue to provide direct access to I-526 eastbound. Access from I-526 westbound would also utilize the U-Turn ramp for direct access to Virginia Avenue. Existing access from Virginia Avenue to I-526 westbound was retained and new ramps will provide access from I-526 eastbound to Virginia Avenue. For more information about the PIM refer to Chapter 6.

A Texas U-turn is a lane that enables vehicles traveling on one side of a one-way frontage road or ramp to U-turn onto the opposite frontage road or ramp, typically crossing over or under a freeway. If this movement is determined to be a significant volume of traffic, it can reduce the delay at two signals in a typical diamond interchange.

In addition to public comments regarding direct access from I-526 and Virginia Avenue, regulatory agencies also expressed concerns with alternatives avoiding and minimizing impacts to environmentally sensitive areas within the alternative corridors. In an effort to evaluate an alternative that both met the purpose and need of the project and minimized impacts, an alternative that was a combination of reasonable alternatives 6 and 2 was developed. Alternative 2A, Alternative 5, and Alternative 6 were developed as proposed Reasonable Alternatives for the I-526 at N Rhett/Virginia Avenue interchange. Therefore, a total of five alternatives are being carried forward at the N Rhett/Virginia Avenue interchange. Refer to Figures 3.16 through 3.18 for Alternatives 2A, 5, and 6.



During the November 21, 2019 PIM and the Virtual Public Information Meeting (VPIM), the public were encouraged to provide feedback on the Proposed Reasonable Alternatives.

Figure 3.15 I-526 at N Rhett/Virginia Avenue Alternatives 2A, 5, and 6



Figure 3.16 I-526 at N Rhett/Virginia Avenue Alternative 2A

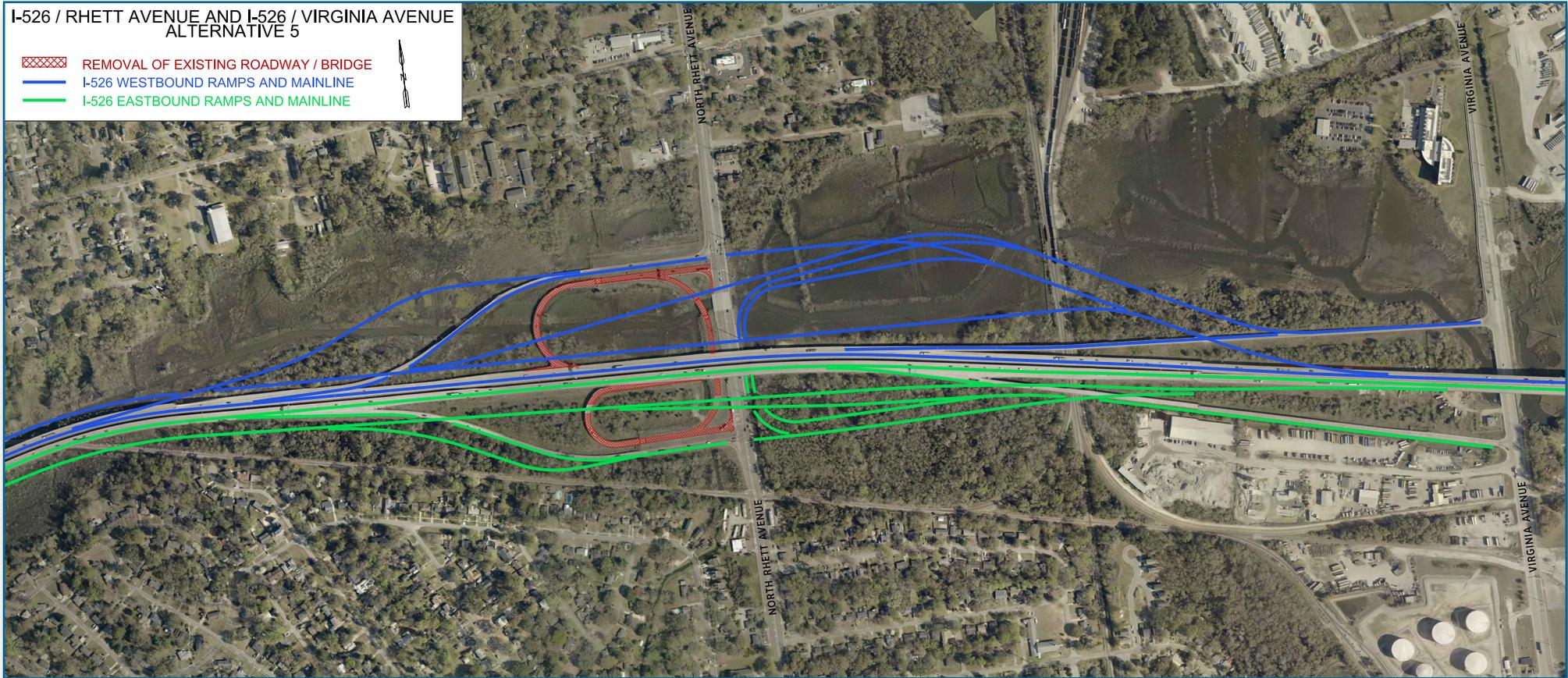


Figure 3.17 I-526 at N Rhett/Virginia Avenue Alternative 5

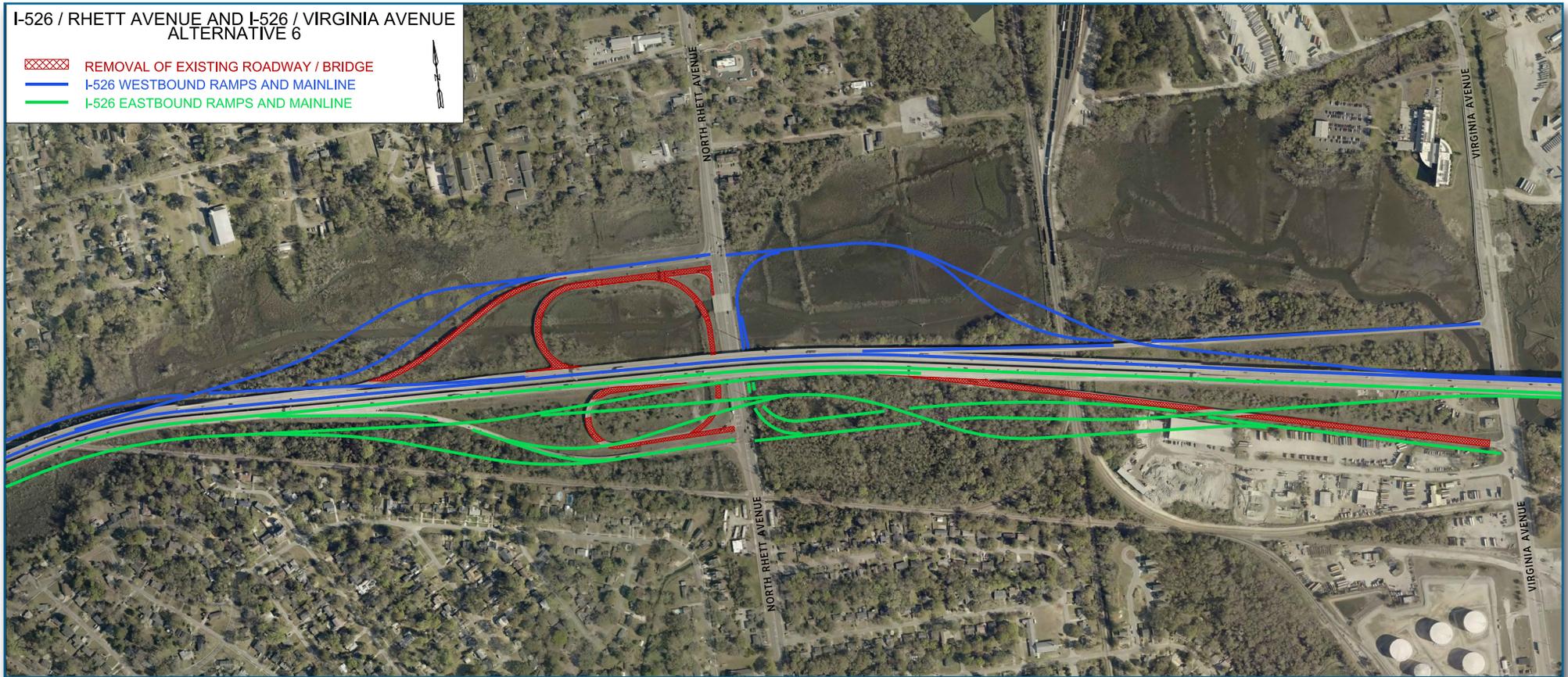


Figure 3.18 I-526 at N Rhett/Virginia Avenue Alternative 6

3.7.2 Detailed Impact Evaluation of Proposed Reasonable Alternatives

In summary, the Proposed Reasonable Alternatives include the following:

- No-Build
- Mainline Interstate 8-lane widening
- Interchange Alternatives
 - > One alternative at I-526 at Paul Cantrell Boulevard that includes the intersection at Magwood Drive
 - > Four alternatives at I-526 at I-26 and Rivers Avenue
 - Alternative 1
 - Alternative 1A
 - Alternative 2
 - Alternative 2A
 - > Five alternatives at I-526 at N Rhett/Virginia Avenue
 - Alternative 1
 - Alternative 2
 - Alternative 2A
 - Alternative 5
 - Alternative 6

In order to perform a detailed impact evaluation on the above alternatives, the widening of the mainline to 8-lanes was combined with the interchange alternatives into the following three sections and shown in Figure 3.19.

- Paul Cantrell Boulevard to International Boulevard
- International Boulevard to Rivers Avenue
- Rivers Avenue to Virginia Avenue

The following two typical sections are representative of the proposed mainline widening and would be applicable to all Proposed Reasonable Alternatives, refer to Figure 3.20.

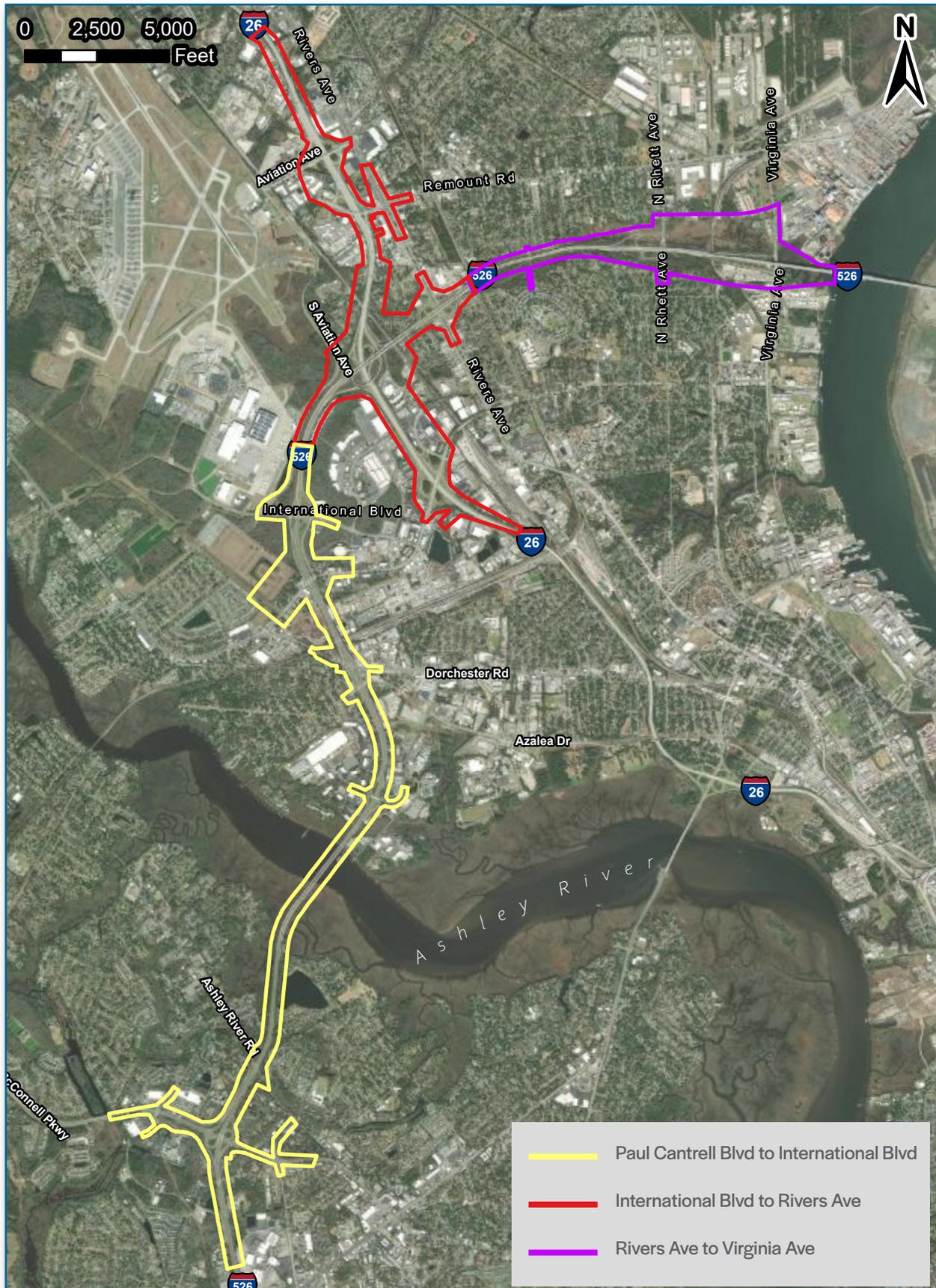


Figure 3.19 Proposed Reasonable Alternatives Sections of I-526 LCC WEST

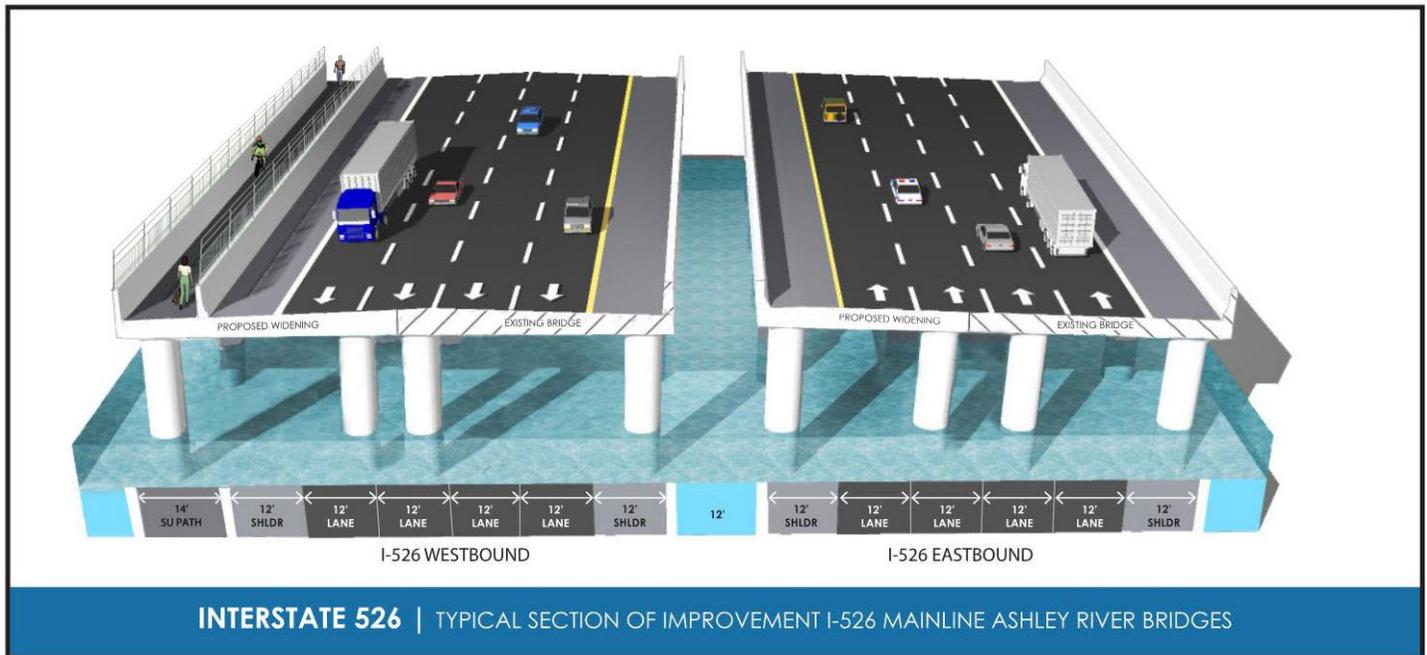
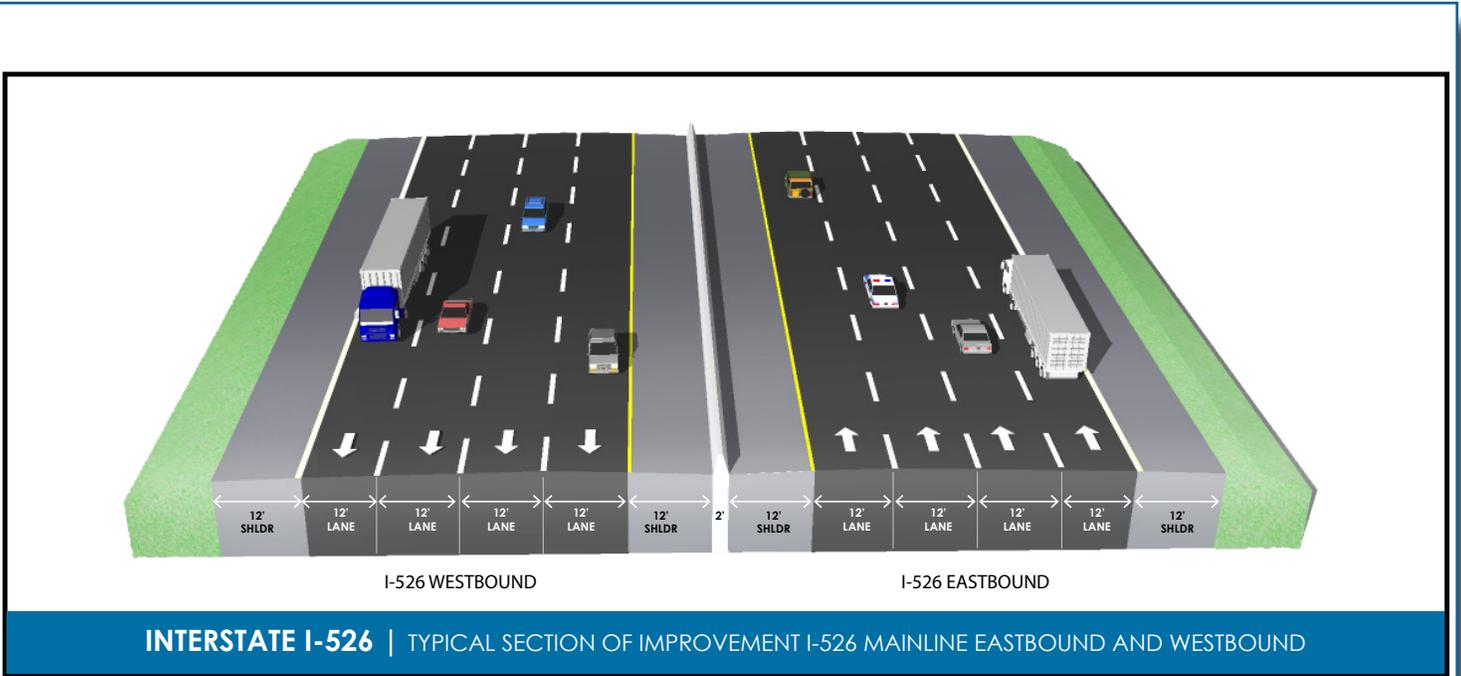


Figure 3.20 Proposed Reasonable Alternatives Mainline Typical Sections

* Shared use path shown in typical section is conceptual design and is to be further developed at a later date.

Each section was then evaluated based on the following criteria:

- Purpose and Need: 2050 Traffic Analysis
 - > Geometric Deficiencies Resolved
 - > Provides Direct Access to/from I-526
 - > Provides Direct Access to/from I-26
 - > Weighted v/c Ratio
 - > Intersection LOS/Delay
 - > Mainline LOS
- Wetlands
 - > Freshwater Impact Based on Right-of-Way
 - > Critical Area Impact Based on Right-of-Way
 - > Critical Area (Ashley River) Bridge Construction Temporary Access Based on Right-of-Way
 - > Pond Impact Based on Right-of-Way
 - > Freshwater Stream Impact Based on Right-of-Way
- Relocations
 - > Residential
 - > Businesses
 - > Churches
 - > Community Facilities
- Environmental Justice
- Threatened & Endangered Species
- Essential Fish Habitat
- Cultural Resources
- Section 4(f) & 6(f)
- Utilities
- Cost

Weighted v/c Ratio = Weights each individual v/c ratio according to the volume processed in that movement

3.7.2.1 Paul Cantrell Boulevard to International Boulevard

This alternative encompasses the interchange at Paul Cantrell Boulevard and I-526, the intersection at Paul Cantrell Boulevard and Magwood Drive, and the widening of I-526 from Paul Cantrell Boulevard to International Boulevard, refer to Figure 3.21

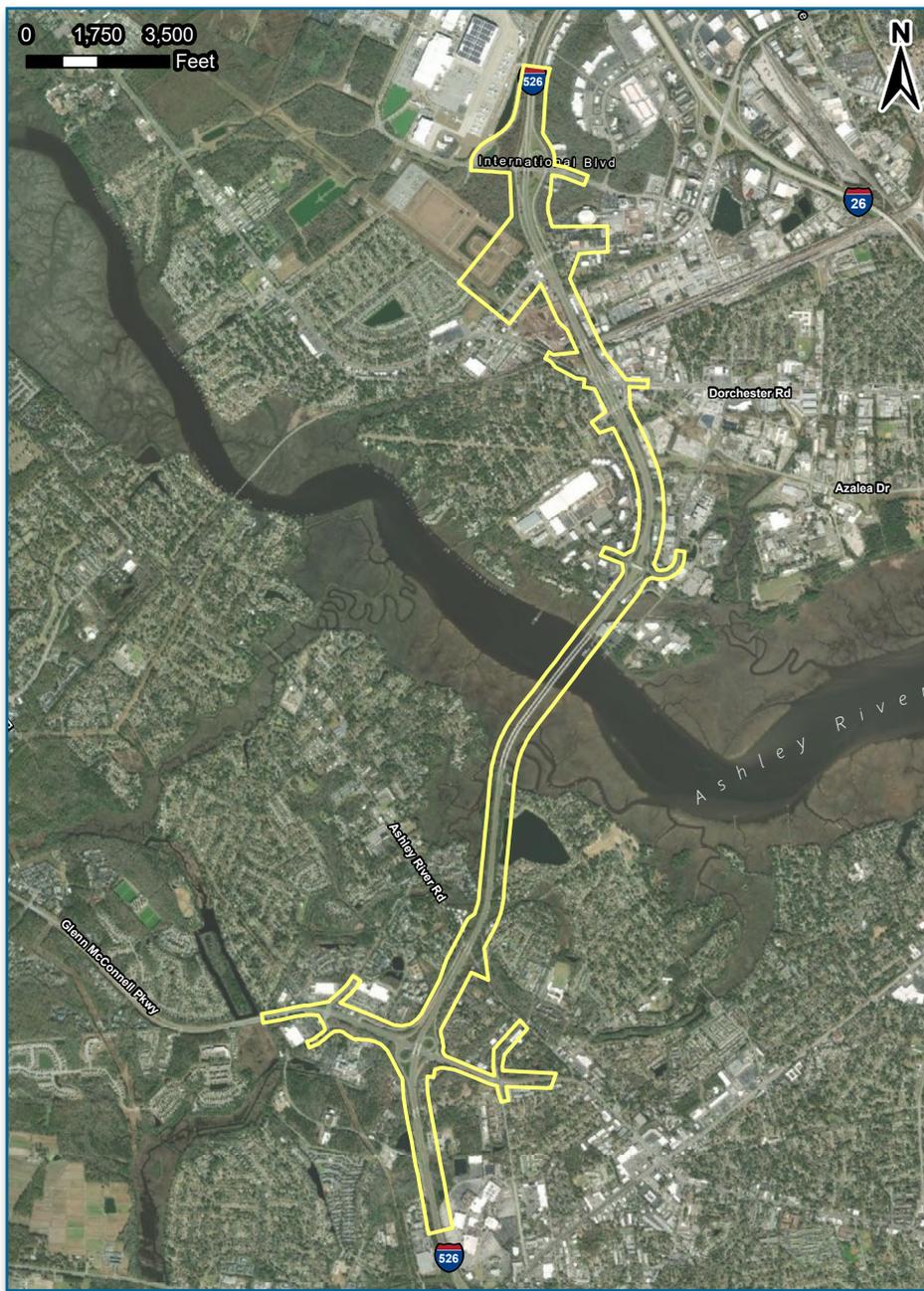


Figure 3.21 I-526 LCC WEST Section from Paul Cantrell Boulevard to International Boulevard

As shown in Table 3.7, the proposed alternative would resolve 15 out of the 16 identified geometric deficiencies as compared to the No-Build Alternative. The proposed alternative would also improve the weighted v/c ratio and the mainline LOS as compared to the No-Build.

Geometric
Deficiency is the consideration of the inadequacies of roadway design. For more details refer to Chapter 2, section 2.1.5.

Table 3.7 Proposed Reasonable Alternatives Screening Matrix : Paul Cantrell Boulevard to International Boulevard

		No-Build	Paul Cantrell Blvd to International Blvd
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/16	15/16
	Provides Direct Access to/ from I-526 (Yes/No)	Yes	Yes
	Provides Direct Access to/ from I-26 (Yes/No)	N/A	N/A
	Weighted v/c Ratio	1.74 2.50 2.90 3.11	0.72 0.75 0.72 0.67
	Intersection Delay/LOS	N/A	N/A
	Mainline LOS	F	D/D/C/C
Freshwater Wetland Impact Based on R/W	(Acres)	0	19.3
Critical Area Impact Based on R/W	(Acres)	0	19.6
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	0	9.1
Pond Impact Based on R/W	(Acres)	0	0.03
Freshwater Stream Impact Based on R/W	(Feet)	0	327.0
Floodplains	(Acres)	0	385
Relocations	Residential	0	1 Single-Family Homes; 1 Multi-Family Complexes, 3 Units Total
	Businesses	0	6
	Churches	0	0
	Community Facilities	0	0
	Total	0	10
Environmental Justice	Yes/No	No	No
Threatened & Endangered Species		0	May Affect, Not Likely to Adversely Affect
Essential Fish Habitat	Yes/No	No	Yes
Cultural Resources	Eligibility for Listing on National Register of Historic Places (NRHP)	No Effect	No Effect
Section 4(f) & 6(f)	Yes/No	No	No
Utilities	\$	\$0	\$12,901,540
Cost	\$	\$0	\$108,600,000
Preferred Alternative	Yes/No	No	Yes

This “weighted v/c ratio” was calculated for the purposes of summarizing and comparing the segment v/c ratio results in a simplified manner to rank each. This method weights each individual v/c ratio according to the volume processed in that movement. The weighted v/c ratio is a way to measure the efficiency of the alternatives for moving traffic within the interchange.

3.7.2.2 International Boulevard to Rivers Avenue

Table 3.8 shows the detailed evaluation of the four Proposed Reasonable Alternatives from International Boulevard to Rivers Avenue, including the I-526/I-26 interchange and the widening of I-526, refer to Figure 3.22. Alternative 2 is recommended as the preferred alternative between International Boulevard and Rivers Avenue. Although Alternatives 1 and 2 would remove access from Rivers Avenue to I-26 via I-526, they would result in lower relocations and less potential impact to environmental justice populations than Alternative 1A or 2A. Alternative 1 would require a traffic movement or weave that may result in overcapacity and failing LOS in the segment. The over-congestion of this segment in Alternative 1 may cause upstream backups along I-526 eastbound and I-526 westbound. Alternative 2 does not require this traffic movement or weave, reducing the number of vehicles which must weave compared to Alternative 1. This results in traffic operations which are under capacity and with acceptable LOS C. Alternative 2 is the Recommended Preferred Alternative between International Boulevard and Rivers Avenue.

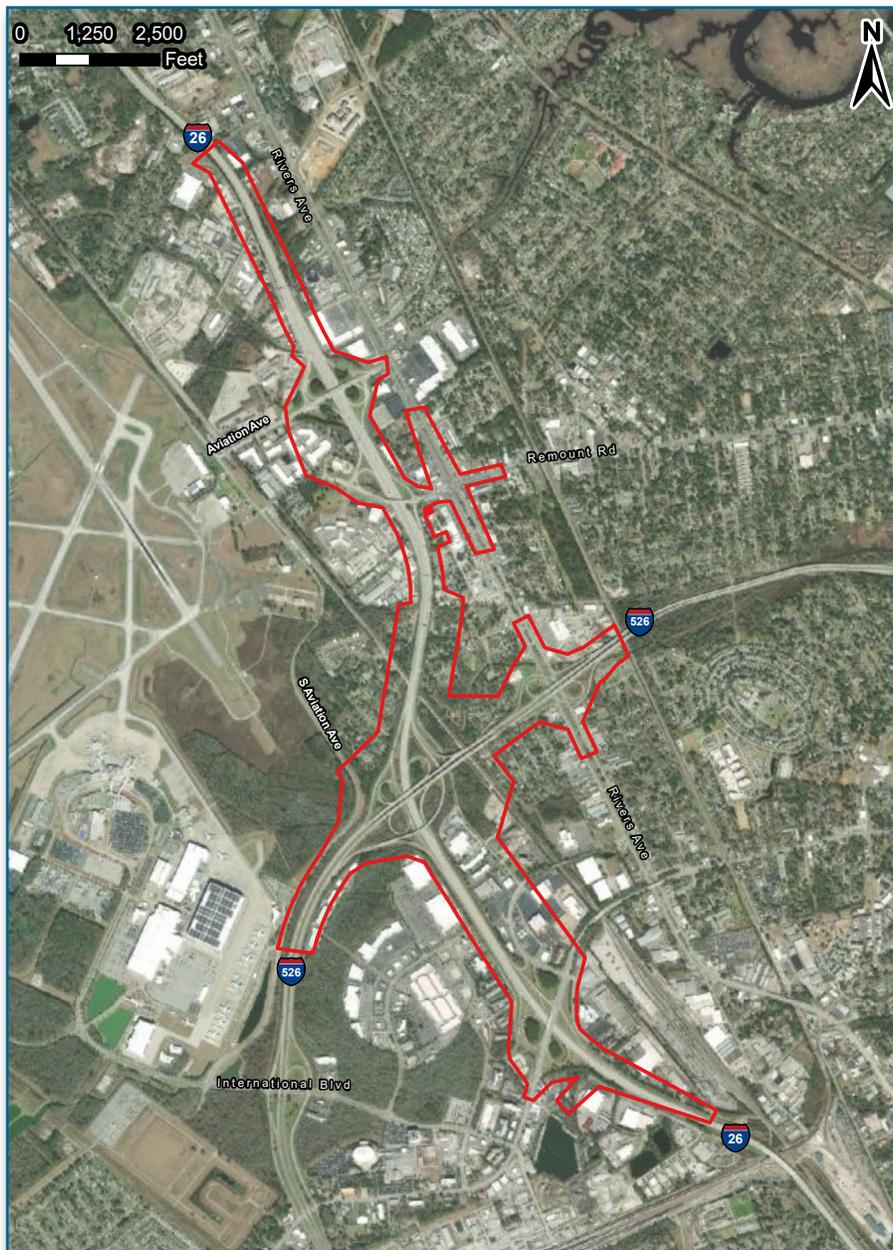


Figure 3.22 I-526 LCC WEST Section from International Boulevard to Rivers Avenue

Table 3.8 Proposed Reasonable Alternatives Screening Matrix : International Boulevard to Rivers Avenue

		No-Build	International Blvd to Rivers Ave			
			1	2	1A	2A
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/11	8/11	8/11	9/11	9/11
	Provides Direct Access to/ from I-526 (Yes/No)	Yes	Yes	Yes	Yes	Yes
	Provides Direct Access to/ from I-26 (Yes/No)	N/A	No	No	Yes	Yes
	Weighted v/c Ratio	1.09	0.74	0.71	0.77	0.74
	Intersection Delay/LOS	N/A	N/A	N/A	N/A	N/A
	Mainline LOS	F	C	C	C	C
Freshwater Wetland Impact Based on R/W	(Acres)	0	28.5	28.5	28.5	28.5
Critical Area Impact Based on R/W	(Acres)	0	0	0	0	0
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	N/A	N/A	N/A	N/A	N/A
Pond Impact Based on R/W	(Acres)	0	0	0	0	0
Freshwater Stream Impact Based on R/W	(Feet)	0	13,327.1	13,327.1	13,327.1	13,327.1
Floodplains	(Acres)	0	419	419	422	424
Relocations	Residential	0	35 Single-Family Homes; 15 Mobile Homes; 14 Multi-Family Complexes, 41 Units Total	34 Single-Family Homes; 11 Mobile Homes; 16 Multi-Family Complexes, 44 Units Total	39 Single-Family Homes; 16 Mobile Homes; 19 Multi-Family Complexes, 55 Units Total	39 Single-Family Homes; 16 Mobile Homes; 19 Multi-Family Complexes, 55 Units Total
	Businesses	0	9	9	10	10
	Churches	0	1 - Enoch Chapel Methodist	1 - Enoch Chapel Methodist	2 - Enoch Chapel Methodist, Life Changers Covenant Ministries	2 - Enoch Chapel Methodist, Life Changers Covenant Ministries
	Community Facilities	0	2 - Highland Terrace-Liberty Park Community Center, Russelldale Community Center	2 - Highland Terrace-Liberty Park Community Center, Russelldale Community Center	2 - Highland Terrace-Liberty Park Community Center, Russelldale Community Center	2 - Highland Terrace-Liberty Park Community Center, Russelldale Community Center
	Total	0	103	101	124	124
Environmental Justice	Yes/No	No	Yes	Yes	Yes	Yes
Threatened & Endangered Species		No Effect	May Affect, Not Likely to Adversely Affect			
Essential Fish Habitat	Yes/No	No	No	No	No	No
Cultural Resources	Eligibility for Listing on NRHP	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect
Section 4(f) & 6(f)	Yes/No	No	Yes Highland Terrace-Liberty Park Community Center - 4(f) & 6(f); Russelldale Community Center - 4(f)	Yes Highland Terrace-Liberty Park Community Center - 4(f) & 6(f); Russelldale Community Center - 4(f)	Yes Highland Terrace-Liberty Park Community Center - 4(f) & 6(f); Russelldale Community Center - 4(f)	Yes Highland Terrace-Liberty Park Community Center - 4(f) & 6(f); Russelldale Community Center - 4(f)
Utilities	\$	\$0	\$37,082,500 (includes Alternative 1 or 2 at N Rhett/Virginia Ave interchange)	\$37,082,500 (includes Alternative 1 or 2 at N Rhett/Virginia Ave interchange)	\$43,582,500 (includes Alternative 1 or 2 at N Rhett/Virginia Ave interchange)	\$43,582,500 (includes Alternative 1 or 2 at N Rhett/Virginia Ave interchange)
Cost	\$	\$0	\$950,000,000	\$979,000,000	\$1,068,000,000	\$1,066,000,000
Preferred Alternative	Yes/No	No	No	Yes	No	No

3.7.2.3 Rivers Avenue to Virginia Avenue

The five Proposed Reasonable Alternatives from Rivers Avenue to Virginia Avenue, including the I-526 at N Rhett interchange, and the widening of I-526, are shown in Table 3.9 and Figure 3.23. Alternative 2A is estimated to have the lowest potential impact to wetlands, streams, and relocations as compared to the other four alternatives. Alternative 2A is the Recommended Preferred Alternative between Rivers Avenue and Virginia Avenue.

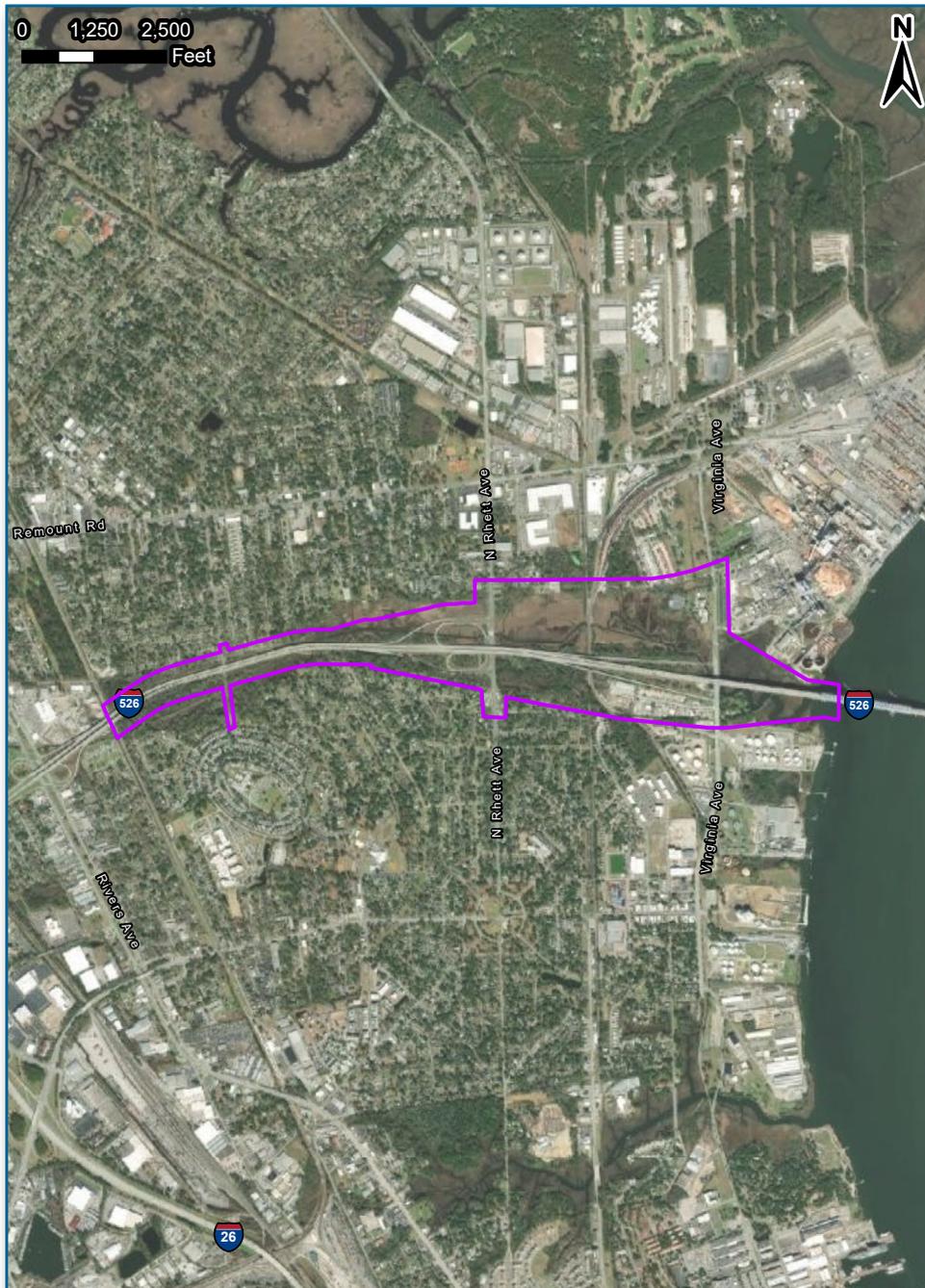


Figure 3.23 I-526 LCC WEST Section from Rivers Avenue to Virginia Avenue

Table 3.9 Proposed Reasonable Alternatives Screening Matrix : Rivers Avenue to Virginia Avenue

		No-Build	Rivers Ave to Virginia Ave																			
			1				2				2A				5				6			
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/3	3/3				3/3				3/3				3/3				3/3			
	Provides Direct Access to/from I-526 (Yes/No)	Yes	526 EB to Virginia No	526 WB to Virginia No	Virginia to 526 EB No	Virginia to 526 WB No	526 EB to Virginia No	526 WB to Virginia No	Virginia to 526 EB No	Virginia to 526 WB No	526 EB to Virginia No	526 WB to Virginia Yes	Virginia to 526 EB Yes	Virginia to 526 WB Yes	526 EB to Virginia Yes	526 WB to Virginia Yes	Virginia to 526 EB Yes	Virginia to 526 WB Yes	526 EB to Virginia Yes	526 WB to Virginia Yes	Virginia to 526 EB Yes	Virginia to 526 WB Yes
	Provides Direct Access to/from I-26 (Yes/No)	N/A	N/A				N/A				N/A				N/A				N/A			
	Weighted v/c Ratio	1.14	1.00				0.99				0.91				0.86				0.91			
	Intersection Delay/LOS	N/A	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			EB C/22.7	WB F/155.8	EB D/37.3	WB F/195.3	EB F/102.9	WB D/43.8	EB E/67.1	WB D/37.8	EB C/30.1	WB B/18.6	EB C/30.7	WB B/11.6	EB C/30.3	WB B/18.4	EB C/31.1	WB B/11.6	EB C/30.3	WB B/18.4	EB C/31.1	WB B/11.6
Mainline LOS	F	C/D				C/D				C/D				C/D				C/D				
Freshwater Wetland Impact Based on R/W	(Acres)	0	54.5				51.3				49.9				57.3				50.8			
Critical Area Impact Based on R/W	(Acres)	0	2.3				2.3				2.4				2.8				2.7			
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	N/A	N/A				N/A				N/A				N/A				N/A			
Pond Impact Based on R/W	(Acres)	0	0				0				0				0				0			
Freshwater Stream Impact Based on R/W	(Feet)	0	5,159.6				5,169.1				4,977.6				5,197.4				5,205.9			
Floodplains	(Acres)	0	166				162				153				173				166			
Relocations	Residential	0	1 Single-Family Home				1 Single-Family Home				1 Single-Family Home				1 Single-Family Home				1 Single-Family Home			
	Businesses	0	3				3				1				3				3			
	Churches	0	0				0				0				0				0			
	Community Facilities	0	0				0				0				0				0			
	Total	0	4				4				2				4				4			
Environmental Justice	Yes/No	No	Yes				Yes				Yes				Yes				Yes			
Threatened & Endangered Species		No Effect	May Affect, Not Likely to Adversely Affect				May Affect, Not Likely to Adversely Affect				May Affect, Not Likely to Adversely Affect				May Affect, Not Likely to Adversely Affect				May Affect, Not Likely to Adversely Affect			
Essential Fish Habitat	Yes/No	No	Yes				Yes				Yes				Yes				Yes			
Cultural Resources	Eligibility for Listing on NRHP	No Effect	No Effect: No Potentially Eligible Resources				No Effect: No Potentially Eligible Resources				No Effect: No Potentially Eligible Resources				No Effect: No Potentially Eligible Resources				No Effect: No Potentially Eligible Resources			
Section 4(f) & 6(f)	Yes/No	No	No				No				No				No				No			
Utilities	\$	\$0	See Utility Costs Under I-526/I-26/Rivers Avenue Alternatives								+ Approx. \$3.5 Million in Transmission Line Relocations				+ Approx. \$3.5 Million in Transmission Line Relocations				+ Approx. \$3.5 Million in Transmission Line Relocations			
Cost	\$	\$0	\$336,000,000				\$338,000,000				\$341,000,000				\$473,000,000				\$461,000,000			
Preferred Alternative	Yes/No	No	No				No				Yes				No				No			

3.8 Recommended Preferred Alternative in the DEIS

Table 3.10 shows the Recommended Preferred Alternative sections presented in the DEIS. Following the designation of the Recommended Preferred Alternative, the design was further evaluated by the project team and the potential impacts were revised in Table 3.11.

Table 3.10 Proposed Reasonable Alternatives Screening Matrix : Recommended Preferred Alternative Sections in DEIS

		No-Build	Paul Cantrell Blvd to International Blvd	International Blvd to Rivers Ave: Alternative 2	Rivers Ave to Virginia Ave: Alternative 2A			
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/30	15/16	8/11	3/3			
	Provides Direct Access to/from I-526 (Yes/No)	Yes	Yes	Yes	526 EB to Virginia No 526 WB to Virginia Yes Virginia to 526 EB Yes Virginia to 526 WB Yes			
	Provides Direct Access to/from I-26 (Yes/No)	N/A	N/A	No	N/A			
	Weighted v/c Ratio	> 1.00	0.72 0.75 0.72 0.67	0.71	0.91			
	Intersection Delay/LOS	N/A	N/A	N/A	AM Peak Hour		PM Peak Hour	
					EB C/30.1	WB B/18.6	EB C/30.7	WB B/11.6
Mainline LOS	F	D/D/C/C	C	C/D				
Freshwater Wetland Impact Based on R/W	(Acres)	0	19.3	28.5	49.9			
Critical Area Impact Based on R/W	(Acres)	0	19.6	0	2.4			
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	0	9.1	N/A	N/A			
Pond Impact Based on R/W	(Acres)	0	0.03	0	0			
Freshwater Stream Impact Based on R/W	(Feet)	0	327.0	13,327.1	4,977.6			
Floodplains	(Acres)	0	385	419	153			
Relocations	Residential	0	1 single-family home; 1 Multi-Family Complex, 3 Units Total	34 Single-Family Homes; 11 Mobile Homes; 16 Multi-Family Complexes, 44 Units Total	1 Single-Family Home			
	Businesses	0	6	9	1			
	Churches	0	0	1 - Enoch Chapel Methodist	0			
	Community Facilities	0	0	2 - Highland Terrace-Liberty Park Community Center, Russelldale Community Center	0			
	Total	0	10	101	2			
Environmental Justice	Yes/No	No	Yes	Yes	Yes			
Threatened & Endangered Species		0	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect			
Essential Fish Habitat	Yes/No	No	Yes	No	Yes			
Cultural Resources	Eligibility for Listing on NRHP	No Effect	No Effect: Potentially Eligible Underwater Resource 006-1	No Adverse Effect	No Effect: No Potentially Eligible Resources			
Section 4(f) & 6(f)	Yes/No	No	No	Yes Highland Terrace-Liberty Park Community Center - 4(f) & 6(f); Russelldale Community Center - 4(f)	No			
Utilities	\$	\$0	\$12,901,540	\$37,082,500 (includes Alternative 1 or 2 at N Rhett/Virginia Ave)	+ Approx. \$3.5 Million in Transmission Line Relocation			
Cost	\$	\$0	\$108,600,000	\$979,000,000	\$341,000,000			
Preferred Alternative	Yes/No	No	Yes	Yes	Yes			

Updated impacts and costs associated with the Recommended Preferred Alternative since the DEIS was completed are noted in Table 3.11. Increased relocation impacts noted are due to additional right-of-way studies that were conducted once the Recommended Preferred Alternative was selected to consider the degree of encroachment, accessibility, and setback requirements for the Recommended Preferred Alternative. Relocation impact numbers for all of the Proposed Reasonable Alternatives would increase across the board to reflect the more conservative right-of-way approach associated with these considerations. Final relocation impacts will be based on negotiations with the property owner, but this conservative estimate was used for assessing impacts and estimating right-of-way costs estimation.

A cost and schedule risk analysis workshop was held in December 2019 and a report was completed in March 2020 which provided updated costs for the reasonable alternatives in the development of the DEIS. Once the Recommended Preferred Alternative was identified for the project, an updated cost and schedule workshop was held in April 2021. The project costs have greatly increased due to several factors, the most significant was a change to the schedule and packaging of construction packages on the project. The construction start date shifted approximately 4 years and the project construction packages were phased over a 10 year period. This one change had the most significant impact on the project cost estimates. Other impacts to the costs were due to refinements in the design of the Recommended Preferred Alternative after the DEIS which were incorporated to address comments received from the public during the development of the FEIS.

Table 3.11 Proposed Reasonable Alternatives Screening Matrix: Recommended Preferred Alternative

		No-Build	Recommended Preferred Alternative (DEIS)	Recommended Preferred Alternative (Updated)
Purpose & Need: 2050 Traffic Analysis	Geometric Deficiencies Resolved	0/30	26/30	26/30
	Provides Direct Access to/from I-526 (Yes/No)	Yes	Yes	Yes
	Provides Direct Access to/from I-26 (Yes/No)	Yes	No	No
	Weighted v/c Ratio	> 1.00	< 1.00	< 1.00
	Intersection Delay/LOS	N/A	N Rhett/Virginia Ave, Refer to Table 3-10	N Rhett/Virginia Ave, Refer to Table 3-10
	Mainline LOS	F	D/D/C/C/C/C/D	D/D/C/C/C/C/D
Freshwater Wetland Impact Based on R/W	(Acres)	0	97.7	97.7
Critical Area Impact Based on R/W	(Acres)	0	22	22
Critical Area (Ashley River) Bridge Construction Temporary Access Based on R/W	(Acres)	0	9.1	9.1
Pond Impact Based on R/W	(Acres)	0	0.03	0.03
Freshwater Stream Impact Based on R/W	(Feet)	0	18,631.7	18,631.7
Floodplains	(Acres)	0	957	965
Relocations*	Residential	0	94	156
	Businesses	0	16	71
	Churches/Institutions	0	1 church	1 church; 1 institution
	Community Facilities	0	2	2
	Total	0	113	231
Environmental Justice	Yes/No	No	Yes	Yes
Threatened & Endangered Species		0	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect
Essential Fish Habitat	Yes/No	No	Yes	Yes
Cultural Resources	Eligibility for Listing on NRHP	No Effect	No Adverse Effect	No Adverse Effect
Section 4(f) & 6(f)	Yes/No	No	Yes	Yes
Utilities	\$	\$0	\$53.5M	\$48.2 M
Cost	\$	\$0	\$1.43B	\$2.5B-\$3B

* The increase in the number of relocations since the DEIS is due to a supplementary right-of-way field study (Spring/Summer 2021) that took into account displacements that were not visible from aerial imagery, verified multi-family residential status, and considered access, mitigation, and drainage design impacts. The majority of the increase in business relocations can be attributed to a count of actual tenants, rather than the number of commercial building displacements. Thirty (30) residential relocations were also added to account for potential long-term occupants of the Double Tree Hilton Hotel and Budget Inn Charleston.

3.9 Changes to the Recommended Preferred Alternative since the DEIS and Public Hearing

The DEIS, Recommended Preferred Alternative, and the Draft EJ Community Mitigation Plan were presented for feedback during the Public Hearing. The Public Hearing comment period ran from October 30, 2020 through January 15, 2021. During the Public Hearing comment period, three community drop-in meetings were held along with a live, virtual Comment Session that was held on December 15, 2020 from 6:00pm to 8:00pm.

Feedback received during the comment period resulted in adjustments made to the design of the Recommended Preferred Alternative; however, only minimal changes occurred to the overall footprint of the project. Figure 3.24 shows the locations where design changes have been made to the Recommended Preferred Alternative since the completion of the DEIS. A description detailing the specific changes at each location follows.

The number of relocations and the project cost for the Recommended Preferred Alternative noted in the DEIS have also been updated that were not related to input received from the public or agencies. Once the Recommended Preferred Alternative was selected, additional right-of-way studies were conducted to consider the degree of encroachment, accessibility, and setback requirements which resulted in an increased number of relocations for the Recommended Preferred Alternative as noted in the FEIS. Relocation impact numbers for all of the Proposed Reasonable Alternatives would increase across the board as a result of the more conservative right-of-way estimate associated with these considerations. Additional right-of-way and relocation impacts are also associated with the cul-de-sacs that have been added at the end of previously bisected roads in the Highland Terrace and Liberty Park neighborhoods as requested by the Community Advisory Council (CAC). Additional right-of-way studies also provided further clarification on the number of tenants within each commercial or business relocation. The increase in business relocations for the FEIS reflects a count of actual tenants, not just commercial buildings. Relocation details, including a comparison of impacts for the Proposed Reasonable Alternatives can be found in the Relocation Impact Study, Appendix I.

An updated cost and schedule risk analysis workshop that was held in April 2021 for the Recommended Preferred Alternative. The project costs increased due to several factors, with the most significant factor being a change to the schedule and packaging of construction packages on the project. The construction start date shifted approximately 4 years and the project construction packages were phased over a 10 year period. This one change had the most significant impact on the project cost estimates. Other impacts to the costs were due to refinements in the design of the preferred alternative after the DEIS which were incorporated to address comments received from the public during the development of the EIS.

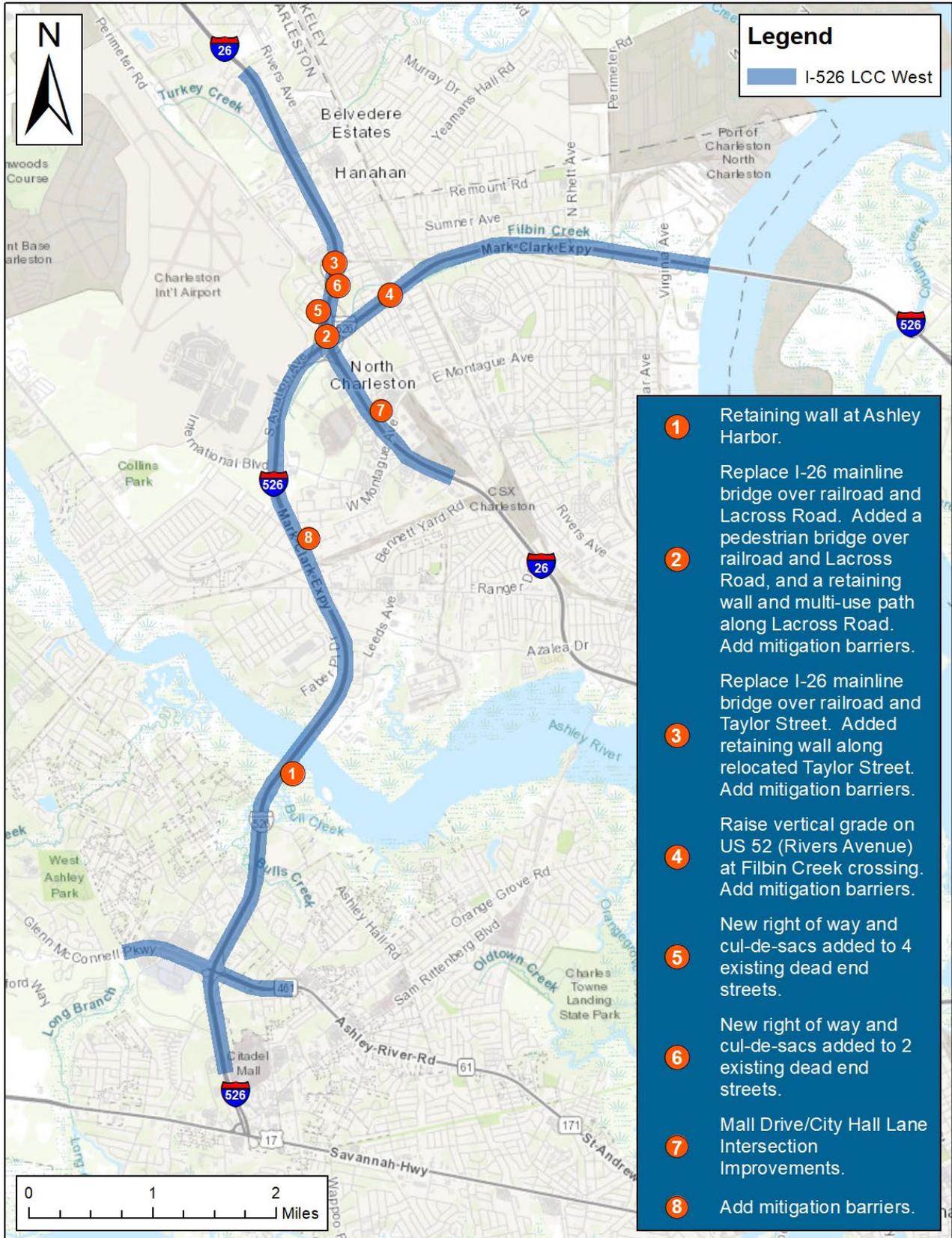


Figure 3.24 I-526 LCC WEST changes since the DEIS

Retaining Wall at Ashley Harbor

Following coordination with the Ashley Harbor neighborhood, the following adjustments were made to address their concerns (Figure 3.25):

- A retaining wall was added to eliminate impacts to the private recreational walking trail in the Ashley Harbor neighborhood that runs parallel to and south of I-526.
- The reduced right-of-way footprint due to the retaining wall will not affect the number of relocations or access for any adjacent properties.

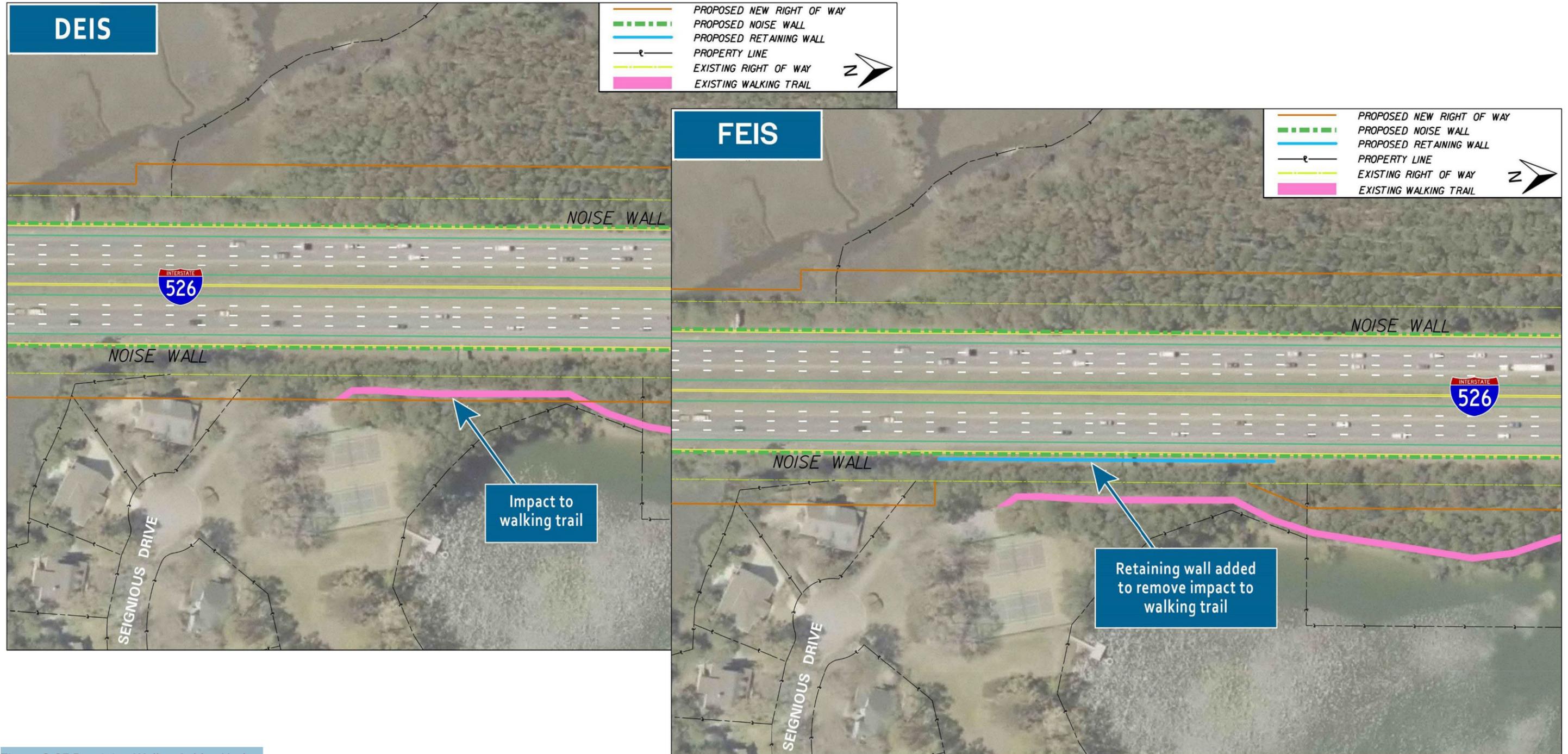


Figure 3.25 Retaining Wall at Ashley Harbor

Replacement of I-26 Mainline Bridge over Norfolk Southern Railroad at Lacross Road and Additional Improvements

- After the completion of the DEIS, SCDOT identified the need to replace the I-26 mainline bridge over Norfolk Southern railroad and Lacross Road.
- A pedestrian bridge will be constructed over Lacross Road and the Northfolk Southern railroad as part of EJ mitigation for impacts to the EJ communities located on both sides of I-26. A multi-use path will connect to the south end of the pedestrian bridge and will extend along the relocated alignment of Lacross Road underneath the I-26 new mainline bridge as well as both of the I-26 collector-distributor (C-D) road bridges. A retaining wall will be constructed between the multi-use path and roadway fill to enable the pedestrian facilities and relocated Lacross Road to fit between the Norfolk Southern railroad and the embankment for I-26. The new pedestrian bridge and multi-use path, to be constructed as part of the I-526 LCC WEST project, will provide a safe crossing over the tracks for Highland Terrace residents to access the replacement community center.
- The additional improvements at this location does not require any adjustments to the proposed DEIS right-of-way footprint (Figure 3.26).

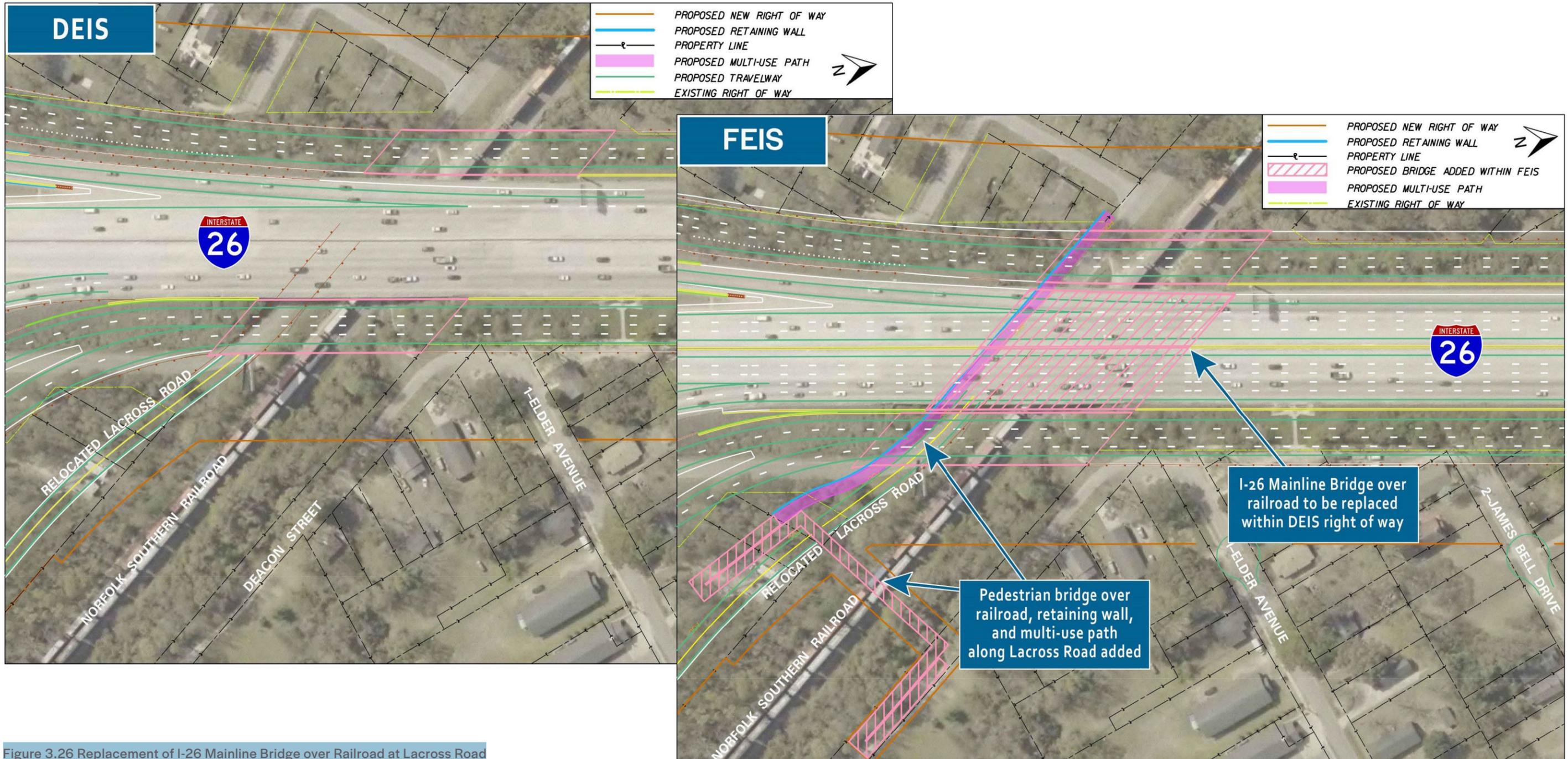


Figure 3.26 Replacement of I-26 Mainline Bridge over Railroad at Lacross Road

Replacement of I-26 Mainline Bridge over Norfolk Southern Railroad at Taylor Street

- After the completion of the DEIS, SCDOT identified the need to replace the I-26 mainline bridge over Norfolk Southern railroad and Taylor Street.
- A retaining wall was added between the fill slopes and relocated Taylor Street on the south side of the Norfolk Southern railroad to minimize impacts to the adjacent Liberty Park neighborhood.
- The additional improvements at this location did not require any adjustments to the proposed DEIS right-of-way footprint (Figure 3.27).

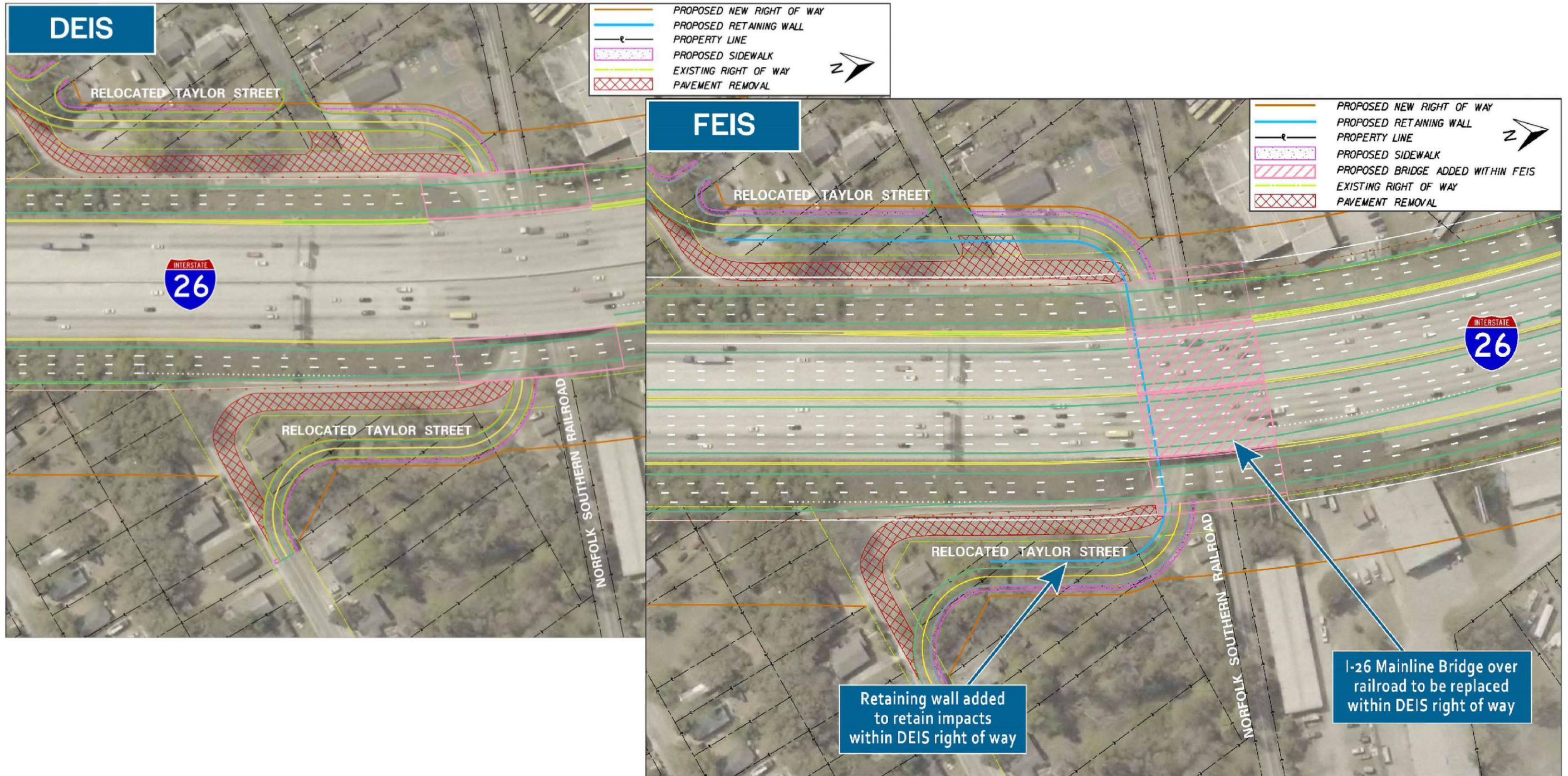


Figure 3.27 Replacement of I-26 Mainline Bridge over Railroad at Taylor Street

Vertical Grade Adjustment at Proposed Filbin Creek Box Culvert under US 52 (Rivers Avenue)

- The elevation of Rivers Avenue at the Filbin Creek crossing was raised slightly to accommodate changes in the culvert design.
- Rip rap pads will be placed at both ends of the proposed culvert.
- Raising the elevation at this location does not require any adjustments to the proposed DEIS right-of-way footprint; however, placing the rip rap pads will require a small amount of additional right-of-way at both ends of the proposed culvert (Figure 3.28).

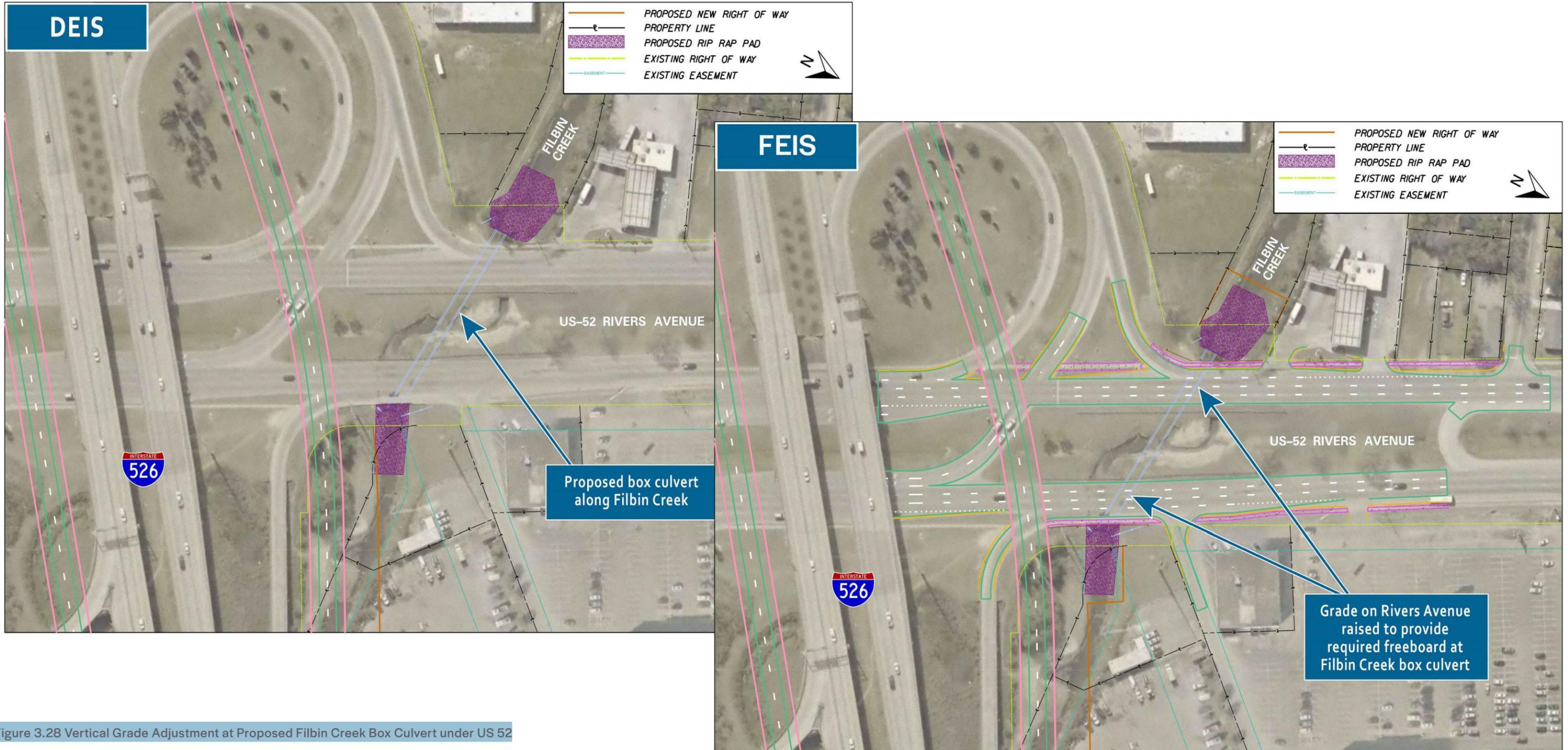


Figure 3.28 Vertical Grade Adjustment at Proposed Filbin Creek Box Culvert under US 52

Proposed Cul-de sacs at Existing Dead-End Streets in Highland Terrace Community

- Cul-de-sacs will be constructed at the end of four streets in the Highland Terrace community: Prince Street, Langston Street, Good Street, and Jury Lane. These streets were dead-ended when the I-526 project was originally constructed.
- Slight adjustments to the DEIS right-of-way were required to construct all four of these cul-de-sacs (Figure 3.29).

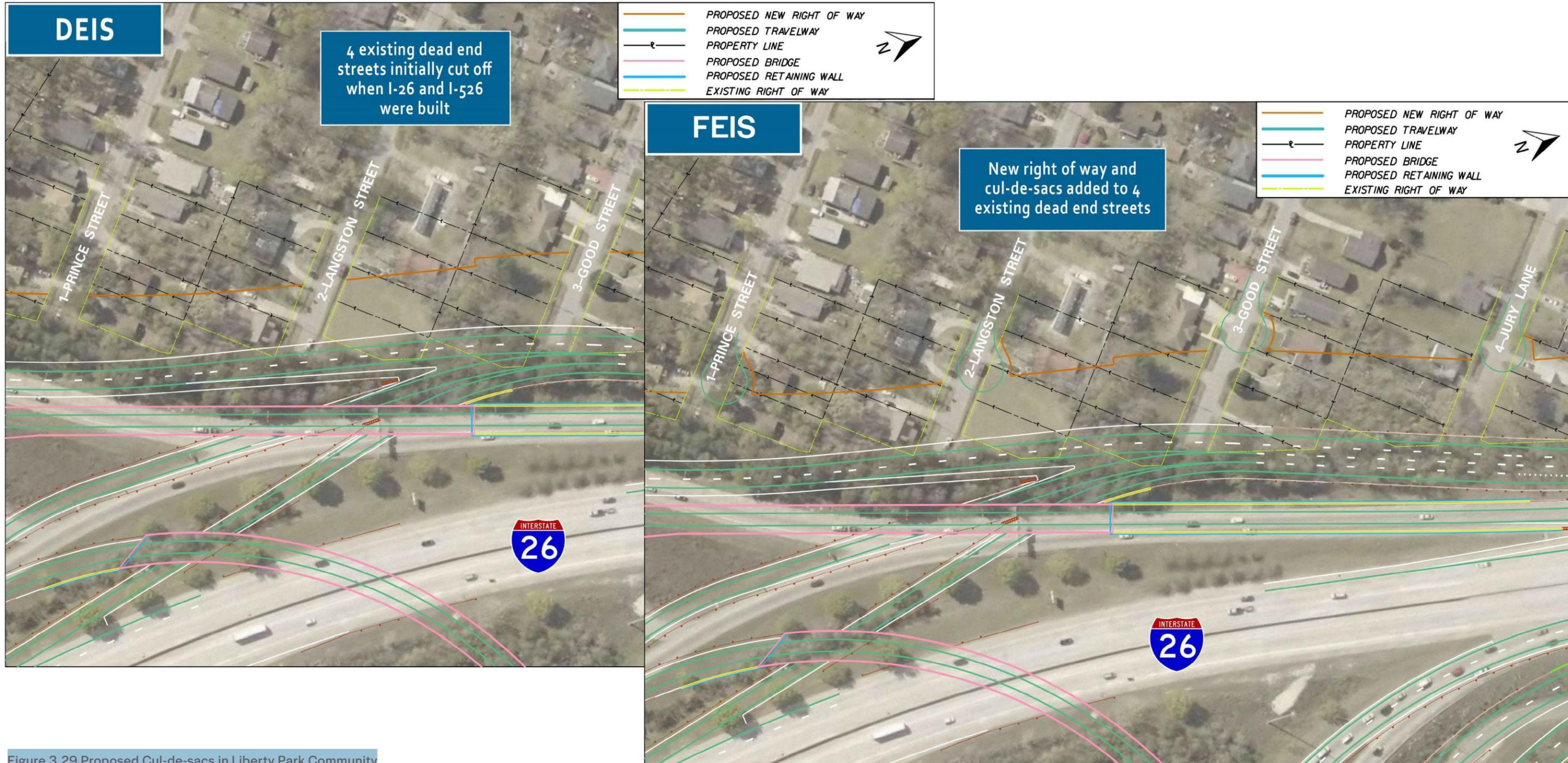


Figure 3.29 Proposed Cul-de-sacs in Liberty Park Community

Proposed Cul-de sacs at Existing Dead-End Streets in Liberty Park Community

- Cul-de-sacs will be constructed at the end of two streets in the Liberty Park community: Elder Avenue and James Bell Drive (Figure 3.30).

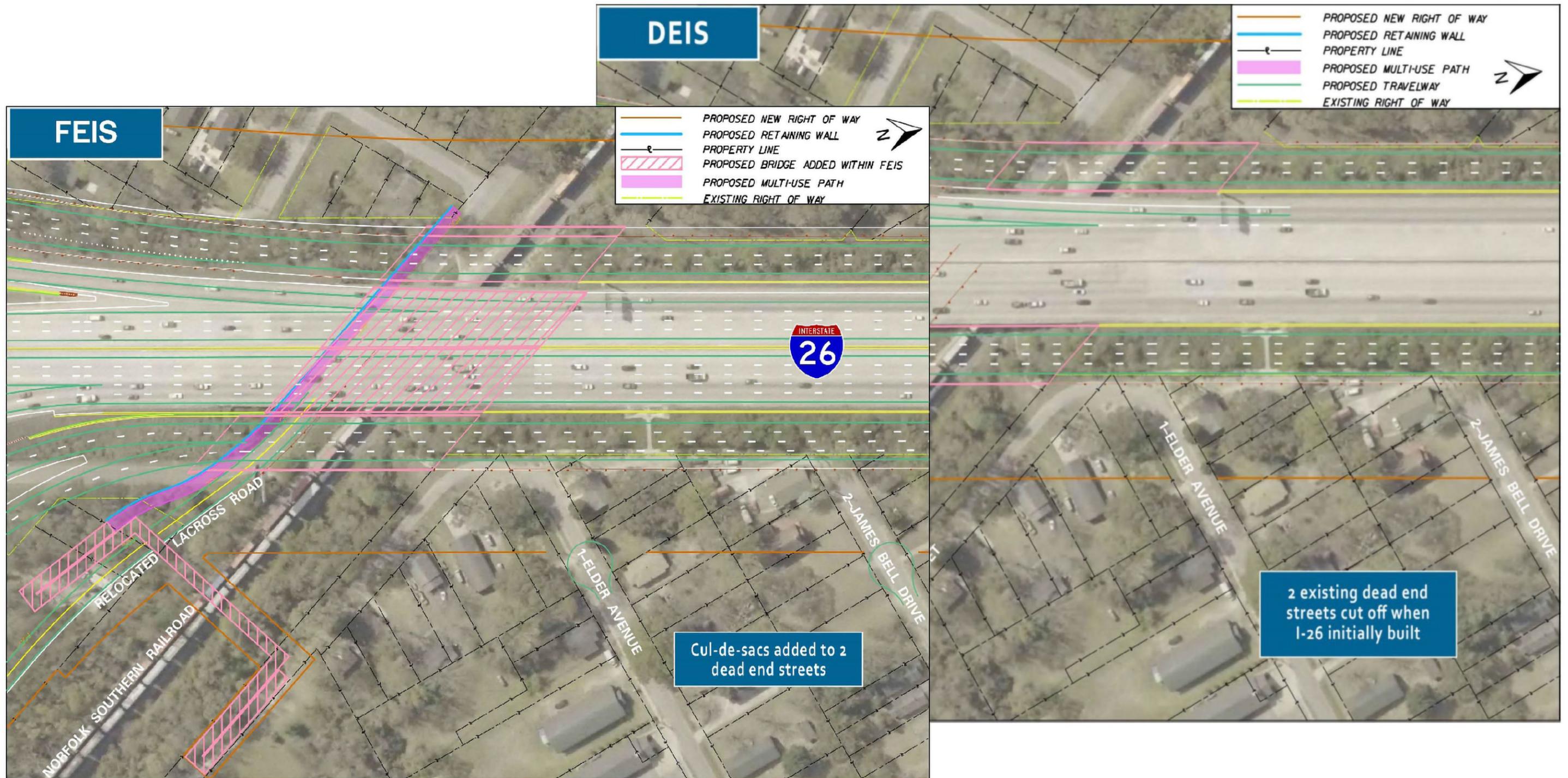


Figure 3.30 Proposed Cul-de-sacs in Liberty Park Community

Mitigation Barriers along I-26

- SCDOT will construct mitigation barriers along the eastbound and westbound sides of I-26 between the I-526 and Remount Road interchanges to benefit the residents of the Highland Terrace and Liberty Park communities. SCDOT will construct mitigation barriers along the westbound side of I-526 between the Rivers Avenue and I-26 interchanges to benefit the residents of the Liberty Park community. SCDOT will construct mitigation barriers along the eastbound side of I-526 from the I-26 interchange to east of the CSX railroad tracks to benefit the residents of the Russelldale and Ferndale communities. SCDOT will construct a mitigation barrier along the eastbound side of I-526 and the eastbound exit ramp at the Montague Interchange to benefit the west side of the Camps community (Figure 3.31).

