



ENVIRONMENTAL RE-EVALUATION FORM

FHWA South Carolina

State File # Fed Project # Project ID Route County

Project Name/Description

The FHWA and SCDOT propose to upgrade the I-20/26/126 corridor and reconstruct associated interchanges in Richland and Lexington Counties, South Carolina. The primary purpose of the proposed Carolina Crossroads project is to implement a transportation solution(s) that would improve mobility and enhance traffic operations by reducing existing traffic congestion within the I-20/26/126 corridor while accommodating future traffic needs.

1. DOCUMENT TYPE: ☒ EIS ☐ EA ☐ CE (non Programmatic) ☐ PCE (No FHWA Approval Required)

A. Other Actions Associated with the Project:

- ☐ Section 4(f) Evaluation
☒ Section 106 Compliance
☒ Wetland Finding/Section 404 Compliance
☒ T & E Species Biological Assessment
☐ None

2. DOCUMENT APPROVAL DATE:

3. DATE(S) OF PRIOR RE-EVALUATIONS:

4. PROJECT DEVELOPMENT STAGE:

- ☐ Final Design
☒ ROW
☒ Construction
☐ Other, Specify

5. HAS DESIGN OR ROW CHANGED SINCE THE LAST APPROVAL?:

(if "NO" then Go To Item 7)

☒ YES ☐ NO

6. DESCRIPTION OF CURRENT PROJECT/DESIGN CHANGES:

During the right-of-way acquisition phase and as a result of property owner negotiations for Phases 2 and 3, changes have occurred at parcels which resulted in either the parcel becoming a full acquisition, additional displaces on the parcel or avoidance of relocations on the parcel. Additionally, 9 parcels needed additional environmental survey for the property remainder that was located outside of the original Project Study Area limits for the FEIS/ROD. Field studies were conducted for these 9 properties, and it was determined that the proposed project would have no additional impacts to environmental resources. In addition, 2 parcels were surveyed for this re-evaluation to fulfill an environmental commitment associated with the August 2, 2020 re-evaluation for the project. Supporting documentation is included in Attachment A.

Under Phase 1, the design-build team developed an alternative design for the I-126 at Colonial Life Boulevard interchange, a partial diverging diamond interchange (DDI). This DDI design will also maintain and rehabilitate the existing Colonial Life Boulevard ramp bridges from I-126 west and to I-126 east. Supporting documentation is included in Attachment B.

7. HAVE THERE BEEN SIGNIFICANT CHANGES IN THE AFFECTED ENVIRONMENT OR HAVE THE ENVIRONMENTAL STUDIES BEEN UPDATED SINCE THE LAST PROJECT APPROVAL?: (If "NO" to both Items 5 and 7, Go To Item 10)

☒ YES☐ NO

8. APPROVED DOCUMENT(S) RE-EVALUATION:

A. REVIEW OF EFFECTS: (Complete this section if "YES" to either Item 5 or Item 7)

SOCIAL ENVIRONMENT

CHANGE

REMARKS

1. Land Use	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
2. Community	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
3. Relocations	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Increase of 48 residential displacements
4. Churches/Institutions	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
5. Title VI/E.O. 12898	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
6. Economic	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
7. Controversy	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
8. Other; Specify	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

NATURAL ENVIRONMENT

CHANGE

REMARKS

1. Wetlands	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Decrease of 0.1 ac wetland & 100 lf stream
2. Water Quality	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
3. Wild/Scenic Rivers	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
4. Farmland	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
5. T & E Species	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
6. Floodplains	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
7. Other; Specify	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

PHYSICAL ENVIRONMENT

CHANGE

REMARKS

1. Noise	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Decrease of 9 impacted receivers
2. Air Quality	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
3. Energy/Mineral Resources	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
4. Construction/Utilities	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
5. UST's	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
6. Hazardous Waste Sites	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
7. Other; Specify	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

CULTURAL ENVIRONMENT	CHANGE	REMARKS
1. Historic Sites	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
2. Archaeological Resources	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
7. Other; Specify	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

PERMITS	CHANGE	REMARKS
1. U.S. Coast Guard	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
2. Forest Service/USACE/USFWS Land	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
3. Section 404	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Update of permit due to impact reduction
4. Other; Specify	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

Have the required permits been obtained? ☒ YES ☐ NO

If "YES" what is the expiration date?

***If permits have expired, permits will need updated and attached to re-evaluation.**

9. NEED FOR PUBLIC INVOLVMENT:

☒ A public hearing/public information meeting was held for the project on:

☒ There have been no changes in project design or environmental effects which would require a public hearing [or additional public hearing if one has already been held] or public information meeting.

☐ The change(s) in project design and/or effects require(s) an additional public hearing/public information meeting. The meeting is scheduled for:

10. FINDINGS/CONCLUSIONS:

☒ Based on the analysis contained in this re-evaluation, it has been determined that the change in project design and/or environmental effects would not significantly alter the conclusions reached in the approved environmental document and/or previous re-evaluation(s).

☐ There have been no changes in the design/ROW of this project nor have there been changes in project effects or the affected environment. Therefore, the conclusions reached in the approved environmental document and/or previous re-evaluation(s) remain valid.

Prepared By: Digitally signed by Will McGoldrick
Date: 2022.05.09 08:48:55 -04'00'

Date:

For Non Programmatic CEs:

Concurred (FHWA): Digitally signed by EMILY OLDHAM LAWTON
Date: 2022.05.23 15:48:14 -04'00'

Date:

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-01	SCDOT will work with the Central Midlands Rural Transit Authority / COMET (CMRTA/COMET) and the Central Midlands Council of Governments (CMCOG) to develop two park-and-ride lots to improve mobility during construction and mitigate congestion resulting from the project. SCDOT would construct the two sites and maintain them during construction of the project. Engineering feasibility, timing and continued maintenance of the sites would be determined in coordination with CMRTA and the CMCOG prior to the start of construction. In the event a permanent site cannot be developed, SCDOT would work with CMRTA and CMCOG to identify and provide funding for existing parking lots that could be leased for park-and-ride use during construction.	Programmatic	SCDOT has completed an evaluation to identify park and ride facilities. In coordination with FHWA a leasing option will move forward. SCDOT is in the process of obtaining leasing agreement information for the park and ride sites. One appraisal has been completed and discussions relative to process for negotiation is forthcoming.	N/A	N/A
EC-02	SCDOT will implement a congestion management tool/commuter services application to improve mobility during construction and mitigate congestion by informing commuters of available options such as carpooling, ridesharing, vanpools and other transit oriented options.	Programmatic	SCDOT has met with the CMCOG who is in the process of developing a mobile application. SCDOT to follow up and determine when the application will be available.	N/A	N/A
EC-03	SCDOT will assist COMET/CMRTA ongoing efforts through such measures as accommodating transit (bus) stops at interchange locations, which may include bus turnout. In addition, SCDOT will work with CMRTA to monitor bus operations and capacity during construction and in the event that capacity is reached, SCDOT will provide support in determining funding for enhanced bus service during construction based upon a framework to be agreed upon with CMRTA.	Programmatic	SCDOT has met with the CMCOG and discussions are ongoing.	N/A	N/A
EC-04	Prior to final design, SCDOT will coordinate with the City of Columbia and CMCOG to ensure that existing and planned bicycle and pedestrian facilities identified in the local and regional plans and existing and proposed connections to such facilities are accommodated where located within the limits of the Carolina Crossroads project at crossing routes and interchanges where feasible.	Design	Status update to be phase specific.	Phase 1 Final design plans are pending	Phase 2 Final design plans are pending
EC-05	During final construction, SCDOT will accommodate bicycle/pedestrian access. SCDOT will coordinate with the local municipalities and/ or trail groups to post information on temporary sidewalk or bicycle facility closures or detours. Sidewalk and/or bicycle lane/path closures will be communicated to the agency with jurisdiction at least 48 hours in advance and appropriate signage will be placed.	Construction	Status update to be phase specific.	Coordination occurred prior to the closing of the Saluda River greenway with the City of Columbia. The end portion of the trail has been temporarily closed.	SCDOT will comply.

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-06	<p>SCDOT will acquire all new right-of-way and process any relocations in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601 et seq.) and the SCDOT ROW Manual. The purpose of these regulations is to ensure that owners of real property to be acquired for federal and federally-assisted projects are treated fairly and consistently, to encourage and expedite acquisition by agreements with such owner, to minimize litigation and relieve congestion in the courts, and to promote public confidence in federal and federally-assisted land acquisition programs.</p> <p>Temporary construction easements may be needed for some properties. SCDOT will temporarily use these properties during construction and would provide compensation to the landowner for the temporary use. The property will be fully returned to the owner when the use of the property is no longer required, typically when construction is complete.</p>	Programmatic	Phase 1 right-of-way acquisition is near completion and relocations are ongoing.	N/A	N/A
EC-07	Changes in access for school bus routes will be discussed with the school system in advance of when they will actually take place, so that the school systems can adjust routes in a timely manner. Coordination with local school districts will also occur during construction. SCDOT and the CONTRACTOR will coordinate with the school system during development of the community outreach program.	Construction	Status update to be phase specific.	Contractor will coordinate with local school districts as necessary.	Contractor will coordinate with local school districts as necessary.
EC-08	Written translations of public involvement documents will be provided for Spanish language speaking 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.	Construction	Status update to be phase specific.	SCDOT has implemented a translation tool on the project website for Spanish language speaking populations.	SCDOT has implemented a translation tool on the project website for Spanish language speaking populations.
EC-09	<p>The CONTRACTOR(s), through a community outreach program, will let the community know what types of closures to expect (i.e. temporary, long-term), when to expect them and who to contact, if needed.</p> <p>SCDOT and the CONTRACTOR(s) will coordinate with emergency service providers such as police, fire protection and ambulance services before construction to ensure that access for emergency vehicles will be maintained.</p>	Programmatic	Community and public relations support plan has been approved and is being implemented.	N/A	N/A

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-10	Based on the studies thus far accomplished, SCDOT intends to install highway traffic noise abatement measures in the form of a barrier at Noise Sensitive Area (NSA) O, R and S. These barriers are located on the south side of I-20 from the Saluda River extending approximately 2,300 feet west (Barrier O); on the north side of I-20 from approximate station 224+90 to approximate 270+34.81 the Broad River Road to approximately 4,550 feet east towards the Broad River (Barrier R); and on the south side of I-20 from approximate station 223+85.23 to approximate station 267+64.89 the Broad River Road exit extending approximately 4,380 feet east towards the Broad River (Barrier S). These preliminary indications of likely abatement measures are based upon preliminary design for a barrier cost of \$35.00 per square foot that will reduce the noise level by at least 5 dB(A) for residences. If it subsequently develops during final design that these conditions have substantially changed, the abatement measures might not be provided. A final decision of the installation of the abatement measure(s) will be made upon completion of the project's design. Since there are residences located on the opposite side of the interstate adjacent to Barriers O, R and S, sound absorption materials will be added to the barriers to minimize noise reflectivity of the barriers towards receptors on the other side of the interstate.	Design	Status update to be phase specific.	Barriers are not located within this phase.	Barriers R and S will be designed in this phase.
EC-11	In order to help local officials and developers consider highway traffic noise in the vicinity of a proposed Type I project, SCDOT will inform them of the predicted future noise levels and the required distance from the roadways needed to ensure that noise levels remain below the NAC for each type of land use per 23 CFR 772.J 7. The information will be provided within three months of the Record of Decision (ROD) publication.	Programmatic	SCDOT has complied.	N/A	N/A
EC-12	During construction, powered construction equipment will not be operated during the traditional evening and/or sleeping hours within 150 feet of a noise-sensitive site, to be decided either by local ordinances and/or agreement with SCDOT.	Construction	Status update to be phase specific.	Discussion will occur in pre-activity meeting with the Contractor and documented accordingly.	Discussion will occur in pre-activity meeting with the Contractor and documented accordingly.
EC-13	The CONTRACTOR(s) will be required to minimize possible water quality impacts through implementation of BMPs, reflecting policies contained in 23 CFR 650B and SCDOT'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.	Construction	Status update to be phase specific.	Environmental compliance inspections are ongoing.	Contractor shall comply.
EC-14	Stormwater modeling will be completed for the final design of the Project. Stormwater runoff would be mitigated by discharging stormwater into appropriately designed BMP's before being released into receiving waters. During construction, the CONTRACTOR(s) will identify and avoid all point sources of fecal coliform as identified in Chapter 3, Section 3.6 of the FEIS.	Construction	Status update to be phase specific.	Final design has been initiated and modeling efforts are ongoing.	Final design has been initiated and modeling efforts are ongoing.
EC-15	A Section 401 State Water Quality Certification will be required for the overall project. SCDOT is responsible for obtaining the certification as part of the Joint 404/401 permit application process.	Programmatic	Initial 401 water quality certification has been obtained.	N/A	N/A
EC-16	The CONTRACTOR(s) is responsible for development of a project specific SWPPP and for obtaining a Section 402 NPDES permit for the project prior to initiating land disturbing activities.	Construction	Status update to be phase specific.	Compliance inspection have been initiated and are ongoing.	Contractor shall comply.
EC-17	A State Navigable Waters permit will be required for construction over any navigable waterways (i.e., the Saluda River). The CONTRACTOR will be responsible for obtaining this permit.	Construction	Status update to be phase specific.	Permit has been obtained.	Permit has been obtained.

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-18	Impacts to jurisdictional waters will be permitted under a Department of the Army Section 404 permit from the U.S. Army Corps of Engineers (USACE). Based on preliminary design, it is anticipated that the proposed project will be permitted under an Individual USACE Permit (IP). SCDOT will provide the USACE with information regarding any proposed activities during the Section 404 permitting process. One permit would be obtained for the overall project. The required mitigation for this project will be provided through a Permittee Responsible Mitigation (PRM) site, developed in consultation with the USACE and other resource agencies.	Construction	Status update to be phase specific.	Permit mod for Ph 1 under development. Construction activities for the PRM site has reach substantial completion. Some minor work remains in the contract.	Permit mod for Ph 2 under development. Construction activities for the PRM site has reach substantial completion. Some minor work remains in the contract.
EC-19	Detailed hydraulic and hydrologic studies for each bridge crossing will be performed to determine the correct sizing of bridges and culverts. The project will be designed to be consistent with local floodplain development plans. Prior to construction activity in the area, coordination with Dominion Energy and Federal Energy Regulatory Commission (FERC) will be required for the Lower Saluda River floodway crossings due to its function as part of a hydroelectric facility.	Design	Status update to be phase specific.	Final design is ongoing and has not been completed.	Final design is ongoing and has not been completed.
EC-20	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. Where regulatory floodplains are defined, hydraulic structures will be designed to accommodate a 100-year (1% annual chance) flood. Where no regulatory floodplains are defined, culverts and bridges will be designed to accommodate a 50-year or greater magnitude flood event. Ongoing design efforts to minimize floodplain impacts will be coordinated with resource and regulatory agencies during the final design process.	Design	Status update to be phase specific.	Final design is ongoing and has not been completed.	Final design is ongoing and has not been completed.
EC-21	Prior to construction, the selected CONTRACTOR(s) will send a set of final plans and request for floodplain management compliance to the local County Floodplain Administrator.	Design	Status update to be phase specific.	Final design is ongoing and has not been completed.	Final design is ongoing and has not been completed.
EC-22	No substantial impacts to floodplain values are anticipated from the proposed project. If conditions change based on final design, additional measures will be evaluated to restore lost floodplain values.	Design	Status update to be phase specific.	Final design is ongoing and has not been completed.	Final design is ongoing and has not been completed.
EC-23	To mitigate for natural upland forested habitats, lost as a result of the project, SCDOT will plant trees (native species), as defined by the final design plans, within the rights-of-way adjacent to new or improved interchanges and roadways outside of required clear safety zones. Impacts to areas providing significant wildlife habitat, such as river floodplains and other large riparian buffers, will be minimized to the extent practicable through avoidance and minimization design measures such as the use of appropriate BMP's. Construction activities will be conducted within the disturbed footprint of the existing roadway and utility right-of-way to the maximum extent practicable.	Programmatic	(blank)	N/A	N/A
EC-24	To mitigate the temporary impacts to the Saluda Riverwalk Extension, SCDOT will notify the City of Columbia Parks and Recreation Department at least 48 hours in advance as to when the trail will be temporarily closed. SCDOT will also work closely with the Parks and Recreation Department to communicate the closing to trail users during construction. When construction is complete, the condition of the trail will be equal to existing conditions.	Construction	Status update to be phase specific.	Coordination occurred prior to the closing of the Saluda River greenway with the City of Columbia. The trail has been temporarily closed.	N/A for Phase 2.

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-25	Prior to construction, the project CONTRACTOR will perform Phase II ESAs on the properties identified within the footprint, including the subject properties, and/or on the adjoining properties or the ROW. Ultimately, the Phase II ESAs will include environmental sample collection (e.g. soil, soil gas, and groundwater), specifically, in areas where a potential for disturbance of soil and/or groundwater exists. Asbestos Containing Material (ACM) and/or Lead Based Paint (LBP) 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 impacts 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.	Programmatic	SCDOT has completed some of the identified Phase II ESAs.	N/A	N/A
EC-26	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 a discharge of oil into navigable waters.	Design	Status update to be phase specific.	Contractor has submitted the SPCC and it will be monitored during construction.	Contractor has submitted the SPCC and it will be monitored during construction.
EC-27	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 disposal of waste materials will be disposed of in approved landfills.	Construction	Status update to be phase specific.	Contractor has submitted a project specific hazardous waste management plan which is currently in place.	Contractor has submitted a project specific hazardous waste management plan which is currently in place.
EC-28	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 the SCDHEC requirements, if necessary. SCDHEC Hazardous Waste Treatment, Storage, and Disposal compliance staff can be contacted at 803-898-0290.	Construction	Status update to be phase specific.	Four buildings were demolished with asbestos and the construction materials were properly disposed.	Should hazardous materials be encountered the will be properly disposed of according to the site specific hazardous waste management plan and this commitment.
EC-29	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. If any such remains are encountered, the Construction Manager for Mega Projects would be immediately notified and all work in the vicinity of the discovered materials and site work shall cease until the SCDOT Chief Archaeologist directs otherwise. SCDOT Chief Archaeologist, Tracy Martin, can be contacted at 803-737-6371.	Construction	Status update to be phase specific.	Discussion will occur in pre-activity meeting with the Contractor and documented accordingly. Minor clearing has been conducted.	Contractor and subContractors shall comply.
EC-30	An archaeological professional will be present during any ground disturbing activities related to Site 38LX212 and 38RD59. Additionally, sites 38RD140, 38RD1175, and 38RD1176 will be protected from indirect effects, including borrow sites and equipment staging. Sites will be clearly marked in the field using orange construction fencing prior to beginning construction activities in the vicinity of the resources.	Construction	Status update to be phase specific.	Mapping provided to Contractor for sites within Phase 1.	N/A for Phase 2

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-31	<p>The Saluda Canal (Site 38RD59) would be clearly plotted on all construction plans. SCDOT has reduced ROW widths in the vicinity of the canal to avoid impacts to the canal during construction & any future maintenance activities along the ROW. A 25-foot buffer will be maintained around the canal for the majority of the resource. This zone would be clearly marked in the field using orange fencing during construction, and all ground disturbance and construction staging activities would be conducted outside of this buffer in order to avoid all possible impacts to the resource. SCDOT proposes to revise the commitment of a 25-foot buffer for a distance of approximately 700 feet along the proposed ramp to allow room for temporary construction access & equipment near I-26 Ramp C. To protect the boundary of the canal at this location, the following will be added to the contract as commitments:</p> <ul style="list-style-type: none"> •Prior to construction activities orange protective fencing will be installed along the edge of boundary of the Saluda Canal Historic District in areas that will maintain the original buffer as well as those areas where the buffer has been requested to be reduced between the two drainages and for a length to the south of the southernmost drainage. •Prior to construction activities silt fencing will be installed along the edge of SCDOT right of way to prevent runoff. •For areas along the identified Saluda Canal located along the I-26 Ramp C beginning Station 5412+50 and ending Station 5419+50 clearing will be allowable to the right of way but grubbing will be limited to within a distance of 5-feet inside of the right of way. Grubbing activities within the 5-foot buffer will require approval from SCDOT prior to occurring. •During land clearing activities prior to construction, an archaeologist will be present at all times to ensure that these activities undertaken close to the fencing do not damage the canal. •During construction, an archaeologist will visit the construction site twice a week to ensure that no activities have crossed over the protective fencing. Any observations during these visits will be recorded in an inspection log that will be made available to the SHPO. •As soon as an inadvertent impact is discovered, such as a previously unidentified cultural resource, archaeological feature, or artifact, construction in that area will stop immediately until an onsite consultation with SCDOT archaeologists and SHPO can determine the best strategies for avoiding, minimizing, or mitigating adverse effects upon the resource. 	Construction	Status update to be phase specific.	Canal plotted on plans and orange fencing has been installed.	N/A for Phase 2
EC-32	The CONTRACTOR(s) will ensure that all construction equipment is properly tuned and maintained. Idling time will be minimized to save fuel and emissions.	Construction	Status update to be phase specific.	Discussion will occur in pre-activity meeting with the Contractor and documented accordingly.	Discussion will occur in pre-activity meeting with the Contractor and documented accordingly.
EC-33	Water will be applied to control dust as needed to prevent dust impacts off site. There will be no open burning of removed vegetation. Vegetation will be chipped or delivered to waste energy facilities.	Construction	Status update to be phase specific.	Dust producing activities are not ongoing.	Dust producing activities are not ongoing.

EC ID	Description	Category	Status	Phase 1 Updates	Phase 2 Updates
EC-34	<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 will notify the Construction Manager for Mega Projects at least four (4) weeks prior to construction/demolition/maintenance of bridges and box culverts. The Construction Manager for Mega Projects will coordinate with SCDOT Environmental Services Office (ESO), Compliance Division, to determine if there are any active birds using the structure. SCDOT will be responsible for the removal/management of any active bird nests.</p>	Construction	Status update to be phase specific.	Surveys conducted on Ramps C and D prior to maintenance/rehab activities. Meeting minutes will be provided for documentation.	No current or anticipated notification of construction/demolition/maintenance of bridges and box culverts.
EC-35	Potential borrow areas to be used for fill dirt for the project will be field reviewed and assessed for the presence of any jurisdictional features, and BMPs will be applied prior to disturbance to avoid and/or minimize erosion and runoff of sediments.	Construction	Status update to be phase specific.	Contractor shall comply.	Contractor shall comply.
EC-36	Construction operations will be scheduled for off-peak traffic hours when reasonable/feasible.	Construction	Status update to be phase specific.	Project specific traffic management plan has been submitted and is being monitored.	Project specific traffic management plan has been submitted.
EC-37	A traffic maintenance plan will be developed prior to construction initiation to minimize interference to traffic flow from construction equipment and activities.	Design	Status update to be phase specific.	Contractor has submitted a conceptual traffic maintenance plan for review.	Contractor has submitted a conceptual traffic maintenance plan for review.
EC-38	After SCDOT acquisition, wetland delineations will be performed on Parcels 270, 187 and 316; archaeological investigations will be conducted on Parcels 187 and 316.	Programmatic	SCDOT has complied.	N/A	N/A



NEPA Re-evaluation

SUPPORTING DOCUMENTATION
MAY 6, 2022

Introduction

FHWA approved a Final Environmental Impact Statement (FEIS) and Record of Decisions (ROD) for the Carolina Crossroads Project on May 2, 2019. After approval, it was decided to construct the project in 5 phases or segments. Right of way was authorized and acquisition of parcels is ongoing. During the progression of right of way plans, the alternative was called the Modified Selected Alternative (MSA).