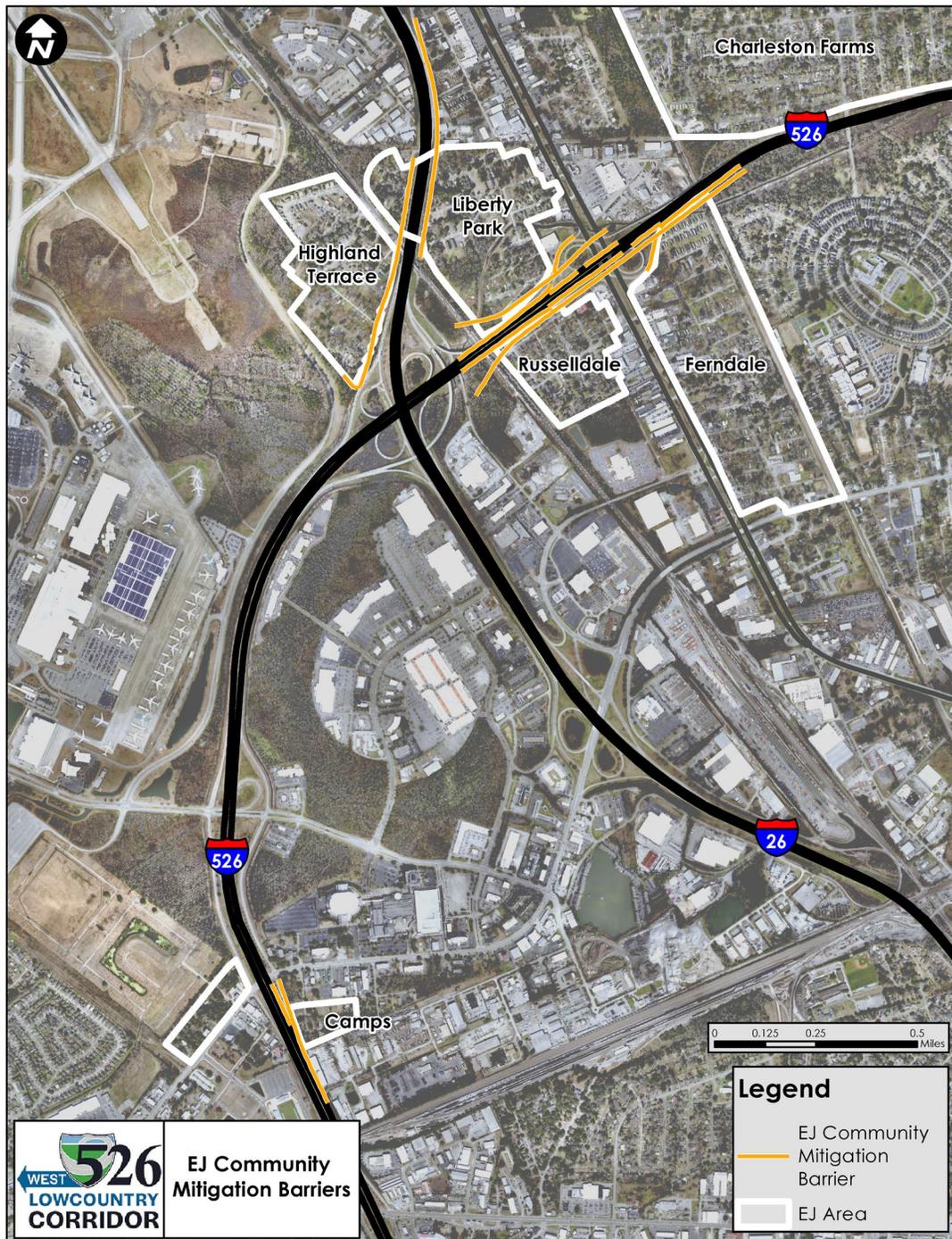


Figure 3.31 Proposed Mitigation Barriers along I-26 and I-526

Improvements to the Mall Drive and City Hall Lane Intersection

As part of coordination with the City of North Charleston, the following improvements will be made to the Mall Drive/City Hall intersection near the I-26 interchange with E. Montague Avenue (Figure 3.33):

- An exit lane will be constructed to the City Hall Lane leg of the roundabout to allow for a right-turn or left-turn movement onto Mall Drive.
- An exclusive left-turn lane will be added on Mall Drive to allow for traffic to enter the roundabout from the eastbound direction.
- Modifications to the existing signal at this intersection will be made to accommodate these improvements. The existing pedestrian crosswalk and sidewalks will also be replaced.

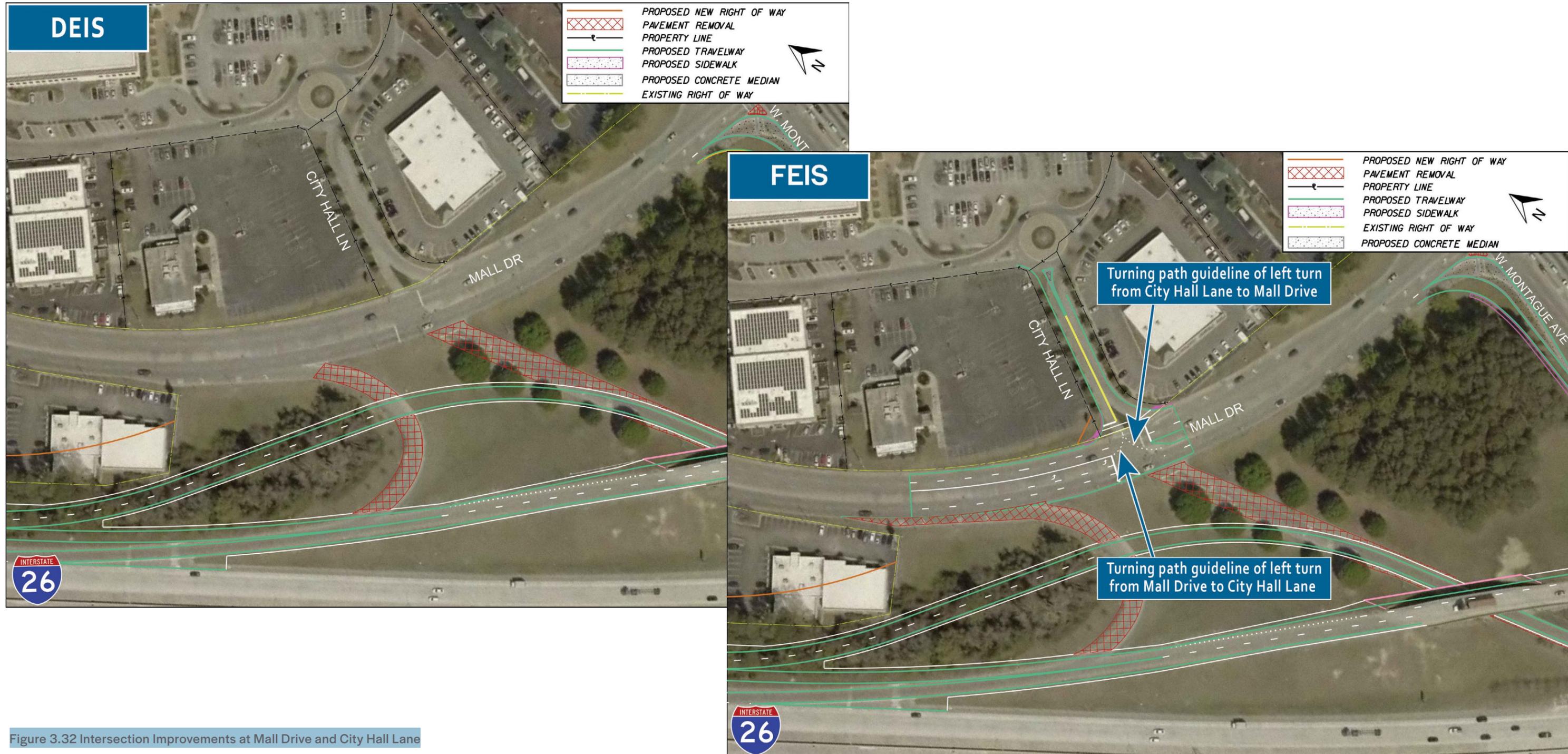


Figure 3.32 Intersection Improvements at Mall Drive and City Hall Lane

3.10 Pedestrian and Bicycle Accommodations

To address pedestrian and cyclist mobility needs within the I-526 LCC WEST project corridor, the addition of potential bicycle and pedestrian improvements documented in local and regional transportation plans within the I-526 corridor was evaluated in the development of this FEIS.

The I-526 LCC WEST project proposes to incorporate additional width across the Ashley River Bridge to accommodate a future shared use path

3.10.1 What Pedestrian and Bicycle Facility Options were Evaluated?

As detailed in Section 2.1.6, the BCDCOG LRTP identified several pedestrian and bicycle improvement projects recommended by the WalkBike BCD and People Pedal plans within the I-526 LCC WEST project corridor.

3.10.1.1 Parallel Shared Use Path

The BCDCOG LRTP includes a shared use path (SUP) parallel to I-526 from Paul Cantrell Boulevard to Virginia Avenue as a “complimentary” project to the I-526 LCC WEST project. Complimentary pedestrian and bicycle projects coincide with LRTP roadway projects. The I-526 LCC WEST project proposes to incorporate additional width across the Ashley River Bridge to accommodate a future shared use path.

The potential for a parallel SUP within the I-526 LCC WEST project corridor was evaluated on a segment by segment basis:

- Segment 1: Paul Cantrell Boulevard to Ashley River
- Segment 2: Ashley River Crossing
- Segment 3: Ashley River Bridge to N Rhett Avenue
- Segment 4: N Rhett Avenue to East of Virginia Avenue

For Segments 1, 2, and 4, the LRTP Plan does not identify the specific alignments of the SUP parallel to I-526, but it does provide goals that influence route selection, including:

- Develop on- and off-street pedestrian and bikeway facilities to meet national best practices in design, providing a safe and inviting environment for all ages and ability levels.
- Prioritize safe walking and biking connections to transit centers and transit stops.
- Focus on improving bicycle connectivity between commercial and employment districts, public services, transit access points, schools, neighborhoods, and existing population centers.

These goals of providing a safe and inviting environment, providing connectivity to transit, and a focus on connectivity to schools, neighborhoods, and existing population centers would be best accomplished by a route that utilizes the non-interstate roadway network adjacent to I-526. Therefore, it was determined that these improvements were outside the purpose and need for the I-526 LCC WEST project and require additional planning and study by local project sponsors to more clearly define the best alignment along this corridor.

Due to the limited opportunities for crossing the major rivers in the region, SCDOT determined that accommodations for bikes and pedestrians should be included on I-526 across the Ashley River. Additionally, while the SUP crossing of the Ashley River provides an important link between commercial and employment districts, public services, transit access points, schools, neighborhoods, and existing population centers, this segment does not have the need for connections within it. Therefore, it was determined that this segment should be constructed as a part of the Recommended Preferred Alternative for the I-526 LCC WEST Project.

The decision to include an SUP for only Segment 2 of the I-526 LCC WEST project is in accordance with the SCDOT's Complete Streets Departmental Directive. This directive, dated February 4, 2021, established that funding for walking and bicycle accommodations should be considered on interstate capacity projects at major river crossings. Additional planning studies would need to be performed to develop a more refined analysis of the potential alignments and connections to bike and pedestrian destinations along the corridor for the remaining segments. However, SCDOT will work in coordination with local planning groups in order to identify any areas of surplus rights of way along I-526 that could be utilized for making key connections along the corridor once the plan is refined.

3.10.1.2 Glenn McConnell Parkway

The Glenn McConnell Parkway Widening project being completed by Charleston County will relieve traffic congestion on Glenn McConnell Parkway by widening the road from four to six lanes between Bees Ferry Road and Magwood Drive. The project also intends to improve bicycle and pedestrian facilities through the addition of a multi-use path allowing safe pedestrian access across the CSX Railway.

The bicycle and pedestrian needs included in the BCDCOG LRTP will be addressed by the Glenn McConnell Parkway Widening project. The I-526 LCC WEST project will ensure compatibility with the Glenn McConnell Parkway multi-use path by providing a paved shoulder on Glenn McConnell Parkway between I-526 and Magwood Drive/Henry Tecklenburg Drive.

3.10.1.3 Ashley River Road

Ashley River Road is an arterial street that passes under a bridge carrying I-526. The BCDCOG LRTP identified the need for a SUP or paved shoulder along Ashley River Road between Frontage Road and Tobias Gadson Boulevard. The identified bicycle and pedestrian improvements along Ashley River Road are not included as part of the I-526 LCC WEST project because they are outside the purpose and need for the project and are the responsibility of other project sponsors. The improvements to I-526 will not impede the future development of these improvements as adequate space exists for them to be built without additional modifications to the bridge structure.

3.10.1.4 N Rhett Avenue

N Rhett Avenue is an arterial street that passes under a bridge carrying I-526. The BCDCOG LRTP identified the need for a SUP or paved shoulder along N Rhett Avenue between Remount Road and the I-526 Exit 19 Ramp. The identified bicycle and pedestrian improvements along N Rhett Avenue are not included as part of the I-526 LCC WEST project because they are outside the purpose and need for the project and are the responsibility of other project sponsors. The improvements to I-526 will not impede the future development of these improvements as adequate space exists for them to be built without additional modifications to the bridge structure.

3.10.1.5 US 52/Rivers Avenue

The BCDCOG LRTP identified several pedestrian or bicycle improvements along US 52 in the vicinity of its interchange with I-526: improved existing sidewalks and paved shoulder or separated bicycle lane extending north and south of I-526. These identified improvements are not included as part of the I-526 LCC WEST project because they are outside the purpose and need for the project and are the responsibility of other project sponsors.

Sidewalks are currently located on both sides of US 52/Rivers Avenue through the I-526 right-of-way, and the I-526 LCC WEST project does not include widening of this road. Improvements to I-526 accommodates the planned bicycle and paved shoulder improvements of the Lowcountry Rapid Transit project, which will construct and implement a bus rapid transit system in the wide median of this roadway. US 52 has high driveway density and a new bicycle facility could provide more safety to cyclists and support better access to transit if placed on the median side of the road and coordinated with this project.

3.10.2 How are Bicycle and Pedestrian Facilities Incorporated into the Recommended Preferred Alternative?

The Ashley River Bridge is a dual structure with a separate bridge carrying eastbound and westbound traffic. Various options were evaluated for how to add a 14-foot wide SUP for pedestrian and bicycle traffic to the corridor crossing the river. Seven viable alternatives were studied for adding the SUP to the Ashley River Bridge. The following option was selected as the recommended preferred due to maintenance and construction logistics, right-of-way requirements, cost, and a balance of wetland impacts. This option would:

- Widen I-526 across the Ashley River to the west (upstream) side of both the eastbound and westbound bridges.
- Route the SUP on the west (upstream) side of the westbound bridge.

The 14-foot width of the SUP will accommodate pedestrians and cyclists in both directions.

More details about the SUP are included at the end of Appendix C.

The Community Infrastructure Enhancement Plan (CIEP), developed as part of EJ mitigation for impacts associated with the I-526 LCC WEST project, proposes bicycle and pedestrian connectivity and safety improvements within the impacted communities. Based on feedback received from residents within these communities, these improvements include a combination of improving existing sidewalks and constructing new sidewalks and crosswalks. Pedestrian safety improvements are also proposed for the existing at-grade railroad crossing at Taylor Street and Jonah Street which is the primary route for Highland Terrace and Joppa Way residents to access the Highland Terrace-Liberty Park pocket park. These infrastructure improvements will be coordinated with the City of North Charleston and construction will be completed prior to the start of construction on the I-526 LCC WEST project. **The proposed pedestrian bridge and multi-use path to be constructed over Lacross Street and the Norfolk Southern railroad, also part of the CIEP, will be constructed as part of the I-526 LCC WEST project.**

See Chapter 4, Section 4.5 and Appendix H for more information regarding these proposed bicycle and pedestrian improvements as outlined in the CIEP.

The Federal Highway Administration (FHWA) is required by the National Environmental Policy Act (NEPA) to evaluate potential impacts to the social, economic, and natural environments for the proposed project discussed in Chapter 3. The best available information is provided to decision-makers, members of the public, stakeholders, and agencies to make informed decisions. This Final Environmental Impact Statement (FEIS) is being developed in accordance with NEPA and provides an evaluation of potential effects on the natural and physical environment, the Recommended Preferred Alternative and the No-Build Alternative. The overall footprint of the Recommended Preferred Alternative presented in the Draft EIS and the refinements that have been made to the Recommended Preferred Alternative are very similar. Changes to the overall footprint of the Recommended Preferred Alternative are minimal. However, any changes to impacts since the completion of the Draft EIS are noted in this chapter.

This chapter defines the existing conditions of the project study area and explains the impacts anticipated for the Recommended Preferred Alternative. Potential mitigation strategies are also proposed to address the associated impacts of the project.

As previously discussed in Chapters 2 and 3, the project study area extends along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue. The project proposes upgrades/changes to five interchanges along I-526: the I-526 at Paul Cantrell Boulevard interchange, the I-26/I-526 system interchange, the I-526 at Rivers Avenue interchange, the I-526 at N Rhett Avenue interchange, and the I-526 at Virginia Avenue interchange. Refer to Chapter 1, Figure 1.2 for the I-526 Lowcountry Corridor (LCC) WEST project study area.

The FEIS addresses the following resource topics in detail:

- Land Use, Section 4.1
- Farmlands, Section 4.2
- Communities, Section 4.3
- Socioeconomics, Section 4.4
- Environmental Justice Analysis, Section 4.5
- Relocations, Section 4.6
- Considerations for Bicycles and Pedestrians, Section 4.7
- Air Quality, Section 4.8
- Noise, Section 4.9
- Water Quality, Section 4.10
- Water Resources, Section 4.11
- Floodplains, Section 4.12
- Natural Resources, Section 4.13
- Cultural Resources, Section 4.14
- Section 4(f) Resources, Section 4.15
- Section 6(f) Resources, Section 4.16
- Hazardous Materials, Section 4.17
- Construction, Section 4.18
- Energy, Section 4.19
- Short-Term Uses Versus Long-Term Productivity, Section 4.20
- Irreversible and Irrecoverable Commitment of Resources, Section 4.21
- Permits, Section 4.22
- Sustainability, Section 4.23
- 404(b)1 Guidelines, Section 4.24

The objective of the FEIS is to focus on the potential impacts which may affect the quality of the human and natural environment. Therefore, if the resource is not present in the project area, it does not warrant evaluation and is not included in this FEIS. Those topics include:

- Water Body Modification and Wildlife Impacts
- Joint Development
- Coastal Barriers

Each resource considered in this chapter of the FEIS is addressed under four primary subsections:

1. **Introduction** - The introduction section includes a discussion of the evaluated resource and the details of the analysis methodology. When relevant, regulatory authority for a resource is defined, and how the resource is managed in a regulatory setting is described.

2. **Affected Environment** - The affected environment section describes the existing conditions of the resource and gives a detailed description of the physical setting and surrounding area.
3. **Environmental Consequences** - The environmental consequences section discusses potential impacts to the subject resource for the Recommended Preferred Alternative presented in the DEIS, any refinements to the Recommended Preferred Alternative, and the No-Build Alternative.
4. **Mitigation Measures** - The mitigation measures section describes feasible mitigation measures to the extent practicable to reduce potential impacts.

4.1 Land Use

This section outlines the existing and future land uses within the project study area, the consistency of the project with local and regional land use plans, as well as anticipated growth in population and employment in the area. These factors are used to evaluate the potential impacts associated with the No-Build and the Recommended Preferred Alternative. The I-526 LCC WEST project study area is divided between the City of North Charleston and the Charleston suburb of West Ashley. The following sections describe the land use of each geographical area.

4.1.1 Who is Responsible for Land Use Plans within the Project Study Area?

Local jurisdictions, including the City of Charleston, City of North Charleston, and Charleston County are responsible for land use planning within the proposed I-526 LCC WEST project study area. These organizations address existing and future land use in comprehensive plans and other planning documents. The public has opportunities to participate in the development of these documents prior to approval. The Berkeley Charleston Dorchester Council of Governments (BCDCOG) is the designated Metropolitan Planning Organization (MPO) for this area and incorporates land use recommendations and goals from each local entity into the overall Long Range Transportation Plan, further discussed in Section 4.1.4.

4.1.2 What Methodology was used for Analysis of Land Use?

The community boundaries established in the Community Impact Assessment (CIA) study area were used for continuity of land use related discussions. Regional and local plans were used to identify existing and future land use and evaluate potential land use effects for the CIA study area. The CIA study area is within Charleston County and extends between Paul Cantrell Boulevard in West Ashley northeastward across the Ashley River into North Charleston. It ends at the Cooper River. Refer to Figure 4.1.

Census block groups containing neighborhoods likely to be affected by the proposed project are being reviewed, and notable community features along the project corridor and within the immediate vicinity are also being identified. The CIA study area is bounded by census block groups as many of the boundary lines follow local streets, railroads, and waterways and provide natural boundary lines. The use of census boundaries provides insight into demographics and identification of special populations within the CIA study area.

The CIA study area within West Ashley is divided into eight areas with a total of 29 neighborhoods and within North Charleston is divided into 12 areas with a total of 37 neighborhoods.

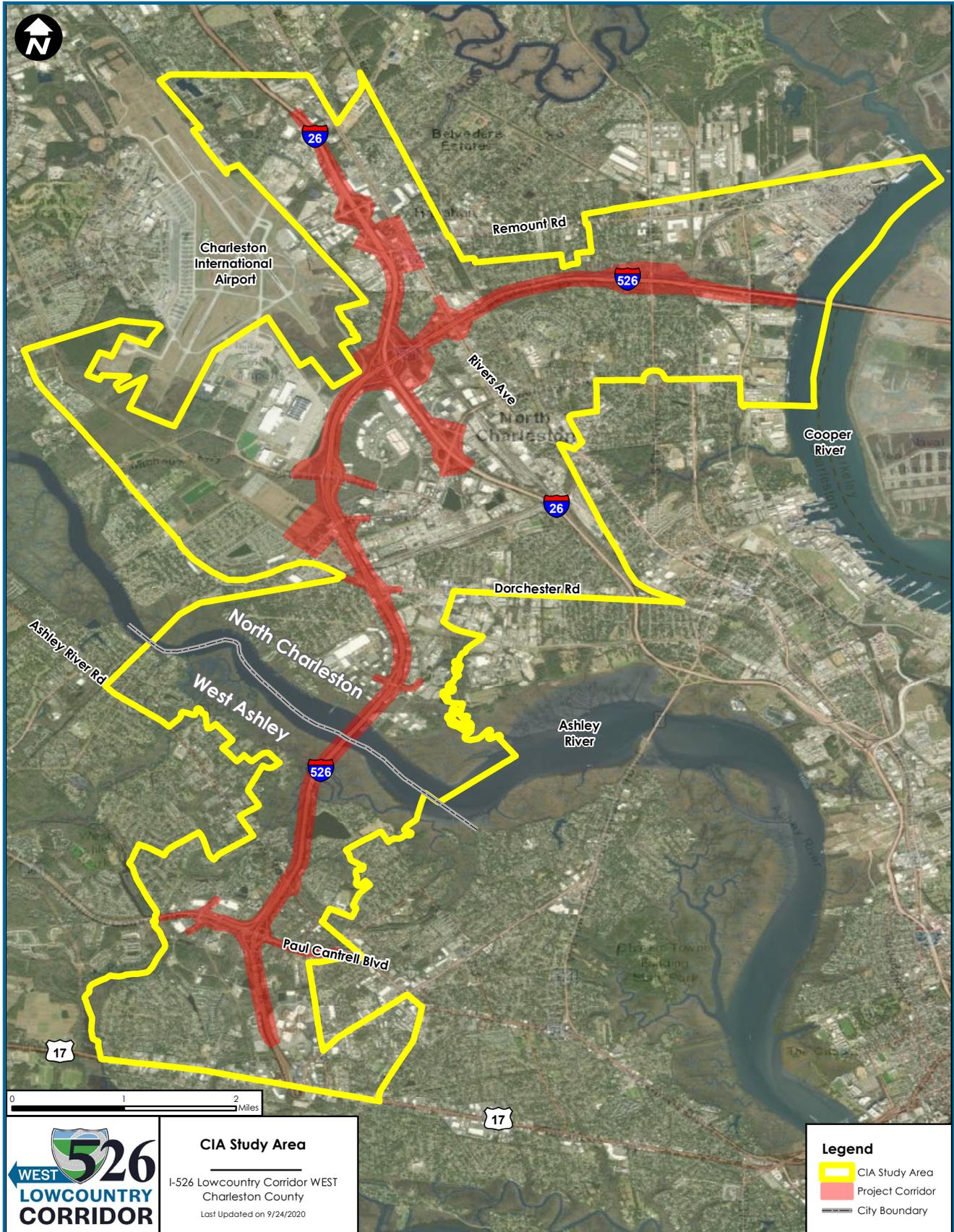


Figure 4.1 CIA Study Area

4.1.3 What is the Affected Land Use within the Project Study Area?

4.1.3.1 Existing Land Use

Planning for what is now I-526 began in the 1960s with construction on the first section starting in 1979. The road first opened to traffic as an unnumbered highway between Ashley River Road (SC 61) and Leeds Avenue in 1982 and included a bridge across the Ashley River. Several extensions occurred in the 1980's when the road was named the Mark Clark Expressway (SC 31). In 1989, after it connected with I-26, the highway was renamed as I-526. I-526 was further extended east over the Cooper River to Daniel Island in 1992, then over the Wando River to Mount Pleasant and its current eastern terminus with US 17 and I-526 Business.

The I-526 LCC WEST is divided between West Ashley and the City of North Charleston. West Ashley is a suburb of the City of Charleston and is characterized by a mixture of residential and commercial land use with limited undeveloped/available land. Primary zoning uses in West Ashley include Planned Unit Development (PUD), Conservation (C), General Business (GB), and Single-Family Residential (SR). The North Charleston area is characterized by residential, industrial, and commercial land use with limited undeveloped/available land. Primary zoning uses in North Charleston include Single-Family Residential (R-1), Light Industrial (M-1), Multi-Family Residential (R-2), Planned Development District (PDD), and General Business (B-2). Land use in West Ashley and North Charleston is summarized below and can be studied in detail in Appendix D, the CIA.

West Ashley

Immediately south of the Ashley River, I-526 is bordered by residential development, denoted as “Suburban Edge” land use. Land use transitions into higher density residential development east of I-526, denoted as “Suburban” land use and commercial uses west of I-526, denoted as “Highway” land use. Magwood Drive is flanked by a number of regional destinations for medical care including the West Ashley Medical Center, Essex Medical Park, and NHC Healthcare Charleston as well as commercial destinations that include many retail shops and restaurants.

Land uses south of Glenn McConnell Parkway/Paul Cantrell Boulevard are similar to those along Magwood Drive, including the Bon Secours St. Francis Hospital and associated facilities plus retail shops and restaurants. For more specific information on the communities in West Ashley refer to the CIA in Appendix D.

The West Ashley portion of the CIA study area is south of the Ashley River. Land use is generally a mix of residential and commercial uses.

North Charleston

Along Virginia Avenue, industrial use is the primary land use. To the west, land uses include single-family, multi-family, and mobile home residential uses in the area between N Rhett Avenue and Rivers Avenue. Commercial use is located east of I-526, that includes Tanger Outlets, the North Charleston Coliseum and Performing Arts Center, and the Charleston Area Convention Center. In this area, the Charleston International Airport and Boeing facilities border I-526 to the west, which are classified as industrial use. I-526 then crosses a large rail yard where industrial use is the predominant land use. South of Dorchester Road,

there is some residential use to the west, mixed with a larger amount of commercial industrial uses to the east.

Land use within the North Charleston portion of the CIA study area is predominantly comprised of residential and industrial uses.

4.1.4 What Area Planning Documents Regulate Land Use?

4.1.4.1 West Ashley

The proposed I-526 LCC WEST project between the Ashley River and Paul Cantrell Boulevard is located within the West Ashley, the City of Charleston, Charleston County, and the BCDCOG, which is the designated MPO for this area. Each of these entities have planning documents to help guide the growth of the overall Charleston area, then the BCDCOG incorporates the land use recommendations and goals from each local entity into the Charleston Area Transportation Study (CHATS) Long Range Transportation Plan (LRTP). The proposed I-526 LCC WEST project’s compatibility with these planning documents was evaluated based on a comparison of environmental consequences on existing and future land use plans. The following documents are referenced while discussing existing and future land use plans in the West Ashley project area:

- [2017 Plan West Ashley](#)
- [2010 Century V City Plan](#)
- [2018 Charleston City Transportation Plan](#)
- [2020 Charleston County Comprehensive Plan](#)
- Charleston Area Transportation Study Long Range Transportation Plan ([CHATS LRTP](#))

Geographic information system (GIS) data from these reference documents was verified by conducting field surveys and reviewing digital aerial mapping of the CIA study area.

4.1.4.2 North Charleston

The section of the project corridor between Virginia Avenue and the Ashley River is located within the jurisdiction of the City of North Charleston, Charleston County, and the BCDCOG. With the exception of the BCDCOG, each of these entities are responsible for developing plans to guide growth in their planning areas. The BCDCOG incorporates land use recommendations and goals from each local entity into the CHATS LRTP. The proposed project was evaluated to determine its consistency with local planning documents. The following documents were referenced to develop discussions on existing and future land use in the North Charleston portion of the CIA study area:

GIS data from these three plans were verified by conducting field surveys, collaborating with the Community Advisory Council (CAC), and reviewing digital aerial mapping of the CIA study area. For more information about the input received from the CAC refer to Chapter 6.

- [2020 Charleston County Comprehensive Plan](#)
- [CHATS LRTP](#)
- [PRIME North Charleston 2020 \(DRAFT\)](#)

4.1.5 Where is Development Activity Expected within the Study Area?

4.1.5.1 West Ashley

As described in Section 4.1.3.1, the West Ashley area is a suburb of Charleston and is characterized by a mixture of residential and commercial land use with limited undeveloped/available land. Commercial retailers such as Costco and Target are located along Sam Rittenberg Boulevard. I-526 and I-26 are utilized as commuter corridors serving traffic beyond West Ashley communities. Because the CIA study area is already developed, any growth is

anticipated to occur with redevelopment, and induced land use changes associated with the proposed project are not anticipated in West Ashley. According to the Century V City Plan, several areas have been identified for economic development. Consistent with future land use plans, West Ashley will have areas designated for high intensity mixed uses, which would most likely include vehicle-dependent commercial development. In addition, the Century V plan includes an urban growth boundary that expands the **West Ashley boundary** further west.

In addition to the I-526 LCC WEST project, one additional project in West Ashley is programmed for funding, the widening of Glenn McConnell Parkway (Project #P037878).

4.1.5.2 North Charleston

Future land use designations provided by the City of North Charleston (June 2020) are generally consistent with existing land uses, which primarily include single-family residential, commercial, and light industrial uses. One notable exception is the future land use designation for the Russelldale, Ferndale, Highland Terrace, and Liberty Park neighborhoods. These neighborhoods are mostly zoned for single-family residential use with some multi-family residential and commercial/light industrial uses on the periphery of the neighborhoods. As shown in Figure 4.2, future land use mapping designates the majority of these neighborhoods as “Mixed-Use” (MU). The MU designation provides for a mixture of land uses within close proximity to each other. This could include multiple uses within a single parcel or structure. The MU designation does not change a property’s current zoning designation, but if a property owner were to apply to have a parcel rezoned for commercial, office, or light industrial use, the change would be compatible with the MU designation. Rezoning requests are reviewed on a case-by-case basis as there are several factors to be considered, including public sentiment, the parcel’s proximity to associated infrastructure, and the areas future land use designation. As such, the MU designation opens up the potential for non-residential uses within the Russelldale, Ferndale, Highland Terrace, and Liberty Park neighborhoods.

Charleston and surrounding municipalities have pro-growth policies as evidenced by the future development of Palmetto Commerce Park and the Volvo Car factory in Ridgeville.^{1,2}

A “Catalyst Area” is located near the North Charleston Environmental Justice (EJ) neighborhoods. Catalyst areas are central points of the “community and places where regional or local services are concentrated. They are the hubs where transportation networks converge to create a high level of accessibility and where people gather for social interaction” (Partnership for Prosperity, 2014).³ Many catalyst areas focus on supporting existing neighborhoods and could provide future opportunities for consistent economic growth. The catalyst area near the Russelldale neighborhood would focus development efforts on the Mall Drive district to expand growth from the existing commercial small lot and big box retail, hotels, and restaurants.

In an area where affordable housing, and housing in general, is scarce and already at a premium, any properties within the EJ neighborhoods rezoned to non-residential uses would likely reduce available housing, and would thus contribute to cumulative effects on EJ neighborhoods.

1 The Post and Courier. “Retail center planned for industry-laden Palmetto Commerce Park in North Charleston.” July 1, 2019. Web. https://www.postandcourier.com/business/real_estate/retail-center-planned-for-industry-laden-palmetto-commerce-park-in/article_53d612ce-9925-11e9-9a25-5bc6603c1597.html

2 Volvo Cars. South Carolina Factory. Web. <https://www.volvocars.com/us/about-volvo/our-story/south-carolina-factory>

3 Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) “A Master Plan for the Neck Area of Charleston and North Charleston.” 2014 http://www.neckprosperity.org/uploads/2/5/0/5/25050083/draftreport_131206_web.pdf

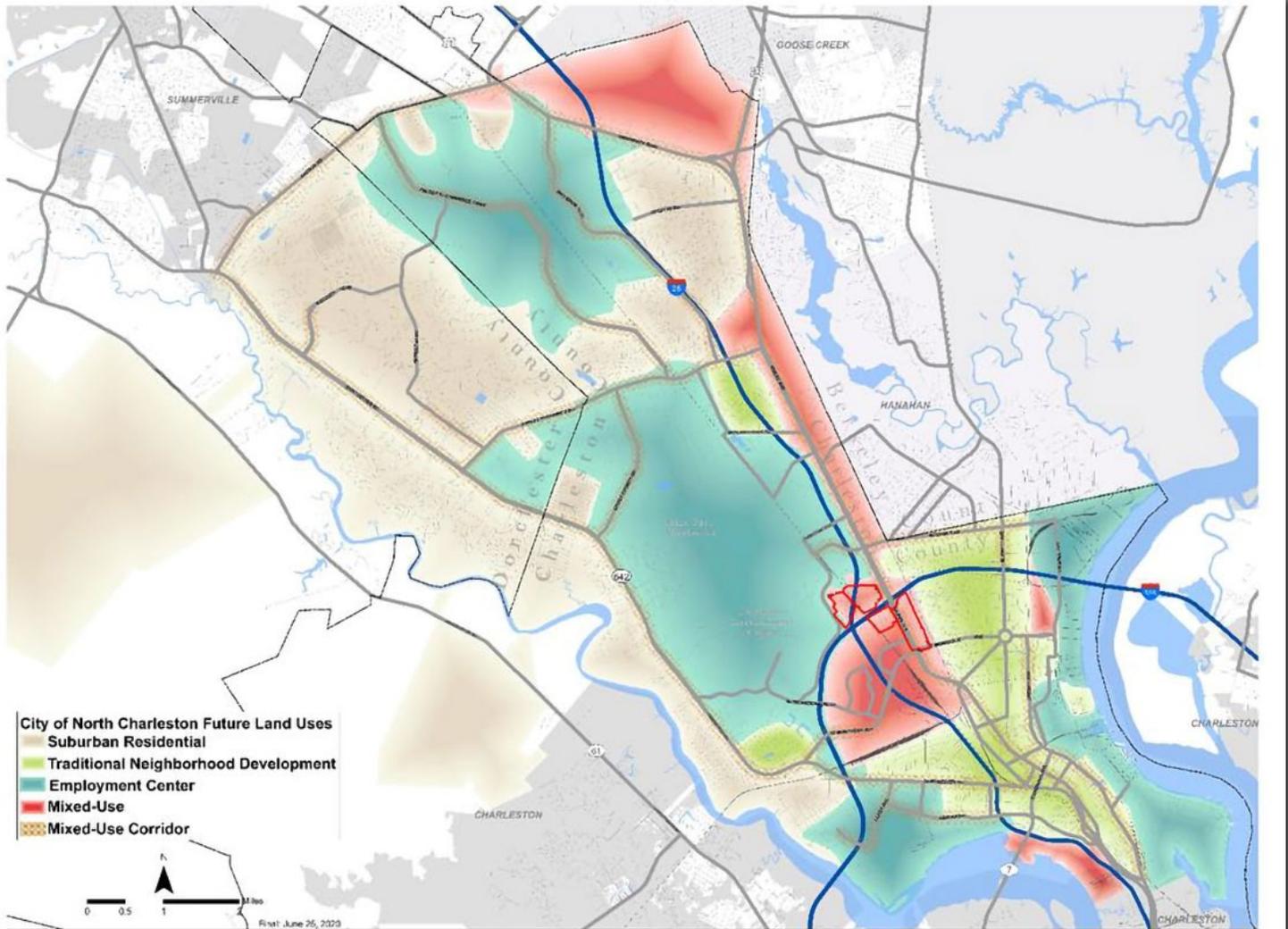


Figure 4.2 North Charleston Future Land Use Map (2020).

Note: Red polygons represent EJ neighborhoods with the majority of direct impacts.

Source: City of North Charleston <https://arc.northcharleston.org/NCIMap/styles/flum2020withroads.jpg>

Refer to the CIA in Appendix D and the Indirect and Cumulative Effects (ICE) Assessment in Appendix F for more details on land use and future development in the project study area.

4.1.6 What are the Potential Environmental Consequences to Land Use?

4.1.6.1 How would the No-Build Alternative Impact Land Use?

As noted in Section 4.1.6.2, regional population growth and development trends; pro-growth policies; and availability of water, sewer, schools, and other infrastructure indicate that growth and development will continue to occur in the broader Charleston region regardless of the proposed project. As such, no substantial differences to land use are anticipated between the No-Build and the **Recommended Preferred Alternative**.

4.1.6.2 How would the Recommended Preferred Alternative Impact Land Use?

The proposed project would affect land use by converting existing land uses to transportation right-of-way.

Table 4.1 Direct Land Use Impacts of the Recommended Preferred Alternative

Zoning Designation	No-Build (acres)	Recommended Preferred Alternative in DEIS (acres)	Refined Recommended Preferred Alternative (acres)
North Charleston			
Residential	0.0	71.7	69.58
Business	0.0	12.2	9.34
Industrial	0.0	43.3	35.4
Commercial Redevelopment District	0.0	17.2	14.19
Planned Development District	0.0	1.8	1.29
Neighborhood Office	0.0	0.5	0.12
West Ashley			
General Office	0.0	1.5	0.99
Business	0.0	7.2	3.63
Single-Family Residence	0.0	8.0	4.88
Diverse Residential	0.0	1.2	0.04
Conservation	0.0	1.3	1.75

*Impacts to land uses are based on the proposed right-of-way for the Recommended Preferred Alternative. Design changes since the publication of the DEIS have decreased the overall direct land use impacts associated with the proposed right-of-way, but further land use changes may occur as a result of additional relocations based on encroachment considerations, accessibility, or setback requirements.

Table 4.1 shows direct impacts to land use associated with the Recommended Preferred Alternative. **Changes to the direct impacts from the Recommended Preferred Alternative and refinements made to the Recommended Preferred Alternative are minimal.** Since the area surrounding the project corridor is already developed, any changes outside the direct conversion of land to transportation right-of-way would occur as part of local planning initiatives rather than induced land use changes associated with the proposed project.

Regional population growth and development trends; pro-growth policies; and the availability of water, sewer, schools, and other infrastructure indicate that growth and development will continue to occur in the broader Charleston region regardless of the proposed project.

The improved mobility associated with the proposed improvements would not create indirect land use effects across the broader region as growth and development will continue to occur regardless of the proposed project.

4.1.7 How will Land Use Impacts be Mitigated?

The land uses within the project study area are consistent with regional and local land use plans. Although coordination between South Carolina Department of Transportation (SCDOT) with local officials is ongoing, the local jurisdictions have the responsibility for land use planning. Development of land would require obtaining the necessary approvals and permits from local, state, and federal agencies, which may include, but are not limited to Section 401, Section 402, and Section 404 permits/approvals, as well as mitigation for any fill of wetlands or Waters of the U.S.

SCDOT will also fund the construction of a large, modern, centrally located community center with expanded programs and hours to replace the smaller community centers in Russelldale and Liberty Park that will be impacted by the project. The outdoor amenities currently located at the existing community centers will be replaced with nearby pocket parks located in the communities where the existing community centers are located. As part of the plans for the recreational facilities, SCDOT will also identify and construct infrastructure improvements necessary to facilitate the safe travel for residents between the replacement community center, pocket parks, transit stops on Rivers Avenue, and the surrounding communities. SCDOT has coordinated with the City of North Charleston and has developed an intergovernmental agreement (IGA) to ensure long-term mitigation efforts are fulfilled. For additional information on the proposed mitigation, refer to Appendix H for the Environmental Justice Community Mitigation Plan.

4.2 Farmlands

The Farmland Protection Policy Act (FPPA) of 1981 was created to prevent and lessen the irreversible conversion of farmland to non-agriculture use by federal agencies. When federal projects have the potential to impact farmlands an assessment must be completed to evaluate if the farmland will be converted to a non-agriculture use. The FPPA exempts certain activities, including projects within an urban development area or land utilized for water storage and/or construction within an existing right-of-way purchased on or before August 4, 1984.

The No-Build Alternative would have no effect on farmlands since existing conditions would remain unchanged.

The **Recommended Preferred Alternative** is located on land that is currently, or is intended to be, developed with transportation, residential, and commercial uses or is designated as urban land; therefore, the project is exempt from the FPPA and no impacts to farmland are anticipated.

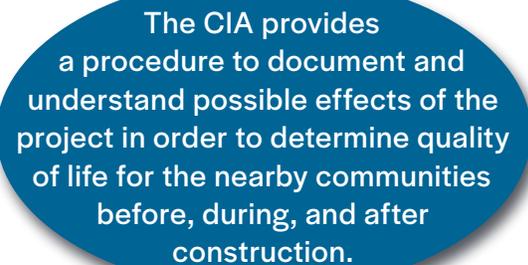
4.3 Communities

The community characteristics discussed in this section include population, household, community services and facilities, and visual aesthetics. This section also discusses the demographic profile **of the Community Impact Assessment (CIA) study area**, including low-income, minority, elderly, and Limited English Proficient (LEP) populations, as well as information on transportation equity.

4.3.1 Why Do We Evaluate Communities?

NEPA specifically requires the consideration of social and economic impacts to ensure that potential effects to people and communities are integrated into the decision-making process of the proposed project. **Socioeconomic factors anticipated to result from the Recommended Preferred Alternative are discussed in Section 4.4.**

A CIA was developed to determine possible cultural, social, economic, historical, and physical impacts of the proposed I-526 LCC WEST project. This process involved fully comprehending the goals of the local and regional planning groups, understanding the values that are important to the impacted communities, and taking the needs and wants of the citizens into account throughout the entirety of the planning and construction process. Input from the community ultimately helps shape the outcome of the transportation project and helps planners to make socially responsible and efficient decisions.



The CIA provides a procedure to document and understand possible effects of the project in order to determine quality of life for the nearby communities before, during, and after construction.

Refer to Section 4.3.6 for an overview of the potential impacts evaluated as a part of the I-526 LCC WEST project including relocations (residential, community, and business), isolation, environmental, community cohesion, Environmental Justice, agriculture, and recreation. Access, mobility, employment and income are detailed in Section 4.4 as part of the socioeconomics discussion. Additional details on these topics can be found in the CIA, Appendix D.

4.3.2 What Communities are in the CIA Study Area?

The CIA study area is within Charleston County and extends between Paul Cantrell Boulevard in West Ashley northeastward across the Ashley River into North Charleston. It ends at the Cooper River. The CIA study area within West Ashley is divided into eight areas with a total of 29 neighborhoods, and the CIA study area within North Charleston is divided into 12 areas with a total of 37 neighborhoods. Figure 4.3 shows the locations of the West Ashley neighborhoods within the CIA study area.

West Ashley Neighborhood Areas

1. Mulberry Place at Westborough, Dogwood Road, Beechwood Mobile Homes
2. The Arboretum, Oasis at West Ashley, Ashley River Apartments, Hawthorne Westside Apartments, Middleton Cove Apartments, Planters Trace Apartments, Plantation Oaks Apartments, Ashley Crossing Lane
3. Ashley Harbor
4. Marsh Cove, Ricefield Townhomes
5. Colonial Village at Westchase, Radius at West Ashley, Ashley Oaks, 1800 Ashley West
6. San Miguel Road, Savage Road, Brighton Place, Able Street, Richmond Street
7. Abberly at West Ashley
8. Etiwan Garden Apartments, Melrose Park, Shaftesbury Woods, Castlewood Townhouses

Figure 4.4 shows the location of the North Charleston neighborhoods within the CIA study area.

North Charleston Neighborhood Areas

1. Oak Grove, Oak Grove West, Singing Pines, Boland Park, Fair Haven Trailer Park
2. Charleston Farms, Seepoint Townhomes
3. Liberty Park, Highland Terrace, Joppa Way, Russelldale, Ferndale
4. Morningside, Liberty Hill, Oak Terrace Preserve, Cameron Terrace West
5. Park Circle, Oak Park, Cameron Terrace, Cameron Terrace Manor, Palmetto Gardens
6. Glyn Terrace, Northpointe, Oak Ridge, Oak Ridge Two, Firestone Road, Ozark Street
7. Wando Woods
8. Plantation Isles, Reverie on the Ashley
9. West Ada Avenue, East Ada Avenue, Highpoint Road
10. Brentwood, Waylyn
11. Centre Pointe
12. Camps

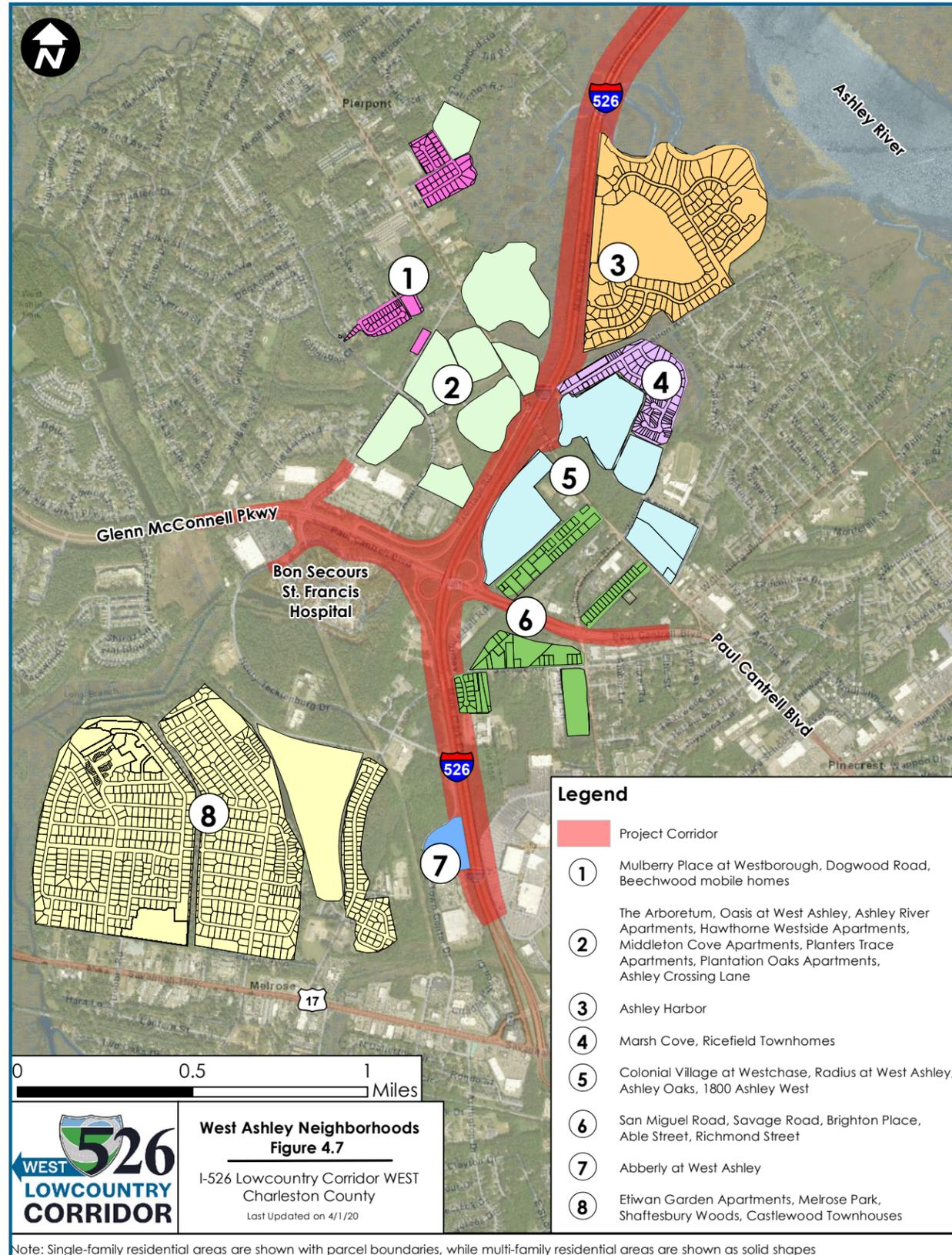


Figure 4.3 West Ashley Neighborhoods

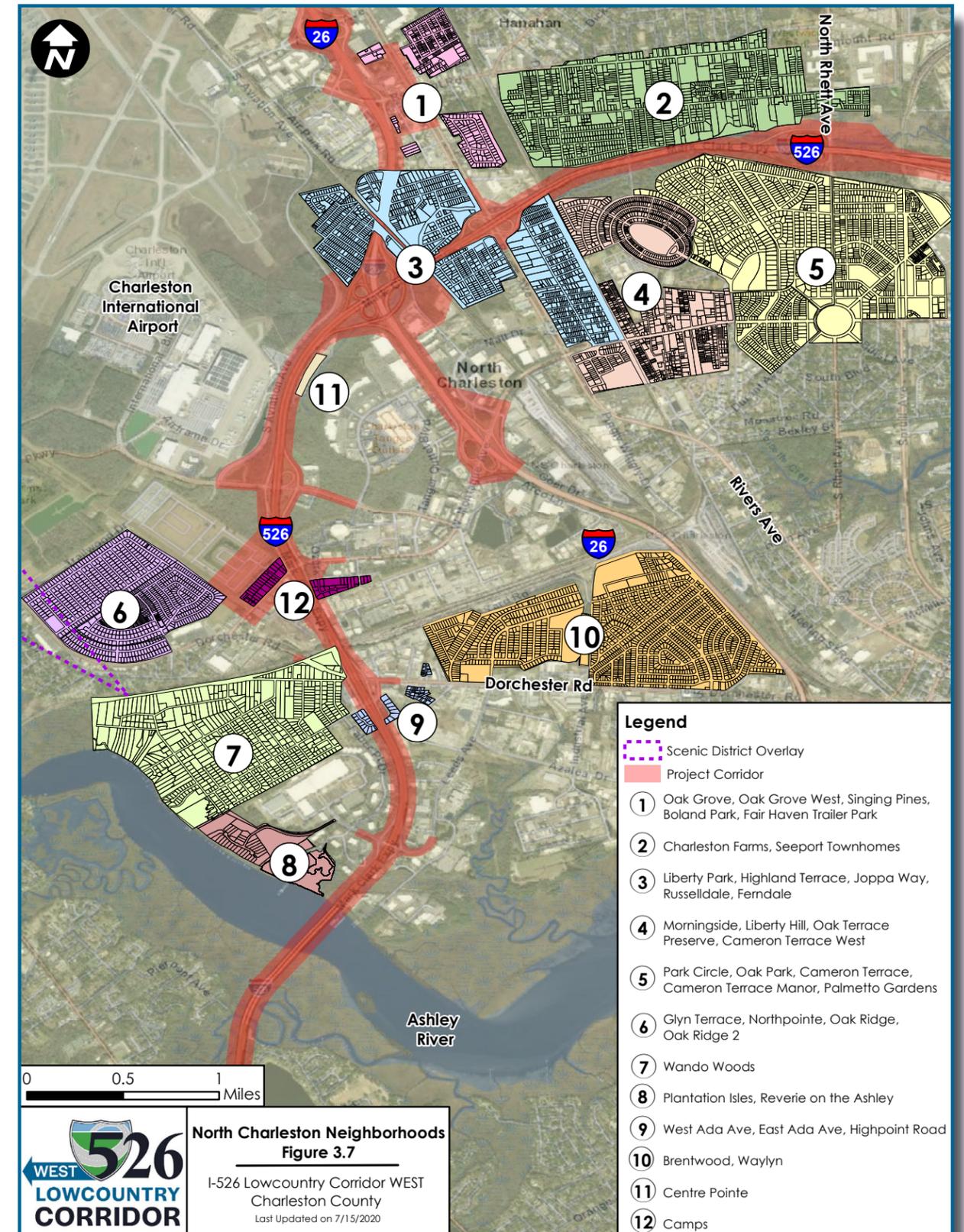


Figure 4.4 North Charleston Neighborhoods

4.3.3 What Methodologies and Data Sources were used to Characterize Communities?

4.3.3.1 Methodology

The CIA study area was developed to include all areas that could experience direct, indirect, and/or cumulative effects from the proposed project. The area of potential direct impacts was determined based on the proposed right-of-way for **the Recommended Preferred Alternative**. Notable community features along the project corridor and within the immediate vicinity were also identified. The census block groups follow local streets, railroads, and waterways and provide natural boundary lines. The CIA study area was also evaluated to identify smaller, or hidden, EJ populations within the larger geographic area of each block group, but none were identified. As such, the CIA study area uses census block group boundaries to identify special populations and provide insight into the demographics of residents. Refer to Figure 4.5 for the CIA study area and block groups.

The block group data were verified by conducting field surveys and reviewing aerial mapping of the CIA study area to identify the exact geographic location of special populations within each block group.

4.3.3.2 Data Sources

Data sources for the CIA include US Census 2012-2016 American Community Survey (ACS) data, field surveys, aerial mapping and GIS data, I-526 LCC WEST Community Advisory Council (CAC) input, information provided by the City of North Charleston, stakeholder group feedback, and public comments received at public meetings held in November 2019. The CAC not only provided the project team with valuable insight into neighborhood values and goals, but also helped create the Environmental Justice Community Mitigation Plan to offset project impacts by helping address the social needs and priorities of neighborhood residents. Refer to Chapter 6 for more information about the input and feedback received from the CAC.

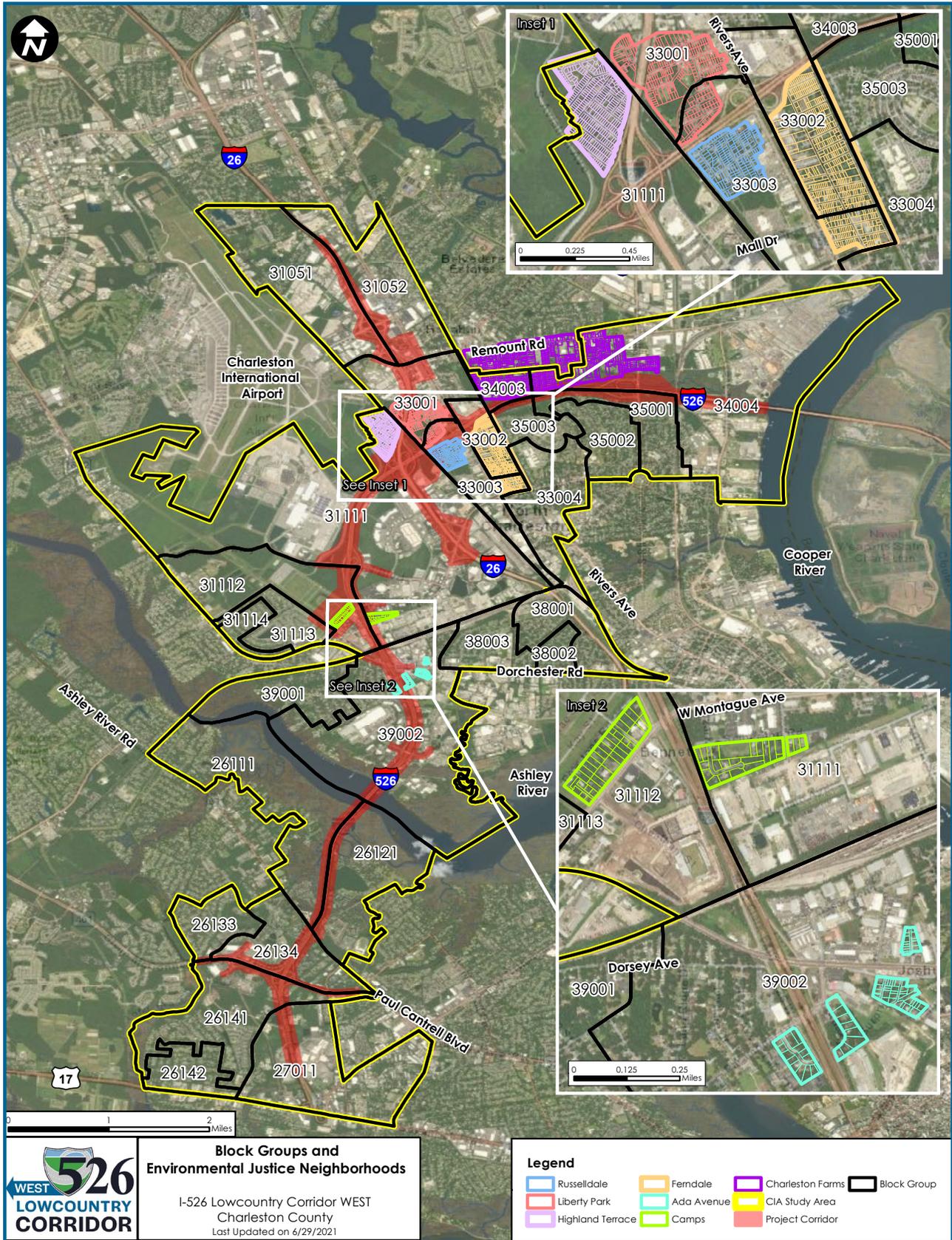


Figure 4.5 CIA Study Area, Block Groups, and EJ Neighborhoods

4.3.4 What are the Existing Characteristics of the CIA Study Area Communities?

4.3.4.1 Study Area

Table 4.2 shows that the minority population percentage of the CIA study area varies considerably and ranges anywhere from nine percent to 94 percent. For households over 65 in the block group neighborhoods, the percentage ranges from three percent to 26 percent. Inversely, the percentage of households with children under 18 ranges from nine percent to 50 percent. Households with Limited English Proficiency (LEP) range from zero percent to the highest percentage of 26 percent. **See Appendix D for a breakdown of demographic characteristics by individual block group.**

Table 4.2 Demographic Characteristics

	Total CIA Study Area	CIA Study Area - West Ashley	CIA Study Area - North Charleston
Population	61,715	28,527	33,188
% Minority	9-94 %	19-53 %	9-94 %
% Low-Income	9-76 %	9-51 %	16-76 %
% over 65	3-26 %	7-24 %	4-26 %
% under 18	7-50 %	7-32 %	9-50 %
% LEP	0-26 %	0-25 %	0-26 %
Unemployment Rate	0-27 %	2-12 %	0-27 %
Median Household Income	\$16,378-\$60,137	\$28,000-\$60,137	\$16,378-\$57,788
% Below Poverty Level	14-87 %	20-53 %	14-87 %

4.3.4.2 Communities

West Ashley

West Ashley Population

According to the United States Census, the population in West Ashley in 2018 was approximately 75,385. As one of the largest suburbs of Charleston, West Ashley accounts for over half of the city's 120,000 residents and its overall population has grown by about 17 percent since 2000.

West Ashley Housing

Home prices have increased in recent years and many of the single-story brick homes built in the 1960s value around \$200,000. The median home values in the West Ashley CIA study area vary substantially. On the lower end of the range are homes at an average of \$165,500. The homes on the upper end of the median value range are approximately \$387,100 and the higher end peaks in the \$2 million range, refer to Figure 4.6.

A large demand for rental properties has led to rental price increases, making West Ashley less affordable. The rent increased by 28 percent from 2011-2016. These differences are significant as they play a key role in the demographic makeup of each area.

According to the 2017 Plan West Ashley document, inner West Ashley has historically housed a larger concentration of African American residents. The rising cost of housing threatens neighborhood diversity because higher property taxes and housing prices may force low-income and minority families from their homes through gentrification.

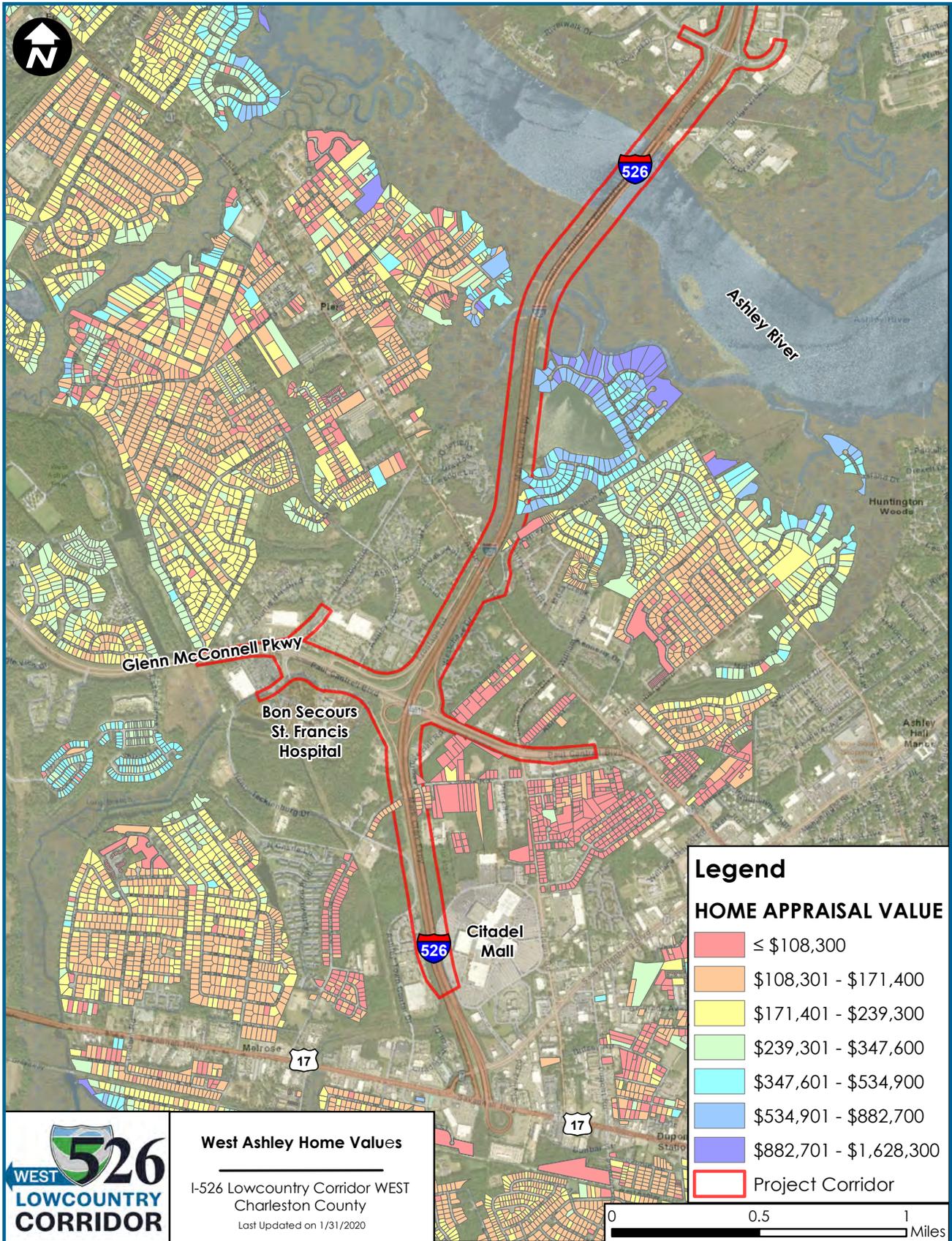


Figure 4.6 West Ashley Home Values

West Ashley Community Services and Facilities

Charleston County Public Library operates branches throughout the county including branches in West Ashley located at the West Ashley Library (45 Windermere Blvd) and the Cynthia Graham Hurd/St. Andrew's Regional Library (1735 N Woodmere Dr) and a planned branch on Bees Ferry Road.

Healthcare services in West Ashley are provided by the Medical University of South Carolina (MUSC), Bon Secours St. Francis Hospital, Roper St. Francis Health Care, and Health First. The Charleston County Emergency Medical Service Department provides emergency medical services. The West Ashley CIA study area includes five fire stations: two operated by West Ashley and three operated by St. Andrews. The closest available police station is located across the Ashley River in the City of Charleston.

West Ashley's public schools are served by Charleston County School District 10. There are two private schools, seven elementary, two middle, one high, and two charter schools in West Ashley. Religious facilities in the CIA study area include churches and synagogues. There are many religious facilities located in West Ashley, with approximately 19 located within the CIA study area, refer to Figure 4.7.

Although West Ashley does not have community centers available for individual neighborhoods, it has various parks and facilities for recreation. Bees Landing Recreation Center, Charles Towne Landing State Historic Site, the West Ashley Park, the West Ashley Greenway, and the West Ashley Bikeway are all popular recreation spots in West Ashley.

There are many places of historic and archaeological importance in West Ashley due to the area's history as part of the City of Charleston. Among many others, the National Register of Historic Places (NRHP) lists the following districts or buildings found within West Ashley: St. Andrews Episcopal Church, Ashley River Road from Church Creek to SC 165, Drayton Hall, Magnolia Plantation and Gardens, and the Site of Old Charles Towne.

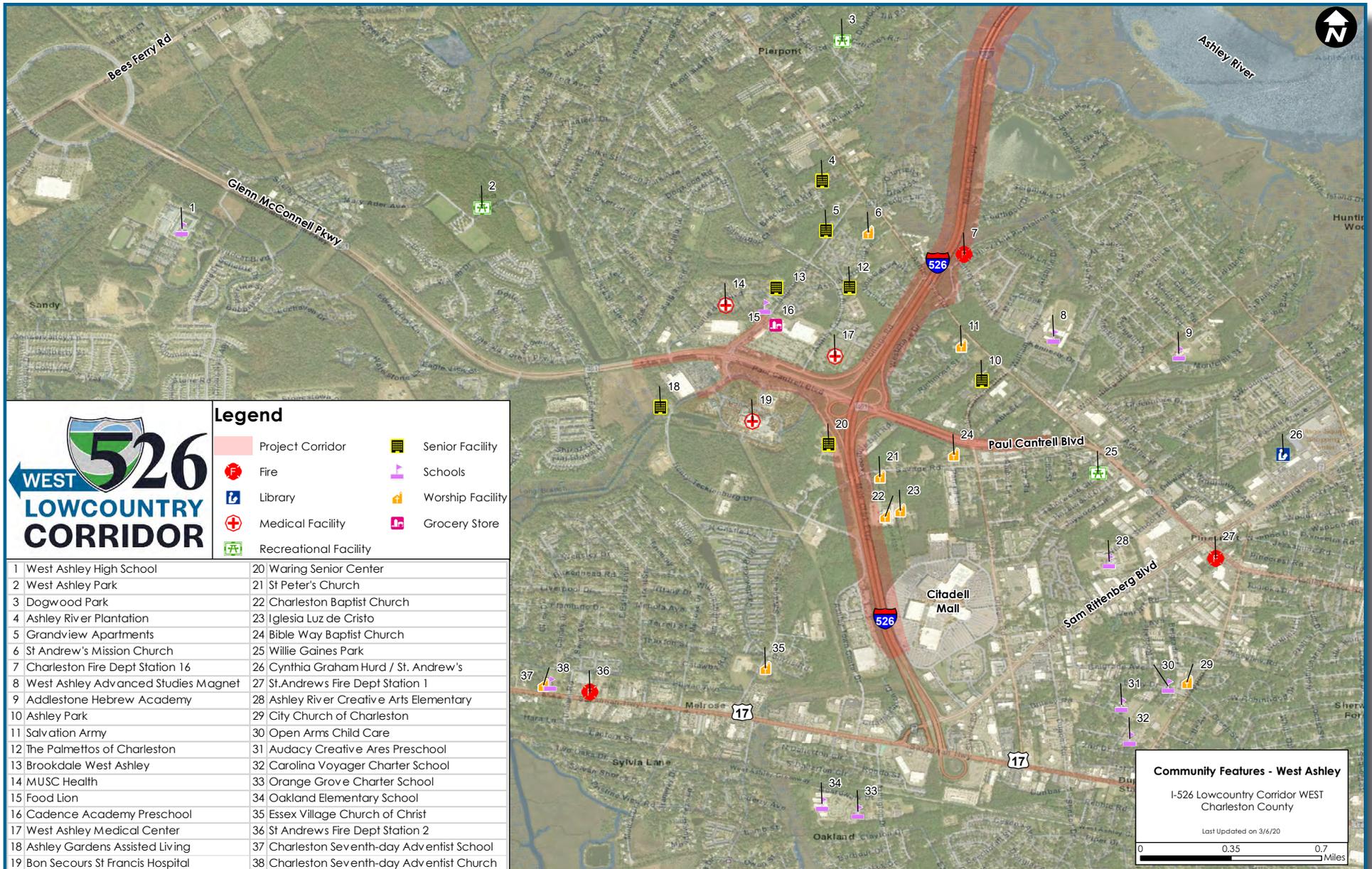


Figure 4.7 West Ashley Community Features

West Ashley Visual and Aesthetics

Although the majority of the study area includes residential neighborhoods and commercial facilities, there are some other natural and cultural resources along the I-526 corridor which make up the visual quality of the area. The southern end of the corridor has open views of the Ashley River and surrounding wetlands on both sides of the roadway. This resource increases the scenic integrity values along the I-526 corridor. The project goes through suburban and urban residential areas and several commercial districts.

Significant visual resources related to the cultural environment include historic structures, government facilities, and other notable buildings. Cultural environment visual resources include the Rivers Edge Marina, a dry storage facility with amenities, including a fuel dock, ship's store, captain's lounge, and picnic area. For more detail refer to Appendix E, Abbreviated Visual Impact Assessment (VIA).

West Ashley Environmental Justice Neighborhoods

There are small areas that would qualify as Environmental Justice (EJ) communities in West Ashley, see Section 4.5.

North Charleston

North Charleston Population

According to the United States Census, the population in North Charleston in 2018 was approximately 113,237 and the average household income is \$34,813.88. North Charleston's overall population has grown by almost 40 percent since 2000, but the African American population in the area has fallen by two percent during the same time period.

American Community Survey (ACS) 2016 data shows that 62 percent of the North Charleston population is minority. Compared to statewide and national averages of 36 percent and 39 percent respectively, North Charleston has a notably high minority population. North Charleston's low-income population comprises 46 percent of the total population. Comparatively, South Carolina's low-income population comprises 37 percent of total residents and nationally, low-income residents comprise 33 percent of the total population. As such, North Charleston has a notable low-income population. Detailed information on low-income and minority demographics in the impacted study area can be studied in Appendix D.

North Charleston Housing

Most houses in North Charleston were built 1980–2000, but an increasing number of houses are currently under construction or recently built. The City of North Charleston Housing Authority manages housing for families with Low to Moderate Income (less than \$33,000 for a family of four). Currently, there are not enough units to accommodate the demand. Approximately 20 percent of residents located in the Russelldale and Highland Terrace Communities rely upon the Section 8 housing program for assistance. The median home values across the CIA study area in North Charleston also vary. The lower end of the range is an average of \$21,400. With the higher end of the range over \$1 million. Gentrification appears to be a main factor as **the increased home values and new construction** trend continues to move west of the Cooper River. Figure 4.8 shows North Charleston home values.

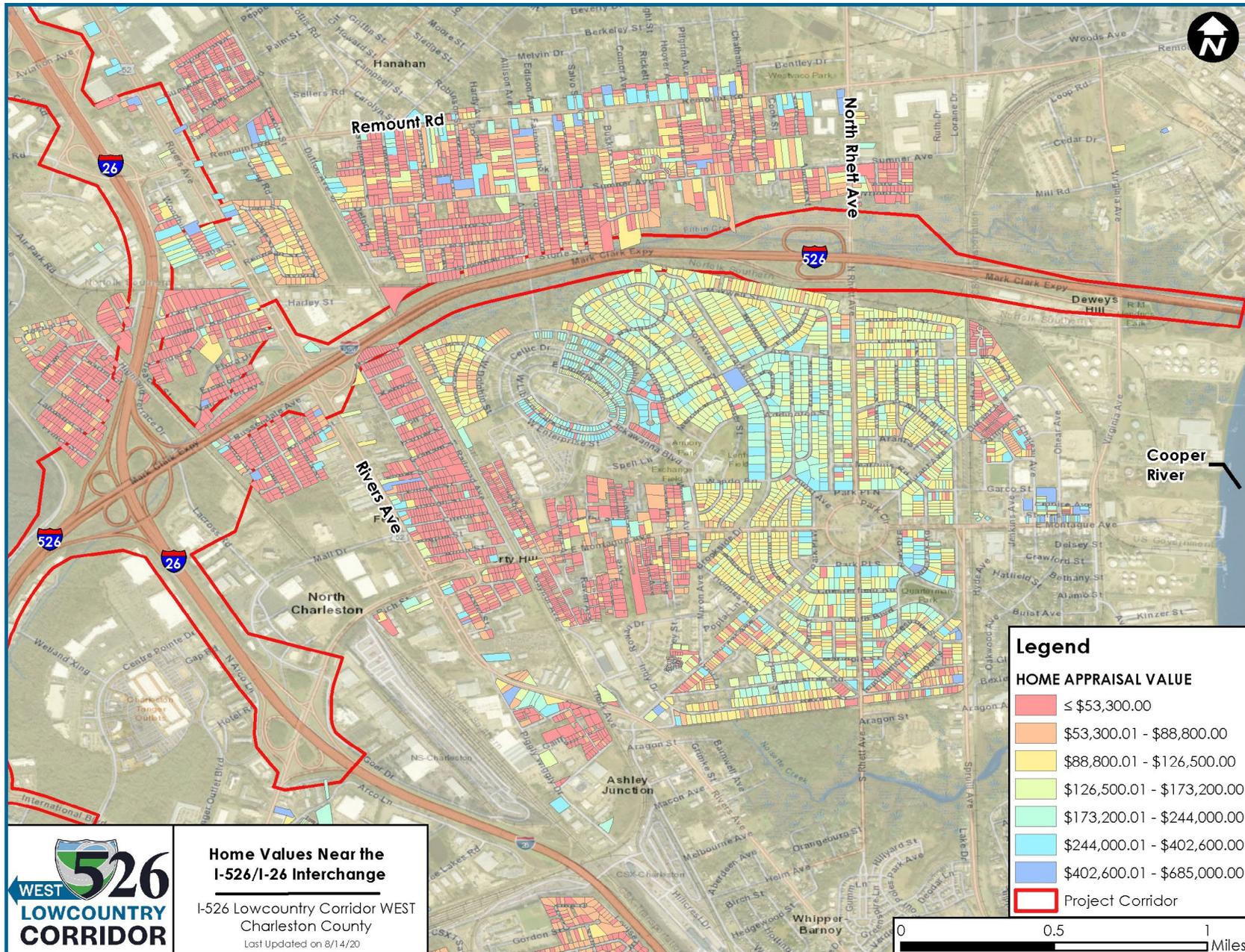


Figure 4.8 North Charleston Home Values

North Charleston Community Services and Facilities

The library system in this area is operated by the Charleston County Public Library. These branches include the Otranto Regional Library and the Cooper River Memorial Library. The R. Keith Summey North Charleston Library is planned to replace the Cooper River Memorial Library located at the corner of Rivers Avenue and Dorchester Road. Its opening date has not been announced.

Healthcare in North Charleston is provided by many private practices including Trident Medical Center and MUSC Health. Both medical facilities are in the northern region of North Charleston. Emergency services are provided by the North Charleston Fire Department, Charleston County Sheriff, and the Charleston Volunteer Rescue Squad. In total, there are approximately five EMS Medic locations, 15 Charleston County Fire Stations, and ten police departments throughout North Charleston.

Public schools located in North Charleston are part of Charleston County's District Four. There are 17 elementary schools, five middle schools, one high school and two charter schools with the majority located near the southern portion of the city. There are also five universities or colleges.

There are many religious institutions located in North Charleston, including churches, with approximately 33 that serve the neighborhoods within the CIA study area.

There are also 21 community center facilities throughout North Charleston.⁴ These centers are run by the city and provide nearby communities with facilities such as basketball courts, event rooms for renting, playgrounds, picnic areas, and bathrooms. The different community centers allow distinct neighborhoods to have a place for community gathering.

Section 8 is a federally funded rental assistance program that pays private landlords the difference between what a low-income household can afford and the fair market rent.

North Charleston has numerous places of historic and archaeological importance due to the area's rich history and national importance as a port. Among many others, the NRHP lists the following districts or buildings found within North Charleston: General Asbestos & Rubber Company, Charleston Navy Yard Officers' Quarters, Charleston Navy Yard Historic District, Charleston Naval Hospital, and the Ashley River Historic District.

North Charleston Visual and Aesthetics

While the majority of the study area includes residential neighborhoods and commercial facilities, there are some other natural and cultural resources along the I-526 corridor which make up the visual quality of the area. Moving north from Paul Cantrell Boulevard across the Ashley River transitions from suburban to urban in nature, with both residential and commercial uses along the route.

Roadway geometrics are flat and curvilinear to the west of the Ashley River, while the interstate is raised above the landscape from I-26 to Virginia Avenue. The roadway includes bridging at Bull Creek, the Ashley River, Paramount Drive, Dorchester Road, Montague Avenue, International Boulevard, and I-26. The roadway provides an unobstructed view of the river in the vicinity of the crossing. The immediate vegetation surrounding the highway consists of landscaped grasses and wooded areas, except in the vicinity of the Ashley River where estuarine and marine wetland areas are present. Throughout the corridor, highway structures include multiple overpasses and underpasses, five railroad bridge crossings, one river bridge crossing, and eight interchanges which add to the visual character of the project's highway environment. For more detail, see Appendix E - Abbreviated Visual Impact Assessment (VIA).

4 North Charleston, City of. 2015. North Charleston Comprehensive Plan Review: Chapter 7 – Community Facilities. <https://northcharleston.org/wp-content/uploads/Ordinance-2016-031-Chapter-7-Community-Facilities.pdf>. Web accessed: 1/21/2020.

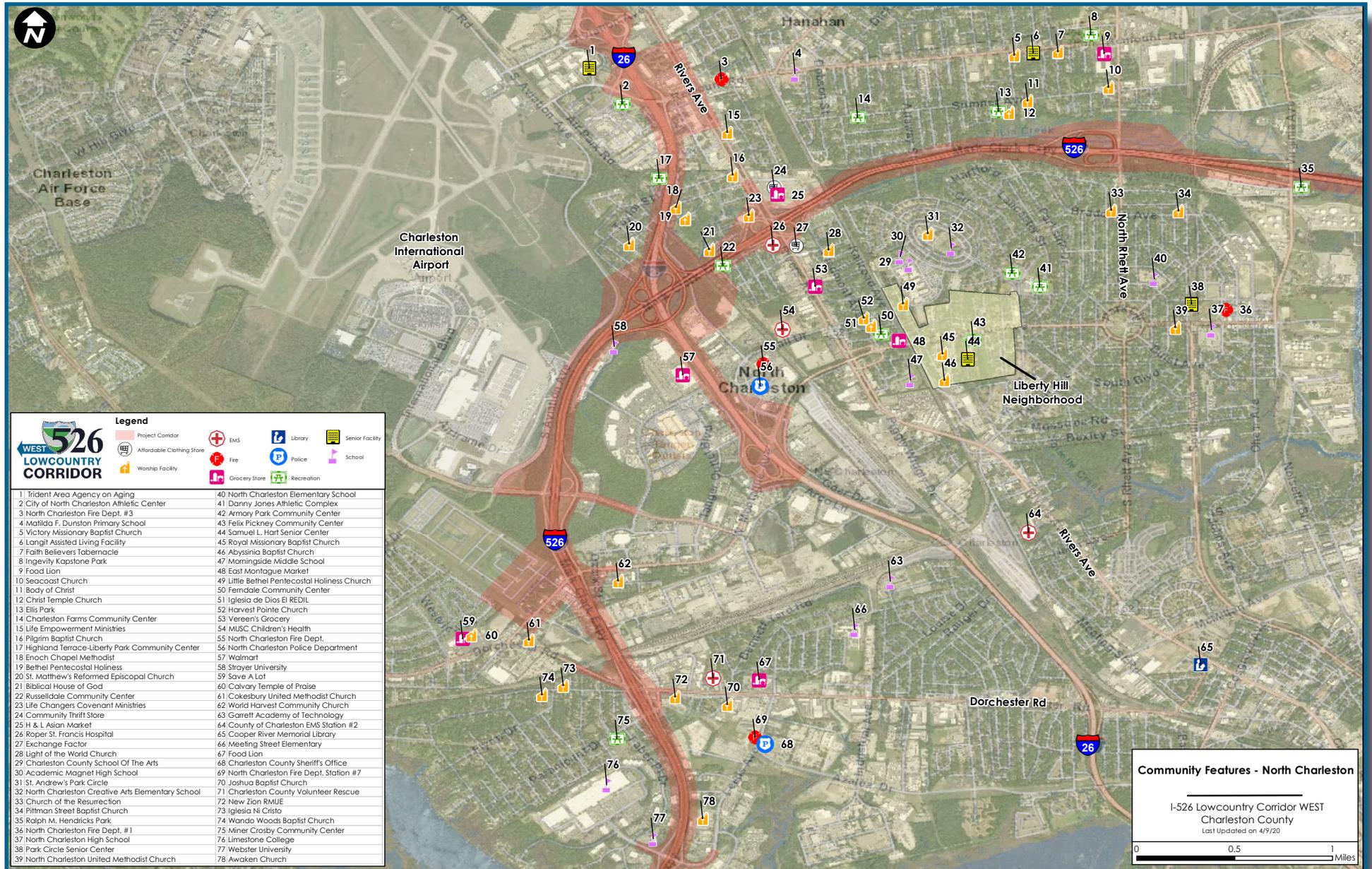


Figure 4.9 North Charleston Community Features

North Charleston Environmental Justice Neighborhoods

There are four areas in North Charleston that are considered Environmental Justice (EJ) communities, including Russelldale, Highland Terrace, Liberty Park, and Ferndale. In addition, Charleston Farms, Wando Woods, and Camps are also considered EJ areas. EJ communities are discussed in Section 4.5. **Appendix G, the EJ Analysis**, also contains additional information about population, housing, and community services and facilities for these neighborhoods.