There have been three Reevaluations since the approval of the FEIS and ROD.

- August 2, 2020 – I-26 ramp, I-126 and Saluda River access road design refinements
- October 30, 2020 – Noise Barrier R update
- December 8, 2020 – Demolition Tract Re-evaluation

During the development of right of way plans and the right of way negotiation and acquisition process for the construction of Phases 2 and 3 of the Carolina Crossroads Project, changes have resulted for several parcels required for the Refined Recommended Preferred Alternative (RRPA) described in the FEIS/ROD. These changes are described in **Attachment A – Project-Wide Right of Way Updates**.

Project construction began in fall 2021 for Phase 1 with traffic control/maintenance activities, and full construction is anticipated to begin in spring 2022. Substantial project completion for Phase 1 is anticipated for 2024. Under Phase 1, improvements are proposed to I-26 and I-126, including construction of new ramps at the I-26/I-126 interchange and improvements to the I-126/Colonial Life Boulevard interchange.

SCDOT is administering the final design and construction of Phase 1 through a design-build contract. The design-build team has slightly modified various design elements of the previous RRPA, including an alternative design for the I-126 at Colonial Life Boulevard interchange to provide the most efficient and economical solution to SCDOT. These changes are described in **Attachment B - Phase 1 Design Changes**.

These changes have led to SCDOT to re-evaluate the environmental impacts documented in the FEIS/ROD and subsequent Reevaluations.

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APPENDICES

Appendix A CCR Relocation Study Update

Appendix B Wetland Forms

Appendix C Noise Analysis Addendum

Attachment A – Project-Wide Right of Way Updates

Changes based on right-of-way negotiations

During the FEIS/ROD, a relocation study was conducted based on the conceptual RPA alignment. Since that time, right-of-way plan development has progressed and right of way acquisition was initiated on Phases 1, 2 and 3. During property owner negotiations and the assessment of parking at each parcel, in some cases, SCDOT was unable to find replacement parking which resulted in a change in the property impact. In one case, previously identified relocations at an apartment complex were able to be avoided by providing replacement parking at surplus SCDOT property adjacent to the parcel.

Generally, changes in status or impacts was related to property owner negotiation and/or loss of parking or access that caused the parcel or building to become a full acquisition versus any design changes proposed by the design-build contractor. These changes resulted in either the parcel becoming a full acquisition, additional displacees on the parcel becoming new impacts, or the avoidance of impacts. Table 1 below provides a summary of these parcels. For detailed information on these parcels, please see the Relocation Impact Study Update in Appendix A.

All parcels in **Table 1** fall within the Project Study Area (PSA) for the FEIS/ROD.

Table 1. Summary of Parcels with ROW Changes since ROD

Parcel No.	FEIS Parcel Acquisition Status	Current Parcel Acquisition Status	New Displacee	Change in displacees
Phase 2				
195	Partial	Partial	Yes	+24 Residential & 8 Personal Property (storage units)
Phase 3				
111	Full	Partial	No	-1 Business
123	Partial	Full	Yes	+5 Businesses
138	Partial	Full	No	Land/Parcel; ODA
141	Partial	Partial	Yes	+8 Residential
142	Full	Full	No	-1 Business
149	Full	Full	Yes	+2 Businesses
156	Partial	Full	Yes	+1 Business; +1 Residential
169	Full	Full	Yes	+19 Residential*
175	Full	Partial	No	-1 Business
200	Full	Full	No	-1 Business
272	Full	Full	No	-1 Business
273	Full	Full	No	-1 Business
321	Partial	Full	Yes	+1 Business
377	Partial	Full	Yes	+1 Business
399	Partial	Full	Yes	+ 1 Residential
402	Full	Full	No	-3 Business
547	Full	Full	Yes	+4 Non-Profit
550	Partial	Full	Yes	+1 Business; +1 Residential

551	Partial	Full	No	-1 Residential
558	Full	Partial	No	-1 Business
626	Full	Full	No	-1 Business
627	Partial	Partial	Yes	+20 Residential
628	Partial	Partial	No	- 36 Residential**
629	Full	Full	No	-1 Business
630	Full	Full	No	-1 Business
631	Full	Full	Yes	+1 Residential*
657	Partial	Partial	Yes	+1 Residential*; reduction to 328 Personal Property
660	Partial	Partial	Yes	+1 Residential*; reduction to 108 Personal Property
662	Partial	Partial	Yes	+8 Residential
669/670	Full	Full	Yes	+1 Business

* Displacees within businesses

** SCDOT is in the process of getting formal approval to convey property to replace parking to reduce relocations; FHWA has given verbal approval.

In all, right of way changes have increased the number of residential relocations reported in the FEIS/ROD by 24 apartment/condominium units, 2 residences, and 22 displacees within businesses (20 within motels, 2 within other businesses). There was also an increase in the number of non-profit organizations relocated due to 5 independent services being housed in the SC Public Education Association building. The majority of these increases are primarily due to a loss of parking, but also from loss of access, design refinements, and long-term residents living in impacted motels. However, the total number of businesses, institutional properties and storage units have decreased from the FEIS/ROD. See **Table 2** for total relocations compared to the Refined RPA.

Table 2. Comparison of Relocation from FEIS to Modified Selected Alternative (MSA)

	Refined RPA (FEIS/ROD)	MSA
Business/office	49	48
Non-Profit	1	5*
Residential	95	143
Single-family	21	23
Apt/Condos	74	98
Displacees within businesses	N/A	22
Institutional	2	1
Storage units/Personal Property	1,050	444
Total	1,224	641

*SC Public Education Association building contained 5 independent, non-profit services

Due to the changes in the number of relocations, the project team reassessed the project for disproportionately high and adverse effects on Environmental Justice (EJ) populations. The FEIS/ROD

made a determination that the project was not anticipated to cause disproportionately high and adverse effects to EJ or Limited English Proficiency (LEP) populations.

As of January 31, 2022, based on demographic data collected for all right of way contacts made to date, approximately 53.8% of affected property owners or tenants were minority. This percentage is similar to the overall demographic make-up of the project study area (50.4% minority). Block group analysis conducted in the FEIS Community Impact Assessment resulted in a similar percentage of minority presence in the project study area. Data on racial demographics is not available for parcels where first contact has not been initiated to date. The SCDOT has not conducted door-to-door surveys to identify minority populations prior to contacting property owners as directed by the Uniform Act.

Table 2 summarizes an increase of 52 relocations in two relocation categories (48 residential, 4 non-profit) since the approval of the FEIS/ROD, which are addressed in this re-evaluation. As part of the right of way acquisition process, personal contact has been made with all individual relocatees listed in this re-evaluation. When initial right of way contact is made with a property owner or tenant, demographic data for each household is collected per the Uniform Relocation Act. Based on the demographic data collected to date, relocatees affected by the project are located within both EJ and non-EJ populations and neither will bear the full burden of the displacements throughout the project area.

For those parcels in Phases 4 and 5 where right of way acquisition has not been initiated, initial contact data on demographics of property owners and/or displacees has not yet been collected. The SCDOT has not conducted door-to-door surveys to identify minority populations prior to contacting property owners as directed by the Uniform Act.

Based on the Community Impact Assessment completed for the FEIS, the higher concentrations of EJ populations within the project study area are located in Block Groups within the Seven Oaks, St. Andrews and Broad communities, in which Phases 1, 2 and 3 of the project are located. Phases 4 and 5 of the Carolina Crossroads project fall primarily within the Columbiana and Harbison communities, where less than half of block groups are categorized as EJ (see FEIS, Appendix G Community Impact Assessment). As right of way acquisition in Phase 4 continues and acquisition in Phase 5 is initiated, based on census data, an increase in the percentage of EJ relocations for the project as a whole is not anticipated based on upcoming acquisitions in Phases 4 and 5. In addition, all relocations of single-family homes for the project have already been completed; no additional residential relocations are anticipated within Phases 4 and 5.

SCDOT is conducting all right of way acquisitions for the Carolina Crossroads project under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 to ensure that displacees are treated fairly and consistently. For each displacee on the project and to the extent feasible, replacement housing was selected within the neighborhood in which the displacement dwelling was located; when that was not possible due to lack of availability, nearby or similar neighborhoods were sought for displacees. A displacee's school district, distance to their workplace and proximity to transit were considerations when locating replacement housing options for displacees on the project. On the Carolina Crossroads project, tenants within apartment complexes have been relocated into the same complexes when units within the complex have been available to the extent practicable. Long-term motel residents are treated as tenants if the motel is considered their permanent place of residence and have been offered comparable replacement housing to the extent practicable.

In addition to the identification of comparable housing, the Act has provided relocation benefits to both eligible homeowners and tenants that were displaced by the Carolina Crossroads project that may include: moving expense payments, purchase or rental differential payments, replacement housing payments, closing costs and/or down payment assistance. Replacement Housing Down Payment Option is a system of payments to help short-term owners and tenants purchase and relocate to decent, safe and sanitary housing. On this project, tenants have been offered the option of these benefits to move to home ownership. SCDOT is providing moving expense payments, purchase or rental differential payments, replacement housing payments, and closing costs and/or down payment assistance as relocation benefits.

While the impacts described above would occur in EJ areas as well as non-EJ areas, the EJ populations would share in the potential benefits of implementing a transportation solution that improves mobility and reduces traffic congestion within the project corridor. In addition, the MSA does not divide any neighborhood or community within the study area and one population does not bear the full burden of project impacts or relocations. Neighborhoods adjacent to the project would maintain connections within the community and community cohesion would not be adversely affected. No community facilities within these neighborhoods would be relocated.

Other potential benefits of the Modified Selected Alternative (MSA), include:

- employment opportunities due to construction and the potential redevelopment/development opportunities in the areas surrounding the interchanges, which would result in positive economic gains in the form of increased wages and spending;
- improved mobility through the project vicinity in the area of the interchanges;
- improved user experiences relating to personal, emotional and mental health due to shorter travel times and ease of navigation;
- improved safety for pedestrians around interchanges;
- improved safety for motorists along the corridor and at interchanges;
- enhanced access and connectivity along the corridor; and
- reduced travel time within the corridor.

During development of the DEIS and FEIS, public outreach to EJ and other special populations was customized to specifically target EJ and LEP populations. These outreach strategies have provided these populations opportunities for engagement and input into the project and the transportation decision-making process. For additional information on targeted outreach, please see the FEIS, Chapter 4, Appendix O.

Based on the information collected to date, an assessment of additional relocations, mitigation and benefits of the project, the MSA is not anticipated to cause disproportionately high and adverse effects to EJ or LEP populations.

Parcels outside of the FEIS PSA

Another category of property/tract changes addressed in the re-evaluation were parcels that had previously been assessed as relocations in the FEIS Relocation Study Report; once the parcels were acquired, it was determined that a portion of the parcel extended beyond the FEIS/ROD Project Study Area (PSA) boundary. Nine (9) parcels had additional right-of-way extending beyond the PSA. They include parcels 671, 657, 152, 629, 630, 631, 547, 196, and 211. In Figures 1-7, the blue line shows the original

FEIS PSA and the red line is the updated Study Area limits that were not previously covered; these study area limits are generally the parcel boundary to be acquired. These locations were field reviewed for cultural resources and jurisdictional features (streams and wetlands).

Table 3. Summary of Parcels Extending Beyond the FEIS PSA

Parcel No.	FEIS Parcel Acquisition Status	Parcel extends beyond FEIS Project Study Area	Displacee	Type
Phase 2				
196	Full	Yes	Yes*	Business
211	Partial	Yes	No	Land/Parcel only
Phase 3				
152	Partial	Yes	No	Land/Parcel only
547	Full	Yes	Yes*	Non-Profit
629	Full	Yes	Yes*	Business
630	Full	Yes	Yes*	Business
631	Full	Yes	Yes*	Business
657	Full	Yes	Yes*	Business & Residential
671	Full	Yes	Yes*	Business

*Included as a total take in FEIS/ROD Relocation Study Report.

Archaeological and Wetlands Survey: [Parcels 671, 657, 629, 630, 631, 547, 196, and 211](#)

On June 29-30, 2021, investigators conducted archaeological and wetland surveys of Parcels 671, 657, 152, 629, 630, 631, 547, 196, and 211. The locations of the parcels are presented in Figures 1-7. The investigations are summarized below.

Parcel 671 – Fireworks Supermarket

The currently investigated portion of **Parcel 671** is located in a paved and partially wooded and grassy area to the west of the Fireworks Supermarket along Jamil Road, approximately 240 feet northwest of the intersection of Jamil Road and King George Way. The portion of the parcel that is outside of the original study area is approximately 0.36 acres. The unpaved portion consists of graded uplands and a large drainage area. No shovel tests were excavated at Parcel 671, and no further survey is recommended at this location. No wetlands or streams were observed within this parcel.

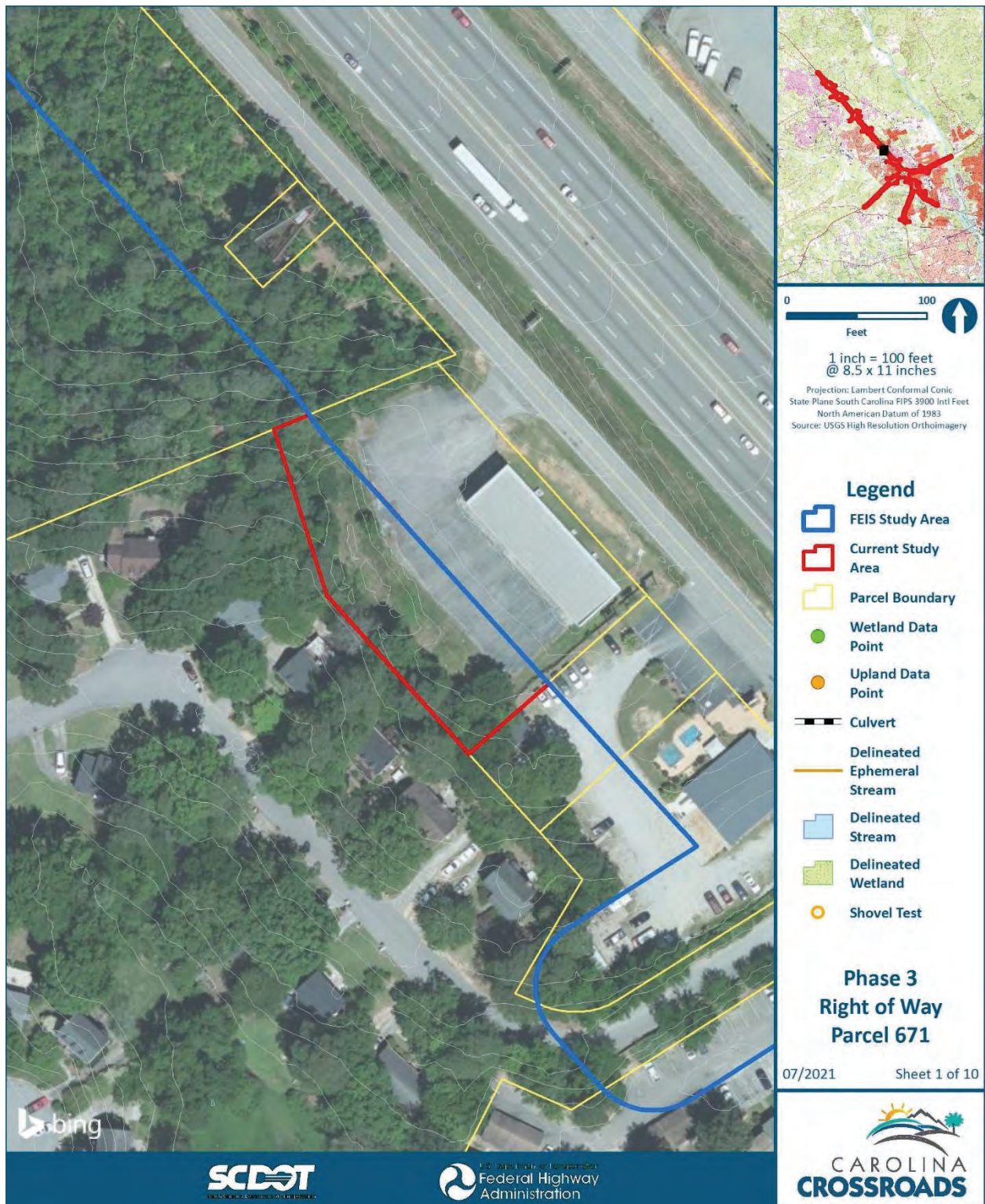


Figure 1. Parcel 671



View of Parcel 671, facing southeast.

Parcel 657 – U-Haul Storage Facility

The currently investigated portion of **Parcel 657** is located in a largely developed U-Haul storage facility along Jamil Road, approximately 715 feet north of the intersection of Jamil Road and St. Andrews Road. The portion of the parcel that is outside of the original study area is approximately 0.91 acres, the majority of which is developed storage units. The unpaved portion of the parcel consists of a steep, grassy bank adjacent to a fenced apartment complex. No shovel tests were excavated at Parcel 657, and no further survey is recommended at this location. No wetlands or streams were observed within this parcel.



Figure 2. Parcel 657



View of Parcel 657, facing southwest.

Parcel 152

The currently investigated portion of **Parcel 152** is located in an area east of a commercial parking lot along Fernandina Road, approximately 950 feet northwest of the intersection of Fernandina Road and St. Andrews Road. The portion of the parcel that is outside of the original study area is approximately 0.91 acres. This portion of the parcel consists of a steep, wooded bank adjacent to a razed apartment complex. No shovel tests were excavated at Parcel 152 and no further survey is recommended at this location. No wetlands or streams were observed within this parcel.

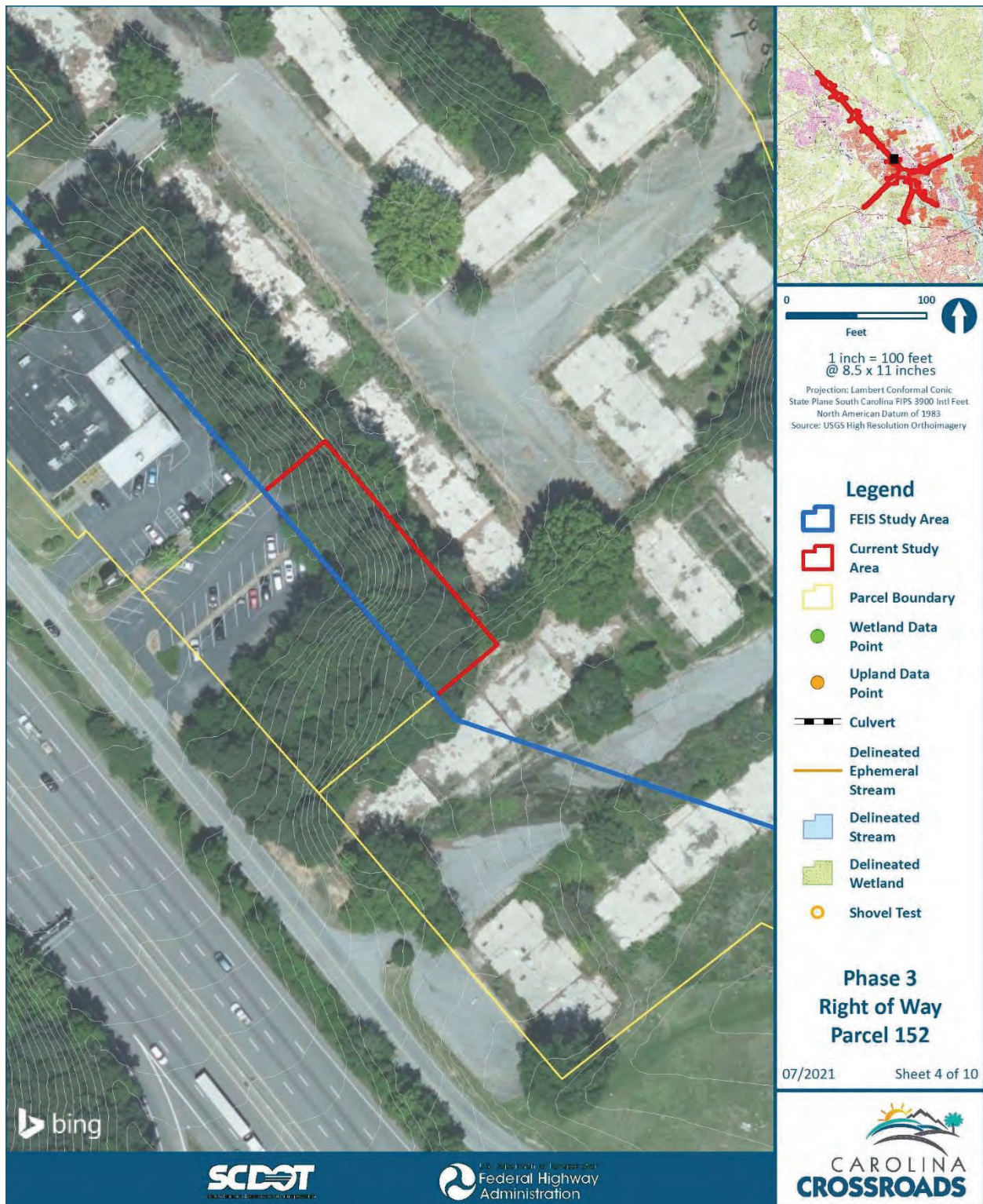


Figure 3. Parcel 152



View of Parcel 152, facing northwest.

Parcels 629, 630, and 631

The currently investigated portion of **Parcels 629, 630, 631** is located in an area west of two vacant commercial buildings (former night club in Parcel 630 and Spherion complex in Parcel 629) and their associated parking lots along Berryhill Drive and surrounding the southernmost portion of the Red Roof Inn. The northernmost parcel, Parcel 631, is located approximately 365 feet southeast of the intersection of Berryhill Drive and Woodland Hills Road. The portions of the parcels that are outside of the original study area totals approximately 4.67 acres. The majority of this acreage is covered in paved parking lots. The remainder consists of narrow, steep strips of land adjacent to Stoop Creek. No shovel tests were excavated at Parcels 629, 630, or 631, and no further survey is recommended at this location.

One stream (Stream 1 Stoop Creek) is located on all three parcels (701 linear feet). Stoop Creek is a perennial stream with a bank height of between 8 and 10 feet and a bank full width of approximately 20 feet. As currently proposed, the design would not impact wetlands on this parcel; however, if the design-build contractor proposed an alternate design that did impact wetlands at this location, those impacts would be documented in a re-evaluation and USACE Individual Permit (IP) modification by the contractor.

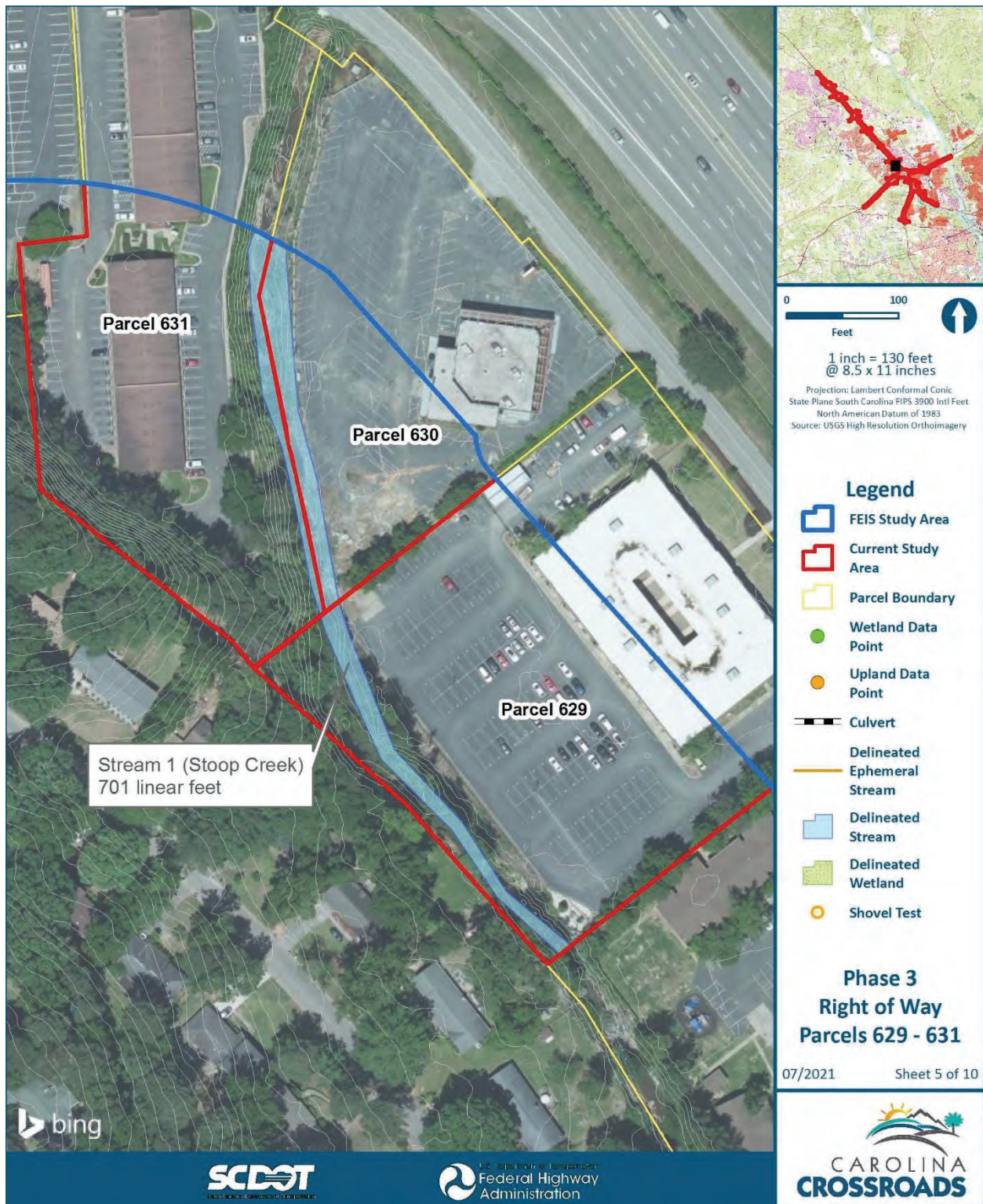


Figure 4. Parcels 629, 630, and 631



View of Parcel 629, facing northwest.



View of Parcel 630, facing northwest.



View of outfall from Parcel 631, facing west.

Parcel 547 – South Carolina Education Association Building

The currently investigated portion of **Parcel 547** is located on the parcel for the South Carolina Education Association Building along Rockland Road, approximately 1,275 feet northwest of the intersection of Zimalcrest Drive and Bush River Road. The portion of the parcel that is outside of the original study area is approximately 0.56 acres and is located south of the building. This portion of the parcel consists of a disturbed wooded area between the parking lot and a hotel to the south. Investigators excavated one exploratory shovel test near the center of the space; the shovel test exposed a 2.5YR5/8 red loamy clay from 0-20 cm bs, over a compact 2.5YR5/6 red clay subsoil at 20-40+ cm bs. The fill from this test was sifted through ¼-inch mesh hardware cloth. No cultural materials were recovered from the investigation at Parcel 547. No further archaeological survey is recommended at this location. No wetlands or streams were observed within this parcel.



View of Parcel 547, facing east.

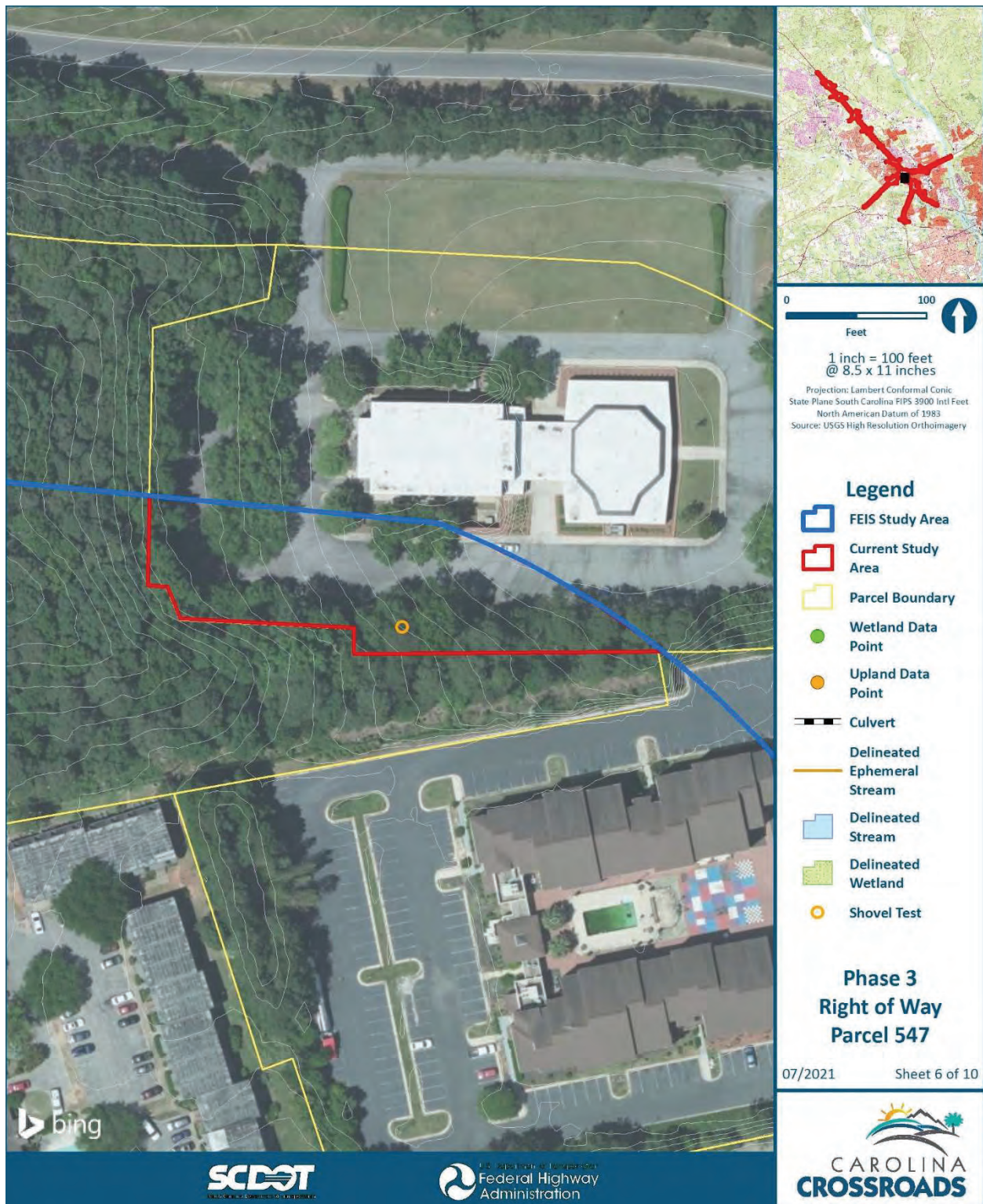


Figure 5. Parcel 547

Parcel 196

The currently investigated portion of **Parcel 196** is located in an area within and surrounding a commercial development parking lot along Briargate Circle, approximately 660 feet southwest of the intersection of Briargate Circle and Broad River Road. The portion of the parcel that is outside of the original study area is approximately 1.36 acres, the majority of which is a paved parking lot. All grassy areas surrounding the parking lot are highly modified and manicured. No shovel tests were excavated at Parcel 196, and no further survey is recommended at this location. No wetlands or streams were observed within this parcel.



View of Parcel 196, facing south.



Figure 6. Parcel 196

Parcel 211

The currently investigated portion of **Parcel 211** is located in a wooded area in a residential neighborhood, to the west of the intersection of Battleford Road and Emerald Valley Road. A transmission line corridor borders the parcel to the west. The portion of the parcel that is outside of the original study area is approximately 0.08 acres. The area is wooded in mixed pines and hardwoods with a moderate understory of small trees and vines. Investigators excavated one shovel test in the center of the parcel. The shovel test exposed a 2.5YR5/8 red loamy clay with heavy gravel inclusions from 0-30 cm bs, over a compact 2.5YR5/6 red clay subsoil at 30-50+ cm bs. The fill from the shovel test was sifted through ¼-inch mesh hardware cloth. No cultural materials were recovered from the investigations at Parcel 211. No further archaeological survey is recommended at this location. No wetlands or streams were observed within this parcel.



View of Parcel 211, facing west.



Figure 7. Parcel 211

Parcel from a Previous Re-evaluation/Environmental Commitment

Parcels 187/316 and 270 were included in Reevaluation #1; they were not surveyed at that time due to limitations of access related to ongoing right of way negotiations. This re-evaluation documents the surveys completed to fulfill an environmental commitment to complete surveys once the parcels were acquired.

Parcels 187 and 316

The currently investigated portions of **Parcels 187 and 316** are adjacent to each other and are located in a wooded area in a residential neighborhood, to the west of the intersection of Chippewa Drive and Chicopee Drive. Surveys were conducted on these parcels to fulfill environmental commitments from Reevaluation #1 to complete wetland/stream and cultural resources studies once parcels were fully acquired. The portion of the parcels that is outside of the original study area is approximately 0.33 acres. The area is heavily wooded, and no additional features were identified on this parcel outside of what was identified during the Preliminary Jurisdictional Determination (PJD). Impacts to the wetland located on Parcels 187 were covered in the approved Section 404 Individual Permit. Any changes to the design at this location would be documented in a re-evaluation and USACE Individual Permit (IP) modification by the design-build contractor.

Investigators excavated three shovel tests spaced 30 meters (100 feet) apart to cover the area. The shovel tests generally exposed a 10YR4/2 dark grayish brown sandy loam from 0-20 cm below surface (bs), over a 10YR5/6 yellowish brown loamy sand from 20-40 cm bs, underlain by a compact 10YR7/6 yellow sand subsoil at 40-60+ cm bs. The fill from these tests was sifted through ¼-inch mesh hardware cloth. No cultural materials were recovered from the investigations at Parcels 187 and 316. No further archaeological survey is recommended at this location.



Figure 8. Parcels 187 and 316

Parcel 270

Parcel 270 is located in a wooded area behind an abandoned nightclub adjacent to Longcreek Drive. The parcel is split into two pieces. The eastern portion of the parcel (**Parcel 270a**) that is outside of the original study area is approximately 0.45 acres and is approximately 630 feet northeast of the intersection of Longcreek Drive and US 176. Parcel 270a is wooded and is generally low and wet. It appears to be an area where people dispose of used tires and other debris. The northern portion of Parcel 270a is very steep and backs up to a motel along Garner Lane. Investigators excavated one shovel test in the uplands in the southern portion of Parcel 270a; this shovel test exposed a 2.5YR5/3 reddish brown loam clay at 0-30 cm bs over a 2.5YR5/8 red clay subsoil at 30-50+ cm bs. The fill from this test was sifted through ¼-inch mesh hardware cloth. No cultural materials were recovered from the investigations at Parcel 270a. No further archaeological survey is recommended at this location.

One wetland (W1) was delineated on Parcel 270a. Wetland W1 is 0.15 acre in size and has a Cowardin Classification of palustrine forested (PFO). As currently proposed, the design would not impact wetlands on this parcel; however, if the design-build contractor proposed an alternate design that did impact wetlands at this location, those impacts would be documented in a reevaluation and USACE IP modification. The US Army Corp of Engineers Wetland Delineation forms are presented in **Appendix B**.

The western portion of the parcel (**Parcel 270b**) that is outside of the original study area is approximately 1.56 acres and is approximately 270 feet north of the intersection of Longcreek Drive and US 176. Parcel 270b is wooded and slopes down fairly steeply from west to east. The area has witnessed extensive erosion and dumping of modern refuse. Investigators excavated three exploratory shovel tests spaced 30 meters (100 feet) apart; all shovel tests exposed a 2.5YR5/8 red clay subsoil at the ground surface. No cultural materials were recovered from the investigations at Parcel 270b. No further archaeological survey is recommended at this location. No wetlands or streams were observed within Parcel 270b.



Figure 9. Parcel 270



View of Parcel 270a, facing north.



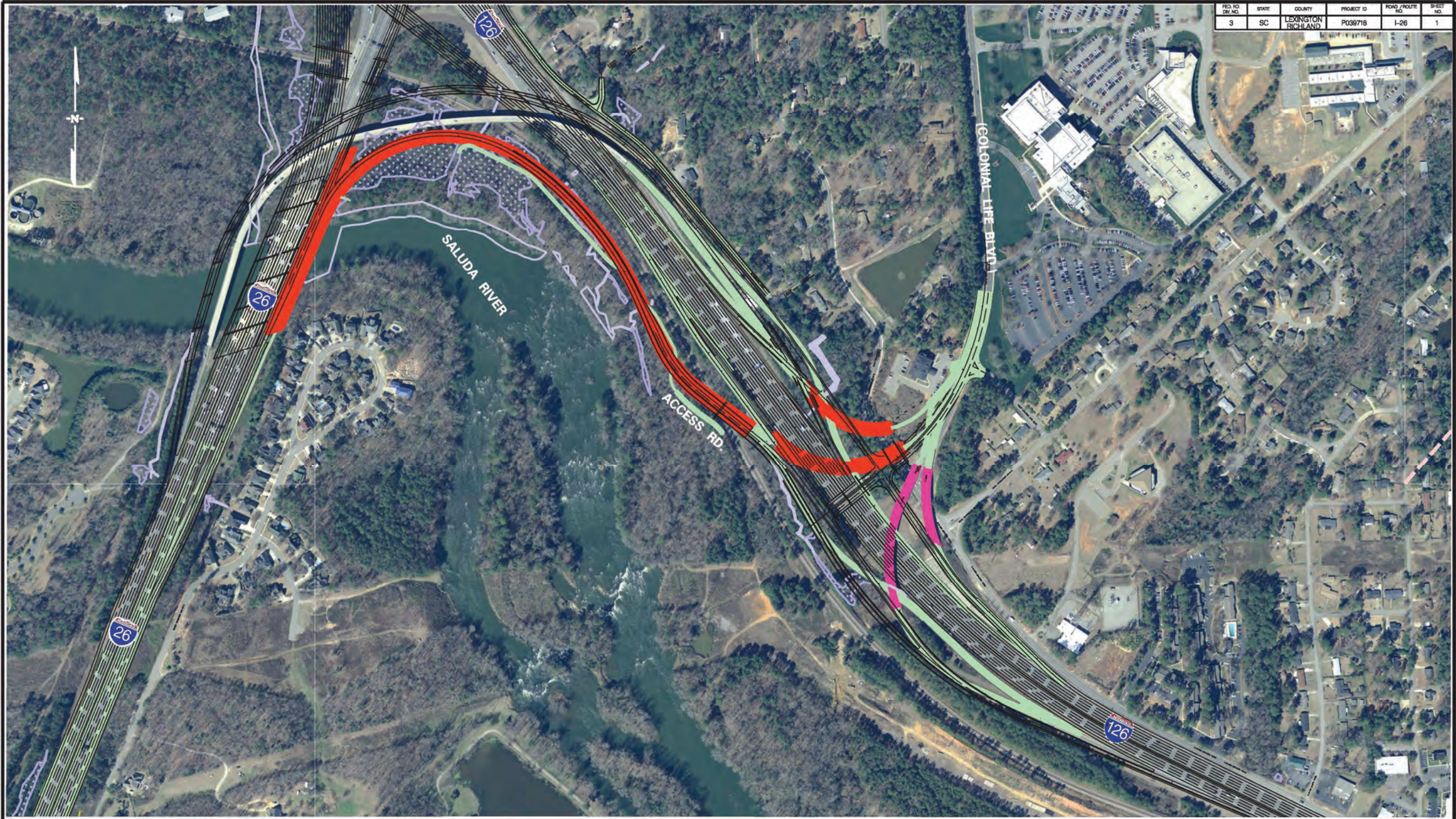
View of Parcel 270b, facing north.

Attachment B – Phase 1 Design Changes

Proposed Design Changes

The CCR Phase 1 design-build team evaluated the previous RRPA for Phase 1 in an effort to develop more efficient and economical solutions based on both design and construction. This included a detailed evaluation of the I-126 at Colonial Life Boulevard interchange. A full access tight urban diamond interchange was proposed as the RPA to replace the existing partial interchange.

The CCR Phase 1 design-build team developed an alternative design for this interchange—a partial diverging diamond interchange (DDI). Following an extensive analysis of the alternative design, the proposed partial DDI design was chosen as the most preferred concept based on design innovation, constructability, cost effectiveness, and traffic operations (see **Figure 1** for the design changes).



FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	LEXINGTON RICHLAND	P039718	I-26	1

LEGEND	
	MODIFIED ROADWAY
	MODIFIED BRIDGES
	REHAB BRIDGES
	WETLANDS
	PREVIOUS REFINED RPA

**Figure 1 Design Modifications
Carolina Crossroads Phase 1**

6			
5			
4			
3			
2			
1			
0			
REV. NO.	BY	DATE	DESCRIPTION OF REVISION

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
CAROLINA CROSSROADS PHASE 1
DISPLAY SHEET SCALE: 1" = 400'

CCR Phase 1 expands the existing partial interchange with direct connectors oriented towards the east to serve the traffic to and from downtown Columbia and provides direct connectors to and from the west of the interchange. The purpose of the project is to provide traffic access to and from I-26 and I-126 to Colonial Life Boulevard in all directions, allowing for permanent closure of the I-26/Bush River Road interchange. However, Colonial Life Boulevard terminates at I-126. As a result, the new design is a partial DDI with access to the interchange only from the north, east, and west. This partial DDI design creates a new single “crossover” intersection instead of two signalized intersections as proposed in the FEIS. The crossover is where three of the four interchange ramps intersect at a single location. The revised design will also maintain and rehabilitate the existing Colonial Life Boulevard ramp bridges from I-126 west and to I-126 east.

Additional design improvements were also made as part of the new partial DDI:

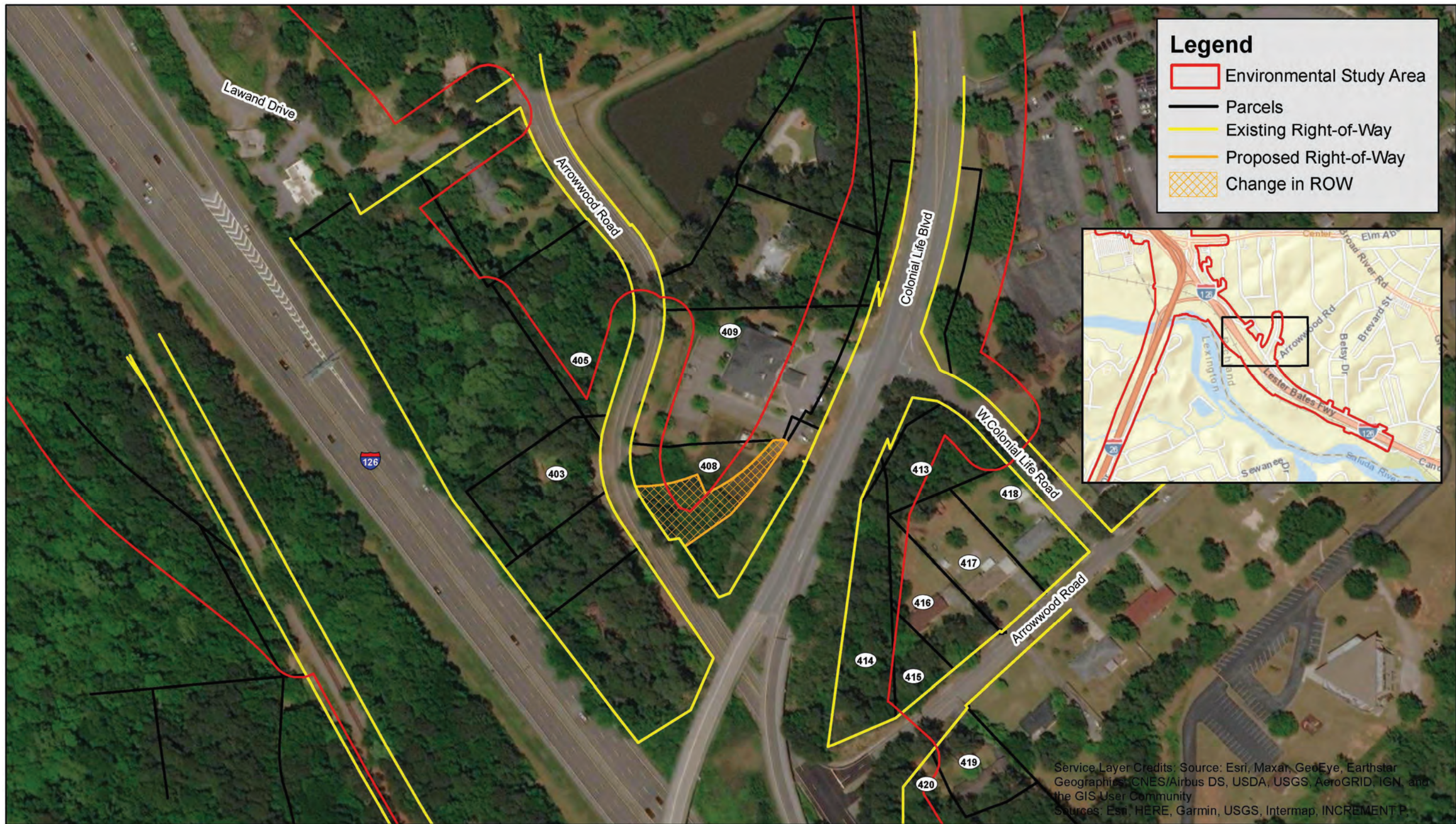
1. Modification of the system-to-system ramp from westbound I-26 to eastbound I-126. The change was made at the request of SCDOT to avoid a large Dominion Energy transmission tower. This change led to the eastbound entry ramp merge point to I-126 from the I-126/Colonial Life Boulevard interchange being moved closer to the Greystone Boulevard interchange.
2. Modification of the right-turn movement from the westbound I-126 exit ramp to northbound Colonial Life Boulevard. The free one-lane right-turn movement was modified to a two-lane signal-controlled movement.
3. Modification of the intersection of Colonial Life Boulevard and West Colonial Life Boulevard from a right-in/right-out into a full intersection. This intersection will include a signal that will work in tandem with the signal at the new crossover intersection. It was determined that the Colonial Life Boulevard/West Colonial Life Boulevard intersection and the new crossover intersection could essentially be clustered and operated with a single controller due to their proximity to each other.

As a result of these design changes, the impacts to the human and natural environment have been reevaluated for CCR Phase 1, as discussed below.