North Charleston has many parks and facilities for recreation. Neighborhood parks in the CIA study area include the following: Riverfront Park, Collins Park, Danny Jones Athletic Complex, Armory Park, Ellis Park, Ingevity Kapstone Park, Quarterman Park, and Ralph M. Hendricks Park.

4.3.4.3 Other Special Populations

Disabled Individuals

The definition of disability varies; however, it is generally used to describe conditions that affect an individual's interaction with their environment. A disability may include a physical disability but can also include barriers that prohibit movement and social interaction. As such, the goals of programs supporting disabled persons emphasize actions that promote independence and social involvement.⁵ Census disability questions focus on the following six themes: hearing, seeing, cognitive abilities, ambulatory ability (walking/climbing stairs); self-care, and independent living. Table 4.3 shows estimates of disabled persons at the national, state, and county level. Charleston County's disabled population percentage is below state and national averages.

Table 4.3 Population of Disabled Persons

Geographic Area	Total Population with a Disability	Disabled Persons as a Percent of the Total Population
United States	39,272,529	12.5 %
South Carolina	691,835	14.6 %
Charleston County	40,958	11.0 %

SOURCE: U.S. Census Bureau 2012-2016 American Community Survey 5-Year Estimates

NOTE: Disability data is not available for recent ACS datasets

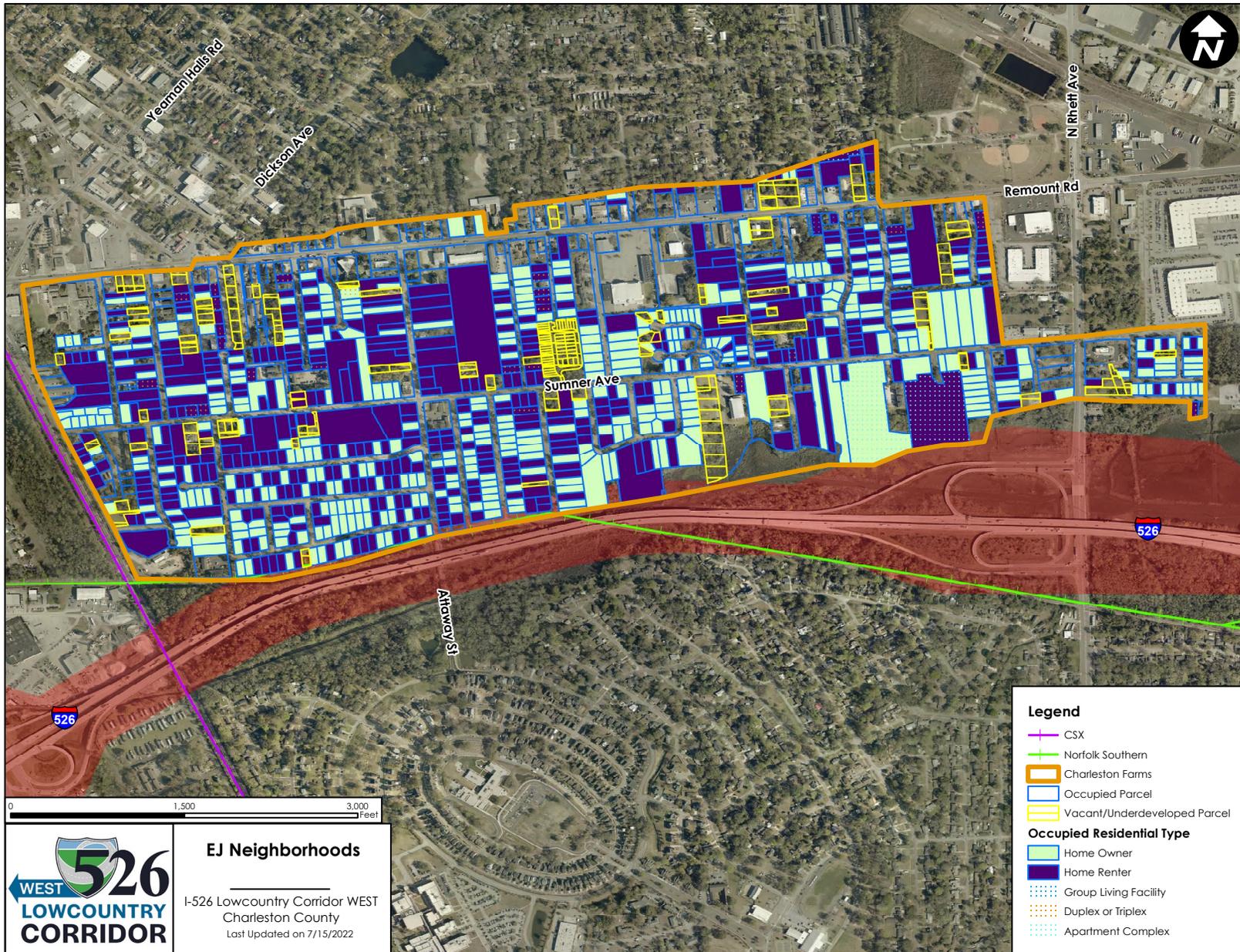
There are several state and county programs in North Charleston providing services and support for disabled persons. None of these facilities are located within the CIA study area and the proposed project is not proposing to relocate or otherwise adversely affect any facilities that provide services for the disabled.

Elderly Individuals

Within the CIA study area, elderly populations vary widely. In the West Ashley portion of the CIA study area, there are three assisted living centers, which contribute to the high percentage of elderly. The Palmettos of Charleston is located west of I-526, just north of Paul Cantrell Boulevard on Ashley Crossing Drive. Brookdale West Ashley is located just west of The Palmettos on Charlie Hall Boulevard. Ashley River Plantation is located along Ashley River Road to the north of Brookdale West Ashley. None of these facilities are adjacent to or within proximity to the project corridor.

In North Charleston, the highest percentage of residents over 65 years of age (26 percent) is within the neighborhoods of Wando Woods, Oak Park, Cameron Terrace, Palmetto Gardens, Singing Pines, Boland Park, Fair Haven Trailer Park, and the southern portion of Liberty Park.

5 <https://www.census.gov/topics/health/disability/about.html>



Note: Home owner and renter status were determined by comparing physical addresses with mailing addresses from Charleston County parcel data

Figure 4.10a EJ Neighborhoods - Charleston Farms

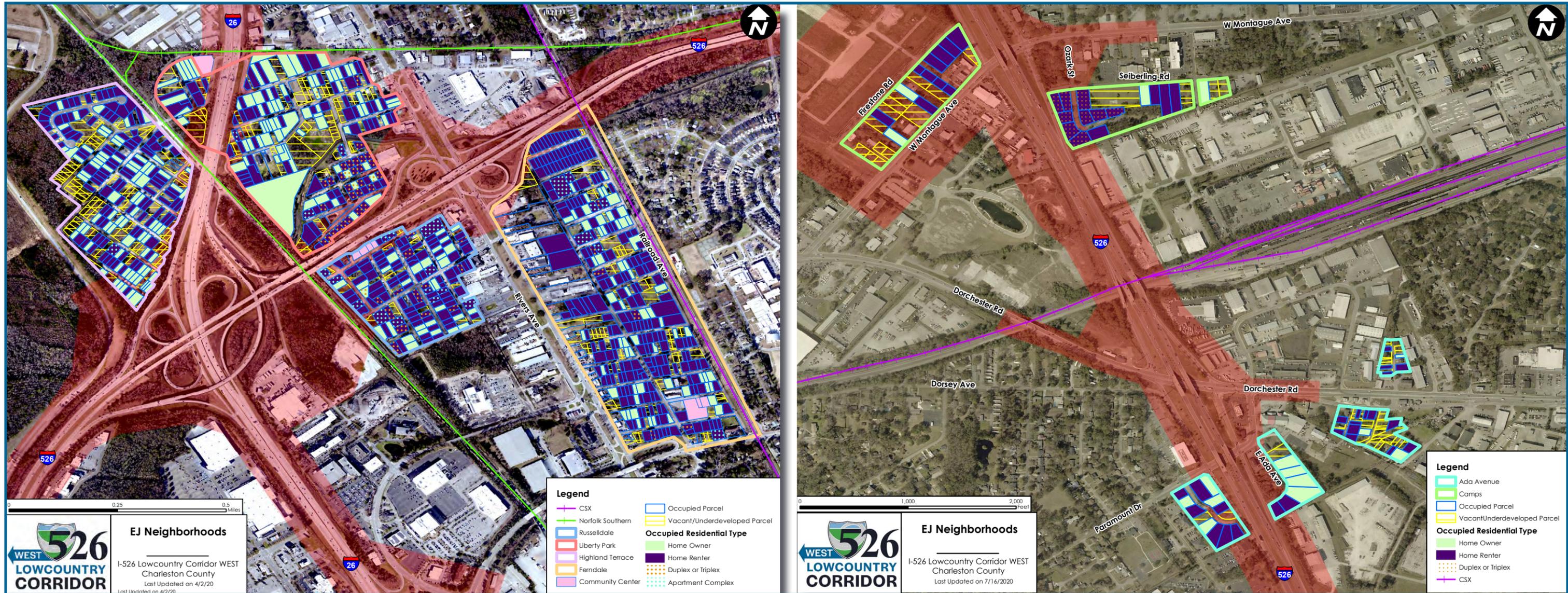


Figure 4.10b EJ Neighborhoods - Russelldale, Liberty Park, Highland Terrace, Ferndale and Ada Avenue, Camps

Per SCDOT’s guidance, home owner and renter status were determined by comparing physical addresses with mailing addresses from Charleston County parcel data. Using the Census Bureau’s American Community Survey (ACS) 5-year 2017 summary estimates, the home owner and renter numbers below were compared to block group and block data for confirmation.

Neighborhood	Owner Occupied (DEIS)	Renter Occupied (DEIS)	Owner Occupied (FEIS)	Renter Occupied (FEIS)
Russelldale	21 %	79 %	27%	73%
Highland Terrace	39 %	61 %	17%	83%
Liberty Park	46 %	54 %	58%	42%
Ferndale	31 %	69 %	27%	73%
Camps	22 %	77 %	17%	83%
West/East Ada	47 %	53 %	87%	13%
Charleston Farms & Seepport Townhomes	—	—	30%	70%
Average Overall	34 %	66 %	38%	62%

No planned active-adult (55+) neighborhoods are located along the project corridor. The Trident Area Agency on Aging is located on the west side of I-26 on the north side of Remount Road. This organization provides guidance related to caregiving for seniors and resources to support independent living. This facility is not adjacent to nor within proximity to the project corridor.

Limited English Proficiency Populations

Executive Order 13166 “Improving Access to Services for Persons with Limited English Proficiency” (LEP) requires all recipients of federal funds to provide meaningful access to persons who are LEP. The US Department of Justice defines LEP individuals as those “who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English” (67 FR 41459).

The Department of Justice’s “Safe Harbor” LEP threshold is met when either 1,000 adults or five percent of the CIA study area population speak English “less than very well” as documented by Census Bureau survey results. 2013-2017 ACS data was evaluated to determine if the number of LEP individuals within the CIA study area would exceed the LEP Safe Harbor threshold. There are nine block groups with LEP populations exceeding five percent of the total block group population. When the number of LEP individuals are tallied in those block groups, the total is 1,886 which meets the 1,000 Safe Harbor Threshold (in this instance for Spanish-speaking populations) and necessitates additional actions to ensure that all members of the public are provided with an equitable opportunity to participate in public outreach and engagement. The project team has intentionally provided outreach and engagement opportunities to the LEP population, whose primary speaking language within the EJ communities is Spanish. Details on LEP engagement efforts can be further studied in the EJ Analysis and the EJ Outreach Strategy, located in Appendix G and X, respectively.

Spanish-versions of all public meeting materials are developed for the duration of the public engagement process and Spanish translation services are provided at all public informational meetings.

Written translations of public involvement documents will be provided for Limited English Proficiency populations, as well as other measures determined by SCDOT to ensure meaningful access to project information during construction. Efforts will be made to ensure meaningful opportunities for public participation during construction. Additional meetings will be held when warranted to address community concerns.

4.3.5 Transportation Equity

Properly designed transportation systems can provide exercise opportunities, improve safety, lower emotional stress, link poor people to opportunity, connect isolated older adults and people with disabilities to crucial services and social supports, and stimulate economic development and create transportation systems that benefit everyone.⁶ To ensure that systems are designed with all populations in mind, a project is assessed for transportation equity.

Transportation equity practices support the goals of NEPA as well as Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations and the Americans with Disabilities Act (ADA). Transportation equity strives to address systemic, structural inequities, such as segregation, discrimination, automobile dependency, and tolling and the effects they have on an individual due to race, ethnicity,

6 Healthy, Equitable Transportation Policy Recommendations and Research. PolicyLink. <https://www.policylink.org/resources-tools/healthy-equitable-transportation-policy-recommendations-and-research>

income, ability, gender, age, and/or place of residence⁷ by assessing whether the benefits and burdens created by transportation policies, plans, and projects are equally distributed, so that no one group is unduly burdened or receives less benefit than others.

Transportation equity also ensures an inclusive public participation process that listens to participants, overcomes barriers to engagement, and conveys to under served/underrepresented populations (for example, low-income, minority, seniors, disabled persons, and rural residents) that their voices are being heard and fairly considered in the decision-making process. Transportation equity goals are focused on developing multimodal transportation systems that are affordable, sustainable, convenient, efficient, safe, and accessible to all populations within an inclusive decision-making process that responds to the needs of under served and underrepresented populations.

Transportation equity addresses inequities in the transportation system itself and promotes social equity through improved means of transportation.

The proposed project encompasses a number of transportation equity goals and objectives, including:

- An inclusive, community-driven project development process that engages under served/underrepresented populations through a wide range of high-touch/low-touch engagement strategies (see EJ Outreach Plan, Appendix X).
- An Environmental Justice Community Mitigation Plan (Appendix H) was developed in coordination with a Community Advisory Council to address the needs of the community as identified through a social needs assessment survey (including the mitigation of cumulative effects associated with the proposed project and mitigation that helps increase access to social and economic opportunities).
- Incorporation of project elements and mitigation measures that support active transportation and increase accessibility through alternate modes of transportation (i.e., improved pedestrian connectivity and better access to transit on Rivers Avenue and improved bike route connectivity through the development of a multi-use path).
- Project elements and mitigation measures that provide benefits to under served/underrepresented populations such as elderly and disabled populations by enhancing multimodal transportation options that provide a sense of independence and reduce travel costs.⁸

There is also a social equity aspect to congestion management as it affects travel costs, commute times, housing, and accessibility; however, in general congestion management favors people who most often drive on congested roads over people who seldom or never use such facilities. According to 2018 American Community Survey data, 94 percent of employed North Charleston residents drive to work with an average commute time of 28.5 minutes, with many residents utilizing main interstates such as I-526 or I-26. As such, there is an overarching benefit from congestion management that extends to all users, including under served/underrepresented populations, by improving travel costs, commute times, and access to educational and employment centers. For more information on how impacts to low-income and minority residents were evaluated, see Section 4.5.

⁷ Advancing Transportation Equity: Research and Practice Final Report. Center for Transportation Studies University of Minnesota. February 2019. <https://www.dot.state.mn.us/planning/program/advancing-transportation-equity/pdf/CTS-percentage2019-08.pdf>

⁸ Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transportation Planning. Victoria Transport Policy Institute. June 5, 2020. <https://www.vtpi.org/equity.pdf>

4.3.6 What are the Potential Environmental Consequences to Communities?

4.3.6.1 How would the No-Build Alternative Impact Communities?

Heavy interstate-to-interstate congestion resulting from the No-Build Alternative is projected to cause increased traffic on Rivers Avenue. This increased traffic congestion would result in increased travel delays for area residents and a reduction in mobility for alternative modes of transportation. Higher levels of congestion on Rivers Avenue in the No-Build Alternative result in fewer opportunities for pedestrians and bicyclists to cross and to access transit. Higher congestion on Rivers Avenue would also result in increased delays for local transit.

Expected increases in freight rail activity will compound congestion on Rivers Avenue and will impact the interstate- to-interstate traffic movements.

As noted previously, the study area is currently experiencing a loss of affordable housing, a trend anticipated to continue under the No-Build Alternative. For more detailed information, refer to the CIA in Appendix D.

4.3.6.2 How would the Recommended Preferred Alternative Impact Communities?

The proposed project would reduce congestion and improve mobility along the project corridor through the construction of additional travel lanes, provide wider shoulders to allow vehicles involved in crashes to be moved out of travel lanes, and provide an improved interchange between I-26 and I-526.

Capacity improvements and improved travel times would result in the potential to expand markets for commercial businesses in the Charleston area and help improve productivity and competitiveness for production-related businesses. Improved travel times can also create other economic benefits such as reduced vehicle operating costs from less stress on vehicles due to traffic.

Construction of the proposed project would temporarily affect the traveling public and those living along the project corridor. In general, construction of the proposed project would have minor, temporary effects on emergency response times due to possible delays caused by construction and traffic related to construction. Upon completion, the proposed project would aid in the reduction of emergency response times within portions of the project study area and vicinity.

West Ashley

Impacts to West Ashley Community Cohesion

Transportation projects can impact community cohesion by bisecting neighborhoods and/or isolating a portion of a neighborhood. Other affects include the subsequent generation of new development, property value changes, or creating barriers that separate residents from community facilities. Original construction of the West Ashley portion of I-526 preceded development in that area and as such, instead of potential neighborhood bisection, development accommodated the I-526 corridor and grew around the freeway.

The term community cohesion is used to describe the social connections within a community.

The CIA, Appendix D, explains that there is a high number of renters within the CIA study area neighborhoods, largely due to the high cost of homeownership. The ratio of renters to homeowners can sometimes indicate less cohesion as there is a transience to renting that could preclude making strong ties with neighbors. However, many long-time renters would likely feel similar levels of cohesion as homeowners given their time living in the neighborhood.

There is a mix of apartments, townhomes, mobile homes, and single-family homes in the West Ashley community. Community cohesion is likely to be higher in owner-occupied homes and townhomes. The proposed project would relocate **townhomes and a single-family home. Potential relocations are discussed in detail in Section 4.6.** Given the relatively small number of relocations in comparison to the size of the affected neighborhoods, no adverse effects on community cohesion are anticipated in the West Ashley area.

West Ashley Visual and Aesthetic Impacts

An Abbreviated Visual Impact Assessment (VIA) was completed for the proposed project **to analyze how the project will impact existing viewsheds, landscapes, and aesthetic resources. Additional details can be reviewed in Appendix E.** The visual and aesthetic character of the West Ashley neighborhoods within the CIA study area would not be directly altered by the **Recommended Preferred Alternative.** A flyover ramp into the median is proposed at Glenn McConnell Parkway, which will result in several new retaining walls. However, the proposed improvements are not anticipated to provide notable changes to the visual setting of the project area as the corridor was in place prior to most development in the area and is being widened versus new location construction. There are no preserved park lands and open spaces where the proposed project would create incompatible visual effects. Temporary visual impacts, in the form of construction equipment along the project corridor, may occur during project construction but would be short-term in nature.

Noise walls are preliminarily recommended in neighborhoods such as Marsh Cove, **Ashley Harbor,** and various apartment complexes along I-526 in West Ashley. The noise walls would alter views of the road from the impacted receptors, but this change would not be a departure from the character of the highly developed and urbanized project setting.

West Ashley Environmental Justice Neighborhoods

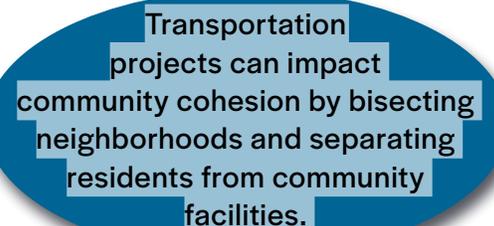
While there are small areas that would qualify as Environmental Justice (EJ) communities in West Ashley, there are no areas within the CIA study area that would be affected by direct, indirect, or cumulative effects associated with the proposed project. For more detail, see Section 4.5 Environmental Justice Analysis.

For more detailed information about potential community impacts please refer to the CIA in Appendix D.

North Charleston

North Charleston Community Cohesion

Community cohesion impacts are anticipated in North Charleston, primarily within the Highland Terrace, Liberty Park, Ferndale, and Russelldale neighborhoods, due to past transportation project related impacts and impacts that are anticipated to arise from the proximity to the I-526 LCC WEST improvements. These neighborhoods have been identified as Environmental Justice (EJ) neighborhoods.



Transportation projects can impact community cohesion by bisecting neighborhoods and separating residents from community facilities.

The original construction of I-526 and I-26 bisected these EJ neighborhoods, thereby adversely affecting existing community cohesion. In addition, potential future adverse community cohesion effects are associated with the possible rezoning of the EJ neighborhoods to “Mixed-Use” as reported by the City of North Charleston and indicated in Figure 4.2. The original construction and zoning impacts are further discussed in Section 4.5, EJ Analysis.

Although there are a high number of renters within the CIA study area neighborhoods, which usually indicates increased transience and decreased cohesion, many residents are long-term renters who likely feel a sense of community given the multi-generational families that continue to live in the area. Furthermore, there are long-time renters who participate on the I-526 LCC WEST CAC, indicating a clear desire to invest in their community.

There is a mix of apartments, duplexes, triplexes, mobile homes, and single-family homes in the North Charleston community. The proposed project would relocate approximately 149 owner and renter occupied residences, as well as two existing community centers in North Charleston. Because these centers are used for community programs such as after-school care and summer camp, community cohesion will be negatively impacted. The availability of land and a small offset from I-526 in the North Charleston area are other contributing factors to the high number of relocations in the area surrounding the I-526 and I-26 interchange. Adverse effects on community cohesion are anticipated within this area given the high number of relocations, specifically within the EJ neighborhoods. Potential relocations are discussed in detail in Section 4.6.

With the exception of the effects on the impacted North Charleston EJ neighborhoods, which are further explored in Section 4.5, the Recommended Preferred Alternative would not affect community cohesion in the greater North Charleston area.

North Charleston Visual and Aesthetic Impacts

As the Abbreviated VIA in Appendix E concludes, the visual and aesthetic character of many of the North Charleston neighborhoods within the CIA study area would not be directly altered by the Recommended Preferred Alternative.

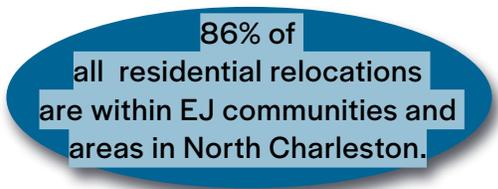
The design of the highway generally follows the existing grade, however, in some areas there will be minor grade changes and braided ramps, which will not create substantial visual changes. The widening of the highway and creation of collector-distributor roads would result in a minor change in the visual experience for motorists and residents due to additional pavement. Most of the bridges over the highway and the interchanges along the corridor are proposed to be reconstructed at approximately the same heights of existing structures minimizing changes to the existing visual character.

Short-term impacts for all users of the project corridor during construction of the project would include an increase in roadway congestion in and around the area, the presence of large equipment, dust from construction, and general disruption to the surrounding neighborhoods and businesses. These short-term impacts would have a temporary visual effect to the North Charleston community. Long-term impacts include relocation of businesses and residences; new interchanges; increased right-of-way; and changes to the surrounding landscape through the presence of new ramps and modifications to existing overpasses, bridges, retaining walls, medians, as well as from alterations to the existing roadway grade. The neighborhoods within close proximity to the interstate corridors would experience a low level of permanent visual changes to the existing environment but the changes would not be substantial because the existing road already sits above many of the affected communities. The Highland Terrace-Liberty Park Community Center is in the Area of Visual Effect (AVE) and would be impacted by the proposed project, but the visual change would be minimal as existing I-26 is already visible from the area. There are no preserved park lands or open spaces where the proposed project would create incompatible visual effects.

Noise walls are recommended for Area 11: Centre Pointe Apartments. While the noise walls would alter views of the road from the impacted noise receptors this change would not be a departure from the character of the highly developed and urbanized project setting. Additional details on the noise impacts and noise walls are described in Appendix K.

North Charleston EJ Communities

There are eight residential areas within the North Charleston CIA study area that qualify as EJ communities, all of which are anticipated to be affected by direct, indirect, or cumulative effects associated with the proposed project. Four of these neighborhoods will likely face substantial impacts with the implementation of the project due to their close proximity to the I-526 and I-26 interchange. These neighborhoods include Russelldale, Highland Terrace, Liberty Park, and Ferndale. For more information on impacts to these neighborhoods, see Section 4.5, the EJ Analysis.



86% of
all residential relocations
are within EJ communities and
areas in North Charleston.

Refer to Appendix D for more detailed information about potential community impacts.

4.3.7 What are the Indirect Effects on Communities?

Indirect and cumulative effects of the project were analyzed using an eight-step framework created for transportation projects (NCHRP 2002). An indirect and cumulative effects (ICE) study area is established as the first step. Through the next three steps, the ICE study area is defined and described and then impact causing activities are identified. For steps five through seven, the indirect effects along with the reasonably foreseeable actions are identified and analyzed. The final step involves an assessment of consequences and the development of mitigation strategies. Additional details can be found in the Indirect and Cumulative Effects Assessment, Appendix F.

Indirect community impacts from transportation projects are typically associated with land use changes that occur as a result of a project. Neighborhoods within close proximity of the I-526 and I-26 corridors would experience land use changes associated with the displacement of single-family homes, apartments, mobile homes, a church, and community centers. Additional information on land use changes and relocations can be reviewed in Section 4.5 and 4.6. In other cases, transportation projects may create land use changes farther from the project corridor by providing additional capacity that results in shorter commutes from surrounding areas. The improved mobility associated with the proposed improvements would not create indirect land use effects across the broader region as growth and development will continue to occur regardless of the proposed project. Regional population growth and development trends, pro-growth policies, and the availability of water, sewer, schools, and other infrastructure, indicate that growth and development will continue to occur in the broader Charleston region regardless of the proposed project.

Since the project corridor and vicinity are already developed, land use changes along the project corridor and vicinity are occurring as part of city-led development and local planning initiatives rather than induced land use changes associated with the proposed project. A GIS analysis was conducted to quantify the amount of undeveloped land within the ICE study area. The analysis considered land use information including parcel data, neighborhood boundaries, surface waters, transportation rights-of-way, environmentally sensitive areas, and protected areas; and verified land uses with aerial photography. Land was classified as not available for development if it contained: land already built-up, development currently under construction, in the current roadway right-of-way, environmentally sensitive areas, protected areas, or containing open water. The ICE study area encompasses 27,147 acres of land. Of this total, 26,207 acres (97 percent) are categorized as developed, and 940 acres (three percent) are

classified as available. It is anticipated the small amount of available land remaining in the ICE study area will be developed in both the no-build and build scenarios, regardless of the proposed project. Additional information on available land is contained in the Indirect and Cumulative Effects Assessment, Appendix F.

The proposed modification of the Paul Cantrell Boulevard/Magwood Drive intersection and upgrades to existing interchanges would create travel pattern changes for those accessing I-526 or adjacent roadways. **The Recommended Preferred Alternative** proposes access management modifications at I-26 and West Montague Avenue. Changes in travel patterns and access in West Ashley include the modification of the I-526/Paul Cantrell Boulevard interchange. These modifications include a new bridge carrying westbound lanes of Paul Cantrell Boulevard over Magwood Drive and widening of the I-526 westbound exit ramp to accommodate the new bridge bypassing the Magwood Drive intersection. These changes in access and circulation patterns are anticipated to decrease travel time.

In addition, these changes would result in an increase in traffic noise levels in 40 of the 49 Noise Study Areas. Details on impact causing activities and associated indirect effects, including traffic noise levels, are included in Appendix F.

4.3.8 What are the Cumulative Effects on Communities?

The cumulative effects of the project were analyzed in the Indirect and Cumulative Effects Assessment found in Appendix F.

The original construction of I-526 in the 1980's resulted in the bisection of neighborhoods that caused disruption of community cohesion within the CIA study area. The interstate corridor created a physical barrier between homes and community resources, which effectively disrupted existing community cohesion. Additional cumulative effects to communities along the I-526 corridor are anticipated with the potential displacement of approximately 156 residences with additional impacts anticipated due to other future roadway projects currently programmed in the area. Most of these residential displacements are located in North Charleston due to the predominantly commercial nature of land use along the West Ashley portion of the project corridor. In addition, since most development in West Ashley occurred after I-526 was first constructed, a greater undeveloped buffer exists along the interstate corridor in the West Ashley area.

The original construction of I-526 and I-26 through the North Charleston EJ communities and construction and subsequent expansion of the Charleston International Airport, generated a substantial increase in highway and air traffic noise.

Following the original construction of I-526 and I-26, the expansion of the Charleston Airport in 2005 further reduced the amount of affordable housing in the area. Combined with industrial growth in North Charleston and surrounding areas, prior and present growth patterns reduce the amount of available land, and availability of affordable housing. Furthermore, feedback from the I-526 LCC WEST CAC has indicated that residents displaced or encroached upon by the previous I-26 project felt that they were not compensated fairly or justly, which has contributed to diminished economic vitality.⁹

The proposed improvements would result in an increase in traffic noise levels in 40 of the 49 Noise Study Areas (NSAs). The increase in sound levels as a result of the proposed improvements is not substantial, and in some cases the proposed improvements result in a decrease in sound levels due to parapets on elevated sections.

9 Community Advisory Council Meeting No. 4, Meeting Minutes. January 4, 2020.

Many locations in the project study area are currently above Noise Abatement Criteria (NAC). As Charleston and the surrounding areas have increasingly developed, traffic levels and infill development has increased, resulting in an additional increase in noise levels in the communities. The proposed improvements in combination with future projects will contribute to the cumulative noise levels in these communities. Refer to Sections 4.1.5.1, 4.1.5.2, and Appendix F for more details on future development and programmed projects. Refer to Appendix K for the Detailed Noise Analysis and further information on traffic noise level impacts.

The EJ neighborhoods of Russelldale, Liberty Park, Highland Terrace, and Ferndale are likely to be most directly affected by the project due to their proximity to the existing interstate corridor. The same is true for anticipated adverse cumulative effects such as barriers to community cohesion, exposure to environmental pollutants, and other impacts related to past and present transportation projects as described in Section 4.5. Additional details on all cumulative effects can be found in Appendix F.

4.3.9 How will the Community Impacts be Avoided, Minimized, and Mitigated?

As discussed in Section 4.3.6, the Recommended Preferred Alternative would result in direct, indirect, and cumulative impacts to the communities adjacent to the project corridor. These impacts are specific to each individual community and tied to the transportation improvement in that particular segment of the project. The transportation decision-making process takes a three-step approach to addressing project impacts: avoidance, minimization, and mitigation.

- **Avoidance:** The first step in the alternatives development process is to develop build alternatives and work through avoidance and minimization efforts prior to finalizing impacts and mitigative measures. As noted in Sections 3.5.1 through 3.5.6, a range of avoidance alternatives were evaluated. With the exception of Existing Corridor Improvements (discussed in Section 3.5.7), these avoidance alternatives would not reduce congestion along the project corridor and would not fulfill the purpose of and need for the proposed project.
- **Minimization:** After thorough evaluation of all potential avoidance alternatives, design studies focus on minimizing impacts associated with viable alternatives that meet the project purpose and need. These efforts include alignment shifts and other design refinements, adjusting fill slopes where possible, and the use of retaining walls. With minimization, however, it is important to consider any future right-of-way needs associated with bridge and roadway maintenance to avoid the potential for future relocations or major encroachments.

In the West Ashley area, construction of I-526 preceded residential and commercial development and as such, development grew around the freeway. This sequence of events and I-526's wider right-of-way in the West Ashley area helped minimize the impacts associated with the proposed improvements.

- **Mitigation:** As discussed in Section 4.3.6, community impacts would be felt predominantly in the North Charleston area within the immediate vicinity of the I-526 and I-26 interchange. This area includes the EJ neighborhoods of Russelldale, Highland Terrace, Liberty Park, and Ferndale. Impacts to these neighborhoods and other EJ areas, as well as measures to avoid, minimize, and mitigate impacts are discussed in Section 4.5.8. Community impacts across the rest of the project corridor are not to a degree that require mitigation beyond noise abatement (i.e., noise walls) where determined to be feasible and reasonable, and relocation assistance for the anticipated displacements. To address noise concerns, SCDOT requires that feasible and reasonable measures be considered and evaluated to abate all predicted Build condition traffic noise impacts. Feasibility and reasonableness are distinct and separate considerations. Feasibility is the consideration as to whether noise abatement measures can be implemented. Reasonableness is the consideration as to whether noise abatement measures should be implemented. See Section 9.1 of Appendix K for additional details.

4.4 Socioeconomics

As noted in Section 4.3, NEPA specifically requires the consideration of social and economic impacts to ensure that potential effects to people and communities are integrated into the decision-making process of the proposed project. The economic factors anticipated to result from the construction of this project include government finances; economic output, involving employment and income; and the impacts on the local economy, including business access. These items are discussed below.

4.4.1 What is the Business Community Profile in the CIA Study Area?

4.4.1.1 West Ashley

West of the Ashley River, the project corridor travels through residential development to the southern terminus at Paul Cantrell Boulevard. There is some commercial development on the north side of I-526 including a shopping center with a Kohl's, Food Lion, Joann Fabrics, and several fast food restaurants. The West Ashley Medical Center and NHC Healthcare Rehabilitation Center are also located in this area.

4.4.1.2 North Charleston

In the North Charleston portion of the CIA study area, I-526 traverses industrial, residential, and commercial land uses. At the Cooper River, the project corridor is initially flanked on both sides by port-related facilities and industrial uses. Traveling westward, the project corridor is surrounded by residential development, except for the Rivers Avenue commercial corridor. Rivers Avenue is a typical commercial corridor with a large amount of strip development containing restaurants, retail, and services. Commercial uses extend west from Rivers Avenue across I-26 north of I-526 via Remount Avenue, but also include several manufacturing companies such as Miller Signs and Warren Fastenings South, as well as auto and hydraulic repair services such as Fenix Automotive and Hydradyne. This area also includes several shipping and supply services, likely located here to be near freight, air, and port distribution avenues.

Between I-26 and International Boulevard, businesses along the project corridor are primarily retail, restaurants, and entertainment-related. This portion of the CIA study area includes Tanger Outlets, the Charleston Area Convention Center, North Charleston Coliseum and Performing Arts Center, and many restaurants and hotels.

Farther west and south, commercial uses are present between West Montague Avenue and Dorchester Road. These businesses include several building material suppliers and a trucking company.

Businesses surrounding the I-526 interchange with Leeds Avenue area are largely office and service related, including Aerotek (an employment agency) and Select Health SC (health insurance agency). This area includes the academic institutions of Limestone College and Cummins Technical Center and is the central location for government offices including Charleston County government and the Internal Revenue Service.

West of the I-26 interchange, I-526 is bordered to the north by Boeing Company, the Charleston International Airport, and Joint Base Charleston (JBC). Boeing and JBC are top local employers, with 7,000 and 22,000 employees respectively.

4.4.2 What does Employment and Income Look Like in the CIA Study Area?

4.4.2.1 Existing Conditions

West Ashley

The largest public sector employers in Charleston County include Joint Base Charleston and MUSC, while the largest private sector employers include The Boeing Company and Roper St. Francis Healthcare. MUSC- Rheumatology and Immunology clinic is in West Ashley, as well as MUSC Health West Campus, which is in the Citadel Mall. Roper St. Francis Healthcare operates multiple facilities in West Ashley, including Bon Secours St. Francis Hospital, primary care clinics, and several specialty clinics.

According to the ACS 2016 data, unemployment rates in the West Ashley CIA study area range from 2 percent to 12 percent as compared with the South Carolina average, which is 5.3 percent. The median household income for block groups **within the CIA study area** ranges from \$28,000 to \$96,184. Only two block groups have a median household income at or above the South Carolina median of \$54,336. The percent of persons below poverty level ranges from 4 percent to 40 percent (Appendix D).

North Charleston

According to the 2000 U.S. Census data, the North Charleston area primarily employs workers in the construction/manufacturing, retail, accommodations, and health care/social assistance sectors. These industries are supported by the Port of Charleston, the Charleston International Airport, and the multiple railroad lines (Palmetto Railways, Norfolk Southern and CSX Transportation), which move goods to and from the North Charleston area. As noted above, the Boeing Company and Roper St. Francis Healthcare are the largest private employers in Charleston County.

46
percent of the population
in North Charleston is considered
low-income, which is also considerably
higher than the average in South Carolina
at 37 percent and the United States
average at 33 percent.

Joint Base Charleston is located near the Charleston International Airport and is one of 12 joint bases that were formed in 2005 as part of the US Department of Defense Base Realignment and Closure (BRAC) process. **Charleston International Airport is a joint civil-military airport operated by the Charleston County Aviation Authority under a joint-use agreement with Joint Base Charleston. The runways at the airport are owned by the Joint Base Charleston and are shared through what is the longest running civilian/military joint-use agreement of its kind with the Department of Defense.¹⁰ The Joint Base of Charleston also supports over 60 Department of Defense and Federal Agencies and provides service and support to over 90,000 military members, civilians, dependents, and retirees across four installations, including the Air Base and Naval Weapons Station.¹¹ The base also maintains \$7.5 billion in property and capital assets making it a large economic driver in the area.**

According to the ACS 2016 data, unemployment rates in North Charleston range from 0 percent to 27 percent for an average rate of approximately 8 percent. In 2016, the average unemployment rate in South Carolina was

¹⁰ Charleston International Airport. About CCAA. <https://www.iflychs.com/About>.

¹¹ Joint Base Charleston. About Us. <https://www.jbcharleston.jb.mil/About-Us/>.

5.3 percent, while the United States average was 4.7 percent - both lower than the North Charleston rate.^{12 13} The median household income for block groups ranges from slightly over \$16,300 to \$57,788 with an average of \$34,813 for the North Charleston CIA study area, which is lower than that for South Carolina of \$54,336. The percent of persons below poverty level ranges from 14 percent to 87 percent, with an average of 44 percent which is significantly higher than South Carolina at 16.7 percent in 2016.

4.4.2.2 Potential Environmental Consequences

Capacity improvements and improved travel times associated with the proposed I-526 LCC WEST project would result in the potential to expand markets for commercial businesses in the Charleston area and help improve productivity and competitiveness for production-related businesses. Improved travel times can also create other economic benefits such as reduced vehicle operating costs from less stress on vehicles due to traffic.

Although congestion incurs time and money costs, it is a challenge to quantify the economic costs of congestion partly due to the fact that some businesses benefit by locating in high-density commercial corridors, which offsets adverse economic costs associated with traveling to and parking in those areas.¹⁴ Construction of the proposed project would create multi-year (short-term) employment within Charleston County. First round employment (a direct job) includes all jobs created by the hiring of construction firms that execute the projects, or by firms that provide direct inputs (e.g., paving materials, steel, lighting, etc.) to the project. Second round employment (an indirect job) includes employment in companies that provide products to the companies that provide project inputs (e.g., a company that manufactures guardrail is a first round employer, the firm producing sheet metal for the guardrail company is a second round employer). Third round employment (an induced job) includes all jobs generated by incremental customer expenditures due to wages paid for first and second round employees. Given the strong local work force available, it is reasonable to assume that a majority of the first and third round employment would be created in North Charleston and the immediate region by the proposed I-526 LCC WEST project. A portion of second round employment may also occur in the region, especially as some manufacturers find it economically beneficial to set up manufacturing near the project site to reduce transportation costs.

4.4.3 What does Access and Mobility Look Like in the CIA Study Area?

4.4.3.1 Existing Conditions

West Ashley

Within the CIA study area, major roads include Ashley River Road, Paul Cantrell Boulevard, and Sam Rittenberg Boulevard. According to SCDOT, the 2017 Annual Average Daily Traffic (AADT) on I-526 from Paul Cantrell Boulevard to Leeds Avenue was 81,900 vehicles per day. Intersections with a high volume of crashes include US 17 at I-526 and **Paul Cantrell Boulevard** at I-526. Main streets are not easily walkable or bikeable, causing residents to rely on cars or public transportation to reach work, shopping, and entertainment destinations.

CARTA operates five routes that run throughout West Ashley. Routes 30 and 32 serve inner West Ashley, running from the Citadel Mall to downtown Charleston and North Charleston, respectively. Route 301 serves outer West

12 <https://fred.stlouisfed.org/series/SCUR>

13 <https://www.thebalance.com/unemployment-rate-by-year-3305506>

14 National Cooperative Highway Research Program. Economic Implications of Congestion. 2001. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_463-a.pdf

Ashley, running from the Citadel Mall to Bees Ferry Road. Route 33 runs from Bees Ferry Road to downtown Charleston and includes many stops in both inner and outer West Ashley. Route 31 includes one stop in West Ashley and includes termini in St. James Island and downtown Charleston. Except for Route 301, which does not run on Sundays, all routes run seven days a week.

Paul Cantrell Boulevard is not a designated bicycle route nor are there any bicycle accommodations on the roadway. There are no sidewalks on Paul Cantrell Boulevard within the immediate vicinity of the I-526 corridor. Refer to Appendix D for more detailed descriptions of sidewalks within the CIA study area neighborhoods in West Ashley.

North Charleston

Major roads in the CIA study area include I-526, I-26, Rivers Avenue, Dorchester Road, Remount Road, and Montague Avenue. According to SCDOT, the 2018 AADT at the I-526 and I-26 intersection was approximately 159,000 vehicles per day.

According to the 2018 American Community Survey, 94 percent of employed North Charleston residents drive to work, with one percent utilizing public transportation, three percent bicycling or walking, and two percent working at home. The average commute time is 28.5 minutes, with many residents utilizing main interstates such as I-526 or I-26. Sidewalks are present on both sides of Rivers Avenue, but there are a number of foot paths on the east side of Rivers Avenue between the Ferndale neighborhood and Rivers Avenue. To the east, there are two footpaths from the Liberty Park neighborhood to Rivers Avenue. Another notable foot path exists between West and East Deacon Roads in the Liberty Park neighborhood. Taylor Street has sidewalk on one side of the roadway, but is lacking a crosswalk from the sidewalk to Highland Terrace Community Center. There are sidewalks on both sides of Dorchester Road and Paramount Drive under I-526. There are no sidewalks on International Boulevard or Leeds Avenue. There is no sidewalk access to the Russelldale Community Center. There are no designated bicycle routes in the North Charleston portion of the CIA study area, nor are there any bicycle accommodations along the above-mentioned roadways.

Residents in the North Charleston area have access to Charleston Area Transportation Authority (CARTA) and TriCounty Link bus services. CARTA serves the urban and suburban area of the TriCounty (Berkeley, Charleston & Dorchester) region. It provides service between larger communities, has regular routes to major destinations, and provides free transportation in the downtown area. Transit routes within the CIA study area in North Charleston include routes 10, 103, 104, 12, 13, XP4, 11, XP3, and XP1. CARTA also manages the Tel-A-Ride Service which meets residents with disabilities to transport them around the region. TriCounty Link provides similar services to more rural parts of North Charleston. They have 49 buses that comply with the Americans with Disabilities Act (ADA) and serve areas as far out as Summerville.

According to the 2018 Charleston County Comprehensive Plan, the Charleston International Airport supports the travel of 3.6 million people annually. Located in North Charleston, the airport is a significant resource for the local

According to the 2017 ACS, 91 percent of employed West Ashley residents drive to work, with 2 percent utilizing public transportation, 2 percent bicycling or walking, and 5 percent working at home. The average commute time is 23 minutes.

There are plans for a Bus Rapid Transit (BRT) program whose main goal is to give travelers an alternative to sitting in traffic. The BRT will originate in Summerville, have 18 different substations and end in downtown Charleston. There will be 16 buses in the fleet and at least three stops located within the North Charleston area.

economy. Continued growth is anticipated due to the increase in population and growth in manufacturing, health care, tourism, and technology industries in the area.

4.4.3.2 Potential Environmental Consequences

West Ashley

Changes in travel patterns and access associated with the I-526 LCC WEST project in West Ashley include a modification of the I-526/Paul Cantrell Boulevard interchange. All alternatives propose a new bridge over Magwood Drive carrying westbound lanes of Paul Cantrell Boulevard, in addition to the widening of the I-526 westbound exit ramp to accommodate a new bridge, bypassing the Magwood Drive intersection. These changes in access and circulation patterns are anticipated to decrease travel time.

As detailed in Section 3.10, the proposed I-526 LCC WEST project includes accommodations for a future shared use path on the crossing of the Ashley River. The shared use path would provide a critical link for existing pedestrian and bicycle connectivity, as well as provide a connection for future improvements by other project sponsors. Additional details on the future shared use path can be found in Section 3.9 and 4.7 of the FEIS.

North Charleston

The Recommended Preferred Alternative for the I-526 LCC WEST project would create minor travel pattern changes around the I-26 interchange at Aviation Avenue. Two eastbound on-ramps on the south side of I-26 due to their proximity to the eastbound off-ramp to Remount Road will be removed. The proximity of these on/off-ramps creates a very short distance for vehicles to merge on and off I-26, increasing the potential for sideswipes and other types of collisions.

When the proposed I-526 LCC WEST project is constructed travelers on northbound Aviation Avenue wishing to access eastbound I-26 would continue over I-26 to Rivers Avenue and move through a new reduced-conflict intersection along Rivers Avenue, then cross back over I-26 to access a new eastbound ramp onto I-26 from Remount Road.

The Recommended Preferred Alternative includes an access management modification at I-26 and West Montague Avenue. Traffic headed west towards West Montague Avenue and Mall Drive would still take the existing exit, but traffic would only have one access point to Mall Drive (via West Montague Avenue), instead of two. Eliminating this access point creates space for a proposed new lane that would channel traffic headed toward I-526, Remount Road, and Aviation Avenue into a single dedicated lane. Similarly, traffic would no longer be able to directly merge onto I-26 from Mall Drive because all Build Alternatives would eliminate this ramp. By removing this ramp, traffic would be able to flow freely, without the obstruction of traffic slowing down to exit.

The Recommended Preferred Alternative at the I-526 at North Rhett Avenue interchange would increase existing access and safety for traffic headed east and west along I-526 and traffic headed to and from Virginia Avenue. Eastbound traffic from Virginia Avenue would have no interaction with I-526 westbound thoroughfare traffic, creating fewer potential conflict points between traffic headed in opposite directions. The weave conflict that arises as traffic merges onto and off the interstate would also be reduced by breaking ramp entrances for N Rhett Avenue into two locations. The low speed loop exit at the N Rhett Avenue at I-526 interchange would be eliminated, along with the weave conflict area between N Rhett Avenue and Virginia Avenue. This design increases safety along I-526 and improves overall capacity levels.

4.5 Environmental Justice Analysis

4.5.1 What is Environmental Justice?

An Environmental Justice (EJ) analysis was performed to identify EJ populations early in the planning process and incorporate strategies into the project management plan to engage EJ community members at the onset of the project development process. As a part of this analysis, the impacts for each project alternative were evaluated to determine whether the impacts are disproportionately high and adverse for any of the communities located on the project corridor. While this section provides an overview of the Environmental Justice Analysis, the full Environmental Justice Analysis can be reviewed in detail in Appendix G.

Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice to Minority and Low-Income Populations), United States Department of Transportation (USDOT) Order 5610.2C (Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), and Federal Highway Administration (FHWA) Order 6640.23A (FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) (FHWA EJ Order 6640.23A) have been set forth to:

1. avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
2. ensure the full and fair participation by all potentially affected communities in the transportation decision-making process, and;
3. prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Disproportionate impacts refers to situations of concern on a project where there exists significantly higher and more adverse health and environmental effects on minority populations, low-income populations, or indigenous peoples.

FHWA EJ Order 6640.23A defines disproportionately high and adverse effects as effects that are “predominately borne by a minority and/or low-income population, or will be suffered by the minority/low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority/non-low-income population.”

Title VI of the 1964 Civil Rights Act states, “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” The Act bars intentional discrimination as well as disparate impact discrimination (i.e., a neutral policy or practice that has a disparate impact on protected groups).

FHWA’s Guidance on Environmental Justice and NEPA¹⁵ describes the process to address Environmental Justice during the NEPA review, including documentation requirements.

4.5.2 How is an Environmental Justice Analysis Performed?

Environmental Justice impacts were analyzed in accordance with EO 12898 (Federal Actions to Address Environmental Justice to Minority and Low-Income Populations), USDOT Order 5610.2C (Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), and FHWA’s Guidance on

15 Federal Highway Administration. Guidance on Environmental Justice and NEPA. December 16, 2011. https://www.environment.fhwa.dot.gov/env_topics/ej/guidance_ejustice-nepa.aspx

Environmental Justice and NEPA.¹⁶ The EJ analysis included the following steps:

- Identifying EJ populations
- Providing opportunities for meaningful public involvement with EJ populations
- Understanding EJ needs and concerns
- Assessing benefits and burdens of proposed plans
- Assessing whether transportation plans may result in disproportionately high and adverse effects on EJ populations
- Deploying strategies to address such effects, including imbalances and needs

FHWA EJ Order 6640.23A¹⁷ defines “adverse effects” as “the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to:

- Bodily impairment, infirmity, illness, or death;
- Air, noise, and water pollution and soil contamination;
- Destruction or disruption of human-made or natural resources;
- Destruction or diminution of aesthetic values;
- Destruction or disruption of community cohesion or a community’s economic vitality;
- Destruction or disruption of the availability of public and private facilities and services;
- Vibration;
- Adverse employment effects;
- Displacement of persons, businesses, farms, or nonprofit organizations;
- Increased traffic congestion, isolation, exclusion, or separation of minority and/or low-income individuals within a given community or from the broader community; and,
- Denial of, reduction in, or significant delay in the receipt of benefits of FHWA/DOT programs, policies, or activities.

Adverse effects are to be addressed in accordance with FHWA mandates to identify and avoid discrimination and disproportionately high and adverse effects on minority populations and low-income populations by actions that include:

- Identifying and evaluating environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities; and,
- Proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental or public health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities, where permitted by law and consistent with EO 12898.

Projects can cause positive and negative effects (“benefits and burdens”) that can occur in the near or long term. The FHWA EJ Order notes that practitioners may take planned mitigation measures (offsetting benefits) and the relevant number of similar existing system elements in non-minority and non-low-income areas when assessing impacts on EJ populations.

To supplement this discussion, impacts can be assessed and appropriately mitigated by identifying and understanding factors such as:

- Connectivity: Access to jobs, shopping, transit service; pedestrian access; bicycle access

¹⁶ FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations Classification Code Date OPI 6

¹⁷ FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations Classification Code Date OPI 6640.23A <https://www.fhwa.dot.gov/legsregs/directives/orders/664023a.pdf>

- Mobility: Traffic congestion, travel times
- Safety: Vehicle crashes, bicycle crashes, pedestrian injuries and fatalities, personal security
- Displacements: Residences, businesses, public amenities
- Equity: Investments, costs, maintenance
- Environmental: Air quality, vibration, noise, climate change
- Social: Community cohesion/disruption, isolation
- Aesthetics: Diminution of landscaping, lighting

Each of these factors are described in detail in the Environmental Justice Analysis, Appendix G.

4.5.3 Are there Minority and/or Low-Income Populations within the Project Study Area?

According to the USDOT and FHWA Environmental Justice orders, a "low-income" individual is defined as "a person whose household income is at or below the Department of Health and Human Services poverty guidelines."

The classification of "minority" is defined by the USDOT and FHWA as individuals who list their racial status as (1) Black; (2) Hispanic or Latino; (3) Asian American; (4) American Indian and Alaskan Native; or (5) Native Hawaiian or Other Pacific Islander.

Table 4.4 Environmental Justice Communities within the I-526 LCC WEST Project Study Area

Neighborhood	Census Block Group	Minority ¹	Low-Income ²
Russelldale	450190033003	84 %	34 %
Highland Terrace	450190031111	91 %	36 %
Liberty Park	450190033001	59 %	38 %
Ferndale	450190033002	95 %	53 %
Wando Woods: West & East Ada Avenue	450190039002	69 %	11 %
Camps: Ozark Street & Seiberling Road	450190031111	91 %	36 %
Charleston Farms & Seepport Townhomes	450190034001 450190034002 450190034003 450190034004	80 %	51 %
North Westchester Drive (West Ashley)	450190027011	63 %	46 %

1. Minority percentages per block group based on Census Bureau's 2013-2017 American Community Survey 5-year summary estimates.

2. Low-income percentages per block group based on 2018 household income data and poverty guidelines set forth by the US Department of Health and Human Services (<https://aspe.hhs.gov/2018-poverty-guidelines>).

Areas with high percentages of minority and/or low-income populations within the project study area qualify as EJ communities. As detailed in Table 4.4, there are eight neighborhoods with high percentages of low-income and/or minority populations. Therefore, further Environmental Justice analysis is required. Additional details on each neighborhood can be further reviewed in Appendix G, the complete Environmental Justice Analysis.

4.5.4 Are there Limited English Proficiency Populations within the Project Study Area?

EO 13166 “Improving Access to Services for Persons with Limited English Proficiency” requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The US Department of Justice defines LEP individuals as those “who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English” (67 FR 41459).

The Department of Justice’s “Safe Harbor” LEP threshold is met when a study area’s population exceeded either 1,000 adults or 5 percent of the study area population speak English “less than very well” as documented by Census Bureau survey results. The 2013-2017 American Community Survey (ACS) data was evaluated to determine if the number of LEP individuals within the CIA study area would exceed the LEP Safe Harbor threshold. There are nine Block Groups with LEP populations exceeding 5 percent of the total Block Group population. When the number of LEP individuals are tallied in those Block Groups, the total is 1,886 which meets the 1,000 Safe Harbor Threshold (in this instance for Spanish-speaking populations) and necessitates additional actions to ensure that all members of the public are provided with an equitable opportunity to participate in public outreach and engagement.

4.5.5 How did the Project Team Create Opportunities for Meaningful Public Involvement with EJ Populations?

As a part of the project’s development, a comprehensive Public Involvement Plan (PIP), **included in Appendix U**, was developed to outline how the public would be engaged during the project. Since EJ neighborhoods were identified along the project corridor and these communities are potentially impacted by the project, a separate and specific EJ Outreach Strategy was developed to incorporate efforts designed to engage those residents and business owners. **The EJ Outreach Strategy is located in Appendix X.**

A goal of the EJ Outreach Strategy is to facilitate project involvement opportunities that fit within the EJ community’s schedule and overcome traditional barriers to public involvement that many families may face. Such barriers that can prevent effective public engagement include inadequate access to transportation and childcare services, as well as conflicting work hours when meetings or events are scheduled. To best mitigate some of the barriers to public involvement, outreach activities for the project have been held inside the impacted EJ neighborhoods **at various times of the day** to give residents a more convenient opportunity to engage with the project team. **The project team also collaborated with local pastors and church leadership to disseminate project information to their congregations.** Creating public involvement opportunities within the impacted neighborhoods has helped the project team spread project awareness, promote utilization of the I-526 LCC Community Office, and encouraged participation in future outreach meetings and EJ community mitigation activities. EJ outreach efforts include multiple focus areas to effectively engage the community, including those outlined below.

- Community Drop-in Meetings
 - > Five meetings were held in 2019 to encourage discussions with participants, share information as it relates to the project, and provide an opportunity for residents to meet SCDOT personnel and the Community Office staff who can respond to future questions, concerns, or comments regarding the project.

- > Three meetings were held in 2020 to give residents of EJ neighborhoods an opportunity to identify and understand the direction and indirect impacts from the project, speak to a right-of-way agent about specific residential relocations, and provide feedback on the draft EJ Community Mitigation plan.
- > One open house was held in 2021 to solicit detailed feedback from EJ residents on specific components within the Community Infrastructure Enhancement Plan such as stormwater drainage, lighting, pedestrian facilities, traffic calming amenities, landscaping, aesthetics, and bus shelters.
- > One Community Drop-In Meeting was held in North Charleston in August 2022 to present the updated EJ Community Mitigation plan components.
- Social Needs Assessment (SNA)
 - > The purpose of this assessment was to provide a snapshot of the norms, needs, and desires related to 25 social needs categories and to rank the importance of and satisfaction with each category:
 - > 47 EJ neighborhood residents from the four primarily impacted EJ neighborhoods participated in the SNA survey
 - > Top social needs and priorities include infrastructure improvements related to stormwater management, bike/pedestrian facilities, and availability/quality of affordable housing followed by services for seniors and youth. The results from this survey are outlined below.

Ranked Social Needs Categories (highest to lowest)

1. Adequate stormwater management	13. Availability of good grocery stores
2. Adequate sidewalks/bicycle facilities	14. Adequate public transportation and facilities
3. Availability of quality housing	15. City's response to requests related to public services
4. Availability of affordable housing	16. Availability of employment-assistance services
5. Availability of agencies providing services for seniors	17. Availability of nearby medical services
6. Availability of agencies providing services for youth	18. Parks and recreation facilities
7. Quality of teaching at schools	19. Employment opportunities
8. Well-lit streets/sidewalks	20. Availability of opportunities for small businesses
9. Appearance of neighbors' homes	21. Quality of daycare centers
10. Safety of schools	22. Ability to open a small business
11. Availability of youth employment opportunities	23. Emergency services response times (ambulance, police, fire)
12. Availability of supervised after-school youth activities	24. Availability of affordable daycare centers
	25. Garbage collection frequency

- Pop-up Meetings
 - > 12 pop-up events were held in various locations in 2019 to engage area residents and create opportunities for residents to discuss the project with the project team. Pop-up meetings are also a means of creating and promoting dialogue to determine what residents see as assets, liabilities, and possible solutions to issues within their respective neighborhoods.
 - > An estimated 265 total participants attended the 2019 pop-up meetings
 - > 8 outreach events were held in various locations in 2020 to spread updated project information and raise awareness of impacts. The project team was able to directly connect with an estimated 380 participants, and provide project materials to many more.
- Charleston County School District (CCSD)
 - > The CCSD Division of Strategy and Communication helped to provide information to students of families living in the EJ neighborhoods about upcoming events by distributing flyers, placing yard sign advertisements in the carpool line, and utilizing their phone messaging system to share a public service announcement.
- Flyer Box Program
 - > Many residents have limited or no access to the project's electronic communications. In an effort to keep them up-to-date at each stage of the project development process and informed about upcoming events, both indoor and outdoor flyer stations were placed at transit stops, local businesses, churches, community

- centers, and city offices. Each site was monitored and replenished weekly.
- Community Advisory Council (CAC)
 - > A group of local citizens and other stakeholders met during the course of the project development process to discuss project-related issues, share individual knowledge and concerns, develop the draft community mitigation plan, spread project information and knowledge to EJ residents, and give EJ residents a strong voice in the project process.
 - > The CAC is comprised of community members that either live or own property in the EJ neighborhoods or represent the interests of faith-based organizations that are situated within or near Russelldale, Liberty Park, Highland Terrace, and Ferndale.
 - Local Faith-based Organizations
 - > Five churches located within the EJ neighborhoods disseminated project-related information by hosting pop-up events and Community Drop-in Meetings, allowing flyer-boxes on their property, and/or attending a CAC meeting to learn more about potential infrastructure improvements within the communities.
 - > A member of the project team attended worship service at multiple churches in the Liberty Park neighborhood including Bethel Pentecostal Holiness and Biblical House of God to provide project literature, engage with the public, and answer any project related questions.
 - Community Office
 - > A local office for project or community related meetings, workshops, and other events was established in Gas Lite Square, a shopping complex just north of the Liberty Park neighborhood.
 - > The Community Office is staffed with a full-time Office Manager, Community Liaisons/Outreach Specialists, and part-time right-of-way Specialists who provide community residents with real-time project information.
 - > Throughout the project development process, the Community Office serves as an alternate location to obtain information presented at public-facing events. Visitors can drop in or schedule an appointment to review maps, displays and other materials while sharing feedback with the office staff and others from the project team.
 - Specific LEP Outreach
 - > The project team participated in the 2017 Latin American Festival sponsored by the Charleston County Parks and Recreation Commission, presented project information at a Hispanic church's worship service in the EJ neighborhoods, hosted a Media Day in which several local Spanish media were invited, and advertised for the Community Office Open House in the Spanish newspapers, El Informador and Universal Latin. Universal Latin staff also attended the Community Office Open House and interviewed the 526 LCC WEST Project Manager to publish additional information about the project for their readers.
 - > Art Pot, an art and educational multicultural group based in North Charleston, conducted specific Hispanic outreach through the radio station 103.9 FM / 95.5 FM Charleston ¡Aquí estamos! and through online platforms such as Facebook and Facebook Live. Spanish advertisements have been posted on the Facebook pages of Charleston Aquí estamos, Iglesias Hispanas del Lowcontry, and Art Pot, and because of the higher concentration of Spanish speaking residents in Ferndale, representatives of Art Pot specifically focused door-to-door outreach in this neighborhood.

As noted above, the draft EJ Community Mitigation Plan was presented to residents in affected EJ neighborhoods in 2020 to gather feedback on proposed mitigation. Feedback received from EJ neighborhood residents and the CAC was used to refine and finalize the EJ Community Mitigation Plan. The final EJ Community Mitigation Plan catalogs all agreements and plans required to implement the mitigation commitments and can be further studied in Appendix H.

For additional outreach information see the EJ Outreach Strategy, located in Appendix X. Outreach and engagement of EJ neighborhood residents is ongoing through the planning, design, and project implementation process. Upcoming activities include, but are not limited to, Project Oversight Committee meetings to ensure adequate implementation

of the final EJ Community Mitigation Plan and continued utilization of the Community Office to meet with residents and answer questions from the community.

4.5.6 Do EJ Neighborhoods Face Adverse and/or Beneficial Impacts from the Project?

4.5.6.1 Beneficial Impacts

I-526 LCC WEST project benefits associated with the impacted EJ neighborhoods are similar to those for the entire project corridor. The purpose of the project is to increase capacity at the I-26/I-526 interchange and along the I-526 mainline, thereby relieving traffic congestion and improving operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue. Additional benefits are summarized below and further discussed in the Community Impact Analysis (Appendix D).

Mobility and Accessibility

The proposed project would reduce congestion and improve mobility along the project corridor through the construction of additional travel lanes, an improved interchange between I-26 and I-526, and wider shoulders that allow vehicles involved in crashes to be moved out of travel lanes. The proposed improvements would also improve the ease with which travelers can reach destinations along the project corridor and broader vicinity. This includes local EJ residents, commuters, and visitors alike.

Economics

Capacity improvements and improved travel times would result in the potential to expand markets for commercial businesses in the Charleston area and help improve productivity and competitiveness for production-related businesses. Improved travel times can also create other economic benefits such as reduced vehicle operating costs from less stress on vehicles due to traffic.

Construction of the proposed project would also create multi-year (short-term) employment within Charleston County. First round employment (a direct job) includes all jobs created by the hiring of construction firms that execute the projects, or by firms that provide direct inputs (e.g., paving materials, steel, lighting, etc.) to the project. Second round employment (an indirect job) includes employment in companies that provide products to the companies that provide project inputs (e.g., a company that manufactures guardrail is a first-round employer, the firm producing sheet metal for the guardrail company is a second-round employer). Third round employment (an induced job) includes all jobs generated by incremental customer expenditures due to wages paid for first and second round employees. Given the strong local work force available, it is reasonable to assume that a majority of the first and third round employment would be created in North Charleston and the immediate region. This includes the impacted EJ neighborhoods. A portion of second round employment may also occur in the region, especially as some manufacturers find it economically beneficial to set up manufacturing near the project site to reduce transportation costs.

Travel Patterns & Increased Safety

Any of the build alternatives would create minor travel pattern changes around and near the EJ neighborhoods. Travelers on northbound Aviation Avenue wishing to access eastbound I-26 would move through a new reduced-conflict intersection along Rivers Avenue. The purpose of a reduced conflict intersection is to improve vehicular mobility and safety by limiting the number of points where vehicles can collide when making traffic maneuvers. This design reduces the potential for collisions by limiting the number of left-turns and moves traffic through an intersection more efficiently, ultimately translating into more signal “green time” and shorter travel times. Compared

to conventional intersections, the elimination of left turns substantially reduces the number of potential conflict points and the type/severity of accidents.

In addition, all of the Proposed Reasonable Alternatives at the I-526 and I-26 interchange add collector-distributor (C-D) roads along I-526 to separate movements that create congestion caused by closely spaced ramps and less than desirable weave and merge lane lengths. Separating the flow of traffic and eliminating traffic weaving and merging improves the safety of this interchange and decreases the likelihood of severe accidents.

4.5.6.2 Direct Adverse Impacts

The right-of-way corridor acquired for original I-526 and I-26 construction was very narrow, leaving many North Charleston homes and businesses located near the existing interstate structures. As a result, there are several EJ communities along the corridor that would likely be directly and adversely impacted with any improvements or changes to the I-526 or I-26 corridors. As such, it is important to explore alternatives that would avoid direct impacts to EJ communities, particularly in this case where EJ neighborhoods were impacted by past transportation projects. Potential options to avoid and minimize impacts to the EJ neighborhoods are noted in Section 4.5.8 and Chapter 3.

Displacements

The EJ neighborhoods that face substantial impacts with the proposed project include Russelldale, Highland Terrace, Liberty Park, and Ferndale. The availability of land and close proximity of homes to the interstate corridors in the North Charleston area are contributing factors to the high number of relocations in the area surrounding the I-526 and I-26 interchange, where these four (of the eight) impacted EJ neighborhoods/areas are located.

The remaining four directly impacted EJ areas include Ozark Street and Seiberling Road in the Camps neighborhood, West and East Ada Avenue in the Wando Woods neighborhood, and the Charleston Farms neighborhood, and townhomes on Seepoint Drive. There are homes on North Westchester Drive in the West Ashley portion of the project study area that qualify as EJ populations, but this population is not in the immediate vicinity of the proposed project and would not be affected by direct, indirect, or cumulative effects from the proposed project.

The Proposed Reasonable Alternatives evaluated in the DEIS included a study of the direct impacts that are detailed in Table 4.5. All of the Proposed Reasonable Alternatives would displace two community centers within the Liberty Park and Russelldale neighborhoods. Impacted facilities at the Highland Terrace-Liberty Park Community Center include a 2,000 square foot community center building, one outdoor basketball court, one half-size basketball court, one multi-use court, playground equipment on a mulch play area, one picnic shelter, multiple benches and picnic tables throughout the park, and a small parking lot. Impacts to the Russelldale Community Center include the 2,000 square foot community center building, an outdoor basketball court, playground equipment on a mulch play area, a multi-use field, and multiple benches and picnic tables throughout the park. All Proposed Reasonable Alternatives would also displace Enoch Chapel Methodist Church within the Liberty Park neighborhood. This church was previously relocated by past transportation projects.

As indicated in Table 4.5, Alternative 2 was selected as the Recommended Preferred Alternative in the DEIS in part due to the fewer community facility and service, business, and residential displacements anticipated in comparison to any of the other Proposed Reasonable Alternatives. Table 4.5 breaks out the relocation estimates associated with the Recommended Preferred Alternative based on each EJ neighborhood/area as shown in the DEIS which included a total of 92 total displacements within the EJ neighborhoods and areas.

Table 4.5: Relocation Impacts within EJ Neighborhoods for the Proposed Reasonable Alternatives (DEIS, October 2020)

Russelldale					
Type of Impact	ALT 1	ALT 1A	ALT 2 (Recommended Preferred Alternative)	ALT 2A	NO-BUILD
Community Facilities and Services	1 Comm Ctr	1 Comm Ctr 1 Church	1 Comm Ctr	1 Comm Ctr 1 Church	—
Residential Acquisitions	4 apt buildings (19 units) 1 single-family home	5 apt buildings (25 units) 2 single-family homes 1 duplex (2 units) 1 triplex (3 units)	4 apt buildings (19 units) 1 single-family home 1 mobile home	5 apt buildings (25 units) 2 single-family homes 1 duplex (2 units) 1 triplex (3 units)	—
Business Acquisition	—	1	—	1	—
Highland Terrace					
Community Facilities and Services*	1 Comm Ctr	1 Comm Ctr	1 Comm Ctr	1 Comm Ctr	—
Residential Acquisitions	11 single-family homes	12 single-family homes 1 mobile home	13 single-family homes 1 mobile home	12 single-family homes 1 mobile home	—
Liberty Park					
Community Facilities and Services*	1 Comm Ctr 1 Church	1 Comm Ct 2 Churches	1 Comm Ctr 1 Church	1 Comm Ctr 2 Churches	—
Residential Acquisitions	11 duplexes (22 units) 3 mobile homes 23 single-family homes	11 duplexes (22 units) 3 mobile homes 26 single-family homes	8 duplexes (16 units) 3 mobile homes 19 single-family homes	11 duplexes (22 units) 3 mobile homes 26 single-family homes	—
Ferndale					
Residential Acquisitions	12 mobile homes	12 mobile homes	6 mobile homes	12 mobile homes	—
Wando Woods: West Ada Avenue & East Ada Street					
Residential Acquisitions	—	—	1 single-family home	—	—
Camps: Ozark Street & Seiberling Road					
Residential Acquisitions	—	—	4 apt buildings (9 units)	—	—
TOTAL EJ DISPLACEMENTS	94	114	92	114	—
Total Business Displacements	18	19	16	19	—
Non-EJ Displacements	5	5	5	5	—
TOTAL PROJECT DISPLACEMENTS	117	138	113	138	—
<p>* The proposed project would relocate the Highland Terrace/Liberty Park Community Center. This relocation is shown in the table for both neighborhoods as both neighborhoods would experience adverse effects associated with the community center's relocation. This relocation is only counted once in the Total EJ Displacement number. Note: cells with "—" indicate no impact anticipated.</p>					

Based on the updated Relocation Impact Study (Appendix I) conducted after the DEIS was published, it is anticipated that the Recommended Preferred Alternative involves a total of 137 total EJ displacements which includes 112 total displacements within the EJ neighborhoods/areas and 25 displacements that are also considered EJ related relocations (Table 4.6). This is an increase of 45 total relocations associated within the EJ neighborhoods/areas since the DEIS was published.

The Recommended Preferred Alternative will result in a total of 156 residential relocations along the entire project corridor and 28 commercial building relocations that account for 71 commercial units. This is an increase of 62 residential relocations and 55 commercial units since the DEIS was published.

All additional residential and commercial relocations are due in part to a supplementary right-of-way field study that was conducted in July 2021, which counted displacements within the proposed right-of-way boundary, identified additional displacements that were not previously visible from aerial imagery, and verified multi-family or single-family residence status. Because two (2) hotels, Double Tree Hilton Hotel and Budget Inn Charleston, are likely to be displaced as a part of the project, the project team has also included an estimate of the long-term hotel tenants in the updated residential relocation count. Per SCDOT Relocation Manager guidance, this estimate is based off the percentage of long-term tenants occupying impacted hotels of previous SCDOT projects. Through this methodology, the tenant to room rate typically ranges from 10-20% of total occupancy. The high end of this range was used for this project to reflect a conservative estimate, resulting in an estimated thirty (30) residential relocations added since the DEIS. This estimate is subject to change as contact with tenants is initiated during the Right-of-Way phase. Furthermore, per requests from the Community Advisory Council (CAC), cul-de-sacs have been added at the end of previously bisected roads in the Highland Terrace and Liberty Park neighborhoods which resulted in additional, yet minimal, property impacts.

Commercial relocations were also re-evaluated to provide a count of actual tenants rather than the number of commercial building displacements. The count of building units is intended to estimate a more accurate number of businesses that may be relocated as a part of this project. In addition to the field study, access and drainage impacts were evaluated which resulted in additional relocations.

It is noted that relocation impact numbers for all of the Proposed Reasonable Alternatives would increase to reflect these updates. Final relocation impacts will be based on negotiations with each property owner as a part of the appraisal process during the right-of-way phases. These counts will be refined as the project advances and additional measures are evaluated to minimize impacts. Relocation details, including a comparison of impacts for the Proposed Reasonable Alternatives, can be found in Chapter 3 and in the updated Relocation Impact Study, Appendix I.

Table 4.6 shows the updated anticipated relocation impacts along the project corridor based on the Recommended Preferred Alternative described in the FEIS-ROD and the considerations noted above. This table provides a direct comparison to Table 4.5 by breaking out impacts to each EJ neighborhood.

As noted in Table 4.6, the Recommended Preferred Alternative would displace 42 single-family homes, 11 mobile homes, 46 apartment units, seven duplexes and two triplexes consisting of 20 units, two community centers, and one church within the identified EJ neighborhoods/areas of Russelldale, Liberty Park, Highland Terrace, Ferndale, Camps, Wando Woods (East Ada Avenue), Seepport Townhomes, and Charleston Farms. An additional 15 potential long-term hotel tenants at the Budget Inn Charleston are also included as other EJ residential relocations.

These displacements can also be compared to the overall project relocations in Table 4.6. EJ residential relocations account for 86 percent of all residential relocations associated with the I-526 LCC WEST project. Furthermore, 63 percent of all residential relocations are within the Russelldale, Liberty Park, Highland Terrace, and Ferndale neighborhoods. The "non-EJ" residential relocations make up 14% of the total residential relocations associated with the Recommended Preferred Alternative.

There are no known business relocation impacts within the EJ neighborhoods/areas. Seventy-seven percent of the total "non-EJ" impacts are business/institutional displacements.

Table 4.6: Relocation Impacts within the EJ Neighborhoods for the Recommended Preferred Alternative

Type of Impact	Recommended Preferred Alternative	
Russelldale		
Community Facilities and Services	1 Comm Ctr	
Residential Acquisitions	5 apt buildings (27 units) 1 single-family home 1 mobile home	
Highland Terrace		
Community Facilities and Services	1 Comm Ctr*	
Residential Acquisitions	15 single-family homes	
Liberty Park		
Community Facilities and Services	1 Comm Ctr* 1 Church	
Residential Acquisitions	7 duplexes (14 units) 2 triplexes (6 units) 1 mobile home 24 single-family homes	
Ferndale		
Residential Acquisitions	9 mobile homes	
Wando Woods: East Ada Avenue		
Residential Acquisitions	1 single-family home	
Camps: Ozark Street & Seiberling Road		
Residential Acquisitions	4 apt buildings (9 units)	
Charleston Farms		
Residential Acquisitions	1 single-family home	
TOTAL EJ NEIGHBORHOOD DISPLACEMENTS	109 residential 2 Community Centers*, 1 Church	
OTHER EJ DISPLACEMENTS**	2 apt buildings (10 units) 15 potential long-term hotel tenants	
TOTAL EJ DISPLACEMENTS	137	59%
Non-EJ Business/Institutional Displacements	72	
Non-EJ Residential Displacements***	22	
Total Non-EJ Displacements	94	41%
TOTAL PROJECT DISPLACEMENTS	231	
<p>* The proposed project would relocate the Highland Terrace/Liberty Park Community Center. This relocation is shown in the table for both neighborhoods as both would experience adverse effects associated with the community center's relocation. This relocation is only counted once in the EJ Neighborhood Displacement number.</p> <p>** Includes Seepoint Drive Townhomes and potential long-term tenants at Budget Inn Charleston</p> <p>*** Includes estimated relocations associated with long-term tenants at the Double Tree Hilton Hotel</p>		

Land Use

The North Charleston area is characterized by residential, industrial, and commercial land use with limited undeveloped/available land. Direct impacts are anticipated in EJ neighborhoods with land use changes associated with converting land from its current use (primarily residential) to SCDOT right-of-way.

Visual and Aesthetics

The proposed project would create a low level of permanent visual changes to the existing environment in the EJ neighborhoods because the existing road already sits above many of the affected communities. Long-term impacts include relocation of businesses and residences; new interchanges; increased right-of-way; and changes to the surrounding landscape through the presence of new ramps and modifications to existing overpasses, bridges, retaining walls, medians, as well as from alterations to the existing roadway grade. The EJ neighborhoods proximity to I-526 and I-26 would result in increased visual impacts as the proposed project's widening would encroach on the existing EJ neighborhoods viewshed. In comparison, I-526 was present in West Ashley before a majority of development occurred, and thus a larger buffer exists between the facility and residences. The Highland Terrace-Liberty Park Community Center in the Liberty Park neighborhood is also in the Area of Visual Effect (AVE) and would be impacted by the proposed project, but the visual change would be minimal as existing I-26 is already visible from the area.

Noise Levels

Noise abatement measures were evaluated for all NSAs with traffic noise impacts due to the project, including the EJ neighborhoods. The proposed improvements would result in an increase in traffic noise levels in 40 of the 49 Noise Study Areas (NSAs) studied for the project. Many locations in the project study area currently approach or exceed the Noise Abatement Criteria (NAC). The increase in sound levels as a result of the proposed improvements is not substantial, and in some cases result in a decrease in sound levels due to parapets on elevated sections. Traffic noise level changes in the affected EJ neighborhoods in Design Year 2050 range from -4 dB(A) to 5 dB(A), which is comparable to anticipated noise level changes in other areas along the project corridor. Noise walls were evaluated for the affected EJ neighborhoods but did not meet criteria for feasibility and/or reasonableness.

SCDOT requires that feasible and reasonable measures be considered and evaluated to abate all predicted Build condition traffic noise impacts. Feasibility and reasonableness are distinct and separate considerations. Feasibility is the consideration as to whether noise abatement measures can be implemented. Reasonableness is the consideration as to whether noise abatement measures should be implemented. Noise walls were evaluated for the affected EJ neighborhoods but did not meet criteria for feasibility and/or reasonableness. See Section 9.4 and Appendix E of the Detailed Noise Analysis found in Appendix K for details.

4.5.6.3 Indirect Adverse Effects

Indirect impacts in EJ neighborhoods include:

- The proposed improvements would create adverse effects on community cohesion, aesthetics, and land use resulting from anticipated displacements, including the Highland Terrace-Liberty Park and Russelldale community centers
- EJ neighborhood residents are anticipated to experience a high level of adverse impacts associated with exposure to construction noise and dust as they are likely to have windows open to help ventilate homes

4.5.6.4 Cumulative Adverse Effects

Past actions that have contributed to adverse cumulative impacts in EJ neighborhoods are summarized below. Additional detail on each of these topics can be reviewed in Appendix G, the EJ Analysis.

Previous Displacements

The original construction of I-26 impacted 25 residences and one mobile home in Highland Terrace, and 22 residences, three stores, and one church in Liberty Park. The original construction of I-526 impacted 17 residences, 12 likely residences, two apartments, two mobile homes, one motel, two restaurants, and nine stores.

Community Cohesion

Due to the bisection of the Russelldale, Ferndale, Liberty Park, and Highland Terrace EJ neighborhoods during the original construction of I-526 and I-26 and subsequent relocations, these neighborhoods faced a greater disruption of community cohesion and connectivity than other North Charleston neighborhoods such as Park Circle or Brentwood. This is evidenced by the lack of regular neighborhood association meetings, public feedback on crime in the neighborhoods, and the sparseness of residents observed out of doors during field surveys.

Despite past impacts to community cohesion, CAC members who live in these neighborhoods have expressed that community cohesion is still an important value to the residents living there. Additional evidence of continued community cohesion values stem from the various multi-generational families who have lived in these neighborhoods for decades and from residents who often utilize the existing community centers for gatherings and events. The displacement of either the Russelldale Community Center or Highland Terrace-Liberty Park Community Center by the I-526 LCC WEST project would further impact local community cohesion because, as noted previously, these facilities are often used for social gatherings by residents living in these neighborhoods.

Cumulative Noise Levels

Past actions, in combination with the proposed improvements and future projects, would contribute to cumulative noise levels in the affected EJ neighborhoods. The original construction of I-526 and I-26 and construction/expansion of the Charleston International Airport, generated a substantial increase in highway and air traffic noise. In addition, two railroad corridors border the affected EJ neighborhoods; both railroad corridors generate noise. As Charleston and the surrounding areas have increasingly developed, traffic levels and infill development has increased, resulting in an additional increase in noise levels in the communities.

Aesthetics

Past transportation projects included raised concrete overpasses that bisected existing streets without proper design for drainage and vehicle operations. These changes in viewshed have led to deteriorating community aesthetics in the impacted EJ neighborhoods.

Economic Vitality

EJ communities have seen a diminished economic vitality due to depreciated home values, a high number of vacant or underdeveloped parcels, and a high number of homes in disrepair. This increases the potential for further erosion of community cohesion as homeowners may sell to developers that do not reinvest in the current community.

Future Land Use

EJ neighborhoods are currently zoned for single-family residential use with some multi-family and commercial/light industrial areas on the periphery of the neighborhoods. The future land use mapping for these neighborhoods

(see Figure 4.2) is reported by the City of North Charleston as “Mixed-Use” which is not entirely consistent with the primarily residential land use that these neighborhoods are currently zoned for. The MU designation provides for a mixture of land uses within close proximity to each other. This could include multiple uses within a single parcel or structure. The MU designation does not change a property’s current zoning designation, but if a property owner were to apply to have a parcel rezoned for commercial, office, or light industrial use, the change would be compatible with the MU designation. As such, the MU designation opens the potential for additional non-residential uses within EJ neighborhoods. In an area where affordable housing, and housing in general, is scarce and at a premium already, the potential conversion to mixed-use in these neighborhoods may reduce available housing, thus contributing to the cumulative effects in this area.

Quality Housing

Many of the houses in the affected EJ neighborhoods were built in the 1940’s; these homes were prefabricated houses designed to be easily assembled and disassembled so they could be moved as needed; as such, the existing housing stock is old and much is in disrepair.

Available and Affordable Housing

Affordable housing stock is affected by the reduction of mobile homes in the project area and vicinity; this trend is anticipated to continue based on local growth plans and policies related to mobile homes. In addition, available land for affordable housing is also being reduced by new development in the area including other transportation projects, past airport expansions, and large-scale commercial development.

Heirs’ Property

Due to a lack of access to legal resources, most early black landowners did not have wills. As descendants inherited land without a clear title, the land was designated as “heirs’ property.” This scenario is prevalent in low-income communities in the North Charleston area. The lack of a clear title can cause legal issues which can hinder residents from performing home repairs or building new homes.

Social Vulnerability

EJ neighborhood residents experience a high degree of vulnerability related to weather hazards given the quality of housing stock, presence of an elderly population who may not be able to perform their own home repairs, the challenges Heirs’ Properties present for receiving federal disaster relief and performing home repairs/redevelopment, and the EJ neighborhoods’ locations within the broad Filbin Creek drainage basin.

Environmental Pollutants:

EJ neighborhood residents experience environmental stressors, notably those related to economic insecurity, outdoor, and indoor pollutants. EJ neighborhoods in North Charleston are more exposed to toxins from the area’s industrial facilities than the City of North Charleston’s predominantly white, non-Hispanic neighborhoods which are located away from those facilities. Industrial facilities in the Charleston metro area produce approximately 26 percent of the state’s toxic chemical releases. Air quality effects are compounded by the proximity of minority and low-income communities to the I-526 and I-26 corridors and rail corridors. A study that tracked the number of children treated for asthma at the Medical University of South Carolina (MUSC) over a 40-year period found a 20-fold increase of asthma instances among African- American children; four times the instances of asthma in white children over the same period.¹⁸ The Air Quality Impact Analysis can be reviewed in Appendix J.

In addition to cumulative effects listed above, there are a number of adverse cumulative/ recurring EJ effects

¹⁸ <https://www.charlestoncitypaper.com/charleston/is-pollution-poisoning-charlestons-african-american-and-low-income-communities/Content?oid=5790876>

broadly experienced by low-income/minority residents in the North Charleston area, including:

- Intergenerational poverty;
- Segregation and isolation;
- Surface transportation projects;
- Changing job markets;
- Limited access to transit;
- Lack of sidewalks and bike facilities; and;
- Language barriers (LEP)

The above adverse impacts are detailed in the Environmental Justice Analysis, Appendix G, Visual Impact Assessment, Appendix E, and the Indirect and Cumulative Effects Assessment, Appendix F.

4.5.7 Are the EJ Impacts Disproportionately High and Adverse?

“Disproportionate impacts” refer to situations of concern on a project where there exists significantly higher and more adverse health and environmental effects on minority populations, low-income populations or indigenous peoples. Disproportionately high and adverse effects are effects that are predominately borne by a minority and/or low-income population, or will be suffered by the minority/low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority/non-low-income population.” (FHWA Order 6640.23A)

The proposed project would result in one residential relocation in Wando Woods (East Ada Avenue) and one residential relocation in Charleston Farms. Across North Rhett Avenue from Charleston Farms, two additional buildings (totaling 10 units) on Seepoint Drive will potentially be relocated. There are no community impacts in the way of community center relocations any of the above-mentioned areas, and cumulative/indirect impacts are similar for these residents as those along the entirety of the project corridor. As such, impacts in these areas are not disproportionately high and adverse.

Four apartment buildings totaling 9 residential units will potentially need to be relocated in the Camps area (Seiberling Road and Ozark Street) located east of I-526. Although there are no specific community impacts, additional impacts to this neighborhood are anticipated due to other future programmed projects, thus contributing to overall cumulative effects in this neighborhood. As such, disproportionately high and adverse cumulative effects are anticipated for these residents.

The EJ neighborhoods of Russelldale, Liberty Park, Highland Terrace, and Ferndale would experience a high level of impacts associated with direct, indirect, and cumulative effects. Residential relocations within all of the EJ neighborhoods/areas comprise of 86 percent of the total residential relocations. Sixty-three (63) percent of the total residential relocations (EJ and non-EJ) and 73 percent of the total EJ residential relocations are located within the four EJ neighborhoods noted above. In addition, due to the close proximity to the existing project corridor, these neighborhoods will likely have adverse land use, visual and aesthetics, and noise impacts. Previous transportation related project impacts, inequitable compensation from past projects, future land use inconsistencies, developer/investor pressure, existing affordable housing stock and quality, heirs’ property challenges, social vulnerability, and environmental pollutants are among the additional cumulative effects that are impacting these EJ neighborhoods. Without mitigation, the anticipated impacts on Russelldale, Liberty Park, Highland Terrace, and Ferndale are considered to have disproportionately high and adverse effects, as there are no comparable burdens placed upon other neighborhoods in the broader vicinity of the proposed project.

Table 4.7 summarizes the EJ Analysis results with regard to EJ neighborhoods that face direct, indirect, and/or cumulative impacts due to the I-526 LCC WEST project.

Table 4.7: Anticipated Disproportionately High and Adverse Effects to EJ Communities

Neighborhood	Disproportionately High and Adverse Effects Anticipated?
Russelldale	Yes
Highland Terrace	Yes
Liberty Park	Yes
Ferndale	Yes
Wando Woods: East Ada Avenue*	No
Camps: Ozark Street & Seiberling Road	Yes
Charleston Farms	No

*Changes from "Yes" to "No" since DEIS: Although this neighborhood is considered an EJ population, relocation impacts resulting from the Preferred Alternative include one residence and zero community impacts in the way of community center relocations. Cumulative/indirect impacts are similar for these residents as those along the entirety of the project corridor. As such, impacts to the Wando Woods neighborhood are not disproportionately high and adverse.

4.5.8 How will the Adverse and Disproportionate Impacts be Avoided, Minimized, and Mitigated?

According to FHWA EJ Order 6640.23A, adverse effects are to be addressed in accordance with FHWA mandates that require the identification and evaluation of environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities; and, the development of measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental or public health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals.

4.5.8.1 Avoidance

In consideration of the tight existing right-of-way along I-526 and I-26 within the EJ communities, SCDOT does not currently have enough rights-of-way to replace the existing structures while maintaining interstate operations. The project team for the original construction of I-26 attempted to minimize relocations by proposing a very narrow right-of-way. This not only created undesirable quality of life for those residences remaining in close proximity to the interstate, but also limited SCDOT's ability to maintain and replace the existing structures in the future without additional impacts in the communities. The current proposed right-of-way for the I-526 LCC WEST project was developed in consideration of past effects related to proximity and maintenance logistics and was thereby set to avoid and minimize the potential for these effects to occur again in the future.

A range of alternatives that would avoid impacting EJ communities was evaluated and can be reviewed in detail in Chapter 3 and Appendix G. These alternatives included the No-Build Alternative; Improvements to existing local facilities (i.e., East Montague Avenue and Remount Road; New location alternatives (i.e., US 78 to Virginia Avenue, Ashley Phosphate Road to Virginia Avenue, Bees Ferry Road to Dorchester Road); Managed Lanes; Transportation System Management (TSM)/ Transportation Demand Management (TDM) Strategies; Mass Transit; and, Existing Corridor Improvements. In addition, SCDOT reviewed highway realignment options to avoid the impacted EJ

neighborhoods altogether, particularly in this case where EJ neighborhoods were impacted by past transportation projects. Realignment of the interstate would be restricted by the lack of open land and presence of dense existing development, regional landmarks and environmental features. Any option for interstate realignment would cause massive impacts to the following areas:

- Environmental Justice neighborhoods: Interstate realignment could substantially impact additional EJ neighborhoods that are within the vicinity of the existing I-526 and I-26 corridors including Midland Park, Shady Oaks Mobile Home Park, Dale Valley Mobile Home Park, Bubis Mobile Home Park, Lakeside Mobile Home Park, Charleston Farms, Waylyn, Glen Terrace, Wando Woods, and/or Dorchester Terrace, among others.
- Potential Section 4(f) Parks: There are 21 community centers in addition to various parks and open recreation spaces operated by the City of North Charleston throughout the North Charleston region. Those near the existing I-526 and I-26 corridors include the Charleston Farms Community Center, Ferndale Community Center, Felix Pickey Community Center, Park Circle Community Center, Miner Crosby Community Center, and Persephone Moultrie Community Center, among others.
- The Charleston International Airport: The combined airport area of the civilian facilities and Charleston Air Force Base is the busiest airport in South Carolina (REF 1 from comment 14). It extends over 2,000 acres, covering most of the land to the west of the I-26/I-526 interchange between I-26/I-526 and the Ashley River, extending north to Ashley Phosphate Road. The location and size of the airport prevent alternate route development to the west of I-26 for approximately four miles to the north. In addition, I-526 passes under the approach-departure surface of Runway 33, approximately 5,000 feet from the end of the runway. While the interstate corridor does not encroach on the approach-departure surface, it does fall within Accident Potential Zone 1 (APZ 1), where land use is restricted to protect people on the ground in the event of an aviation incident. The U.S. Air Force controls the property within the portion of APZ 1 north of I-526 and South Aviation Avenue and would oppose moving the interstate closer to the runway.
- The Cooper River Crossing: The waterway demarks the easternmost boundary of the North Charleston city limits and remains a vital commercial channel for the region. Currently, the Don Holt Bridge and the Arthur Ravenel Jr. Bridge are the only two structures that transport vehicles across the river. Any alternate route which would involve the construction of a third roadway bridge would increase the cost of the project drastically.
- Goose Creek Reservoir: Situated just east of the Rivers Avenue business district near Hanahan, the 600-acre reservoir serves as the primary water supply storage for much of the Charleston region. The area is also home to a wide variety of animal species and has become a popular destination for fishers and paddleboaters alike. The reservoir stretches from just northeast of Murray Drive to Goose Creek Road, impeding any new alternate alignment between Rivers Avenue and North Rhett Avenue.
- Francis Marion National Forest/Bonneau Ferry Wildlife Management Area: Although much of this forested expanse lies to the northeast of the project area, its presence would prevent new alternate four-lane routes north of I-526 which connect I-26 to US 17. Wildlife management is overseen by the South Carolina Department of Natural Resources.
- Natural Environment: Many areas east of North Rhett Avenue are comprised of wetlands related to the branch of the Cooper River connecting to the Goose Creek Reservoir. Alternate routes constructed in this vicinity would result in increased impacts to the surrounding natural environment.

The severity of such impacts would be deemed unfeasible and unreasonable for improving congestion along I-526.

The range of alternatives evaluated in Sections 3.5.1 through 3.5.6 would avoid impacts to EJ neighborhoods; however, these alternatives would not reduce congestion along the project corridor and would not fulfill the

purpose of and need for the proposed project. Improving the existing I-526 LCC WEST mainline from Paul Cantrell Boulevard to Virginia Avenue, as described in Section 3.5.7, would accommodate current and future vehicular demands, as well as population and employment increases. Improving the existing highway would meet the project purpose and need by increasing capacity and thereby reducing congestion. Proposed Reasonable Alternatives to improve the existing corridor were subsequently developed, including options for the I-26/I-526 System interchange (Alternatives 1, 2, 1A, and 2A), which primarily impacts EJ neighborhoods. Minimization efforts to lessen impacts to the EJ neighborhoods are described below.

4.5.8.2 Minimization

As noted above, four Proposed Reasonable Alternatives were developed in the vicinity of the EJ neighborhoods, which all utilize as much of the existing right-of-way as possible. Minimization of impacts was balanced with the intentions of SCDOT to not create quality of life impacts to those homes that will be directly adjacent to the interstate after the proposed project is constructed. See Sections 3.6 through 3.8 for additional details related to alternative development and evaluation. Among the four Proposed Reasonable Alternatives in this area that were under consideration in October 2020, the Alternative 2 is recommended as the preferred alternative between International Boulevard and Rivers Avenue. Although Alternative 1 and 2 would remove access from Rivers Avenue to I-26 via I-526, both alternatives would result in lower relocations and potential impacts to EJ communities than Alternative 1A or 2A. Alternative 1 would require a traffic movement or weave that may result in overcapacity and failing LOS in the segment. The over-congestion of this segment in Alternative 1 may cause upstream backups along I-526 eastbound and I-526 westbound. Alternative 2 does not require this traffic movement or weave, which reduces the number of vehicles which must weave compared to Alternative 1. This results in traffic operations which are under capacity and with acceptable LOS C. Alternative 2 is the Recommended Preferred Alternative as it minimizes the number of relocations, avoiding the displacement of approximately six single-family homes, five mobile homes, eight multi-family units, four businesses, and two churches (see Table 4.5).

4.5.8.3 Mitigation

This section describes proposed mitigation developed to offset disproportionately high and adverse effects to EJ populations. The proposed EJ Community Mitigation Plan is included in Appendix H. The purpose of EJ community mitigation is to lessen the burden of impacts caused by the project to an extent that, after mitigation, impacts are no longer disproportionately high or adverse on a minority or low-income population. Specific mitigation measures have been developed to offset community impacts within the Ferndale, Highland Terrace, Liberty Park, and Russelldale neighborhoods in North Charleston, while other mitigation programs have been developed to mitigate the broader effects of the project on EJ populations within the project study area.

The Recommended Preferred Alternative would avoid and minimize impacts to the maximum extent practicable; however, adverse impacts would still be created by the proposed project. In addition to residential and community facility displacements within EJ neighborhoods, the proposed project would further encroach upon low-income and minority EJ populations in the immediate vicinity of the I-526/I-26 interchange. The overarching goal of the I-526 LCC WEST EJ Community Mitigation Plan is to effectively mitigate disproportionately high and adverse effects to impacted EJ communities and areas within the I-526 LCC WEST study area and create opportunities to offset the loss of generational wealth. Additionally, the intent of the EJ Community Mitigation Plan is to address the issues and priorities of the affected EJ communities /areas, not only as a way to mitigate impacts, but most importantly as a way to convey ownership of the

community mitigation and work toward establishing a foundation of trust.

The draft EJ Community Mitigation Plan was developed by the CAC and presented to EJ neighborhood residents in a series of neighborhood meetings held in November 2020 during the DEIS review period. The Community Infrastructure Enhancement Plan (CIEP), a component of the EJ Community Mitigation Plan, was presented to EJ neighborhood residents in March 2021. Additional mitigation measures were added and presented to the communities in August 2022.

Impacts from the Recommended Preferred Alternative to the EJ communities, comments received from the CAC, and community responses to the Social Needs Assessment (SNA) are categorized in Table 4.8 into the four pillars of community impact mitigation: Cohesion, Enhancement, Preservation, and Revitalization. The table then identifies which components of the EJ Community Mitigation Plan addresses each impact, CAC comment, and SNA response. This input from the CAC and EJ neighborhood residents was referenced to refine and finalize the EJ Community Mitigation Plan, which is outlined in the summary below. The detailed EJ Community Mitigation Plan is included in Appendix H.

Summary of the EJ Community Mitigation Plan (See Appendix H for additional details)

- A **Community Project Office** was established at 5627 River Avenue, in the Gas Light Square shopping center, adjacent to Liberty Park. The primary purpose of the Community Office is to provide residents local and immediate access to project materials and knowledgeable project staff. The Community Office is staffed with a full-time Office Manager, Community Liaisons/Outreach Specialists, and part-time Right-of-Way Specialists who are available to provide community residents with real-time project information such as maps, public involvement materials, right-of-way acquisition information, and copies of the Draft and Final EJ Community Mitigation Plan. The Community Office will continue to serve as a resource for the communities until the completion of the project and associated mitigation components.
- To support community advocacy efforts beyond the project, SCDOT will provide **organizational training** for the CAC and interested community members.
- The project team will work with the CAC and local non-profit organizations to develop a **Community Resource Guide** which will provide residents within the EJ communities improved access to local organizations, resources, and other information related to food insecurity, health and wellness, home repair, financial assistance, minority-owned businesses, transit resources, and referral agencies.
- The project team will coordinate with local non-profit organizations and community leaders to host **free community workshops** and information sessions on relevant and beneficial topics for the EJ residents such as public safety, finances, or creating a will.
- SCDOT will fund the **construction of a large, modern, centrally located community center with expanded programs** and hours to replace the smaller community centers in Russelldale and Liberty Park, which are Section 4(f) resources that will be impacted by the project. The outdoor amenities currently located at the existing community centers will be replaced with nearby **pocket parks** located in the communities where the existing community centers are located. Construction of the new centrally located community center and the pocket parks will be completed prior to the I-526 LCC WEST project construction impacting the existing community centers. Additional details on the Section 4(f) and 6(f) recreational resource mitigation can be found in Section 4.15 and Section 4.16, as well as in Appendix Q and Appendix R.
- SCDOT and the City of North Charleston have developed an intergovernmental agreement (IGA) outlining the **programs, services, structural components, and arrangements for long-term operation**

and maintenance of the replacement community centers and recreational facilities. The agreement includes language that gives residents of the communities served by the community centers priority in areas such as program enrollment/participation, reserving facility space, volunteer, and job opportunities.

- SCDOT will fund a **study to document the cultural history and character of the impacted EJ communities** through the support of a qualified historian and photographer. The study efforts will include collecting oral history, archival research, collection of historic photography, and the development of a report that will be available for viewing online and at the community center.
- SCDOT will implement the **Community Infrastructure Enhancement Plan (CIEP)**, which is a subset of improvements that will address infrastructure issues associated with bicycle and pedestrian safety, access to the community center/park amenities, neighborhood entrance aesthetics, stormwater improvements, lack of bus shelter amenities, and traffic calming measures that would be implemented as part of the project. The majority of the CIEP components will be completed prior to the construction of the I-526 LCC WEST improvements. However, the schedule for construction of components such as the shared use path along Margaret Drive and the pedestrian bridges will be dictated by the acquisition of right-of-way for the I-526 LCC WEST Project, construction sequencing, and access needs.
- SCDOT will develop and fund a **PM 2.5 air quality monitoring program** within the impacted EJ communities of Ferndale, Highland Terrace, Liberty Park, and Russelldale. SCDOT will provide results to their website where community members can access real time data/results through 2038 or until the end of construction activities within the EJ neighborhoods listed above.
- SCDOT will construct **mitigation barriers** along the eastbound and westbound sides of I-26 between the I-526 and Remount Road interchanges to benefit the residents of the Highland Terrace and Liberty Park communities. SCDOT will construct mitigation barriers along the westbound side of I-526 between the Rivers Avenue and I-26 interchanges to benefit the residents of the Liberty Park community. SCDOT will construct mitigation barriers along the eastbound side of I-526 from the I-26 interchange to east of the CSX railroad tracks to benefit the residents of the Russelldale and Ferndale communities. SCDOT will construct a mitigation barrier along the eastbound side of I-526 and the eastbound exit ramp at the Montague Interchange to benefit the west side of the Camps community.
- SCDOT will provide a **full-time EJ Community Right-of-Way Liaison** to be available in the Community Office as a resource to all impacted EJ communities. The liaison will provide advisory services to the impacted residents to ensure they fully understand their rights, benefits, responsibilities, and opportunities available.
- SCDOT will implement an **affordable replacement housing program** that includes two components: (1) partnering with the South Carolina State Housing and Finance Development Authority to develop an affordable housing program that will construct 100 affordable housing units within the city of North Charleston and (2) purchase 45 vacant lots within the EJ communities and partner with a local non-profit that specializes in constructing affordable housing.
- SCDOT will develop partnerships with local organizations to provide **financial literacy and first-time home buyer workshops and counseling** to residents of the impacted EJ communities.
- SCDOT will partner with a state or federal agency to provide a **grant program for first-time home buyers** within the impacted EJ communities.
- SCDOT will provide an **enhanced relocation mitigation program** for displaced business owners and employees to minimize economic harm. SCDOT will also reimburse reasonable moving costs and provide rent supplements for tenants in accordance with the Uniform Act, with an additional 18 months of supplemental rent payments based on the displacee's replacement rent and income.
- SCDOT will implement an **acquisition fairness program** that will pay for a third party appraiser to address community concerns over the fairness of property appraisals.

- SCDOT will establish and manage a college aid initiative of at least \$500,000 that will provide scholarships for high school and college students from the impacted EJ communities that intend to or are currently attending institutions of higher education.
- SCDOT will develop partnerships with organizations to develop school-to-work employment programs with the goal of enhancing employment opportunities within the fields of construction, engineering, and transportation.
- SCDOT will provide a transportation career awareness program that increases the understanding of the transportation industry and builds interest in the wide range of career opportunities.
- SCDOT initiated the Summer Transportation Institute Program, which provides skill building programs to create awareness of and expose high school students to career opportunities in the transportation industry.
- SCDOT will identify and provide financial support for pre-employment training opportunities that encourage career placement in the transportation industry. Participants who successfully acquire relevant job readiness skills will be considered for the On-the-Job Training (OJT) Program implemented by the contractor selected to construct the project.
- SCDOT will partner with organizations and other disadvantaged business enterprises (DBE) in the state to develop and deliver an educational program that empowers those interested in learning more about starting a small business enterprise (SBE).
- The Community Advisory Council (CAC) helped the project team develop the proposed mitigation measures contained in the EJ Community Mitigation Plan by sharing individual knowledge, experiences, and perspectives, and providing input on project-related impacts and proposed mitigation.
- A Project Oversight Committee (POC) will be established after the FEIS-ROD is approved and tasked with overseeing the implementation of the EJ Community Mitigation Plan commitments. The POC will assume the following duties: coordinate with technical staff on issues related to implementation of the EJ mitigation, serve as a liaison between the communities and project staff during the final design and construction phases, and assist SCDOT in outreach efforts and meetings to get input from the greater community on detailed design concepts for those mitigation items that require physical construction. Prior CAC members and/or EJ neighborhood residents interested in getting involved with the project will be encouraged to participate on the POC. SCDOT will provide administrative support to the POC, consistent with the services provided to the CAC.
- SCDOT is committed to delivering the community mitigation measures outlined in this plan in a timeline that maximizes the benefits to the impacted EJ communities, with many components being implemented immediately upon the approval of the FEIS/ROD.
- SCDOT will develop an implementation plan that outlines more detailed plans for each of the mitigation items. This plan will be evaluated and adjusted each year in an effort to increase participation. The plan will be shared with the POC with the intention of continuing outreach and project communication with all EJ residents.
- SCDOT will work with the POC to conduct community meetings and distribute flyers to keep residents informed of project updates.

Table 4.8 notes feedback identified through the SNA or by the CAC but are not specifically related to direct, indirect, or cumulative impacts from the project, and thus are not addressed by the proposed SCDOT mitigation.

Table 4.8: EJ Community Mitigation Matrix

COMMUNITY COHESION: ACTIONS THAT STRENGTHEN NEIGHBORHOOD CONNECTIONS	
<p>A cohesive community has a common vision and sense of belonging for all residents; diversity of different backgrounds and circumstances are appreciated and positively valued; those from different backgrounds have similar life opportunities; and there are strong and positive relationships between people from different backgrounds in the workplace, in schools, and within neighborhoods.</p>	
PROJECT IMPACTS	SCDOT COMMUNITY MITIGATION MEASURES
<ul style="list-style-type: none"> Adverse effects on community cohesion from original construction of I-26 and I-526 Adverse cumulative effects on community cohesion associated with the EJ neighborhood zoning of “mixed” use. Mixed-Use (MU) zoning includes a mixture of commercial and residential land uses located in close proximity to each other. 	<ul style="list-style-type: none"> Replacement Affordable Housing Program Community Infrastructure Enhancement Plan Financial Literacy & First-Time Home Buyer Counseling First-Time Home Buyer Grant Program Community Workshops Community Office Enhanced Right-of-Way Advisory Services
CAC/SNA FEEDBACK	SCDOT COMMUNITY MITIGATION MEASURES
<p>CAC Feedback:</p> <ul style="list-style-type: none"> More access to community center for community children; “neighborhood” center versus “community” center Crime prevention through well-lit streets; going above code for minimum requirements for spacing of streetlights¹ Sense of ownership through well-defined private/public areas; directional signs, landscaping, and informal common areas 	<ul style="list-style-type: none"> Recreation Facilities and Amenities Recreational Programs and Activities Community Infrastructure Enhancement Plan Community Resource Guide Community Workshops
<p>CAC Feedback:</p> <ul style="list-style-type: none"> Concern about residents and children safely crossing the railroad tracks separating Highland Terrace from Liberty Park Concerns about walkability for children to the proposed community center Crime prevention through lighting design and maintenance (CPTED principle)¹ Need to eliminate abandoned properties/overgrown lots 	<ul style="list-style-type: none"> Community Infrastructure Enhancement Plan Replacement Affordable Housing Program
<p>Social Needs Assessment:</p> <ul style="list-style-type: none"> Appearance of neighborhood homes (Ranked #9 out of 25) 	<ul style="list-style-type: none"> Organizational Training Community Resource Guide Community Workshops
<p>CAC/SNA Feedback (Items Not Addressed by SCDOT Mitigation Measures):</p> <ul style="list-style-type: none"> Pedestrian bridge to help children and other community center users to avoid traffic on Rivers Avenue² Surveillance cameras as crime prevention measure³ Convey sense of ownership of public spaces as crime deterrent by maintaining areas in public domain (CPTED principle)² Crime prevention through increased law enforcement presence³ Community yard sale to foster community cohesion³ <p>Footnotes related to CAC/SNA Feedback on Community Cohesion:</p> <p>¹ Item to be addressed by the City of North Charleston’s City-wide LED lighting upgrade program.</p> <p>² Pedestrian safety improvements along Rivers Avenue will be implemented by the Lowcountry Rapid Transit Project starting in 2026 (https://lowcountryrapidtransit.com/)</p> <p>³ Items were identified through the SNA or by the CAC but are not specifically related to direct, indirect, or cumulative impacts and thus, are not addressed by proposed SCDOT mitigation.</p>	

COMMUNITY ENHANCEMENT: COMMUNITY CENTER AND RECREATIONAL FACILITY REPLACEMENT	
<p>Community enhancement projects improve the value, quality, desirability, and attractiveness of a neighborhood. This pillar focuses on community center and recreational facility replacement and the infrastructure enhancements that will be developed in conjunction with these replacement facilities.</p>	
PROJECT IMPACTS	SCDOT COMMUNITY MITIGATION MEASURES
<ul style="list-style-type: none"> Displacement of two community centers 	<ul style="list-style-type: none"> Recreation Facilities, Programs, and Amenities
CAC/SNA FEEDBACK	SCDOT COMMUNITY MITIGATION MEASURES
<p>CAC Feedback:</p> <ul style="list-style-type: none"> Installation of traffic calming measures Installation of speed humps to address speeding and general safety 	<ul style="list-style-type: none"> Community Infrastructure Enhancement Plan
<p>Social Needs Assessment:</p> <ul style="list-style-type: none"> Services for seniors (Ranked #5 out of 25) Services for youth (Ranked #6 out of 25) <p>CAC Feedback:</p> <ul style="list-style-type: none"> Concerns about residents and children safely crossing the railroad tracks separating Highland Terrace from Liberty Park Pedestrian bridge to help children and other community center users to avoid traffic Concerns about ability of children to walk to community center CAC agreeable to evaluate one, centrally located facility and smaller pocket parks due to limited availability of large and/or contiguous vacant/underdeveloped parcels Residents' first choice options (amenities) should be included in the intergovernmental agreement CAC input in the intergovernmental agreement with the City of North Charleston "Neighborhood" center vs. community center (no box design) Facility should be broad scale in design, diverse use, forward-thinking, multi-faceted Center staffed by neighborhood residents with scheduled activities that engage the community Center staff need to be qualified to run the center Design of center should facilitate delivery, storage, and distribution of emergency supplies Incorporate visual imagery in community center Center should integrate solar power with generator backup to ensure the facility can be used as an emergency resource. 	<ul style="list-style-type: none"> Recreation Facilities and Amenities Recreation Programs and Activities Community Infrastructure Enhancement Plan Community History Preservation Study Project Oversight Committee Community Mitigation Implementation Schedule
<p>CAC/SNA Feedback (Items Not Addressed by SCDOT Mitigation Measures): None</p> <p>Footnotes related to CAC/SNA Feedback on Community Enhancement: None</p>	

COMMUNITY PRESERVATION: INFRASTRUCTURE NEEDS	
<p>Community preservation connects the past, present, and future of a community by maintaining and preserving neighborhood infrastructure in consideration of past effects of highway/infrastructure projects and current transportation and land use decisions; the ability to prepare for, and recover from, severe weather; and the ability of residents to be able to age in place.</p>	
PROJECT IMPACTS	SCDOT COMMUNITY MITIGATION MEASURES
<ul style="list-style-type: none"> • Adverse effects to family generational wealth created by land ownership due to cumulative acquisitions from original construction of I-26 and I-526 • Diminished economic vitality due to depreciated home values, a high number of vacant or underdeveloped parcels, and a high number of homes in disrepair • EJ neighborhood residents are anticipated to experience disproportionate impacts associated with exposure to construction noise and dust as they are likely to have windows open to help ventilate homes⁴ 	<ul style="list-style-type: none"> • Replacement Affordable Housing Program • Community Infrastructure Enhancement Plan • Financial Literacy & First-Time Home Buyer Counseling • First-Time Home Buyer Grant Program • Enhanced Right-of-Way Advisory Services • Acquisition Fairness Program • Enhanced Relocation Mitigation Program • Community Mitigation Implementation Schedule • Community Air Quality Monitoring Program
<ul style="list-style-type: none"> • Liberty Park and Highland Terrace Residents are anticipated to experience increased exposure to traffic noise • Visual changes to the existing environment in the EJ neighborhoods because the existing road already sits above many of the affected communities 	<ul style="list-style-type: none"> • Mitigation Barriers
CAC/SNA FEEDBACK	SCDOT COMMUNITY MITIGATION MEASURES
<p>Social Needs Assessment:</p> <ul style="list-style-type: none"> • Adequate stormwater management (Ranked #1 out of 25) • Adequate sidewalks/bicycle facilities (Ranked #2 out of 25) • Well-lit streets/sidewalks (Ranked #8 out of 25)¹ <p>CAC Feedback:</p> <ul style="list-style-type: none"> • Installation of speed humps to address speeding/general safety • Address sidewalk infrastructure needs/neighborhood connectivity • Importance of safe, practical footpaths/sidewalks • Safety for bicycle riders • Address areas with inadequate streetlighting/standing water • Bus shelters with covers and seating 	<ul style="list-style-type: none"> • Community Infrastructure Enhancement Plan • Community Mitigation Implementation Schedule

COMMUNITY PRESERVATION: INFRASTRUCTURE NEEDS	
<p>CAC Feedback:</p> <ul style="list-style-type: none"> Remove barriers to residents' ability to 'age in place' 	<ul style="list-style-type: none"> Replacement Affordable Housing (rentals and owner-occupied with ADA accessible units available) Community Infrastructure Enhancement Plan Community Resource Guide Financial Literacy & First-Time Home Buyer Counseling First-Time Home Buyer Grant Program Community Workshops Acquisition Fairness Program Enhanced Right-of-Way Advisory Services Pre-Employment Job Training Program On-the-Job Training Program Careers in Transportation Educational Programs School to Work Program Small Business Development Program Community Mitigation Implementation Schedule
<p>CAC Feedback:</p> <ul style="list-style-type: none"> Potential partnerships with local college nursing programs to develop health and wellness program for senior residents 	<ul style="list-style-type: none"> Recreation Programs and Activities Community Resource Guide Community Workshops
<p>CAC/SNA Feedback (Items Not Addressed by SCDOT Mitigation Measures):</p> <ul style="list-style-type: none"> Pedestrian accommodations over/across Rivers Avenue; safety issues for veterans crossing at Patriots Villa across Rivers Avenue² CARTA/shuttle bus (with seats) to transport residents, AM/PM² <p>Footnotes related to CAC/SNA Feedback on Community Preservation:</p> <p>² Pedestrian improvements along Rivers Avenue will be addressed by the Lowcountry Rapid Transit Project to provide safe access to the transit service stops serving these communities. In addition, CARTA OnDemand program that serves seniors and disabled community members provides low cost, comfortable and easily accessible shuttle rides (https://www.ridecarta.com/services/ondemand/).</p> <p>⁴The contractor(s) will use fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. The contractor(s) will ensure that all construction equipment is properly tuned and maintained. Idling time will be minimized to save fuel and reduce emissions. Water will be applied to control dust impacts off site. There will be no open burning of removed vegetation. Vegetation will be chipped or delivered to waste energy facilities.</p>	

COMMUNITY REVITALIZATION: REPLACEMENT HOUSING AND EMPLOYMENT/ECONOMIC OPPORTUNITIES

Community revitalization focuses on actions such as maintaining and providing more affordable housing stock, providing employment opportunities for neighborhood residents, and actions such as improved public safety which foster community development.

PROJECT IMPACTS	SCDOT COMMUNITY MITIGATION MEASURES
<ul style="list-style-type: none"> • Displacements associated with original construction of I-26 and I-526 • Many of the houses in the affected EJ neighborhoods were built in the 1940's; these homes were prefabricated houses designed to be easily assembled and disassembled so they could be moved as needed; as such, the existing housing stock is old, and much is in disrepair • Affordable housing stock is also affected by the reduction of mobile homes in the project area and vicinity; this trend is anticipated to continue based on local growth plans and policies related to mobile homes • Available land for affordable housing is also being reduced by new development in the area including other transportation projects, past airport expansions, and large-scale commercial development⁵ • Heirs' property issues can hinder residents from performing home repairs or building new homes • Due to a lack of access to legal resources, many early black landowners did not have wills, therefore their descendants now lack clear titles. This type of property issue is called "Heirs' Property", and historically, it has hindered residents from performing home repairs or building new homes. Additional information on Heirs' Property can be found in the EJ Analysis, FEIS-ROD Appendix G • EJ neighborhood residents experience environmental stressors, notably those related to economic insecurity, outdoor and indoor pollutants³ • EJ neighborhood residents experience a high degree of vulnerability related to weather hazards given the quality of housing stock, location within the Filbin Creek drainage basin, and Heirs' Property issues 	<ul style="list-style-type: none"> • Replacement Affordable Housing Program • Community Infrastructure Enhancement Plan • Community Resource Guide • Financial Literacy & First-Time Home Buyer Counseling • First-Time Home Buyer Grant Program • Community Workshops • Acquisition Fairness Program • Enhanced Right-of-Way Advisory Services • Enhanced Relocation Mitigation Program • Community Air Quality Monitoring Program • Community Mitigation Implementation Schedule
CAC/SNA FEEDBACK	SCDOT COMMUNITY MITIGATION MEASURES
<p>Social Needs Assessment:</p> <ul style="list-style-type: none"> • Availability of quality housing (Ranked #3 out of 25) • Availability of affordable housing (Ranked #4 out of 25) <p>CAC Feedback:</p> <ul style="list-style-type: none"> • Prefer single-family rental units as opposed to multi-family units/mobile homes/modular 	<ul style="list-style-type: none"> • Replacement Affordable Housing Program • Financial Literacy & First-Time Home Buyer Counseling • First-Time Home Buyer Grant Program • Enhanced Relocation Mitigation Program • Community Mitigation Implementation Schedule

<p>CAC Feedback:</p> <ul style="list-style-type: none"> • Advocacy and self-advocacy – educational and financial resources • Need for advocacy training to prepare CAC members and residents to participate in the transition to Project Oversight Committee (POC) • There is a need for and added value from organizing as a community advocacy group when the purpose of the CAC has been fulfilled. • Internship programs for 9th grade students • Networking opportunities • Residents feel there have been adverse effects to economic vitality due to what they consider improper compensation (for property impacts) from original construction of I-26 	<ul style="list-style-type: none"> • Organizational Training • Project Oversight Committee • Careers in Transportation Educational Program • College Aid Initiative • School-to-Work Program • Summer Transportation Institute Program • Pre-employment Training • On-the-Job Training Program • Small Business Development Program • Community Resource Guide • Community Office • Community Workshops
<p>Footnotes related to CAC/SNA Feedback on Community Revitalization:</p> <p>³Items were identified through the SNA or by the CAC but are not specifically related to direct, indirect, or cumulative impacts and thus, are not addressed by proposed SCDOT mitigation.</p> <p>⁵Items were identified as a direct, indirect, or cumulative impact. However, mitigation developed for the project does not (or cannot) directly address these impacts.</p>	

4.5.9 What is the Environmental Justice Analysis Conclusion?

The implementation of any of the Proposed Reasonable Alternatives would create disproportionately high and adverse effects to low income and minority communities. **The disproportionately high and adverse effects are a result of** direct impacts such as residential relocations, recreation facility relocations; a decrease in overall community cohesion and economic vitality; and cumulative impacts from past transportation projects, environmental pollutants and a lack of affordable housing in the North Charleston area. **As shown in Table 4.6, 59 percent of the displacements associated with the Recommended Preferred Alternative would impact low-income and/or minority residents.**

As detailed in Section 4.5.6, the Russelldale, Liberty Park, Ferndale, and Highland Terrace EJ neighborhoods would face the largest impacts from the I-526 LCC WEST project due to their proximity to the I-526 and I-26 interchange. Approximately 98 residential units, one church, and two community centers will be displaced within these four EJ neighborhoods as a result of the proposed project. Up to 21 project-related EJ residential impacts are associated with impacts to residents living on Seepoint Drive in the Seepoint Townhomes, and in Wando Woods, Charleston Farms, and Camps. In addition, an estimated 15 potential long-term EJ tenants staying at the Budget Inn Charleston, one of the anticipated commercial displacements, are included as other EJ relocations. Future roadway projects that are currently programmed will also result in further cumulative impacts to the Camps neighborhood.

It is anticipated that the proposed mitigation measures that have been incorporated into the Recommended Preferred Alternative, as outlined in the EJ Community Mitigation Plan (described in Section 4.5.8, summarized in Table 4.8, and detailed in Appendix H), would provide community benefits within the impacted EJ communities. As previously stated, a series of neighborhood meetings was held during the public review period for the DEIS to gather feedback on proposed mitigation. Feedback received from EJ neighborhood residents was used to refine and finalize the EJ Community Mitigation Plan. The final Plan (Appendix H) catalogs all agreements and plans required to implement the mitigation commitments.

In addition, as described in Section 4.5.6.1, the I-526 LCC WEST project would provide economic, mobility, and safety benefits for residents that utilize the I-526 and I-26 corridors. The purpose and primary benefit of the project is to increase capacity at the I-26/I-526 interchange and along the I-526 mainline, thereby relieving traffic congestion and improving operations at the I-26/I-526 interchange and along the I-526 mainline from Paul Cantrell Boulevard to Virginia Avenue.

Mitigation commitments within the impacted EJ communities, coupled with overall project benefits, would effectively offset adverse effects to the extent that effects on minority and low-income populations will not be appreciably more severe or greater in magnitude than the adverse effect on non-minority and non-low-income populations. Based on the above discussion and analysis, the Recommended Preferred Alternative would not cause disproportionately high adverse effects on any minority or low-income populations in accordance with the provisions of E.O. 12898 (Federal Actions to Address Environmental Justice to Minority and Low-Income Populations) and FHWA Order 6640.23A (FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). No further EJ analysis is required.

4.6 Relocations

The purpose of a Relocation Impact Study is to expound upon the anticipated problems and proposed solutions associated with the displacement of individuals, families, businesses, farms, and nonprofit organizations. To determine the number of potential displacements within the Recommended Preferred Alternative, field inspections were conducted along with the review of aerial photos and maps showing the proposed new right-of-way. Refer to Appendix I, for the Relocation Impact Study.

Based on the Recommended Preferred Alternative, it is anticipated that there will be approximately 156 residential relocations and 28 commercial building relocations that account for 71 commercial unit relocations along the project corridor, as described in the FEIS-ROD Relocation Impact Study, Appendix I. This is an increase of 62 residential relocations and 55 commercial units since the DEIS was published. These additional residential and commercial relocations are due in part to a supplementary right-of-way field study that was conducted in July 2021, which counted displacements within the proposed right-of-way boundary, identified additional displacements that were not previously visible from aerial imagery, and verified multi-family or single-family residence status. Because two (2) hotels are likely to be displaced as a part of the project, the project team has also included an estimate of the long-term hotel tenants in the updated residential relocation count. Per SCDOT Relocation Manager guidance, this estimate is based off the percentage of long-term tenants occupying impacted hotels of previous SCDOT projects. Through this methodology, the tenant to room rate typically ranges from 10-20% of total occupancy. The high end of this range was used for this project to reflect a conservative estimate. This estimate is subject to change as contact with tenants is initiated during the Right-of-Way phase.

Commercial relocations were also re-evaluated to provide a count of actual tenants, rather than the number of commercial building displacements. In addition to the field study, access and drainage impacts were evaluated which resulted in additional relocations. Refer to Table 4.9 for the number of relocations noted in the DEIS and the revised number of relocations based on the updated Relocation Impact Study.

Table 4.9 Relocation Impacts of the Recommended Preferred Alternative

Relocations		Recommended Preferred Alternative (DEIS)	Recommended Preferred Alternative (Updated)
Residential	Single-Family	36	43
	Multi-Family Units	47	102
	Mobile Homes	11	11
Businesses		16	71
Churches/Other Institutions		1 church	1 church; 1 institution
Community Facilities		2	2
Billboards		10-20	15-25
Communication Cell Towers		1	2

The increase in the number of relocations since the DEIS is due to a supplementary right-of-way field study (July 2021) that took into account displacements that were not visible from aerial imagery, verified multi-family or single-family residence status, and considered access, mitigation, and drainage design impacts. The majority of the increase in business relocations can be attributed to a count of actual tenants, rather than the number of commercial building displacements.

There is a possibility that the number of single-family homes and mobile homes could change due to homes being built on vacant lots and homes or mobile homes being vacant. The number of tenants in the commercial buildings are subject to change due to vacancies, leasing to new tenants, and altering space to accommodate current tenant needs. To accommodate these considerations, the updated Relocation Impact Study (June 2022) presents relocation estimates for the Recommended Preferred Alternative that are based on the best available information at the time of production from sources including 2019 GIS imagery provided by Charleston County, 2021 GIS ESRI imagery, latest market information, and field verification. Mapping of the relocations along the project corridor are included in Appendix I. These estimates are subject to change in response to housing and/or businesses changes in the project study area.

It is noted that relocation impact numbers for all of the Proposed Reasonable Alternatives would increase to reflect these updates. It is SCDOT's desire to leave remaining homes with an adequate front yard and space for parking so final relocation impacts will be based on negotiations with each property owner as a part of the appraisal process during the right of way phase. These counts will be refined as the project advances and additional measures are evaluated to minimize impacts. Relocation details, including a comparison of impacts for the Proposed Reasonable Alternatives, can be found in Chapter 3 and in the updated Relocation Impact Study, Appendix I.

The acquisition of property for right-of-way would be in accordance with State Law 28-11-10 and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646, as amended by 100-17; 49 CFR 24.205 (AF)). This Act was enacted by congress in 1971 to assist residents, organizations, and businesses displaced by public agencies in relocating without suffering a disproportionate loss. In addition to just compensation for the acquired property, equitable compensation normally associated with relocations is included as a part of the relocation assistance program. South Carolina Department of Transportation (SCDOT) will provide relocation advisory and financial assistance to homeowners, renters and business owners displaced as a direct result of the project. Since November 2019 SCDOT has maintained a Community Office near the impacted EJ neighborhoods. The intent of opening this office was not only to create meaningful engagement with residents during the project development process, but to also make right-of-way specialists readily available to help educate residents on their rights under the Uniform Act and advise impacted residents of the relocation

process. The right-of-way specialists have helped to ease concerns and negative perceptions regarding the relocation process based on past transportation projects. Title VI of the Civil Rights Act of 1964 will be followed and will be provided without discrimination.

All EJ Community Mitigation Plan commitments, including those regarding replacement housing and recreational facilities, are found in Appendix H.

Residential

Several residential communities within the North Charleston and West Ashley areas will be impacted by the Recommended Preferred Alternative and will require relocation assistance. The Recommended Preferred Alternative would result in the relocation of approximately 156 residential properties, including 43 single-family homes, 102 multi-family units, and 11 mobile homes. All residential relocations reflect a conservative estimate that will be refined as the project advances and additional measures are evaluated to help further minimize impacts.

Finding affordable housing within the North Charleston area is a concern for relocating owners and tenants that will be affected by the Recommended Preferred Alternative. Some individuals that will potentially be displaced have expressed an interest in moving to other areas of the state or out of state. It is crucial to continue investigation of affordable house options for the affected communities. **To the extent practicable, the contractor will attempt to limit changes in design that would result in additional displacements in Environmental Justice communities.**

SCDOT will conduct right-of-way acquisition and relocation assistance in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (P.L. 91-646). Relocation resources would be made available to all eligible displaced residents, including tenants, without discrimination, consistent with the requirements of the Civil Rights Act of 1964 and the Housing and Urban Development Act of 1974.

ROW Certification: In accordance with Federal regulations at 23 CFR 635.309, FHWA will not issue authorization to advertise the physical construction for bids or to proceed with force account construction until the SCDOT certifies that all individuals and families have been relocated to decent, safe, and sanitary housing OR that the State has made available to displacees adequate replacement housing in accordance with the provisions of the 49 CFR part 24 and that one of the criteria outlined in 23 CFR 635.309(c) applies.

SCDOT will implement an affordable replacement housing program that includes two components: (1) partnering with the South Carolina State Housing and Finance Development Authority to initiate a developer- incentivized affordable housing program that will construct 100 affordable housing units within the city of North Charleston and (2) purchase 45 vacant lots within the EJ communities and part with a local non-profit that specializes in constructing affordable housing.

Section 8

Section 8 Housing is a federal program that is provided by the U.S. Department of Housing and Urban Development (HUD). This program provides affordable housing to individuals or families that are having a difficult time finding a home due to their financial situation. While there are not any government owned Section 8 housing units in the Recommended Preferred Alternative project study area, there are a large number of privately owned units that accept Section 8 vouchers from program participants. According to Relocation Impact Study in Appendix

I, approximately 20 percent of the residents located in the Russelldale and Highland Terrace Communities may receive assistance from the Section 8 Housing Program. Although it is anticipated that residents receiving Section 8 housing assistance will be displaced by the proposed project, the exact number cannot be determined until preliminary contacts are conducted during the right-of-way acquisition process. Under the Section 8 program, participants in the program that are impacted by a federally funded project, such as the I-526 LCC WEST project, will receive priority for available properties on the wait list for Section 8 Properties. SCDOT will work closely with the local Housing Authorities to ensure that each tenant currently receiving Section 8 Assistance will continue to receive the same assistance.

Housing of Last Resort

Affordable housing is still a concern and remains a top priority for SCDOT. As a way to assist with affordable housing and the shortage for both owners and tenants, Housing of Last Resort will be used following the guidelines in the Uniform Act and the SCDOT Relocation Manual. Housing of Last Resort is used when a project or program cannot move forward promptly because there are no comparable replacement dwellings available within the monetary limits for owners or tenants. The purpose is to allow broad latitudes in methods so that decent, safe, and sanitary replacement housing can be established. If the right of way acquisition is phased the current real estate market may be able to absorb the single-family dwelling displacements.

Housing of Last Resort: In accordance with the Uniform Act, comparable Decent, Safe, and Sanitary (DSS) replacement housing within a person's financial means must be made available before that person may be displaced by SCDOT. When such housing cannot be provided under the provisions for replacement housing payments, SCDOT shall provide for Housing of Last Resort (HLR) payments in accordance with 49 CFR 24.404, which authorizes payments in excess of statutory maximums or the use of other methods of providing comparable housing.

Businesses

The Recommended Preferred Alternative would result in the relocation of 71 commercial units throughout the project study area. All business relocations reflect a conservative estimate that will be refined as the project advances and additional measures are evaluated to help further minimize impacts. Several of the businesses are located on parcels that may have enough property remaining for a replacement building. Vacant property for sale near the project area may accommodate additional displaced businesses. There are businesses within the project study area that would require special attention and planning to ensure that the business is given appropriate time to relocate. No grocery stores will be impacted. The majority of business relocations are industrial warehouse types and are located along I-26 approaching the system interchange with I-526. Borden Dairy Company, Aviation Square Shopping Center, and Bank of America Financial Center are large potential relocations, but efforts are being made to minimize impacts and/or avoid relocation. The incorporation of retaining walls is being reviewed to minimize impacts and reduce the number of relocations.

SCDOT will provide an enhanced relocation mitigation program for displaced business owners and employees to minimize economic harm. SCDOT will also reimburse reasonable moving costs and provide rent supplements for tenants in accordance with the Uniform Act, with an additional 18 months of supplemental rent payments based on the displacee's replacement rent and income.

SCDOT will partner with organizations and other disadvantaged business enterprises (DBE) in the state to develop and deliver an educational program that empowers those interested in learning more about starting a small business enterprise (SBE).

Churches and Institutions

The Recommended Preferred Alternative would result in the relocation of one hospital building and one church, Enoch Chapel Methodist. The hospital building houses the Medical University of South Carolina (MUSC) Children's Services Speech Pathology Office. As noted in Appendix I, this institution provides medical services for the community and should be given priority so that the relocation is successful, and services can continue to be provided. SCDOT anticipates the ability to successfully accommodate relocation of this hospital building in the general location where it is currently located in order to facilitate continued services to existing patients. The impacted church, which serves a predominately African-American congregation and is located within the EJ neighborhoods, has previously been relocated four times, three of which have been related to an infrastructure project. **To avoid the potential for additional impacts to Enoch Chapel Methodist Church subsequent to this project, SCDOT will provide the church with elevated advisory assistance during the right-of-way acquisition phase, which shall include a review of future transportation projects within the project study area.** It will ultimately be the church's decision as to where they prefer to be relocated. They may have additional considerations such as the visibility of the new location and proximity to their congregants.

Community Centers

The Recommended Preferred Alternative would result in the relocation of two community centers. One community center is located within the Russelldale neighborhood and one is located within the Highland Terrace and Liberty Park neighborhoods. The community centers are vital components of the Russelldale and Highland Terrace-Liberty Park communities, providing support for parents and a safe place for children that live within the area. Functional Replacement should be considered for both community centers and should remain in the same area for continued support.

SCDOT will fund the construction of replacement recreational facilities and associated infrastructure to mitigate project impacts and satisfy Section 4(f) and Section 6(f) requirements, see Sections 4.15 and 4.16 as well as Appendix Q and R for more information on these requirements. To facilitate this commitment, SCDOT will acquire parcels located within the affected neighborhoods and provide funding to the City of North Charleston who will oversee construction of one large, modern, centrally located community center complex with expanded programs and operating hours and two pocket parks, one within the Liberty Park neighborhood and one within the Russelldale neighborhood. SCDOT and the City of North Charleston have developed an intergovernmental agreement outlining the programs, services, structural components, and arrangements for long-term operation and maintenance of the replacement community center and recreational facilities. The agreement includes language that gives residents of the communities served by the community center priority in areas such as program enrollment/participation, reserving facility space, volunteer, and job opportunities. It is SCDOT's goal that construction of the new, centrally located community center and the pocket parks will be completed prior to the project construction impacting the existing community centers.

Billboards

Billboards in South Carolina are considered personal property so if any are impacted by the project, they will need to be relocated to a conforming location. The Recommended Preferred Alternative would result in the relocation of 20 billboards.

SCDOT will continue to coordinate with the Director of Outdoor Advertising to ensure that the relocation process is followed, enough time is allotted to relocate the billboards, and if there are any other issues with

the boards that they are addressed as soon as possible. The owners of the billboards were invited to attend the informational meetings to ensure they are kept abreast of the project, the time frame, and the process. In addition, SCDOT has met one-on-one with billboard owners during the planning phase to review the right-of-way and relocation process on a case-by-case basis. Billboard owners will be further accommodated by leaving the billboards up for as long as possible before construction in order to minimize impacts.

Communication Cell Towers

As currently proposed, the Recommended Preferred Alternative would result in the relocation of two communication cell towers. The communication cell towers will require the services of several specialty companies to relocate the towers and can be a costly expense. As a more detailed project design develops, ways to reduce the right-of-way impacts to the cell towers will be further analyzed.

4.7 Considerations Relating to Pedestrians and Bicyclists

As described in Section 3.9, the I-526 LCC WEST project will accommodate a future shared use path (SUP) across the Ashley River. Although this path will not connect to existing pedestrian and bicycle facilities, it will provide a critical link for the future overall mobility of pedestrians and cyclists in the project corridor.

The shared use path over the Ashley River will provide an overall benefit to pedestrian and cyclist mobility within the I-526 LCC WEST project corridor.

4.7.1 Is the Project Compatible with Existing Pedestrian and Bicycle Plans?

As detailed in Section 3.9, the I-526 LCC WEST project is compatible with bicycle and pedestrian improvements documented in local and regional transportation plans within the I-526 corridor:

- The additional footprint for a future Ashley River SUP included in the I-526 LCC WEST project will accommodate a portion of the parallel SUP planned from Paul Cantrell Boulevard to Virginia Avenue described in the BCDCOG LRTP. The remaining segments of the parallel SUP will be built outside of the interstate network. Those segments have independent utility from the Ashley River crossing and will require additional planning by local project sponsors.
- The footprint of the I-526 LCC WEST project will not impede the development of pedestrian and bicycle improvements on roadways crossing under I-526.

The Community Infrastructure Enhancement Plan (CIEP), developed as part of EJ mitigation for impacts associated with the I-526 LCC WEST project, proposes bicycle and pedestrian connectivity and safety improvements within the impacted EJ communities in order to restore community connections and provide safe access to the new community center, pocket parks, and transit stops. Based on feedback received from residents within these communities, these improvements include a combination of improving existing sidewalks and constructing new sidewalks and crosswalks. To address specific rail crossing safety concerns voiced by the CAC, as documented in the meeting summary for CAC Meeting #5 (Part 2 of Appendix U) and noted in Table 4.8, CIEP pedestrian safety improvements are also proposed for the existing at-grade railroad crossing at Taylor Street and Jonah Street which is the primary route for Highland Terrace and Joppa Way residents to access the Highland Terrace-Liberty Park pocket park. These infrastructure improvements will be coordinated with the City of North Charleston and

construction will be completed prior to the start of construction on the I-526 LCC WEST project. The proposed pedestrian bridge and multi-use path to be constructed over Lacross Street and the Norfolk Southern railroad, also part of the CIEP, will be constructed as part of the I-526 LCC WEST project.

See Table 4.8 for specific feedback received from the CAC to restore community connections. Appendix H, the EJ Community Mitigation Plan, can be referenced for more information regarding proposed bicycle and pedestrian improvements as outlined in the CIEP.

The I-526 LCC WEST project is in accordance with the SCDOT's Complete Streets Departmental Directive. This directive, dated February 4, 2021, established that funding for walking and bicycle accommodations should be considered on interstate capacity projects at major river crossings.

4.7.2 What are the Environmental Consequences of the Ashley River Shared Use Path?

The accommodation of additional footprint for a future SUP on the Ashley River crossing of I-526 will increase the footprint of the I-526 LCC WEST project in the vicinity of the river crossing. Impacts to the human and natural environment associated with the SUP are included in the impacts of the overall Recommended Preferred Alternative detailed earlier in this chapter.

The I-526 Ashley River SUP will also provide benefits to pedestrians and cyclists in the project vicinity and larger Charleston area. Currently, there are no dedicated pedestrian or bicycle facilities near the I-526 crossing of the Ashley River, with the closest planned accommodations located several miles downstream on the future bicycle and pedestrian bridge that will be built just south of the US 17 drawbridges. Once constructed, the I-526 Ashley River SUP will provide a critical link for existing pedestrian and bicycle connectivity, as well as provide a connection for future improvements by other project sponsors.

4.8 Air Quality

4.8.1 How are Air Quality Standards Regulated?

Air Quality refers to the condition of the air and level of pollutants such as smoke, dust, smog, or other impurities. Air quality is assessed by measuring pollution indicators or criteria pollutants.

The Clean Air Act of 1970 amended (CAA) section 176(c) requires that federal transportation projects remain consistent with state air quality goals found in the State Implementation Plan (SIP) which is developed by the South Carolina Department of Health and Environmental Control (SCDHEC). Transportation Conformity is the process to ensure consistency and that transportation activities do not cause new violations of the National Ambient Air Quality Standards (NAAQS), worsen existing violations of the standard, or delay timely attainment of the standard. Atmospheric pollutants which are considered as such by the NAAQS include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and sulfur dioxide (SO₂). The United States Environmental Protection Agency (USEPA) also regulates mobile source air toxics (MSATs). Due to their association with roadway transportation sources, CO, O₃, PM_{2.5}, and MSATs are reviewed for potential effects on nearby receptors with respect to roadway projects. The SCDHEC’s Bureau of Air Quality is responsible for regulating and ensuring compliance with the CAA in South Carolina.

Criteria pollutants are the only air pollutants with acceptable levels defined by national air quality standards that define allowable concentrations of these substances in ambient air. The criteria pollutants are carbon monoxide, ozone, nitrogen, lead, sulfur dioxide, and particulate matter.

Section 107 of the CAA requires the USEPA to publish a list of all geographic areas in compliance with the NAAQS as well as those not in compliance. This designation is made on a pollutant-by-pollutant basis for geographic areas. The USEPA’s current designations and scale of an area are as follows:

- Attainment - Area is in compliance with NAAQS
- Unclassified - Area has insufficient data to make a determination. Unclassified areas are treated as being in attainment.
- Nonattainment - Area is not in compliance with NAAQS
- Maintenance - Area once classified as nonattainment but currently demonstrates attainment of NAAQS

Charleston County is currently in attainment based on air quality monitoring data collected in the region. **Since the region is in attainment, neither the transportation nor general conformity apply to this action.**

4.8.2 What are the Potential Environmental Consequences to Air Quality?

4.8.2.1 How would the No-Build Alternative Impact Air Quality?

The No-Build Alternative would result in more traffic congestion and idling of vehicles, which would result in an increase in pollutants. In addition, as industry and population grow there will be more vehicles within the corridor and congestion will also increase. This traffic congestion will increase pollution to the detriment of local air quality. The No-Build Alternative is not anticipated to put the region into nonattainment or maintenance for any of the NAAQS.

4.8.2.2 How would the Recommended Preferred Alternative Impact Air Quality?

A quantitative analysis of MSAT impacts was conducted for the interchange at I-526 and I-26. This interchange experiences the highest daily traffic along the corridor and would therefore be the expected location of greatest impacts to air quality on nearby populations. The Recommended Preferred Alternative, which include a single 2050 build and No-Build scenario, would experience significant overall reductions between 2015 and 2050 for all MSAT pollutants included in the analysis. These reductions, in large part, are due to the tiered emission reduction requirements imposed on auto makers doing business within the United States. The quantitative MSAT impact analysis placed special focus on the highest air quality impacts within the interchange-adjacent EJ neighborhoods as compared to the highest impacts within the greater modeling domain. For all pollutants examined except benzene and ethyl benzene, the locations of highest impact within the modeling domain were not located in any of the EJ neighborhoods adjacent to the interchange. In the case of benzene and ethyl benzene, the domain-wide highest impact locations were located within the Highland Terrace EJ neighborhood. There are many contributors to this including the proximity of the Highland Terrace neighborhood to a single-lane interchange ramp link with exceptionally low peak hour average speeds coupled with the fact that both pollutants are emitted at much higher rates at low vehicle speeds in the USEPA's latest version of MOtor Vehicle Emission Simulator (MOVES2014b), the emissions model used for this analysis. There are several proposed single-lane or multi-lane ramps with relatively low rates of average speed situated very close to the location of highest impact in Highland Terrace.

The absolute concentrations of benzene and ethyl benzene will experience a greater reduction in the Recommended Preferred Alternative than in the No-Build alternative.

Between 2015 and 2050, concentrations of benzene are projected to experience an 88.46 percent reduction in the No-Build Alternative whereas the projected reduction for the Recommended Preferred Alternative is marginally higher, at 90.11 percent. For ethyl benzene, the projected reduction in the No-Build Alternative is 92.26 percent and that for the Recommended Preferred Alternative is, again, marginally higher at 93.34 percent. While all MSAT emissions, in general, are projected to drop precipitously between 2015 and 2050 due to improved vehicle emission requirements, it should be noted that the impact analysis showed greater impacts on receptors (i.e. residents) closer to the interchange for all pollutants modeled. For more detailed information refer to the quantitative impact assessment for MSATs found in Appendix J, Air Quality Impact Analysis.

SCDOT will develop a PM 2.5 monitoring program within the impacted EJ communities of Ferndale, Highland Terrace, Liberty Park, and Russelldale. SCDOT will provide results to their website where community members can access real time data/results. The POC will be updated on the results of this program.

During construction, the contractor(s) will ensure particulate matter emissions will be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. Construction-related Mobile Source Air Toxics (MSAT) emissions will be minimized by using low emission diesel fuel for non-road diesel construction equipment. Contractor will be required to make every reasonable effort to minimize construction air quality impacts through abatement measures such as limiting construction equipment idling and other emission limitation techniques, as appropriate.

The contractor(s) will ensure that all construction equipment is properly tuned and maintained. Idling time will be minimized to save fuel and reduce emissions. Water will be applied to control dust impacts off site. There will be no open burning of removed vegetation. Vegetation will be chipped or delivered to waste energy facilities.

4.9 Noise

4.9.1 What is Noise?

Highway traffic noise is usually a composite of noises from engine exhaust, drive train, and tire-roadway interaction. Decibels (dB) are the unit used to measure the intensity of sound. The commonly accepted range of human hearing is between the threshold of hearing at zero decibels and the threshold of pain at 140 decibels.

Noise
is defined as unwanted
sound from natural or man-
made sources.

The degree of disturbance or annoyance from exposure to unwanted sound – noise – depends upon three factors:

- The amount, nature, and duration of the intruding noise;
- The relationship between the intruding noise and the existing (ambient) sound environment; and
- The situation in which the disturbing noise is heard

In considering the first of these factors, it is important to note that individuals have a varying sensitivity to noise. Loud noises bother some people more than others. The time patterns and durations of noise(s) also affect perception as to whether the noise is seen as offensive. For example, noises that occur during nighttime (sleeping) hours are typically considered to be more offensive than the same noises in the daytime.

Regarding the second factor, individuals tend to judge the annoyance of an unwanted noise in terms of its relationship to noise from other sources (background noise). A car horn blowing at night when background noise levels are low would generally be more objectionable than one blowing in the afternoon when background noise levels are typically higher.

The third factor – situational noise – is related to the intrusion of noise with activities of individuals. For traffic noise measurements, decibels are most commonly reported in terms of the A-weighting frequency scale, which best includes the frequencies to which human hearing is typically most sensitive and is denoted by the abbreviation dB(A). In a 60 dB(A) environment such as is commonly found in a large business office, normal conversation would be possible, while sleep might be difficult. Loud noises may easily interrupt activities that require a quiet setting for greater mental concentration or rest; however, the same loud noises may not interrupt activities requiring less mental focus or tranquility.

Noise levels from rail and both commercial and military aircraft from the Charleston International Airport were considered. Refer to Appendix K for further information of how railroad and aircraft noise were taken into consideration in the noise analysis.

4.9.2 How does SCDOT Evaluate Noise Impacts?

FHWA has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and design of highways. The purpose of establishing regulations is, “to provide procedures for noise studies and noise abatement measures to help protect the public’s health, welfare and livability, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to Title 23, United States Code (USC).” FHWA’s abatement criteria and procedures are set forth in Title 23 CFR Part 772, which also states, “in abating traffic noise impacts, a highway agency shall give primary consideration to exterior areas where frequent human use occurs.”

Table 4.10, Noise Abatement Criteria, is a summary of the NAC for various land uses. Regarding traffic noise, fluctuating sound levels of traffic noise are represented in terms of Leq, the steady, or “equivalent,” noise level with the same energy. If the difference between the existing noise level and the predicted noise level under the Recommended Preferred Alternative equals 15 dBA equivalent sound level (Leq) or greater, noise impacts would occur.

Table 4.10 Noise Abatement Criteria

Activity Category	Leq (h)* Noise Levels (dBA)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 (exterior)	Residential
C	67 (exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	-	Undeveloped lands that are not permitted.

* Leq(h) is hourly equivalent sound level

SCDOT’s Traffic Noise Abatement Policy (October 10, 2019) establishes official policy on highway noise. This policy describes SCDOT’s process that is used in determining traffic noise impacts, construction noise impacts, abatement measures, and the equitable and cost-effective expenditure of public funds for traffic noise abatement. Where the FHWA has given highway agencies flexibility in implementing the 23 CFR Part 772 standards, this policy describes SCDOT’s approach to implementation.

Ambient sound level data was acquired at thirty-six noise monitoring locations (NMLs) between April 1 and April 4, 2019. The I-526 Lowcountry Corridor WEST Detailed Noise Analysis is in Appendix K and contains the technical details of the modeling and impact analysis.

A Traffic Noise Model (TNM) 2.5 model representing existing conditions was created utilizing receptors, roadways, terrain lines, ground zones, and barriers (to represent structures). In order to validate the TNM model, traffic was counted simultaneously during the noise measurement period. The traffic was classified as automobiles, lightweight trucks, heavy trucks, motorcycles and buses. This traffic was applied to the TNM model and the measured noise levels were compared to the levels derived from TNM. If the TNM results and the measured results were within +/- 3.0 dB(A) then the model is considered validated per SCDOT and FHWA criteria. For further information about the measurement of existing noise levels, validation of the TNM 2.5 model and figures showing receptors and measurement locations, refer to the Detailed Noise Analysis, which can be found in Appendix K of the FEIS.

The two categories of traffic noise impacts are defined as 1) those that “approach” or exceed the FHWA NAC and 2) those that represent a “substantial increase” over existing noise levels as defined by SCDOT.

4.9.3 What are the Potential Noise Environmental Consequences?

Design elements for the Build 2050 scenario were incorporated into the validated TNM models and predicted traffic noise levels were evaluated for all noise-sensitive receptors. Traffic noise impacts were assessed per SCDOT NAC and Substantial Increase Criteria of 15 dB(A) increase in predicted design year loudest-hour equivalent noise levels over existing base year loudest-hour equivalent noise levels.

The project area is divided into Noise Study Areas (NSAs) consisting of similar land uses. Forty-nine NSAs were identified in the project corridor, see Detailed Traffic Noise Analysis Report found in Appendix K. The existing land use consists of primarily single-family and multi-family residences (Category B) as well as some places of worship, apartment pools, trails (Category C), college interior, interior of places of worship with no outdoor land uses, TV station interior, daycare center interior that has no outdoor land use (Category D) (note: there are no medical facilities that are NAC D on this project), and a marina picnic deck, offices with outdoor seating for dining or breaks, hotel pools and outdoor dining at restaurants (Category E). Receptors representing places of worship and medical facilities were only considered as Category D if no exterior area of frequent human activity was identified.

Approximately 2,200 individual noise receptors were identified in the project area.

4.9.3.1 How would the No-Build Alternative Impact Noise?

Based on the noise analysis for the No-Build Alternative, noise levels would approach or exceed the NAC established in SCDOT Traffic Noise Abatement Policy for 589 receptors. The majority of the levels exceeding the NAC are at NAC Category B (residences). Preliminary predicted exterior noise levels for the No-Build Alternative range from 43 to 78 dB(A).

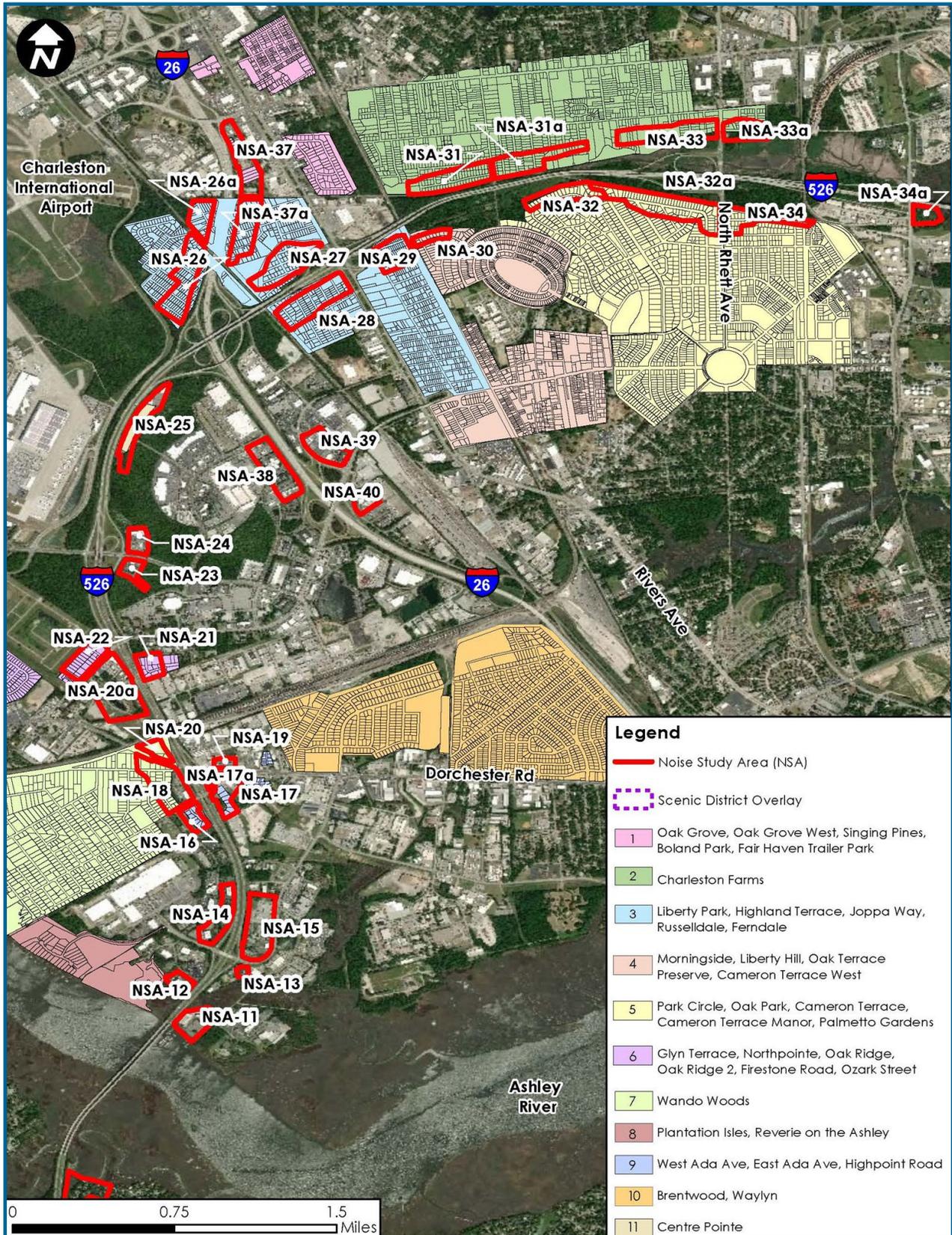


Figure 4.11 North Charleston Noise Study Areas

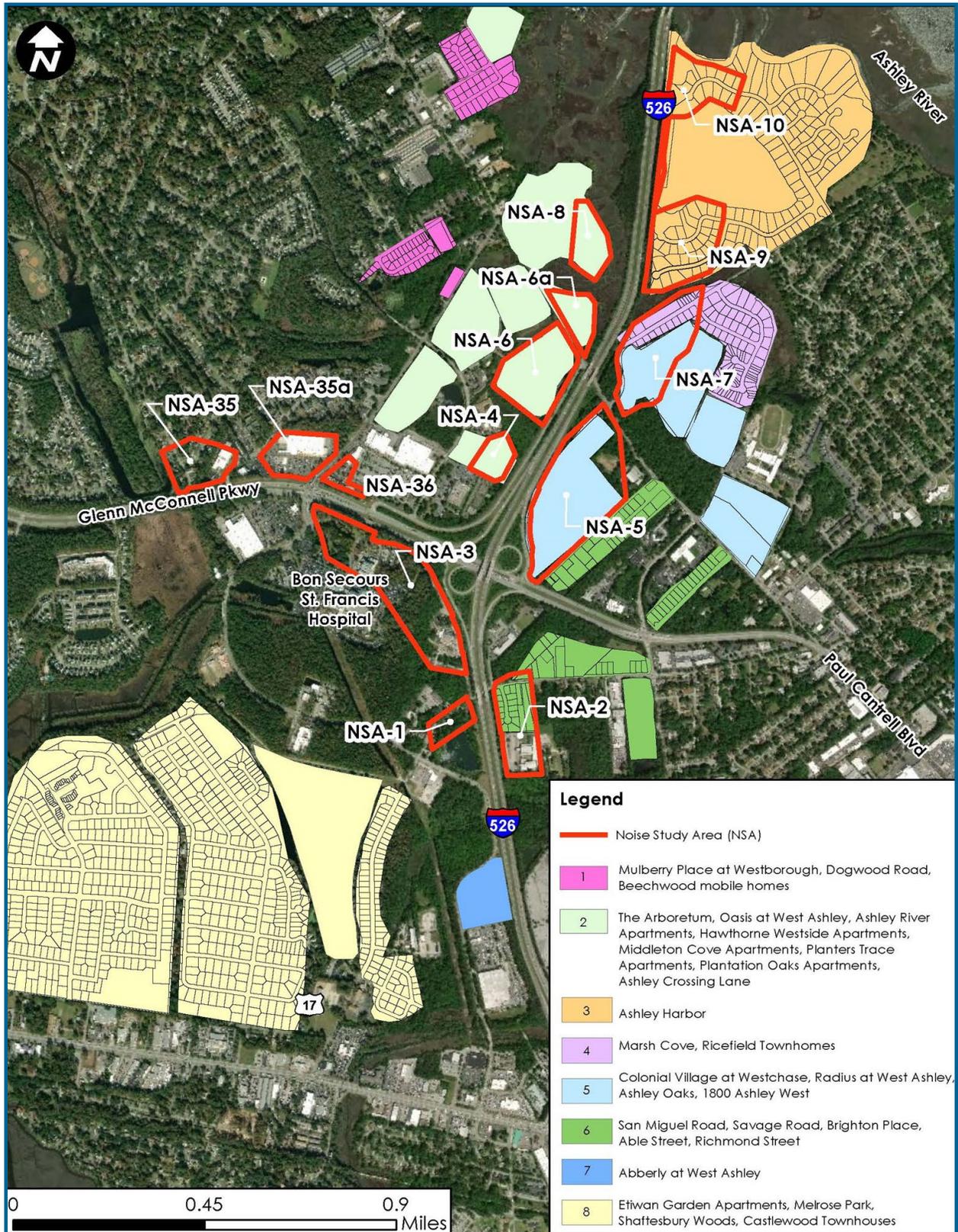


Figure 4.12 West Ashley Noise Study Areas

4.9.3.2 How would the Recommended Preferred Alternative Impact Noise?

The Recommended Preferred Alternative traffic noise is predicted to impact 720 receptors. Table 4.11 shows the number and types of predicted traffic noise impacts designated as either approaching or exceeding the FHWA NAC. Preliminary predicted exterior noise levels for the Recommended Preferred Alternative range from 45 to 80 dB(A).

Table 4.11 Predicted Traffic Noise Impact Summary

Study Alternative	Reason for Noise Impact	Noise Abatement Criteria Impact by Activity Categories ¹							All Activity Categories
		A	B	C	D	E	F ⁵	G ⁶	
Design Year 2050 Build	NAC Only ¹	0	710	9	0	1	0	0	720
	Substantial Increase Only ²	0	0	0	0	0	0	0	0
	By Both Criteria ³	0	0	0	0	0	0	0	0
	Total Impacts ⁴	0	710	9	0	1	0	0	720

1. Predicted traffic noise impacts due to loudest hourly equivalent noise levels that approach or exceed NAC (refer to Appendix G)
2. Predicted traffic noise impacts due to Design Year loudest hourly equivalent noise levels that are a “Substantial Increase” over existing base year levels
3. Predicted traffic noise level impacts due to both 1 and 2
4. Only one of the Note 1 and Note 2 conditions must be met for an impact to exist
5. There are no impact criteria for NAC F land use facilities, no analysis of noise impacts is required
6. There are no impact criteria for undeveloped lands; however, appropriate predicted traffic noise levels contours are provided to local officials to aid in future land use planning efforts. Per TNM 2.5 and in accordance with 23 CFR Part 772

4.9.4 How would Noise Impacts be Mitigated?

In accordance with 23 CFR §772.13 (c) and SCDOT's Noise Abatement Policy, noise abatement measures must be considered for reducing or eliminating noise levels to impacted receivers. When considering noise abatement measures, primary consideration shall be given to exterior areas where frequent human use occurs. Since South Carolina is not part of the FHWA-approved Quiet Pavement Pilot Program, the use of quieter pavements was not considered as an abatement measure for the proposed project. Planting of vegetation or landscaping is not an acceptable Federal-aid noise abatement measure and was not considered as a potential abatement measure. Only dense stands of evergreen vegetation planted for a width of 100 feet between the roadway and noise-sensitive receptors can reduce noise levels. **As noted in Section 9.1 of Appendix K Detailed Noise Analysis**, the following measures were considered to reduce or eliminate the traffic noise impacts:

- **Acquisition of rights-of-way:** The acquisition of additional right-of-way to alter the alignment would result in impacts to the surrounding environment, both natural and human.
- **Traffic management:** Traffic management measures such as prohibition of truck traffic, lowering speed limits, limiting of traffic volumes, and/or limiting time of operation were considered as possible traffic noise impact abatement measures. The purpose of the project is to increase the functional capacity of the highway facility. Prohibition of truck traffic, reduction of the speed limit below the existing speed limits or the proposed speed limits or screening total traffic volumes would diminish the functional capacity of the highway facility and are not considered practicable for the I-526 LCC WEST project.
- **Alteration of horizontal and vertical alignments:** Highway alignment selection for traffic noise abatement measures involves modifying the horizontal and vertical geometry of the proposed facility to minimize traffic noise to noise-sensitive receptors. The selection of alternative alignments for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. For noise abatement, horizontal alignment selection is primarily a matter of locating the roadway at a sufficient distance from noise sensitive receptors. Appreciable reductions in traffic noise transmissions to sensitive receptors can be made by adjusting the vertical highway alignment and/or section geometry. For example, lowering a roadway below existing grade creates a cut section which could act similarly as an earth berm, depending upon the relative location(s) of noise-sensitive receptor(s). Given the design requirements of the I-526 LCC WEST project, changing the highway alignment in the vicinity of the noise sensitive areas is not a viable alternative for noise abatement.
- **Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development:** The acquisition of a suitable buffer zone is not feasible because the associated costs would exceed the SCDOT reasonable abatement quantity threshold per benefited receptor.
- **Noise insulation of public use or nonprofit institutional structures:** Per FHWA (FHWA 2011), highway agencies may only consider noise insulation for public use or nonprofit institutional structures, e.g., places of worship, schools, hospitals, libraries, etc. "Public use or nonprofit institutional structures" means the facility is open for public use, owned by the public or that a nonprofit organization owns the facility. This measure can be considered for Activity Category D land use facilities where there are no exterior areas with frequent human use or where areas of frequent use are shielded from receiving noise impacts and an impact has been determined based on the interior noise impact evaluation. The noise abatement evaluation for impacted Activity Category D land use facilities based on the interior NAC should first be evaluated using noise barriers. Noise insulation will only be considered for Activity Category D if noise barriers are determined to be not feasible or not reasonable and there is a noise impact based on an interior evaluation. All receptors that are categorized as NAC "D" because there are no areas of frequent outdoor human use on the property were evaluated for interior noise impacts. The type of windows for each location is not known (it is assumed that the windows are not kept open) so the single-glazed factor was applied as a conservative measure

(- 25 dB(A)). After applying the building noise reduction factors to each receptor, none of the receptors are impacted by the proposed project with an interior sound level that approaches or exceeds the NAC for Activity Category D of 52 dB(A) and are therefore not eligible for consideration of noise insulation measures.

- **Noise barriers:** Consideration for the construction of noise barriers was given to all impacted receptors. Each impacted receptor was evaluated for feasibility and reasonableness of noise abatement per SCDOT Policy. Appendix K includes a description of abatement consideration for each NSA. Refer to Figures 4.11 and 4.12 for the locations of the NSAs.

The following NSAs were not considered for noise abatement:

- NSA-1 - Only one impacted receptor - It is SCDOT's Policy that, at a minimum, at least three impacted receptors must achieve a 5 dB(A) reduction for a proposed barrier to be considered acoustically feasible. NSAs with less than three impacted receptors are not considered feasible for consideration of noise abatement.
- NSA-3 - No impacted receptors
- NSA-11 - No impacted receptors
- NSA-12 - Only one impacted receptor
- NSA-14 - The walking trail at Faber Place does not have enough usage to have an equivalent receptor value that will equal three.
- NSA-15 - Per the Awaken Church Day School, only 35 children and two staff members use the playground for one hour per day. The equivalent receptor value does not equal three.
- NSA-17a - Only one impacted receptor
- NSA-18 - For receptors R18-1, R18-2, R18-3 and R18-13 along Paramount Drive, a noise abatement measure will not be feasible due to the driveway access to the College of Charleston and a break at Lysa Avenue. A noise abatement measure would not be possible for the impacted receptors along Dorchester Road due to major power transmission lines crossing Dorchester Road. Also, in order to install a noise wall along Dorchester Road, the right-of-way necessary to build the wall would result in the acquisition of the impacted residences.
- NSA-19 - the pool area at Suburban Extended Stay is not impacted by the project
- NSA-20 - The Kingdom of God Ministries is not impacted by the project
- NSA-20a - The future Charleston County School System stadium is an Active Sports Area. Per SCDOT Policy active sports areas do not fall within the classification of non-residential uses, as a quiet environment is not important for normal activities. As such, these areas are equivalent to one impacted residence.
- NSA-22 - Noise abatement measures for impacted receptors R22-1, R22-2, R22-3 and R22-12 will not be feasible due to driveway access along west Montague Avenue and powerlines. NSA-22 is also within the 65 dB contour noise levels from the Charleston International Airport.
- NSA-23 - No impacted receptors
- NSA-24 - No impacted receptors
- NSA-30 - Only one impacted receptor
- NSA 33 - Only one impacted receptor
- NSA-33a - For the impacted townhouse receptors east of North Rhett Avenue at Seeport Drive, abatement measures will not be feasible due to major power lines and the driveway access at the townhouses.
- NSA-34 - Only one impacted receptor
- NSA-34a - The R.M. Hendricks Park is under the Cooper River Bridge. Noise abatement measures will not be feasible for the park due to major powerlines along Virginia Avenue. Also, the walking trail through the park does not have enough usage for an equivalent receptor value that will equal three. Refer to Appendix B of the FEIS Appendix K.
- NSA-35 - Only two impacted receptors
- NSA-35a - No impacted receptors
- NSA-36 - No impacted receptors

The following barrier was analyzed but did not meet feasibility criteria:

- NSA-29 - South of I-526, east of US 52 (Rivers Avenue), south of Filbin Creek and west of the CSX Railroad.