Environmental Effects Associated with the Final Project

Right-of-Way

The design revisions result in changes to the amount of right-of-way to be acquired. Approximately 0.35 acre of additional right-of-way is needed for CCR Phase 1, compared to the previous RRPA design. Additional right-of-way will need to be acquired from one parcel (Parcel 408) by the new interchange at I-126 and Colonial Life Boulevard, as shown in **Figure 2**. A small portion (approximately 0.06 acre) of the additional right-of-way on Parcel 408 extends beyond the previously surveyed project study area (PSA) for the FEIS/ROD (environmental study area). This area was field reviewed for jurisdictional features (streams, wetlands), cultural resources, and hazardous waste sites/hazardous materials. The area assessed is an undeveloped forested upland area and is part of a larger parcel that is commercially developed to the north. Based on the field review, and review of previous studies, no environmental constraints were identified, and no new environmental impacts are anticipated.



Date: 01.25.2022



Figure 2 Right-of-Way Impact Change

Carolina Crossroads Phase I

0 150
Feet



Saluda River Access Road

The access road along the Saluda River that is used for maintenance of transmission lines and access for the Saluda Riverwalk and Saluda River boat ramp was proposed to be removed and relocated for the RRPA design. The proposed access road would be shifted slightly to accommodate final design requirements and to ensure avoidance of the Saluda Canal, a historic resource. The realignment would result in similar impacts to waters of the U.S. (WOUS), with a slight reduction to the impacts (clearing) to Wetland 25.

Noise

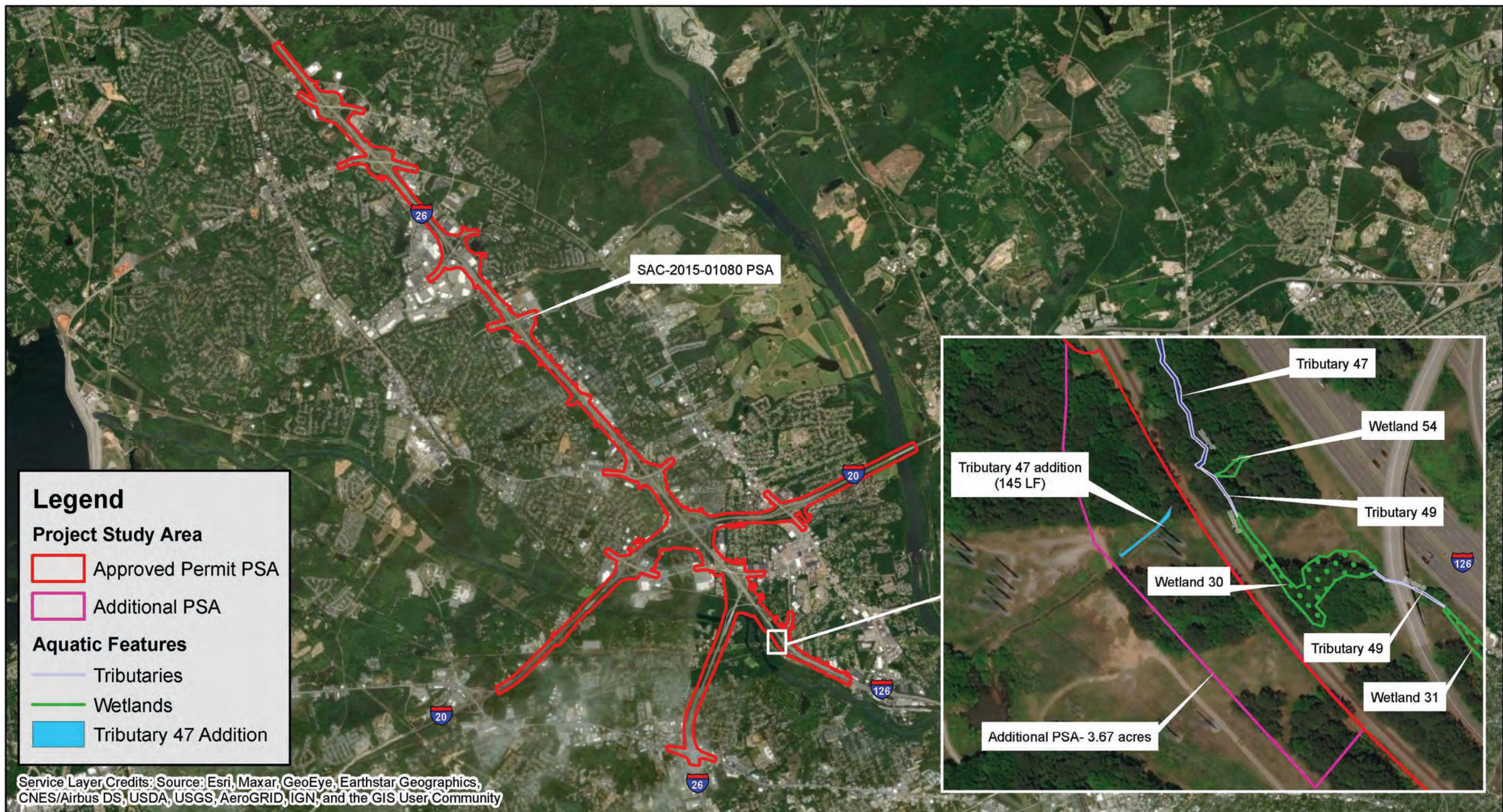
An addendum to the noise analysis was conducted to evaluate and document the geometric alignment changes proposed by the design-build team (enclosed in **Appendix C**). Sound levels were evaluated for the noise receivers within five noise sensitive areas (NSAs). An NSA is a group of receptors that are situated in a single geographic area and might be protected by a single noise barrier. The CCR project area was divided into NSAs to make the noise analysis process more organized. Six NSAs are within CCR Phase 1. Overall, there is a reduction in the number of impacts with the alternative design when compared to the May 2019 FEIS and the July 2020 noise addendum. Nine fewer receivers would be impacted by noise from the alternative design. Four noise barriers were re-evaluated based on the revised design. The feasibility, reasonableness, and design of Noise Barriers V, X, Y and Z were re-evaluated as part of this addendum. This re-evaluation determined whether these four noise barriers would pass the feasible and reasonable criteria to construct each noise barrier. Based on the SCDOT Traffic Noise Abatement Policy, none of the barriers were reasonable or feasible to construct; therefore, no barriers are warranted for the Phase 1 revised design.

Waters of the U.S./Section 404 Permit Modification

The design modifications would result in a change in impacts to WOUS, which have been permitted through a Department of Army, Corps of Engineers Permit (SAC-2015-01080). This permit authorized a total of 12,969 linear feet (LF) of stream impacts and 4.42 acres of wetland impacts, which were mitigated through a permittee-responsible mitigation (PRM) plan.

The total stream/tributary impacts associated with CCR Phase 1 will be consistent with the approved permit, with an anticipated reduction in impacts as a result of final roadway and drainage design. The reduction in impacts is primarily from the avoidance of Tributaries 54, 55, and 56. Reductions are also anticipated at Tributaries 47, 50, and 53. Final drainage design and a sewer line relocation will result in additional impacts to Tributary 47 outside the existing (approved permit) PSA. The additional area (3.7 acres) was surveyed and contains an additional 145 linear feet of Tributary 47. Approximately 50 linear feet of additional impacts to Tributary 47 are anticipated in this location (see **Figure 3**). However, due to other design revisions the overall impacts to Tributary 47 will be reduced.

Impacts to Wetland 23 are anticipated to increase. However, the impacts to Wetlands 25, 27, 30, 33, 34, and 54 will be reduced, and impacts to Wetlands 36 and 38 will be avoided.

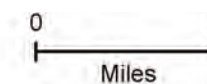


Date: 01.26.2022



Figure 3 Carolina Crossroads Approved Permit Project Study Area

Carolina Crossroads Phase I



The proposed design is anticipated to result in a net reduction of approximately 0.1 acre of wetland impacts and 100 linear feet of stream impact, and the final impact totals, including mitigation credits, will be reflected in a permit modification for individual permit SAC-2015-01080. The proposed design is anticipated to result in a net reduction of approximately 0.1 acre of wetland impacts and 100 linear feet of stream impact.

Public Involvement

A construction public meeting was held in person on November 18, 2021, to provide information about the anticipated construction impacts for CCR Phase 1. A virtual meeting was also held, which provided the same materials that were available at the in-person meeting. The meeting shared displays and renderings of the construction design and impacts on traffic. Written comments were not accepted and there was no formal comment period.

Summary

The potential impacts associated with the continued negotiation and acquisition of right-of-way, along with design changes to CCR Phase 1 have been evaluated to ensure consistency with the original decisions made in the FEIS/ROD. Based on the further evaluation of parcels, versus contractor modifications, changes have occurred which resulted in either the parcel becoming a full acquisition, additional displacees on the parcel becoming new impacts, or the avoidance of impacts. Right-of-way changes have increased the number of residential relocations reported in the FEIS/ROD by 24 apartment/condominium units, 2 residences, and 22 displacees within businesses (20 within motels, 2 within other businesses).

The RRPA for CCR Phase 1 has also been modified to provide an alternate design for the I-126 at Colonial Life Boulevard interchange. The proposed design will improve constructability, maintain and rehabilitate the existing two ramp bridges, and improve traffic operation by utilizing a single “crossover intersection instead of two signalized intersections. The proposed modified design will require a minor amount of additional ROW but will not result in any additional displacements. Potential noise impacts associated with the proposed design was conducted, with the determination that the revisions do not differ from the original noise findings, and noise abatement measures are not warranted. Finally, the proposed design will result in a net loss of impacts to wetlands and other Waters of the U.S. (WOUS), but will require modification of the Section 404, Department of Army Permit SAC-2015-01080. As such, the impacts associated with the proposed design of CCR Phase 1 are similar to the impacts of the RRPA, and consistent with the overall findings and decision documented in the FEIS/ROD.

APPENDIX A

CCR Relocation Study Update

Appendix A:

Relocation Impact Study

Carolina Crossroads

I-20/26/126 Corridor Improvement Project

Lexington and Richland Counties, South Carolina

Federal Project ID: P027662

PIN P027662

Road/Route: Interstates 20/26/126 (Carolina Crossroads)

Re-evaluation May 5, 2022

Prepared for
South Carolina Department of Transportation,
and the Federal Highway Administration

Prepared by



Relocation Impact Study

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Relocation Impact Study

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Relocation Impact Study

1 Changes to this Document Since the FEIS/ROD

FHWA approved a Final Environmental Impact Statement (FEIS) and Record of Decisions (ROD) for the Carolina Crossroads Project on May 2, 2019. Since that time the project has progressed towards construction that will occur in five (5) phases. The phases of construction are proposed to overlap or be performed consecutively with little or no time between phases and the overall construction time of all phases of work is anticipated to be less than 10 years.

Since the approval of the FEIS and ROD, the design of the project has continued to be progressed and refined for the purpose of right of way acquisition. During the design progression, the anticipated right of way acquisition on several parcels has changed. These changes in design and right of way have been addressed in three re-evaluations of the EIS.

The first re-evaluation had the following design modifications that resulted in right-of-way changes: realignment of the I-26 Westbound Ramp onto I-126 Eastbound and Colonial Life Boulevard; realignment of the I-126 Westbound exits to Colonial Life Boulevard and I-26 Eastbound; and relocation of the Saluda River Access Road. These design modifications did not result in any changes in right of way or relocations.

The second re-evaluation included an updated noise study along Interstate 20 and did not result in any changes in right of way or relocations.

The third re-evaluation focused on three parcels (Tracts 392, 399, and 404) that partially extended beyond the Project Study Area (PSA) from the EIS. Tract 392 was owned by the SCDOT prior to the project and was previously the location of the Right of Way Office. Parcel 399 became a full acquisition and relocation of a single-family residence at 521 Lawand Drive. Parcel 404 became a full acquisition, though no structures or relocations were associated with this parcel.

Changes that have occurred during right of way acquisition and current negotiations are being addressed in a fourth re-evaluation. Several parcels were originally documented as partial acquisitions in the Relocation Study completed for the FEIS/ROD but are currently considered full acquisitions. Some of the parcels are undeveloped land, which would not require the relocation of a residence, business or other structure. However, some parcels did have residential or commercial buildings. These changes increased the number of residential relocations reported in the FEIS/ROD by 48 but decreased the overall number of displacees by 583. Relocations for the project are currently 143 residential relocations and 498 non-residential relocations (including 48 business/offices, 5 non-profits, 1 institutional, 444 storage units and personal property) for a total of 641 relocations.

In coordination with SCDOT and FHWA, the Relocation Report has been updated to reflect changes in the potential relocation impacts associated with the Carolina Crossroads project.

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2 Description of Project

The SCDOT, in consultation with the FHWA, is studying alternatives to improve mobility and enhance traffic operations within the I-20/26/126 corridor (Appendix A). The primary purpose of the project is to implement a transportation solution(s) that would improve mobility and enhance traffic operations by reducing existing traffic congestion within the corridor while accommodating future traffic needs. The secondary purposes are to enhance safety, improve freight mobility, and improve system linkages while minimizing community and environmental impacts.

The I-20/26/126 corridor is located in the Columbia, South Carolina metropolitan area. Specifically, the corridor is located within the city limits of Columbia and West Columbia in both Richland and Lexington Counties. Land use within the proposed project area is composed of commercial development, residential development, industrial development, and sparse undeveloped forestland. Land use directly adjacent to the existing project corridor is primarily commercial, roadway and utility rights-of-way (ROWs), and sparse undeveloped forestland in the vicinity of the Saluda and Broad Rivers. The boundaries of the study area, shown in Figure 2.1, are generally:

- I-20 from US-378 to the Broad River crossing
- I-26 from Broad River Road to US-378
- I-126 from I-26 to Colonial Life Boulevard

The I-20/26/126 corridor is listed as one of South Carolina's most congested interstate corridors. The corridor is a major hub for the Midlands' commuters and commerce, serving as a main route in and out of Columbia. It serves a number of important functions locally including regional access to downtown Columbia, adjacent employment areas and neighborhoods, and regional activity centers. With its central location in the state, the I-20/26/126 corridor also serves as a primary thoroughfare for travelers going to the coast and mountains for recreation and tourism. Additionally, I-26 in particular also serves as a major cargo route between Lowcountry ports and Upstate manufacturers. I-26 is further elevated in importance by its direct connection with I-20 which connects South Carolina with the rest of the southern states; I-85 which connects Alabama to Virginia; I-77 which connects South Carolina to the Midwest and north; and I-95 which runs from Florida to Maine.



Figure 2.1 Project boundary

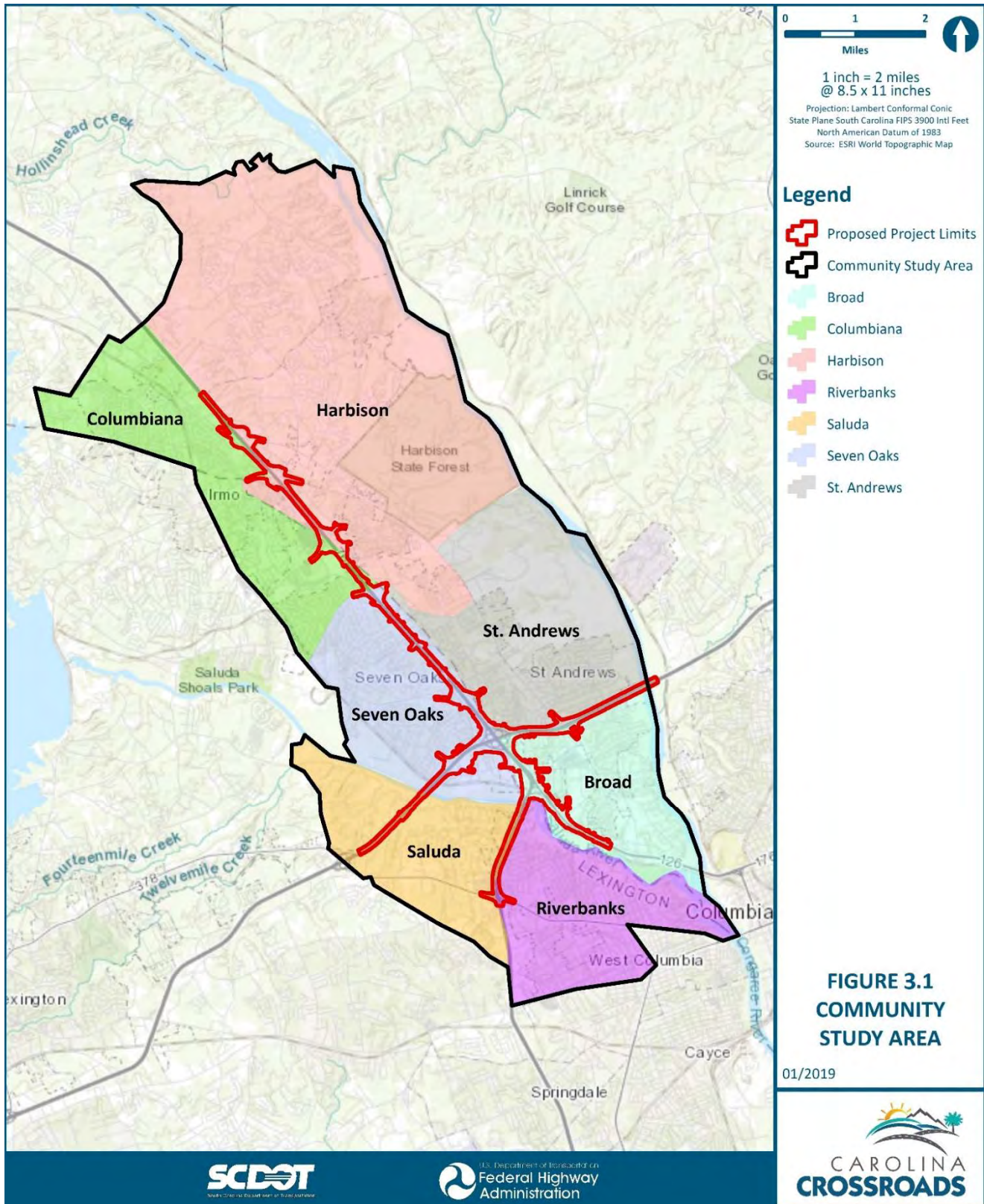
3 Characteristics of Communities and Neighborhoods in the Community Study Area

In developing the community study area (CSA) for the Carolina Crossroads project, neighborhoods and communities were identified within a one-mile radius of the I-20/26/126 corridor. For ease of data collection, the U.S. Census Bureau tract/Block Group boundaries and Transportation Analysis Zone (TAZ) boundaries, which encompass those neighborhoods and communities to delineate the CSA, were used. The Block Group and TAZ boundaries generally follow visible natural or man-made features such as streams, rivers, or major roadways.

The CSA is organized into seven smaller, project team defined communities which are based on similarities in land use and context while still following Block Group and TAZ boundaries and visible features. These seven communities include:

- **Columbiana:** Located in Lexington County and situated west of I-26 and north of Piney Grove Road.
- **Seven Oaks:** Located in Lexington County positioned west of I-26, south of Piney Grove Road and north of I-20.
- **Saluda:** Located in Lexington County, west of the Saluda River and I-26.
- **Riverbanks:** Located Lexington County, between I-26 and I-126.
- **Harbison:** Located in Richland County, between I-26 and the Broad River.
- **St. Andrews:** Located in Richland County, west of the Saluda River and I-26 and just northeast of the I-20/26 interchange.
- **Broad:** Located in Richland County, situated between I-20 and I-126.

Data from the smaller communities are used as the foundation for the Community Impact Assessment, which is appended to the FEIS/ROD (Appendix F). Block Group and TAZ data are used in the evaluation of demographics, economics, and growth trends within the overall CSA and each of the seven communities, which are described in more detail in later sections of this report. The CSA and communities are shown in Figure 3.1.



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Information about the area was collected and confirmed during a visit to the CSA in the spring of 2015 and during discussions with local residents at a Community Kickoff Meeting on May 12, 2015; a Scoping Public Meeting on September 10, 2015; an Alternatives Public Information meeting on October 4, 2016; a Reasonable Alternatives Public Meeting on September 19, 2017; a Bush River Road business community meeting on March 1, 2018, and a Public Hearing on August 23, 2018. Information was also collected via input forms which were emailed to several local planners. Since the ROD, SCDOT has continued to have coordination meetings with communities and individuals in the Carolina Crossroads project area.

Characteristics of the communities in which relocations would occur are described below. Relocations are not anticipated within the Saluda or Riverbanks communities and are, therefore, not described in this report. More detailed demographics and economic data for all communities is included in the Community Impact Assessment (Appendix F of the FEIS).

Columbiana: The Columbiana community is residential with 13 subdivisions. Unemployment in this area is 1.6 percent, compared to Lexington County which has a 6.2 percent unemployment rate. The median household income for this community ranges from \$46,700 to \$71,000. Two of the three census tracts in the community have higher median incomes than that of Lexington County (\$54,100). The median value of owner-occupied homes in Columbiana ranges from \$123,600 to \$191,000. In comparison, Lexington County has a median home value of \$140,100.

There were 4,800 total households in Columbiana in 2010, which is the greatest concentration of households of all communities in the Lexington County portion of the CSA. The total number of households in Columbiana is expected to decrease 4.2 percent by 2040. Household growth of 4 percent is expected within the entire CSA, while Lexington County is predicted to see a 44.7 percent increase in households by 2040 (see Appendix F).

The minority population of the Columbiana community makes up 34.7 percent of the total population, higher than that of the entirety of Lexington, which contains 23.3. Of the total population, 21.2 percent is considered low-income, slightly less than the county average of 23.1 percent.

Seven Oaks: Like Columbiana, the majority of the Seven Oaks community is residential with 17 subdivisions in the community. There are some office uses along I-20, and institutional uses are concentrated along St. Andrews Road and Bush River Road. Commercial uses, such as restaurants and retail stores, are concentrated near the I-26/St. Andrews Road and I-26/Bush River Road interchanges, while industrial uses are concentrated along the Saluda River.

Unemployment in the Seven Oaks area is 1.5 percent, compared to Lexington County which has a 6.2 percent unemployment rate. The median household income for this community ranges from \$40,900 to \$79,600. Only one census tract in the community has a higher median income than that of Lexington County (\$54,100), but that tract has the highest median income of all tracts in the CSA. The median value of owner-occupied homes in Seven Oaks ranges from \$134,100 to \$166,900. In comparison, Lexington County has a median home value of \$140,100.

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Seven Oaks has the second highest population within the Lexington County portion of the CSA, with a 2010 total population of 10,900. The total population in Seven Oaks is expected to decrease by 13.8 percent to 9,400 by 2040. Population growth within the CSA is expected to see a 5.1 percent increase between 2010 and 2040, while as a whole, the county is estimated to see a 46.5 percent increase by 2040.

There were 4,700 total households in Seven Oaks in 2010. The total number of households in this community is expected to decrease 14.9 percent by 2040. Household growth of 4 percent is expected within the CSA, while Lexington County is predicted to see a 44.7 percent increase in households by 2040.

The minority population of the Seven Oaks community makes up 40.2 percent of the total population, higher than that of Lexington County, which contains 23.3 percent. Of the total population, 19.4 percent is considered low-income, slightly less than the Lexington County average of 23.1 percent.

Harbison: The Harbison community has the greatest amount of undeveloped land in the CSA. The majority of developed portions of the community are residential, with 42 subdivisions in the community. There are some office and industrial uses scattered throughout the community, while commercial uses are concentrated along US-176 or Broad River Road. This community is anchored by the Harbison Environmental Education Forest (formerly Harbison State Forest), which is situated on more than 2,000 acres in the southern portion of the Harbison community. No hunting or fishing is allowed in the forest, but other recreational opportunities include hiking, biking, camping, picnicking, nature study and canoe access to the Broad River (by permit).