The following barriers met feasibility criteria but did not meet the reasonableness criteria for allowable cost per benefit (cost-effectiveness):

- NSA-2 - West of I-526 and surrounding Savage Road
- NSA-16 - West of I-526 and south of Paramount Drive
- NSA-17 - East of I-526 and south of Dorchester Road and east of Paramount Drive
- NSA-21 - East of I-526 and south of West Montague Avenue
- NSAs 26/26a - West of I-26, east of South Aviation Avenue and adjacent to the Norfolk Southern Railway
- NSA-27 - North of I-526, east of I-26, south of Filbin Creek and west of US 52 (Rivers Avenue)
- NSA-28 - South of I-526, east of I-26 and west of US 52 (Rivers Avenue)
- NSA-31/31a - North of I-526, east of the CSX Railway, north of the Norfolk Southern Railway and east of Attaway Street. Although preliminary met cost-effectiveness criteria, during the constructability review, additional costs were considered to employ a structure mounted noise wall. The cost needed to achieve federal safety compliance for a structure-mounted noise wall on the collector-distributor (C-D) viaduct and other issues related to construction and maintenance renders NW 31/31a as cost-prohibitive and should not be included for construction in the project. See Appendix E of the **FEIS Appendix K**.
- NSA-32/32a - South of I-526, east of Attaway Street, south of Filbin Creek and the Norfolk Southern Railway, east of Parkside Drive and west of N Rhett Avenue
- NSA-37 - East of I-26, west of US 52 (Rivers Avenue), south of Remount Road and north of the Norfolk Southern Railway
- NSA-37a - East of I-26, west of US 52 (Rivers Avenue) and south (and north) of the Norfolk Southern Railway

The following noise barriers are presently considered to be feasible and reasonable and are recommended for construction. During the constructability review for the following noise barriers, it was determined that the construction will be typical ground-mounted roadside noise wall construction with no additional cost to accommodate the wall. **Refer to the Detailed Noise Analysis in Appendix K of the FEIS.**

- NSA-4 and NSA-6 - West of I-526 between Paul Cantrell Boulevard and Ashley River Road in West Ashley. Based on the studies completed to date, the State intends to install a noise abatement measure in the form of a barrier at the Arboretum Condominiums and Plantation Oaks Apartments. These preliminary indications of a likely abatement measure are based upon preliminary design for a barrier of 20 feet high and 2,640 feet long and a cost of \$1,847,860 that will reduce the noise level by 5 to 13 dB(A) for 213 residences. If during final design these conditions substantially change, the abatement measure might not be provided.
- NSA-6a and NSA-8 - West of I-526 between Ashley River Road and the Ashley River in West Ashley. Based on the studies completed to date, the State intends to install a noise abatement measure in the form of a barrier at the Planters Trace Apartments and the Middleton Cove Apartments. These preliminary indications of a likely abatement measure are based upon preliminary design for a barrier of 16 feet high and 3,000 feet long and a cost of \$1,680,035 that will reduce the noise level by 5 to 11 dB(A) for 157 residences. If during final design these conditions substantially change, the abatement measure might not be provided.
- NSA-5 - East of I-526 and north of Paul Cantrell Boulevard. Based on the studies completed to date, the State intends to install a noise abatement measure in the form of a barrier at residences along Richmond Street and the Colonial Village at Westchase Apartments. These preliminary indications of a likely abatement measure are based upon preliminary design for a barrier of 19 feet high and 2,969 feet long and a cost of \$1,974,525 that will reduce the noise level by 5 to 13 dB(A) for 191 residences. If during final design these conditions substantially change, the abatement measure might not be provided.

- NSAs 7, 9 and 10 - East of I-526 and north of Ashley Harbor. Based on the studies completed to date, the State intends to install a noise abatement measure in the form of a barrier at the Ashley Oaks Apartments and the Ashley Harbor community. These preliminary indications of a likely abatement measure are based upon preliminary design for a barrier of 13 feet high and 4,560 feet long and a cost of \$2,074,800 that will reduce the noise level by 5 to 14 dB(A) for 140 residences, tennis courts and a walking trail. If during final design these conditions substantially change, the abatement measure might not be provided.
- NSA-25 - East of I-526 and west of I-26, across from Boeing Company and Charleston International Airport. Based on the studies completed to date, the State intends to install a noise abatement measure in the form of a barrier at the Centre Pointe Apartments. These preliminary indications of a likely abatement measure are based upon preliminary design for a barrier of 19 feet high and 1,650 feet long and a cost of \$1,097,250 that will reduce the noise level by 5 to 12 dB(A) for 38 residences. If during final design these conditions substantially change, the abatement measure might not be provided.

Refer to the Detailed Noise Analysis in Appendix K for more information on the location of the proposed noise walls that will be constructed as part of the I-526 LCC WEST project.

Table 4.12 Noise Wall Analysis Summary

Noise Barrier Name (NSA)	Length (ft)	Area (ft ²)	Number of Benefited Receptors	Cost per Benefited Receptor/ Allowable Cost per Benefited Receptor	Recommended for Construction
NW 2 (NSA-2)	2,070	49,409	18	\$96,073 / \$30,000	No
NW 4/6 (NSAs 4 and 6)	2,640	52,796	213	\$8,675 / \$30,000	Yes
NW 6a/8 (NSAs 6a and 8)	3,000	48,001	157	\$10,701 / \$30,000	Yes
NW 5 (NSA 5)	2,969	56,415	191	\$10,338 / \$30,000	Yes
NW 7/9/10 (NSAs 7,9 and 10)	4,560	59,280	140	\$14,820 / \$30,000	Yes
NW 16 (NSA-16)	840	16,801	6	\$98,006 / \$30,000	No
NW 17 (NSA-17)	2,196	33,913	5	\$237,391 / \$30,000	No
NW 21 (NSA-21)	2,333	44,325	23	\$67,451 / \$30,000	No
NW 25 (NSA-25)	1,650	31,350	38	\$28,875 / \$30,000	Yes
NW 26/26a (NSAs 26 and 26a)	4,669	109,976	62	\$62,083 / \$30,000	No
NW 27 (NSA-27)	5,675	90,046	53	\$59,464 / \$30,000	No
NW 28 (NSA-28)	5,516	81,787	78	\$36,699 / \$30,000	No
NW 29 (NSA-29)	5,491	65,885	37	\$62,624 / \$30,000	No
NW 31/31a (NSAs 31 and 31a)	7,734	85,164	121	\$24,634 / \$30,000	No
NW 32/32a (NSAs 32 and 32a)	4,197	50,362	51	\$34,562 / \$30,000	No
NW 37 (NSA-37)	1,850	43,264	29	\$52,215 / \$30,000	No
NW 37a (NSA-37a)	2,310	50,441	28	\$63,051 / \$30,000	No

Note: Barrier heights vary within the NSA. Noise abatement was considered for all predicted traffic noise impacts.

Based on the detailed noise analysis, the five noise barrier walls listed below were deemed reasonable and feasible. The contractor will ensure the walls are designed and constructed to provide the appropriate noise abatement based on the parameters stated in the noise assessment completed for this project, and in close coordination with SCDOT.

- **NW 4/6: west of I-526 between Paul Cantrell Boulevard and Ashley River Road in West Ashley**
- **NW 6a/8: west of I-526 between Ashley River Road and the Ashley River in West Ashley**
- **NW 5: east of I-526 and between Paul Cantrell Boulevard and Ashley River Road in West Ashley**
- **NW 7/9/10: east of I-526 between Ashley River Road and the Ashley River in West Ashley**
- **NW 25: east of I-526 and southwest of I-26 in North Charleston**

After completion of the detailed noise study, ballots were sent to the owners of each of the receptors benefited by the proposed noise walls (and tenants currently living in those residences) that were found to be feasible and reasonable per SCDOT Policy (Noise Walls 4/6, 6a/8, 5, 7/9/10 and 25) to solicit their preference on the

construction of the proposed walls. Noise Wall 4/6 received 98 percent of possible votes in favor of the wall and 2 percent opposing. Noise Wall 6a/8 received 98 percent of possible votes in favor of the wall, and 1 percent against the wall. Noise Wall 5 received 100 percent of possible votes in favor of the wall, and 0 percent against the wall. Noise Wall 7/9/10 received 98 percent of possible votes in favor of the wall, and 2 percent against the wall. Finally, Noise Wall 25 received 98 percent of possible votes in favor of the wall, and 2 percent against the wall.

None of the proposed noise walls received a majority of ballots expressing opposition to the wall, so all five proposed noise walls are considered feasible and reasonable. A detailed discussion of the polling process, materials sent to residents including cover letter, figures showing the benefited receptors for each proposed wall and the response postcard are shown in Appendix F of the Detailed Noise Analysis (Appendix K of the FEIS).

SCDOT will inform local planning officials of future, generalized noise levels expected to occur in the project vicinity after FHWA has made a final decision on the Environmental document.

See Section 4.18.3.4 for noise abatement measures that will be implemented during construction of the I-526 LCC WEST project.

4.10 Water Quality

4.10.1 How is Water Quality Assessed?

The Clean Water Act (CWA) of 1972 regulates the discharge of pollutants into our state’s waters. The standards set by each state are based on criteria recommended by the USEPA. The USEPA has delegated the responsibility of monitoring and regulating water quality in South Carolina to the SCDHEC.

A drainage area is a geographic area in which all water drains to a common point. Watersheds are formed by the smaller drainage areas draining into a common outlet and a group of watersheds make up a sub-basin. Larger river basins are comprised of sub-basins.

4.10.2 In which Drainage Basin is the Project Located?

The US Geological Survey (USGS) categorizes drainage areas by specific numbers, or hydrologic unit codes (HUCs). Sub river basins (within larger river basins) are given an eight-digit HUC (e.g. 03050201). Ten-digit HUCs are also provided for watersheds within eight-digit HUCs (e.g. 03050201-07). SCDHEC divides South Carolina into eight major river basins.¹ The proposed project study area is located entirely within the Santee River Basin. The Santee River Basin is subdivided into sub-basins and the project study area is predominantly located within the Cooper River sub-basin (HUC 03050201). However, the extreme southern portion of the project study area extends into the Stono River sub-basin (HUC 03050202). Refer to Figure 4.13. For more detailed information about the Santee River Basin and related sub-basins, refer to Appendix L, the Natural Resources Technical Memorandum.

¹ https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Watershed/wwqa/Santee_WWQA_2013.pdf

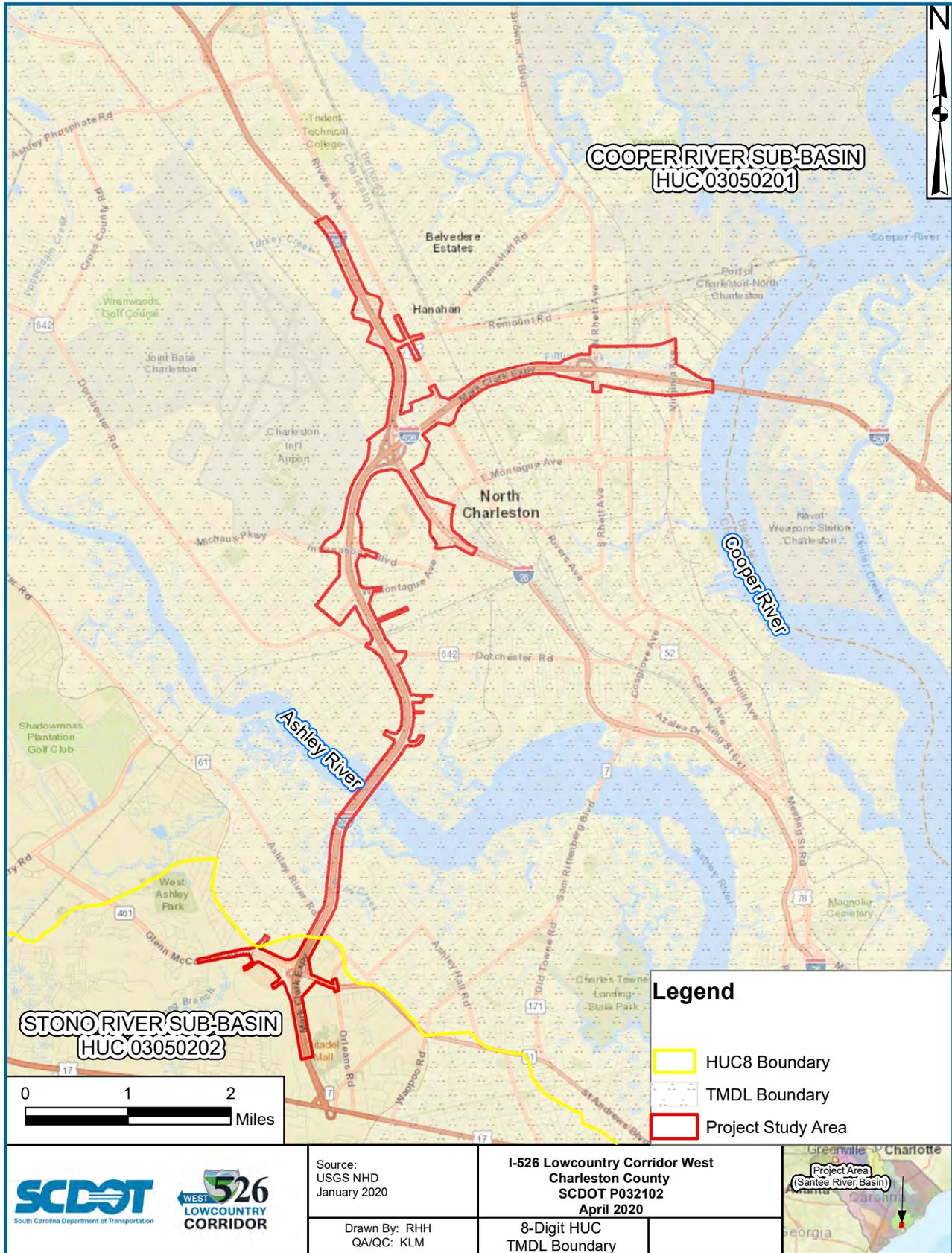


Figure 4.13 Watersheds

4.10.3 What Watersheds are within the Project Study Area?

The Cooper River and Stono River Sub-Basins are further divided into watersheds. The project is located within the Stono River Watershed (03050202-02), the Ashley River Watershed (HUC 03050201-06), and the Cooper River Watershed (03050201-07). For more information about the watersheds, refer to Appendix L, the Natural Resources Technical Memorandum.

4.10.4 Are any Impaired Streams Located in the Project Study Area?

In accordance with Section 303(d) of the CWA, SCDHEC evaluates water bodies identified as impaired from pollutants included on the Section 303(d) list. The 303(d) list targets water bodies that do not meet water quality standards set by the state for water quality management, as well as identifying the cause(s) of the impairment and the designated classifications.

The 303(d) list is a state list of waters not meeting water quality standards or having impaired uses.

There are five water quality monitoring stations located within or near the project study area, refer to Figure 4.14. Station MD-249 is located within the project study area along Filbin Creek. According to SCDHEC’s 2016 Section 303(d) list and the draft 2018 303(d) list, recreational use is not supported in Filbin Creek due to elevated levels of Enterococcus bacteria. Enterococcus is a large genus of bacteria that can be harmful to swimmers and others who use the rivers and streams when there are elevated levels in the water.

Two stations are located on the Cooper River. Station MD-248 is located downstream of the project, in the Cooper River, and station MD-044 is located upstream in the Cooper River. Neither MD-248 nor MD-044 are listed on the current or draft 303(d) lists.

Two stations are present in the Ashley River. Station MD-135 is downstream of the project area and is not listed as impaired on the current or draft 303(d) lists. Monitoring station MD-049 is located upstream of the project study area along the Ashley River and is listed on the SCDHEC’s 2016 Section 303(d) list and the draft 2018 303(d) list. At this station, recreational use is not supported due to elevated levels of Enterococcus bacteria. Additionally, aquatic life uses are not supported at MD-049 based on pH and turbidity.² For more information about the water quality monitoring stations, refer to Appendix L, the Natural Resources Technical Memorandum.

“pH is a measure of how acidic/basic water is... The pH of water is a very important measurement concerning water quality... Not only does the pH of a stream affect organisms living in the water, a changing pH in a stream can be an indicator of increasing pollution or some other environmental factor.”

USGS - Water Science School: https://www.usgs.gov/special-topic/water-science-school/science/ph-and-water?qt-science_center_objects=0#qt-science_center_objects

“Turbidity is the measure of relative clarity of a liquid... Material that causes water to be turbid includes clay, silt, very tiny inorganic and organic matter, algae, dissolved colored organic compounds, and plankton and other microscopic organisms... In streams, increased sedimentation and siltation can occur, which can result in harm to habitat areas for fish and other aquatic life.”

USGS - Water Science School: https://www.usgs.gov/special-topic/water-science-school/science/turbidity-and-water?qt-science_center_objects=0#qt-science_center_objects

² <https://www.scdhec.gov/food-safety/food-monitoring-advisories/fish-consumption-advisories/ashley-river-fish-consumption>

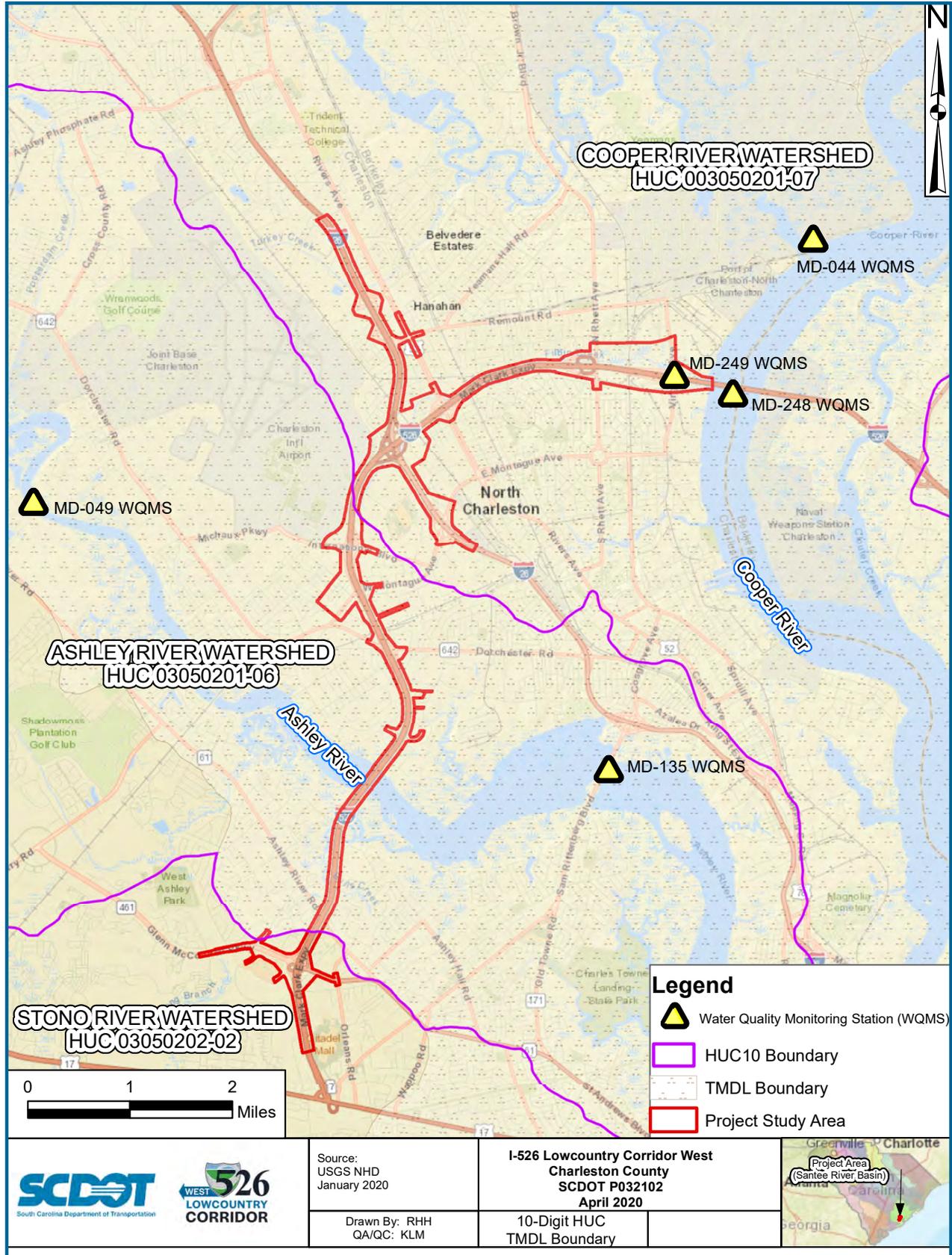


Figure 4.14 Water Quality Monitoring Stations

4.10.5 Have any TMDLs been Developed in the Project Study Area?

Once a site is included on the 303(d) list of impaired waters, a Total Maximum Daily Load (TMDL) must be developed. For more information about TMDL refer to Appendix L, the Natural Resources Technical Memorandum.

TMDL is the amount of a single pollutant (e.g., bacteria, nutrients, metals) that can enter a waterbody on a daily basis and still meet water quality standards set forth by SCDHEC.

A TMDL has been developed for the Charleston Harbor, Cooper, Ashley, and Wando Rivers and approved by the USEPA to identify opportunities to increase dissolved oxygen (DO) in the watershed.³

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 can create naturally low DO conditions: such factors include organic loading, reduced oxygen levels from wetlands and marshes, and estuarine dynamics in the mixing zone where freshwater and saltwater come together. The waters in and around Charleston Harbor are both naturally low in DO and further impacted by wastewater dischargers. The National Pollutant Discharge Elimination System (NPDES) permit program regulates point source pollution by considering stormwater discharges, non-point sources, and natural background sources.

4.10.6 Are any Point Sources Located in the Project Study Area?

Point source discharge means a discharge which is released to the waters of the State by a discernible, confined, and discrete conveyance, including but not limited to a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel, or other floating craft from which waste is or may be discharged. The NPDES Permit Program was created by Section 402 of the CWA. In 1975, the SCDHEC Bureau of Water received authority from the USEPA to administer the NPDES Permit Program in South Carolina. For more information about point source discharges refer to Appendix L.

The SCDHEC Bureau of Water is responsible for the permitting, compliance, monitoring, and enforcement activities of the NPDES program.

According to the Water Quality Assessment Report for the Santee River Basin (SCDHEC, 2013) and the SC Watershed Atlas (SCDHEC, 2018), six NPDES major discharge permitted facilities are authorized directly in, or within the vicinity of the proposed project. One is in the project study area and the remaining five are located north and south of the project.

- Kapstone Charleston Craft, LLC (SC0001759) holds a permit to discharge as a paperboard mill. This is located just north of Filbin Creek within the project study area and a second site is located just outside of the project study area.

For more information about the five NPDES major discharge permits issued within 2.5 miles of the project, but outside the project study area, refer to Appendix L.

One NPDES General Permit has been issued to Defense Fuel Support (SCG340022) to discharge as a petroleum bulk and/or terminal. This discharge location is situated within the project study area near Virginia Avenue, refer to Figure 4.15. Five NPDES discharge General Permits have been issued for areas near (within 2.5 miles) but outside of the project study area, refer to Appendix L.

3 https://www.scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Chas_Hbr_DO_TMDL.pdf



Figure 4.15 NPDES Permits

4.10.7 What are the Potential Environmental Consequences to Water Quality?

4.10.7.1 How would the No-Build Alternative Impact Water Quality?

The existing conditions would remain unchanged under the No-Build Alternative. This alternative would have negligible effects on water quality.

4.10.7.2 How would the Recommended Preferred Alternative Impact Water Quality?

The Recommended Preferred Alternative proposes to increase traffic capacity throughout the project study area by adding more travel lanes, altering interchanges, widening bridges, and other road-related improvements. By adding travel lanes and reconfiguring interchanges, the amount of paved surfaces will change. Hardened areas that were once vegetated and could absorb rainwater (pervious surfaces) will be replaced by paved surfaces that are impenetrable to precipitation (impervious surfaces). The impervious surfaces can allow more stormwater and pollutants to run-off the surface into adjacent waterbodies. Additionally, through the process of pavement removal, some areas that are currently impervious would be reduced and restored to a pervious surface. These two actions are not equal and more impervious surface would be generated rather than removed as a result of the proposed project.

Table 4.13 shows that the Recommended Preferred Alternative would increase the amount of impervious surface in the project study area. The Recommended Preferred Alternative would also remove some existing pavement, converting it back to a pervious surface.

Table 4.13 Increase of Impervious Surface by the Reasonable Alternative and Recommended Preferred Alternative

	8-lane Mainline & Paul Cantrell Blvd	I-26/I-526 System & I-526 at Rivers Ave				I-526 at N Rhett/Virginia Ave				
		1	2*	1A	2A	1	2	2A*	5	6
Existing right-of-way boundary (acres)	378	418	422	419	424	167	162	152	173	166
Impervious to Pervious (acres)	4	6	8	5	6	6	3	3	2	4
Pervious to Impervious (acres)	54	21	24	44	25	21	12	36	32	22

* Recommended Preferred Alternative

The term “nonpoint source” is defined to mean any source of water pollution that does not meet the legal definition of “point source” in section 502(14) of the CWA. Nonpoint source pollution generally results from water related to land runoff, precipitation, atmospheric deposition, and natural or manmade drainage systems. This type of pollution can come from many sources and is caused by rainfall moving over and through the ground. As the runoff moves, it picks up and carries natural and human-made pollutants that can be deposited into lakes, rivers, wetlands, coastal waters, and ground waters.

Non-point source pollution from a variety of sources would be present in the project study area. Fertilizers from maintained grasses and lawns can be picked up in water flow. Oil and grease found on roadways can be washed away during rainstorms. Sediment from construction sites can contain pollutants that can be picked up through water runoff. The implementation of a stormwater management plan for the collection and treatment of roadway stormwater runoff would decrease the potential of pollutants and sediments to impact the water quality.

The Ashley River is listed on the 303(d) List of Impaired Waters as a result of low dissolved oxygen. The proposed project will have a negligible effect on the dissolved oxygen levels in the Ashley River.

Much of the project study area is located within a TMDL watershed. The proposed project is not anticipated to affect this designation. Best management practices (BMPs) would be followed. These practices would eliminate or reduce sedimentation, thereby minimizing the potential effects sedimentation would have on the impairments in the project study area.

Examples of best management practices (BMPs) would be installation of grass swales, detention basins, check dams, silt fencing, etc.

4.10.8 How would Water Quality Impacts be Mitigated?

The final design of the proposed project would take into consideration the increase in the amount of stormwater during the stormwater modeling process. SCDOT BMPs guidelines would be followed during design and construction to minimize the amount of runoff pollution to streams. Similar to the current design, excess stormwater would be retained in vegetated swales, ditches, and detention basins before it is released into open waterbodies. This would reduce the number of suspended solids in stormwater and allow those solids to settle out before the water flows on to adjacent streams and ponds or other waters.

During the construction process the contractor would avoid and minimize impacts resulting from stormwater runoff through adhering to policies contained in 23 CFR 650 B and S.C. Code of Regulations 72-400. SCDOT has also issued an Engineering Directive Memorandum (Number 23), dated April 10, 2015, regarding Department procedures to be followed to ensure compliance with Regulation 72-400, Standards for Stormwater Management and Sediment Reduction. Exposed areas would be stabilized by following the Department's Supplemental Technical Specification for Seeding (SCDOT Designation SC-M-810 (11-08)). The contractor will be required to minimize possible water quality impacts through implementation of BMPs, reflecting policies contained in 23 CFR 650B and the Department's Supplemental Specification on Erosion Control Measures (latest edition) and Supplemental Technical Specifications on Seeding (latest edition). Other measures including seeding, silt fences, sediment basins, etc. as appropriate will be implemented during construction to minimize impacts to water quality

These policies recommend a range of sediment and erosion control measures for stormwater runoff including temporary silt fence, sediment basins, filter berms, and/or re-vegetative plantings.

Due to the existing water quality impairments and the approved TMDL within the project watershed, SCDHEC may require additional water quality protection and stormwater treatment measures during and after construction. Specific mitigation requirements for impacts to water quality would be established during the CWA Section 404/401 permitting process.

4.11 Water Resources

Waters of the US (WOUS) are defined by 33 CFR 328.3(a)-(c) and protected by Section 404 of the CWA (33 U.S.C. 1344). WOUS also include wetlands, or areas that are saturated by water that support a majority of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Generally WOUS do not include groundwater, stormwater run-off, upland cut ditches, prior converted cropland, artificially irrigated areas, artificial lakes/ponds, or waste treatment systems (33 CFR 328.3(b)). WOUS do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA.

The term Waters of the US includes the oceans, territorial seas; tributaries; lakes, ponds, and impoundments of jurisdictional waters; and adjacent wetlands.

4.11.1 What Agencies are Responsible for Regulating Water Resources?

The United States Army Corps of Engineers (USACE) Charleston District regulates WOUS, including wetlands in South Carolina. The USACE's authority to regulate impacts to WOUS comes from Section 404 of the CWA. The USACE utilizes specific hydrologic, soil, and vegetation criteria in establishing the boundary of wetlands within their jurisdiction. In addition to wetlands, the USACE defines WOUS within CWA as Traditional Navigable Waters (TNWs) – including territorial seas and surface waters that flow to TNWs. Impoundments of these waters (ponds, lakes, and reservoirs) are also considered to be WOUS. Executive Order 11990 (Protection of Wetlands) established a national policy to avoid adverse impacts on wetlands wherever there is a practicable alternative. FHWA set forth the Department of Transportation Order 5660.1A in 1978 to comply with this direction. Alternatives which avoid wetlands must be considered.

SCDHEC also has jurisdiction over WOUS in South Carolina. SCDHEC's regulatory authority derives from Section 401 of the CWA. A Section 401 water quality certification from SCDHEC is required whenever a project needs a federal license or permit for an activity that may result in a discharge to a navigable water or other WOUS. In South Carolina, the South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resource Management (SCDHEC OCRM) is the regulatory agency responsible for implementing the Coastal Zone Management Act and the South Carolina Coastal Tidelands and Wetland Act of 1977, which was enacted by the state to protect, preserve, restore, and enhance the coastal resources of South Carolina. SCDHEC-OCRM's objective is to manage wetland alterations, activities, and alterations to tidally influenced critical areas. The project study area contains WOUS that are defined as "critical area."

Critical area is defined by the SCDHEC-OCRM as any of the following: 1) coastal waters; 2) tidelands; 3) beach/dune systems; and 4) beaches.

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. Waterbody classifications are named or listed in South Carolina Regulation 61-69 (R.61-69), Classified Waters. All waters of South Carolina are classified even if they are not specifically named or listed in R.61-69. Waters not listed are assigned the classification of the receiving waterbody to which they flow. Waters classifications are shown in Appendix L. the Natural Resources Technical Memorandum.

4.11.2 What Methodology was used for the Analysis of Water Resources?

Information concerning the water resources within the project study area was obtained from federal, state, and local sources including USGS topographic maps, USEPA, USGS, Natural Resources Conservation Service (NRCS) soil surveys, United States Fish and Wildlife Service (USFWS) National Wetlands Inventory, SCDHEC, South Carolina Department of Natural Resources (SCDNR) Light Detection and Ranging (LiDAR) digital elevation model datasets, Charleston County, and City of Charleston. Information regarding ground water resources was obtained from the USGS Ground Water Atlas of the U.S. and USGS Groundwater Availability in the Atlantic Coastal Plain of North and South Carolina.^{4,5} Surface water resources information is listed in the Natural Resources Technical Memorandum (NRTM) in Appendix L. Information regarding drinking water resources was gathered from the Charleston Water System (CWS).⁶ **WOUS were delineated and the preliminary jurisdictional determination (PJD) was issued prior to the effective date of the new Navigable Waters Protection Rule (June 22, 2020).**

4.11.2.1 What Water Resources Exist within the Project Study Area?

Groundwater resources were identified in the project study area primarily through desktop research using the USGS Groundwater Atlas of the U.S., USGS Groundwater Availability in the Atlantic Coastal Plain of North and South Carolina, and SCDHEC’s monitoring report of users who withdraw more than 3 million gallons in any month.

Following review of available background data, site visits were conducted on several occasions from August to December 2016, January to February 2017, and throughout September 2019 to document the potential of WOUS, including wetlands. WOUS were determined using the Routine On-Site Determination Method as outlined by the 1987 USACE Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Region Regional Supplement, Version 2.0. The USACE was provided a PJD, which identifies the locations and boundaries of wetlands and other aquatic resources on-site that are presumed to be the subject of regulatory jurisdiction. The USACE approved the PJD on October 31, 2019 and figures depicting all WOUS are provided in Appendix M.

The Coastal Plain covers two-thirds of the State yet contains about 95% of its groundwater resources. It consists of layers of unconsolidated sand, clay, and limestone. Sand and limestone layers are porous and constitute the water-bearing zones called aquifers; clay layers are relatively impervious and constitute the confining units.

4 USGS. 1990. “Groundwater Atlas of the U.S. – Alabama, Florida, South Carolina”. Accessed 03/03/2020. https://pubs.usgs.gov/ha/ha730/ch_g/G-Floridan.html

5 Campbell, B.G., and Coes, A.L., eds., 2010, Groundwater availability in the Atlantic Coastal Plain of North and South Carolina: U.S. Geological Survey Professional Paper 1773, 241 p., 7 pls. <https://pubs.usgs.gov/pp/1773/pdf/pp1773.pdf>

6 <https://www.scdhec.gov/sites/default/files/media/document/R.19-450.pdf>

4.11.3 What Groundwater Resources Exist within the Project Study Area?

Water found within the pores and cracks of underground materials such as gravel, sand, and rock is considered groundwater. The proposed project is within the Atlantic Coastal Plain geologic region of South Carolina, which covers the southeastern two-thirds of the state. Figure 4.18 shows the different geologic regions of South Carolina. Most geologic features within the Coastal Plain in South Carolina consist of gravels, sands, and crystalized sediments that water can flow through quite easily.⁷ These permeable layers form the State’s largest and most important aquifers.⁸ There are seven overarching hydrostratigraphic systems found in the Coastal Plain of South Carolina, four aquifer systems and three confining systems, which are then broken down into additional classifications.⁹ The proposed project lies within the Floridian Aquifer System that is made from crystalline rocks, sand, silt, gravel, and clay.¹⁰ These aquifers contain a large volume of groundwater that has accumulated over years and can remain within the aquifer for hundreds of years.¹¹ The Floridian Aquifer System is very permeable, which means that precipitation can easily filter through the soil to recharge the groundwater¹²

Historically, groundwater use in the project area dates to at least 1670 when European settlers arrived in what is now Charleston, SC, and constructed shallow, hand-dug wells. With time and increasing population, Charleston began to have water-quality problems with the surficial aquifer, so other sources of water supply were sought, especially deeper aquifers. Developing these deeper aquifers for adequate groundwater supplies led to declining water levels in the study area, which in some cases, date back to the latter part of the 19th century.

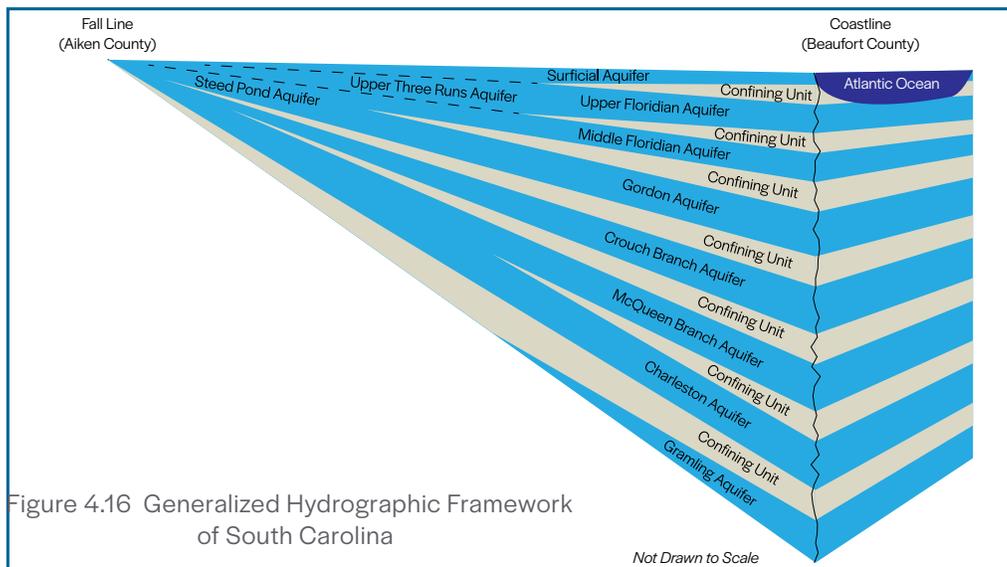


Figure 4.16 Generalized Hydrographic Framework of South Carolina

7 Campbell, B.G., and Coes, A.L., eds., 2010, Groundwater availability in the Atlantic Coastal Plain of North and South Carolina: U.S. Geological Survey Professional Paper 1773, 241 p., 7 pls. <https://pubs.usgs.gov/pp/1773/pdf/pp1773.pdf>

8 Andrew Wachob, Joseph A. Gellici, and Brooke Czwartacki. 2017. Potentiometric Surface Maps of the South Carolina Coastal Plain Aquifers: November-December 2016. SCDNR Water Resources Report 60. http://hydrology.dnr.sc.gov/pdfs/reports/Report_60_Potentiometric_maps_2016.pdf

9 SCDNR Hydrology website - <http://hydrology.dnr.sc.gov/aquifers.html>

10 Campbell, B.G., and Coes, A.L., eds., 2010, Groundwater availability in the Atlantic Coastal Plain of North and South Carolina: U.S. Geological Survey Professional Paper 1773, 241 p., 7 pls. <https://pubs.usgs.gov/pp/1773/pdf/pp1773.pdf>

11 USGS What is Groundwater? Accessed 03/03/2020 https://www.usgs.gov/faqs/what-groundwater?qt-news_science_products=0#qt-news_science_products

12 USGS. 1990. "Groundwater Atlas of the U.S. – Alabama, Florida, South Carolina". Accessed 03/03/2020. https://pubs.usgs.gov/ha/ha730/ch_g/G-Floridan.html

4.11.4 What Surface Water Resources Exist within the Project Study Area?

4.11.4.1 Wetlands

A total of 86 wetland areas met the criteria for classification and were identified within the project study area during field site reviews. Refer to Table 4.14. Wetlands are classified based upon type of hydrophytic species present, percentage of cover within the recorded data point, and proximity to saline environment. Wetland types identified include palustrine emergent wetlands, palustrine forested wetlands, palustrine scrub shrub wetlands, and estuarine wetlands. For more detailed information about each wetland type refer to the NRTM located in Appendix L. Executive Order 11990 (Protection of Wetlands) established a national policy to avoid adverse impacts on wetlands wherever there is a practicable alternative. FHWA set forth the Department of Transportation Order 5660.1A in 1978 to comply with this direction. Alternatives which avoid wetlands must be considered.

Table 4.14 Wetland Types within the Project Study Area

Wetland Type	Number of Wetland Sites	Total Acres
Palustrine Emergent Wetlands	15	120.05
Palustrine Forested Wetlands	59	111.79
Palustrine Scrub/Shrub Wetlands	1	3.02
Estuarine Emergent Wetlands	9	90.27

4.11.4.2 Streams

Freshwater streams, tidally influenced streams, and open water ponds (identified in the Jurisdictional Determination (JD) as non-wetlands waters) were evaluated in the field. Tables 4.15 and 4.16 show the identified features. For more detailed information refer to the NRTM in Appendix L.

Table 4.15 Rivers and Streams within the Project Study Area

Feature Name	Number of Features	Linear Feet
Unnamed Freshwater Tributaries	24	28,923.55
Filbin Creek	1	8,831.15
Turkey Creek	1	144.98
Unnamed Tidally Influenced Tributaries	6	5,745.94
Filbin Creek	1	3,575.42
Bulls Creek	1	237.85

Table 4.16 Open Water Ponds within the Project Study Area

Feature Name	Number of Features	Total Acres
Open Water Ponds	10	6.89

4.11.4.3 Drinking Water Resources

Charleston Water System (CWS) obtains its drinking water from the Edisto River and Bushy Creek Reservoir. The Edisto River is part of the Ashepoo-Combahee Edisto (ACE) Basin while the Bushy Creek Reservoir is part of the Saluda River Basin. The collected water is treated at the Hanahan Water Treatment Plant. The water goes through a process of rapid mixing, flocculation, sedimentation, filtration, and disinfection. To disinfect the water, CWS uses chloride and ammonia called chloramines. Fluoride is also added to the water before distribution to numerous properties. The distribution system has over 1,800 miles of water mains.¹³

The primary source of drinking water is surface water. Residences and businesses within the project study area are serviced by Charleston Water System.

The retail service areas include portions of Charleston, Berkeley, and Dorchester Counties. CWS also provides water on a wholesale basis to Joint Base Charleston, Berkeley County, Dorchester County Public Works, Isle of Palms Water and Sewer Commission, Mount Pleasant Waterworks, St. Johns Water Company, Town of Folly Beach, Town of Lincolville, and the Town of Sullivan’s Island. CWS serves approximately 400,000 people and 10,000 fire hydrants.

To aid, improve, and protect water quality, CWS, in collaboration with Joint Base Charleston, has been granted funding to develop a Watershed Based Plan for the Bushy Park Reservoir and Foster Creek Watershed.

4.11.4.4 Wild and Scenic Rivers

Nationwide Rivers Inventory

The National Park Service maintains the Nationwide Rivers Inventory (NRI) and is a source of information for statewide river assessments and federal agencies involved with stream-related projects. The I-526 LCC WEST project is not crossing a river segment listed on the NRI. There are also no federally designated Wild and Scenic Rivers within the project study boundary.

State Designated Scenic Rivers

The Ashley River, from US 17 to I-526, was designated as a State Scenic River in 1998 and 1999 for its variety of habitat communities and its 26 historic sites.¹⁴ In 2002 an Ashley Scenic River Management Plan was developed for the 22-mile segment in Dorchester and Charleston Counties. The Ashley Scenic River Management Plan establishes goals and recommendations related to water quality, recreational use and access, preservation and conservation, and land management and development.¹⁵ The I-526 LCC WEST project does cross the Ashley River at the point where the Scenic River designation ends.

The purpose of the South Carolina Scenic Rivers Act of 1989 is to protect “unique or outstanding scenic, recreational, geologic, botanical, fish, wildlife, historic or cultural values” of selected rivers or river segments in the state.

13 www.charlestonwater.com. (n.d.). Source Water | Charleston Water System, SC - Official Website. [online] Available at: <http://www.charlestonwater.com/492/Source-Water> [Accessed 4 Mar. 2020].

14 SCDNR Ashley Scenic River Project Overview. Accessed 3/6/2020. <http://www.dnr.sc.gov/water/river/scenic/ashley.html>

15 Ashley Scenic River Management Plan Report 25. January 2003. <http://www.dnr.sc.gov/water/river/pdf/ashleyriver.pdf>

4.11.5 What are the Potential Environmental Consequences to Water Resources?

4.11.5.1 How would the No-Build Alternative Impact Water Resources?

The existing conditions would remain unchanged under the No-Build Alternative. This alternative would have no effect on water resources.

4.11.5.2 How would the Recommended Preferred Alternative Impact Water Resources?

Potential impacts (including but not limited to filling, clearing, piping, and armoring) to water resources are categorized into freshwater wetland, Critical Area, Critical Area bridge construction, pond, and stream. All impacts are based on right-of-way, refer to Table 4.17. Wetlands and WOUS were given special consideration during development and evaluation of the project. The project would utilize steeper fill slopes in and near wetlands where possible to avoid having a long reaching slope that would extend into a wetland. The area of the roadway footprint was reduced, which reduced related fill in salt marsh and freshwater wetlands. Stormwater treatment is planned for existing embankments and medians where possible. Temporary work trestles and barges are proposed for construction access in and near the Ashley River to avoid placing fill or causeways for access.

Unintentional direct impacts to wetlands, streams, and water quality can occur during construction due to the failure of sediment and erosion control measures, accidental encroachment, or hazardous material spills. Permitted impacts will directly alter streams and wetlands which can lead to a change in hydrology leading to more runoff or decreased floodplain storage. These effects on water resources can lead to the degradation of water quality.

Erosion control measures would be implemented during construction, to include seeding of slopes, temporary silt fences, and sediment basins in median as appropriate. These measures would minimize temporary construction impacts on adjacent wetlands. Other best management practices would be required of the contractor to ensure compliance with policies reflected in 23 CFR 650B.

Table 4.17 Impacts to Water Resources of the Recommended Preferred Alternative

Impact Type based on Right-of-Way	No-Build	Paul Cantrell Blvd to International Blvd	I-26/I-526 System & I-526 at Rivers Ave				I-526 at N Rhett/Virginia Ave				
			1	2*	1A	2A	1	2	2A*	5	6
Freshwater Wetland (acres)	0	19.3	28.5	28.5	28.5	28.5	54.5	51.3	49.9	57.3	50.8
Critical Area (acres)	0	19.6	0	0	0	0	2.3	2.3	2.4	2.8	2.7
Critical Area Bridge Construction Temporary Access (acres)	0	9.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pond (acres)	0	0.03	0	0	0	0	0	0	0	0	0
Freshwater Stream (feet)	0	327.0	13,327.1	13,327.1	13,327.1	13,327.1	5,169.1	5,169.1	4,977.6	5,197.4	5,205.9

* Recommended Preferred Alternative

4.11.5.3 Waters of the US Conditions and Impacts

In addition to the total quantity of WOUS impacts, the quality or condition of those resources was also considered. In evaluating the importance of the wetlands, the analysis should consider such factors as the primary functions of the wetlands (e.g., flood control, wildlife habitat, ground water recharge, etc.); the relative importance of these functions to the total wetland resource of the area; and other factors such as uniqueness that may contribute to the wetlands importance. Higher quality wetlands and streams are generally valued for their function and aesthetics. Medium and lower quality wetlands still provide functional value to the ecosystem, but to a lower degree or with less effectiveness. Definitions of wetland and stream quality are based on characteristics outlined in the USACE, Charleston District Guidelines for Preparing a Compensatory Mitigation Plan (dated October 7, 2010). The USACE Charleston District Guidelines consider the type and existing condition when evaluating impacts to wetlands and streams. Wetland and stream quality was defined as follows:

Wetlands

High Quality:

- Existing Condition: Fully functional wetlands that appear to the delineators to be primarily undisturbed, or existing disturbances do not substantially alter important functions
- Type: Tidal wetlands, bottomland hardwoods and riverine systems, including headwaters and riparian

Medium Quality:

- Existing Condition: Partially impaired wetlands that appear to the delineators to have a partial or full loss of one or more functions. Examples of impacts contributing to this category include partial ditching, drainage modifications, minor excavation, shading, and activities categorized as routine maintenance such as clear cutting. Examples include mixed pine-hardwood wetlands, scrub-shrub wetlands, segmented and/or ditched wetlands, and wetlands adjacent to or abutting streams
- Type: Seeps and bogs, depressions, pocosins, and flatwoods

Low Quality:

- Existing Condition: Impaired or very impaired wetlands that appear to the delineators to have a permanent loss of one or more functions. Examples of impacts contributing to this category include fill, fragmentation, stormwater discharge outlets, channelization of adjacent water features, mechanical excavation, drained areas, vegetation conversion, and heavy routine maintenance. Examples include stormwater basins, clear-cut wetlands, permanently cleared utility corridors, and wetlands that have been heavily modified
- Type: Man-made lakes and ponds, impoundments, some modified emergent wetlands

Streams

High Quality:

- Existing Condition: Fully functional streams that appear to be primarily undisturbed with stable, vegetated stream banks, and riparian buffers. Examples include streams with listed species and streams identified as highly diverse are considered fully-functional
- Type: Headwater streams (1st and 2nd Order)

Medium Quality:

- Existing Condition: Partially impaired streams that appear to have limited human-influence or natural disturbance, resulting in a partial loss of one or more functions. Examples of impacts contributing to this category include minor channelization, partial piping, shading, riparian clearing, culverts, bank armoring, detention, stormwater discharge, and channel modification
- Type: All other streams identified as “partially impaired”

Low Quality:

- Existing Condition: Impaired or very impaired streams that appear to the delineators to have unvegetated stream banks and severe loss of function. This includes streams with significant human-influence or natural disturbance. Examples of impacts contributing to this category include channelization, piping, shading, substantial riparian clearing, perched culverts, bank armoring, detention, stormwater discharge, and channel modification
- Type: All other streams with a condition of “impaired”

Table 4.18 Waters of the US Conditions and Impacts

	No-Build	Paul Cantrell Blvd to International Blvd	I-26/I-526 System & I-526 at Rivers Ave				I-526 at N Rhett/Virginia Ave				
			1	2*	1A	2A	1	2	2A*	5	6
High Quality Wetland Fill (acres)	0	19.6	0.0	0.0	0.0	0.0	2.3	2.3	2.4	2.8	2.7
Medium Quality Wetland Fill (acres)	0	18.8	27.7	27.7	27.7	27.7	54.2	51.0	49.7	57.0	50.6
Low Quality Wetland Fill (acres)	0	0.2	0.8	0.8	0.8	0.8	0.2	0.2	0.2	0.2	0.2
High Quality Stream Pipe (feet)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medium Quality Stream Pipe (feet)	0	220.7	5,038.0	5,038.0	5,038.0	5,038.0	4,500.1	4,500.1	4,311.0	4,503.7	4,539.3
Low Quality Stream Pipe (feet)	0	106.3	8,289.1	8,289.1	8,289.1	8,289.1	669.0	669.0	666.6	666.6	666.6

* Recommended Preferred Alternative

4.11.6 What are the Indirect Impacts on Water Resources and Water Quality?

An indirect and cumulative effects analysis of water resources and water quality was undertaken using an eight-step methodology described in Section 4.3.5. Additional details can be found in the **Indirect and Cumulative Effects Assessment, Appendix F**. Indirect effects to wetlands, streams, and water quality from transportation projects are typically associated with land use changes that occur as a result of the project. In these cases, the transportation project may provide new access to previously undeveloped land or provide additional capacity resulting in shorter commutes from surrounding areas. The proposed project would not alter existing land use within the Wetland, Streams, and Water Quality Indirect and Cumulative Effects (WSWQ-ICE) study area, refer to Figure 4.17. Because the WSWQ-ICE study area is already developed, land use changes are occurring as part of City-led development and local planning initiatives rather than induced land use changes associated with the proposed project.

Indirect impacts to floodplains, wetlands, streams, and water quality can occur during construction due to the failure of sediment and erosion control measures, accidental encroachment, or hazardous material spills. Permitted impacts will directly alter streams and wetlands which can lead to a change in hydrology in the ICE study area leading to more runoff or decreased floodplain storage. These effects on water resources can lead to the degradation of water quality.

Indirect impacts to water quality, streams, and wetlands can occur as a result of the direct increase in impervious surface associated with the proposed project. The increase in impervious surface may lead to an increase of stormwater runoff into the adjacent streams and wetlands. The runoff carries pollutants and the increase in peak discharge can lead to scour and bank erosion which then leads to an increase in sediment migration. The pollutants and sediment travel from the adjacent floodplains, streams and wetlands to points further downstream.

The proposed freeway widening, improved I-26/I-526 interchange, and associated improvements on Rivers Avenue at Aviation Drive would not alter existing land use within the majority of the WSWQ-ICE study area, as it is already developed. The improved mobility associated with the proposed improvements would not create indirect land use effects across the broader region as growth and development will continue to occur regardless of the proposed project. As such, significant impacts to water quality resulting from land use change associated with the project are not anticipated. Significant impacts to wetlands and streams may occur but will be avoided and minimized in order to comply with existing regulations and obtain permits from the regulatory agencies. The impacts will be offset by mitigation and enhancement strategies.

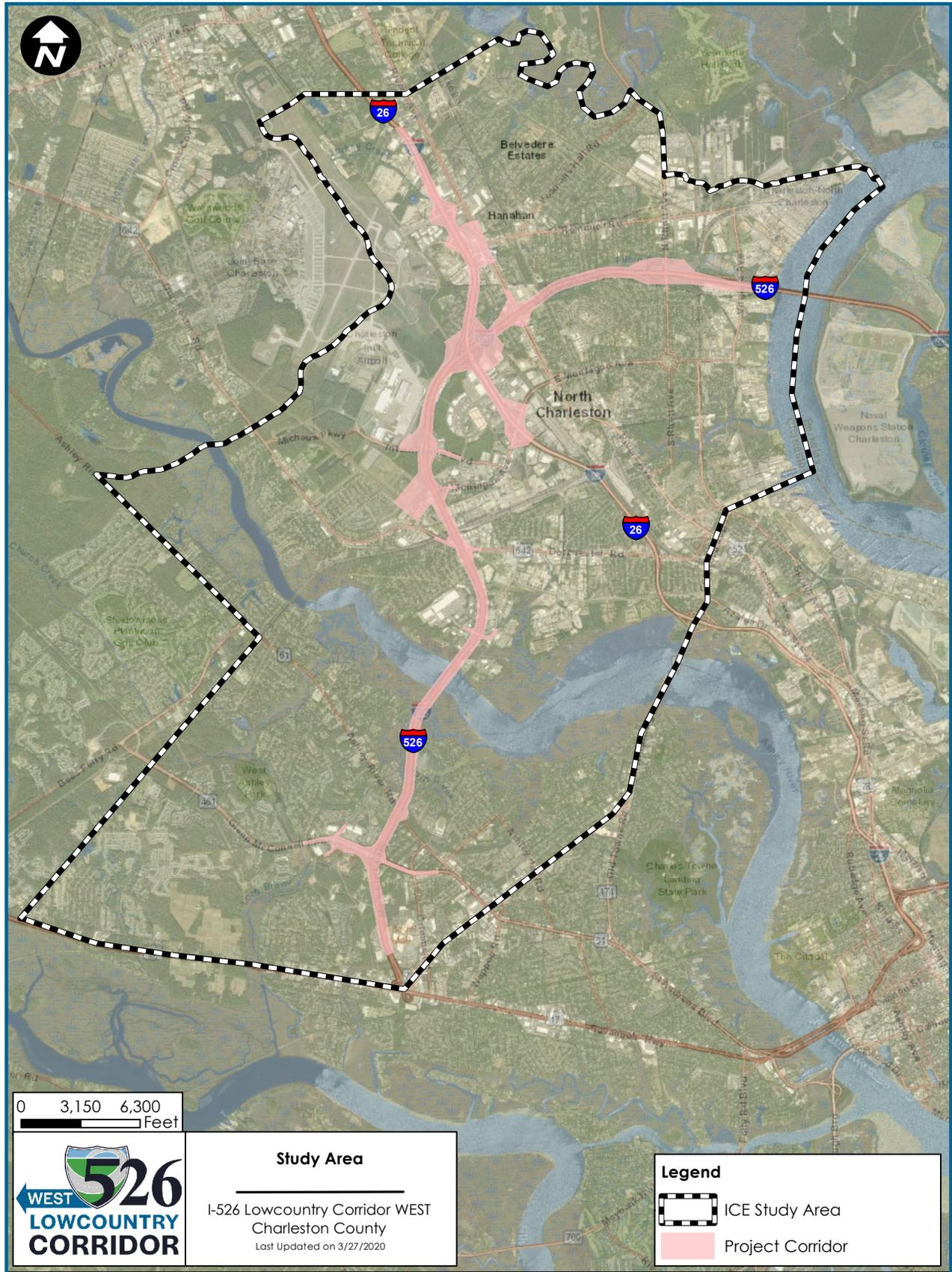


Figure 4.17 WSWQ-ICE Study Area

4.11.7 What are the Cumulative Impacts on Water Resources and Water Quality?

Past actions have resulted in impacts and the loss of wetlands and streams. Aerial photography and topography from the past century were used to describe growth in the WSWQ-ICE study area that led to these impacts (see Section 4.3.6). While current regulations protect these water resources to some degree, impacts will continue to occur regardless of the proposed project. Minor impacts will likely be permitted while major impacts will be offset by mitigation. These impacts may continue as future development and redevelopment continue. Water quality has been impacted by past actions, including the original construction of I-526 and I-26 and subsequent development of West Ashley and infill development of North Charleston, leading to the impairment of some waterbodies. Additional planned development such as programmed transportation improvements, the Volvo car factory in Ridgeville, and Palmetto Commerce Park will add to these impairments; however, it is unlikely to be a significant increase given the current high percentage of existing developed land. Isolated parcels of undeveloped land are found in the WSWQ-ICE study area. Many more regulations are in place to protect water quality since these impairments were first identified. More recent losses to wetlands since these regulations have been in place can be measured by comparing the Multi-Resolution Land Characteristics Consortium (MRLC) National Land Cover Database (NLCD) from 2016 to the NLCD from 2001. In that time period wetland coverage decreased from 1.7 percent due to an increase in developed lands.

Due to the high amount of development that has and is planned to occur in the WSWQ-ICE study area, cumulative impacts to the water resources are numerous and already evident in water quality data, as discussed previously. Impacts lead to loss of the resource or degradation depending on the action. Streams and wetlands are lost due to fill. Degradation occurs when streams are dammed, channelized or their banks are armored, when wetlands are converted from forest to open water, and when riparian buffers are removed. Water quality degradation occurs due to an increase in pollutant loads from the surrounding land and/or an increase in stormwater runoff. Additional details on past and future projects and development is included in Appendix F and Sections 4.1.5.1, 4.1.5.2, and 4.3.6.

4.11.8 How would Impacts to Water Resources and Water Quality be Mitigated?

Potential indirect and cumulative effects to water resources are likely however to what degree is difficult to determine. **Consequences of the identified effects will be limited by implementing mitigation and other strategies as determined by requirements set forth in permits that will be needed for the proposed project to go to construction. These include:**

- Following SCDOT **water quality** BMP's.¹⁶
- Compensatory mitigation - Unavoidable impacts to streams and wetlands will be permitted through the 401/404 and SCDHEC OCRM Coastal Zone Permitting regulatory process. Impacts will be mitigated at a ratio set by USACE Charleston District Compensatory Mitigation Guidelines. SCDOT is proposing to mitigate for these impacts using mitigation credits from banks that serve the Cooper River watershed. A mitigation plan will be prepared for inclusion in the 401/404 permit application package.

16 SCDOT Roadway Design Manual. https://www.scdot.org/business/pdf/roadway/2017_SCDOT_Roadway_Design_Manual.pdf

- Stormwater Pollution Prevention Plan (SWPPP) - The SWPPP contains information regarding sediment and erosion control based on SCDOT water quality manual and SCDOT's general permits (MS4 and construction).¹⁷ It also contains information on temporary and permanent stormwater management practices. Preliminary designs include the use of roadside swales to help improve the water quality of stormwater runoff as well as the addition of water storage along the upper reaches of Filbin Creek on both sides of the I-26 and I-526 interchange to reduce the impact of stormflows.
- **Attainment of a no-rise certificate - Hydraulic analysis and modeling will be used to demonstrate avoidance of impacts to floodplains. As such floodplain mitigation will not be required, however floodplain storage will be increased in the upper reaches of Filbin Creek as part of the stormwater management plan. This action helps offset some of the indirect and cumulative effects of floodplains that have been altered in the past within the ICE study area.**

In addition, these same regulations apply to future development by others that may occur within the WSWQ-ICE study area. Finally, the proposed project and other growth in the area is consistent with regional development policies.

Compensatory mitigation is the third step in a sequence of actions that must be followed to offset impacts to aquatic resources. The 1990 Memorandum of Agreement (MOA) between the USEPA and the Department of Army establishes a three-part process, known as the mitigation sequence to help guide mitigation decisions and determine the type and level of mitigation required under CWA Section 404 regulations.

Step 1. Avoid - Adverse impacts to aquatic resources are to be avoided and no discharge shall be permitted if there is a practicable alternative with less adverse impact.

Step 2. Minimize - If impacts cannot be avoided, appropriate and practicable steps to minimize adverse impacts must be taken.

Step 3. Compensate - Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain. The amount and quality of compensatory mitigation may not substitute for avoiding and minimizing impacts.

Compensatory mitigation is normally required to offset unavoidable losses of WOUS. The Council on Environmental Quality has defined mitigation in 40 CFR Part 1508.20 to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts. Compensatory mitigation usually consists of the restoration or enhancement of existing degraded wetlands or waters. This type of mitigation is only undertaken after avoidance and minimization actions are exhausted. Specific mitigation requirements would be established during the Section 404 permitting process.

As project designs are developed there may be roadway alignment shifts to avoid impacts to WOUS. Additionally, impacts may be minimized through reductions in right-of-way widths, fill slopes, and culvert lengths, and the use of bridges in lieu of culverts where appropriate.

Utilizing USACE's online resource, the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS), there are several USACE mitigation banks with service areas that cover, or partially cover, the project study area.

These operating and pending banks may not have enough credits to satisfy the estimated impacts of the project. It is unknown at this time if a mitigation bank or banks would be able to provide enough credits to offset the estimated impacts, or if the credits would be available at the time of the permitting and construction schedule. If mitigation

17 <https://www.scdot.org/business/storm-water.aspx> (MS4 stands for Municipal Separate Storm Sewer System)

bank credits cannot be purchased, compensatory mitigation for unavoidable impacts to aquatic resources could be met by establishing a permittee responsible mitigation (PRM) plan. Under a PRM plan, restoration, establishment, enhancement, or preservation of wetlands and streams would be undertaken by the permittee. This would require protection and restoration of an off-site property containing wetland and/or stream systems, as reviewed and approved by the USACE.

4.12 Floodplains

4.12.1 What are Floodplains?

Floodplains are low-lying areas located near the channel of a river, stream, or other type of waterbody. These areas are subject to periodic flooding during heavy rains and/or long periods of wet weather. Floodplains provide storage for flood waters, protect the surrounding environment from erosion, and provide habitat for wildlife. Thus, floodplains provide crucial functions in the natural environment. Federal agencies are required to reduce impact risk to floodplains and their associated floodways and/or main channel of flow. Floodplain areas exist within the study area, and this section describes the floodplains and potential impacts to those areas.

4.12.2 How are Floodplains Regulated?

Executive Order 11988 entitled “Floodplain Management,” requires federal agencies to avoid making modifications to and supporting development in floodplains wherever practical. Furthermore, floodplain and floodway protection are mandated under several federal, state, and local laws. Floodplains subject to inundation by the 1-percent annual chance flood event are regulated by the Federal Emergency Management Agency (FEMA). FEMA publishes maps depicting areas of regulated floodplains and floodways. The Flood Insurance Rate Map (FIRM) is the most common of the flood maps. The FIRM is a community map on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community. FIRMs depict the boundaries of flood hazard areas and differentiate them by zone.

Zone AE floodplains are areas subject to inundation by the 1-percent annual chance flood event and are determined by detailed methods. Base flood elevations (BFEs) are available for Zone AE floodplains and are provided on FIRMs.

Zone VE floodplains are areas subject to inundation by the 1-percent annual chance flood event with additional hazards due to storm-induced velocity wave action. VE Zones are also known as the coastal high hazard areas. BFEs derived from detailed hydraulic analyses are shown in the FEMA mapping of Zone VE areas. Refer to Photograph 5 to see an example of a VE flood zone in the project study area.

Zone X500 is a moderate flood hazard area and is an area between the limits of the base flood and the 0.2-percent annual chance (or 500-year) flood. Zone X500 includes areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile.



Photograph 1 Ashley River; a VE flood zone

Zone X is considered a minimal flood hazard from the principal source of flood in the area and determined to be outside the 0.2-percent annual chance floodplain.

4.12.3 What Floodplains are Located within the Project Study Area?

Based upon a review of the floodplain mapping and a GIS analysis, the proposed project crosses several areas designated by FEMA as floodplains. The proposed project is within a FEMA-regulated flood zone. Most of these areas are within Zone AE. The Ashley River and a portion of the tidal marshes surrounding the Ashley River are in Zone VE. For more detailed information refer to Appendix N.

4.12.4 How would the No-Build Alternative Impact Floodplains?

No-Build Alternative would not improve the roadway network beyond what is currently planned. Typical maintenance activities such as culvert and ditch clean-out and repair would continue to occur. The No-Build Alternative would have no effect on floodplains since existing conditions would remain unchanged.

4.12.5 How would the Recommended Preferred Alternative Impact Floodplains and How were the Impacts Evaluated?

A potential floodplain impact evaluation has been performed by overlaying digital files of the Recommended Preferred Alternative's potential right-of-way boundaries with the FEMA FIRM maps depicting the floodplains in the project study area. The preliminary right-of-way corridors for each of the alternatives were used to determine the amount of floodplain impacts that would potentially occur for each alternative. Refer to Table 4.19

The **Recommended Preferred Alternative** would be located within FEMA designated floodplains. Based on preliminary bridge locations/lengths, Alternatives 1A and 2A at the system interchange appear to have the greatest impact to floodplains within the project corridor, while Alternatives 1 and 2 would result in slightly lower impacts. At N Rhett Avenue and Virginia Avenue, Alternative 5 would have the greatest floodplain impacts and Alternative 2A would have the least amount of impacts. The mainline of I-526 from Paul Cantrell Boulevard to International Boulevard would impact approximately 378 total acres of floodplains.

Table 4.19 Potential Impacts to Floodplains from the Recommended Preferred Alternative

FEMA Flood Designation	Paul Cantrell Blvd to International Blvd	I-26/I-526 System & I-526 at Rivers Ave				I-526 at N Rhett/Virginia Ave				
		1	2*	1A	2A	1	2	2A*	5	6
AE (acres)	49	37	37	38	38	139	135	135	147	138
VE (acres)	34	N/A	N/A	N/A	N/A	3	3	3	3	3
X (acres)	310	382	382	384	386	24	24	15	23	25
Total Acres (AE + VE + X)	393	419	419	422	424	166	162	153	173	166

* Recommended Preferred Alternative

Floodplain impacts have been revised since the DEIS to account for necessary changes made to the design of the Recommended Preferred Alternative which included construction access needed for widening the Ashley River bridges.

Per FHWA Technical Advisory 6640.8A the level of potential risk or environmental impact resulting from any floodplain encroachments must be analyzed. A hydraulic analysis must be conducted for an encroachment of a FEMA-regulated floodplain. The hydraulic analysis is used to determine if the project is likely to increase the risk of flooding within the floodplain. To meet the requirements of a “No-Rise” condition, FEMA requires projects which would encroach on Regulated Floodways and Zone AE floodplains to result in a change no greater than one foot from the established 100-year flood elevations.

Regional hydrologic models were developed to evaluate potential flooding impacts that would result from the **Recommended Preferred Alternative**. Because the project is so close to the coast, base floodplain elevations are based on hurricane storm surge. Under the storm surge scenario the project would not have a significant encroachment on the base floodplain.

The hydrologic and hydraulic models were developed to also assess water elevations as it relates to rainfall-driven flooding, such as a non-hurricane storm surge event. In this scenario, the project would also not result in a significant encroachment on the base floodplain elevation. The models were developed based on preliminary drainage designs. These designs may vary in the future as final plans are developed and additional study would be completed. **The project would be designed in an effort to meet “No-Rise” requirements. In the event a “No-Rise” condition cannot be achieved, coordination with FEMA will require the preparation of a CLOMR (Conditional Letter of Map Revision)/LOMR (Letter of Map Revision) package for the encroachment. This includes a detailed hydraulic analysis,**

Design measures considered to minimize floodplain encroachments may include special flood related design criteria, elevating facilities above base flood levels, locating nonconforming structures and facilities out of the floodplain, or minimizing fill placed in floodplains.

determination of floodplain impacts, and preparation of the CLOMR. Following construction, impacts to the floodplain would be verified prior to the issuance of the LOMR. A LOMR is FEMA's modification to an effective FIRM, or Flood Boundary and Floodway Map (FBFM), or to the Flood Insurance Study. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the Special Flood Hazard Area (Flood zones AE and VE for this project). SCDOT Bridge Scope and Risk Assessment forms and SCDOT Floodplain Checklist form were completed for each crossing based on the preliminary analysis, refer to Appendix N.

There is no incompatible floodplain development that would result from the proposed project. All bridge and necessary culvert crossings would be designed to FEMA standards and would be constructed within an existing urban transportation corridor. The project would be designed to be consistent with local floodplain development plans and coordinated with local floodplain officials in Charleston County, the City of Charleston, and the City of North Charleston.

While the **Recommended Preferred Alternative** would not result in a significant encroachment on the base floodplain, there is no practicable alternative that would avoid all impacts to floodplains because the floodplain crossings are perpendicular to the roadway. It is FHWA's policy "to avoid longitudinal encroachments, where practicable" [23 CFR 650.103(b)]. Longitudinal encroachments are parallel or nearly parallel to a stream or the edge of a lake. **Where regulatory floodplains are defined, hydraulic structures will be designed to accommodate a 100-year (1-percent annual chance) flood.** The 100-year flood elevation at the bridge over the Ashley River is 13 feet (North American Vertical Datum of 1988 [NAVD 88]). The lowest portion of the bridge near the main channel is 38 feet. **Under the hurricane storm surge scenario the project would not have a significant encroachment on the base floodplain. In a non-hurricane storm surge event, such as rainfall-driven flooding, the project would also not result in a significant encroachment on the base floodplain elevation.** **Where no regulatory floodplain is defined, culverts and bridges will be designed to accommodate a 50-year magnitude flood event.** Ongoing design efforts and coordination with resource and regulatory agencies would continue to minimize floodplain impacts during the final design process.

4.12.6 What are the Indirect and Cumulative Effects to Floodplains?

Flooding concerns are a major issue for residents and business owners in the Lower Coastal Plain and Coastal Zone regions of South Carolina. Federal Emergency Management Agency (FEMA) regulated floodplains are found along all of the major waterways and many of the tributaries within the ICE study area, refer to Appendix F. Floodplains provide water storage during storm events, help improve water quality, and provide habitat for terrestrial and aquatic species. Floodplains mapped as AE and VE which are considered high risk areas within the 100-year floodplain. Flood zones AE have mapped base flood elevations while flood zones VE are impacted by coastal flooding with velocity hazards or wave action. Development within the Ashley and Stono Rivers floodplains within the ICE study area is limited. The Goose Creek floodplain is dammed in the upper portion and has little development in the lower portion. The Cooper River floodplain is highly developed. FEMA regulated floodplains can change as a result of changing conditions related to climate as well as growth and development. As noted previously, development within the FEMA mapped floodplains is regulated but not completely prohibited within the study area.

The proposed freeway widening, improved I-26 / I-526 interchange, and associated improvements on Rivers Avenue at Aviation Drive would not alter existing land use within the majority of the ICE study area, as it is already developed. The improved mobility associated with the proposed improvements would not create indirect land use effects across the broader region as growth and development will continue to occur regardless of the proposed

project. As such, impacts to water quality resulting from land use change associated with the project are not anticipated.

4.12.7 How would Impacts to Floodplains be Mitigated?

Preliminary engineering studies were conducted to determine impacts and ways to avoid and minimize impacts through the use of bridges when practicable. The use of bridges would reduce impacts to streams, wetlands, and floodplains. Although the bridge piers may need to be placed within these regulated features, impacts from the use of these piers are much less when compared to fill impacts. **SCDOT Design Build team will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator to the project procurement date.**

Final detailed hydraulic and hydrologic studies for each bridge crossing will be performed during final design to determine the correct sizing of bridges and culverts. The project will be designed to be consistent with local floodplain development plans.

At this phase of project development, general hydraulic analysis has been conducted and would be later updated with detailed studies. Bridge lengths would be a primary factor in determining the level of floodplain impacts that are proposed. Bridge structures would be designed in accordance with FEMA standards. Pursuant to the FEMA certification, the project will be designed to allow for no more than a one-foot rise in flood elevations. **The Engineer of Record will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator prior to the project procurement date.**

A “No-Rise” certification would be required from FEMA to ensure that any proposed structure would result in less than a one-foot rise in flood elevations.

4.13 Natural Resources

The purpose of this section is to describe the natural resources located within the study area and evaluate potential impacts. Natural resources such as landforms, soils, natural communities, and wildlife are important in providing plant and animal habitats. Landforms and soils provide plants a method of water storage and a habitat for wildlife. The potential impacts and minimization of impacts to natural resources, to the extent practicable, is documented below.

4.13.1 How were Natural Resources within the Project Study Area Identified and Assessed?

Field reviews were conducted August to December 2016, January to February 2017, and in September 2019 to document the natural resources, potential wetlands, and Waters of the U.S. (WOUS). In addition to the site visits, literature and reference materials were also reviewed to document the soils, natural communities, and wildlife. Refer to Appendix L for the Natural Resource Technical Memorandum (NRTM).

Since the DEIS, this chapter has been revised to address the official listing of the Eastern black rail as “threatened” and to include the impacts from the Recommended Preferred Alternative. The DEIS assumed a federal protection status for the black rail and there are no changes to the findings. Since the DEIS, USFWS has concurred with the potential species effects for all federally protected species under their review (April 6, 2020 and February 19, 2021 - see Appendix L, page 370 and page 375). Additionally, NOAA Fisheries has concurred with potential effects for two sturgeon fish species under their review (February 16, 2021 - see Appendix L, page 384).

4.13.2 How are Natural Resources Protected?

Within the project study corridor, a variety of mammals, birds, fish, and plants are protected through federal and/or state regulations. In addition, certain areas of habitat which support targeted species are designated by the USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries as critical habitat.

4.13.2.1 Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 (50 CFR Part 402), as amended, is the federal regulatory tool that serves to administer permits, implement recovery plans, and monitor federally protected (endangered and threatened) species. The ESA is administered and regulated by the USFWS and by NOAA Fisheries. Because of the federal nexus of the proposed project, consultation with the USFWS and NOAA is required.

Section 7 of the ESA mandates consultation with USFWS and NOAA for proposed projects that “may affect” federally endangered and threatened species. This project requires Informal Consultation and the preparation of two Biological Assessments; one for USFWS and one for NOAA.

4.13.2.2 Federal Protected Species

Species with the federal classification of endangered or threatened are protected under the ESA. The term endangered species is defined as “any species which is in danger of extinction throughout all or a significant portion of its range,” and the term threatened species is defined as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range” (16 U.S.C. 1532).

When a species is proposed for listing as endangered or threatened under the ESA, USFWS and NOAA must consider whether there are areas of habitat believed to be essential to the species' conservation. Those areas may be proposed for designation as critical habitat.

At-Risk Species (ARS) is an informal term that refers to those species which may need concentrated conservation actions and have been submitted for listing as threatened or endangered. The USFWS designations of ARS does not provide federal protection and requires no Section 7 consultation under the ESA.

Executive Order 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds” also directs and guides Federal agencies in implementing the Migratory Bird Treaty Act (MBTA). The migratory bird species protected by the MBTA are listed in 50 CFR § 10.13. The USFWS has statutory authority and responsibility for enforcing the MBTA. Any activity which results in the “take” of migratory birds or eagles is prohibited unless authorized by USFWS.

4.13.2.3 Bald and Golden Eagle Protection Act

The bald eagle is no longer protected under the ESA, but the species is afforded federal protection through the Bald and Golden Eagle Protection Act (BGEPA) of 1940, as well as the MBTA. The BGEPA, 16 USC 668-668c, prohibits the “take” of bald eagles including their parts, nests, or eggs by anyone, without a permit issued by the Secretary of the Interior.

The MBTA makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations (16 USC § 703-712).

4.13.2.4 State Protected Species

Animal species that are on the South Carolina state protected species list receive protection under the South Carolina Nongame and Endangered Species Conservation Act (South Carolina Code, Title 50). State endangered species are defined as any species or subspecies of wildlife whose prospects of survival or recruitment within the state are in jeopardy or are likely within the foreseeable future to become so. It is unlawful for any person to “take,” possess, transport, export, process, sell or offer for sale or ship, and for any common or contract carrier knowingly to transport or receive for shipment any species or subspecies of wildlife appearing on the state list of protected species without appropriate authorization.

4.13.3 What Natural Resources are in the Project Study Area?

4.13.3.1 Landform and Soils

The proposed project is in the Coastal Plain physiographic province of South Carolina and is specifically situated within the Southern Coastal Plain (75) Level III Ecoregion.¹⁸ The Southern Coastal Plain extends from South Carolina and Georgia through much of central Florida, and along the Gulf coast lowlands of the Florida Panhandle, Alabama, and Mississippi. It appears to be mostly flat plains, but it is a heterogeneous region also containing barrier islands, coastal lagoons, marshes, and swampy lowlands along the

The Sea Islands/ Coastal Marsh region contains the lowest elevations in South Carolina and is a highly dynamic environment affected by ocean wave, wind, and river action. Mostly organic and clayey soils occur in the freshwater, brackish, and salt marshes.

18 Griffith, et al., 2002

Gulf and Atlantic coasts. It was once covered by a variety of forest communities that included trees of longleaf pine, slash pine, pond pine, beech, sweetgum, southern magnolia, white oak, and laurel oak. Currently, land cover in the ecoregion as a whole is mostly slash and loblolly pine with oak-gum-cypress forest in some low-lying areas. Other areas are used as pasture for beef cattle or urban land uses. The study area is further characterized by falling within the Sea Islands/Coastal Marsh (75j) Level IV Ecoregion.¹⁹ For detailed information on each of the soil series and associated mapping units, refer to Appendix L.

4.13.3.2 Natural Habitat Communities

The majority of the project study area is comprised of existing roadway. Areas which are not developed are classified based upon vegetation and land-form types. Vegetative terrestrial communities are distinguished by dominant plant species, community types, location in the landscape, past disturbances, and hydrologic characteristics. Only those habitats located directly within the study area are characterized. The study area is examined through current and historical Google Earth imagery, US Department of Agriculture (USDA) ortho imagery, and USGS topographic maps to discern areas with similar signatures, and the data is being verified and classified through on-site field review. Essential Fish Habitat (EFH) is also present and is addressed in the NRTM. The habitat communities found within the project study area are listed below. Refer to Appendix L for more detailed information about each habitat community.

- Maintained Development
- Mixed Pine/Hardwood Forest
- Scrub/Shrub
- Bottomland Hardwood Forest
- Tidal Wetlands
- Brackish Marsh
- Freshwater Herbaceous Wetlands
- Forested Wetlands
- Cypress-Tupelo Wetlands
- Open Freshwater

Many of these natural habitats are susceptible to invasive species introduction if disturbed during the construction process. Executive Order (EO) 13112, amended by EO 13751, set guidelines for executive departments and agencies to take steps to prevent the introduction and spread of invasive species. To meet the intent of these EOs, the Department will ensure no invasive species shown by the USDA-SC Invasive Noxious Weeds list [Link to List] are planted as part of the revegetation and stabilization of the project site. The Contractor will follow the SCDOT Supplemental Technical Specification SC-M-810-3, as amended, in regard to all other aspects of seeding operations.

4.13.4 General Wildlife

Wildlife readily observed and documented during the field reviews, or those likely to occur within the study area, are summarized below.

Common bird species either observed during field reviews or known to occur within the study area 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.

Common mammal species likely to occur in the study area include white-tailed deer, striped skunk, river otter, raccoon, bats, cotton mouse, opossum, eastern gray squirrel, and eastern cottontail rabbit.

Some crayfish, common fishes, and other aquatic organisms were readily observed in both brackish and freshwater areas. Those species, as well as others that are likely to be present 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 study area 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.

4.13.5 Federal and State Protected Species

A review of the USFWS species list provides existing information concerning the potential occurrence of threatened or endangered species within Charleston County. Refer to Appendix L for a copy of the list provided by the USFWS in 2016; it is also included in the NRTM, which is also provided in Appendix L. This online database identifies 24 federally threatened or endangered species known to occur or to have formerly occurred in Charleston County. Refer to Table 4.20 for the list of federally threatened or endangered species, which has not changed since the 2016 list. The bald eagle is listed under the BGEPA but was removed from the federal list of Threatened and Endangered Species, effective August 8, 2007.

Per
review of the USFWS
Information, Planning, and
Conservation (IPaC) online
database, there is no critical habitat
for threatened or endangered
species within the study
area.

The SCDNR Rare, Threatened, and Endangered Species Inventory database was also reviewed for information regarding species with state endangered or threatened status. Nine additional species are currently listed as state threatened or endangered in Charleston.

ARS are also included in the Natural Resources Technical Memorandum, refer to Appendix L for informational purposes. These species do not receive legal protection from the ESA; therefore, specific surveys for the species were not conducted. During field surveys, none of the ARS were identified within the project study area.

Table 4.20 Federal and State Protected Species in Charleston County

Common Name	Scientific Name	Protected Status	Conclusion or Impacts
Amphibian			
Dwarf siren	<i>Pseudobranchius striatus</i>	Threatened (State)	May affect, not likely to adversely affect
Flatwoods salamander	<i>Ambystoma cingulatum</i>	Threatened (Federal), Endangered (State)	No effect
Gopher frog	<i>Lithobates capito</i>	Endangered (State)	No effect
Bird			
American swallow-tailed kite	<i>Elanoides forficatus</i>	Endangered (State)	May affect, not likely to adversely affect
American wood stork	<i>Mycteria americana</i>	Threatened (Federal), Endangered (State)	May affect, not likely to adversely affect
Bachman's warbler	<i>Vermivora bachmanii</i>	Endangered (Federal & State)	May affect, not likely to adversely affect
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, Threatened (State)	No effect
Eastern black rail	<i>Laterallus jamaicensis</i>	Threatened (Federal)	May affect, not likely to adversely affect
Least tern	<i>Sterna antillarum</i>	Threatened (State)	No effect
Piping plover	<i>Charadrius melodus</i>	Threatened (Federal), Endangered (State)	No effect
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered (Federal & State)	No effect
Red knot	<i>Calidris canutus rufa</i>	Threatened (Federal)	No effect
Wilson's plover	<i>Charadrius wilsonia</i>	Threatened (State)	May affect, not likely to adversely affect
Fish			
Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	Endangered (Federal)	May affect, not likely to adversely affect
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered (Federal & State)	May affect, not likely to adversely affect
Mammal			
Finback whale	<i>Balaenoptera physalus</i>	Endangered (Federal & State)	No effect
Humpback whale	<i>Megaptera novaengliae</i>	Endangered (Federal & State)	No effect
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened (Federal)	May affect, but any resulting incidental take is not prohibited by the final 4(d) rule
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	Endangered (State)	May affect, not likely to adversely affect
Right whale	<i>Balaena glacialis</i>	Endangered (Federal)	No effect
Sei whale	<i>Balaenoptera borealis</i>	Endangered (Federal)	No effect
Sperm whale	<i>Physeter macrocephalus</i>	Endangered (Federal)	No effect
West Indian manatee	<i>Trichechus manatus</i>	Threatened (Federal), Endangered (State)	May affect, not likely to adversely affect
Mollusk			
Atlantic pigtoe	<i>Fusconaia masoni</i>	Endangered (State)	No effect

Common Name	Scientific Name	Protected Status	Observed in Study Area
Plant			
American chaff seed	<i>Schwalbea americana</i>	Endangered (Federal)	No effect
Canby's dropwort	<i>Oxypolis canbyi</i>	Endangered (Federal)	May affect, not likely to adversely affect
Pondberry	<i>Lindera melissifolia</i>	Endangered (Federal)	May affect, not likely to adversely affect
Seabeach amaranth	<i>Amaranthus pumilus</i>	Threatened (Federal)	No effect
Reptile			
Green sea turtle	<i>Chelonia mydas</i>	Threatened (Federal & State)	No effect
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered (Federal & State)	No effect
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered (Federal)	No effect
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened (Federal & State)	No effect
Southern hognose snake	<i>Heterodon simus</i>	Threatened (State)	No effect
Spotted turtle	<i>Clemmys guttata</i>	Threatened (State)	May affect, not likely to adversely affect

Note: USFWS concurred with these findings on April 6, 2020 and February 19, 2021 and NOAA Fisheries concurred on February 16, 2021.