Unemployment within Harbison is 1.5 percent, less than Richland County, which has a 7 percent unemployment rate. The median household income for this community ranges from \$43,400 to \$65,300, which is generally higher than that of Richland County (\$48,400). Of the total population, 16.5 percent is considered low-income, less than the Richland County average of 27.9 percent. The median value of owner-occupied homes in Harbison ranges from \$112,300 to \$180,000. In comparison, the median home value in Richland County is \$149,800.

The 2010 total population within the Harbison community was 21,900, which constitutes the highest concentration of people in the CSA. The total population in Harbison is expected to increase by 34.2 percent to 29,400 by 2040, the highest growth rate in all communities in the CSA. Population growth within the CSA is expected to see a 5.1 percent increase between 2010 and 2040, while population growth in Richland County as a whole is estimated to increase by 20.8 percent by 2040.

There were 8,900 total households in Harbison in 2010, the highest concentration of households of all communities in the CSA. The total number of households in Harbison is expected to increase 29.2 percent by 2040, the highest household growth rate of all communities in the CSA. An average household growth of 4 percent is expected within the CSA, while Richland County is predicted to have a 23.2 percent increase in households by 2040.

The minority population of the Harbison community makes up 43 percent of the total population, lower than that of Richland County, which contains 50.5 percent.

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St. Andrews: Several correctional institutions encompass large tracts of land in this community. The Broad River Correctional Institution is a high-security facility for male inmates and serves as the state's capital punishment facility. The neighboring Kirkland Correctional Institution is the site of the state's maximum security and protective custody units. A juvenile correctional facility and other law enforcement organizations are located in the same area, between Broad River Road and the Broad River. The remainder of the community is predominantly residential, with 47 subdivisions in the community. This portion of the CSA has a large percentage of multi-family housing, particularly along the interstate corridors. Commercial uses are concentrated along Broad River Road.

Unemployment within St. Andrews is 3.4 percent. The median household income for this community ranges from \$19,700 to \$41,000, the lowest median household incomes in the CSA and lower than that of Richland County (\$48,400).

Of the total population, 46.9 percent is considered low-income, which is higher than the Richland County average of 27.9 percent and the highest poverty rate in the CSA. The median value of owner-occupied homes in St. Andrews ranges from \$79,000 to \$106,800, which are some of the lowest media home values in the CSA. For comparison, the median home value in Richland County is \$149,800.

The 2010 total population within the St. Andrews community was 19,000, which is the second highest concentration of people in the CSA. The total population in St. Andrews is expected to decrease 4.2 percent to 18,200 by 2040. Population growth within the CSA is expected to see a 5.1 percent increase between 2010 and 2040, while the county as a whole is expected to see a 20.8 percent increase by 2040.

There were 6,000 total households in St. Andrews in 2010. The total number of households in this community is expected to decrease 5 percent by 2040. An average household growth of 4 percent is expected within the CSA, while Richland County is predicted to see a 23.2 percent increase in households by 2040.

The minority population of the St. Andrews community makes up 81.1 percent of the total population. This percentage is the highest concentration of a minority population in the CSA and is notably higher than that of Richland County, which contains a 55.1 percent minority population.

Broad: The majority of the Broad community is residential, with 29 subdivisions in the community. There are some office and industrial uses scattered throughout the area, and commercial uses are concentrated along Bush River Road and Greystone Boulevard. This section is anchored by the Dutch Square Center, a large mall situated on Bush River Road which was the first enclosed mall built in the state of South Carolina. There are several auto dealerships located along Greystone Boulevard. The Riverbanks Zoo and Garden is located in the very southern portion of the Broad community along the Saluda River.

Unemployment within Broad is 3.1 percent, less than Richland County, which has a 7.0 percent unemployment rate. The median household income for this community ranges from \$29,800 to \$44,500, which is lower than that of Richland County (\$48,400). Of the total population, 40.5 percent is considered low-income, which is higher than the Richland County average of 27.9 percent. The median value of owner-occupied homes in Broad

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ranges from \$106,600 to \$126,300. Broad's median home values are lower than the Richland County median of \$149,800.

The 2010 total population within the Broad community was 9,000, the lowest concentration of people within the Richland County portion of the CSA. The total population in Broad is expected to increase by 5.6 percent to 9,500 by 2040. Population growth within the CSA is also expected to see a 5.1 percent increase between 2010 and 2040, while Richland County as a whole is estimated to see a 20.8 percent increase by 2040.

There were 4,900 total households in Broad in 2010, the lowest concentration of households of the Richland County portion of the CSA. The total number of households in this community is expected to experience an increase of 4.1 percent by 2040. An average household growth of 4 percent is expected within the CSA, while Richland County is predicted to see a 23.2 percent increase in households by 2040.

The minority population of the Broad community makes up 65.1 percent of the total population, the second highest concentration of minority residents within the CSA, and slightly higher than that of Richland County which contains 55.1 percent.

4 Property Acquisitions and Relocations

The development of the Refined Recommended Preferred Alternative focused on avoiding and minimizing effects on communities where possible; however, relocation impacts were anticipated with the proposed improvements.

Initially, during the development of the EIS, courthouse research, GIS and field verification were used to identify properties affected by the proposed project. For the initial analysis, relocations were identified when the right of way limits intersected the primary structure (not including sheds, detached garages, etc.), a change to highest and best use, or eliminated access to the property. Impacted structures may contain multiple businesses or housing units (apartment buildings, office suites), resulting in multiple relocations. Relocations were also included if access to a property was restricted due to establishing control of access near interchanges /intersections. The resulting property impact information was compiled into this Relocation Report.

During the right of way acquisition process, impacts resulting from loss of parking, movement of personal property and highest and best use were determined for each parcel, which resulted in additional displacees. Currently, right of way acquisition is approximately 39% complete for the project overall, 98% for Phases 1 and 2, 34% for Phase 3, and 1% for Phase 4.

The acquisition and relocation process has been, and will continue to be, conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (P.L. 91-646, as amended by 100-17; 49 CFR 24.205 (AF)). The program is designed to assist displaced persons in finding replacement property in which to live or do business. Resources will be made available without discrimination to all residential and business owners who are relocated. Under the requirements of this Act, no relocations can occur until it is shown that comparable replacement property is available in the area for relocation purposes.

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4.1 Residential

The Refined Recommended Preferred Alternative was expected to result in the relocation of 95 residential properties, including apartment units. The Modified Selected Alternative is currently expected to have 144 residential displacees. Table 4.1 provides a comparison of the breakdown of these relocations by community. Maps showing relocations are located in Appendix A.

Table 4.1 Residential Relocations

Alternative	Community	Columbiana	Seven Oaks	Harbison	St. Andrews	Broad	Total
Refined Recommended Preferred Alternative	Single Family House	0	2	0	4	15	21
	Apartments/condos (units)	0	74 units	0	0	0	74 units
Modified Selected Alternative (MSA)	Single-Family House	0	2	0	5	16	23
	Apartment/condos (units)	0	74 units	0	24 units	0	98
	Displacees within businesses/motels	0	22	0	0	0	22

Based on field surveys of the area, the majority of the communities where residential relocations occurred consist of mid-century ranch-style brick homes. Smaller homes with clad siding characterized the Seven Oaks area. In initial studies, two homes were observed to have outside playground equipment and one home had a ramp that could be used by disabled residents (see field observation checklists in Appendix B).

Since the ROD, all single-family residences impacted by the project have been relocated. In some cases, housing of last resort was required. One mobile home was identified in the FEIS to be relocated but the mobile home has been moved and no longer considered a relocation.

Three apartment complexes and two condominium complexes will have relocations resulting from the Refined Recommended Preferred Alternative. The apartment complexes include:

- Peachtree Place located on Berryhill Road (Tract 627),
- St. Andrews Apartments (now Gleneagle Apartment Homes) located on Jamil Road, (Tract 658), and
- Raintree Apartments (now Ovation at 3500) located on Fernandina Road (Tract 141).

Two condominium complexes include:

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- Lakewood Village, located on Jamil Road, (Tracts 662A-662H), and
- Briarsgate, located on Menlo Drive (Tracts 195A – 195X).

Initial contact has been made with property management at each complex; the exact number of tenants/displacees impacted cannot be determined until preliminary contact is made with all units during the right-of-way acquisition process.

Based on a review of websites for the affected apartment complexes, there appears to be some availability within the same complex for those families being displaced.

Long-term residents were identified at two hotels in the project area (Tracts 631 and 169). An estimated number of displacees has been provided to SCDOT at each location; however, the exact number of displacees may increase or decrease during the right of way acquisition process.

4.2 Businesses, Non-Profits, Institutional, and Cell Towers

For non-residential properties, the Refined Recommended Preferred Alternative was expected to result in the relocation of 1102 non-residential properties (Table 4.2). The MSA is currently expected to result in 533 non-residential relocations. Maps showing relocations are located in Appendix A.

Table 4.2 Non-Residential Relocations

Alternative	Relocation Type	Community					Total
		Columbiana	Seven Oaks	Harbison	St. Andrews	Broad	
Refined Recommended Preferred Alternative	Office (tenants)	0	10 (21)	0	1(1)	3 (6)	14 (28)
	Industrial	0	0	0	0	0	0
	Retail/Commercial	2	6	2	0	6	16
	Hotel	0	3	0	0	0	3
	Storage*	0	2 (1,050)	0	0	0	2 (1,050)
	Institutional	0	0	0	1	1	2
	Non-Profit	0	1	0	0	0	1
	Billboards	9	0	3	9	6	27
Modified Selected Alternative	Office (tenants)	0	4 (19)	0	1	2 (2)	7 (21)
	Industrial	0	0	0	0	0	0
	Retail/Commercial	2	14	2	1	6	24

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Alternative	Relocation Type	Community					
		Columbiana	Seven Oaks	Harbison	St. Andrews	Broad	Total
	Hotel	0	2	0	0	0	2
	Storage*	0	2 (436)	0	0	0	2 (436)
	Personal Property	0	1	0	12	2	15
	Institutional	0	0	0	0	1	1
	Non-Profit	0	5	0	0	0	5
	Billboards	9	0	3	9	7	28

*Businesses (units)

Some business and office relocations have already occurred. The exact number of office tenants cannot be determined until preliminary contact at all locations is made during the right-of-way acquisition process.

No additional businesses are located directly within the project right of way; however, the exact number of business relocations or personal property displaces are unknown at this point until real estate appraisals is completed. Some remaining parcels that currently considered partial acquisitions could result in personal property displaces during negotiations.

The relocation of displaced storage units requires each unit to be treated as an individual relocation of property. As shown in Table 4.2, the project impacts two mini-storage facilities: Cube Smart Self Storage (Tract 660) and UHaul Self Storage (Tract 657). It anticipated that 108 and 328 individual self-storage units will be impacted, respectively. These relocations were based on loss of storage, office space, and leased parking.

An additional UHaul facility (Tract 121) is a partial acquisition with no direct impact to improvements; however, until appraisal completed, the total number of storage units affected, if any, is unknown at this time.

Two cell towers located on Fernandina Road are located within the project area but will not be relocated by the project. Numerous other cell towers are located in the surrounding area but will not be impacted by the project.

There is one institutional displacement resulting from the proposed project namely, ITT Technical Institute. One building housing a non-profit organization, the South Carolina Public Education Association, will also be relocated; this building houses four additional independent, non-profit services including the AFL-CIO, Richland County Education Association, SC Education Association Retired, and SC State Employees Association. Each institution is independent and provides services to the community. It will be important to ensure a timely, and successful, relocation of these institutions; all services currently plan to relocate into one building.

No schools or libraries would be displaced as a result of the MSA.

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No places of worship or cemeteries or property from these institutional uses would be acquired as a result of the MSA.

4.3 Summary of Relocation Changes

The table below identifies the properties that vary from those documented in the FEIS/ROD. The properties, identified by tract number, were either added to or removed from the original ROW during to the design progression and/or experienced a change in acquisition status based on right of way negotiations. For additional details on each parcel, see Appendices B and C.

Table 4.3 Summary of Displacee Changes by Community

Tract #	Location	Community	Relocation Removed	Relocation Added	Relocation Type	Reason for Change in displacees
111	3850 Fernandina Road	Seven Oaks	1		Non-residential	ROW reduction
123	3740 Fernandina Road	Seven Oaks		5	Non-residential	Loss of parking
141	3500 Fernandina Road	Seven Oaks		8	Residential	Loss of parking
142	3506 Fernandina Road	Seven Oaks	1		Non-residential	Vacant
149	3232 Fernandina Road	Seven Oaks		2	Non-residential	3 businesses at location
169	1776 Burning Tree Road	Seven Oaks		19	Residential	Long-term residents at motel
547	421 Zimalcrest Drive	Seven Oaks		4	Non-profit	5 services at location
550	Rockland Road	Seven Oaks		1	Business	Business located at property
550	Rockland Road	Seven Oaks		1	Residential	Unknown residence on property
551	2023 Rockland Road	Seven Oaks	1		Residential	Home Removed
558	1803 Bush River Road	Seven Oaks	1		Non-residential	ROW Reduction
626	Berryhill Road	Seven Oaks	1		Non-residential	Vacant
627	200 Berryhill Road	Seven Oaks		20	Residential	Loss of parking

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Tract #	Location	Community	Relocation Removed	Relocation Added	Relocation Type	Reason for Change in displacees
628	18 Berryhill Road	Seven Oaks	36		Residential	Replacement parking found adjacent to parcel
629	16 Berryhill Road	Seven Oaks	1		Non-residential	Reduction in tenants
630	14 Berryhill Road	Seven Oaks	1		Non-residential	Vacant
631	10 Berryhill Road	Seven Oaks		1	Residential	Long-term hotel resident
657	156 Jamil Road	Seven Oaks		1	Residential	On-site manager
657	156 Jamil Road	Seven Oaks	195		Non-residential	Storage units vacant at initiation of negotiation
660	208 Jamil Road	Seven Oaks		1	Residential	On-site manager
660	208 Jamil Road	Seven Oaks	392		Non-residential	Appraisal identified 108 impacted
662	240 Jamil Road	Seven Oaks		8	Residential	Loss of parking
669/670	256 Jamil Road	Seven Oaks		1	Non-residential	2 businesses at location
200	2219 Broad River Rd	Broad	1		Non-residential	Alternate access provided
272	2116 Broad River Rd	Broad	1		Non-residential	Vacant
273	2108 Broad River Rd	Broad	1		Non-residential	Vacant
321	1620 Browning Road	Broad		1	Non-residential	Design refinement
377	830 Bush River Road	Broad		1	Non-residential	Loss of access
399	521 Lawand Drive	Broad		1	Residential	Loss of access
402	500 Lawand Drive	Broad	3		Non-residential	Reduction in tenants
156	3102 Greenore Drive	St Andrews		1	Residential	Residence at business
156	3102 Greenore Drive	St Andrews		1	Non-residential	Design refinement

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Tract #	Location	Community	Relocation Removed	Relocation Added	Relocation Type	Reason for Change in displacees
175	1000 Center Point Dr	St Andrews	1		Non-residential	ROW reduction
195	825 Menlo Drive	St Andrews		24	Residential	Loss of parking
TOTAL			637	101		

Table 4-4 compares total relocations for the Refined Recommended Preferred Alternative and the MSA.

Table 4.4 Relocation Summary

	Refined RPA (FEIS/ROD)	MSA
Business	49	48
Non-Profit	1	5*
Residential	95	143
Single-family	21	23
Apt/Condos	74	98
Displacees within businesses	N/A	22
Institutional	2	1
Storage units/Personal Property	1,050	444
Total	1,224	641

*SC Public Education Association building contained 5 independent, non-profit services

4.4 Billboards

The Refined Recommended Preferred Alternative as designed was expected to displace 27 billboards. The MSA is expected to relocate 30 billboards. Since relocation of billboards is treated as personal property, they are counted as a relocation in this study and would be relocated in accordance with SCDOT's Right-of-Way Manual.

The billboards are listed below with their respective TMS # and approximate location.

Relocation Impact Study

- I-26 Eastbound ramp at US 176- TMS # R04009-01-05- Grace Advertising- Steel Mono Pole Standard Sign
- I-26 Westbound ramp at US 176- TMS # R03916-01-01- Lamar Advertising- Steel Mono Pole Standard Sign
- Saturn Parkway- TMS # 002898-01-033 Lamar Advertising - Steel Mono Pole
- Jamil Road- TMS # 002898-02-013- Outfront Advertising- Multi Wood Pole Standard Sign
- Jamil Road- TMS # 002899-01-022- Outfront Advertising- Multi Wood Pole Standard Sign
- Jamil Road- TMS # 02899-04-001- Outfront Advertising- Multi Wood Pole Standard Sign
- Jamil Road- TMS # 02899-04-001- Additional Site- Outfront Advertising- Multi Wood Pole Standard Sign
- Jamil Road- TMS # 002899-04-055- Grace Outdoor- Steel Mono Pole Standard Sign
- Jamil Road- TMS # 002899-04-051- Lamar Advertising- Mono Pole Standard Sign
- Jamil Road- TMS # 002899-04-011- Lamar Advertising- Mono Pole Standard Sign
- Jamil Road- TMS # 002899-04-016- Lamar Advertising- Mono Pole Standard Sign
- Jamil Road- TMS # 002899-04-018- Lamar Advertising - Mono Pole Standard
- Fernandina Road- TMS # 002844-02-005- Grace Outdoor- Steel Mono Pole Standard Sign
- Fernandina Road- TMS # 002844-02-010- Grace Outdoor- Steel Mono Pole Standard Sign
- Fernandina Road- TMS # 002899-06-023- Grace Advertising - Steel Mono Pole Standard
- Fernandina Road- TMS # 002899-06-023- Additional Site- Grace Outdoor- Steel Mono Pole Standard Sign
- Fernandina Road- TMS # 002899-06-003- Lamar Outdoor- Steel Mono Pole Standard Sign
- Fernandina Road- TMS # 002899-06-005- Lamar Outdoor- Steel Mono Pole Standard Sign
- Fernandina Road- TMS # 002899-05-002- Lamar Outdoor- Steel Mono Pole Standard Sign
- Fernandina Road- TMS # 002899-05-009- Lamar Outdoor- Steel Mono Pole Standard Sign
- St. Andrews Road- TMS # 003697-02-008- Lamar Outdoor- Small Steel Mono Pole Standard Sign
- I-20 Eastbound Ramp at US 176- TMS # R07402-04-015 Lamar Outdoor- Multi Pole Standard Signs
- I-20 Eastbound Ramp at US 176- TMS # R07402-04-015- Additional Site- Lamar Outdoor- Multi Pole Standard Signs
- I-20 Eastbound Ramp at US 176- TMS # R07402-04-015- Additional Site- Outfront Outdoor- Multi Pole Standard Signs
- Burnette Drive- TMS # R05916-01-09- Outfront Advertising- Steel Mono Pole Standard Sign
- Burnette Drive- TMS # R05916-09-02- Outfront Advertising- Steel Mono Pole Standard Sign
- Morninghill Drive- TMS # R05915-03-09- Grace Advertising- Steel Mono Pole Standard sign
- Latonea Drive – TMS# R05915-03-09 - DHS, LLC C/O Grace Outdoor
- I-26 Eastbound near Exit 110 TMS# 004597-09-050 - Stevenson Outdoor Communications

5 Relocation Analysis

Based on initial field observations, each community consists of a mixture of owner occupants and tenants. “For Rent” signs were observed at all apartment complexes. In addition, the tax map data indicated one condominium (single family townhome) and six single-family properties where mailing addresses were different than the physical addresses of the residence, indicating potential rental status. The exact number of renters versus owner-occupied residential units cannot be determined until preliminary contact is made for all units during the right-of-way acquisition process.

In each apartment complex, during right of way negotiations, some renters have been able to relocate within the same complex, when units have been available.

Relocation Impact Study

5.1 Special Needs Populations

Impacts to elderly or disabled populations are not anticipated within any community with the MSA. Based on initial field observations for the FEIS, one residential structure had an access ramp available and 10 residential properties qualified for Homestead exemptions per county tax map data. There are no known 55 and older residential communities identified near the corridor or interchanges within the CSA.

There are four known assisted living, nursing home, and rehabilitation complexes located near the corridor or interchanges within the CSA. These include Harbor Chase and Brookdale Harbison in the Harbison community, Brian Center Nursing Care in the Seven Oaks community, and The Columbia Presbyterian Community in the Saluda community. Based on right of way plans, no relocations would occur at these facilities. Minor amounts of right-of-way would be acquired from the Columbia Presbyterian Community at the entrance road to the complex.

5.2 Environmental Justice Populations

Columbiana: Within Columbiana, five out of 11 Block Groups are categorized as Environmental Justice (EJ) Block Groups. Many of these EJ Block Groups are located near the proposed interchange improvements at I-26/Broad River Road, I-26/Harbison Boulevard and I-26/Piney Grove Road. Of the five EJ Block Groups, two groups exceed both the minority and low-income EJ criteria.

Within the Columbiana community, the proposed improvements for the Modified Selected Alternative is not anticipated to impact any EJ Block Groups.

Seven Oaks: Within the Seven Oaks community, eight out of 11 Block Groups are categorized as EJ Block Groups. Seven Oaks contains the highest concentration of minority and low-income populations within the Lexington County portion of the CSA, at 84.5 percent and 68.1 percent respectively. Many of the EJ Block Groups are located around the proposed interchange improvements at I-26/Piney Grove Road, I-26/St. Andrews Road, I-20/I-26 and I-20/Bush River Road. Of the eight EJ Block Groups, three groups exceed both the minority and low-income EJ criteria.

The Modified Selected Alternative would relocate one single-family home and 12 multi-family buildings (106 units). All of the relocations are located in a Block Group that is categorized as an EJ area; however, it is not confirmed that the residents or owners are minority or low-income. Based on all right of way contacts to date, the demographics of residential relocations have been 53.8% minority, similar to the overall racial make-up of the project study area (50.4% minority).

Harbison: Within the Harbison community, four of the nine Block Groups are categorized as EJ Block Groups. These EJ Block Groups are located around the proposed interchange improvements at I-26/Harbison Boulevard and I-26/Piney Grove Road. Of the four EJ Block Groups, two exceed both the minority and low-income EJ criteria. No residential relocations would occur in these block groups.

Relocation Impact Study

St. Andrews: Within the St. Andrews community, all of the 11 Block Groups are categorized as EJ Block Groups. Of the eleven, nine exceed both the minority and low-income EJ criteria. The Modified Selected Alternative resulted in the relocation of four residential properties, all of which are located in EJ Block Groups; however, it is not confirmed that the residents or owners are minority or low-income. Based on right of way contacts to date, demographics of residential relocations have been 53.8% minority, similar to the overall racial make-up of the project study area (50.4% minority).

Broad: Within the Broad community, five of the seven Block Groups are categorized as EJ Block Groups. All of the EJ Block Groups exceed both the minority and low-income EJ criteria. All proposed residential relocations were located within EJ Block Groups; however, it is not confirmed that the resident or owner is minority or low-income. Based on right of way contacts to date, demographics of residential relocations have been 53.8% minority, similar to the overall racial make-up of the project study area (50.4% minority).

5.3 Available Single-Family Homes

All residential relocations associated with the project has been completed. When necessary, housing of last resort has been utilized for residential relocations for the project.

5.4 Available Rental Properties

There appears to be sufficient rental properties available to relocate renters who are being displaced. Based on availability list on Apartments.com, there are approximately 839 rental units available in the project area in the \$500-\$1100 price range.¹ Many of these apartment complexes have multiple rental units listed; both Peachtree Place and St. Andrews Apartments (now Gleneagle Apartments) have availability within the complex.

Table 5.1 Rental Unit Availability and Price Range listed on Apartments.com (as of November 2021)

Location	Rent	
	Price Range \$500-800	Price Range \$800-1100
Available apartment units in 29210 (location of displaced apartments)	239	457
Available apartment units in project study area	240	599

Because of COVID 19 and the eviction moratorium, the market for rental units is limited at this time, despite website listings. Units have been found as they become available through meeting with multiple apartment managers for units that will become vacant within the next 30 days. Displacees have been relocated into the same complexes if units are available. If any of the rental supplements exceed \$7,200, then housing of last resort applies.

In addition to the identification of comparable housing, the Uniform Relocation Act provides relocation benefits to both eligible tenants that may include moving expense payments, rental differential payments, replacement

¹<https://www.apartments.com>; last accessed November 2, 2021

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housing payments, and/or down payment assistance. Replacement Housing Down Payment Option is a system of payments to help short-term owners and tenants purchase and relocate to decent, safe and sanitary housing.

Because the project area contains relocations within low-income areas and/or relocations with apartment complexes that accepted Section 8 Housing Vouchers, the project team explored options for low-income relocations. The Columbia Housing Authority (CHA) can issue up to 4,000 Housing Choice Vouchers in the Columbia area, which allow low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market. Currently CHA has issued 3,438 vouchers.^{2,3} The SC State Housing Authority that manages Housing Choice Vouchers for Lexington County has 800 vouchers available in the Lexington County area (personal communication, SC State Housing Authority). Based on the Low-income Housing Tax Credit (LIHTC) Database⁴ maintained by HUD, there are 3,930 units that accept Housing Choice Vouchers in the Columbia area and 1,042 units are near the project area (29210 and 29212). These units could also provide housing for any displaced residents with Section 8 vouchers although, these units may be in areas outside of the immediate project area.

5.5 Available Commercial Properties for Lease or Sale

There appears to be sufficient commercial properties available to relocate those who are displaced. Table 5.3 lists the availability of different commercial properties within the general project area based on LoopNet.⁵ The search for commercial properties for sale or lease was conducted based on property type. Although there is no guarantee that an exact replacement property can be found, the market indicates that there are numerous comparable commercial properties available to meet the needs of the potential displacees.

Table 5.2 Commercial Properties for Sale or Lease Listed on LoopNet (as of November 2021)

Type of Properties	Properties for Sale	Properties for Lease	Available Square Footage/Acres*
Office	5	17	278,511
Retail	10	17	659,327
Industrial	3	2	288.229
Land	20	0	77.73

Based on internet research, there are six storage facilities located from 1.5 to 3 miles from the project area that could accommodate any displacees from the two storage facilities impacted by the proposed project.

5.6 Relocation Assistance

Displaced persons would be offered to relocate in areas at least as desirable as their original property with respect to public institutions and commercial facilities. Rent and sale prices of replacement property offered to

²<http://www.section8housinglist.info/south-carolina-sc/section-8-housing-in-columbia-south-carolina>

³<http://www.chasc.org/property-directory.html>

⁴ <https://lihtc.huduser.gov/>; Last accessed on March 7, 2019

⁵<http://www.loopnet.com/> - Last accessed on November 2, 2021.

Relocation Impact Study

those displaced would be within their financial means, and replacement property would be within reasonable distance to displaced individuals' places of employment. According to 49 CFR 24.205 (A-F), relocation planning and service would be provided to businesses. These relocation services include the following:

- Site requirements, current lease terms and other contractual obligations;
- Providing outside specialists to assist in planning and move, assistance for the actual move and the reinstallation of machinery and other personal property;
- Identification and resolution of realty issues;
- An estimate of time required for the business to vacate the site;
- An estimate of the anticipated difficulty in locating replacement property; and
- An identification of any advance relocation payments required for the move.

5.7 Displacement and Relocation Impact Summary

It is not believed that relocations resulting from the project will cause long-term disruption to local communities. Single-family residential relocations for the project have already been completed.

For other types of community impacts that could occur in the CSA, including impacts or changes to land use, community cohesion, community facilities and services, access and mobility, visual and aesthetics and noise, please see the Community Impact Assessment in the FEIS/ROD (Appendix F).

The St. Andrews, Broad, and Seven Oaks communities would appear to incur the greatest overall property impacts, for residential and non-residential acquisitions, from the proposed alternatives within EJ Block Groups; these communities also have the higher concentrations of low-income and minority populations. Although residential and non-residential acquisitions are higher within EJ Block Groups, it is not confirmed which business or property owners are minority or low-income. The study area is majority minority (at 50.4 percent of the population) and potential project impacts and benefits appear to be distributed equitably.

Due to the known EJ populations within the community study area, public outreach to special populations was customized to specifically target EJ and LEP population. Outreach approaches to these populations are listed below and would continue through the duration of the project, as needed. The project is not anticipated to contribute to any highly disproportionate or adverse effects to EJ or LEP populations; however, these outreach strategies would provide these populations opportunities for engagement and input into the project and the transportation decision-making process. Additional information on public outreach is included in the FEIS, Chapter 4 and in Appendix O.

- Seeking out, building and maintaining a comprehensive database of mail and e-mail contact information for EJ groups and advocacy groups;
- Partnering with senior, disability, social service, transit, and area Hispanic liaison offices to provide information regarding the project. Offices include Hispanic Connections and the South Carolina Commission for Minority Affairs;

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- Advertising meetings in high activity centers along the project corridor using fliers and static displays. Centers include Richland County Recreation facilities and City of Columbia Parks and Recreation facilities; churches; gas stations and grocery stores.
- Publishing newspaper ads and press releases in Spanish for Hispanic publications;
- Providing interpreters throughout the acquisition process;
- Translating other project materials to Spanish, as needed;
- Providing Spanish translators free of charge at public meetings;
- Engaging audiences through greater use of visuals, larger font and simpler language in fliers, display boards, and presentations;
- Translating features on the project website to Spanish; and,
- Coordinating information distribution to focused communities based on GIS mapping and socioeconomic and demographic information such as EJ insight.
 - Partnering with local places of worship
 - Providing project information to area grocery stores and gas stations

While the impacts described above would occur in EJ areas as well as non-EJ areas, the EJ populations would share in the potential benefits of implementing a transportation solution that improves mobility and reduces traffic congestion within the project corridor. Other potential benefits of the Modified Selected Alternative, including those mentioned by local planners, are:

- employment opportunities due to construction and the potential redevelopment/development opportunities in the areas surrounding the interchanges, which would result in positive economic gains in the form of increased wages and spending;
- improved mobility through the project vicinity in the area of the interchanges;
- improved user experiences relating to personal, emotional and mental health due to shorter travel times and ease of navigation;
- improved safety for pedestrians around interchanges;
- improved safety for motorists along the corridor and at interchanges;
- enhanced access and connectivity along the corridor; and
- reduced travel time within the corridor.

Based on the information collected to date, an assessment of additional relocations, mitigation and benefits of the project, the MSA is not anticipated to cause disproportionately high and adverse effects to EJ or LEP populations.

The following mitigation measures would address direct and indirect impacts from the Modified Selected Alternative that may affect communities:

- Compensation for land acquisitions of privately-owned properties and businesses would be addressed in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (49 CFR Part 24) and the SCDOT ROW Manual.
- Because the Department of Justice's Safe Harbor threshold for LEP is exceeded for Spanish-speaking populations within the study area, written translations of vital documents would be provided for

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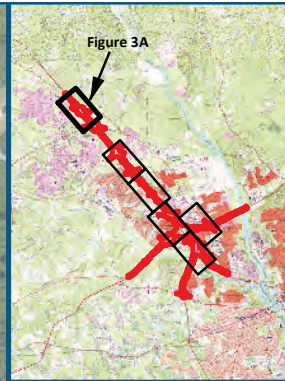
Spanish-speaking populations, as well as other measures determined by SCDOT to ensure meaningful access to project information. This includes providing translators and translated information before and during the ROW acquisition process.

- The SCDOT would provide relocation advisory assistance to all eligible persons without discrimination in accordance with Title VI of the Civil Rights Act of 1966 and Title VIII of the Civil Rights Act of 1968. These Acts along with Executive Order 11063 make discriminatory practices in the purchase and rental of residential units illegal if based on race, color, religion, sex or national origin.

6 Public Outreach to Local Population

Multiple opportunities for public input was provided to residents and business owners located within the project area including meetings during development of the EIS. Outreach efforts included social media, newspapers, radio, billboards, post cards, bulk mailings, and other notification methods. Communication strategies were developed that included the formation of a Stakeholder Advisory Committee, a Noise Advisory Board, Mobility Input Group, and specific strategies to reach minority, low-income, and limited English proficiency populations. A database was developed that included mail and email contact information for environmental justice groups and advocacy groups. One-on-one meetings with local officials provided information for them to use in addressing comments and concerns from their constituents. These meetings provided critical input that was considered in the development of this project and its potential impact on local populations. These efforts will continue in order to address comments and concerns from area residents and businesses affected or potentially affected by the proposed project. More detailed information can be found in Chapter 4 of the FEIS/ROD and its appendices.

Appendix A— Relocation Map



0 500 1,000
Feet

1 inch = 1,000 feet
@ 8.5 x 11 inches

Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)

Legend

-  Proposed Right-of-Way Limits
-  Residential
-  Non-Residential
-  Residential and Non-Residential
-  New Residential
-  New Non-Residential
-  New Residential and Non-Residential
-  Residential Relocation
-  Relocation Removed

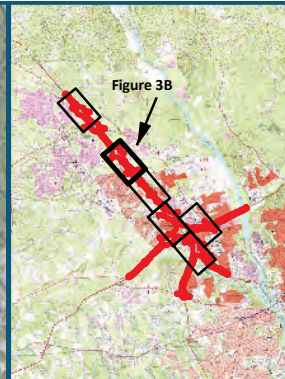
RELOCATION MAP FIGURE 3A

11/2021

Sheet 1 of 6



See Figure 3C



0 500 1,000
Feet

1 inch = 1,000 feet
@ 8.5 x 11 inches

Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)

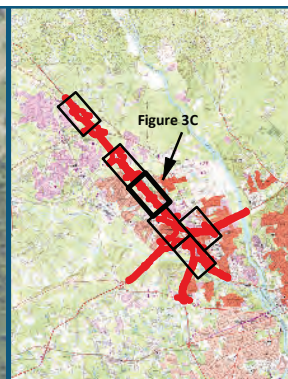
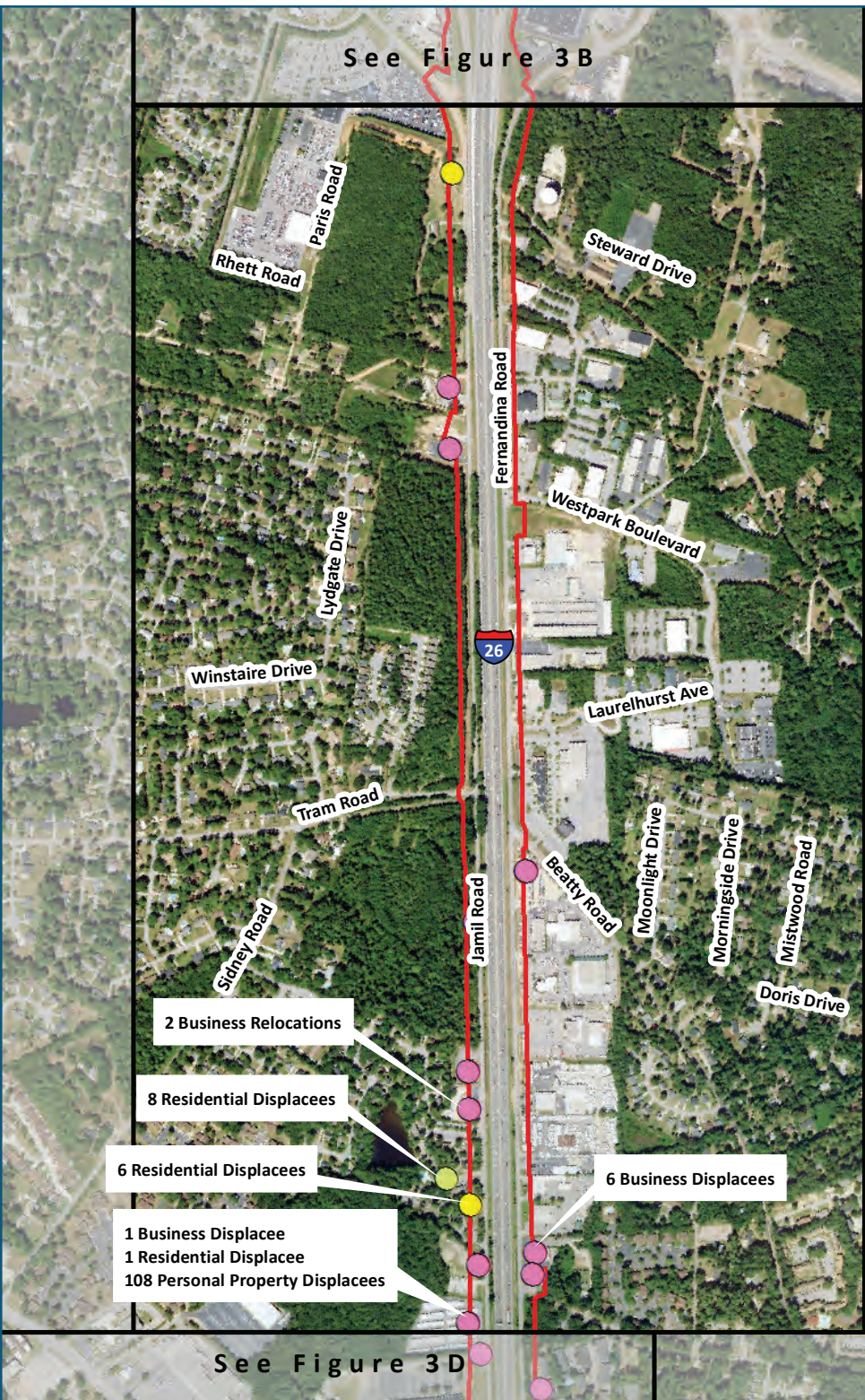
Legend

- Proposed Right-of-Way Limits
- Residential
- Non-Residential
- Residential and Non-Residential
- New Residential
- New Non-Residential
- New Residential and Non-Residential
- Residential Relocation
- Relocation Removed

RELOCATION MAP FIGURE 3B

11/2021

Sheet 2 of 6



0 500 1,000
Feet

1 inch = 1,000 feet
@ 8.5 x 11 inches

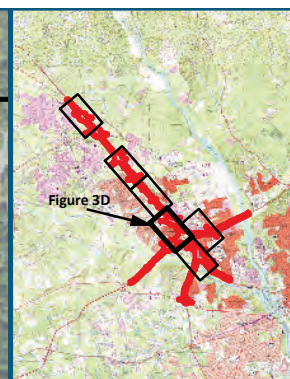
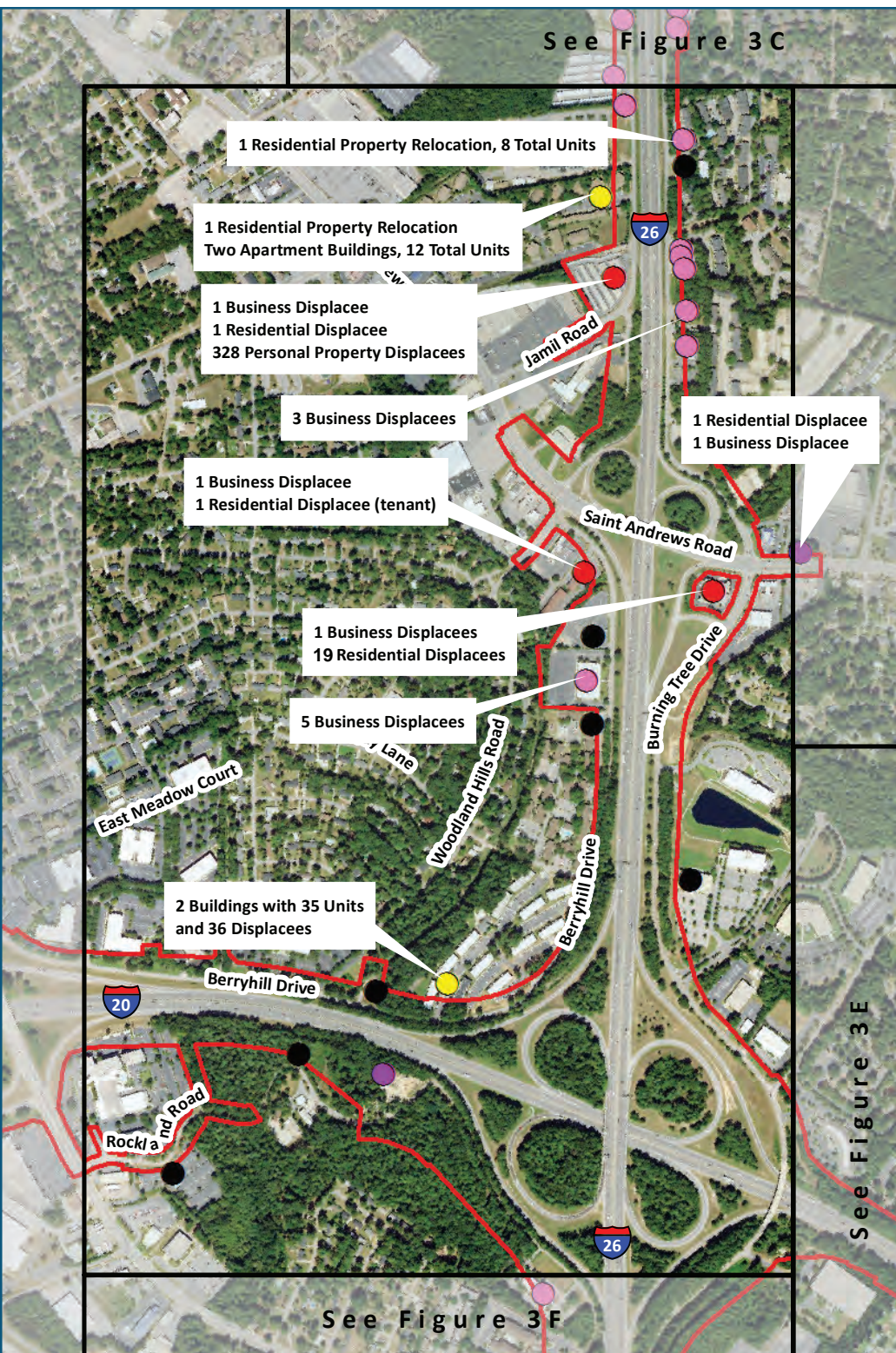
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)

Legend

-  Proposed Right-of-Way Limits
-  Residential
-  Non-Residential
-  Residential and Non-Residential
-  New Residential
-  New Non-Residential
-  New Residential and Non-Residential
-  Residential Relocation
-  Relocation Removed

RELOCATION MAP FIGURE 3C

11/2021 Sheet 3 of 6



0 500 1,000
Feet

1 inch = 1,000 feet
@ 8.5 x 11 inches

Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)

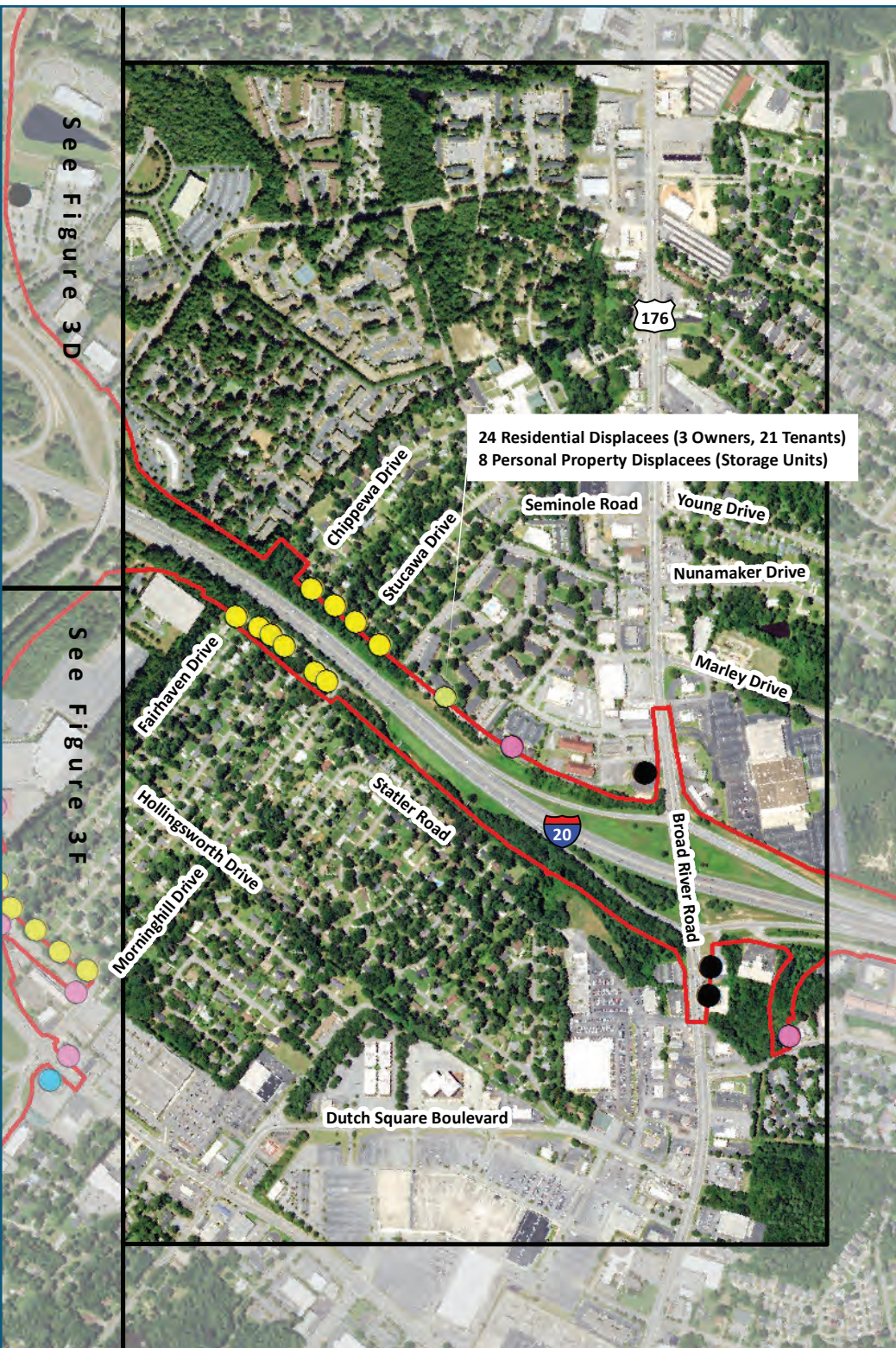
Legend

- Proposed Right-of-Way Limits
- Residential
- Non-Residential
- Residential and Non-Residential
- New Residential
- New Non-Residential
- New Residential and Non-Residential
- Residential Relocation
- Relocation Removed

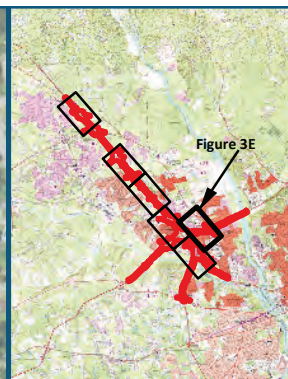
RELOCATION MAP FIGURE 3D

11/2021

Sheet 4 of 6



24 Residential Displacees (3 Owners, 21 Tenants)
8 Personal Property Displacees (Storage Units)



0 500 1,000
Feet

1 inch = 1,000 feet
@ 8.5 x 11 inches

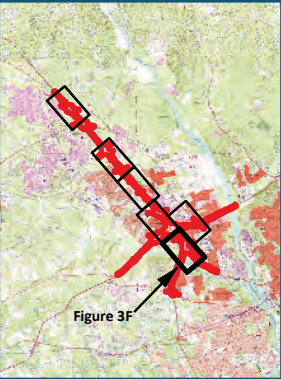
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)

Legend

- Proposed Right-of-Way Limits
- Residential
- Non-Residential
- Residential and Non-Residential
- New Residential
- New Non-Residential
- New Residential and Non-Residential
- Residential Relocation
- Relocation Removed

RELOCATION MAP FIGURE 3E

11/2021 Sheet 5 of 6



0 500 1,000
Feet

1 inch = 1,000 feet
@ 8.5 x 11 inches

Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)

Legend

- Proposed Right-of-Way Limits
- Residential
- Non-Residential
- Residential and Non-Residential
- New Residential
- New Non-Residential
- New Residential and Non-Residential
- Residential Relocation
- Relocation Removed

**RELOCATION MAP
FIGURE 3F**

11/2021 Sheet 6 of 6



Appendix B—Field Observations & Photographs

FIELD OBSERVATION CHECKLIST

Date: April 1, 2022

Alternative: Modified Selected Alternative – Phase 3

TMS# 002844-02-010 Address: 3740 Fernandina Road Tract: 123

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: Pradal, LLC

Race: Caucasian

Attach photos:

Owner: **c/o Great Southern Management Corp
Columbia, SC**



Tenants:

Civil Engineering of Columbia

ProDrivers

ProLogistix

ResourceMFG

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# 002898-01-019

Address: 370 Harbison Boulevard

Tract: 711

TYPE:

☐

Residential

CSA Community: Columbiana

☐

Apartment/Condo

Complex: _____

☒

Business/Commercial

Name: Best Buy - retail

Attach photos:

Owner: Harbison Associates LLC c/o John Simpsons

PO Box 1083

Arden, NC 28704



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# R04907-01-17

Address: 5185 Fernandina Road

Tract: 58

TYPE:

☐ Residential

CSA Community: Harbison

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Applebee's restaurant

Attach photos:

Owner: **Casual Dining Columbia/Rock Hill LLC**
26 Knights Ct
Upper Saddle River, NJ 07458



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# R004907-01-16 Address: 5195 Fernandina Road Tract: 57

TYPE:

☐ Residential Community: _____

☐ Apartment/Condo CSA Complex: Harbison

☒ Business/Commercial Name: Hooters - restaurant

Attach photos:

**Owner: Hooters Holdings 2 LLC
1100 Shames Street, Suite 205
Westbury, NY 11590**



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 4

TMS# 002898-02-005

Address: 301 Paris Road (off Jamil Road) Tract: 681

TYPE:

- ☒ Residential CSA Community: Seven Oaks
- ☐ Apartment/Condo Complex: _____
- ☐ Business/Commercial Name: _____

Attach photos:

Owner: Mary Ann Foust
301 Paris Road
Columbia, SC 29210



Single-family dwelling with handicap accessible ramp.