4.13.5.1 Migratory Birds

There are hundreds of species of migratory birds protected by the MBTA that may nest in, forage in, or fly through, the study area. Birds that are considered non-native species such as the house sparrow and the European starling are examples of species that are not protected under the MBTA. In addition, many groups of hunted or game birds, such as ducks, geese, doves, and some shorebirds are subject to limited protection and can be hunted in specific seasons. Migratory birds which may be foraging or moving through the project study area are less likely to be affected by project impacts as they can generally move more readily from construction-related disturbances. Ground nests, arboreal nests, and nests built on man-made structures could occur within the project study area. Active nests were not noted on any structures; however, nests in shrubs and trees are present throughout the project study area.

The federal Migratory Bird Treaty Act of 1918, as amended, 16 USC § 703-711, states that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. The SCDOT will comply with the Migratory Bird Treaty Act of 1918 in regard to the avoidance of taking of individual migratory birds and the destruction of their active nests.



Photograph 2 Great blue heron foraging within the I-526 LCC WEST Project Study Area

The contractor shall notify the Resident Construction Engineer (RCE) at least four (4) weeks prior to construction/demolition/maintenance of bridges and box culverts. The RCE will coordinate with SCDOT Environmental Services Office (ESO), Compliance Division, to determine if there are any active birds using the structure. After this coordination, it will be determined when construction/demolition/maintenance can begin. If a nest is observed that was not discovered after construction/demolition/maintenance has begun, the contractor will cease work and immediately notify the RCE, who will notify the ESO Compliance Division. The ESO Compliance Division will determine the next course of action.

The use of any deterrents by the contractor designed to prevent birds from nesting, shall be approved by the RCE with coordination from the ESO Compliance Division. The cost for any contractor provided deterrents will be provided at no additional cost to SCDOT.

4.13.6 Essential Fish Habitat

4.13.6.1 What is Essential Fish Habitat?

Wetlands, reefs, rivers, and other aquatic habitats are considered EFH because of their importance to fish throughout their lifecycle. Proper management and conservation of EFH is necessary for the survival of fish populations, as well as the ecological and economic benefits they provide.²⁰

Essential Fish Habitat (EFH) is defined as waterbodies and substrate that fish and other organisms need to spawn, breed, feed, and grow to maturity (16 USC 1802, 50 CFR 600.10).

Certain locations and types of EFH have a greater need for conservation and management than others. These areas are referred to as Habitat Areas of Particular Concern (HAPC). HAPC 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.²¹

4.13.6.2 How is Essential Fish Habitat Protected?

Magnuson-Stevens Fishery Conservation and Management Act of 1976

The Magnuson-Stevens Fishery Conservation and Management Act (MSFA) is the law governing marine fisheries in the United States. A fishery is one or more species of fish which are managed as a unit for commercial, recreational, or subsistence purposes. The MSFA was passed to address concerns of overfishing and unregulated foreign activity affecting fisheries in the US. This law expanded the US federal jurisdiction from 12 miles offshore to 200 miles and established eight regional fishery management councils.²²

Regional Fisheries Management Councils

Regional fisheries management councils are responsible for the monitoring and regulation of fisheries within the waters of their respective regions. The South Atlantic Fisheries Management Council (SAFMC) is tasked with conserving and managing fish stocks for the South Atlantic region, which includes the coast of South Carolina. Some fish species managed by the Mid-Atlantic Fisheries Management Council (MAFMC) also occur within the coastal waters of South Carolina.

20 <https://www.fisheries.noaa.gov/national/habitat-conservation/essential-fish-habitat>

21 <https://www.fisheries.noaa.gov/national/habitat-conservation/essential-fish-habitat>

22 <https://www.fisheries.noaa.gov/insight/understanding-laws-and-noaa-fisheries>

NOAA Fisheries

NOAA Fisheries is a division of NOAA and is responsible for managing the marine resources of the United States. NOAA Fisheries works closely with the regional fisheries management councils to describe and identify EFH and HAPC as well as minimize adverse impacts to these habitats. Adverse effects to EFH are those that reduce the quality and/or quantity of EFH. These adverse effects include direct, indirect, site specific, habitat wide impacts, individual, cumulative, or synergistic consequences of actions.²³

Table 4.21 EFH Types within the Project Study Area

EFH Type	Ashley River	Filbin Creek
Estuarine Emergent Wetlands	X	X
Palustrine Emergent Wetlands		X
Intertidal Non-Vegetated Flats	X	X
Riverine Tidal Creek		X
Estuarine Tidal Creeks	X	X
Unconsolidated Bottom (Coastal Inlets)	X	X

Table 4.22 provides a total acreage for each EFH type and quality found within the project area. Refer to the EFH Assessment in Appendix O for more detailed information about these habitat types, Managed Fisheries and EFH/HAPC.

Table 4.22 EFH Acreage within the Project Study Area

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

23 <https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-assessment-consultations>

4.13.6.3 How is Essential Fish Habitat within the Project Study Area Identified and Assessed?

The SAFMC provides descriptions of the different types of EFH in the region. These descriptions are being used to determine which habitat types are present within the I-526 LCC WEST and where their boundaries lie. Using GIS data and aerial imagery, habitat types and their boundaries are predicted based on the visible water levels and the presence or lack of vegetation. Field assessments were conducted to either confirm or make changes to the mapped EFH boundaries. These assessments were completed during low tide to ensure that all habitat types were accounted for and identified correctly. EFH within the project area is found in the portion that crosses the Ashley River and the portion that crosses Filbin Creek and its confluence with the Cooper River. Both systems are tidally influenced and have similar habitats.

4.13.7 How would the No-Build Alternative Impact Natural Resources?

Since existing conditions are unaffected by the No-Build Alternative, no effects on natural resources are anticipated under the No-Build scenario.

4.13.8 How would the Recommended Preferred Alternative Impact Natural Resources?

4.13.8.1 Federal and State Protected Species

There are no known populations of threatened or endangered species residing in the project area. Suitable habitat occurs within the project study area for nine federally listed threatened or endangered species. There are no candidate species, or critical habitat within or near the project study area. Under Section 7(a)(4) of the ESA, federal agencies must confer with the USFWS and/or NOAA if their action will jeopardize the continued existence of a proposed species.

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.

No adverse effects are anticipated for any federal or state protected species. Refer to Table 4.20 for the effects determination for each species.

4.13.8.2 Agency Coordination and Consultation Findings

Under Section 7 of the ESA consultation with USFWS and NOAA is required for projects that “may affect” federally endangered and threatened species. Informal Consultation was initiated with both agencies, resulting in a Biological Assessment being prepared for each agency, detailing potential species impacts and effects. The Biological Assessments can be found in Appendix L. A Letter of Intent (LOI) was sent to USFWS and NOAA Fisheries by SCDOT on January 27, 2016. The USFWS provided a response to the LOI on February 1, 2016, refer to Appendix L. USFWS concurred with the species findings on April 6, 2020. After the concurrence date, one species, the Eastern black rail, was heightened from “proposed” to “threatened” status. The Preferred Alternative may affect, but is not likely to adversely effect this species. USFWS concurred with these findings on February 19, 2021. Refer to Appendix L for USFWS correspondence. Additionally, NOAA Fisheries has concurred with species

findings under their jurisdiction (February 16, 2021). Refer to Appendix L for NOAA Fisheries correspondence. Biological Opinions are not anticipated from either NOAA or USFWS.

4.13.8.3 Essential Fish Habitat

The EFH Technical Report outlines potential impacts to EFH. Refer to Appendix O for the technical report and for documentation of NOAA Fisheries coordination and consultation.

The proposed project will result in unavoidable impacts to EFH. Impacts to EFH are expected where two additional bridge structures would be constructed over the Ashley River and where new structures would be constructed over portions of Filbin Creek and its associated floodplain to accommodate the widening of I-526. Additionally, improvements to the interchange access for the I-526 connections at N Rhett Avenue and Virginia Avenue would result in impacts to EFH.

Adding new bridge support structures may result in a net benefit to oysters within the project limit by providing new hard surfaces for them to grow on.

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 Fisheries. The proposed impacts to EFH are based on the conceptual design at this time. Additionally, the potential impact to managed fishery species will vary based on life stage, habitat use, distribution, and abundance.

Permanent direct impacts to EFH are expected from the placement of permanent fill for roadway and 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 or loss of function 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.

To evaluate temporary impacts to EFH it was assumed the contractor would use temporary trestles as the main method of construction access. However, the contractor may use temporary trestles, barges, timber mats, or a combination of multiple methods of construction access to complete the new bridge structures. **Temporary fill may be used for some access, but will not be the only method of construction access for the project.** The final construction access methods will be determined by the design build contractor in coordination with SCDOT and FHWA. Temporary direct impacts to EFH will result from the placement of temporary fill for construction access for the project. **All construction access materials will be removed to the greatest extent practicable at the completion of construction.**

No matter which method the contractor uses for construction access, the EFH associated with the Ashley River will experience 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. Construction access in the 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.

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 high quality estuarine emergent wetlands and low quality palustrine emergent wetlands EFH.

Table 4.23 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.

Since there will be impacts to the EFH and possibly aquatic species managed by the SAFMC, an EFH Mitigation Plan will be established.

Table 4.23 EFH Impacts within the Project Study Area

Impact Type	EFH 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)	1.6 acres (HQ)	0.5 acres (HQ)	0.4 acres (HQ)	1.4 acres (LQ)	0.3 acres (LQ)	0.2 acres (HQ)	0.4 acres (HQ)
		1.3 acres (LQ)					
Permanent Indirect (Shading, Additional Surface Area for Oysters)	3.2 acres (HQ)	0 acres	0 acres	10.3 acres (LQ)	0 acres	0 acres	0 acres (HQ)
Temporary Direct (Temporary Trestle Pilings, Barges, Timber Mats)	0.2 acres (HQ)	0.2 acres (HQ)	0.2 acres (HQ)	0.1 acres (LQ)	0.1 acres (LQ)	0.2 acres (HQ)	0.2 acres (HQ)
	0.1 acres (LQ)	0.1 acres (LQ)					
Temporary Indirect (Shading, Siltation)	14.4 acres (HQ)	0.2 acres (HQ)	0.2 acres (HQ)	17.2 acres (LQ)	0.1 acres (LQ)	0.2 acres (HQ)	0.2 acres (HQ)
	0.2 acres (LQ)	0.1 acres (LQ)					
Total	19.7 acres (19.4 HQ, 0.3 LQ)	2.4 acres (0.9 HQ, 1.5 LQ)	0.8 acres (0.8 HQ)	29.0 acres (29.0 LQ)	0.5 acres	0.6 acres	0.8 acres

EFH impacts have been updated since the DEIS based on necessary changes made to the design of the Recommended Preferred Alternative which included construction access needed for widening the Ashley River bridges.

The project will ultimately 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. 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. NOAA Fisheries has reviewed the findings of the EFH assessment and had no objections to the findings documented by SCDOT. SCDOT received a concurrence letter from NOAA Fisheries on September 2, 2020 regarding the potential impacts to EFH.

As the Recommended Preferred Alternative was refined, the EFH Assessment was revised to reflect necessary changes to the design, including the addition of the SUP as part of the widening of the Ashley River bridges, and the associated changes to EFH impacts. A revised EFH Assessment was submitted to NOAA Fisheries on December 1, 2020. NOAA Fisheries provided concurrence (February 26, 2021) on the revisions and made no additional conservation recommendations. A copy of the EFH Assessments and concurrence letters from NOAA Fisheries can be found in Appendix O.

Consultation with NOAA Fisheries will be re initiated if: (1) new information reveals impacts of this identified action may affect any essential fish habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment.

4.13.9 How would Project Impacts to Natural Resources be Mitigated?

4.13.9.1 Federal and State Protected Species

Steps will be taken to avoid and minimize impacts to wetlands and aquatic areas to protect federally listed species found to have habitat within the project study area: the West Indian manatee, American wood stork, black rail, Bachman's warbler, Atlantic sturgeon, shortnose sturgeon, pondberry and Canby's dropwort. These species rely on wetlands, open water areas, or both for habitat; therefore, habitat degradation and elimination should be minimized. Piping plovers inhabit areas adjacent to open water and could also benefit from measures to minimize impacts to wetlands and aquatic habitat. In addition, state listed species may also benefit from measures to protect wetlands and water quality.

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 and maintenance.
- Drilled shafts should be used in place of driven piles where possible.
- 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.

4.13.9.2 Essential Fish Habitat

Impacts to EFH would be minimized to the maximum extent practicable. As the project design progresses, the proposed 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.

SCDOT and NOAA Fisheries have developed an EFH-specific list of general 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. **SCDOT will work with the contractor to ensure the use of EFH specific list of general best management practices (BMPs) to minimize construction-related impacts to EFH. The contractor will be responsible for ensuring all temporary construction access methods, including temporary fill, timber mats, barges, and trestles and associated piles would be removed in their entirety upon completion of the bridges. 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.**

A final mitigation plan will be developed for the **Department of the Army** permit and will include consideration for impacts to EFH as part of that plan. This mitigation plan will be established as part of the Section 404 permitting phase of the project. SCDOT/FHWA will develop the mitigation plan in coordination with the appropriate resource agencies.

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 as 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, including NOAA Fisheries.

4.14 Cultural Resources

A cultural resource survey was completed to identify and evaluate potential cultural resources within the project study area that may be affected by the proposed I-526 LCC WEST corridor improvements project. The results of this survey and any potential effects of the proposed project on cultural resources are summarized below. For more detailed information, refer to Appendix P.

Cultural resources consist of archaeological sites, isolated artifacts, historic architecture, and historic districts, as well as traditional cultural properties (TCPs).

4.14.1 How are Cultural Resources Protected?

4.14.1.1 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 was passed to preserve historical and archaeological sites in the United States. NHPA establishes the National Register of Historic Places which is the official list of the nation's historic places worthy of preservation. Section 106 of the NHPA requires federal agencies involved in an undertaking (funding, permitting, etc.) to consider the impacts on cultural resources. 36 CFR 800, Subpart B establishes a process for federal agencies to follow when complying the requirements of the Section 106 process which is completed in consultation with the State Historic Preservation Office (SHPO) and the federally recognized Native American tribes. Due to the proposed I-526 LCC WEST project being a federal undertaking, FHWA must comply with the NHPA including applicable regulations.

4.14.1.2 Department of Transportation Act of 1966, Section 4(f), as Amended

Section 4(f) of the US Department of Transportation Act (as amended by SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users) provides protection for publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic sites.²⁴ Historic sites protected by this regulation include sites that are eligible for listing or listed on the NRHP. Section 4(f) only applies to USDOT agencies, including FHWA, projects. The Section 106 process is used to address historic properties in the Section 4(f) evaluation, but Section 106 and Section 4(f) are separate acts with separate requirements. Section 4(f) is discussed in detail in Section 4.11: Section 4(f).

4.14.2 How were Cultural Resources Identified?

The cultural resources survey conducted for the I-526 LCC WEST Project includes background research, a terrestrial archaeological survey, an underwater archaeological survey, and an architectural survey.

ArchSite is an online database managed by SCIAA and SCDAAH that contains information about recorded archaeological sites.

²⁴ U.S. Department of Transportation Federal Highway Administration (USDOT FHWA). 2012. Environmental Review Toolkit: Section 4(f) Policy Paper. 7/20/2012. <https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.aspx#p-pra>. Web accessed: 1/20/2020.

4.14.2.1 Background Research

Background research was done at the South Carolina Institute of Archaeology and Anthropology (SCIAA) and online at ArchSite to locate any previously recorded archaeological resources or NRHP properties within or near the project. Background research resulted in the identification of several previously recorded cultural resources within 0.25 mile of the project; these are discussed in detail in the Cultural Resource Report. Refer to Appendix P.

4.14.2.2 Archaeological Field Survey

The archaeological survey was completed August 23-26, 2016; September 13-17 2017; and in February 2020, in accordance with the South Carolina Standards and Guidelines for Archaeological Investigations.²⁵ The surveys conducted for this project applied systematic shovel testing and visual surfaces inspections. Each shovel test measured approximately 30-by-30 centimeters (cm) in diameter, was excavated approximately 40-60 cm below surface into sterile subsoil and fill was sifted. Visual surface inspection was used in areas with good ground surface visibility. Refer to Appendix P for additional details.

4.14.2.3 Architectural Survey

Field survey methods complied with both the Survey Manual: South Carolina Statewide Survey of Historic Properties and the National Register Bulletin 24, Guidelines for Local Surveys: A Basis for Preservation Planning. During field surveys, the integrity of each architectural resource and previously recorded resources within the project study area were evaluated to determine eligibility for the South Carolina Survey of Historic Properties. The principal measure used by the South Carolina Department of Archives and History (SCDAH) to define historic architectural resources is a minimum age of 50-years. All architectural resources in the project study area were recorded with survey forms, maps, and digital photographs. Refer to Appendix P for additional details.^{26,27}

An intensive architectural survey of aboveground cultural resources was designed to identify, record, and evaluate all historic architectural resources (buildings, objects, designed landscapes, structures, and/or other sites with aboveground elements) within the project study area.

25 Council of South Carolina Professional Archaeologists, South Carolina Department of Archives and History, and South Carolina Institute of Anthropology and Archaeology (COSCAPA). 2015. "South Carolina Standards and Guidelines for Archaeological Investigations". State Historic Preservation Office, Review and Compliance Branch, Columbia, South Carolina.

26 South Carolina Department of Archives and History (SCDAH). 2011. "Survey Manual: South Carolina Statewide Survey of Historic Properties". South Carolina Department of Archives and History, Columbia, South Carolina.

27 Parker, Patricia L. 1985. National Register Bulletin 24: Guidelines for Local Surveys: A Basis for Preservation Planning. U.S. Department of the Interior, National Park Service, Interagency Resources Division, Washington, D.C

4.14.2.4 NRHP Eligibility

As per 36 CFR 60.4, all cultural resources encountered are assessed to determine significance based on four broad evaluative criteria. Any resource (building, structure, site, object, or district) may be eligible for the NRHP that:

- A. is associated with events that have made a significant contribution to the broad pattern of history;
- B. is associated with the lives of persons significant in the past;
- C. embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or
- D. has yielded, or is likely to yield, information to history or prehistory.

4.14.2.5 How are Historic Resources Evaluated?

A resource may be eligible under one or more of the listed criteria. Archaeological sites are most often, but not always, evaluated using Criterion D. Criteria A, B, and C are most frequently applied to historic buildings, structures, non-archaeological sites, objects, and districts. 50 years of age is used as a broad guideline to define “historic” in the NRHP evaluation process, but if a more recent resource displays “exceptional” significance it may be considered for eligibility. To recommend a resource as eligible for the NRHP, it must be associated with an important historic context in local, regional (state), or national history and it must retain the integrity necessary to reflect and represent its historic context.²⁸

4.14.3 What Archaeological Resources were Found During the Survey?

During the archaeological survey of the I-526 LCC WEST Project, investigators revisited one previously identified site (38CH17) and identified one new archaeological site (38CH2523). In this section we describe each archaeological site and summarize the NRHP assessments for each site.

Site 38CH17, the remnants of a large brick kiln, was originally recorded in 1972. According to Brockington’s Cultural Resource Survey, the site is a pile of bricks which appears to be the main area for firing bricks. One pile of clay appears to be where clay was stored until it could be used. A borrow pit is located about 300 feet east of the site. According to original site documentation, the borrow pit was largely destroyed during the construction of the existing I-526 but the small portion that still exists was revisited during the investigations of the proposed I-526 LCC WEST project. Based on previous and current evaluations, Site 38CH17 is recommended as not eligible for the NRHP under Criterion D and warrants no further management consideration.

A newly identified concrete bridge and earthen causeway, Site 38CH2523, was investigated during the current evaluations. The early twentieth century site consists of a bridge that once crossed Bulls Creek and an earthen causeway. The middle portion of the bridge does not exist today and no evidence of a former road on the eastern side of the bridge exists. The site is recommended as not eligible for the NRHP under Criterion D and warrants no further management consideration.

Anomaly 006-1 could be associated with an early ferry vessel or bridge structure and avoidance is recommended for this site. The site is of indeterminate eligibility and further investigations to determine the site’s NRHP eligibility status are not necessary as avoidance is recommended. A project commitment has been made to avoid the site, including a 100-ft radius buffer surrounding the resource. Anomaly 001-1 likely represents modern debris and is recommended not eligible for the NRHP. No further management of Anomaly 001-1 is warranted.

Two anomalies were identified during the underwater archaeological survey, Anomaly 006-1 and Anomaly 001-1.

Refer to Appendix P for additional detail on the archaeological resources.

4.14.4 What were the Results of the Architectural Survey?

The architectural survey was conducted from July 26 to September 7, 2016. The survey was designed to identify and evaluate historic architectural resources in the project study area using the SCDAH’s (2005, 2018) Survey Manual: South Carolina Statewide Survey of Historic Properties. Table 4.24 lists all architectural resources within the project study area and the recommended NHRP eligibility determination of each site.

Table 4.24 Architectural Resources in the Project Study Area

Resource Number	Name	Date	NRHP Status
7806	Bethune School	1952	Eligible
7916	Charleston Mining and Manufacturing Company (CMMC)	1870-1930	Not Eligible

Resource 7806, Bethune Elementary, is eligible for the NRHP under Criteria A and C. The proposed I-526 LLC WEST Corridor Improvements will have no adverse effect on this resource as the proposed improvements take place on a raised roadway with a building and vegetation which provide a buffer limiting most of the viewshed. No further management considerations are warranted for this resource.

Resource 7916, Charleston Mining and Manufacturing Company (CMMC), was recommended for as eligible and SHPO concurred in a letter dated June 1, 2020. The site has been reevaluated and the previous finding reversed. Resource 7916 is determined not eligible for NRHP listing. SHPO concurred in a letter dated September 1, 2020. Refer to Appendix P for SHPO concurrence letters.

Ashley Hall Plantation is a NRHP-listed property located approximately 0.25 miles outside of the project study area buffer on the bank of the Ashley River. The roadway and bridge over the Ashley River are in the property’s viewshed. Proposed construction activities do not change the height of these bridges; therefore, the project will have no adverse effect on Ashley Hall Plantation. Additional consultation with SHPO is required if bridge heights are raised. Refer to Figure 4.18 for the historic properties near the project study area.

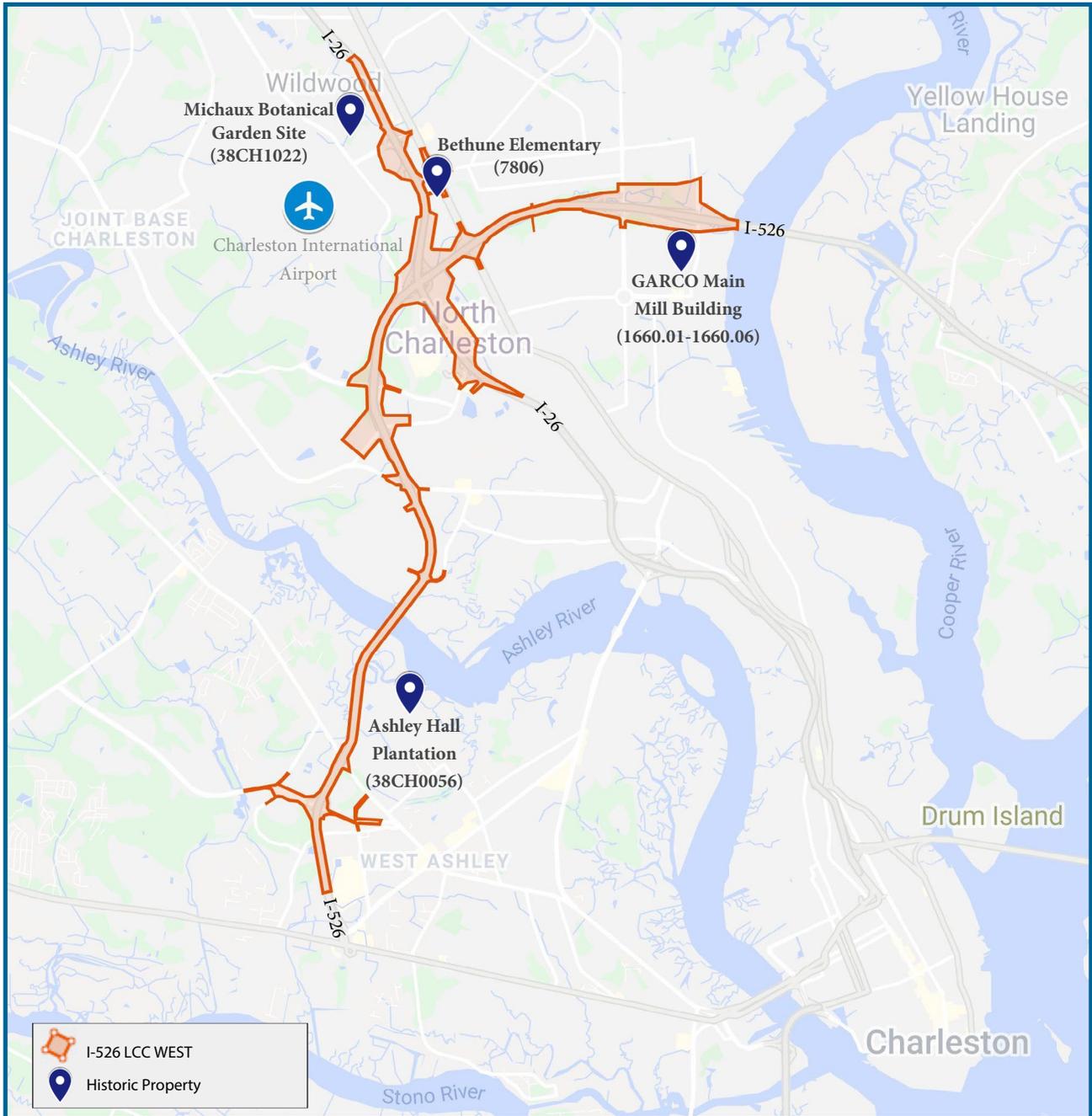


Figure 4.18 Historic Properties near the Project Study Area

4.14.5 What are the Potential Impacts to Cultural Resources?

The No-Build Alternative would have no effect on NRHP-eligible or listed resources.

The proposed undertaking is not anticipated to have an adverse effect on NRHP-eligible or listed resources. The Bethune School (Resource 7806) is the only cultural resource within the project study area that is eligible for NRHP listing. The No-Build Alternative would not have any impact on this resource. The **Recommended Preferred Alternative** would not directly impact the Bethune School, and there will be a 300-foot buffer that restricts the majority of the viewshed. Avoidance of Anomaly 006-1, an underwater resource that may be

associated with an early ferry vessel or bridge structure, is recommended and included as an Environmental Commitment, in addition to a 100-foot radius buffer for any construction-related activities surrounding the resource.

4.14.6 Consultation & Coordination with Federally Recognized Tribes

The NHPA requires consultation with federally recognized Native American tribes when federal agencies are involved in an undertaking with the potential to affect resources of religious or cultural significance, when the location of the undertaking is within an area of traditional use for the tribe, when the location is on tribal land, or where such properties might be affected regardless of the undertaking's location. 36 CFR 800 requires consultation at a government-to-government level in acknowledgment of the sovereign status of the tribes. In the case of the I-526 LCC WEST project, this means that the FHWA must take the lead in consulting with the tribes.

The objective of tribal consultation is to identify resources of importance; to assess the nature and extent of the impact on the characteristics of the resources; and to work through a collaborative process to identify acceptable measures for avoiding, minimizing, or mitigating significant impacts to the resources.

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, 2020 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. Responses to Section 106 coordination efforts were not received from the Eastern Shawnee Indians or Muscogee Creek Nation. Refer to Appendix A for more details on these letters and responses.

4.14.7 Consultation & Coordination with SHPO

On April 15, 2019 SCDOT sent SHPO an electronic copy of the overall eligibility of resources in the project study area. SCDOT received SHPO comments in a May 7, 2019 email. After revisions were completed, three physical copies and an electronic copy of the revised draft cultural resources reports were sent to SCDOT on May 29, 2019. On July 16, 2019, SCDOT transmitted a physical copy of the report to the SHPO on behalf of the FHWA. SCDOT and the SHPO concurred with the eligibility of resources within the project study area, July 16, 2019. On May 27, 2020, SCDOT sent SHPO an electronic copy of the I-526 West Addendum 2 Report. SCDOT and SHPO also concurred with the I-526 West Addendum 2 Report on May 27, 2020. SHPO concurred on the findings of no adverse effect to historic resources on June 1, 2020. Refer to Appendix P for documentation of the coordination and consultation efforts.

4.14.8 What Mitigation Measures would be Taken to Protect Cultural Resources?

During the construction phase of the project, the contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations during the construction phase of the project, if any such remains are encountered, the Resident Construction Engineer (RCE) will be immediately notified and all work in the vicinity of the discovered materials and site work shall cease until the SCDOT Archaeologist directs otherwise.

If any such remains are encountered, the Resident Construction Engineer (RCE) must immediately be notified and all work in the vicinity of the discovered materials and site work shall cease until a SCDOT Archaeologist directs otherwise.

SCDOT will coordinate with the Project Engineer to ensure the unknown underwater anomaly 006-1 in the Ashley River is delineated and a 100-ft radius is labeled on all plan sheets. This label shall include the following detail to Prime and Sub Contractors “Within a 100 ft radius from X coordinate 2299561.02 and Y coordinate 365570.49, the Contractor shall not place any permanent or temporary spud, anchoring device or other item that would impact the river bottom.” The protected area shall be noted in the environmental compliance inspection forms for the project and evaluated during each scheduled visit. If impacts to the river bottom are suspected, notification to SCDOT ESO Compliance office shall occur and additional investigations may be needed at the expense of the Contractor.

Resource 7806 and Ashley Hall Plantation will be clearly plotted on all construction plans along with an appropriate buffer of 25 feet around each resource. This zone will be clearly delineated in the field and all ground disturbance and construction staging activities would be conducted outside of this buffer area in order to avoid all possible impacts to these resources. A 100-ft radius buffer surrounding Anomaly 006-1 is recommended for any ground disturbing activities to avoid impacts to this resource.

4.15 Section 4(f) Resources

Resources evaluated for Section 4(f) considerations are defined in the section below. Resources are identified and described, along with any potential impacts which could occur as a result of the proposed project. Potential mitigation measures are also discussed.

4.15.1 What is Section 4(f)?

Section 4(f) of the US Department of Transportation Act provides protection for publicly owned parks, recreation areas, and wildlife and waterfowl refuges as well as significant historic sites. Historic sites protected by this regulation include sites that are eligible for listing or listed on the NRHP. The following paragraphs provide details on the public recreational facilities protected under the Act. There are no wildlife or waterfowl refuges located within the project study area. In addition, the Bethune School (described in Section 4.14.4) is eligible for NRHP listing and is a Section 4(f) resource.

4.15.2 What 4(f) Recreational Resources were Impacted within the Project Study Area?

The City of North Charleston maintains many recreational facilities throughout its jurisdiction. There are five City-maintained recreational resources located within the immediate vicinity of the project corridor. These facilities are detailed in the following paragraphs. There are no recreational facilities within the immediate vicinity of the project corridor in the West Ashley portion of the proposed project. In addition to the services and functions described below, each of the City’s recreational facilities serves as distribution locations for USDA Summer Food Service Program, which provides meals to children 18 years old and younger without charge. Refer to Figure 4.21.

4.15.2.1 Highland Terrace-Liberty Park Community Center

The Highland Terrace-Liberty Park Community Center is located at 2401 Richardson Drive, directly west of I-26 within the Highland Terrace neighborhood. Facilities include a basketball court, playground, and community center. The City of North Charleston hosts after school programs for up to 30 children and a summer camp for up to 30 children. Children often walk to and from this facility and their homes in the adjacent neighborhoods. The indoor community center is available to rent from 9:00am to 10:00pm, with a maximum capacity of 30 people. The City



Photograph 3 Highland Terrace-Liberty Park Community Center

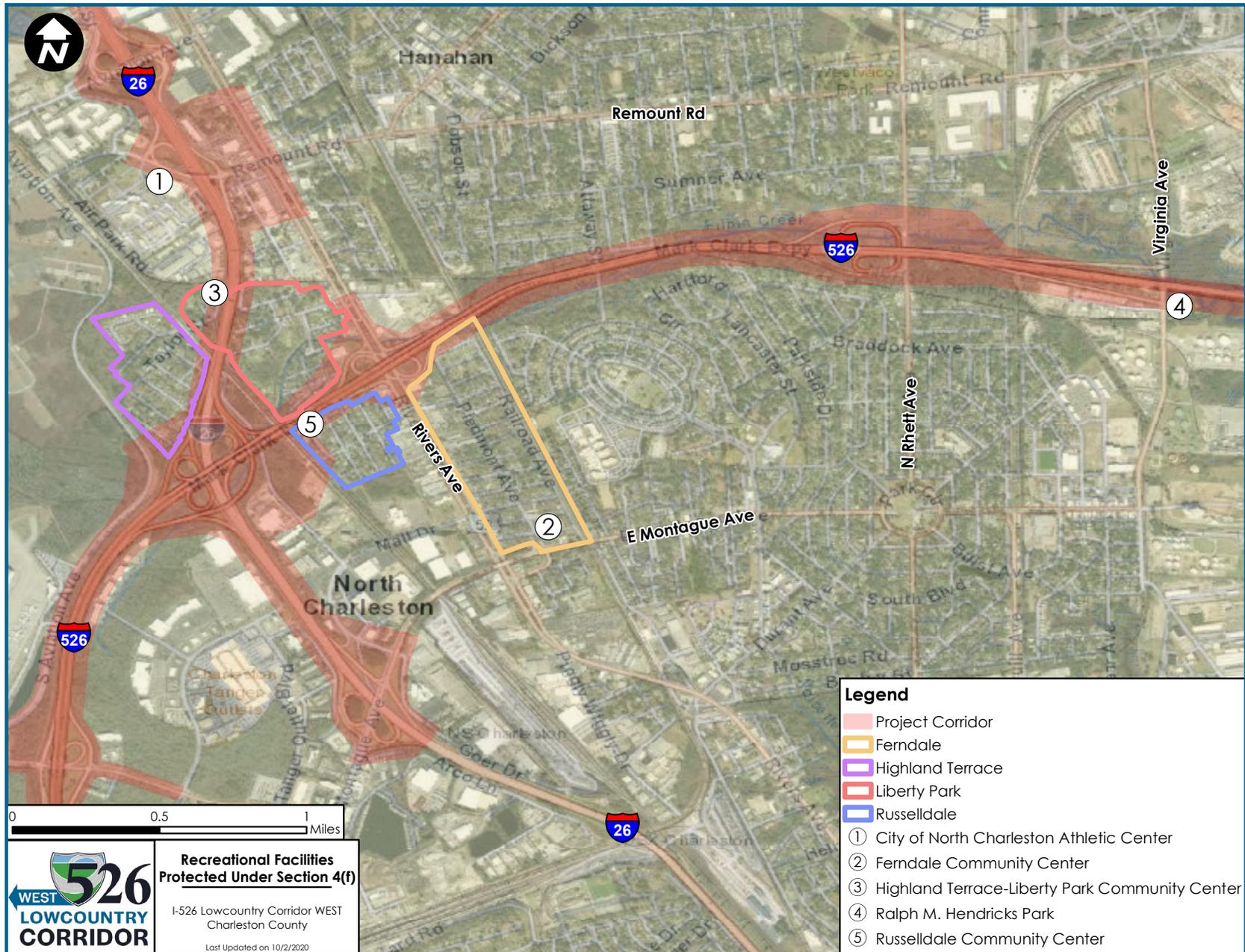


Figure 4.19 Recreational Facilities Protected under Section 4(f)

of North Charleston’s website notes that community members use this facility for meetings and events, for example Neighborhood Council Meetings on the third Saturday of each month. It also serves as a Charleston County voting center.

Outdoor facilities are open to the public from dawn to dusk. According to the North Charleston Parks and Recreation Department Director, the facility’s basketball courts are often utilized by community members on both weeknights and weekends, with approximately 150 people using the park per month.

4.15.2.2 Russelldale Community Center

The Russelldale Community Center is located at 2248 Russelldale Avenue, directly north of the Russelldale neighborhood. The Russelldale Community Center includes a basketball court, playground equipment, and a community center for the public. The facility was built on a 0.83-acre property adjacent to I-526 to mitigate impacts from the original construction of I-526. The outdoor facilities are open to the public from dawn to dusk, with approximately 150 people using them per month. The indoor event center is available to rent from 9:00am to 10:00pm, with a maximum capacity of 15 people per event. The City of North Charleston hosts a yearly after school program for up to 30 children and a summer camp for up to 30 children at the Russelldale Community Center.



Photograph 4 Russelldale Community Center

4.15.2.3 Ferndale Community Center

Located at 1919 Bolton Avenue at the south end of the Ferndale neighborhood, Ferndale Community Center facilities include a playground and an indoor basketball court that is frequently used as a meeting space for public events. The facility is located on 1.56 acres, is managed by the City of North Charleston, and is open to the public from 2:00pm to 5:00pm, Monday through Friday. This facility is used by basketball leagues for tournaments and games, and for other events such as a Bible study hosted by Seacoast Dream Center every Thursday from 6:30pm – 8:30pm. It also hosts The Ceramic House, which is a group that offers ceramic art classes. Past activities at the Ferndale Community Center have also included cultural or artistic events such as the Deninufay African Drum & Dance Kids Festival and the **North Charleston** Arts Fest: Children’s Visual Art Workshop.

The City of North Charleston also hosts an after school program at the community center for up to 30 children and a summer camp for up to 40 children.



Photograph 5 Ferndale Community Center

4.15.2.4 Ralph M. Hendricks Park

Ralph M. Hendricks Park is located at 5250 Virginia Avenue along the Cooper River. Facilities include a picnic shelter, restrooms, playground, walking path, dock, and a public boat launch. The picnic shelter is available for daily rental between 9:00am and 10:00pm. The park is open daily from dawn to dusk.



Photograph 6 Ralph M. Hendricks Park

4.15.2.5 North Charleston Athletic Center

Located at 5794 Casper Padgett Way in North Charleston, the City of North Charleston Athletic Center includes event space and three indoor gymnasiums to host a variety of sports such as basketball, volleyball, cheerleading, soccer, pickleball, wrestling, and many others. The facility opened on October 16, 2019 and is open Monday through Thursday from 9:00am to 9:00pm, Fridays and Saturdays from 9:00am to 5:00pm, and Sundays from 12:00pm to 5:00pm. The 51,000 square-foot facility is expected to be an economic driver for the city due to its ability to host larger sports tournaments. Its location and capacity will serve the low to moderate income North Charleston communities and its indoor setting provides a safe environment during the hot summer months.



Photograph 7 Visualization of North Charleston Athletic Center (open as of October 2019)

4.15.3 What 4(f) Historic Resources were impacted within the Project Study Area?

The proposed project would not require a use of historic resources protected by Section 4(f). The Bethune School is eligible for NRHP listing and is a Section 4(f) resource but would not be impacted by the proposed project. SHPO concurred on the findings of no adverse effect to historic resources on June 1, 2020 (see Appendix P, page 55).

4.15.4 What 4(f) Wildlife and Waterfowl Refuges were impacted within the Project Study Area?

The current project study area does not include any wildlife or waterfowl refuges.

4.15.5 How would the No-Build Alternative Impact Section 4(f) Resources?

The No-Build Alternative would not create any Section 4(f) impacts.

4.15.6 How would the Recommended Preferred Alternative Impact Section 4(f) Resources?

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law as 49 U.S.C. 303, declares, “It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” Section 4(f) also states, “The Secretary [of Transportation] may approve a transportation program or project...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if:

1. there is no prudent and feasible alternative to using that land; and
2. the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the USDOJ and, as appropriate, the involved offices of the USDA and HUD in developing transportation projects and programs which use lands protected by Section 4(f).

FHWA guidance on Section 4(f) outlines the evaluation process. As noted in Section 4.15, Section 4(f) requires consideration of publicly-owned recreational areas/refuges and historic sites that are listed, or eligible for inclusion, in the National Register of Historic Places (NRHP). Section 4(f) properties are identified early in the planning stages so that complete avoidance of the protected resources can be given full consideration in the project development process. After Section 4(f) properties are identified, project alternatives are developed and refined to avoid and minimize impacts. Under Section 4(f) evaluation guidance, state transportation agencies must consider alternatives that would avoid impacts to Section 4(f) resources. If impacts are unavoidable, it is then necessary to determine the alternative’s “use” of the Section 4(f) resource (i.e., permanent use, temporary occupancy, and constructive use). As discussed in Sections 4.10.11.1 and 4.10.11.2, the I-526 LCC WEST project would create a permanent use of Section 4(f) resources that exceeds documentation thresholds for minor impacts. As such, an individual Section 4(f) Evaluation, contained in Appendix Q, was developed to document the evaluation of the proposed use of Section 4(f) properties. The individual Section 4(f) evaluation must demonstrate that: that there is no feasible and prudent alternative that completely avoids the use of Section 4(f) property; and, that the project includes all possible planning to minimize harm to the Section 4(f) property.

Feasible and Prudent Avoidance Alternative Analysis – Federal regulations (23 CFR 774.17) state that a feasible and prudent avoidance alternative: avoids using Section 4(f) property and does not cause other severe problems “of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property.” In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute. The following bullets summarize the alternatives evaluated and the basis for conclusion that they are not feasible or prudent avoidance alternatives.

- **Realignment of the interstate would be restricted by the lack of open land and presence of dense existing development, regional landmarks and environmental features. Any option for interstate realignment would cause massive impacts to areas including environmental justice neighborhoods, the Charleston International Airport, the Cooper River, and many other community features. The severity of such impacts would be deemed unfeasible and unreasonable for improving congestion along I-526.**
- The No-Build Alternative would serve as a total avoidance alternative; however, it is not prudent or feasible due to traffic implications and localized air quality increase associated with congestion. These outcomes would not be compatible with the purpose and need of the proposed project and therefore the No-Build Alternative is not

considered a prudent avoidance alternative. Further information about the No-Build Alternative can be found in Section 3.5.1 of the FEIS.

- SCDOT initiated an evaluation of alternate routes that satisfy the purpose and need of the I-526 LCC WEST project. The study evaluated the enhancement of existing roadway facilities along with the creation of new alignment corridors. Due to large scale impacts to development flanking existing roadways, improving alternate routes is not a prudent avoidance alternative. Evaluation of alternate corridors can be found in Section 3.5.2 of the FEIS.

- The development of additional, new routes is restricted by several regional landmarks and environmental features. Impacts to these landmarks and features are detrimental to the community as a whole; and any alternate route containing such impacts are deemed unreasonable for improving congestion along I-526. As such, there are no feasible and prudent avoidance new location alternatives. Additional details on new location alternatives can be found in Section 3.5.3 of the FEIS.

- Managed lanes, either as a stand-alone alternative or in combination with other avoidance alternatives, would not meet the purpose and need for the project. Managed lanes were evaluated for I-526 in the 2013 Corridor Study and found to be not feasible without implementing a more regional system of managed lanes. In addition, existing and geometric deficiencies on I-526 would require improvements to allow for managed lanes. Existing and projected traffic demand would not allow for conversion of existing general purpose lanes to managed lanes; therefore, managed lanes could not be implemented within the existing footprint of I-526 and would not be an avoidance alternative for Section 4(f) resources. More recent studies of managed lanes in the Charleston region include one additional general purpose lane in each direction on I-526 in the No-Build or baseline condition. The managed lane No-Build condition in the I-526 corridor is equivalent to the 6-lane alternative that was evaluated as part of the I-526 LCC WEST traffic study. At the time that the managed lane study began, modeling had already determined that one general purpose lane in each direction would not reduce congestion to acceptable levels, so the managed lane build alternatives were evaluated in conjunction with one added general-purpose lane. The managed lane alternatives will have the same number of lanes as the I-526 LCC West Recommended Preferred Alternative. Therefore; even if funding were available, managed lanes would still require widening of existing I-526 and therefore is not considered a viable avoidance alternative by itself or in combination with other avoidance alternatives. Additional details on managed lanes can be found in Section 3.5.4 of the FEIS.

- As a standalone alternative, TSM and TDM improvements do not adequately improve the corridor and meet the purpose and need to increase capacity and reduce congestion given the current and future level of service (LOS). TSM/TDM strategies alone do not meet the project's purpose and need and are not a prudent avoidance alternative. Additional details TSM/TDM strategies can be found in Section 3.5.5 of the FEIS.

An alternative is considered not feasible if it cannot be built as a matter of sound engineering judgment.

An alternative is not prudent if:

- It compromises the project to a degree that is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
 - > Severe social, economic, or environmental impacts;
 - > Severe disruption to established communities;
 - > Severe disproportionate impacts to minority or low-income populations; or
 - > Severe impacts to environmental resources protected under other federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors listed above, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

Source: 23 CFR 774.17

- The use of retaining walls was evaluated as an avoidance measure that would allow a more symmetrical widening of I-26 near the Highland Terrace-Liberty Park Community Center. A retaining wall paralleling I-26 was considered along Taylor Street, near the Highland Terrace-Liberty Park Community Center, at a length of 550 feet, average height of 26 feet, and total cost of approximately \$715,000.00. Construction of the retaining walls would avoid displacing the Highland Terrace-Liberty Park Community Center and four residences; however, there are several issues with this avoidance measure.
- The use of a retaining wall on I-26 would create a near-term solution by avoiding the relocation of a handful of homes and a community center but these properties would be exposed to new noise and visual effects and would still potentially be in jeopardy from future impacts, which contributes to the overall cumulative effects residents experienced from area transportation projects. This avoidance measure also has the potential to alter mitigation plans to construct a larger community center to offset impacts to both the Highland Terrace-Liberty Park Community Center and Russelldale Community Center and mitigate broader disproportionate, adverse effects on Environmental Justice populations as part of a Community Mitigation Plan. It has been noted by residents that the current building at the Highland Terrace-Liberty Park Community Center is very small and limits the types of activities and number of participants in the Center's current programs. Under these circumstances, preserving the Center provides limited benefit when compared to elements of the Environmental Justice Community Mitigation Plan, Appendix H. Adding retaining walls on I-26 as part of any reasonable alternative was determined not to be a prudent avoidance alternative due to the unique problems associated with its construction, primarily the contribution of additional cumulative effects on Environmental Justice populations in the form of additional encroachment and the creation of noise and visual impacts on homes that would not be displaced through the construction of the retaining wall. There are no similar options to evaluate retaining walls at the Russelldale Community Center.
- The total potential congestion reduction with mass transit strategies is estimated to be 7.4 percent with the implementation of short-term transit and freight improvements. Because mass transit does not meet the purpose and need as a standalone alternative, it is not carried forward as an alternative for the I-526 LCC WEST Corridor project and is not a prudent avoidance alternative. Additional details on mass transit can be found in Section 3.5.6 of the FEIS.

Alternatives that would improve the existing corridor could meet the purpose and need by increasing capacity and thereby reducing congestion. However, all four build alternatives in the International Boulevard to Rivers Avenue section of the project would impact the Highland Terrace-Liberty Park Community Center and the Russelldale Community Center and are not avoidance alternatives. Alternatives 1, 1A, 2, and 2A are described in Chapter 3.

Least Overall Harm Analysis – Because there is no feasible and prudent avoidance alternative and there are two or more alternatives that use Section 4(f) property, a least overall harm analysis was developed to maintain consistency with Section 4(f) requirements. Alternatives 1, 1A, 2, and 2A would impact the Section 4(f) resources at Highland Terrace-Liberty Park Community Center and Russelldale Community Center to the same extent. According to FHWA's Section 4(f) Policy Paper, "Pursuant to substantial case law, if the assessment of overall harm finds that two or more alternatives are substantially equal, FHWA can approve any of those alternatives." As such, the Recommended Preferred Alternative (Alternative 2) can be selected as the Least Overall Harm Alternative based on it having the same or less impacts than the other reasonable alternatives, a lower cost estimate than two of the four reasonable alternatives, while best meeting the project purpose and need. After mitigation measures are in place, the replacement facilities would reestablish the infrastructure, programs, and services that originally qualified the Highland Terrace-Liberty Park Community Center and Russelldale Community Center as Section 4(f) resources.

The following sections describe the impacted Section 4(f) resources and proposed measures to minimize and mitigate impacts.

4.15.6.1 Highland Terrace-Liberty Park Community Center

The proposed I-526 LCC WEST project would impact a portion of the Highland Terrace-Liberty Park Community Center and associated recreational facilities (approximately 0.27-acres out of 0.87 acres). Figure 4.20 shows that the Highland Terrace-Liberty Park Community Center falls within the proposed right-of-way.

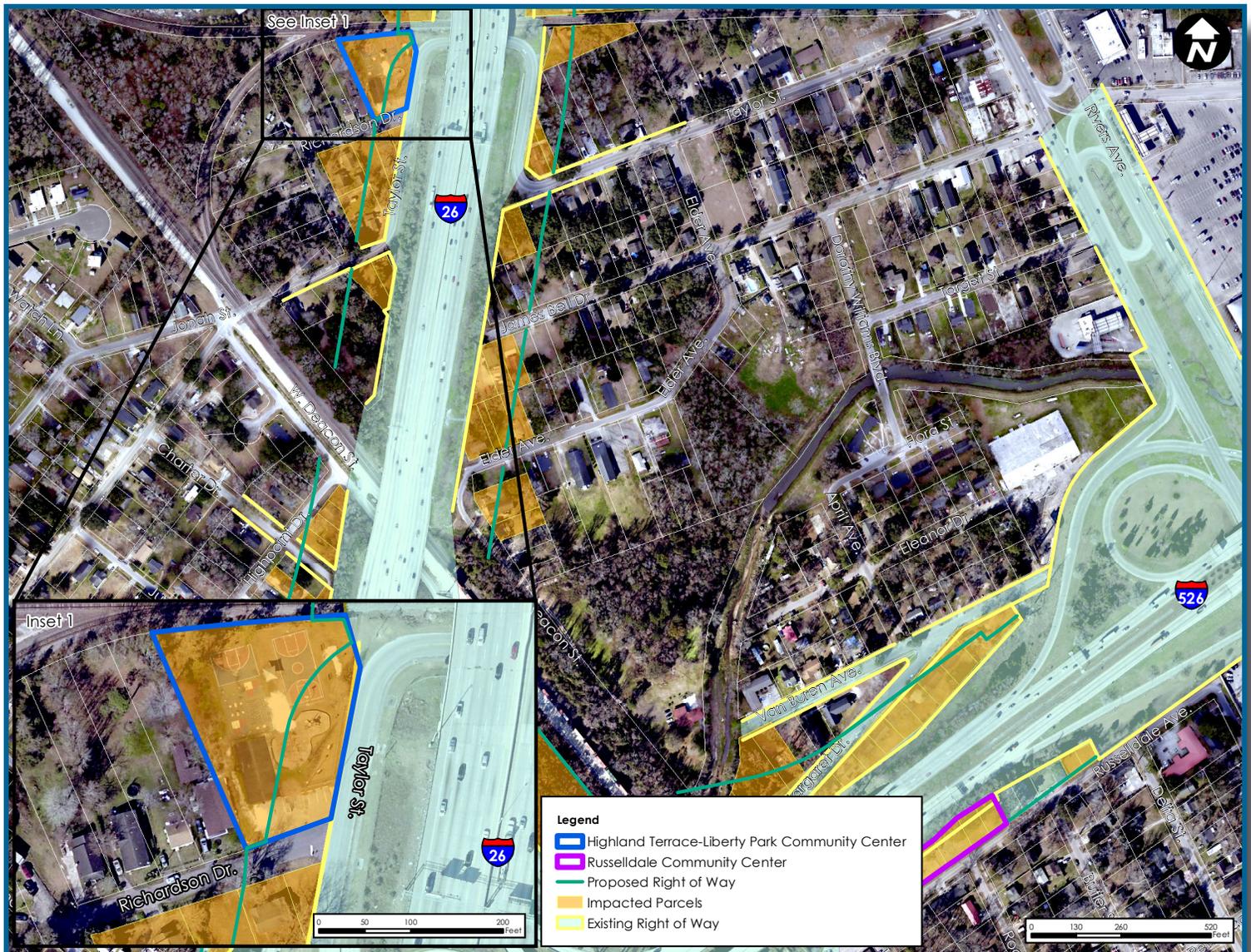


Figure 4.20 Proposed Right-of-Way at Highland Terrace-Liberty Park Community Center

The proposed I-526 LCC WEST project would impact a portion of the Highland Terrace-Liberty Park Community Center and associated recreational facilities (approximately 0.27-acres out of 0.87 total acres). Impacted facilities would include one community center, one outdoor basketball court, one half-size basketball court, one multi-use court, playground equipment on a mulch play area, one picnic shelter, multiple benches and picnic tables throughout the park, and a small parking lot. The displacement of the community center would impact local community cohesion because this facility is often used to host events or gather as a group by residents living in the Highland Terrace and Liberty Park neighborhoods. To address the impact to the park, SCDOT proposes to utilize the remaining land to replace some of the amenities and services displaced by the project. Based on input received from the CAC, a full and half-size basketball court, open air pavilion, playground, and additional parking are proposed at the Highland Terrace-Liberty Park Community Center. Per the request of the CAC and coordination with the City of Charleston, an enclosed building will not be constructed at the site. Refer to Section 4.15.7 and Appendix Q for additional details on proposed mitigation.

4.15.6.2 Russelldale Community Center

The proposed I-526 LCC WEST project would displace the entire Russelldale Community Center and its surrounding recreational facilities. Refer to Figure 4.21. The proposed impacts to the Russelldale facilities include the community center building, an outdoor basketball court, playground equipment on a mulch play area, a multiuse field, and multiple benches and picnic tables throughout the park. The displacement of the community center would impact local community cohesion because this facility is often used to host events or gather as a group by residents living in the Russelldale neighborhood. To address the displacement of the Russelldale Community Center, a new pocket park and a centrally located community center is proposed along Filbin Creek between Elder Avenue and Margaret Drive. The new community center will include, at a minimum, the same amenities as the Russelldale Community Center. Based on input received from residents and the CAC, amenities such as larger classroom and multi-purpose indoor space, improved vehicular circulation, additional parking, and greenway connections over Filbin Creek are proposed. Additionally, connectivity improvements such as new and improved sidewalks, traffic calming measures, and improved bus stops along Rivers Avenue are proposed to improve safety for pedestrians and bicyclists. Refer to Section 4.15.7 and Appendix Q for additional details on proposed mitigation.

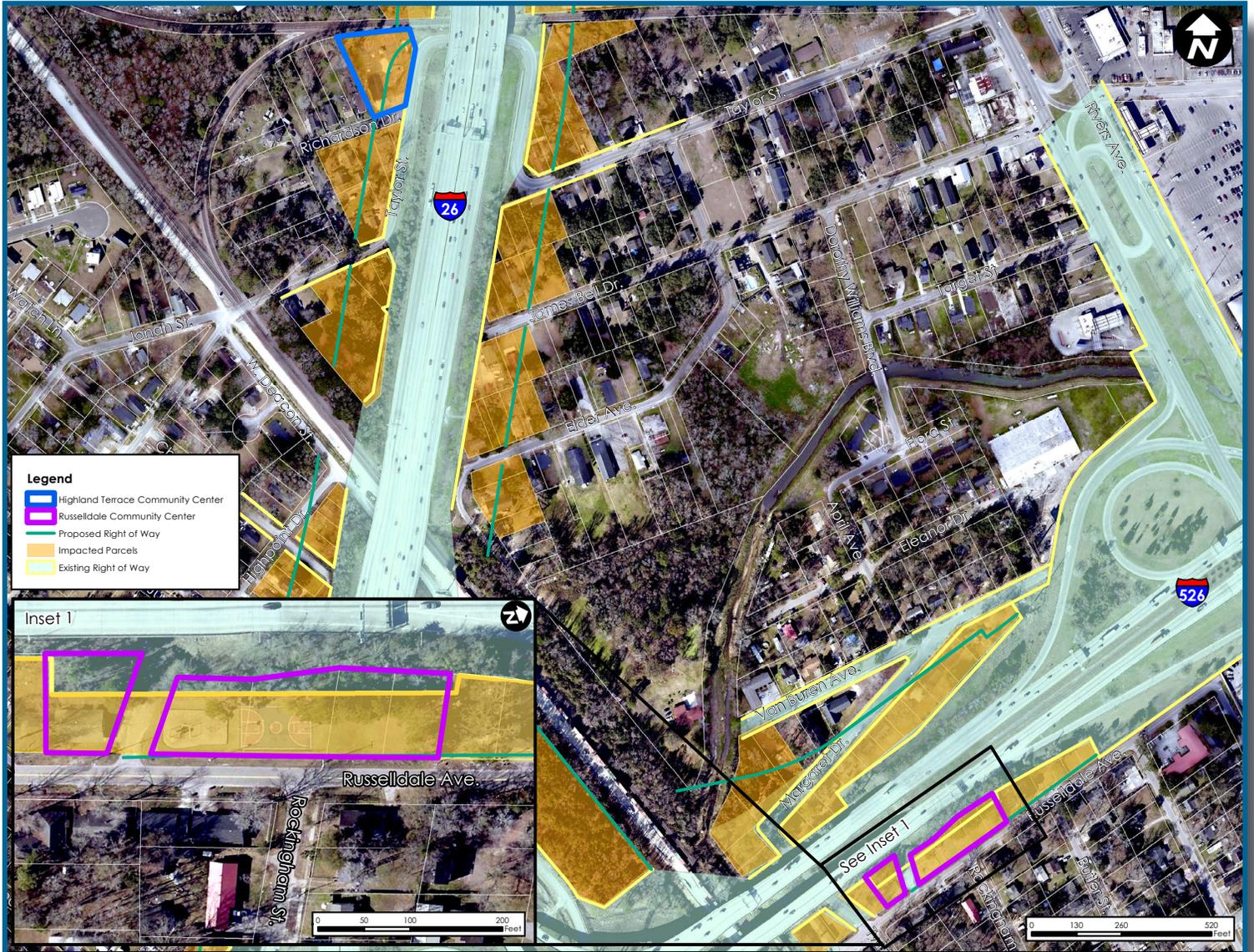


Figure 4.21 Proposed Right-of-Way at Russelldale Community Center

4.15.7 How would Unavoidable Impacts to Section 4(f) Properties be Minimized or Mitigated?

Measures to mitigate impacts to affected Section 4(f) resources include the in-kind replacement of impacted facilities as well as the construction of additional recreational amenities. Section 4(f) mitigation measures were developed through extensive coordination with the CAC, the public, and the City of North Charleston. SCDOT will acquire parcels located within the affected neighborhoods and provide funding to the City of North Charleston to construct one large, centrally located community center complex and two pocket parks. **One pocket park will be located in Highland Terrace-Liberty Park and the other pocket park will be located in Russelldale.**

SCDOT and the City of North Charleston developed an intergovernmental agreement (IGA) detailing the implementation of the programs, services, structural components, and arrangements for long-term operation and maintenance of the replacement community centers and recreational facilities. The IGA includes language that gives residents priority in areas such as program enrollment/participation, reserving spaces, and volunteer opportunities. The City of North Charleston will continue to look for qualified candidates that live in the impacted environmental justice neighborhoods for potential employment at the community center. The City of North Charleston will post job openings within the neighborhoods and encourage the CAC and neighborhood councils to submit qualified applicants. **Conceptual renderings of the replacement community center and pocket parks were developed to illustrate likely layouts of the proposed facilities. Additional details related to replacement recreational facility programs and amenities can be found in the IGA. Proposed mitigation also includes bicycle/pedestrian infrastructure improvements necessary to facilitate the safe travel for residents between the replacement community centers and the surrounding neighborhoods. Additional Section 4(f) resource mitigation details, including the conceptual renderings of the proposed replacement recreational facilities and the IGA, are included in Appendix Q.**

4.16 Section 6(f) Resources

This section provides a description of resources within the project study area that were evaluated for Section 6(f) considerations. Identified resources are described, along with potential impacts that could occur as a result of the proposed project. This section also discusses appropriate mitigation measures that would be implemented.

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 (16 USC 460I-4) requires federal agencies to analyze potential impacts to lands acquired or developed with LWCF grants.

4.16.1 What 6(f) Resources were Identified within the Project Study Area?

The Highland Terrace-Liberty Park Community Center in North Charleston was partially funded through the LWCF Act, qualifying it as a Section 6(f) resource. Community center services and functions of the Highland Terrace-Liberty Park Community Center are detailed in Section 4.15.2.

4.16.2 How would the No-Build Alternative Impact Section 6(f) Resources?

The No-Build Alternative would not create any Section 6(f) impacts.

4.16.3 How would the Recommended Preferred Alternative Impact Section 6(f) Resources?

As discussed in Section 4.15.6.1, the I-526 LCC WEST project would encroach on the Highland Terrace-Liberty Park Community Center and its surrounding recreational facilities. Section 6(f) coordination included identifying a suitable replacement property for the Highland Terrace-Liberty Park Community Center and related amenities. The parcel at 5260 Deacon Street was selected, and environmental surveys were conducted to determine potential impacts on historic architectural resources, archaeological resources, and the natural environment at both the conversion property and the replacement property. Concurrence on effects determinations was received from US Fish and Wildlife Service and SC State Historic Preservation Offices, and is included in the Section 6(f) Environmental Assessment. Section 6(f) coordination with National Parks Service has been concluded.

Section 6(f) prohibits the conversion of these properties to non-recreational use without replacement of land and facilities of equivalent value, usefulness, location, and approval of the National Park Service.

4.16.4 How would Impacts to Section 6(f) Resources be Avoided, Minimized and/or Mitigated?

LWCF regulations require the replacement of Section 6(f) facilities that are converted to other uses. As such, SCDOT is coordinating with the City of North Charleston, the project Community Advisory Council, and others to develop plans for a new community center and pocket park facilities that, in total, would replace the Section 6(f) facilities affected by the proposed project. The City of North Charleston currently owns the Highland Terrace-Liberty Park Community Center parcel and plans to acquire a property at 5260 Deacon Street in the Liberty Park neighborhood through conveyance by SCDOT. The partial land conversion at the current Highland Terrace-Liberty Park Community Center would allow for permanent right-of-way acquisition as a part of the I-526 LCC WEST transportation improvement project as well as the creation of a 0.60-acre pocket park on the remainder of the parcel. Approximately 4.90 acres of the newly acquired property on Deacon Street and the city-owned parcel to the north would be included within the Section 6(f) replacement boundary. Proposed amenities at this location include a full-size outdoor basketball court, rain garden, playground, multi-use field, fitness loop, among others. **In addition, solar power with generator backup will also be integrated to ensure the new facility can be used as an emergency resource.** Refer to the Section 4(f) Evaluation in Appendix Q and the Section 6(f) Evaluation in Appendix R for detail, impacts, and proposed replacement facilities.

4.17 Hazardous Materials

This section provides a preliminary identification of known properties that could potentially contain hazardous waste sites or hazardous materials. The construction footprint of the Recommended Preferred Alternative has been analyzed on these properties or potentially hazardous sites, including evaluation of the presence of contaminated soils, and if remediation or additional field analysis may be required. This section also evaluates the health and safety effects on construction workers or people who live near any identified hazardous waste sites impacted by the Proposed Reasonable Alternatives.

4.17.1 How would the Recommended Preferred Alternative Impact Hazardous Materials?

Thirty-five of the 44 Recognized Environmental Concern (REC) sites are located within this project study area. As discussed in Chapter 3, the Recommended Preferred Alternative was divided into three sections. These include the widening of the mainline to 8-lanes and the interchange modifications. The number of REC sites impacted for each of the three sections are:

- Paul Cantrell to International Boulevard: 6
- International Boulevard to Rivers Avenue: 23
- Rivers Avenue to Virginia Avenue: 4

Table 4.25 shows the REC sites from the Phase I Environmental Site Assessment (ESA) which fall within the alignment for the Recommended Preferred Alternative. These seven REC sites were further evaluated using the construction limits of the Recommended Preferred Alternative and it was determined six sites will require additional investigation. For more details regarding these sites refer to the Phase I ESA and project study area figures in Appendix S.

4.17.2 What is the Affected Environment within the Project Study Area?

Commercial development in the project study area includes gas stations, auto repair businesses, restaurants, hotels, office buildings, shopping centers, and dry cleaners. Some strip mining (soil borrow pits) and phosphate mining occurred in the vicinity of the subject project in years past. These past mining activities typically don't represent an environmental concern, but sometimes resulted in creating wetland areas and unstable soil conditions.

4.17.3 What Methodology was used for Hazardous Materials and Hazardous Site Analysis?

A Phase I Environmental Site Assessment (ESA) was performed for the project study area to determine the presence of potentially hazardous materials or waste sites located within or in proximity to the project study area.

The ESA was conducted using the American Society for Testing and Materials (ASTM) E 1527-13, Standard Practice for Environmental Site Assessments: Phase I ESA Process. The following process was completed to determine properties with potential for or known to contain existing environmental contamination.

A review was conducted of reasonably ascertainable public records for the site and the immediate vicinity. This review was performed to characterize environmental features of the site and to identify past and present land use activities on or in the vicinity of the site, which may indicate a potential for RECs. The review of the reasonably ascertainable public records included:

- Examination of federal, state, tribal and reasonably ascertainable local public records for the site and immediate vicinity.
- Examination of one or more of the following standard sources: aerial photographs, fire insurance maps, tax files, building department records, zoning/land use records, street directories and topographic maps of the site and vicinity for evidence suggesting past uses that might have involved hazardous substances or petroleum products.

A site reconnaissance was performed to identify visual signs of past or existing contamination on or adjacent to the site. This reconnaissance was also performed to evaluate evidence found in the public record review that might indicate activities resulting in hazardous substances or petroleum products being used or deposited on the site. The site reconnaissance included the following activities:

- A reconnaissance of the site and adjacent properties was performed to look for evidence of current and past property uses, signs of spills, stressed vegetation, buried waste, underground or above ground storage tanks, subsidence, transformers, or unusual soil discoloration which may indicate the possible presence of contaminants on the properties. Photographs are provided to document these conditions.
- The exterior reconnaissance involved a viewing of the periphery of the property, and a walkthrough of accessible areas was performed of the site interior.

Interviews with appropriate local officials were conducted to consider any local knowledge of hazardous substances or petroleum products on the property or on adjacent properties.

4.17.4 What Hazardous Materials and Hazardous Waste Sites Exist in the Project Study Area?

Using the methodology above, 44 properties with potential environmental contamination concerns were identified in the project study area, refer to Table 4.25. For more details regarding these sites refer to the Phase I ESA in Appendix S.

4.17.5 How would the No-Build Alternative Impact Hazardous Materials?

The No-Build Alternative would not impact sites with potential hazardous materials or contamination.

Table 4.25 Types of High-Risk Sites in the Hazardous Materials Project Study Area

Site Type	Number of Sites
Impacted Leaking Underground Storage Tank (LUST) / Underground Storage Tank (UST)	26
Solid Waste Processing	2
Dry Cleaners	2
Unknown	2
Brownfields	7
Toxic Chemical Use	1
RCRA Site	4
Total	44

4.17.6 How would the Recommended Preferred Alternative Impact Hazardous Materials?

Thirty-five of the 44 REC sites are located within this project study area. As discussed in Chapter 3, the Recommended Preferred Alternative was divided into three sections. These include the widening of the mainline to 8-lanes and the interchange modifications. The number of REC sites impacted for each of the three sections are:

- Paul Cantrell to International Boulevard: 6
- International Boulevard to Rivers Avenue: 23
- Rivers Avenue to Virginia Avenue: 4

Table 4.26 shows the REC sites from the Phase I ESA which fall within the alignment for the Recommended Preferred Alternative. These seven REC sites were further evaluated using the construction limits of the Recommended Preferred Alternative and it was determined six sites will require additional investigation. For more details regarding these sites refer to the Phase I ESA and project study area figures in Appendix S.

Table 4.26 Recognized Environmental Concern (REC) Sites within the Recommended Preferred Alternative

Facility	Location	Database	Comments
Former Amoco	50 feet east 6001 Rivers Ave N Charleston, SC (cross-gradient)	RCRA NonGen/NLR, UST, LUST GWCI	Facility ID: 01426 Release #1: 12/16/89 CNFA: 6/6/05 Release #2: 2/19/02 NFA: 6/24/03 Eleven abandoned USTs. Groundwater flow direction: East
Westvaco Paper Mill (currently operating as Kapstone/ Westrock)	Adjoining to northeast 5600 Virginia Ave N Charleston, SC	SEMS-Archive, RCRA- TSD, Airs, Manifest, GWCI	Facility has had violations and incidents of soil and groundwater contamination. Site will require Phase II ESA.
Coburg Dairy / Borden Dairy	Within Site Boundary 5001 Lacross Road N Charleston, SC	FINDS, ECHO, RMP, TRIS	Facility uses toxic chemicals. No other information. Site will require Phase II ESA.
Former Classic Dry Cleaners	Within Site Boundary 2177 Ashley River Rd Charleston, SC	EDR Historical Cleaners (identified through street directory listings)	Dry-cleaning facility (closed 2017). Dry cleaner reportedly opted out of joining the SC Dry cleaning Restoration Fund.
Circle K 2720882	Adjacent to the east 5154 N Rhett Avenue N Charleston, SC (cross-gradient)	UST, LUST, GWCI, Financial Assurance	Facility ID: 01506. Three USTs removed in 2017. Release #1: 3/1/93 (active) Release #2: 9/18/06 (active)
Former Asbestos Manufacturer (Reybestos-Manhattan)	under portions of I-526 near the Virginia Avenue exit	None - However, it does represent an environmental concern if excavations are planned in this area.	Unpermitted landfill area, Previous assessments revealed the former manufacturer disposed of asbestos waste in the marsh and other areas near this location.
US Defense Fuel Support Pipeline	5862 N Rhett Avenue	None - However, it does represent an environmental concern if excavations are planned in this area.	Jet fuel storage facility delivers aircraft fuel to the Charleston Air Force Base via underground pipelines. The pipeline runs south in line with North Rhett Avenue, then west in line with Remount Road, crossing I-26 and continuing onto the Air Force Base property.

4.17.7 How would Hazardous Materials Impacts Be Mitigated?

When feasible, it is SCDOT's practice to avoid the acquisition of USTs as well as other hazardous material sites and avoidance or minimization is the primary mitigation for identified hazardous materials sites. Six of the seven REC sites will require additional investigation based on the construction limits of the Recommended Preferred Alternative.

Before design build contract procurement, SCDOT will perform Phase II Environmental Site Assessments (ESAs) on the Recognized Environmental Concern (REC) properties identified in the Phase 1 ESA report that fall within the construction footprint. For UST/LUST sites, the sampling strategy for the Phase II ESA will follow the field screening and sampling procedures, as directed in the SCDHEC Underground Storage Tank Programs Quality Assurance Program Plan (QAPP) to determine the presence of hydrocarbons. Samples should be analyzed for those parameters listed in the QAPP and those typical of a petroleum release, as noted in the research of the subject property. If relocation or removal of an AST or UST is necessary, the removal/relocation would be addressed in accordance with the applicable laws and regulation of the State of South Carolina.

During the construction phase of the project, the following measures and activities will be implemented by the construction contractors to ensure the safety of the workers, as well as the public and environment:

SCDOT will ensure that hazardous materials sites are avoided where practicable or sufficiently remediated so that the public would not be exposed to health risk. Contractors will follow SCDOT's Standard Specifications, which include provisions to protect the health and safety of persons in the proximity of construction and staging sites. Lead and asbestos testing would be conducted prior to demolition to ensure that these materials are handled appropriately.

Asbestos Containing Material and/or Lead Based Paint testing will be assessed separately. Materials containing asbestos and lead-based paints will be managed and disposed of properly at an appropriate permitted facility to minimize impact during the construction and cleanup. Activities will be monitored by a professional that is certified in the removal, handling and disposal of lead-based paint and/or asbestos-containing materials.

A spill prevention, control, and countermeasures (SPCC) plan will be prepared in accordance with 40 CFR 112, for the handling of oils or oil-based products during construction to prevent discharge of oil into navigable waters.

A hazardous waste management plan will be prepared for the handling of hazardous materials during construction, and an on-site health and safety plan will be developed for construction activities to protect human health (i.e. workers, residents, recreation and trespassers) and the environment within proximate to the site. The hazardous waste management plan will also state that the disposal of waste materials will be disposed of in approved landfills.

If avoidance of hazardous materials is not a viable alternative and soils that appear to be contaminated are encountered during construction, the South Carolina Department of Health and Environmental Control (SCDHEC) will be informed immediately. Hazardous materials will be tested and removed and/or treated in accordance with the United States Environmental Protection Agency and SCDHEC requirements, if necessary. SCDHEC Hazardous Waste Treatment, Storage, and Disposal compliance staff can be contacted at 803-898-0290.

4.18 Construction

Temporary impacts to the human and natural environments would occur during the construction of the proposed I-526 LCC WEST project. Temporary impacts would occur from disturbing the ground and operating construction equipment, but these are short-term and intermittent. Construction could affect both the human environment (traffic flow, businesses and noise environments) and the natural environment (wetlands and streams). Most impacts associated with construction are anticipated to be travel delays on the interstate and local streets.

The following section reviews expected construction impacts of the proposed I-526 LCC WEST project and the mitigation measures proposed for those impacts. The No-Build Alternative does not include construction activities; therefore, it does not create construction-related impacts and is not included in this discussion.

4.18.1 What types of Construction Activities would Occur on the Proposed Project?

4.18.1.1 Final Design

Final design of the I-526 LCC WEST project will follow completion of the NEPA process. For the proposed I-526 LCC WEST project, SCDOT has not determined a project delivery system at this time. SCDOT uses either a project delivery system known as design-build (D/B) or a design-bid-build (D/B/B). Under the D/B system, a project is designed and constructed by a single entity, often referred to as the D/B contractor, under a single contract with a single point of responsibility. The D/B/B system allows the final design and construction to be completed by two separate entities.

4.18.1.2 Pre-Construction Activities

Pre-construction activities take place before construction begins. In addition to planning and environmental studies like this NEPA document, activities in this phase often include developing and executing construction contracts, community outreach, the acquiring of environmental permits or agency approvals, property acquisition, and utility relocation. If the Recommended Preferred Alternative is selected for the proposed I-526 LCC WEST project, these pre-construction activities would begin shortly following the FEIS and the signing of the ROD.

4.18.1.3 Construction Activities

Construction activities begin once the pre-construction activities have completed and would include construction of additional lanes on I-526, interchange improvements, collector-distributor (C-D) roadway improvements as well as supplementary improvements such as installing new traffic signals, lighting, or drainage basins. To widen I-526 and to improve the associated intersections and feeder roads, heavy equipment would be utilized to clear vegetation, shape earthen side slopes, and fill areas. Motor graders, compactors, dump trucks, excavators, bulldozers, backhoes, cranes, and impact hammers are all common types of equipment that would be utilized.

To construct the widened bridges over the Ashley River, new structures would be built to the south and to the center of the existing bridges. Temporary work trestles are proposed for use in wetland marsh areas near the Ashley River. Barges are proposed for use in the channel of the Ashley River.

4.18.1.4 Post-Construction Activities

A period of post-construction activities follows the completion of the construction phase. This phase includes activities such as removal of construction signage and barriers, removal of construction equipment, removal of silt fencing or other stormwater control measures, and clean-up of construction debris.

4.18.2 What Other Activities Related to Construction will Occur?

4.18.2.1 Construction Easements

To construct the Recommended Preferred Alternative, construction easements may be required for certain properties. These properties are not included in the right-of-way analysis and the properties would be fully returned to the owner when the use of the property is no longer required, typically when construction is complete. These properties may experience temporary impacts, but long-term impacts are not anticipated.

These easements would be required for properties outside the proposed right-of-way limits of the Recommended Preferred Alternative but either would need modified access to fit the proposed design or would be impacted by the embankment required during construction.

4.18.2.2 Construction Phasing

Due to the size of the I-526 LCC WEST project, it can be anticipated that the project will be implemented through a series of at least four separate contracts for individual sections of the project.

4.18.2.3 Public Notification During Construction

A public information **plan** will be implemented by the Contractor to outline measures to notify the public of periods when construction is scheduled to take place, potential impacts to traffic operations, planned construction work hours, and alternate routes where applicable. To reduce peak hour impacts, night and weekend work could be scheduled. Motorists would also be notified about construction activities and changes in traffic patterns, such as detours by utilizing construction signs throughout the corridor.

4.18.3 How would Construction Affect the Environment and How would it be Mitigated?

4.18.3.1 Transportation and Traffic

Temporary impacts associated with construction on the I-526 LCC WEST corridor could include traffic detours, lane shifts and temporary road closures throughout construction. Detours and road closures could temporarily result in longer commute times, an increase in fuel use and air pollutant emissions as well as a potential loss of revenue for some businesses due to temporary access changes to residential and commercial areas. Construction could also temporarily increase response times for emergency service vehicles. **SCDOT and the contractor would coordinate with emergency service providers such as police, fire protection, and ambulance services prior to the start of construction to ensure access for emergency vehicles would be maintained.**

Coordination with local municipalities to establish a community outreach program during construction will be necessary to communicate temporary closures or detours for pedestrians and bicyclists, what types of closures to expect (i.e., temporary, long-term), when to expect them, and who to contact, if needed.

A maintenance-of-traffic plan will be developed by the contractor to outline measures to minimize construction impacts on transportation and traffic. To the extent possible, the plan would require access to existing residential and commercial areas be maintained and existing roads be kept open unless an alternate route can be provided.

4.18.3.2 Land Use, Communities, Businesses, and Utilities

Land Use and Easements

New right-of-way, permanent easements and temporary construction easements would be necessary for the construction of the proposed project. The temporary construction easements are typically needed to provide the necessary room for construction.

Communities

As previously discussed, nighttime and weekend construction work could be scheduled to reduce peak hour traffic impacts. Since nighttime construction may occur, lights used for nighttime construction could impact residents within proximity of the construction. Impacts from the use of these lights would be minimized by aiming construction lights directly at the work area and/or shielding the lights to reduce any disturbance to nearby residences. The presence of construction machinery, building materials, construction cranes, temporary construction fences, screens and traffic control devices could result in visual impacts, but these will be temporary in nature and removed when construction is complete.

Businesses

While SCDOT would require the construction contractor to maintain access to properties to the extent practicable, access could be temporarily limited due to temporary detours and driveways. During construction this could temporarily discourage customers from patronizing businesses in construction areas.

Utilities

Temporary disruption to utility service (electrical, water, sewer, telecommunication, natural gas) during construction is anticipated, particularly along frontage roads and at interchange locations. Any utility service interruptions would be communicated to the public prior to the disruption and would be temporary in nature. Many utility relocations would occur prior to the start of major construction activities to minimize service interruptions and schedule conflicts.

Prior to construction of the I-526 LCC WEST project, the Defense Logistics Agency with the USACE Omaha will move an 8-inch jet fuel transfer pipeline located underneath I-26 just within the Remount Road interchange to the west of its current location. The current pipeline location and configuration will not allow the protective casing to be extended past the new roadway expansion lanes on I-26. The construction contractor will install a temporary jack & bore pit on the south side of I-26 and a temporary receiving pit on the north side of I-26. A new 10-inch pipeline protective casing will be installed with the ends extending past both the north and south side bridge abutments. The new pipeline will be installed in the new casing and connected to the existing pipeline. The new valve pit will be located on the south side of I-26 as far away from the travel lanes as possible. Once the new section of pipeline is back in service, the original pipeline will be cleaned and slurry filled with a flow able concrete. The pits will be filled back in and the vegetation will be restored to preconstruction condition.

The proposed relocation of the jet fuel line will be contained within SCDOT right-of-way and no impacts are anticipated to the human and natural environment as a result of this utility relocation.

4.18.3.3 Air Quality

Potential air quality impacts would include increases in dust, particulates, and gaseous pollutant emissions from mobile and stationary construction equipment. Emissions would be generated during construction activities such as excavation, trucks delivering and hauling construction supplies and debris, and on-site construction equipment. Detoured vehicles and vehicles slowed by congestion caused by construction activities could result in increased mobile emissions. Air quality impacts would be minimized through construction control measures such as shutting off construction equipment when not in use, routing truck traffic away from residential communities where possible, repaving or replanting exposed areas following construction, and preventing idling of equipment for extended periods of time.

Increases
in construction related
pollutant emissions from the
Recommended Preferred Alternative
would be temporary in nature with
exposure to construction dust
lasting only the duration of
construction.

4.18.3.4 Noise

Construction noise would be an inconvenience to nearby residential and commercial areas. Construction noise impacts may occur due to the proximity of noise-sensitive receptors to anticipated project construction activities. Noise sources during construction associated with this project are expected to be earth removal, hauling, grading,

and paving. Relatively loud construction noise activities such as usage of pile-drivers and impact-hammers (jack hammer, hoe-ram) can create sporadic, temporary, and acute construction noise impacts to nearby noise-sensitive receptors. Temporary and localized construction noise impacts may occur because of these activities.

All reasonable efforts should be made to minimize exposure of noise sensitive land uses to construction noise. Low-cost and easily implemented construction noise control measures should be incorporated into the project plans and specifications (e.g. work-hour limits, equipment exhaust muffler requirements, haul-road locations, elimination of “tail gate banging”, ambient-sensitive backup alarms, construction noise complaint mechanisms, and consistent and transparent community communication and rapport).

Consideration of potential construction noise impacts was assessed for all noise-sensitive land uses in the project corridor, and in areas outside the project corridor near anticipated project construction activities (e.g. construction haul routes). According to the I-526 LCC WEST Detailed Noise Analysis the efforts outlined below are recommended. Refer to Appendix K for more details on the noise analysis.

The Department should utilize the public involvement process to ensure the public is aware of the schedule of project activities that may create construction noise impacts.

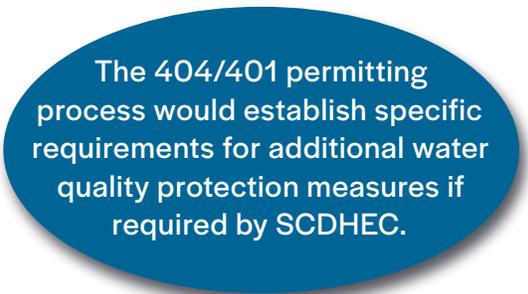
Construction noise impacts associated with earth removal, grading, hauling, and paving activities should be thoroughly evaluated in conjunction with development of the construction plan.

Pile-driving and impact hammer activities should be performed during weekday hours and should not be performed during evening and nighttime hours, or any hours during weekends and/or holidays.

If meeting the project schedule requires that pile-driving and impact hammer activities must occur during evening, nighttime and / or weekend hours near residences within the project corridor, the Contractor shall notify SCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the mitigation of the predicted construction noise impacts upon the affected property owners and / or residents.

4.18.3.5 Water Quality

Sediment from construction has the potential to enter receiving waters; however, any siltation from construction would be temporary. The contractor would avoid and minimize impacts resulting from surface runoff through the implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and S.C. Code of Regulations 72-400 and following SCDOT’s 2015 Engineering Directive Memorandum (Number 23), regarding procedures to ensure compliance with S.C. Code of 72-400, Standards for Stormwater Management and Sediment Reduction. Exposed areas may be stabilized by following the Department’s Supplemental Technical Specification for Seeding (SCDOT Designation SC-M-810 (11-08)).



The 404/401 permitting process would establish specific requirements for additional water quality protection measures if required by SCDHEC.

The contractor is responsible for development of a project specific stormwater pollution prevention plan (SWPPP) and for obtaining a Section 402 NPDES permit for the project before ground disturbing construction activities begin.

While the project does not propose to release sources of fecal coliform into adjacent streams, the contractor would be responsible for identifying and avoiding all point sources of fecal coliform during construction. Due to the existing water quality impairments and approved total maximum daily loads (TMDLs) for Charleston Harbor, Cooper, Ashley, and Wando Rivers. The contractor is responsible for development of a project specific stormwater pollution prevention plan (SWPPP) and for obtaining a Section 402 NPDES permit for the project before ground disturbing construction activities begin.

4.18.3.6 Water Resources

Under Section 402 of the Clean Water Act, a NPDES permit, stormwater pollution prevention plan, and permanent best management practices would be required. The project contractor will be responsible for obtaining this permit and developing these plans and practices. For construction in, over, or through state navigable water, a state Navigable Waters permit may be required from SCDHEC. The construction contractor will be responsible for obtaining this permit. Section 10 of the Rivers and Harbors Act requires a permit for any construction activities that may obstruct the navigability or modify the channel of a navigable WOUS. Approval of these activities are administrated by USACE during the Section 404 permitting process.

A USACE Section 404 Individual Permit (IP) and a SCDHEC Section 401 Water Quality Certification (WQC) would be required to permit unavoidable impacts to WOUS. Compensatory mitigation would be required for all impacts to WOUS.

Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers. Based on preliminary design, it is anticipated that the proposed project would be permitted under an Individual Army Corps of Engineers Permit (IP). SCDOT will provide the Army Corps with information regarding any proposed demolition activities during the Section 404 permitting process. The required mitigation for this project will be determined through consultation with the USACE and other resource agencies.

4.18.3.7 Natural Resources

As previously discussed, construction activities would likely result in erosion and sediment runoff which would be minimized through the implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and S.C. Code of Regulations 72-400. Disturbed areas with exposed soils would be stabilized as required by SCDOT's Supplemental Technical Specification for Seeding. If borrow areas are required for fill dirt a field review and assessment would occur to identify the presence of any jurisdictional features. Best management practices would be applied prior to any disturbance to avoid and/or minimize sediment runoff and erosion.

If threatened or endangered species are observed during construction, construction activities in that area would stop and the U.S. Fish and Wildlife Service (USFWS) or NOAA Fisheries would be notified, as applicable.

Construction activities would occur within the disturbed footprint of the existing roadway and utility right-of-way to the maximum extent practicable. Natural habitat community impacts would be minimized to construct the project. USFWS would be consulted if additional species are listed as federally threatened endangered prior to the start of project construction. In order to comply with the MBTA, as discussed in Section 4.13.2.2, the construction contractor will notify the Resident Construction Engineer (RCE) at least four (4) weeks prior to the construction, demolition, or maintenance of any artificial habitat

structures including bridges and box culverts. Subsequently, the RCE will notify SCDOT Environmental Services Office (ESO) Compliance Division. The ESO Compliance Division will coordinate with the USDA Animal and Plant Health Inspection Service (APHIS) to conduct inspections for migratory birds. Any migratory birds' nests will be removed by USDA APHIS staff. If any migratory bird nests are observed after construction, demolition, or maintenance activities have begun, the contractor will cease work and immediately notify the RCE who will notify the ESO Compliance Division. Deterrents may be implemented to prevent birds from nesting after construction has begun if approved by the RCE through coordination from the ESO Compliance Division.

4.18.3.8 Cultural Resources

The contractor and subcontractors must notify all construction employees to watch for the presence of any prehistoric or historic items, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations. If any such items are encountered during construction, the RCE would be notified immediately and all work in the vicinity shall cease until a SCDOT Archaeologist provides direction to continue. Archaeological investigations identified Anomaly 006-1 could be associated with an early ferry vessel or bridge structure. The site is of indeterminate eligibility and further investigations to determine the site's NRHP eligibility status are not necessary as avoidance is recommended. A project commitment has been made to avoid the site, including a 100-ft radius buffer surrounding the resource.

4.18.3.9 Section 4(f) Resources

There are no special considerations or coordination needs related to Section 4(f) resources currently identified for the construction phase of the proposed project. Mitigation for impacts to Section 4(f) resources is being implemented in the project development process with construction-related mitigation (i.e., construction of replacement recreational facilities) to occur separate from construction of the proposed I-526 WEST LCC project.

No new Section 4(f)-related information has been included in the project that would require special consideration during construction.

4.18.3.10 Section 6(f) Resources

There are no special considerations or coordination needs related to Section 6(f) resources during project construction.

4.18.3.11 Hazardous and Contaminated Materials

Properties containing hazardous materials were identified within the project limits. The Phase I Environmental Site Assessments (ESA) identified 44 REC sites in the project study area. Of these properties, only five are directly impacted by right-of-way acquisition or construction activities. Based on lack of proximity to the alternative footprints or lack of RECs, the other properties would not require additional investigation. Ultimately, the Phase II ESAs would include environmental sample collection (e.g. soil, soil gas, and groundwater), specifically, in areas where a potential for disturbance of soil and/or groundwater exists.

A hazardous waste management plan will be prepared as a guide for handling hazardous materials during construction, and an on-site health and safety plan will be developed for construction activities to protect human health (i.e. workers, residents and pedestrians) and the environment within the construction area. The hazardous waste management plan would require use of approved landfills for disposal of waste materials.

During the demolition of existing bridge structures, construction activities would likely encounter lead-based paint (LBP) and asbestos containing materials (ACM). Hazardous materials should be managed and disposed of at an appropriate permitted facility to minimize impacts during the cleanup process. The potential release of these materials during construction could affect the health and safety of the workers. **A professional certified in the removal, handling and disposal of LBP and/or ACM may monitor construction activities. Asbestos Containing Material and/or Lead Based Paint testing would be completed if deemed necessary on a site-specific basis. These tests would be done independently from the Phase II ESAs as it outside of ASTM guidelines.**

SCDHEC would be informed if contaminated soils are encountered during construction and measures will be employed to avoid, reduce, or otherwise mitigate environmental impacts associated with the proposed project. As the construction moves forward, any discovery of previously unknown contamination (groundwater or soil) would be evaluated and addressed in accordance with regulatory requirements prior to the continuation of construction activities at that site. Tanks and other hazardous materials will be tested and removed and/or treated in accordance with USEPA and SCDHEC requirements. Cost of necessary remedial actions will be considered during the right-of-way appraisal and acquisition process. **The contractor will prepare a spill prevention, control, and countermeasures (SPCC) plan in accordance with 40 CFR 112, for the handling of oils or oil-based products during construction to prevent discharge of oil into navigable waters.**

4.19 Energy

This section evaluates the existing energy use of the project corridor as well as the change in energy use from the proposed corridor improvements. Energy impacts for transportation actions are often evaluated in the form of vehicle fuel consumption, which varies with traffic characteristics. Traffic characteristics include the average vehicle speed, driver behavior, the geometric configuration of the highway, the vehicle mix, and climate and weather.

4.19.1 What are the Existing Energy Consumption Conditions in the Corridor?

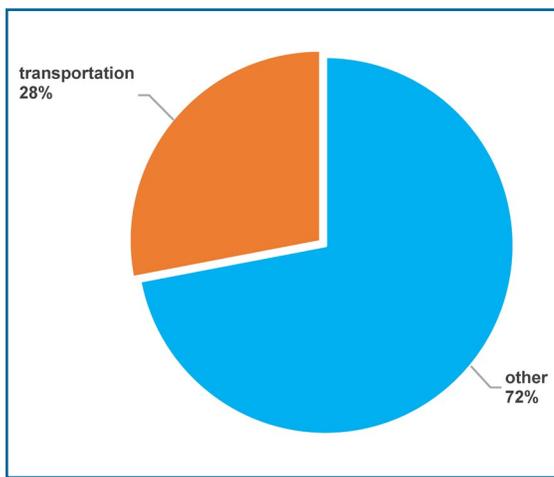


Figure 4.22 Monthly Energy Review, April 2020

In 2018, 28 percent of energy used in the US was attributed to transportation and petroleum products accounted for about 92 percent of the total U.S. transportation sector energy use. Biofuels, such as ethanol and biodiesel, contributed about five percent. Natural gas accounted for about three percent, most of which was used in natural gas pipeline compressors. Electricity provided less than one percent of total transportation sector energy use and nearly all of that in mass transit systems. As petroleum products account for nearly 92 percent of transportation energy, the analysis is focused on vehicles using the project corridor to characterize the existing conditions.

The existing (2015) traffic models show that on average 73,670 vehicles use the project corridor each day and that the existing conditions result in congestion throughout much of the corridor.

Based on analysis from fueleconomy.gov, traffic congestion results in direct reductions in fuel economy by limiting speeds to below optimum conditions as shown in the graphic below.

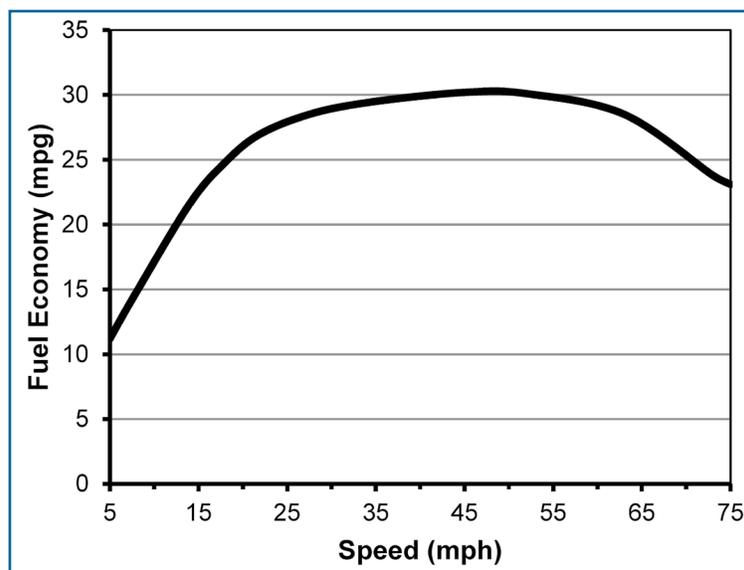


Figure 4.23 Correlation Between Fuel Economy and Speed

4.19.2 What are the Effects of the Recommended Preferred Alternative on Existing Energy Consumption Conditions in the Corridor?

A comparison of fuel consumption in the AM and PM peak hours of the day was completed for the 2015 Base Year Conditions, 2050 No-Build Condition, and the 2050 Recommended Preferred Alternative Build Condition. An assumption is used that fuel efficiency in 2050 would be improved from present averages. The difference in total number of vehicles coupled with the projected level of congestion between the two alternatives is representative of the energy impacts caused by the Recommended Preferred Alternative.

To estimate the fuel consumption within the I-526 LCC WEST corridor, two values were obtained from the VISSIM microsimulation model for each of these conditions: Total Vehicle Miles Traveled (VMT) and Total Stopped Delay.

Published values of predicted fuel consumption were used to determine the total consumption that applies to each of these two conditions. The total fuel consumed by vehicles in motion was estimated by the Total VMT divided by the predicted consumption rate in miles per gallon. A consumption rate for moving vehicles of 22 miles per gallon was used for the 2015 Base Year and 38 miles per gallon for the 2050 Design Year.⁴⁰ The total fuel consumed by stopped vehicles was estimated by the Total Stopped Delay (hours) multiplied by the predicted idling consumption rate in gallons per hour. The consumption rate of 0.3 gallons per hour was used for idling vehicles in both the base and future years.⁴¹

These consumption rates were applied to the VMT and Total Stopped Delay from the VISSIM model to determine the total fuel usage for each peak hour of each condition. Tables 4.27 and 4.28 show the values obtained from the VISSIM models. The 2050 fuel efficiency used in this analysis is based on data from the U.S. Energy Information Administration, Annual Energy Outlook 2020. An increase in electric vehicles is inherent in the predicted overall fuel efficiency. This publication predicts that internal combustion powered vehicles will still represent 75 percent of vehicles sold in 2050. This analysis did not consider how this might change as a result of government investment or incentives to increase the transition to battery electric vehicles.

Table 4.27 VISSIM Output Metrics - AM & PM Peak Hours

Condition	Vehicle Miles Traveled		Total Stopped Delay (hr)	
	AM	PM	AM	PM
2015 Base Year	272,274	276,760	703.4	889.9
2050 No-Build	281,225	291,442	2,794.7	4,741.3
2050 Build Pref. Alt.	329,655	355,881	1,944.3	3,504.1

40 “Annual Energy Outlook 2020 with Projections to 2050,” U.S. Energy Information Administration, January 2020. <https://www.eia.gov/aeo>

41 “Fact #861 February 23, 2015 Idle Fuel Consumption for Selected Gasoline and Diesel Vehicles,” Office of Energy Efficiency & Renewable Energy, February 2015, <https://www.energy.gov/eere/vehicles/fact-861-february-23-2015-idle-fuel-consumption-selected-gasoline-and-diesel-vehicles>

Table 4.28 Fuel Consumption Comparison - AM & PM Peak Hours

Condition	Fuel Efficiency (miles per gallon)		In-Motion Fuel Consumption		Idling Fuel Consumption		Total Peak Hour Fuel Consumption	
	AM	PM	AM	PM	AM	PM	AM	PM
2015 Base Year	21.6	21.5	12,376	12,580	211	367	12,587	12,847
2050 No-Build	34.1	32.1	7,401	7,670	838	1,422	8,239	9,092
2050 Build Pref. Alt.	35.6	34.2	8,675	9,365	583	1,051	9,258	10,417

4.19.2.1 No-Build Alternative

Compared to the 2015 Base Year, the 2050 No-Build Alternative shows a reduction in total peak hour fuel consumption. However, this is entirely due to increases in vehicle fuel efficiency that are expected to occur by 2050. The actual efficiency (combined AM and PM peak hour) in the 2015 Base Year is 21.6 miles per gallon (mpg), or 98 percent of the published 2015 in-motion vehicle consumption rate, while the No-Build Alternative produces 33.0 mpg, or 87 percent of the published 2050 in-motion vehicle consumption rate. This is also illustrated by the fuel consumed by idling, which is 2 percent of total peak hour consumption in the 2015 Base Year and 13 percent in the 2050 No-Build condition.

4.19.2.2 Recommended Preferred Alternative

The 2050 Build Recommended Preferred Alternative produced a total VMT that was approximately 17 percent greater in the AM peak hour and 22 percent greater in the PM peak hour, than the 2050 No-Build condition. The Total Stopped Delay for the Build Recommended Preferred Alternative was approximately 30 percent lower in the AM peak and 26 percent lower in the PM peak, than the 2050 No-Build condition.

The 2050 Build Recommended Preferred Alternative results in a 20 percent increase in VMT and a 28 percent decrease in total stopped delay when compared to the 2050 No-Build condition. The combined AM and PM peak hour efficiency, based on peak hour VMT and total peak hour fuel consumption is 34.8 mpg, or 92 percent of the published 2050 in-motion vehicle consumption rate. The fuel consumed by idling is 8 percent of the total peak hour consumption.

Energy resources such as fuel and electricity would be consumed to produce materials used for project construction and would also be consumed during the construction of the project itself; however, the quantity of this energy resource consumption is unknown.

4.19.3 What Mitigation Measures would be Taken for Energy Consumption?

The proposed project is anticipated to increase capacity and reduce congestion which are both shown to limit energy use in vehicles. Although no mitigation measures are proposed, multiple travel demand alternatives have been implemented in the region. Refer to Chapter 3 for more information.

4.20 Short-Term Uses versus Long-Term Productivity

The short-term use of the environment's resources relates to changing the natural productivity of the land, which is viewed as a renewable resource. The long-term, natural productivity of the I-526 LCC WEST project study area comes from mostly developed land within the right-of-way of the I-526 LCC WEST **project** along with the area's wildlife productivity, vegetation habitat, and wetlands. Instead of being used for its natural productivity, the land within the right-of-way would be used for the I-526 LCC WEST **project**. The proposed project is based on state and local transportation planning documents. These planning documents considered the need for present and future traffic capacity consistent with present and future land-use planning. These planning documents are discussed in Section 4.1.4 (Land Use). The I-526 LCC WEST project provides several lasting efficiency improvements for the local area including more efficient transportation facilities.

This use of the environment is consistent with local land-use and transportation plans which demonstrate the need for the I-526 LCC WEST improvements.

4.21 Irreversible and Irretrievable Commitment of Resources

Land used for constructing the I-526 LCC WEST corridor improvement alternatives is an irreversible commitment of natural, physical, human and fiscal resources during the time the land is used for the project. If the transportation system is no longer needed or a more critical need for the land materializes, the land could be adapted to another use. At this time, a conversion is not anticipated to be necessary or desirable.

The use of construction materials such as fossil fuels and construction materials are not projected to have an adverse effect on the continued availability of these resources. The availability of skilled laborers may be a challenge for the contractors as there are multiple projects under construction in the region. A lack of available labor and multiple projects needing the same construction materials may put a short-term stress on these resources.

The commitment of irretrievable financial resources is based on the premise that residents in the area, the region, and the state benefits from the improved quality of the transportation facility. While construction of the I-526 LCC WEST corridor improvements requires a sizeable expenditure, the benefits consist of improved mobility and savings in travel time, both of which are anticipated to outweigh the commitment of these resources.

The proposed I-526 LCC WEST project does not completely avoid impacts to wetlands and waters. Impacts have been minimized and would be mitigated through restoration, enhancement or preservation of wetlands, streams, and other aquatic resources.

4.22 Permits

Federal and State permits are required for construction activities for the I-526 LCC WEST project. The agencies issuing these permits are either cooperating or participating agencies and have been involved during the project development process. Information related to each type of permit is listed below.

4.22.1 Section 404 of the Clean Water Act

A Department of the Army permit is required for impacts to WOUS, pursuant to Section 404 of the CWA. Section 404 is administered by the USACE with a consistency determination from SCDHEC-OCRM. Section 404 regulates the discharge of dredged or fill material into WOUS. Depending on the type and extent of impacts, permitting requirements range from activities considered exempt or preauthorized to those requiring pre-construction notification for a Nationwide Permit or an Individual Permit from the USACE. **Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers. Based on preliminary design, it is anticipated that the proposed project would be permitted under an Individual Army Corps of Engineers Permit (IP). On October 30, 2020, USACE and SCDHEC issued a 30-day Joint Public Notice for the proposed I-526 LCC WEST project pursuant to Section 10 of the Rivers and Harbors Act of 1899, Sections 401 and 404 of the Clean Water Act, and the South Carolina Coastal Zone Management Act. SCDOT will provide the Army Corps with information regarding any proposed construction and demolition activities during the Section 404 permitting process. The required mitigation for this project will be determined through consultation with the USACE and other resource agencies. SCDOT plans to acquire freshwater wetland and stream mitigation credits from the Palmetto Umbrella Mitigation Bank; Big Run Site located in the Cooper River watershed. In the event this mitigation bank is not utilized, SCDOT will obtain the required mitigation credits from approved mitigation banks.**

4.22.2 Section 401 of the Clean Water Act

Section 401 of the CWA requires any request for a federal permit involving activities which impact WOUS (Section 404 permit) to also acquire a Water Quality Certification. This certification involves a review of the proposed project and analysis of its potential effects on water quality. In South Carolina, SCDHEC has direct responsibility for granting, denying, or waiving Section 401 Water Quality Certifications.

Since the I-526 LCC WEST project requires a Section 404 Individual permit, a Section 401 Water Quality Certification is also required. A Section 401 Water Quality Certification is required before the USACE will act on the Section 404 Permit. **USACE and SCDHEC issued a 30-day Joint Public Notice for the proposed I-526 LCC WEST project on October 30, 2020 that is pursuant to Section 401 of the Clean Water Act.**

4.22.3 Section 402 of the Clean Water Act

The USEPA is authorized by Section 402 of the CWA to regulate point sources which discharge pollutants, including surface runoff, into WOUS through the NPDES permit program. In South Carolina, the USEPA authority is delegated to SCDHEC. A Stormwater Pollution Prevention Plan must also be developed for the project to identify potential sources of stormwater pollution and describe measures to reduce or eliminate pollutants. The NPDES permit requires that measures be implemented to control stormwater runoff prior to discharging into receiving waters. Projects disturbing more than one acre of land require a NPDES permit, also referred to as a Land Disturbance Permit. Projects which disturb greater than five acres of land necessitate the development and approval of permanent best management practices, along with a signed maintenance agreement for continued water quality protection.

Given that the Recommended Preferred Alternative disturbs greater than five acres of land, a NPDES Permit, stormwater pollution prevention plan, and permanent best management practices are required.

4.22.4 Critical Area Permitting

The Federal Coastal Zone Management Act of 1972 requires that activities in the coastal zone comply with approved state coastal management guidelines. The South Carolina Coastal Zone Management Act (1977, as amended 1993 by Act 181) gives authority to SCDHEC-OCRM to promote the economic and social welfare of the citizens of South Carolina while protecting the sensitive and fragile areas in the coastal counties and promoting sound development of coastal resources. **SCDHEC-OCRM has permitting authority over critical areas and a permit must be received before any alterations occur.** A permit would be required from SCDHEC-OCRM for activities within the critical area and the coastal zone and the project would be classified by SCDHEC-OCRM as a Major Activity.

Critical area is defined as coastal waters, tidelands, beaches, and dune/beach system.

SCDHEC-OCRM is required to review all state and federal permit applications for activities within the eight-county coastal zone for consistency with the State’s Coastal Zone Management Plan (SCCZMP) and grant a Coastal Zone Consistency (CZC) Certification. A CZC Certification ensures the activity protects the quality of the coastal environment and promotes the economic and social improvement of the coastal zone.

USACE and SCDHEC issued a 30-day Joint Public Notice for the proposed I-526 LCC WEST project on October 30, 2020 that is pursuant to the South Carolina Coastal Zone Management Act.

4.22.5 Construction in State Navigable Waters

A permit for Construction in State Navigable Waters is required from SCDHEC for bridge construction over state navigable waters, such as the Ashley River. State navigable waters are defined in South Carolina as “waters which are navigable, have been navigable, or can be made navigable by removal of incidental obstructions by rafts of lumber or timber by small pleasure or sport fishing boats.” **A separate Construction in Navigable Waters Permit is not required for activities which require another DHEC permit or certification, including but not limited to 401 Water Quality Certifications and NPDES permits. SCDHEC’s permitting/certification areas will coordinate with their Construction in Navigable Waters Permitting staff to ensure the provisions of this regulation are adhered to.**

4.22.6 Section 9 of the Rivers and Harbors Act

Section 9 of the Rivers and Harbors Act requires approval from the U.S. Coast Guard (USCG) for any construction of a dam, dike, bridge, or causeway across navigable WOUS. Navigable WOUS are not always the same as state navigable waters. Navigable WOUS are those waters presently used, used in the past, or susceptible to use to transport interstate or foreign commerce.

The Recommended Preferred Alternative involves construction activities in the Ashley River; therefore, Section 9 and 10 Permits will be required.

FHWA initially determines if a USCG permit is required for projects impacting navigable waters. The Recommended Preferred Alternative proposes to widen both the existing westbound and eastbound spans of the Westmoreland Bridge over the Ashley River to accommodate additional travel lanes and a future shared use path (SUP) which will involve construction activities in and over the Ashley River. FHWA concluded a USCG permit was necessary for the Ashley River crossing. The USCG concurred with FHWA's determination; therefore, a USCG permit is necessary for the proposed project. USCG issued a 30-day public notice for the proposed I-526 LCC WEST project on October 28, 2020 that is pursuant to Section 9 of the Rivers and Harbors Act. See Chapter 5 for more detailed information.

4.22.7 Section 10 of the Rivers and Harbors Act

According to Section 10 of the Rivers and Harbors Act, a permit is required for any construction activities with the potential to obstruct the navigability or modify the channel of a navigable WOUS. The USACE manages the approval of these activities during the Section 404 permitting process. USACE and SCDHEC issued a 30-day Joint Public Notice for the proposed I-526 LCC WEST project on October 30, 2020 that is pursuant to Section 10 of the Rivers and Harbors Act.

4.23 Sustainability

The goal of sustainability is the fulfillment of basic social, environmental and economic needs in the present as well as the future. Sustainability includes the responsible use of natural resources to maintain and/or improve the welfare of the environment to meet the needs of current generations, while not compromising the capacity to meet the needs of future generations.

4.23.1 What is a Sustainable Highway?

A sustainable approach looks at access and (in addition to mobility), movement of people and goods (in addition to vehicles), and provisions for safe and comfortable routes for alternate transportation sources such as walking, bicycling, and transit. FHWA views sustainable highways as an integral part of sustainable development. The sustainability characteristics of a roadway project should be evaluated and considered for its full lifecycle which includes conception through construction, operations, and maintenance.

Transportation agencies address sustainability during the NEPA process. Measures of project success include a wide range of indicators, such as travel performance, gains achieved through material selection, and construction methods.

4.23.2 Key Sustainability Considerations for the Project

The key sustainability considerations for the project are discussed in the following sections.

4.23.2.1 Communities and Public Outreach

Public and Agency Involvement

Public and agency involvement have played an important role for the I-526 LCC WEST project and the project team continues to be committed to encourage and lobby public and agency participation while documenting feedback. Chapter 6 of the DEIS provides a detailed discussion of public involvement communication tools and stakeholder involvement throughout the process. In order to meet the project’s sustainability goals comprehensive public involvement continues to be a critical component.

Community Mobility

Community mobility is assessed by improvements to access, commute time reductions, and navigation to existing facilities and transportation. SCDOT is evaluating how to design and construct the I-526 LCC WEST project to increase capacity and improve operations. Through this process, SCDOT is measuring community mobility by evaluating projected traffic volumes as well as flows, preferred methods of access, and effects of design alternatives on mobility.

The public, agencies and stakeholders have been engaged in this process through public involvement efforts in order to optimize design choices and ensure access and mobility requirements are incorporated into the project.

Impact Assessment

Various technical studies were done to assess impacts the proposed project may have on community resources including, but not limited to: a noise impact analysis, natural resource studies, cultural resource surveys, hazardous materials assessment, and a community impact assessment. The impact assessment of these key components is critical in assessing the sustainability of the proposed project.

4.23.2.2 Natural World

Prime Habitats

High areas of ecological value are considered prime habitat and include, but are not limited to: Essential Fish Habitat (EFH), tidal waters, national parks, wildlife refuges, wild & scenic rivers and old-growth forests. Avoiding and minimizing impacts to these resources is a key component of the sustainability of a project. EFH as well as salt marsh and tidal waters are present in the proposed project area.

4.23.2.3 Resiliency

The I-526 LCC WEST project is being planned and designed for short- and long-term climate resiliency specific to its location and geography. According to the USEPA 2017 emissions records, carbon dioxide, methane, nitrous oxide and fluorinated gases are the main pollutants contributing to climate change with carbon dioxide accounting for 82 percent of U.S. greenhouse gas emissions.

One of the benefits of the proposed I-526 LCC WEST project is a potential reduction in emissions through improving mobility by increasing capacity and improving operations. This mobility improvement will result in a decrease in idling vehicles which result from existing congestion issues.

4.23.3 Documentation of Sustainability During Construction and Operation of the Project

4.23.3.1 Environmental Compliance

SCDOT's Compliance Division is tasked with confirming that environmental commitments are followed during the construction phase and that any post-construction monitoring commitments are met. The Compliance Division is comprised of the Compliance Division Manager, District Compliance Managers, and a QA/QC Manager.

During the design of the project, environmental permits may be obtained specifying additional construction requirements. The FEIS and ROD define required mitigation for the I-526 LCC WEST project. A compliance team would provide support to SCDOT staff during construction of the project and assist in monitoring compliance with environmental requirements and NEPA commitments. **Preparing a complete environmental closeout packet at the end of every USACE permitted project is also a responsibility of the compliance team.**

The compliance team would compile environmental commitments, permit standard/special conditions, and maintain an environmental journal with the appropriate environmental compliance forms.

A detailed Environmental Compliance Plan would be developed and updated to include environmental commitments from the FEIS and ROD, environmental permits, and other environmental approvals. All coordination with state and federal agencies must be done through SCDOT's Environmental Services Office. Typical tasks in the Environmental Compliance Plan may include:

- Attend project pre-bid meeting and preconstruction/partnering meetings
- Participate as needed in regular contractor meetings
- Participate as needed with resource agencies
- Check construction site with environmental compliance forms; provide copies of all reports as required
- Review Weekly Sediment and Erosion Control Site Inspection Reports as needed
- Review permit plans, construction plans, construction contracts, and reconcile differences
- Monitor NEPA commitments
- Track compensatory mitigation
- Ensure project jurisdictional boundaries are clearly identified and marked
- Respond within 24 hours to any requests from SCDOT project authority regarding changing site conditions
- Evaluate debris pile areas, staging areas, borrow pits, and lay-down sites in environmentally sensitive locations
- Review construction access through jurisdictional crossings
- Act as the liaison for jurisdictional violations and develop resolution agreements as needed
- Coordinate major environmental concerns through the SCDOT Environmental Compliance Division Manager
- Complete deliverables (environmental compliance forms, environmental construction close-out packet)

4.23.3.2 Public Outreach During Construction

A **public information** plan for the construction phase of the proposed project would be developed by the contractor to ensure the public is aware of any changes in traffic patterns during construction. Routes of construction vehicles and reduction of construction noise would be considered in the development of the public outreach plan.

An essential element of sustainability for the proposed I-526 LCC WEST project is public outreach.

4.24 404(b)1 Guidelines

The proposed project would require a U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit. The Section 404 permit along with the concurrent Section 401 Water Quality Certification, issued by SCDHEC Bureau of Water, would be addressed through a joint application process with USACE. For more detailed information on the Section 404 Individual Permit refer to Section 4.22.

Section 404 of the Clean Water Act (CWA) authorizes USACE to issue permits regulating the discharge of dredge or fill material into waters of the United States (WOUS).

4.24.1 Clean Water Act Section 404(b)1 Guidelines

4.24.1.1 Regulatory Background and Existing Conditions

Under Section 404(b)1 of the Clean Water Act, the Environmental Protection Agency, in conjunction with USACE, developed “Guidelines” to ensure compliance with Section 404 of the Clean Water Act when evaluating permit applications. The 404(b)1 Guidelines specifically outline four conditions that must be satisfied to determine that a proposed discharge complies with these guidelines. These conditions are referred to as “restrictions on discharge”. In general, these four “restrictions on discharge” do not allow USACE to issue a permit if a discharge would:

1. have a “practicable” alternative which would have less adverse impact on the aquatic ecosystem if the alternative does not have other significant adverse environmental consequences. The USACE may only issue a permit for the least environmentally damaging practicable alternative (LEDPA). Practicability considers cost, existing technology, and logistics of the alternatives. The “overall” project purpose is used to determine whether “practicable” alternatives exist to a proposed project.
2. cause or contribute to violations of any applicable State water quality standard; violate toxic effluent standards; jeopardize the continued existence of an endangered or threatened species; or violate any marine sanctuary.
3. cause or contribute to significant degradation of the waters of the U.S.
4. not have taken appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Each of these “restrictions” has specific requirements in order to determine compliance.

4.24.1.2 404(b) 1 Guidelines for the Practicable Alternatives

As described in Section 4.24.1.1, the 404(b)1 Guidelines outline four conditions that must be satisfied in order for USACE to make a finding that the proposed discharge (of dredged or fill material) complies with these guidelines. The analysis of the Practicable Alternatives assists USACE in evaluating the first condition which states that USACE cannot issue a permit if the proposed discharge would have a practicable alternative which would have less adverse impact on the aquatic ecosystem as long as the alternative does not have other significant adverse environmental consequences.

In order to perform a detailed impact evaluation on the above alternatives, the widening of the mainline to 8-lanes was combined with the interchange alternatives into three sections. Each section was evaluated in consideration of the 404(b)(1) Guidelines.

When evaluating the proposed project, 404(b)1 Guidelines were considered during the analysis of the Reasonable Alternatives. Refer to Chapter 3 for more details on the alternatives analysis. Possible impacts to the aquatic ecosystem were included in the analysis along with the evaluation of other environmental resources. The preliminary range of alternatives was evaluated to determine if the proposed alternatives meet the need and purpose of the project. In addition to the purpose and need, several environmental categories were also used to narrow the range of alternatives to the Reasonable Alternatives. This thorough exploration and detailed analysis of the Reasonable Alternatives should lead USACE to identify the “least environmentally damaging practicable alternative.”

Paul Cantrell Boulevard to International Boulevard

The I-526 at Paul Cantrell Boulevard interchange has only one Reasonable Alternative. While impacts to wetlands and waters would occur, this alternative meets the project purpose and need. Therefore, this alternative meets the 404(b)1 Guidelines.

International Boulevard to Rivers Avenue

The I-26/I-526 System & I-526 at Rivers Avenue interchange has four Reasonable Alternatives. The four alternatives that were carried through the preliminary alternatives analysis to become Reasonable Alternatives had fewer impacts than the initial alternatives evaluated. The Reasonable Alternatives were then evaluated in detail with respect to the various resources (which included the aquatic ecosystem). All four Reasonable Alternatives have the same amount of impacts to freshwater wetlands and freshwater streams. Alternative 2 is the Recommended Preferred Alternative because of improved traffic operations and reduced impacts to environmental justice communities. Therefore, Alternative 2 **for the I-26/I-526 System & I-526 at Rivers Avenue interchange meets the 404(b)1 Guidelines.**

Rivers Avenue to Virginia Avenue

The I-526 at North Rhett Avenue/Virginia Avenue interchange has five Reasonable Alternatives. The five alternatives that were carried through the preliminary alternatives analysis to become Reasonable Alternatives had fewer impacts than the initial alternatives evaluated. The Reasonable Alternatives were then evaluated in detail with respect to the various resources (which included the aquatic ecosystem). Alternative 2A is the Recommended Preferred Alternative for the Rivers Avenue to Virginia Avenue portion of the project. Alternative 2A has the fewest impacts to freshwater wetlands of any of the Reasonable Alternatives. Alternative 2A has fewer critical area impacts than two of the Reasonable Alternatives (Alternatives 5 and 6), and slightly more critical area impacts than two of the Reasonable Alternatives (Alternatives 1 and 2). Alternative 2A has the fewest impacts to freshwater streams of any of the Reasonable Alternatives. While Alternative 2A has a slightly higher critical area impact compared to Alternatives 1 and 2, this alternative was selected because it results in the fewest amount of relocations of any of the Reasonable Alternatives. Therefore, Alternative 2A meets the 404(b)(1) Guidelines.

The **USACE** provided input throughout the project to ensure that the evaluation of the alternatives is sufficient to make a decision pertaining to the 404(b)(1) Guidelines. At the conclusion and signing of this EIS, USACE should have enough information to make an informed decision regarding permit issuance or denial.

To ensure marine safety and security, the U.S. 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.

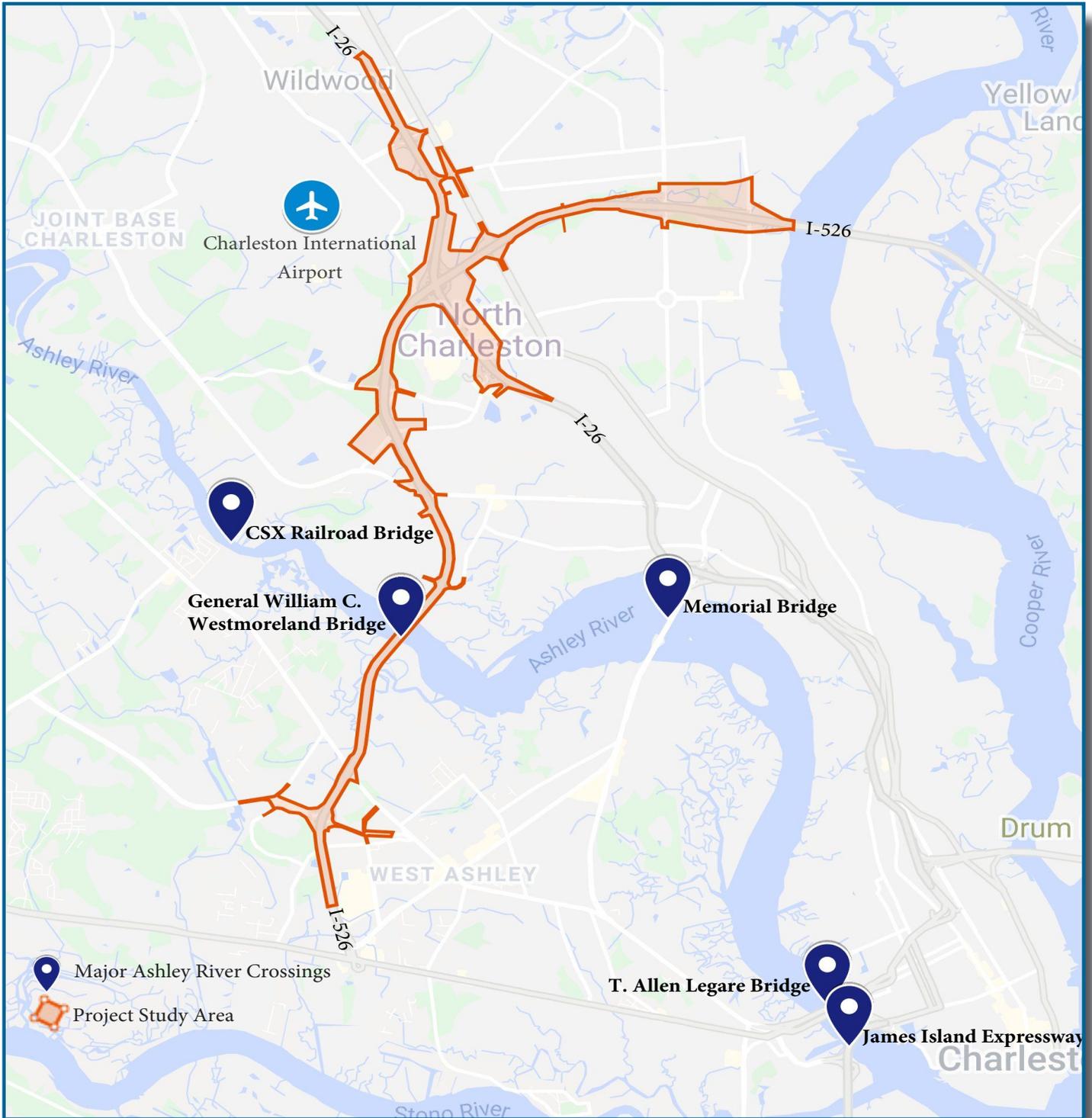


Figure 5.1 Major River Crossings

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 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)

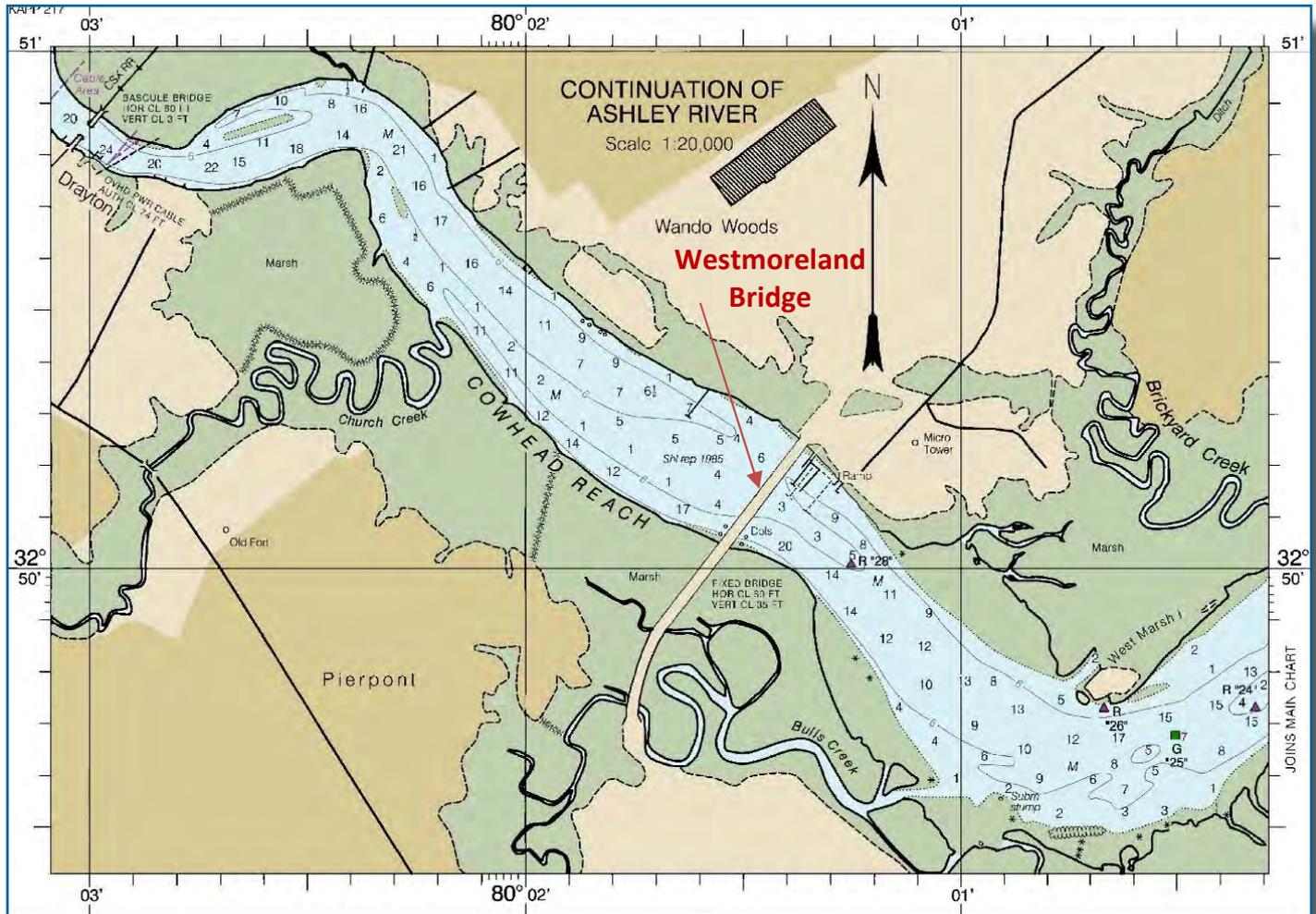


Figure 5.2 NOAA Navigation Chart - Charleston Harbor. 54th Edition, June 2015. Last Correction 2/5/2019.

5.3 Proposed Bridge Dimensions

As part of the proposed project, the South Carolina Department of Transportation (SCDOT) proposes to widen both the existing westbound and eastbound spans of the Westmoreland Bridge over the Ashley River to accommodate additional travel lanes. Additionally, 14-feet of additional width to accommodate a future shared use path would be added to the upstream side of the existing westbound structure. The shared use path (SUP) would be separated from motorized travel lanes with a raised barrier located between the path and a 12-foot outside paved shoulder. The SUP would also allow for maintenance and future improvements to the Westmoreland Bridge. Both structures of the Westmoreland Bridge would retain their 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 bridge structures are approximately 42 feet, 10 inches wide. The existing bridge deck for both structures consists of two 12-foot travel lanes, a five-foot, six-inch inside left shoulder, and a ten-foot outside right shoulder. Barriers located on each side of the bridge structures (two total) are one-foot, eight-inches wide each. There are currently no accommodations for pedestrians or bicyclists on the existing structures.

Widening I-526 would require that these **structures** be widened and that the shoulders and bridge barriers be modified slightly to accommodate four lanes in each direction of travel with shoulders and bridge barriers. The proposed **bridge structures would have two additional 12-foot wide travel lanes in each direction of travel and 12-foot wide inside and outside shoulders in each direction of travel.** The additional widening to the existing westbound structure would be approximately 47 feet and the additional widening to the eastbound bridge structure would be approximately 32 feet. The total width of the westbound bridge structure would be approximately 90 feet and 75 feet for the eastbound bridge structure. The final dimensions of the widened westbound bridge structure needed to support the SUP 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.

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.

- 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.
- 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. A permit application was submitted to USCG and they placed the project on public notice on October 28, 2020 for a comment period of 30 days. USCG provided comments on the permit application on December 12, 2020. Per the Agency Coordination Plan agreement, the USCG permit will be issued within 90 days after the Record of Decision (ROD) has been signed. During final design, a final 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.

Comments received during the public notice comment period can be found in Appendix Z.

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 to accommodate the widened bridge structures.

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.

The National Environmental Policy Act (NEPA) regulations state that agencies must “make diligent efforts to involve the public in preparing and implementing their NEPA procedures.”¹

For the development of this project, the Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) coordinated with the following three distinct groups to ensure meaningful involvement and input:

Public and agency involvement are critical components of the transportation planning process.

- Federal, state, and local agencies
- The public
- Stakeholders, including public officials, business owners, and other groups with an interest in this project.

This chapter describes the initial and continuous efforts to engage with these three groups. Engaging these groups at the very early stages helps ensure decisions consider and benefit public needs and preferences, while developing potential alternatives for the proposed project area.

6.1 What are the Goals and Objectives of Resource and Regulatory Agency Involvement?

Effective interagency coordination is the key to achieving environmentally responsible transportation decisions.² To meet this goal, SCDOT and FHWA invited federal and state agencies to be involved in the project as cooperating or participating agencies.

6.1.1 Who are the Lead Agencies and what are Their Responsibilities?

FHWA and SCDOT are the Joint Lead Agencies and share the responsibility of identifying the status and level of involvement of other agencies during the environmental process. This includes the identification of cooperating and participating agencies.

23 United States Code (USC) Part 139 also requires the Lead Agency to:

- Establish a plan for agency and public participation in the review process
- After consultation and concurrence of each cooperating and participating agency, set a schedule for the review process, including deadlines for agency and public comments
- Involve the cooperating and participating agencies in the development of the purpose and need, the alternatives analysis and development, and the designation of a Preferred Alternative

The Council on Environmental Quality Regulation requires a Lead Federal Agency to oversee the preparation of an Environmental Impact Statement (EIS) and that Cooperating Agencies be identified.³

1 40 Code of Federal Regulations (CFR) 1506.6(a)

2 FHWA https://www.environment.fhwa.dot.gov/nepa/trans_decisionmaking.aspx, 1/6/2020

3 40 CFR 1501.5

6.1.2 What are the Cooperating and Participating Agencies?

The roles and responsibilities of cooperating and participating agencies are similar. However, cooperating agencies have a higher degree of authority, responsibility, and involvement in the environmental review process.

Cooperating agencies are agencies with jurisdiction by law or by virtue of special expertise.⁴ They are to identify information needed to complete their review, limit their comments to their areas of expertise, make personnel and/or expertise available to the Lead Agency, and complete their reviews following the prearranged project schedule. Refer to Table 6.1 for the Cooperating Agencies for this project.

Participating agencies are identified as those federal, state, tribal, regional, and local agencies with an interest in the project and who have specific responsibilities in the process. Participating agencies, identified in accordance with 23 USC Part 139, provide information and identify and resolve issues. Refer to Table 6.2 for the Participating Agencies for this project.

Table 6.1 Cooperating Agencies

Agency	Primary Responsibility	Contact Person	Contact Information
US Army Corps of Engineers (USACE)	Jurisdictional Area Determination and Section 404/10 Permitting; Wetlands and Streams Expertise	Lt. Col. Andrew Johannes Travis Hughes Amanda Heath Jeremy Kinney	Travis.G.Hughes@usace.army.mil 843-329-8046 Amanda.L.Heath@usace.army.mil 843-329-8025 Jeremy.M.Kinney@usace.army.mil 843-329-8033
US Coast Guard (USCG)	Navigational Permitting for Bridges	Randall Overton	Randall.D.Overton@uscg.mil 305-415-6736
National Park Service (NPS)	Review and Concurrence of any Section 6(f) Conversion	Alexis John	Alexis_John@nps.gov 404-507-5834

Table 6.2 Participating Agencies

Agency	Primary Responsibility	Contact Person	Contact Information
Federal Agencies			
US Fish & Wildlife Service (USFWS)	Endangered Species Act, Migratory Bird Treaty Act, Bald & Golden Eagle Protection Act, Fish & Wildlife Coordination Act Consultations; Wetlands and Streams Expertise	Tom McCoy Mark Caldwell	Thomas_McCoy@fws.gov 843-727-4707 x227 Mark_Caldwell@fws.gov 843-727-4707 x215
US Environmental Protection Agency (USEPA)	NEPA/Environmental Justice Review; Section 404, Section 401, Water Quality	Ntale Kajumba Alya Singh-White Kelly Laycock	Kajumba.Ntale@epa.gov Singh-White.Alya@epa.gov 404-562-9339 Laycock.Kelly@epa.gov 404-562-9132
National Oceanic & Atmospheric Administration (NOAA) Fisheries	Essential Fish Habitat	Pace Wilber Cynthia Cooksey	Pace.Wilber@noaa.gov 843-762-8601 Cynthia.Cooksey@noaa.gov 843-460-9922
	Endangered Species Act/Marine	Dr. Roy Crabtree	Roy.Crabtree@noaa.gov
	Section 7	Andrew Herndon	Andrew.Herndon@noaa.gov 727-824-5312
	Marine Mammal Protection Act (MMPA)	Jaclyn Daly	Jaclyn.Daly@noaa.gov 301-427-8438
	Correspondence	Noah Silverman Richard Fickley	Noah.Silverman@noaa.gov 727-824-5353 Richard.Fickley@noaa.gov 727-551-5705
State Agencies			
South Carolina Department of Archives & History (SCDAH)	Archaeological and Historical Resources Consultation, Section 106 Review	Elizabeth Johnson	EJohnson@scdah.sc.gov 803-896-6168
South Carolina Department of Health & Environmental Control (SCDHEC); Ocean & Coastal Resource Management (OCRM)	Jurisdiction of Critical Areas, Critical Area Permitting, Air Quality, Section 401 Water Quality, Coastal Zone Management (CZM) Consistency Determinations; Wetlands and Streams Expertise	Chuck Hightower (SCDHEC) Blair Williams (OCRM) Chris Stout (OCRM)	HightoCW@dhec.sc.gov 803-898-0369 WilliaBN@dhec.sc.gov 843-953-0232 StoutCM@dhec.sc.gov 843-953-0691
South Carolina Department of Natural Resources (SCDNR)	State Protected Species; Wetlands and Streams Expertise	Robert H. Boyles, Jr. LoriAnn Riggan Susan Davis	BoylesR@dnr.sc.gov 803-734-4007 RigganL@dnr.sc.gov 803-734-4199 DavisS@dnr.sc.gov 803-953-9003
South Carolina Department of Parks, Recreation & Tourism (SCPRT)	Consultation on Section 6(f) Properties Funded by Land and Water Conservation Fund Act	Justin Hancock	JHancock@scprtr.com 803-734-1658
Sovereign Nations			
Catawba Indian Nation	Historic/Cultural Resources Review	Wenonah Haire, THPO Caitlin Totherow	WenonahH@ccppcrafts.com 803-328-2427 x224 CaitlinH@ccppcrafts.com 803-328-2427 x226
Eastern Shawnee Tribe	Historic/Cultural Resources Review	Brett Barnes, THPO	BBarnes@estoo.net 918-666-5151 x1845
Muscogee (Creek) Nation	Historic/Cultural Resources Review	Corain Lowe-Zepeda, THPO LeeAnne Wendt	CLowe@mcn-nsn.gov 918-732-7835 LWendt@mcn-nsn.gov 918-732-7852

6.1.3 How are the Agencies Involved in the Proposed Project?

The Agency Coordination Plan (ACP) establishes the framework for regular communication among the agencies involved in the environmental review process and ensures an interdisciplinary approach to decision-making. More detailed information on the ACP is available in Appendix A.

Effective interagency coordination is the key to achieving environmentally responsible transportation decisions.⁵ Coordination occurs at the following major concurrence points in which the cooperating and participating agencies are offered the opportunity to comment and provide input:

- Agency Coordination Plan/Purpose and Need Statement
- Permitting/Milestone Timetable
- Range of Alternatives/Alternatives Carried Forward
- Preferred Alternative

In addition to coordination at these concurrence points, monthly discussions were held regarding key topics such as draft document review, mitigation, general project concerns, updates on public involvement efforts among others. The permitting timetable, although not an official concurrence point, was reviewed by the agencies and added to the project process. Participating and cooperating agencies should be aware of any changes and cooperating agencies need to approve any changes.

Monthly meetings were scheduled, as necessary, for consultation with the agencies concerning the information needed in the EIS for permitting decisions, the identification of the Proposed Reasonable Alternatives and the designation of a Recommended Preferred Alternative. **Table 6.3 lists the agency meetings conducted as part of the project.**

Table 6.3 Agency Meetings

Date	Topic	Agencies Participating
3/14/2019	Agency Project Kickoff and Scoping Workshop	USEPA, USFWS, NOAA Fisheries, SCDHEC, SCDHEC OCRM, SCDAH, SCDNR, SCPRT
4/23/2019	Agency Coordination Plan, Permitting Timetable, Purpose and Need Statement	USACE, USEPA, USFWS, SCDHEC, SCDHEC OCRM
7/10/2019	Agency Meeting to Discuss Permitting Timetable and Agency Milestones	USACE, USEPA, USFWS, NOAA Fisheries, NPS, SCDAH, SCDHEC, SCDHEC OCRM, SCPRT
7/25/2019	Follow-up Meeting to Review Milestones Specific to Section 7 and MMPA	NOAA Fisheries
8/14/2019	Alternatives Evaluation Criteria, Alternatives Analysis Process, and Preliminary Range of Alternatives	USACE, USCG, USEPA, NOAA Fisheries, SCDAH, SCDHEC OCRM, SCDNR
9/11/2019	Mitigation Needs Assessment	USACE, USEPA, USFWS, NOAA Fisheries, SCDAH, SCDHEC OCRM, SCDNR, SCPRT
10/9/2019	Initial Alternatives Analysis and Reasonable Range of Alternatives	USACE, USFWS, NOAA Fisheries, NPS, SCDAH, SCDHEC OCRM
10/21/2019	Section 6(f) Process	NPS, SCPRT
11/13/2019	Concurrence Points and Upcoming Milestones	USACE, USCG, USEPA, USFWS, NOAA Fisheries, SCDAH, SCDHEC OCRM, SCDNR, SCPRT
12/9/2019	Section 6(f) Conversion Process	NPS, SCPRT

5 FHWA https://www.environment.fhwa.dot.gov/nepa/trans_decisionmaking.aspx, 1/6/2020

Table 6.3 Agency Meetings (Continued)

Date	Topic	Agencies Participating
12/11/2019	Potential Mitigation Options	USACE, USCG, USFWS, NOAA Fisheries, NPS, SCDAH, SCDHEC OCRM, SCDNR
1/8/2020	Public Involvement Update	USACE, USCG, USEPA, USFWS, NOAA Fisheries, SCDAH, SCDHEC OCRM, SCDNR
2/12/2020	Reasonable Alternatives Discussion and the Alternatives Evaluation Process Workshop	USACE, USCG, USEPA, USFWS, NOAA Fisheries, SCDHEC OCRM
3/11/2020	Project Update and Mitigation Needs Assessment	USACE, USCG, USEPA, USFWS, NOAA Fisheries, SCDHEC OCRM, SCDNR, SCPRT
4/8/2020	DEIS Update and Preliminary Evaluation of Floodplain Mitigation	USACE, USCG, USEPA, USFWS, NOAA Fisheries, NPS, SCDAH, SCDHEC OCRM, SCDNR, SCPRT
5/13/2020	Review of Recommended Preferred Alternative	USACE, USCG, USEPA, NOAA Fisheries, NPS, SCDAH, SCDHEC, SCDHEC OCRM, SCDNR, SCPRT
6/10/2020	Project Mitigation Strategy Update	USACE, USEPA, NOAA Fisheries, SCDHEC OCRM, SCDAH
8/12/2020	Section 6(f) Update	USACE, USCG, USEPA, USFWS, NOAA Fisheries, NPS, SCDHEC, SCDHEC OCRM, SCDNR
9/9/2020	Environmental Justice (EJ) Community Mitigation Plan	USACE, USCG, USEPA, USFWS, NOAA Fisheries, NPS, SCDHEC, SCDHEC OCRM, SCDNR, SCPRT
10/14/2020	Agency Milestones, DEIS Update, Shared Use Path and Public Hearing	USACE, USCG, USFWS, NOAA, NPS, SCDHEC, SCDHEC OCRM, SCPRT
12/9/2020	Agency Milestone Changes, Public Hearing Update, 6(f)	USEPA, USCG, USFWS, NOAA Fisheries, NPS, SCDHEC, SCDHEC OCRM, SCDNR, SCPRT
1/13/2021	Permitting Milestone Updates, Public Hearing Comments, Section 6(f)	USACE, USEPA, USCG, USFWS, NPS, SCDHEC, SCDHEC OCRM, SCDNR, SCPRT
2/10/2021	Public Hearing Comments Review, Mitigation Update, 6(f)	USACE, USEPA, USCG, USFWS, NOAA Fisheries, NPS, SCDHEC, SCDHEC OCRM, SCDNR, SCPRT
4/14/2021	EJ Mitigation Update, North Charleston Intergovernmental Agreement Update, 6(f)/4(f) Update	USEPA, USCG, USFWS, NPS, NOAA Fisheries, SCDHEC, SCDHEC OCRM, SCPRT
6/9/2021	Project Schedule Update, Permitting Approvals Update, FEIS Review and Discussion	USACE, USEPA, USCG, USFWS, NPS, NOAA Fisheries, SCDHEC, SCDHEC OCRM, SCDNR, SCPRT
9/9/2021	FEIS-ROD Update, 6(f) Conversion Update, 4(f) Mitigation Update (Russelldale Pocket Park), EJ Mitigation Update, Permitting Update	USFWS, NPS, NOAA Fisheries, SCDHEC, SCDHEC OCRM
12/8/2021	FEIS-ROD and Project Schedule Updates	USACE, USEPA, USCG, SCDHEC, SCDHEC OCRM, SCPRT
6/29/2022	EJ Mitigation Update; FEIS-ROD and Project Schedule Updates	USACE, USEPA, USCG, NPS, NOAA, SCDHEC, SCDHEC OCRM, SCDNR
8/10/2022	FEIS-ROD Review Update; Agency Milestones and Permitting Schedule Updates; I-526 East PEL Study Update	USACE, USEPA, USCG, NPS, NOAA, SCDHEC, SCDHEC OCRM, SCDNR

6.1.4 What is the Consultation Process?

Federal agencies agreed to actively participate in environmental reviews and communicate with one another in a structured process that started early in the project development process so agencies can “identify concerns, raise potential issues early in the review process, and identify solutions.” The following relevant goals for the project were agreed to by the federal agencies:

- Completion of all environmental reviews and permitting within two years
- Active communication between agencies
- Concurrent reviews
- Development of a permitting timetable
- Commitment to the process and improvements of the process

A Working Agreement was reached between the USACE, USCG, USEPA, USFWS, NOAA Fisheries, and FHWA for major infrastructure projects requiring an EIS.

In addition to concurrence points, the aforementioned agencies agreed in writing to the Agency Coordination Plan (ACP) and the permitting timetable/schedule, per the Working Agreement. While only cooperating agencies needed to concur on the concurrence points above, the lead agencies requested concurrence from all participating agencies to ensure that concerns were addressed during the NEPA process. Refer to Table 6.4 for concurrence tracking.

These agencies, along with state natural resource and regulatory agencies, worked together to develop a schedule to streamline the NEPA and permitting processes for this project.

Table 6.4 Agency Concurrence Tracking

Agency	Date of Concurrence
ACP and Purpose and Need	
USACE	June 7, 2019
USCG	June 4, 2019
USEPA	August 19, 2019
USFWS	June 3, 2019
NOAA Fisheries	June 7, 2019 (Request Specific Dates for Table 3-1 in ACP)
NPS	October 9, 2019
SCDAH	June 4, 2019 (No Comment of Purpose and Need)
SCDHEC	No Objection Received
SCDHEC OCRM	No Objection Received
SCDNR	June 3, 2019
SCPRT	June 6, 2019

Table 6.4 Agency Concurrence Tracking (Continued)

Agency	Date of Concurrence
Permitting Timetable and Agency Milestones	
USACE	September 13, 2019
USCG	September 5, 2019
USEPA	August 21, 2019
USFWS	August 20, 2019
NOAA Fisheries	September 3, 2019
NPS	October 9, 2019
SCDAH	August 21, 2019
SCDHEC	No Objection Received
SCDHEC OCRM	No Objection Received
SCDNR	August 22, 2019
SCPRT	June 6, 2019
Proposed Reasonable Alternatives	
USACE	March 27, 2020
USCG	March 26, 2020
USEPA	April 8, 2020
USFWS	March 16, 2020
NOAA Fisheries	March 23, 2020
NPS	April 6, 2020
SCDAH	April 2, 2020
SCDHEC	No Objection Received
SCDHEC OCRM	No Objection Received
SCDNR	March 19, 2020
SCPRT	April 6, 2020
Recommended Preferred Alternative	
USACE	June 19, 2020
USCG	June 8, 2020
USEPA	June 26, 2020
USFWS	June 8, 2020
NOAA Fisheries	June 12, 2020
NPS	June 18, 2020
SCDAH	June 5, 2020
SCDHEC	No Objection Received
SCDHEC OCRM	No Objection Received
SCDNR	June 8, 2020
SCPRT	June 24, 2020

6.2 What are the Goals and Objectives of Public Involvement?

The public involvement effort is intended to establish and maintain communication between the community, **stakeholders**, SCDOT and FHWA. These lines of communication allow participants to express any issues or concerns regarding the I-526 LCC WEST project. Specific public involvement goals are outlined in Figure 6.1.

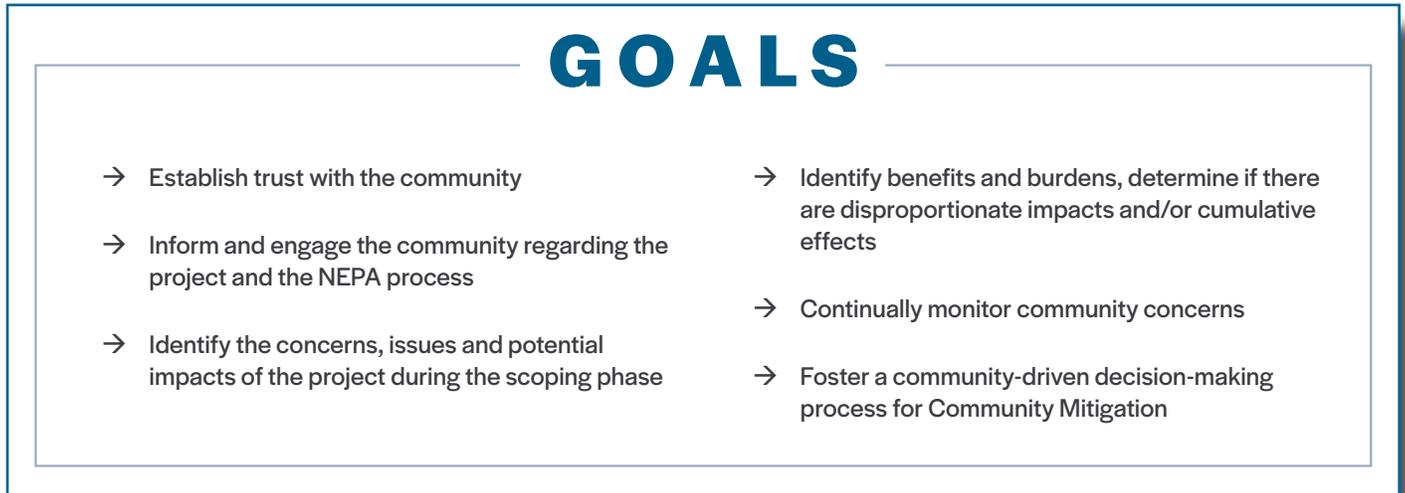


Figure 6.1 Public Involvement Goals

The I-526 LCC WEST Public Involvement Plan (PIP) (Appendix U) details strategies and tools used so members of the public receive key information about the project and have opportunities to provide meaningful input on decisions that will affect their community. It was developed to be consistent with public involvement requirements under the National Environmental Policy Act (NEPA), Title VI of the Civil Rights Act, Executive Order 12898 – Environmental Justice (EJ), and other federal regulations. The PIP outlines methods to engage all segments of the public with intensive outreach focused on residents, small neighborhood businesses, special populations (e.g., low-income and minority neighborhoods), and other stakeholders in and around the proposed project area. It is a living document and is updated regularly as the project progresses.

The EJ Outreach Strategy (Appendix X) provides a detailed action plan for reaching impacted EJ neighborhoods and areas.

6.3 How is the Public Engaged in the Proposed Project?

NEPA encourages meaningful public involvement in decisions affecting the quality of the human and natural environments. An effective public involvement process provides an open exchange of information and ideas between the public and transportation decisionmakers.

The overall objective of a public involvement process is to be proactive, provide complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement.⁶ It also provides opportunities for the agencies to solicit public comments and ideas as well as identify circumstances and

⁶ 23 CFR 450.212(a) and 450.316(b)(1)

impacts which may not have been known or anticipated by public agencies.

6.3.1 What Strategies and Tools are used to Involve the Public and Communicate Information?

Due to the diverse nature of the audiences and the scale of the potential impacts, a selection of both high-touch and low-touch strategies were implemented to educate the public and solicit appropriate feedback on the project. The key communication tools for this include:

- Community office and hotline
- Community Advisory Council
- Meetings: Public, Stakeholder, Community and Pop-up meetings
- Digital: website and social media
- Newsletters, **flyer boxes, and mailers**
- Speakers Bureau

Figure 6.2 shows an overview of the Public Involvement strategies. For a full list of strategies and tools the project team uses, refer to the Public Involvement Plan in Appendix U.

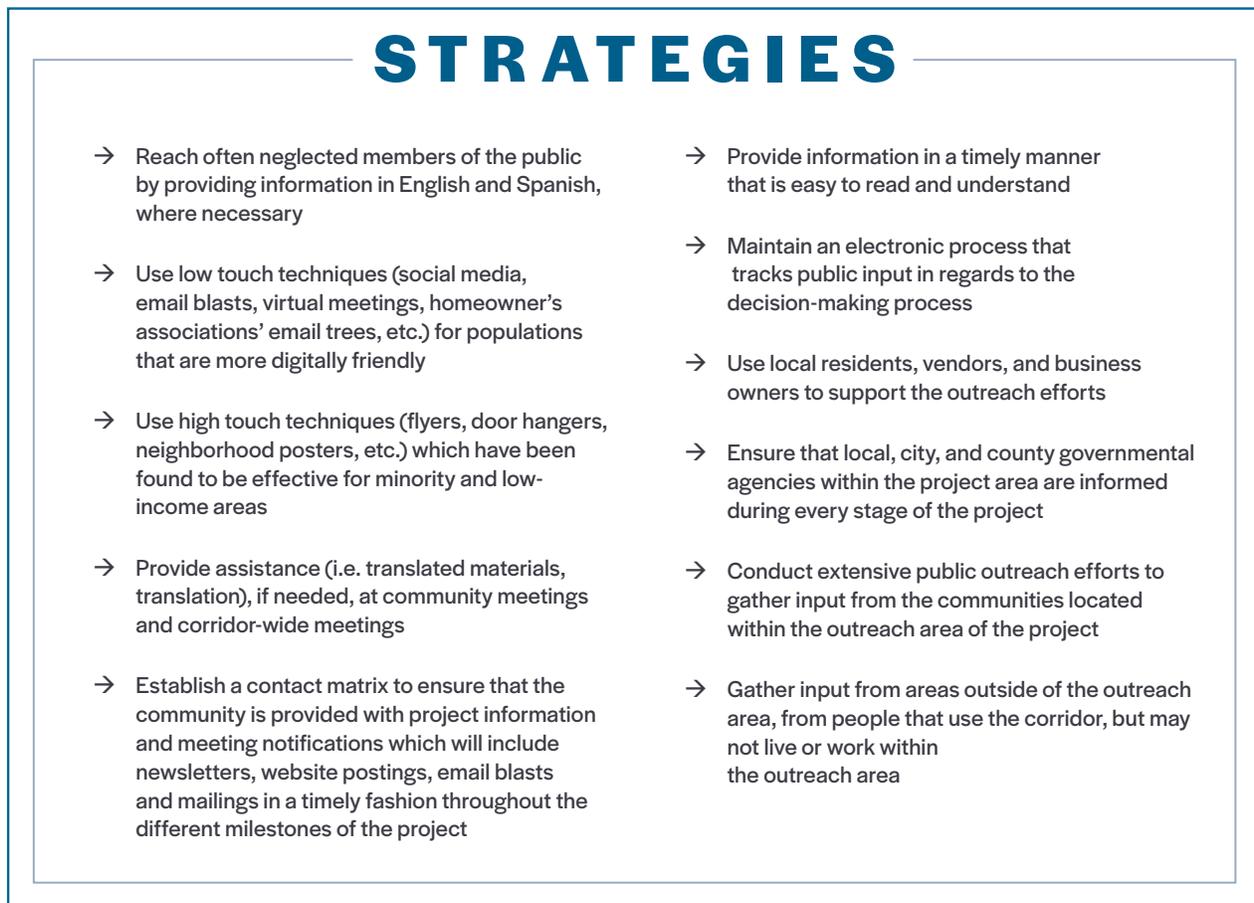


Figure 6.2 Public Involvement Strategies

6.3.1.1 Public Meetings

Public meetings were held to inform and involve the public on the project development process and gather feedback were integral to the decision-making process. Additionally, starting in 2019, all meeting materials were available at the I-526 Lowcountry Corridor Community Office during public comment periods and were advertised as an alternative method of participating. Appointments outside of regular working hours were available so members of the public could participate anytime on their schedule. Public meetings held for the project are outlined in Table 6.5.

Table 6.5 Public Meetings

Date	Type of Meeting	Meeting Goal	Number of Attendees
October 2016	Virtual Meeting	Introduce the public to the project and provide the same information provided at the community meetings	N/A
July 2016 (North Charleston); October 2016 (West Ashley)	Community Meetings	Introduce the public to the project	134
November 2019	Community Drop-ins (4 in North Charleston, 1 in West Ashley)	Meetings in potentially impacted communities to present draft Reasonable Alternatives and potential Right-of-Way impacts	188
November 2019 (virtual through January 31, 2020)	Public Information Meeting (North Charleston) with materials also available online and at the Community Office	Project scoping and introduce the purpose and need; provide an update on the alternatives analysis process and how the team arrives there (alternatives evaluation criteria); present the draft reasonable alternatives; explain the SCDOT noise policy, the right-of-way process and the community mitigation plan; receive feedback from the public on the above	223 in person; almost 6,000 page views online

Table 6.5 Public Meetings (Continued)

Date	Type of Meeting	Meeting Goal	Number of Attendees
November 2020	Community Drop-ins (3, in the potentially impacted communities)	Present the Draft EIS, Recommended Preferred Alternative, potential impacts, and the DRAFT EJ Community Mitigation Plan	Biblical House of God – 36 attendees Ferndale Community Center – 25 attendees Enoch Chapel United Methodist Church- 49 attendees
October 30, 2020 through January 15, 2021	Public Hearing (Information available in-person at the Community Office, online, and through the mail if requested)	Present and receive comments on the Draft EIS, Recommended Preferred Alternative, and the DRAFT Environmental Justice Community Mitigation Plan	13 in-person appointments 8,176 visitors online 40 viewers during the Live Virtual Comment Session on December 15, 2020
March 6, 2021	Community Open House	Solicit feedback on the Community Infrastructure Mitigation Plan and kick-off the Community History Preservation Program.	77 attendees; received 85 surveys with input on proposed infrastructure improvements within EJ communities.

6.3.1.2 Initial Community Meetings and Companion Virtual Public Meeting (Summer/Fall 2016) - Scoping Meetings

A series of eight community meetings were held during July 2016 in North Charleston. An additional community meeting was held in West Ashley in October 2016. The purpose of these meetings was to provide an opportunity for citizens to engage in small, table talks where they could comfortably share their thoughts and ideas regarding the potential I-526 improvements. A corresponding video was made available online as well as a downloadable PDF with basic project information such as study area, capacity, safety, and schedule. The meeting survey was also distributed using paid social media. Refer to Table 6.6 for the Community Meetings held in 2016.

Table 6.6 Community Meetings 2016

Date	Location	Municipality
July 18, 2016 5-7pm	Radisson Hotel	North Charleston
July 19, 2016 5-7pm	Jerry Zucker Middle School	North Charleston
July 20, 2016 5-7pm	Jerry Zucker Middle School	North Charleston
July 21, 2016 5-7pm	Alfred Williams Community Center	North Charleston
July 25, 2016 5-7pm	Alfred Williams Community Center	North Charleston
July 26, 2016 5-7pm	Danny Jones Gymnasium	North Charleston
July 27, 2016 5-7pm	Felix C. Davis Community Center	North Charleston
July 28, 2016 5-7pm	Felix C. Davis Community Center	North Charleston
October 25, 2016 5:30-7:30pm	West Ashley Advanced Magnet Middle School	West Ashley

6.3.1.3 Public and Virtual Engagement (Fall 2019) - Draft Reasonable Alternatives

Community Drop-Ins (Fall 2019)

The goal of the community drop-ins was to provide a more intimate setting for those potentially impacted by the project to learn more about those potential impacts, the tools and resources available to them (especially regarding the right-of-way process), and the project schedule. Therefore, it was important to provide a high-touch opportunity to address those concerns and points of discrepancy. Interactive stations included the virtual public meeting overview video, printed maps showing potential right-of-way impacts, and a property “look up” station, among others.

A series of five community drop-in meetings and one public information meeting were held in November 2019. An accompanying virtual public meeting was active through the end of January 2020.

Meeting locations were chosen specifically because of their convenience and proximity to the EJ neighborhoods and I-526 LCC WEST study area. A total of 188 people attended the community drop-ins.

Public Information Meeting and Online Materials (Fall 2019)

The purpose of the public information meetings (in-person and **online materials**) was to provide the public with an opportunity to offer input on the alternatives evaluation process, including the full range of alternatives, the evaluation criteria and the draft reasonable alternatives. Interactive smartboards were used to display the draft reasonable alternatives and a station was dedicated to address searches/right-of way concerns.

All materials from the in-person meeting were added to the website and made available to the public during the comment period, and thereafter. Additionally, a video “tour guide,” featuring open captions, provided additional information in each section to supplement the PDF materials. These materials were made available online in both English and Spanish.

Complementary public meeting materials were available online which had almost 6,000 views during the public comment period.

A total of 553 comments were received during the formal comment period across all comment methods (Community Drop-Ins, in-person Public Information Meeting, **Online Comment form**, Project Hotline, Email, Community Office and traditional mail) associated with these fall 2019 outreach efforts, with approximately half from an online method. **Refer to Table 6.7 for the community and public information meetings held in the fall of 2019. See Section 6.5.1 Comments Summary for additional information on the comments received during the formal comment period associated with these meetings.**

Table 6.7 Community and Public Information Meetings 2019

Date	Type	Location	Municipality
11/9/2019 2-5pm	Community	Biblical House of God	North Charleston
11/13/2019 5-8pm	Community	Ferndale Community Center	North Charleston
11/14/2019 5-8pm	Community	Life Changers Covenant Ministries	North Charleston
11/18/2019 5-8pm	Community	Danny Jones Community Center	North Charleston
11/19/2019 5-8pm	Community	Citadel Mall	West Ashley
11/21/2019 11am-7pm	Public Scoping	Charleston Area Convention Center	North Charleston

6.3.1.4 Public Hearing (Late 2020)

The Public Hearing comment period for the I-526 Lowcountry Corridor WEST project ran from October 30, 2020 to January 15, 2021. Materials were made available to the public in a variety of methods including on the project website, at the I-526 LCC Community Office (located within the study area at 5627 Rivers Avenue), and by mail, upon request. Additionally, the public could engage and ask questions of the project team by live chatting with a project team member on the project website, calling the project hotline, visiting the community office (during normal office hours or by appointment anytime), or emailing the project email address. During the Public Hearing, the Draft EIS, Recommended Preferred Alternative, and the DRAFT EJ Community Mitigation Plan were presented for public feedback.

During the Public Hearing comment period, the webpage for the Public Hearing materials had 8,176 visitors. Additionally, 13 one-on-one Public Hearing appointments were made. A live, virtual Comment Session was held Tuesday, December 15, 2020 from 6:00pm to 8:00pm, which was viewed by 40 people. A total of 234 comments were received during the comment period. See Section 6.5.2 Public Hearing Comments for more information on the types of comments received during the Public Hearing comment period.

6.3.1.5 Meeting Notifications

Public meetings were advertised through the methods discussed in this section. Additional methods were added to solicit feedback or were removed if unnecessary. For a detailed description of all meeting summaries and advertising methods, view the accompanying meeting plans or advertisements summaries in Appendix V.

Postcards and Doorhangers

Postcards and/or doorhangers notified surrounding neighborhoods and businesses of upcoming public or community meetings. These were distributed between one to three weeks prior to the meetings. Doorhangers were used for door-to-door distribution to notify residents and business owners located in potentially impacted EJ neighborhoods of community meetings. These neighborhoods are particularly important in regard to meeting participation.

Flyers

The I-526 Lowcountry Corridor WEST flyer box program began in mid-2019. The intent of this program is to keep citizens in and around the potentially affected areas up to date on project information, without relying on the use of technology, making it more accessible for those with limited computer/internet resources. From June 2019 through January 2021, there were more than 1,700 flyers distributed through this program. Additionally, flyers were distributed during neighborhood canvassing throughout the EJ communities leading up to the community meetings and the CIEP Workshop, as well as during May 2021, to advertise the Community Office as a resource. Flyers were also distributed in the summer of 2022 to advertise upcoming community drop-ins in the late summer and fall of 2022. These drop-in sessions were held to present new mitigation measures in the updated EJ Community Mitigation Plan.

Flyers were placed in real estate boxes (20–30) in high-pedestrian-traffic areas, such as bus stops, as well as the display stands located in community centers and businesses within the EJ neighborhoods.

Text Alerts

A text alert system was established in 2017. It was intended to be used to encourage the public to sign up for project notifications. However, it was discontinued prior to the 2019 public outreach efforts because the number of subscribers was low. Leading up to the Public Hearing and throughout the comment period, phone numbers were collected through the comment forms in order to begin to build the database again for text alerts.

Advertising

Billboards, bus wraps, digital display ads, and radio and audio streaming services were used to build awareness of the project and drive website traffic. For a full review of the advertising methods, visit the Advertising Summary in Appendix V.

Traditional Media

Media events with one-on-one interview opportunities with the project manager were held prior to each public outreach phase.

Social Media

Twitter posts and Facebook posts (paid and non-paid) and event pages were used to promote the meetings. More **information** about the additional uses of social media for the project can be found in Section 6.3.3.3.

Community Yard Signs

Forty yard signs were distributed to CAC members within each of the four EJ neighborhoods and the five schools within the study area. The purpose of these yard signs was to encourage more engagement in the project from these four neighborhoods. Additionally, yards signs were placed in the surrounding neighborhoods before each of the community meetings and CIEP workshop to advertise the events.

6.3.2 Meeting Materials Used

The following meeting materials were provided at all public and community meetings. See Appendix U for all meeting materials.

- Project Sign-In Sheet
- Display Boards
- Project Area Maps
- Project Handout
- Project Comment Form

Meeting materials were tailored for each meeting and included:

- Videos on topics such as noise analysis, the right-of-way process, project overview/status update (Fall 2019 Community, Public and Virtual Meetings; Fall 2020 Public Hearing)
- Interactive smartboard displays for alternatives and other area projects (Fall 2019 Public Information Meeting - draft Reasonable Alternatives and existing and committed projects)
- Noise handout (Fall 2019 Community, Public and Virtual Meetings)
- Interactive right-of-way impact maps (Fall 2019 Community and Public Information Meeting, **Fall 2020 Public Hearing**)
- 360-degree virtual room for online Public Hearing Materials
- **Live chat capability on project website to chat with the project team (Fall 2020 Public Hearing)**
- **“Fly-through” visualization video for the Recommended Preferred Alternative and associated interchanges (Fall 2020 Public Hearing)**
- **Handout and display boards with information on the Community Infrastructure Enhancement Plan (Spring 2021 Community Improvements Open House)**
- **Handout and display boards with updates to EJ Community Mitigation Plan (Late Summer/Fall 2022 Community Drop-Ins)**

6.3.3 What Other Sources of Information are Available to the Public?

6.3.3.1 Website

A project website, www.526lowcountrycorridor.com, is used to disseminate project information, provide a schedule of events and studies, and solicit public input, refer to Figure 6.3. The site includes English and Spanish materials and includes features such as an online **comment** form, a location for **previous newsletters and presentations**, and a repository for technical documents and reports. A section titled “Community Commitments” was added in Fall 2020 to provide a central repository for all information related to the environmental justice community mitigation ideas. This section includes a forum for the potentially impacted communities to share ideas and concerns with their peers.