Per Lexington County Tax Assessor, home is 3br, 1ba @ 1,150 square feet. Homeowner is receiving homestead exemption, so potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 4

TMS# 002899-01-031 Address: 450 Jamil Road Tract: 677

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Wilson Equipment and Outdoor – retail;
service department; rentals

Attach photos:

Owner: Wilson Equipment & Outdoor LLC
743 Wilson Road
Newberry, SC 29108



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 4

TMS# 002899-01-032

Address: 434 Jamil Road

Tract: 674

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Grier Roofing – service truck parking; warehouse

Attach photos:

Owner: Grier Properties LLC
9328 Asheville Highway
Inman, SC 29349



FIELD OBSERVATION CHECKLIST

Date: October 28, 2020

Alternative: Modified Selected Alternative

TMS# 002899-04-007

Address: 270 Jamil Road

Tract: 671

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Fireworks Supermarket – sales; warehouse

Attach photos:

Owner: Robert, Philip & Foster Pulley

3010 North Ingram Avenue

Springfield, MO 65803



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-04-051 Address: 256 Jamil Road Tract: 669/670

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: Aquatic Recreation/Lanier Pools – retail; outdoor pool display

Attach photos:

Owner: **Lanier Jamil Property LLC**
PO Box 21037
Columbia, SC 29210



Note: 2 relocations

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002834-01-019 through 024 Address: 240 Jamil Road Tracts: 662-667 and 3

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☒ Apartment/Condo Complex: Lakewood Village Condos
- ☐ Business/Commercial Name: _____

Apartment Observations: Units/building: 2 buildings- 6 units+ 8 units= 14 units (all units have individual TMS #)

Availability within complex: Yes

Attach photos:

Owner: Precision Property LLC
1631 Pine Lake Drive
West Columbia, SC 29169



Note: 8 additional relocations

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002889-06-017

Address: 3604 Fernandina Road

Tract: 136

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Office building (Affordable Insurance, I'll Buy your house.com; Humphries & Associates, Acoustical Design, LLC, CPR-ASAP Center, Paul Properties)

Attach photos:

Owner: **Deborah K. Humphries**

123 Captain Lowman Road

Chapin, SC 29036



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-06-009

Address: 3600 Fernandina Road

Tract: 137

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Delorah Home Care Services

Attach photos:

Owner: **DLORAH LLC**
3600 Fernandina Road
Columbia, SC 29210



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-04-013 Address: 208 Jamil Road Tract: 660

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Save Green Self Storage

Attach photos:

Approximately 108 storage units, office space, and leased parking impacted.

Owner: MHC 6 (Columbia SC) LLC
PTA-CS#5601
PO Box 320099
Alexandria, VA 22320



Notes: 1 business displacee
1 residential displacee
108 personal property displacees

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-04-017 Address: Jamil Road Tract: 658

TYPE:

☐ Residential CSA Community: Seven Oaks

☒ Apartment/Condo Complex: Gleneagle Apartment Homes (formerly St. Andrews Apartments)

☐ Business/Commercial Name: _____

Apartment Observations: Units/building: 2 buildings (building 1 = 8 units; building 2 = 4 units)

Availability within complex: Yes

Attach photos:

Owner: Monument St. Andrews LLC
5200 Blue Lagoon Drive, Suite 400
Miami, FL 33126
Attn: Stuart Cook



12 displacees

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-04-018 Address: 156 Jamil Road Tract: 657

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: U-Haul Self Storage
Approximately 328 storage units.

Attach photos:

Owner: Four SAC Self-Storage Corp
207 East Claredon
Phoenix, AZ 85012



Notes: 1 business displacee
1 residential displacee
328 personal property displacees

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-006 Address: 3404 Fernandina Road Tract: 144

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Vision Learning Center (CDC)

Attach photos:

Owner: BURRISSFB Company LLC
150 Creekwood Road
Chapin, SC 29036



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-019

Address: 3402 Fernandina Road

Tract: 145

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: TelCom

Attach photos:

Owner: George R. Corley, Jr.
3402 Fernandina Road
Columbia, SC 29210



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-007 Address: 3400 Fernandina Road Tract: 146

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: AirTime Cooling & Heating

Attach photos:

Owner: 3400 Fernandina Road LLC
325 Emerald Oaks Way
Irmo, SC 29063



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-010 Address: 3202 Fernandina Road Tract: 149

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Lawyer Lisa Law Office

Attach photos:

Owner: Nina & James H. Newcomb
564 Mallard Drive
Chapin, SC 29036



Notes: 3 businesses displaced Increase by 2

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-012

Address: 3210 Fernandina Road

Tract: 151

TYPE:

☐

Residential

CSA Community: Seven Oaks

☐

Apartment/Condo

Complex: _____

☒

Business/Commercial

Name: Sonitrol

Attach photos:

Owner: Greystone Holdings LLC
4455 Tile Drive
North Charleston, SC 29405



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 003697-02-013 Address: 10 Berryhill Drive Tract: 631

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Red Roof Inn

Attach photos:

Owner: SNG Hospitality Columbia LLC
10 Berryhill Road
Columbia, SC 29210



Notes: 1 business displacee
1 residential displacee (tenant)

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 003697-02-014 Address: 16 Berryhill Drive Tract: 629

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: Office Building (6 business displacees)

Attach photos:

Owner: Berryhill Road LLC
16 Berryhill Road, Suite 200
Columbia, SC 29210



Reduced by 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 003697-02-016 Address: 200 Berryhill Road Tract: 627

TYPE:

☐ Residential CSA Community: Seven Oaks

☒ Apartment/Condo Complex: Peachtree Place

☐ Business/Commercial Name: _____

Apartment Observations: Units/building: 2 buildings – 20 units each) total 40 units; increase of 20 units

Availability within complex: Yes

Attach photos:

Owner: Monument St Andrews LLC
5200 Blue Lagoon Drive, Suite 400
Miami, FL 33126
Attn: Stuart Zook



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-06-02

Address: 230 Chicopee Drive

Tract: 190

TYPE:

☒ Residential

CSA Community: St. Andrews

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: Joseph S. Byrd, Jr.
PO Box 212641
Columbia, SC 29221



Per Richland County Tax Assessor, home is 2br, 1ba @ 725 square feet. Homeowner is receiving homestead exemption, so potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-06-03

Address: 236 Chicopee Drive

Tract: 191

TYPE:

☒ Residential

CSA Community: St. Andrews

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: Previously had for rent sign – rental unit; currently occupied

Attach photos:

Owner: Gayle K. Gray c/o Ken Wood
236 Chicopee
Columbia, SC 29210



Per Richland County Tax Assessor, home is 2br, 1ba @ 725 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-06-05

Address: 303 Stucawa Drive

Tract: 192

TYPE:

☒ Residential

CSA Community: St. Andrews

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: **SFR3-001 LLC**
2927 Devine Street
Columbia, SC 29205



Per Richland County Tax Assessor, home is 3br, 1ba @ 951 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-03-10

Address: 302 Stucawa Drive

Tract: 194

TYPE:

☒ Residential

CSA Community: St. Andrews

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Robert A. Wright
302 Stucawa Drive
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,538 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R06014-09-01

Address: 1837 Fairhaven Drive

Tract: 2

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: Bishop Donald E. & David Barton JTWRS
1837 Fairhaven
Columbia, SC 29210



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,377 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-10-01

Address: 1836 Fairhaven Drive

Tract: 309

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: **Nora S. Brazell**
1836 Fairhaven
Columbia, SC 29210



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,319 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-10-02

Address: 420 Gale Drive

Tract: 308

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Frederick B. Moore
420 Gale Drive
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,555 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-10-03

Address: 418 Gale Drive

Tract: 307

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: House Magic Trust/Julie Brickley/Trustee
11 Bee Ridge Circle
Columbia, SC 29223



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,716 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# _____ Address: 436 Gale Drive Tract: 299

TYPE:

☒ Residential CSA Community: Broad

☐ Apartment/Condo Complex: _____

☐ Business/Commercial Name: _____

Attach photos:

Owner: Audrey FKA Dawkins/Audrey Stokes
436 Gale Drive
Columbia, SC 29210



Per Richland County Tax Assessor, home is 3br, 2.5ba @ 2,312 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06014-11-03

Address: 440 Gale Drive

Tract: 298

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: Oseni B. & Agnes B. Bello
124 Bakers Point Road
Columbia, SC 29223



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,418 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R07402-05-01

Address: 1021 Briargate Circle

Tract: 196

TYPE:

☐ Residential

CSA Community: St. Andrews

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Infrastructure Consulting Engineers (ICE)

Attach photos:

Owner: Heritage Park Properties LLC
1021 Briargate Circle
Columbia, SC 29210



19,170 square feet of Office space

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 003697-05-033

Address: 421 Zimalcrest Drive

Tract: 547

TYPE: INSTITUTIONAL /Non-Profit

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: South Carolina Education Association (5 displacees)

Attach photos:

**Owner: SC Hospital Association
4000 Miller Valentine Court
Dayton, OH 45439**



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R06013-01-26

Address: 1630 Browning Road Tract: 319

TYPE: BUSINESS

☐

Residential

CSA Community: Broad

☐

Apartment/Condo

Complex: _____

Business/Commercial

Name: Kenneth Shuler School of Cosmetology (counted as a business
and not an institution due to vacancy)

Attach photos:

Owner: MKS Properties LLC
1630 Browning Road
Columbia, SC 29210



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R06013-01-25

Address: 1628 Browning Road

Tract: 318

TYPE: INSTITUTIONAL

☐ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: ITT Technical Institute (Southern Institute)

Attach photos:

**Owner: Browning Office Investment LLC
116 Long Pine Court
Chapin, SC 29036**



206,766 square feet of educational space

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-01-10

Address: 1624 Browning Road

Tract: 320

TYPE:

☐ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: SCU Credit Union

Attach photos:

**Owner: SC State Credit Union
AE Hammond
Columbia, SC 29201**



31,500 square feet

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-01-06

Address: 1525 Fairhaven Drive

Tract: 322

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: Sold 9/2018; not currently for sale

Attach photos:

Owner: SFR3 LLC

2927 Devine Street

Columbia, SC 20205



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,440 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-02-08

Address: 1522 Fairhaven Drive

Tract: 329

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: Willia D. Davis
1522 Fairhaven Drive
Columbia, SC 29210



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,961 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-02-07

Address: 1521 Luster Lane

Tract: 330

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Seighbee B. Bennett
1521 Luster Lane
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,410 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-03-08

Address: 1520 Luster Lane

Tract: 337

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Nivit Tipvaree
1520 Luster Lane
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,678 square feet.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-03-07

Address: 1521 Morninghill Drive

Tract: 338

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Delores D. Anthony
1521 Morninghill Drive
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 4br, 1.5ba @ 2,323 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-09-02

Address: 1545 Burnette Drive

Tract: 346

TYPE:

☐ Residential

CSA Community: Broad

☐ Apartment/Condo

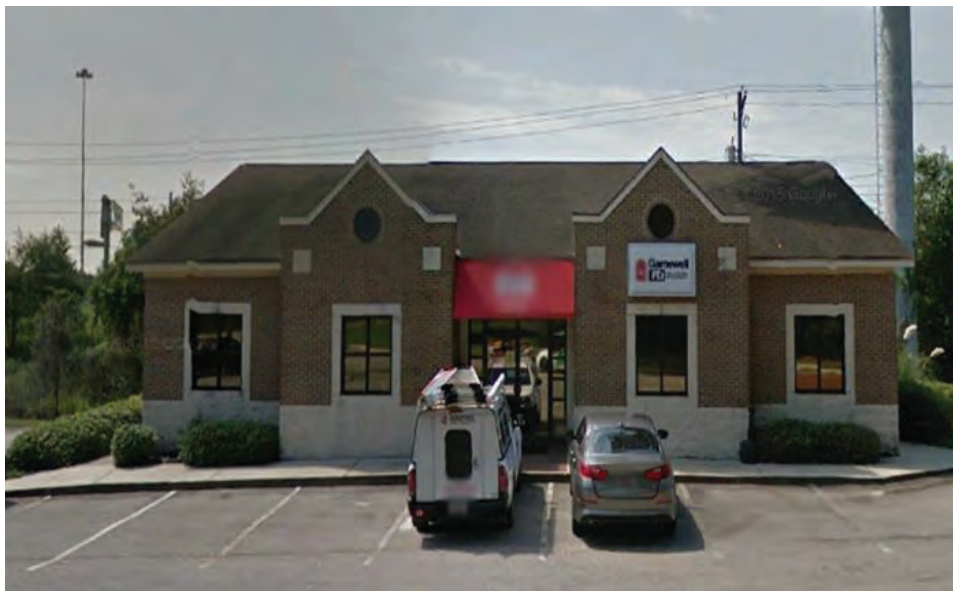
Complex: _____

☒ Business/Commercial

Name: Sonitrol Security Systems

Attach photos:

**Owner: Ram Property Holdings LLC
4455 Tile Drive
North Charleston, SC 29405**



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R05916-09-04

Address: 1513 Morninghill Drive

Tract: 349

TYPE:

☐ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: True Serenity - Recording Studio

Attach photos:

**Owner: True Serenity LLC
411 Bakerton Court
Columbia, SC 29212**



1,269 square feet of office space

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R05915-03-14

Address: 320 Lawand Drive

Tract: 388

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Ruth L. Byrd
320 Lawand Drive
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 2ba @ 1,742 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R07303-05-01

Address: 500 Lawand Drive

Tract: 402

TYPE:

☐ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Office building (1 owner/tenant) 2 story building;

6,960 square feet of office suites.

Attach photos:

Owner: MD Investment Lawand LLC
500 Lawand Drive
Columbia, SC 29210



NOTE: REDUCED TO 1 BUSINESS DISPLACEE FROM 4

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R07302-05-04

Address: 433 Arrowwood Road

Tract: 405

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: Arlene P. Woody
433 Arrowwood Road
Columbia, SC 29210



Per Richland County Tax Assessor, home is 3br, 2.5ba @ 1,669 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R07302-05-05

Address: 435 Arrowwood Road

Tract: 406

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Maxine T. Russell
435 Arrowwood Road
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 1.5ba @ 1,740 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R07302-05-07

Address: 443 Arrowwood Road

Tract: 407

TYPE:

☒ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

**Owner: Claire H. Reed Trustee
443 Arrowwood Road
Columbia, SC 29210**



Per Richland County Tax Assessor, home is 3br, 1.5ba @ 1,822 square feet. Homeowner is receiving homestead exemption indicating potential for elderly and/or disabled homeowner that will need to be relocated.

FIELD OBSERVATION CHECKLIST

Date: _ October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-018

Address: 1776 Burning Tree Road Tract: 169

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Motel 6

Attach photos:

Owner: G6 Hospitality Property LLC
PO Box 117508
Carrollton, TX 75011
Attn: Tax Department



NOTES: 1 business displacee

19 residential displacees (tenants)

FIELD OBSERVATION CHECKLIST

Date: _ October 28, 2021 _

Alternative: Modified Selected Alternative

TMS# 002898-01-004

Address: 609 Giles Court

Tract: 699

TYPE:

☐

Residential

CSA Community: Columbiana

☐

Apartment/Condo

Complex: _____

☒

Business/Commercial

Name: Giles Auto Repair

Attach photos:

Owner: Todd W. Giles
609 Giles Court
Columbia, SC 29212



FIELD OBSERVATION CHECKLIST

Date: _ October 28, 2021 _

Alternative: Modified Selected Alternative – Phase 2

TMS# R07406-01-02

Address: 1315 Longcreek Road

Tract: 269

TYPE:

Residential

CSA Community: Broad

Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: Vacant Club

Attach photos:

Owner: Darrell J. Jabour
136 Hamilton Park Drive
Irmo, SC 29063



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R07302-02-06

Address: 521 Lawand Drive _____ Tract: 399 _____

TYPE:

☒ Residential

CSA Community: Broad _____

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: _____

Attach photos:

Owner: James L. and Carolyn Swittenberg
521 Lawand Drive
Columbia, SC 29210



NOTES: 1 residential displacee

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R06081-06-00 Address: _____ Tract: 195

TYPE:

☐ Residential CSA Community: St Andrews

☒ Apartment/Condo Complex: Briarsgate (24 units; 8 storage units) _____

☐ Business/Commercial Name: _____

Attach photos:

Owner: multiple



NOTES: 24 residential displacees (3 owners, 21 tenants)
8 personal property (storage units)

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# R06008-01-06 Address: _____ Tract: 156

TYPE:

- ☐ Residential CSA Community: St Andrews
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Jarrett & Hart Goldsmiths

Attach photos:

Owner: Jarrett Steven & Mary Hart-Jarrett JTWRs
3102 Greenore Drive
Columbia, SC 29210



NOTES: 1 business displacee
1 residential displacee

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 1

TMS# R05916-01-09

Address: 1620 Browning Road

Tract: 321

TYPE:

☐ Residential

CSA Community: Broad

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: _____

Attach photos:

**Owner: SCDOT
PO Box 191
Columbia, SC 29202**



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-003 Address: 3500 Fernandina Road Tract: 141

TYPE:

- ☐ Residential CSA Community: Seven Oaks
- ☒ Apartment/Condo Complex: Ovation @3500 (formerly Raintree Apartments)
- ☐ Business/Commercial Name: _____

Attach photos:

Owner: **Fernandina Properties, Inc.**
3500 Fernandina Road
Columbia, SC 29210



NOTES: 8 Residential displaces

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# R05916-08-01

Address: 830 Bush River Road

Tract: 377

TYPE:

☐

Residential

CSA Community: Broad

☐

Apartment/Condo

Complex: _____

☒

Business/Commercial

Name: Citgo

Attach photos:

Owner: BUSH RIVER C-STORE LLC
41 Cromwell Court
Irmo, SC 29063



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# 003697-04-001

Address: 2105 Rockland Road

Tract: 550

TYPE:

☐

Residential

CSA Community: Seven Oaks

☐

Apartment/Condo

Complex: _____

☒

Business/Commercial

Name: Citgo

Attach photos:

Owner: Wildlife Road Properties LLC
PO Box 8413
Columbia, SC 29201



NOTES: 1 business displacee
1 residential displacee



Appendix C—Field Observations & Photographs Relocations Removed

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# 002898-04-032 Address: 3850 Fernandina Road Tract: 111

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: JJE Capital- private equity firm

Attach photos:

Owner: Commercial Properties of SC LLC
3850 Fernandina Road
Columbia, SC 29210



NO RELOCATION – REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 002899-05-004 Address: 3506 Fernandina Road Tract: 142

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: Executive Plumbing

Attach photos:

Owner: Cregger Company Inc
PO Box 2197
Columbia, SC 29202



NO RELOCATION – VACANT – reduce by 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# R06010-03-02 Address: 1000 Center Point Drive Tract: 175

TYPE: Institutional

☐ Residential CSA Community: St. Andrews

☐ Apartment/Condo Complex: _____

☐ Business/Commercial Name: South Carolina Hospital Association (SCHA)

☐

Attach photos:

Owner: SC Hospital Association
PO Box 60009
West Columbia, SC 29171



21,100 square feet of office and conference space.