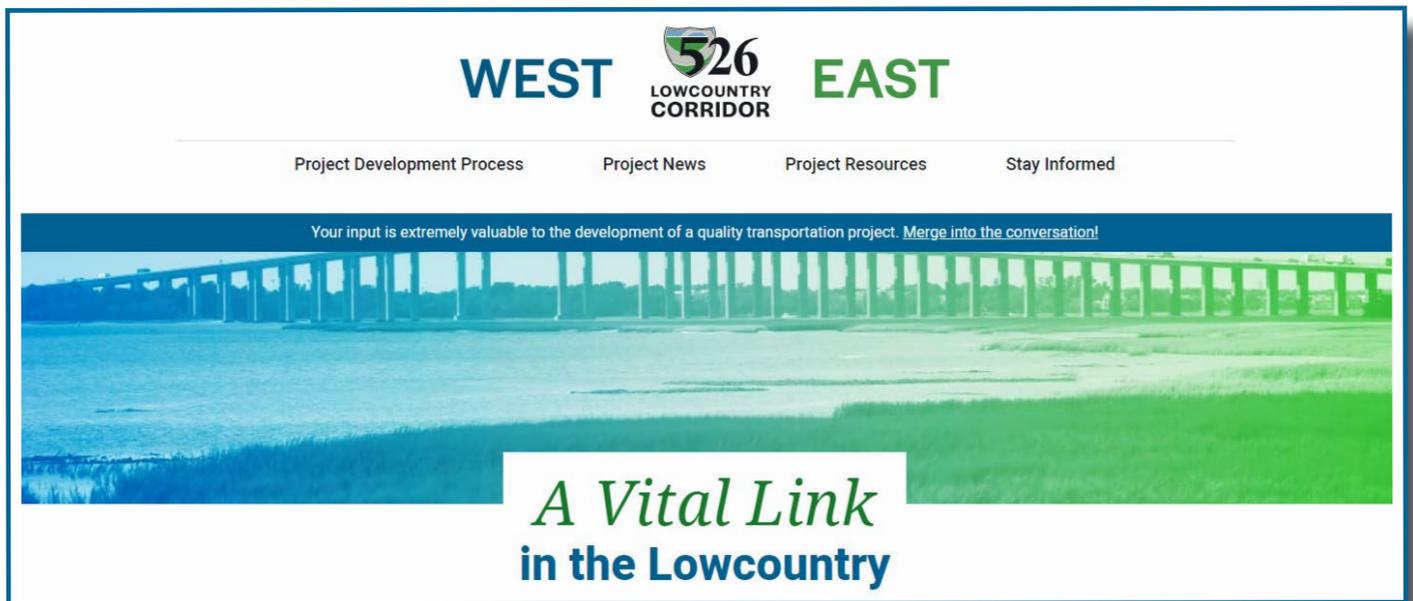


Figure 6.3 Project Website - Home Page (May 20, 2019)

6.3.3.2 Hotline

A hotline, with **texting capabilities**, provides the status of the project and current engagement opportunities. The hotline is **managed** by Community Office staff during normal business hours.

6.3.3.3 Social Media

Project-specific Facebook and Twitter accounts are used to provide a stream of regular project updates, including photos of the project team and current activities to promote upcoming events and engagement opportunities. This feed also includes educational campaigns about the project development process, transportation, and other topics.

6.3.3.4 Newsletters

Newsletters notified the community of upcoming project milestones, project updates, and opportunities for engagement for both the I-526 LCC WEST and EAST projects. Even though these are separate and distinct projects, **there is a substantial overlap in stakeholders and interested parties for both projects.** All newsletters reside on the project website, in both English and Spanish, and were emailed to stakeholders and individuals that have signed up to be included in the project database.

Newsletters are distributed to property owners within the public outreach area via mail and/or email.

6.3.3.5 Speakers Bureau

Presentations are provided to local groups such as neighborhood associations and business organizations about the project, providing answers to their specific questions and informing them of other ways to stay engaged with the project (upcoming meetings, website, social media, etc.). **Table 6.8 lists speakers bureau presentations provided through June 2022.**

Table 6.8 Speakers Bureau Presentations

Date	Organization	Venue	Attendance
8/10/2017	Charleston Chamber of Commerce North	Crowne Plaza Airport	40
9/26/2017	Charleston Chamber of Commerce Central	Doubletree by Hilton	40
10/4/2017	Mt. Pleasant Rotary Club	Harbor Breeze Restaurant	40
10/23/2017	American Subcontractors Association Meeting	Town & Country Inn - West Ashley	100
1/18/2018	Charleston Chapter Society of Military Engineers	Ashley Venue - West Ashley	50
2/7/2018	Summerville Rotary Club	Sticky Fingers - Summerville	75
5/16/2018	Highland Terrace, Liberty Hall, and Russelldale Communities (Councilwoman Dorothy William's Community Meeting)	City of North Charleston - City Hall	99
8/7/2018	Pile Driver Contractors Association of South Carolina	Town & Country Inn - West Ashley	75
10/12/2018	American Society of Civil Engineers - Citadel	Citadel Campus	40
10/26/2018	International Right-of-Way Association	Charleston Harbor Resort & Marina	100
3/18/2019	Park Circle Community Meeting (Councilman Bob King)	Felix C. Davis Community Center	60
4/16/2019	North Charleston Area Top Real Estate Producers	Oscar's Restaurant	50
7/25/2019	Joint Base Charleston Partnership Council	Joint Base Weapons Station	Approx. 50
7/29/2019	North Charleston Rotary Club	Hilton Garden Inn - Airport	Approx. 75
8/27/2019	Berkeley County Continuing Education Course	Berkeley County Building	Approx. 50
9/19/2019	Charleston Motor Carriers Association	Doubletree by Hilton	Approx. 75
1/10/2020	Ashley Harbor Neighborhood	West Ashley Middle School	79

Date	Organization	Venue	Attendance
1/23/2020	Joint Base Charleston Commanders Meeting	Joint Base Weapons Station	40
1/27/2020	Providence Commons HOA	West Ashley High School Band Room	40
2/3/2020	Ferndale Community Meeting	Ferndale Community Center	14
2/5/2020	Charleston Metro Chamber of Commerce Champion Advocates: Demystifying SCDOT	The Workshop	30
2/25/2020	The Citadel: Engineering Department	The Citadel, Engineering Building	50
3/5/2020	Charleston Trident Association of Realtors, Investment Division	Crowne Plaza	60
6/23/2020	National Association of Women in Construction	Virtual	30
8/14/2020	SC Engineering Conference	Virtual	100
9/17/2020	City of North Charleston, Council Meeting	North Charleston Coliseum	60
10/1/2020	Charleston County Council Meeting	Charleston County Council Chambers	40
12/16/2020	Interdenominational Ministerial Alliance	Virtual	20
12/16/2020	Charleston Regional Chamber of Commerce, Policy Committee	Virtual	25
1/10/2021	Charleston Area Transportation Study (CHATS) Policy Committee Meeting	Virtual	45
2/16/2021	Originsc.org Board Meeting	Virtual	Unknown
3/10/2021	Society of American Military Engineers Charleston Post Meeting	Virtual	Unknown
5/12/2021	WTS International Conference	Virtual	Unknown
8/16/2021	Joint Base Charleston Commanders Meeting	Joint Base Weapons Station	20 In-Person/ Unknown Virtual
8/26/2021	Maritime Association for SC	North Charleston In-Person/Virtual	Unknown
10/15/2021	International Right-of-Way Association	Charleston Harbor Resort & Marina	Unknown
10/28/2021	Joint Base Charleston Commanders Meeting	Weapons Station	50
11/18/2021	Charleston Motor Carriers Association	Doubletree Hotel	50
11/30/2021	USDOT MSA WITI Webinar	Virtual	75
12/7/2021	ACEC – SCDOT Annual Meeting	Columbia Convention Center	250
12/13/2021	Trident CEO Council Meeting	Virtual Panel Discussion on Infrastructure in Metro Charleston Region	40
2/1/2022	Harbour Club Business Breakfast Series	Harbour Club	100

Date	Organization	Venue	Attendance
3/15/2022	Charleston Top Producers Luncheon	Harbour Club	100
4/19/2022	GIS T / FHWA Elevating Equity Workshop	Charleston Convention Center	100
4/22/2022	Women in Industry Event	Trident Technical College	75
5/2/2022	ACEC – PA Leaders Conference	Charleston Place Hotel	50
5/12/2022	Customs Brokers & Freight Carriers Association	Doubletree Hilton	Unknown
5/16/2022	CHATS Policy Committee Meeting	BCDCOG Office	Approx. 60
6/10/2022	SC Engineering Conference	Charleston Convention Center	100

6.3.3.6 Community Office

The I-526 LCC Community Office, located at 5627 Rivers Avenue in the project study area, provides the opportunity for the public to meet one-on-one with the project team and connect with resource specialists such as right-of-way relocation experts and community liaisons. The public can come to the office for information about the project and how it may impact their community, as well as ask specific questions or share concerns. Since the Community Office opened in 2019, all public meeting materials have been on display and available to the public at the Community Office throughout the comment periods, and beyond. The office was advertised as an alternative way for the public to view materials, discuss materials with staff, and provide comments at a time most convenient for the interested party.

Due to public health concerns in March 2020, the Community Office closed its door to walk-in appointments. However, the office was still open for private appointments and the hotline was still available. The Community Office reopened to walk-in appointments in October 2020.

SCDOT will continue to operate and maintain a Community Office for the remainder of the project development phase and throughout the final design and right-of-way acquisition phases of the project. The Community Office will continue to be staffed with a full-time Office Manager, Community Liaisons/Outreach Specialists, and part-time Right-of-Way Specialists who will be available to provide community residents with real-time project, relocation, and property acquisition information and assistance. After the FEIS-ROD is approved, the Community Office will serve as a location for residents to receive information on the proposed mitigation and serve as the meeting place for the Project Oversight Committee and community advocacy groups. The Community Project Office will remain in operation in close proximity of the impacted EJ communities until the completion of the project and associated mitigation components.

6.3.4 How Does FHWA and SCDOT Reach Out to Traditionally Under-Represented Communities?

6.3.4.1 Limited English Proficiency Communities

The primary non-English-language within the community is Spanish. As such, nearly all project materials are translated into Spanish. This includes the project website, quarterly project newsletters, Community Office flyers, and Public Information Meeting **and Public Hearing** materials. Further, the Community Drop-Ins, Public Information Meetings, and Public Hearing were staffed with English/Spanish translators. At the Community Office, any visitors requiring Spanish translation are provided with an informational card to request a translator from SCDOT. Facebook allows for the user to translate text posts into Spanish. **Leading up to the Public Hearing, additional outreach specifically targeting the local Hispanic community was conducted. This included participation in Hispanic radio shows, Facebook live events, engagement at Hispanic places of worship, and door-to-door outreach.**

Considerable efforts have been made to ensure meaningful engagement for limited English proficiency (LEP) communities.

6.3.4.2 Community Office

Establishing connections within the community and with resources that can best serve the community's needs are not only critical components of an effective EJ Outreach Strategy, they also support the delivery of a comprehensive Community Mitigation Plan. To foster the growth of these relationships, SCDOT opened a Community Office in Gas Lite Square, a shopping complex just north of the Liberty Park neighborhood in the fall of 2019 ahead of the public meetings. The Community Office is staffed with an office manager and subject matter experts such as right-of-way **specialists** and community liaisons.

Due to public health concerns in March 2020, the Community Office closed its door to walk-in appointments. However, the office was still open for private appointments and the hotline was still available. The Community Office reopened to walk-in appointments in October 2020.

While any member of the public is welcomed and encouraged to visit the Community Office, the EJ neighborhoods nearby of Ferndale, Highland Terrace, Liberty Park, Russelldale, and the surrounding potentially impacted areas are the target audiences for these services. Additionally, the office is equipped with the project materials from the fall 2019 public engagement **and the 2020 Public Hearing** (boards, handouts, etc.), as well as additional project collateral developed for the public (including some from adjacent projects such as the Mark Clark Extension).

These residents are encouraged to visit the Community Office to ask questions about relocation; construction; renters, homeowners, and business rights; and potential impacts. Additionally, the Community Office is used regularly for community events, such as open houses and workshops, as well as meetings for the Community Advisory Council, media, agencies, and project team. **The Community Office will also be utilized in the implementation of the Community Mitigation Plan and will remain in operation through the right-of-way acquisition phase to serve as a location for residents to receive information on the proposed mitigation and as a meeting place for the Project Oversight Committee and community advocacy group.**

The public may visit the office during normal operating hours or by scheduling an appointment. Right-of-way specialists and other resources are available to answer project-related questions by appointment.

6.3.4.3 Community Advisory Council

The Community Advisory Council (CAC) was formed to provide input on minimizing project impacts, give insight on best ways to provide outreach in their communities, and help develop/refine the I-526 LCC WEST EJ Community Mitigation Plan. CAC members provide input on actions to minimize and mitigate impacts and help distribute project updates and meeting notifications. The project team queried community leaders, neighborhood associations, organizations active in the community, and local churches to assist with identifying community residents that might be interested in becoming involved in the CAC. The goal was to identify multiple (three to five) community members from each of the potentially impacted EJ neighborhoods of Russelldale, Ferndale, Liberty Park and Highland Terrace to serve on the CAC.

The purpose of the CAC is to help advise the project team on the communities' needs, the full extent of project impacts in the community, and to provide input on the most effective ways for the project team to be accessible to the community.

The CAC assisted in the formulation of community mitigation options that were presented to the impacted EJ neighborhood residents for consideration. The CAC will transition to a Project Oversight Committee (POC) during implementation of the Community Mitigation Plan to ensure the commitments outlined are implemented in accordance with intent of the plan. CAC meeting presentations and summaries are included in Appendix U.

Table 6.9 lists the CAC meetings held through June 2022.

Table 6.9 Community Advocacy Council (CAC) Meetings

Date	CAC Meeting Number	Meeting Topics
9/20/2019	1	Project overview, schedule, intro to Environmental Justice, CAC purpose
11/1/2019	2	Rules of engagement, Social Needs Assessment, preview of Community Drop-In Meeting materials
12/7/2019	3	Finalize rules of engagement, recap of November outreach, Social Needs Assessment results, relocation/right-of-way information, Open Mic
1/4/2020	4	Open Mic, CAC Roles/Responsibilities, vision statement activity, recreation facilities mitigation
2/8/2020	5	Open Mic, project impacts, vision statement, recreation facilities mitigation, outreach
3/7/2020	6	Project impacts, mitigation case studies, DRAFT EJ Community Mitigation Plan work sessions: <ol style="list-style-type: none"> 1. Community Cohesion 2. Community Enhancement 3. Community Preservation 4. Community Revitalization
4/18/2020	7	Open Mic, results from mitigation work session, recreational facilities, replacement housing, outreach

Date	CAC Meeting Number	Meeting Topics
5/2/2020	8	Open Mic, layout for replacement recreational facilities, functions/ services of recreational facilities, coordination efforts with local organizations, outreach
6/6/2020	9	Open Mic, FHWA Peer Exchange report, City of North Charleston report, recreational facility conceptual plans, draft mitigation plan framework, engaging with local officials, community livability plan, outreach
7/11/2020	10	Open Mic, Technical Review Committee report, recreational facility conceptual plans, draft mitigation plan framework, CAC EJ advocacy training, Livability plan scope, outreach in a public health crisis
8/29/2020	11	Neighborhood Update, 1-year CAC recap, community center and pocket park update, recreational program survey, project schedule/milestone review, DEIS EJ project commitments, outreach
9/19/2020	12	Neighborhood Update, Russelldale pocket park recap, Draft Community Mitigation Plan, review of CAC input thus far, draft employment/education mitigation initiatives, mitigation timeline, outreach
10/3/2020	13	Neighborhood Update, education and employment mitigation subcommittee, community leader panel, EJ neighborhood impact update, outreach
11/7/2020	14	Neighborhood Update, EIS and mitigation activity, review of CAC feedback after leadership panel, review of virtual public hearing materials, outreach
1/9/2021	15	Neighborhood Update, EJ Community Mitigation Plan update, summary of recent EJ outreach, Draft EJ Community Mitigation Plan comment review, update to EJ outreach strategy, future outreach
3/6/2021	16	Neighborhood Update, CIEP recommendations and Open House overview, affordable housing update, Community History Preservation Program, funding opportunities, outreach
4/17/2021	17	Neighborhood Update, CIEP Open House results and recommendations, SCDOT response to EJ Community Mitigation Plan letter from the CAC, updated EJ Community Mitigation Plan, outreach
9/18/2021	18	Neighborhood update, Final EJ Mitigation Plan components, proposed mitigation schedule, final thoughts on Mitigation Plan components, Project Oversight Committee (POC) recruitment, outreach update, project schedule and milestone review, community office update
10/9/2021	19	Neighborhood update, commitment revisions, Russelldale pocket park update, I-526 LCC EAST project update, CAC Best Practices review survey, outreach update, project schedule and milestone review
5/7/2022	20	Project status update, EJ Community Mitigation Plan updates, Community Mitigation Implementation schedule, Community Office update
6/4/2022	21	Project schedule/Milestone review, Enhanced EJ Community Mitigation Plan, EJ Community Mitigation outreach, Community Office update

6.3.4.4 Pop-Up and Community Meetings

As part of the EJ outreach efforts, a series of pop-up meetings were held. A pop-up meeting is a mobile booth set up in various locations to engage residents who frequent the area. They can be held at any time of the day thereby allowing hosts to target busy periods, such as evenings or weekends, to increase local participation and overall facetime in the community. Twelve pop-up meetings were held between July and November 2019 to engage with impacted communities and gain a better understanding of community needs. For a full list of the pop-up events, see Appendix W.

Door-to-door canvassing was done to alert the potentially impacted EJ communities with information about upcoming ways to participate such as Community Drop-Ins and the Community Office Open House.

While the Project Team was unable to conduct pop-up events or door-to-door canvassing leading up to the Public Hearing during the summer and fall of 2020 due to public health concerns, the community liaisons engaged with the community through non-project related community events, such as:

- Senior food and care package distribution, in partnership with the Lowcountry Street Grocery
- Back-to-School giveaway in partnership with Origin SC, Lowcountry Street Grocery, The A Phillip Randolph Institute, and the Humanities Foundation
- Palmetto Community Action Partnership (CAP) drive-up event at Joshua Baptist Church in North Charleston
- Pre-Thanksgiving meal drive-thru giveaway sponsored by Molina Healthcare
- Spanish Worship Service at Enoch Chapel United Methodist Church
- Day of Thanks and Giving Turkey Giveaway in partnership with Healthy Blue SC and local radio stations
- Drive through food giveaway sponsored by Harvest Pointe Church and the Lowcountry Food Bank of Charleston
- SCDHEC COVID-19 Testing and Food Distribution at the Ferndale Community Center Parking Lot

A series of community meetings were held within the potentially impacted EJ neighborhoods leading up to each major engagement milestone – project scoping, public information meeting, and public hearing. In the fall of 2016, nine community meetings were held for project scoping. In the fall of 2019, four meetings were held within the potentially impacted communities to share the potential impacts and the draft reasonable alternatives, and to request input. In the fall of 2020, three meetings occurred at Enoch Chapel (November 4, 2020), Biblical House of God (November 6, 2020), and the Ferndale Community Center (November 7, 2020). The purpose of these meetings was to introduce the EJ neighborhoods to the DRAFT EJ Community Mitigation Plan and potential impacts ahead of the official Public Hearing and ask for feedback.

An Open House was held on March 6, 2021 at the Ferndale Community Center to solicit feedback from residents living in the EJ communities on specific components within the Community Infrastructure Enhancements Plan (CIEP). The CIEP is a component of the EJ Community Mitigation Plan and identifies community infrastructure needs within Ferndale, Highland Terrace, Liberty Park, and Russeldale. Seventy-seven people attended the meeting. A survey was used to obtain feedback on the CIEP and was posted on the project website, distributed at the open house, and mailed out to the residents in the EJ neighborhoods. The comment period for submitting surveys ran from March 6 through March 27, 2021. A total of 85 surveys were submitted via computer, mobile device, and mailed in paper copies. Eighty-nine percent of the survey respondents live in the EJ neighborhoods. See Appendix X for more information on the EJ mitigation outreach efforts including the CIEP Open House.

6.3.4.5 Additional Outreach Tools

Many of the previously mentioned tools, throughout this Chapter, identified for communicating with the public at large are also leveraged to better engage with the identified EJ communities. For instance, the Project Hotline was created specifically to make project information available verbally at any hour of the day, and to provide an opportunity for those in the EJ communities a more convenient, high-touch method to connect with the project team. Another example was the use of geographically targeted Facebook ads to promote participation by the potentially impacted neighborhoods at the Community Drop-Ins. In addition to these ads, an additional set of postcards specific to these communities was sent ahead of the Fall 2019 and Fall 2020 community meetings. The Flyer Box program was initiated to provide project materials in a non-internet-reliant method within the EJ communities. For all outreach to EJ communities, view the EJ Outreach Strategy in Appendix X.

Outreach Mapping Analysis

The project team used mapping analyses to determine the effectiveness of the overall outreach and to guide the need and location for any additional outreach, particularly in the EJ communities. This analysis focused on mapping the addresses of participants who engaged with the project and also provided their address. With the understanding that the project team attempted to engage with community members by multiple means (e.g., mailed flyers, door-to-door canvassing, website), the analysis looked to determine of those who have been reached, how many have engaged back with the project indicating a two-way engagement. Based on the mapping, the project team estimated the number of documented two-way engagements within each neighborhood through March 2021 to be:

- Highland Terrace: 51 residences (28.5% of the neighborhood)
- Liberty Park: 64 residences (38% of the neighborhood)
- Russelldale: 27 residences (20% of the neighborhood)
- Ferndale: 48 residences (17% of the neighborhood).

It is important to note that additional members of these neighborhoods have engaged with the project team; however, geographic data was not available to map those residences (e.g., full addresses not provided).

6.4 Who are the Project Stakeholders?

6.4.1 Who was Invited to Become a Project Stakeholder?

The stakeholder group is comprised of representatives from local public agencies (county staffs, municipal staffs, planning organizations, first responders, etc.); local colleges and universities; non-profits; major employers (Boeing, Joint Base Charleston, etc.); owners/operators of local small businesses; owners of substantial numbers of residential rental units in the project area; special interest groups (Charleston Moves, National Action Network, etc.); and some neighborhood representatives (see Appendix Y).

The purpose of this group was to provide a forum where the unique concerns and potential impacts to these businesses could be voiced during the project development process.

The stakeholder's role is to provide information and concerns to the project team and to share project information with their constituencies and neighbors. Stakeholders were invited to participate in the stakeholder group through an official letter.

In October 2016, more than 190 small business owners within the study area were invited to participate in a Small Business Stakeholder Group for the project. In an effort to expand participation by these small business owners, a door-to-door outreach initiative was performed at the following six interchanges within the project study area: Rivers Avenue, International Boulevard, Montague Avenue, Dorchester Road, Leeds Avenue, and Paul Cantrell Boulevard/Glenn McConnell Parkway. Based on the small number of participants (of the 23 who indicated interest, only four participants from three businesses attended), the Small Business Stakeholder Group was combined with the regular project stakeholder group.

6.4.1.1 How are Stakeholder Meetings Held?

The stakeholder group meets two to three times per year over the life of the project. Participants are provided a project update and asked to share information and concerns relevant to the project. A moderator captures the comments of the group and presents the findings to the rest of the project team for inclusion in the decision-making process. Stakeholder presentations are posted to the website for the public at large. A full list of the stakeholder meetings held is available in Appendix Y.

6.4.2 How are Governments and Leadership Involved?

Local, state, and federal elected officials are kept up to date regarding projects occurring in their district. Their participation in the information-sharing process is important to the success of the project. Specific briefings are held, and/or notices issued, prior to public meetings to highlight what is to be presented to their constituents. The frequency of the meetings and the amount of time prior to the meeting they are briefed is dependent on their level of potential impacts by the project. As the project progresses through the mitigation development, an increased briefing schedule will be developed, especially for the local governments impacted. For the fall 2019 public outreach efforts, specific briefings were held with each Mayor at least a month ahead of the public information meeting. An elected officials day in which all Charleston regional elected officials (local, state, federal) was scheduled approximately two weeks ahead of the public information meeting. They are also invited to have representatives in the stakeholder meetings and receive the communications sent to the stakeholder group. For a list of meetings with local, state and federal elected officials, refer to Appendix Y.

6.5 How are Public and Agency Comments Incorporated into the Project?

Public and agency comments are an integral part of the project development process. Comments are accepted throughout the EIS process in a variety of ways shown in Figure 6.4. These comments are stored in a comment tracking database. Comments received through social media are not considered part of the formal comment process.

Upon entry into the public comment database, comments are categorized based on topic. Online and emailed comments were automatically sent to key members of the project team upon receipt. The project manager responds to most emails within forty-eight hours of receipt. As a rule, all comments received during a public

comment period receive a formal response. All comments and responses are documented in the comment tracking database which is available in Appendix Z.

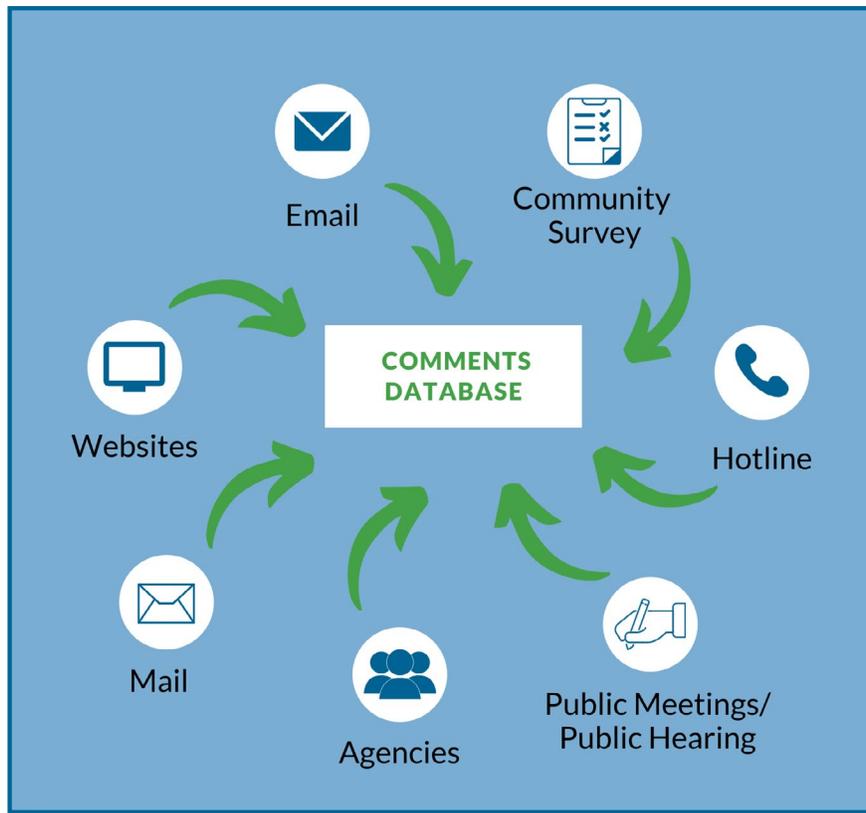


Figure 6.4 Public Comment Methods

6.5.1 Comments Summary

Comments from the 2016 community meetings and surveys include concerns about congestion, safety, dangerous movements/weavings, the distance between interchanges, environmental impacts, loss of property, and transit. Other concerns included the cost of the project, the time it would take to complete, and the real benefit once completed. Comments are representative of 1,549 individual commenters, most of which are survey respondents (1,425).

During the formal comment period for the first in-person public meeting and associated community meetings (November 2019 - January 2020), 553 comments were received and responded to. A summary of the most common topics can be found in Figure 6.5 with the full comments response database (comments and responses) in Appendix Z. The geographic breakdown of those comments can be found in Figure 6.6.

Outreach and public input was also received outside the formal public comment period. While conducting outreach in the EJ communities through pop-up meetings, community meetings, and the Community Office, the comments received from residents, their family members, and property owners focused on concern for the recurring impacts to minority neighborhoods that were previously impacted by construction of and improvements to I-26 and I-526. Most residents were interested in knowing when construction would begin, if they would lose their home, and when they have to relocate.

While comments were shared about the environmental impacts to vegetation along the project corridor, as well as the benefits of natural buffers for noise abatement, there is not an appreciable indication of concern regarding visual impacts from the project.

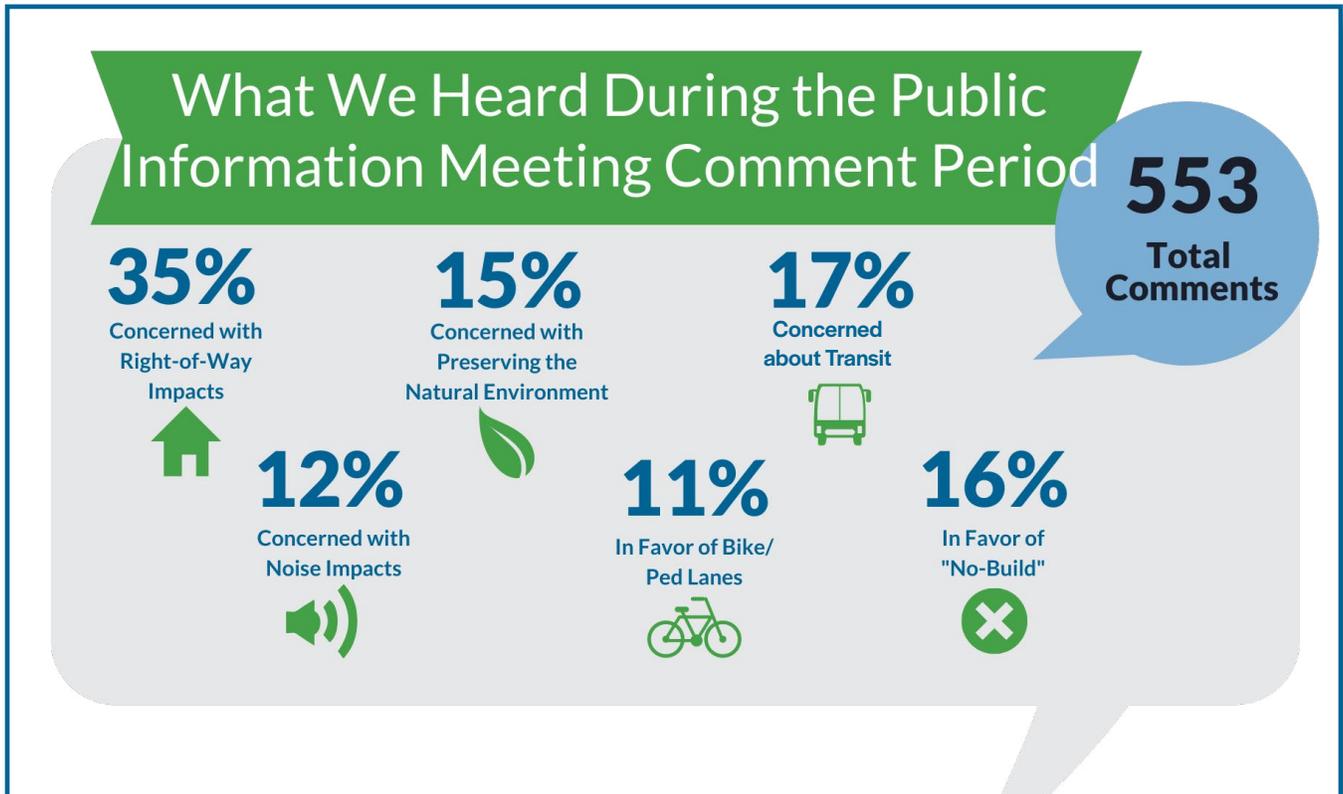


Figure 6.5 Public Comment Summary (11/7/2019 - 1/31/2020)

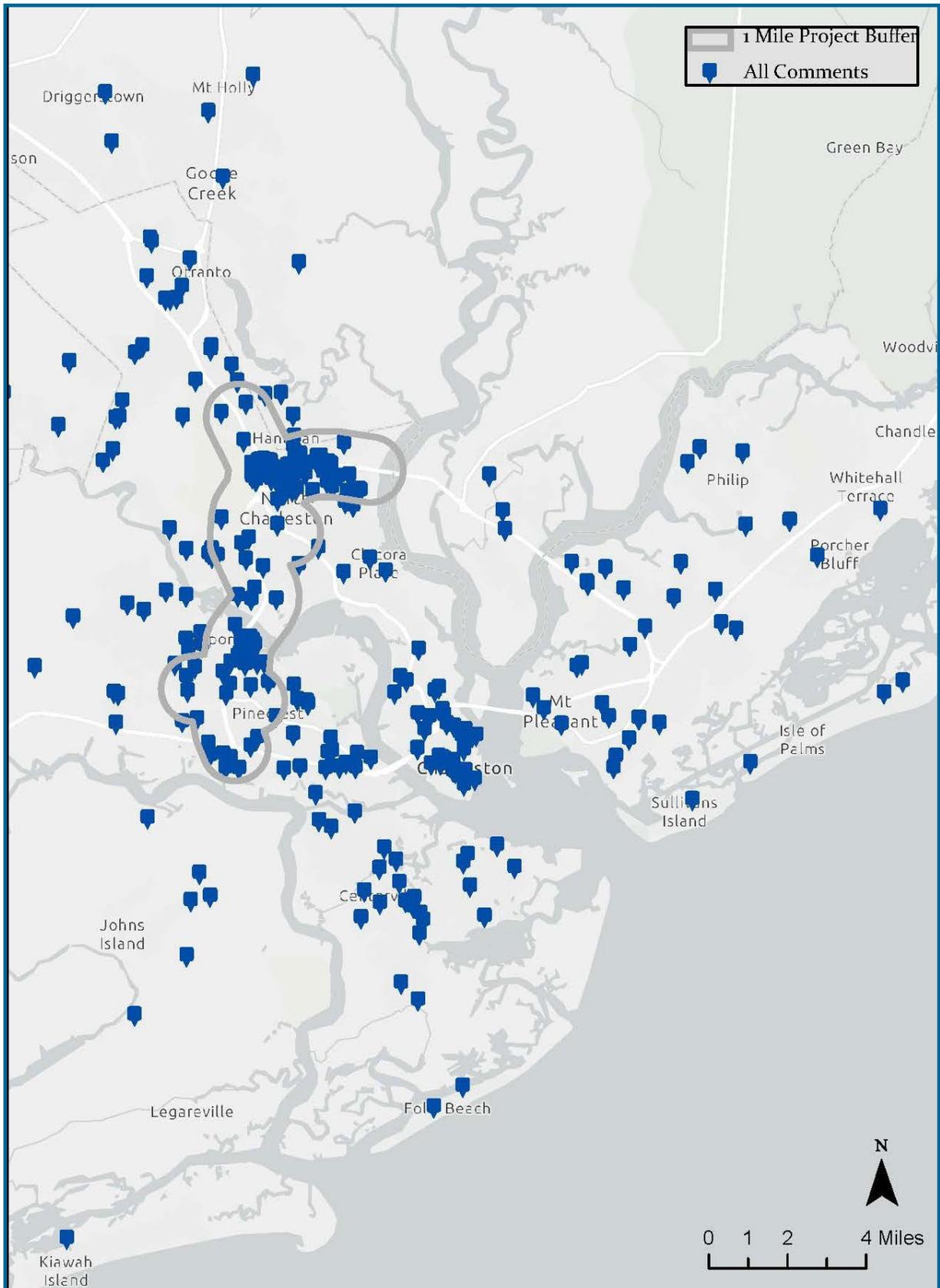


Figure 6.6 Public Comments by Geography (11/7/2019 - 1/31/2020)

6.5.2 Public Hearing Comments

The Public Hearing comment period for the I-526 Lowcountry Corridor WEST project started on October 30, 2020 until January 15, 2021. The DEIS was placed on the project website on October 30, 2020 and the Public Hearing maps and materials were placed on the website on November 12, 2020. Receiving meaningful input was the number one priority throughout the Public Hearing. SCDOT offered the following ways for the public to provide comments throughout the Public Hearing comment period:

- Mail to the Community Office and In-person Appointments at the Community Office
- Written Comment Forms at Community Drop-ins
- Website
- Email
- Project Hotline
- Environmental Justice Paper Survey
- Live Virtual Comment Session
- Live Chat on website

A total of 234 comments were received from multiple sources. General sentiments of the comments are shown in Figure 6.7:

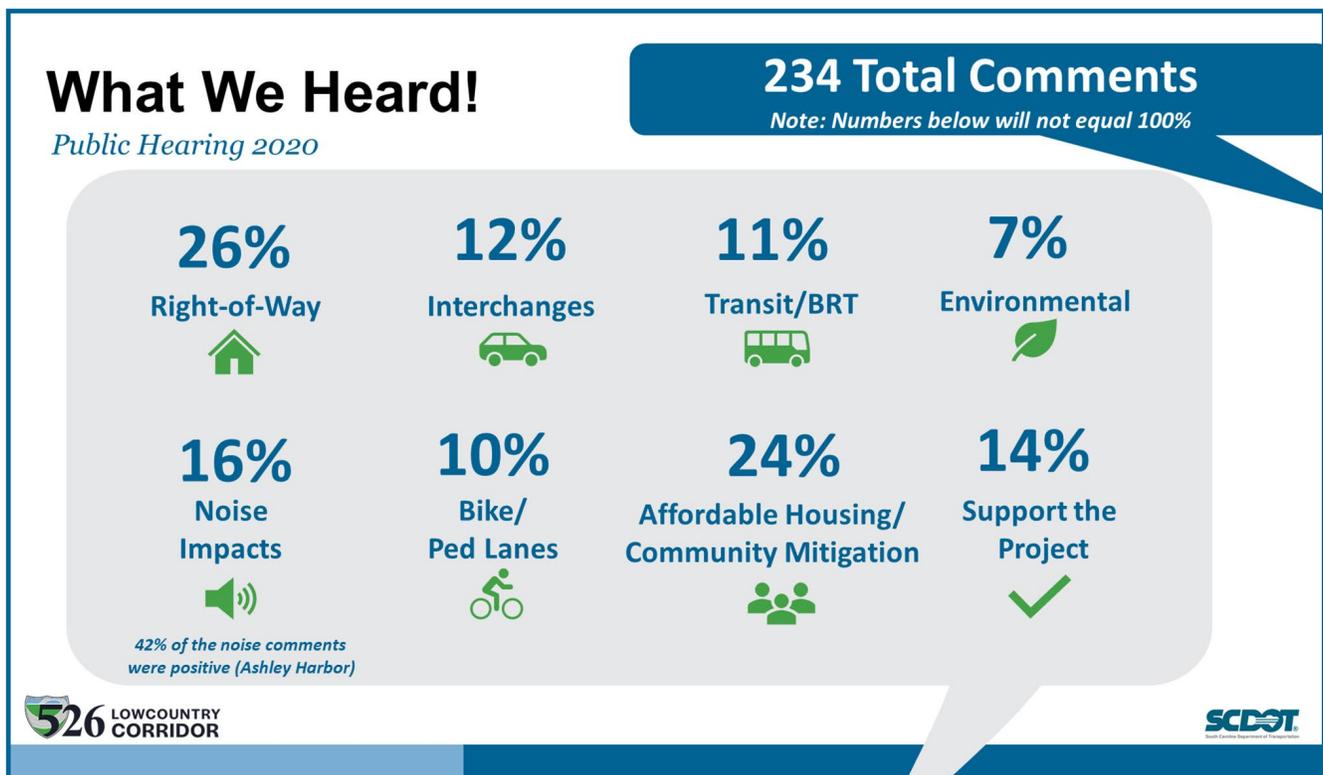


Figure 6.7: Public Hearing Comment Summary (10/30/2020 – 1/15/2021)

All comments received during the Public Hearing comment period and comment responses provided can be found in Appendix Z.

Figure 6.8 shows the locations of comments received during the public comment period. Not all comments are shown within the map extent because it is focused on the project study area.

Public Hearing Comments Mapped

Public Hearing 2020

Note: Not all comments are shown within map extent; map focus is on the Study Area

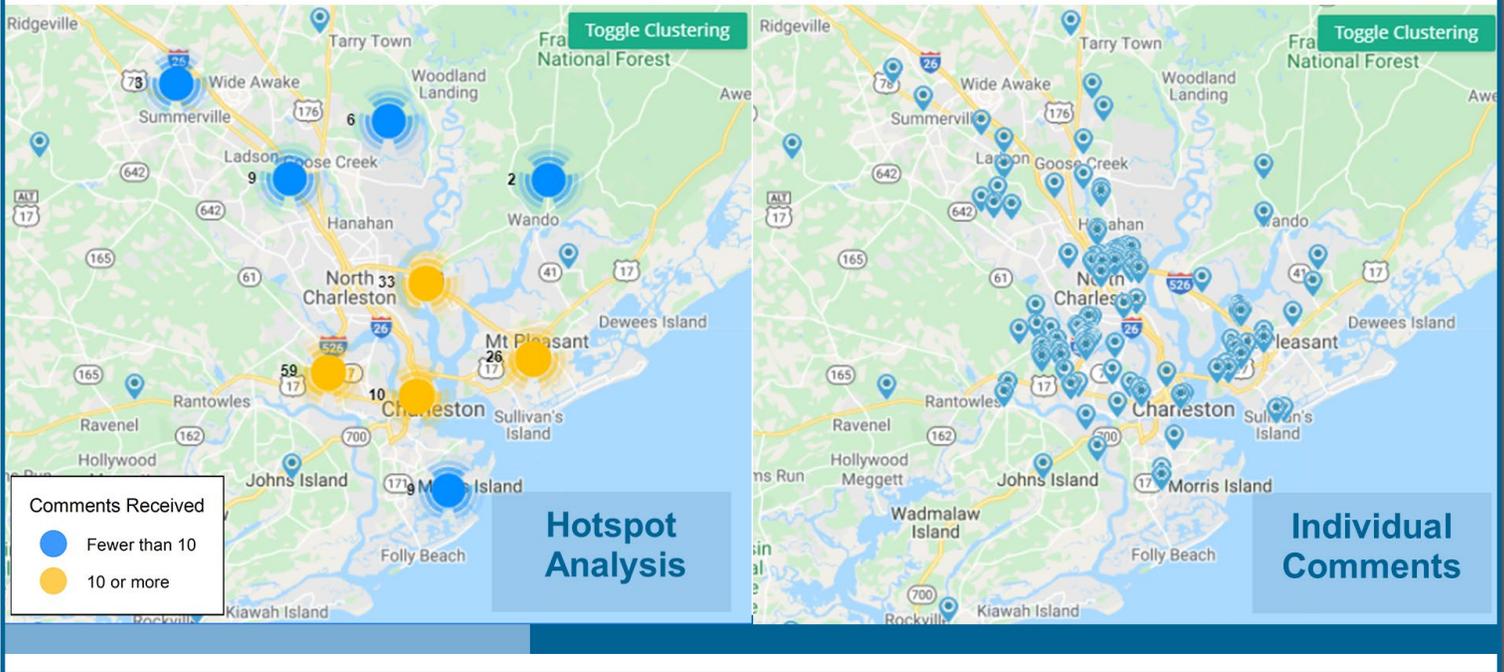


Figure 6.8: Public Hearing Comments by Geography (10/30/2020 – 1/15/2021)

6.6 What Changes were made to the Recommended Preferred Alternative since the Public Hearing?

Based on input received during the Public Hearing comment period, the following adjustments were made to the Recommended Preferred Alternative:

- A retaining wall will be constructed on the eastbound side of I-526 at Ashley Harbor to avoid impacts to the community’s private walking path.
- SCDOT will construct mitigation barriers at the following locations:
 - > along the westbound side of I-526 between the Rivers Avenue and I-26 interchanges to benefit the residents of the Liberty Park community.
 - > along the eastbound side of I-526 from the I-26 interchange to east of the CSX railroad tracks to benefit the residents of the Russelldale and Ferndale communities.
 - > along the eastbound side of I-526 and the eastbound exit ramp at the W. Montague Avenue interchange to benefit the Camps area.
- Cul-de-sacs will be constructed on the following streets that were dead-ended in the Highland Terrace and Liberty Park communities when I-526 was first constructed:
 - > Prince Street, Langston Street, Good Street, and Jury Lane in the Highland Terrace community
 - > Elder Avenue and James Bell Drive in the Liberty Park community
- Through coordination with the City of N. Charleston, improvements will be made to the Mall Drive and City Hall Lane intersection near the I-26/E. Montague Avenue interchange.

6.7 What are the Next Steps in Agency and Public Involvement?

SCDOT will continue to hold monthly agency meetings, as needed, to keep agencies informed of the status of the project and provide updates. SCDOT will continue to keep the public informed and involved in the I-526 LCC WEST project through various outreach efforts. Once the FEIS-ROD is published, the document will be available on the project website. In addition, the Community Office will continue to operate throughout the final design and right-of-way acquisition phases of the project to provide community residents with real-time project, relocation, and property acquisition information and assistance.

SCDOT will continue with various outreach efforts throughout 2022 to provide opportunities to present and obtain feedback on new community mitigation commitments from impacted EJ communities. These planned events and programs are outlined in the EJ Community Mitigation Plan (Appendix H) with more details provided in the EJ Outreach Strategy (Appendix X).

During construction, a public information strategy will be implemented to notify the public of periods when construction is scheduled to take place, potential impacts to traffic operations, planned construction work hours, and alternate routes where applicable. Construction signs will be used to notify motorists about construction activities and changes in traffic patterns, such as detours.

Name & Title	Project Role	Highest Education/Degree	Years of Experience
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Federal Highway Administration (FHWA) - Lead Agency

Emily Lawton Division Administrator	EIS Approval	BS Civil Engineering	32
Yolonda Jordan* Deputy Division Administrator	EJ Coordination	BS Business Administration	25
Shane Belcher Lead Environmental Specialist	NEPA Lead/EIS Review	BS Environmental Science	24
Pamela Foster* Civil Rights Officer	EIS Review/EJ	Master of Business Administration	36
Rickele Gennie Operations Engineer	EIS Review	BS Civil Engineering	11
Jim Martin Major Projects Engineer	EIS Review	Master of Business Administration	33
Mark Pleasant Community Planner	EIS Review	Masters in City & Regional Planning	31
Jessica Hekter* Realty Program Manager/ Team Leader	EIS Review	BS Community & Regional Planning	19
Sandra Saint-Surin Environmental Specialist	EIS Review	BS Health Science & MA Political Science/Urban Policy & Administration	2

South Carolina Department of Transportation (SCDOT) - Lead Agency

Joy Riley, PE, PMP, CPM, DBIA Lowcountry Program Manager	Project Manager	BS Engineering	25
Chad Long Director of Environmental Services	Director of Environmental	Master of Arts	25
David Kelly RPG 2 NEPA Coordinator/ Architectural Historian/Noise	NEPA Coordinator	Master of Historic Preservation	20
Will McGoldrick Design Build Environmental Coordinator	Environmental Coordinator	Bachelor Business Administration	17

* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
Syrees Gillens Oliver SCDOT Public Involvement Director	Public Involvement	Masters in Business Administration	21
Nicole Riddle* Public Involvement Coordinator/ Biologist	Public Involvement Coordinator	BS Marine Biology	11
Henry Phillips* NEPA Division Manager	NEPA Division Manager	BS Management	29
Bill Jurgelski RPG 5 NEPA Coordinator/ Archaeologist	Cultural Resources	PhD Anthropology	32
Chris Beckham RPG Permits Coordinator	Permits Coordinator	BS Biology	23
Siobhan Gordon RPG 4 Permits Coordinator/ Biologist	Agency Coordination Meeting Facilitator	BS Biology	13
Tracy Martin Chief Archaeologist	Cultural Resources	MA Anthropology	22
Chris Johnston* Asst. Director Right of Way for Mega Projects	Right-of-Way	BS Real Estate/Finance	31
Fran Bickley Lowcountry Corridor Right of Way Project Manager	Right-of-Way	Associates Degree in Public Service	16

Consultant Team

Stantec

Richard A. (Rick) Day, PE Vice President, US Mid-Atlantic & South Transportation	Project Manager	MS Civil Engineering	44
Amy Sackaroff, AICP Senior Transportation Planner	Community Studies/ Environmental Justice	BS Environmental Engineering	22
LaTonya B. Derrick, PhD(c) Senior Transportation Planner	Environmental Justice/ Public Involvement	PhD(c) Public Policy and Administration	23
Ryan White, PE Senior Transportation Engineer	Environmental Justice	BS Civil Engineering	22

* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
Emily Love, AICP* Transportation Planner	Community Studies/ Environmental Justice/ GIS Mapping/Indirect and Cumulative Impacts	BA Environmental Studies and Geography	9
Hannah Clements Environmental Planner	Community Studies/ Environmental Justice/ GIS Mapping	BS Environmental Science	4
Alexa Kennedy Environmental Planner	Community Studies/ Environmental Justice/ Traffic Noise Analysis	BS Environmental Science	4
Michael Wray, PE Transportation Engineer	Community Studies/ Environmental Justice	BS Civil Engineering	17
Mary M. Martin Technical Specialist, Planning	Traffic Noise Analysis	Mechanical Drafting	41
Franklin Rex Cooper, III CAD Technician	Traffic Noise Analysis	N/A	9
Simon Binau Senior Environmental Specialist	Traffic Noise Analysis	BA English	25
Jen Cole, EIT Air Quality Scientist	Air Quality Analysis	BS Mechanical Engineering	15
Amanda Voges Environmental Scientist	Indirect and Cumulative Impacts	MS Environmental Studies	7
Melissa Ruiz Senior Environmental Scientist	Indirect and Cumulative Impacts/Spanish Interpreter	Master Forestry, Natural Resources Concentration	22
Jeff Simmons Senior Project Manager/ Principal	Senior Technical Advice/Review	MS Natural Resources (Soil Science)	30
Andre Boykin Jr., PE Transportation Engineer in Training	Community Studies/ Environmental Justice	MS Structural Engineering	11
Jason Hambley, PE Transportation Engineer	Lead Road Designer	BS Civil Engineering	12
Mark McGill Transportation Engineer in Training	Road Designer	BS Engineering, Civil Concentration	4

* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
Tucker Jarvis, PE Transportation Engineer	Road Designer	BS Civil Engineering	8
Jim Fisher, PE Senior Project Manager, Transportation	Traffic and Road Design Support	BS Civil Engineering	37
Joshua Mitchell, PE Transportation Engineer	Lead Traffic Engineer	MS Civil Engineering	6
Sam Williams, PE Transportation Engineer	Senior Traffic Engineer	BS Civil Engineering	9
Saeed Jones Transportation Designer	Traffic Designer and Community Outreach	BS Civil Engineering	7
Claudia Thompson Traffic Analyst	Traffic Designer and Community outreach	MS Transportation	5
Anthony (Tony) Lewis PE, PTOE Senior Project Manager, Transportation	Road Lighting Engineer	MS Civil Engineering	22
David Taylor PE, SE Managing Principal	Lead Bridge Designer	MS Structural Engineering	43
Andy Cook PE, SE Senior Structural Engineer	Senior Bridge Designer	ME Structural Engineering	21
Andrea Dvorak-Grantz AICP Senior Transportation Planner	Senior NEPA Technical Advice/Review	MS Biology	24
Ian Duncan PLA, LEED AP Landscape Architect	Site Planner	BA Environmental Design	23
Horrace Tobin Public Information Officer	Community Office Manager	ECMCA Morgan State University	41
Mollie Rhett Graphic Designer	Public Outreach Support	BS Information Science & Technology	19

Empowerment Strategies, LLC

Jamelle H. Ellis, PhD President/Managing Director	Environmental Justice/ Community Advisory Council Facilitator	Doctorate in Environmental Health Sciences	27
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CDM Smith

Amy Livingston Public Involvement Discipline Leader	Public Involvement Task Lead	Master of Public Administration	13
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* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
Mark Lester, PE Senior Transportation Planner	Contract Management & Public Involvement Support	BS Civil Engineering	31
Jennifer Humphreys, AICP Senior Transportation Planner	Quality Control for Public Information Meeting	BA Geography - Urban Planning	24
Victoria Wornom Public Involvement Planner	Public Involvement	Master of Planning	4

Three Oaks Engineering

A. Mark Mohr Senior Environmental Planner	Co-NEPA Lead	BS Organizational Leadership	21
Karen B. Taylor, PE Senior Transportation Planning Engineer	Co-NEPA Lead	BS Civil and Environmental Engineering	22
Heather M. Robbins, AICP* Senior Environmental Planner	DEIS NEPA Lead	MS Geography	23
Virginia Elmore Theriot* Environmental Planner	DEIS NEPA Planner	Master of Earth and Environmental Resource Management	12
T. Russell Chandler, II* Environmental Scientist	Natural Resources/ Essential Fish Habitat	BA Anthropology	9
Wade Biltoft Environmental Scientist	Natural Resources/ Essential Fish Habitat	Master of Earth and Environmental Resource Management	5
Christy Shumate, AICP Senior Environmental Planner	NEPA Planner and QA/ QC	Master of Environmental Management	21
Shelby Moody Environmental Planner	NEPA Planner	Master of Earth and Environmental Resource Management	5
Amanda Chandler* Environmental Planner	NEPA Planner	BA Studio Art	4
A. Gordon Murphy Senior Environmental Scientist	QA/QC	BS Biology	36
Jackie Obediente, PE Transportation Planning Engineer	QA/QC	BS Civil/Environmental Engineering	22

* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
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CECS

Kally McCormick Director of Environmental Services	Natural Resources	BS Marine Biology	18
Amanda Harris Environmental Scientist	Natural Resources/ Farmlands	BS Natural Resources Management	18
Robert Hibbitts Environmental Scientist	Natural Resources/ Floodplains	BS Biology	17
Jeff Sieckman Environmental Planner	Natural Resources	BS Geography	17
Maher Almassri, PE Director of Structural Design	Senior Bridge Engineer	MS Engineering	31
Theresa Hodge, PE Director of Utilities	Utility Coordination	BS Engineering	41

HDR Engineering, Inc

Blair Wade Senior Environmental Planner	Clean Water Act Permitting/Mitigation	Master of Environmental Management	18
Jennifer Pearson Senior Environmental Planner	405b(2) Guidelines/ Public Interest Review Factors/Clean Water Act Permitting	BS Biology	23
Joshua Fletcher, RPA Environmental Project Manager	405b(2) Guidelines/ Public Interest Review Factors	Master of Arts, Anthropology	25

Maximum Consultants, LLC

Maxine Smith, EdD Chief Executive Officer	Environmental Justice Community Liaison	EdD (Doctorate, Educational Administration & Supervision)	49
Carolyn Lecque* Community Liaison	Environmental Justice Community Liaison	BS Chemistry	42
Mattese Lecque Community Liaison	Environmental Justice Community Liaison	MS Health Services	32
Clay Middleton Community Liaison	Environmental Justice Community Liaison	MA Social Sciences	22
Gwendolyn Boyd Community Liaison	Environmental Justice Community Liaison	General Office Administration	26

* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
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Brockington & Associates

Dave Baluha, RPA Senior Archaeologist	Principal Investigator/ Senior Archaeologist	MA History	27
Sheldon Owens, MHP Architectural Historian	Architectural Historian	Master of Historic Preservation	12
Lannie Kittrell, MHP Architectural Historian	Architectural Historian	Master of Historic Preservation	12
Rachel Bragg, MHP Architectural Historian	Architectural Historian	Master of Historic Preservation	12
Jeff Sherrard Laboratory Supervisor	Laboratory Supervisor	BA Anthropology	17
Scott Kitchens Crew Chief	Field Archaeologist	BA History	17
Jimmy Lefebre Crew Chief	Field Archaeologist	BS Anthropology	17
Ralph Bailey, RPA Senior Archaeologist	QA/QC	MA History	32

Davis & Floyd

Michael V. Horton, PE, CFM, LEED-AP Chief Engineering Officer	Lead Hydrology and Drainage	MS Engineering Applied Fluid Mechanics	27
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Rawle Murdy

Jeff Webster Senior Vice President	Director of Public Relations and Social Media	MA Corporate Communications	24
Robert Flagler Account Supervisor	Public Relations and Social Media	BS Political Science and Government	10
Rachel Croyle Account Supervisor	Brand Leadership & Creative/Digital Project Management	BA Communication	11
Daniel Monroe Account Supervisor	Public Relations and Social Media	BA Media Studies and Journalism	15
Rachel Angelos Account Coordinator	Public Relations and Social Media	BS Marketing/Marketing Management	3

* no longer with department/agency/organization

Name & Title	Project Role	Highest Education/Degree	Years of Experience
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S&ME

Chuck Black, PE, M.ASCE, LEED AP Vice President and Client Development Leader - Environmental	Principal Environmental Engineer	BS Civil Engineering	32
Andrew Wertz, PE Senior Environmental Engineer	Senior Environmental Engineer	BS Agricultural Engineering	25
Terry Richburg Environmental Group Leader	Senior Industrial Hygienist	BS Biology	28

THC, Inc.

Willie B. Johnson Right-of-Way Professional	Right-of-Way Specialist	High School Diploma	44
Annette McCrorey Right-of-Way Professional	Right-of-Way Specialist		

ORC

Shantelle Mears Senior Right-of-Way Professional	Right-of-Way Specialist	BA Organizational Management	26
Bobby Mears Right-of-Way Professional	Right-of-Way Specialist	AA Criminal Justice	7

Michael Baker Incorporated

Oscar Rucker Director of Right-of-Way Services	Right-of-Way estimating, plan review, and acquisition of mitigation properties	MS Engineering Applied Fluid Mechanics	27
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Tidewater Atlantic Research

Gordon P. Watts, Jr President	Principal Investigator/ Remote Sensing/Survey	PhD Maritime History & Underwater Archaeology	50
Robin Arnold Corporate Secretary	Senior Historian	ABT MA History BA Political Science	27

Wildlands

Daniel Johnson Senior Water Resources Engineer/South Carolina Team Leader	Compensatory Mitigation	MS Environmental Engineering & Master of Business Administration	17
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* no longer with department/agency/organization

The following have received a notice of publication and the locations that the Final Environmental Impact Statement (FEIS) is available. The FEIS and supporting technical reports are also published on SCDOT's webpage at <https://www.526lowcountrycorridor.com>.

8.1 Notification of FEIS Publication and Electronic Copy of the FEIS

8.1.1 Federal Agencies

Federal Highway Administration
National Park Service
National Oceanic & Atmospheric Administration Fisheries
US Army Corps of Engineers
US Coast Guard
US Fish and Wildlife Service
US Environmental Protection Agency

8.1.2 State Agencies

SC Department of Archives and History
SC Department of Health & Environmental Control
SC Department of Natural Resources
SC Department of Parks, Recreation & Tourism

8.1.3 Sovereign Nations

Catawba Indian Nation
Eastern Shawnee Tribe
Muscogee (Creek) Nation

8.1.4 Local Governments or Agencies

Charleston County
City of Charleston
City of North Charleston

8.2 Locations with Hard Copies of the FEIS for Public Review

SC Department of Transportation, Headquarters
SC Department of Transportation, District 6 Office
Project Community Office

8.3 Notice of FEIS Publication

8.3.1 Federal Representatives

Senator Lindsey Graham (R)
Senator Tim Scott (R)
Congresswoman **Nancy Mace (R)**-District 1
Congressman Joe Wilson (R) - District 2
Congressman Jeff Duncan (R) - District 3
Congressman William Timmons (R) - District 4
Congressman Ralph Norman, Jr. (R) - District 5
Congressman James “Jim” Clyburn (D) - District 6
Congressman Tom Rice (R) - District 7

8.3.2 State Elected Officials

Governor Henry McMaster
Lt. Governor Pamela Evette

8.3.3 Senate

Lawrence K. “Larry” Grooms (R) - District 37
Marion E. Kimpson (D) - District 42
Sandy Senn (R) - District 41

8.3.4 House of Representatives

Linda “Lin” Bennett (R) - District 114
Wendell G. Gilliard (D) - District 111
Marvin (Mark) Smith (R)-District 99
Deon T. Tedder (D)- District 109
Marvin R. Pendarvis (D) - District 113
Leonidas E. “Leon” Stavrinakis (D) - District 119

8.3.5 City of Charleston Elected Officials

Mayor John Tecklenburg
District One Councilmember **Boyd Gregg**
District Two Councilmember Kevin Shealy
District Three Councilmember Jason Sakran
District Four Councilmember Robert M. Mitchell
District Five Councilmember Karl L. Brady, Jr.
District Six Councilmember William Dudley Gregorie
District Seven Councilmember Perry K. Waring

District Eight Councilmember Michael S. Seekings
District Nine Councilmember A. Peter Shahid, Jr.
District Ten Councilmember **Stephan Bowden**
District Eleven Councilmember Ross A. Appel
District Twelve Councilmember **Caroline Parker**

8.3.6 City of North Charleston Elected Officials

Mayor R. Keith Summey
District One Councilmember Mike A. Brown
District Two Councilmember Rhonda Jerome
District Three Councilmember Virginia Jamison
District Four Councilmember Ron Brinson
District Five Councilmember Jerome Heyward
District Six Councilmember Dorothy Williams
District Seven Councilmember Sam Hart
District Eight Councilmember Bob King
District Nine Councilmember Kenny Skipper
District Ten Councilmember Michael Brown

8.3.7 Charleston County Elected Officials

District One Councilmember Herbert Ravenel Sass, III
District Two Councilmember Dickie Schweers
District Three Council Member **Robert L. Wehrman**
District Four Councilmember Henry E. Darby
District Five Councilmember Teddie E. Pryor, Sr.
District Six Council Member **Kylon Jerome Middleton**
District Seven Councilmember C. Brantley Moody (Vice Chairman)
District Eight Councilmember Anna B. Johnson
District Nine Councilmember Jenny Costa Honeycutt

8.3.8 Charleston County Planning Commission

Commissioner **David Kent**
Commissioner Cindy Floyd,
Commissioner **Anastasia Gandy**
Commissioner **Warwick Jones**
Commissioner **Adam MacConnell**
Commissioner **Marlena Davis**
Commissioner Pete Paulatos
Commissioner Sussan Chavis
Commissioner Logan Davis

8.3.9 Berkeley-Charleston-Dorchester Council of Governments

Ron Mitchum - Executive Director
Andrea Kozloski - Deputy Director of Operations and Support
Robin Mitchum - Deputy Director of Finance and Administration

8.3.10 Community Advocacy Groups

Transportation Association of South Carolina
Palmetto Cycling Coalition
Carolina Wildlife Care
Audubon Society
Sierra Club, SC Chapter
SC Wildlife Federation
Ducks Unlimited
SC Alliance to Fix Our Roads
Lowcountry Alliance for Model Communities
SC Coastal Conservation League
SC National Heritage Corridors
Southern Environmental Law Center
National Action Network

8.3.11 Business Community

Charleston Metro Chamber of Commerce
North Charleston Chamber of Commerce
SC Chamber of Commerce
Joint Base Charleston
SC Ports Authority
SC Small Business Development Center
Charleston Business Leads Associations
Hispanic Business Association
South Carolina Trucking Association
New Carolina: South Carolina's Council on Competitiveness
South Carolina Economic Developers' Association
B.W. Mitchum Trucking
Boeing
Charleston County Aviation Authority
Charleston Regional Development Alliance
H&J Trucking, Inc
Hunter Transportation Co., Inc.
North Charleston Coliseum
Tanger Outlets

8.3.12 Civic Organizations

College of Charleston – Joseph P. Riley Center for Livable Communities
Goodwill
Interdenominational Ministers Alliance
League of Women Voters
Rotary Club
South Carolina African American Chamber of Commerce
Trident Area Agency on Aging

8.3.13 Neighborhood Associations

Ashley Harbor Homeowners Association
Charleston Farms Neighborhood Association
Ferndale Neighborhood Association
Liberty Park-Highland Terrace Neighborhood Association
Russelldale Neighborhood Association
Wando Woods Neighborhood Association

8.3.14 Transportation Related Organizations

Charleston Moves
CSX Transportation
Norfolk Southern
Palmetto Railways

8.3.15 Additional Hispanic Outreach Groups

Art Pot – Partnering as our Hispanic/Latino Community Liaison
South Carolina Hispanic Outreach

8.3.16 Additional Disabled Population Outreach Groups

Able South Carolina
South Carolina Commission for the Blind

Topic	FEIS Chapter/Section
Aesthetics	Chapter 4 - Section 4.3.4.2; 4.5.6; Appendix E
Affected Environment	Chapter 4 - Section 4.0; 4.17.2
Agency Coordination Plan	Chapter 1 - Section 1.0; 1.2; Chapter 5 - Section 5.5; Chapter 6 - Section 6.1.3; 6.1.4; Appendix A
Air Quality	ROD13; Chapter 4 - Section 4.0; 4.5.6.4; 4.5.8.3; 4.8; 4.15.6; 4.18.3.3; Appendix J
Alternatives	Chapter 3; Appendix C
Alternatives Development Process	Chapter 3 - Section 3.1; Appendix C
Alternatives Evaluation	Chapter 3; Appendix C
Americans with Disabilities Act	Chapter 4 - Section 4.3.5; 4.4.3.1; 4.5.8.3
Aquatic Resources	Chapter 4 - Section 4.11
Archaeological Resources	ROD10; Chapter 4 - Section 4.14.2; 4.14.3; 4.16.3; Appendix P
Architectural Resources	ROD10; Chapter 4 - Section 4.14.2.3; 4.14.4; 4.16.3; Appendix P
At-Risk Species	Chapter 4 - Section 4.13.2.2; Appendix L
B	
Bald and Golden Eagle Protection Act	Chapter 4 - Section 4.13.2.3
Bicycle Facilities	ROD2; ROD12; Chapter 2 - Section 2.1; 2.1.6; Chapter 3 - Section 3.9; 3.10; Chapter 4 - Section 4.7; 4.15.7
Biological Conclusion	Chapter 4 - Section 4.13.8.1; Appendix L
Biological Assessment	Chapter 4 - Section 4.13.2.1; 4.13.8.2; Appendix L
Build Alternatives	Chapter 3; Appendix C
Bus Rapid Transit	Chapter 3 - Section 3.0; 3.5.5; 3.10.1; Appendix C
Business Displacements/Relocations	Chapter 3 - Section 3.8; 3.9; Chapter 4 - Section 4.6; Appendix I
C	
Capacity	ROD2; ROD7; ROD8; Chapter 2 - Section 2.1; Chapter 3; Chapter 4 - Section 4.5.9; 4.7.1; 4.9.4; 4.10.7.2; 4.15.6; 4.19.3; Appendix B; Appendix C
Carbon Monoxide	Chapter 4 - Section 4.8
Clean Air Act	Chapter 4 - Section 4.8; Appendix J

Topic	FEIS Chapter/Section
Clean Water Act	ROD16; Chapter 2 - Section 2.2; Chapter 4 – Section 4.10; 4.11; 4.18; 4.22; 4.23; 4.24; Chapter 5 - Section 5.5
Coastal Zone Management Act	ROD17; Chapter 4 - Section 4.11.1; 4.22
Coastal Zone	ROD17; Chapter 4 - Section 4.11.1; 4.11.8; 4.12.6; 4.22.4
Community Advisory Council	ROD9; ROD10; ROD16; Chapter 2 - Section 2.3; Chapter 3 - Section 3.9; Chapter 4 - Section 4.1.4.2; 4.3.3.2; 4.3.5; 4.3.6.2; 4.3.8; 4.5.5; 4.5.6.2; 4.5.6.4; 4.5.8.3; 4.7.1; 4.15.6.1; 4.15.6.2; 4.15.7; 4.16.4; Chapter 6 - Section 6.3.1; 6.3.4.2; 6.3.4.3
Community Facilities and Services	Chapter 4 - Section 4.5.6.2
Community Impact Assessment	Chapter 4 - Section 4.1.2; 4.3 4.23.2.1; Appendix D
Compatibility with Future Land Use Plans	Chapter 4 - Section 4.1.4
Congestion	Chapter 2 - Section 2.1.2; Chapter 3; Appendix B
Conservation	Chapter 4 - Section 4.1.3; 4.1.5; 4.1.6; 4.11.4.4; 4.13; 4.13.9.1
Considerations of Property Ownership	Chapter 4 - Section 4.6
Construction	Chapter 4 - Section 4.18; 4.15; 4.22; 4.23
Cooperating Agencies	Chapter 1- Section 1.1; Chapter 6 – Section 6.1; Appendix A
Costs	Chapter 3 - Section 3.7
Cultural Resources	Chapter 4 - Section 4.14; 4.18.3.8; Appendix P
Cumulative Effects	Chapter 4 - Section 4.5.6.4; 4.5.7; 4.5.8.3; 4.11.6; 4.11.8; 4.12.6; 4.15.6; Chapter 6 - Section 6.2; Appendix F
D	
Demographics	Chapter 4 - Section 4.3.3; 4.3.4
Displacements	Chapter 4 - Section 4.5.6.2; 4.6; Appendix I
Distribution of FEIS	Chapter 8
Drainage Basins	Chapter 4 - Section 4.10.2
Drinking Water	Chapter 4 - Section 4.11.4.3
E	
Economics	Chapter 3 - Section 3.2
Elderly & Disabled Populations	Chapter 4 - Section 4.3.4.3
Emergency Services	Chapter 4 - Section 4.3.4.2; 4.9.2; 4.18.3.1

Topic	FEIS Chapter/Section
Emissions	Chapter 4 - Section 4.8.2.2
Employment and Income	Chapter 2 - Section 2.1.1
Endangered Species	Chapter 4 - Section 4.13; Appendix L
Endangered Species Act	Chapter 4 - Section 4.13.2.1; Appendix L
Energy Needs	Chapter 4 - Section 4.19
Environmental Justice	ROD12; Chapter 4 - Section 4.1.5.2, 4.3; 4.5; 4.6; 4.15.6; 4.15.7; 4.24.1.2; Appendix D, G, H, & X
Environmental Justice Community Mitigation Plan	ROD12; ROD17; ROD20; Chapter 3 - Section 3.9; Chapter 4 - Section 4.1.7; 4.3.3.2; 4.3.5; 4.5.5; 4.5.8.3; 4.5.9; 4.6; 4.7.1; 4.15.6; Chapter 6 - Section 6.3.1.4; 6.3.1.5; 6.3.2; 6.3.4.3; 6.3.4.4; 6.7; Appendix H
Environmental Consequences	Chapter 4
Environmentally Preferable Alternative	ROD8
Essential Fish Habitat	ROD14; ROD17; Chapter 4 - Section 4.13.6; 4.13.8.3; 4.13.9.2; Appendix O
Evaluation Criteria	Chapter 3 - Section 3.6; 3.7
Executive Order 12898	Chapter 4 - Section 4.5; Chapter 6 - Section 6.2; Appendix G
Executive Order 13166	Chapter 4 - Section 4.3.4.3
Executive Order 13807	Chapter 1 - Section 1.0
Executive Order 13186	Chapter 4 - Section 4.13.2.2
Existing Conditions	Chapter 4
F	
Farmland Protection Policy Act	Chapter 4 - Section 4.2
Farmland of Statewide Importance	Chapter 4 - Section 4.2
Farmlands	Chapter 4 - Section 4.2
Fast Act	Chapter 1
Federal Agencies	Chapter 1 - Section 1.0, 1.2; Chapter 2 - Section 2.3; Chapter 4 - Section 4.1.7; 4.2; 4.11.4.4; 4.12; 4.13; 4.14; 4.23; Chapter 6 - Section 6.1.2; 6.1.4; Appendix A
Fish and Wildlife	Chapter 4 - Section 4.13
Flood Hazards	Chapter 4 - Section 4.12

Topic	FEIS Chapter/Section
Floodplain Values	Chapter 4 - Section 4.12
Floodplains	Chapter 4 - Section 4.12; Appendix N
Freight	Chapter 1 - Section 1.3; Chapter 2 - Section 2.1.4
Funding	Chapter 1 – Section 1.4
Future Growth	Chapter 2 – Section 2.1
G	
General Environmental Concerns	Chapter 4
Greenhouse Gases	Chapter 4 - Section 4.23.2.3
Groundwater	Chapter 4 - Section 4.11; 4.11.2; 4.11.3; 4.17.6, 4.18.3.11
H	
Habitat Communities	Chapter 4 - Section 4.13.3
Hazardous Materials and Waste	Chapter 4 - Section 4.17; Appendix S
High-Occupancy Vehicles	Chapter 3 – Section 3.0; 3.5.3
Historic Properties	ROD18; Chapter 4 - Section 4.14; Appendix P
I	
Indirect Effects	Chapter 4 - Section 4.3.7; 4.5.6.3; 4.11.6; Appendix F
Interchange Alternatives	Chapter 3 – Section 3.6; 3.6.3; 3.7; 3.7.3; Appendix B; Appendix C
Irreversible Commitment of Resources	Chapter 4 - Section 4.21
L	
Land Use	Chapter 4 - Section 4.1; 4.18.3
Lead Agencies	Chapter 1; Chapter 6 – Section 6.1
Level of Service	Chapter 2 – Section 2.1.2
Limited English Proficiency	Chapter 6 – Section 6.3.4.1
Local and Regional Plans and Policies	Chapter 4 - Section 4.1.4
Local Governments	Chapter 1 - Section 1.2; Chapter 6 – Section 6.4.2

Topic	FEIS Chapter/Section
Local Officials Coordination	Chapter 1 – Section 1.2; Chapter 6- Section 6.1, 6.3, 6.4
Logical Termini	Chapter 1 – Section 1.3; Chapter 3 – Section 3.6.2.2
Low-Income Populations	Chapter 4 - Section 4.3.5; 4.5; Chapter 6 – Section 6.2; Appendix G
M	
Mass Transit	Chapter 3 – Section 3.1; 3.4; 3.5; 3.5.6
Meeting Materials	Chapter 6; Appendix U
Meeting Notifications	Chapter 6; Appendix U
Minority Communities/Neighborhoods	Chapter 4 - Section 4.5.9; Chapter 6 – Sections 6.2, 6.3; 6.5.1; Appendix G
Minority Populations	Chapter 4 - Section 4.3.5; 4.5
Migratory Birds	Chapter 4 - Section 4.13.5
Migratory Bird Treaty Act	Chapter 4 - Section 4.13.5
MSATS	Chapter 4 - Section 4.8; Appendix J
N	
National Ambient Air Quality Standards	Chapter 4 - Section 4.8; Appendix J
National Pollutant Discharge Elimination System	Chapter 4 - Section 4.10.5; 4.10.6; 4.18.3; 4.22.5
National Rivers Inventory	Chapter 4 - Section 4.11.4
Native American	Chapter 4 - Section 4.14.6
National Historic Preservation Act	ROD18; Chapter 4 - Section 4.14.1.1; 4.14.6; Appendix P
National Register of Historic Places	Chapter 4 - Section 4.3.4.2; 4.14.1; 4.14.2.4; 14.15.6; Appendix P
Natural Habitat Communities	Chapter 4 - Section 4.13.3.2
Natural Resources	Chapter 4 - Section 4.13; Appendix L
Navigation	Chapter 5
Navigable Waters	Chapter 5; Appendix N
Needs and Welfare of the People	Chapter 4 - Section 4.3
Neighborhoods and Communities	Chapter 4 - Section 4.3; Appendix D
Newsletters	Chapter 6 – Section 6.3

Topic	FEIS Chapter/Section
No-Build Alternative	ROD7; Chapter 2 - Section 2.1.4; Chapter 3 – Section 3.4; 3.5.1; 3.6; 3.7; Chapter 4 - Section 4.1.6.1; 4.3.6.1; 4.8.2.1; 4.9.3.1; 4.10.7.1; 4.11.5.1; 4.12.4; 4.13.7; 4.15.5; 4.16.2; 4.17.5; 4.19.2.1; Appendix C
Noise	ROD13; Chapter 4 - Section 4.9; Appendix K
Noise Mitigation	ROD13; Chapter 4 - Section 4.9; Appendix K
Non-native species	Chapter 4 - Section 4.13.5.1
Notice of Availability	ROD3; Appendix A
O	
Open Waters	Chapter 4 - Section 4.11
P	
Participating Agencies	Chapter 1 - Section 1.2; Chapter 6 – Section 6.1.2; Appendix A
Pedestrian Facilities	ROD2; ROD12; Chapter 2 - Section 2.1; 2.1.6; Chapter 3 - Section 3.9; 3.10; Chapter 4 - Section 4.7; 4.15.7
Permits	Chapter 4 - Section 4.22; Chapter 5 - Section 5.5
Places of Worship and Cemeteries	Chapter 4 - Section 4.9
Population Characteristics	Chapter 2 - Section 2.1.1; Chapter 4 - Section 4.3.4
Population Growth	Chapter 2 - Section 2.1.1
Preferred Alternative	ROD3; ROD7; ROD6; ROD7; ROD8; ROD9; Chapter 3 - Section 3.1; 3.6; 3.7; 3.8; 3.9; 3.10; Appendix C
Preliminary Alternatives	Chapter 3 - Section 3.1; 3.6; 3.7; Appendix C
Preparers	Chapter 7
Purpose	Chapter 2
Prime Farmland	Chapter 4 - Section 4.2
Project Alternatives	Chapter 3; Appendix C
Project Description	Chapter 1 - Section 1.3
Project Limits	Chapter 1 - Section 1.3
Project Oversight Committee	ROD12; ROD16; ROD20; Chapter 4 - Section 4.5.8.3; 4.8.2.2; Chapter 6 - Section 6.3.4.3
Public Comments	Chapter 2 - Section 2.3; Chapter 6 – Sections 6.3, 6.5; Appendix Z

Topic	FEIS Chapter/Section
Public Education Facilities/Schools	Chapter 4 - Section 4.3.4; 4.9
Public Hearing	Chapter 6 - Section 6.3.1.4; Appendix Z
Public Involvement	Chapter 6; Appendix U
Public Involvement Plan	Chapter 2 - Section 2.3; Chapter 6; Appendix U
Public Interest Review Factors	Chapter 2 - Section 2.4
Public Meetings	Chapter 2 - Section 2.3; Chapter 3 - Section 3.7; Chapter 6 -Section 6.3; 6.4; Appendix U
Purpose and Need	Chapter 2
R	
Range of Alternatives	Chapter 3 - Sections 3.2, 3.4, 3.5; Chapter 6 – Sections 6.1, 6.3; Appendix C
Reasonable Alternatives	Chapter 3 - Sections 3.2, 3.4, 3.5; Chapter 6 – Sections 6.1, 6.3; Appendix C
Recommended Preferred Alternative	ROD3; ROD7; ROD6; ROD7; ROD8; ROD9; Chapter 3 - Section 3.1; 3.6; 3.7; 3.8; 3.9; 3.10; Appendix C
Recreation	Chapter 4 - Section 4.1.7, 4.3, 4.9.2, 4.14.1.2, 4.15, 4.16
Recreational Areas	Chapter 4 - Section 4.15.6
Regional Planning	Chapter 3 - Section 3.5
Residential Displacements/Relocations	Chapter 4 - Section 4.6; Appendix I
Rivers and Harbors Act	Chapter 2 - Section 2.2; Chapter 5 - Section 5.5
S	
SAFETEA-LU	Chapter 1; Chapter 4 - Section 4.14.1.2
Safety	Chapter 2 - Section 2.1.5; Chapter 3
Scenic Rivers	Chapter 4 - Section 4.11.4.4
Scoping	Chapter 2 - Section 2.3; Chapter 6 – Sections 6.1, 6.2, 6.3; Appendix A
Section 4(f)	ROD9; Chapter 4 - Section 4.15; 4.18.3.9; Appendix Q
Section 6(f)	ROD9; Chapter 4 - Section 4.15; 4.18.3.10; Appendix Q
Section 7	ROD14; ROD17; Chapter 4 - Section 4.13.2; 4.13.8; 4.13.9.1; Appendix L

Topic	FEIS Chapter/Section
Section 9	ROD 17; Chapter 4.22.6; Chapter 5 - Section 5.5; Appendix T
Section 10	ROD17; Chapter 2 - Section 2.2; Chapter 4 - Section 4.18.3.6; 4.22.1; 4.22.7
Section 401	ROD16; Chapter 4 - Section 4.1.7; 4.11.1; 4.13.9.2; 4.18.3.6; 4.22.2; 4:24; Chapter 5 - Section 5.5; Appendix L
Section 402	ROD16; Chapter 4 - Section 4.1.7; 4.10.6; 4.18.3.5; 4.18.3.6; 4.22.3; Appendix L
Section 404	ROD13; ROD14; ROD16; ROD17; Chapter 2 - Section 2.2.2; Chapter 4 - Section 4.1.7; 4.10.1; 4.11; 4.13.9.2; 4.18.3.6; 4.22.1; 4:24; Chapter 5 - Section 5.5; Appendix L
Section 106	ROD18; Chapter 4 - Section 4.14.1; 4.14.2; 4.14.6; Appendix P
Selected Alternative	ROD4; ROD5; ROD7; ROD8; ROD9; ROD10; ROD11; ROD16; ROD19
Short-term Effects and Long-term Productivity	Chapter 4 - Section 4.20
Social Media	Chapter 6 - Section 6.3.3.3; Appendix V
Soils	Chapter 4 - Section 4.13.3
Stakeholders	Chapter 4 - Section 4.5.5; 4.23.2.1; Chapter 6; Appendix Z
State Agencies	Chapter 1 - Section 1.2; Chapter 6 – Section 6.1.2
Stormwater Management/Drainage	Chapter 4 - Section 4.10; 4.11; 4.18.3.5
Streams	Chapter 4 - Section 4.10; 4.11
Surface Waters	Chapter 4 - Section 4.7.4
T	
Terrestrial Communities	Chapter 4 - Section 4.13.3.2
Threatened Species	Chapter 4 - Section 4.13
Traditional Navigable Waters	Chapter 5
Traffic	Chapter 3; Appendix B
Transportation Demand Management	Chapter 3 - Section 3.5.5
Transportation System Management	Chapter 3 - Section 3.5.5
Transit	Chapter 3 - Section 3.5.6
Tribal Consultation	Chapter 1 - Section 1.2; Chapter 4 - Section 4.14.6; Appendix P

Topic	FEIS Chapter/Section
U	
Unique Farmland	Chapter 4 - Section 4.2
Utilities	Chapter 4 - Section 4.18.3
V	
Viewshed	Chapter 4 - Section 4.14.4; 4.14.5; Appendix E
W	
Watersheds	Chapter 4 - Section 4.10.3
Water Supply and Conservation	Chapter 4 - Section 4.10; 4.11
Water Quality	Chapter 4 - Section 4.10
Water Resources	Chapter 4 - Section 4.11
Waters of the US	Chapter 4 - Section 4.11.5; Appendix M
Website	Chapter 6 - Section 6.3.3
Wetlands	Chapter 4 - Section 4.11.4
Wild and Scenic Rivers	Chapter 4 - Section 4.11.4.4
Wildlife	Chapter 4 - Section 4.13.4