NO RELOCATION – REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# 003697-02-049

Address: Berryhill Road

Tract: 626

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial
sale

Name: Abandoned Restaurant- Property currently up for

Attach photos:

Owner: DI-CAROLINAS LLC
6300 Ridglea Place, Suite 1107
Fort Worth, TX 76116
Attn: David A. Knight



NO RELOCATION – REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# 003697-04-002

Address: 2023 Rockland Road

Tract: 551

TYPE:

☒ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☐ Business/Commercial

Name: Mobile Home

Attach photos:

Owner: Pro Tow of Columbia Inc
PO Box 608
Lexington, SC 29071



NO RELOCATION – REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative

TMS# 003697-05-032

Address: 1803 Bush River Road

Tract: 558

TYPE:

☐ Residential

CSA Community: Seven Oaks

☐ Apartment/Condo

Complex: _____

☒ Business/Commercial

Name: One Motel- Two buildings

Attach photos:

Owner: Shreenathji Hospitality LLC
1803 Bush River Road
Columbias, SC 29210



NO RELOCATION – REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 2

TMS# R07402-03-01 Address: 2116 Broad River Road Tract: 272

TYPE:

☐ Residential CSA Community: Broad

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: Vacant gas station

Attach photos: Owner: Mesquite Creek Development Inc
PO Box 22845
Oklahoma City, OK 73123



NO RELOCATION – REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: _ October 28, 2021 _

Alternative: Modified Selected Alternative – Phase 2

TMS# R07402-03-02B Address: 2108 Broad River Road Tract: 273 _____

TYPE:

- ☐ Residential CSA Community: __Broad_____
- ☐ Apartment/Condo Complex: _____
- ☒ Business/Commercial Name: Vacant gas station _____

Attach photos:

Owner: Phillips Petroleum Company
% Racetrac Petroleum Inc
313R
Oklahoma City, OK 73123



NO RELOCATION REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: _ October 28, 2021

Alternative: Modified Selected Alternative

TMS# R07402-05-02 Address: 2219 Broad River Road Tract: 200

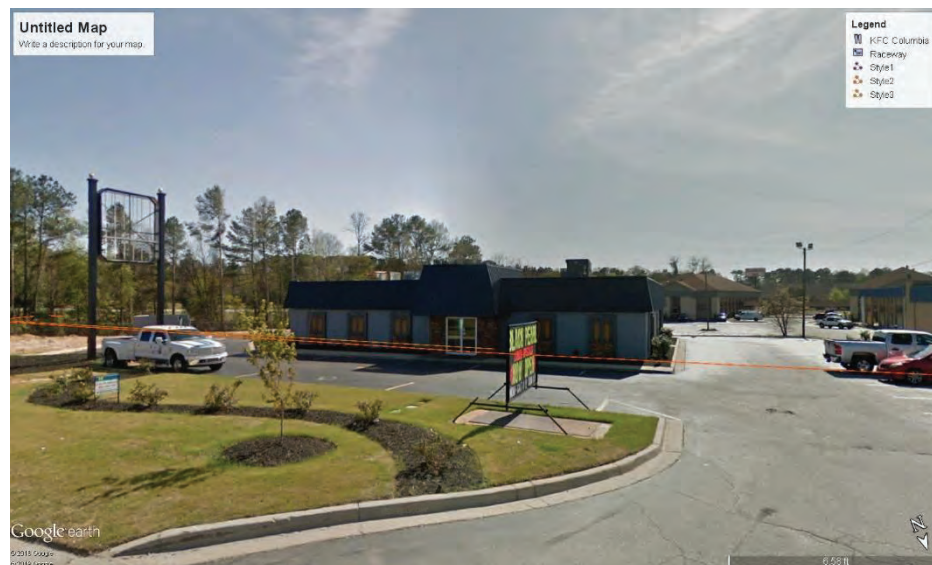
TYPE:

☐ Residential CSA Community: __ Broad

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: formerly Black Pearl Restaurant/club - vacant

Attach photos: Owner: Jamz LLC
2219 Broad River Road
Columbia, SC 29210



NO RELOCATION REDUCE BY 1

FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 003697-02-048 Address: 14 Berryhill Drive Tract: 630

TYPE:

☐ Residential CSA Community: Seven Oaks

☐ Apartment/Condo Complex: _____

☒ Business/Commercial Name: Commercial building (vacant); previously MYXX Nightlife

Attach photos:

Owner: Centurion Investments LLC
111 Traditions Circle
Columbia, SC 29229



FIELD OBSERVATION CHECKLIST

Date: October 28, 2021

Alternative: Modified Selected Alternative – Phase 3

TMS# 003697-02-015

Address: 18 Berryhill Road

Tract: 628

TYPE:

☐ Residential

CSA Community: Seven Oaks

☒ Apartment/Condo

Complex: Waters at Berryhill (formerly Stoney Creek

☐ Business/Commercial

Name: _____

Apartment Observations: Units/building: 5 buildings (#8-#12): 8 units + 8 units + 8 units+ 8 units +4 units (36 units)
HUD funding for renovation – see additional information in Ch. 4.1

Availability within complex: Yes

Attach photos:

Owner: AHF-Stoney Creek LLC
 c/o Atlantic Housing Foundation
 5910 North Central Expressway, Suite 1310
 Dallas, TX 75260



APPENDIX B

Wetlands Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Carolina Crossroads (Parcel 270A) City/County: Richland Sampling Date: 06/30/2021
 Applicant/Owner: SCDOT State: SC Sampling Point: W1-DP1 Wet
 Investigator(s): S. Easterly, J. Fletcher Section, Township, Range: Columbia
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): concave Slope (%): <1
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 34.039423 Long: -81.090224 Datum: NAD 83
 Soil Map Unit Name: Herndon-Urban land complex, 2-6% slopes NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> True Aquatic Plants (B14) <u> </u> High Water Table (A2) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Saturation (A3) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Water Marks (B1) <u> </u> Presence of Reduced Iron (C4) <u> </u> Sediment Deposits (B2) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Drift Deposits (B3) <u> </u> Thin Muck Surface (C7) <u> </u> Algal Mat or Crust (B4) <u> </u> Other (Explain in Remarks) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Hydrology is present	

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W1-DP1 Wet

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)
2. <u>Carpinus caroliniana</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>35</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>				
Sapling/Shrub Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> X 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>40</u> = Total Cover				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
Herb Stratum (Plot size: <u>30'</u>)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in height.
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Microstegium vimineum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
4. <u>Carex lurida</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>40</u> = Total Cover				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>
1. <u>Toxicodendron radicans</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				
Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present				

SOIL

Sampling Point: W1-DP1 Wet**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	100					Loamy/Clayey	sediment from sewer line above feature
3-18	10YR 4/2	90	7.5YR 4/4	10	C	M	Loamy/Clayey	Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (MLRA 136)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 122, 136)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147, 148)
<input type="checkbox"/> Dark Surface (S7)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> (outside MLRA 127, 147, 148)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: _____
Depth (inches): _____Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soils are present

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: Carolina Crossroads (Parcels 270A) City/County: Richland Sampling Date: 06/30/2021
 Applicant/Owner: SCDOT State: SC Sampling Point: W1-DP2 Up
 Investigator(s): S. Easterly, J. Fletcher Section, Township, Range: Columbia
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): concave Slope (%): <1
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 34.039288 Long: -81.090202 Datum: NAD 83
 Soil Map Unit Name: Herndon Urban land complex, 2-6% slopes NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) </div> <div style="width: 50%;"> <u> </u> True Aquatic Plants (B14) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Hydrology is not present	

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: W1-DP2 Up

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Liriodendron tulipifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)
2. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
20 = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				
Sapling/Shrub Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
20 = Total Cover				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in height.
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <u>Wisteria floribunda</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Smilax laurifolia</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50 = Total Cover				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				
Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present				

SOIL

Sampling Point: W1-DP2 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	7.5YR 3/4	100					Loamy/Clayey	sediment from sewer line above feature

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (MLRA 136)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 122, 136)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147, 148)
<input type="checkbox"/> Dark Surface (S7)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> (outside MLRA 127, 147, 148)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes _____ No X**Remarks:**

Hydric soils are not present

NC DWQ Stream Identification Form Version 4.11

S1 Stoop Creek

Date: 06/29/2021	Project/Site: Carolina Crossroads (Parcels 629-631)	Latitude: 34.042322
Evaluator: S. Easterly, J. Fletcher	County: Lexington	Longitude: -81.117930
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> 32	Stream Determination (circle one) Ephemeral Intermittent <u>Perennial</u>	Other Columbia, SC <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = 16)	Absent	Weak	Moderate	Strong
1 ^a . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Bank Height: 8'-10', Bankfull Width: 20', Water Depth: 2"- 24", Substrate: Bedrock, Gravel, Sand, Silt, Velocity: Slow, Clarity: Turbid

Sketch:

APPENDIX C

Noise Analysis Addendum

**Noise Addendum
Executive Summary
Carolina Crossroads Phase I - Colonial Life Boulevard at I-126 Interchange
Richland and Lexington Counties, South Carolina
April 4th 2022**

Project Description: This proposed *Carolina Crossroads* (CCR) project will increase capacity, improve operation, and reconstruct/improve 12 interchanges along the I-20/26/126 corridor in Richland and Lexington Counties, South Carolina. The Federal Highway Administration (FHWA) approved a final environmental impact statement (FEIS) and record of decision (ROD) on May 2, 2019, and a reevaluation was approved on August 3, 2020, for design changes since the FEIS/ROD.

The project will be constructed in five phases through the design-build (DB) process. This noise addendum covers work proposed in Phase 1. Phase 1 includes improvements to I-26 and I-126 including construction of new ramps at the I-26/I-126 interchange and improvements to the I-126/Colonial Life Boulevard interchange.

Project Changes: The DB Team identified an alternate design for the I-126 and Colonial Life Boulevard interchange which changes the preferred configuration from a full access tight urban diamond interchange to a partial diverging diamond interchange (DDI) that provides access from the north, east and west. Four additional design improvements were also made as part of the new partial DDI:

1. Modification of the system-to-system ramp from I-26 westbound to I-126 eastbound, moving the eastbound entry ramp merge point to I-126 from the I-126/Colonial Life Boulevard interchange closer to the Greystone Boulevard interchange.
2. Modification of the right-turn movement from the I-126 westbound exit ramp to northbound Colonial Life Boulevard from a one-lane free movement to a two-lane signalized movement.
3. Modification of the intersection of Colonial Life Boulevard and West Colonial Life Boulevard from a right-in/right-out into a full intersection.
4. Expand the existing partial interchange with direct connectors to the east serving Columbia traffic and direct connectors to and from the west of the interchange.

This addendum documents the geometric alignment changes proposed by the DB Team. Additionally, this addendum documents the analysis and resulting changes to the design of Noise Sensitive Areas V, X, Y and Z as a result of the final roadway design information.

Prepared By: Luis Velasquez, PE

QC/QA: Justin Maderia, PE, PTOE, PTP



Signature 04/04/2022
Date

Signature 04/04/2022
Date

 4/19/2022
Approved By: SCDOT Signature Date

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Attachments

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Attachment B – Noise Levels & Noise Barrier Graphics

Attachment C – TNM 2.5 Runs

Attachment D – TNM 2.5 Sound Level Outputs

Attachment E – TNM 2.5 Noise Barrier Design Outputs

Attachment F – Updated SCDOT Reasonable and Feasible Worksheets

NOISE ADDENDUM
CAROLINA CROSSROADS PHASE I - COLONIAL LIFE BOULEVARD
AT I-126
RICHLAND AND LEXINGTON COUNTIES, SOUTH CAROLINA
DECEMBER 17, 2021

1. INTRODUCTION

In compliance with 23 USC Section 109(h) and (i), the Federal Highway Administration (FHWA) established a standard for the assessment of highway traffic-generated noise. The standard, published as Part 772 of Title 23 of the Code of Federal Regulations (23 C.F.R. § 772), provides procedures to be followed in conducting noise analyses that will protect the public health, welfare, and livability. In accordance with the Noise Control Act of 1972, coordination of this regulation with the Environmental Protection Agency (EPA) has been completed. The following assessment has been prepared in accordance with 23 C.F.R. § 772 and SCDOT Traffic Noise Abatement Policy.

This noise addendum serves as an update to the noise analysis included in the final environmental impact statement (FEIS) and record of decision (ROD) approved on May 2, 2019 (hereafter referred to as the May 2019 FEIS) and to a reevaluation of Noise Barrier X that was approved on August 3, 2020. SCDOT is administering the final design and construction of the project through a Design-Build (DB) contract. This addendum documents the geometric alignment changes proposed by the DB Team as design has been finalized for the I-126 at Colonial Life Boulevard interchange (the DB Team [2021] Final Design). Additionally, this addendum documents the analysis and resulting changes to the design of Noise Barriers V, X, Y and Z as a result of the DB Team (2021) Final Design.

1.1 What is The Proposed Project?

The Federal Highway Administration (FHWA) and South Carolina Department of Transportation (SCDOT) propose to implement various strategies that will improve the mobility and enhance traffic operations by reducing existing traffic congestion within the I-20/20/126 corridor in Richland and Lexington Counties, South Carolina. The proposed project, *Carolina Crossroads* (CCR), will increase capacity and improve operation along the corridor, including reconstructing/improving the following interchanges:

- I-20 and I-26 system-to-system interchange
- Exit 101 at Broad River Road
- I-26 Exit 102 at Lake Murray Boulevard
- I-26 Exit 103 at Harbison Boulevard
- I-26 Exit 104 at Piney Grove Road
- I-26 Exit 106 at St Andrews Road
- I-26 Exit 108 at Bush River Road
- I-26/I-126 interchange,
- I-26 Exit 110 at US 378
- I-126 at Colonial Life Boulevard
- I-20 Exit 65 at Broad River Road
- I-20 Exit 63 at Bush River Road

FHWA approved a final environmental impact statement (FEIS) and record of decision (ROD) for the project on May 2, 2019. A reevaluation was approved on August 3, 2020, for design changes since the

FEIS/ROD. The project has since progressed towards construction that will occur in five phases through the DB process. Phase 1 project construction began in fall 2021 with traffic control/maintenance activities, and full construction is anticipated to begin in spring 2022. Substantial project completion is scheduled for August 2024.

Under Phase 1, SCDOT proposes improvements to I-26 and I-126 in Lexington and Richland Counties, including construction of new ramps at the I-26/I-126 interchange and improvements to the I-126/Colonial Life Boulevard interchange.

The DB Team has slightly modified various design elements of the Refined Recommended Preferred Alternative (RRPA), including an alternative design for the I-126 at Colonial Life Boulevard interchange to provide the most efficient and economical solution to SCDOT. As a result of these changes, the environmental noise impacts have been reevaluated, as discussed below.

1.2 Project Changes

Various alternatives for the interchanges within the entire CCR study area were developed, and from these, the RRPA for each interchange was identified. For the I-126 at Colonial Life Boulevard interchange, a full access tight urban diamond interchange was proposed as the RRPA to replace the existing partial interchange.

The CCR Phase I DB Team developed an alternative design (partial diverging diamond interchange [DDI]) for the interchange (hereafter referred to as the DB Team [2021] Final Design). Following an extensive analysis of the alternative design, the proposed partial DDI design was chosen as the most preferred concept based on design innovation, constructability, cost effectiveness, and traffic operations.

CCR Phase 1 expands the existing partial interchange with direct connectors oriented towards the east to serve the traffic to and from downtown Columbia and provides direct connectors to and from the west of the interchange. The purpose of the project is to provide traffic access to and from I-26 and I-126 to Colonial Life Boulevard in all directions, allowing for permanent closure of the I-26/Bush River Road interchange. However, Colonial Life Boulevard terminates at I-126. As a result, the new design is a partial DDI with access to the interchange only from the north, east, and west. This design creates a new single “crossover” intersection instead of two signalized intersections as proposed in the FEIS.

Three additional design improvements were also made as part of the new partial DDI:

1. The modification of the system-to-system ramp from WB I-26 to I-126 EB. The change was made at the request of SCDOT to avoid a large Dominion Energy transmission tower. This change led to the eastbound entry ramp merge point to I-126 from the I-126/Colonial Life Boulevard interchange being moved closer to the Greystone Boulevard interchange.
2. The modification of the right-turn movement from the westbound I-126 exit ramp to northbound Colonial Life Boulevard. The free one lane right-turn movement was modified to a signal-controlled movement with two lanes.
3. The modification of the intersection of Colonial Life Boulevard and West Colonial Life Boulevard from a right-in/right-out into a full intersection. This intersection will include a signal that will work in tandem with the signal at the new crossover intersection, created as part of the interchange design. It was determined that the Colonial Life Boulevard/West Colonial Life Boulevard intersection and the new crossover intersection could essentially be clustered and operated with a single controller due to their proximity to each other.

2. RE-EVALUATION OF BUILD CONDITIONS SOUND LEVELS

The DB Team (2021) Final Design changes the preferred alternative at the I-126 at Colonial Life Boulevard interchange to a partial DDI which has the potential to influence sound levels at Noise Sensitive Areas (NSAs) V, X, Y, Z, and potentially NSA W. However, the DB Team (2021) Final Design proposed no geometric changes near NSA W. Therefore, only the sound level results for the noise receivers located in NSA V, X, Y, and Z, within the interchange area, were updated based on the new geometry as discussed in the previous section.

Table 1 summarizes the total number of receivers, the number of impacted receivers, and the change in impacts from the May 2019 FEIS, an addendum to NSA X dated July 2020, and this addendum. The table shows that when the May 2019 FEIS sound levels are compared to the DB Team (2021) Final Design sound levels there was no change to the number of impacted receivers in NSA W, X or Y but there was a change to the number of impacted receivers in NSA V and Z. Ten receivers that were impacted in the May 2019 FEIS (V060, Z014, Z112, Z153, Z166, Z171, Z173, Z177, Z181, Z184) are not impacted under the DB Team (2021) Final Design. There is not an increase in impacted receivers from the May 2019 FEIS to the DB Team (2020) Final Design.

The table also shows when the July 2020 Noise Addendum sound levels are compared to the DB Team (2021) Final Design sound levels there was no change to the number of impacted receivers in NSA X. However, receiver X042 which was not impacted in the July 2020 Noise Addendum is now impacted in the DB Team (2021) Final Design and receiver X045 which was impacted in the July 2020 Noise Addendum is not impacted in the DB Team (2021) Final Design. Overall, there is a reduction in the total number of impacts with the DB Team (2021) Final Design when compared to the May 2019 FEIS and July 2020 Addendum, as illustrated in **Table 1**.

Table 1: NSA Sound Level Changes

NSA	# of Receivers	May 2019 FEIS	July 2020 Noise Addendum	DB Team (2021) Final Design	Change in Impacts from May 2019 FEIS to DB Team (2021) Final Design
		No. of Impacted Receivers	No. of Impacted Receivers	No. of Impacted Receivers	
W	92	27		27	0
V	62	21		20	-1
X	80	32	14*+18**=32	14*+18**=32	0
Y	26	9		9	0
Z	171	52		43	-9
Total Impacts		127		118	-9

*14 impacted receivers are outside the area of influence caused by the DB Team (2021) Final Design proposed geometric changes compared to the DOT design.

**18 impacted receivers are within the area of influence caused by the DB Team (2021) Final Design proposed geometric changes compared to the DOT design.

Table 1, in Attachment A, provides a summary of the sound level results from the May 2019 FEIS and the results from this noise addendum. These results are shown graphically in Figure 1 in Attachment B. A comparison of the proposed concept included in the May 2019 FEIS to the DB Team (2021) Final Design is shown in Figure 2 in Attachment B. The TNM 2.5 files are in Attachment C. The TNM 2.5 sound level outputs are included in Attachment D.

3. RE-EVALUATION OF NOISE BARRIERS

The final location of the noise barriers was determined based on noise impacts provided in the May 2019 FEIS and as a result of DB Team (2021) Final Design noise impacts. The feasibility, reasonableness, and design of Noise Barriers V, X, Y and Z were re-evaluated as part of this addendum. This re-evaluation determined whether these four noise barriers would pass the feasible and reasonable criteria to construct each noise barrier. Details regarding the feasible and reasonableness criteria are listed below. Noise Barrier W was not reanalyzed because the DB Team (2021) Final Design proposed no geometric changes near NSA W, therefore the Noise Barrier W results documented in the May 2019 FEIS remain valid.

According to the SCDOT Traffic Noise Abatement Policy (September 1, 2014), a 5 dB(A) reduction must be achieved for 75 percent of the impacted receivers for the noise barrier to be acoustically feasible to construct. Additionally, the barrier shall pass the engineering feasibility criteria which includes a review of the following:

1. Topography – Determine if the abatement measure could be constructed given the topography of the location
2. Safety – Maintaining a clear recovery zone, sight distance and accommodation of disabled vehicles
3. Drainage – Issues created by directing water along, under, or away from an abatement measure
4. Utilities – Large overhead power lines, underground water, sewer, gas, oil, etc., can have a significant impact on costs and design options
5. Maintenance – Potential issues from location of abatement measure and construction materials
6. Access – Refers to the ingress and egress to properties that would be affected by the noise abatement measure
7. The exposed height of the noise abatement measure cannot exceed 25 feet based on constructability constraints

According to the SCDOT Noise Policy, three mandatory reasonable factors must be met for a noise barrier to be considered reasonable: viewpoint of the property owners and residents of benefited receptors, cost effectiveness, and noise reduction design goal.

This addendum discusses the results of the re-evaluation for Noise Barriers V, X, Y and Z based on the revised DB Team (2021) Final Design. Overall, the roadway design and subsequent noise barrier design has been finalized using more refined and defined design elements.

3.1 Noise Barrier V Re-Evaluation

The location of Noise Barrier V was determined based on noise impacts provided in the May 2019 Detailed Noise Analysis Technical Report, and as a result of the DB Team (2021) Final Design noise impacts. Noise Barrier V was analyzed to begin at station 890+08 and end at station 932+36. It would be located approximately 85 feet to 140 feet east of the centerline of I-126 and would be approximately 3,570 feet in length. The feasibility and reasonableness of constructing Noise Barrier V was re-evaluated as part of this noise addendum.

Noise Barrier V was analyzed for feasibility which resulted in 5 of the 22 (23 percent) impacted receivers behind the barrier experiencing a reduction in sound levels of 5 dB(A) or greater. Therefore, according to the SCDOT Noise Policy, Noise Barrier V is not feasible to construct.

Based on the results of the detailed analysis, this abatement feature is not feasible, and is not proposed as part of this project. According to SCDOT policy, reasonableness was not evaluated because the feature was found to be not feasible.

Table 2 in Attachment A summarizes the results of the Noise Barrier V evaluation. Figure 1 in Attachment B illustrates the results of the Noise Barrier V evaluation. The TNM 2.5 files are in Attachment C. The TNM 2.5 sound level outputs are included in Attachment D. The barrier height data is summarized in Attachment E. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier V is in Attachment F.

3.2 Noise Barrier X Re-Evaluation

The location of Noise Barrier X was determined based on noise impacts provided in the May 2019 Detailed Noise Analysis Technical Report and as a result of the DB Team (2021) Final Design noise impacts. Noise Barrier X was analyzed to begin at station 398+00 and end at station 455+00. It would be located approximately 90 feet to 100 feet east of the centerline of I-26 and would be approximately 5,693 feet in length. The feasibility and reasonableness of constructing Noise Barrier X was re-evaluated as part of this noise addendum.

Noise Barrier X was analyzed for feasibility which resulted in 26 of the 31 (84 percent) impacted receivers behind the barrier experiencing a reduction in sound levels of 5 dB(A) or greater. Therefore, according to the SCDOT Noise Policy, Noise Barrier X is feasible to construct.

The reasonableness analysis for Noise Barrier X included noise barrier panels that were 25 feet tall to achieve the largest number of benefited receptors and maximize the benefit at each receptor. The reasonableness analysis resulted in 50 percent of the benefited front row receivers achieving an 8 dB(A) reduction which is below SCDOT policy of more than 80 percent of the benefitted front row receivers achieve an 8 dB(A) reduction. The estimated construction cost for Noise Barrier X is \$4,981,375 and the benefit achieved by constructing Noise Barrier X is \$166,046 per benefitted receiver which is above SCDOT policy of \$30,000 per benefitted receiver. For these two reasons, Noise Barrier X does not meet SCDOT's policy and is not reasonable to construct.

The associated design changes for Noise Barrier X are listed in **Table 2**.

Table 2: Noise Barrier X Design Changes

Report	Length (Ft.)	Wall Height Range (Min Ft. - Max Ft.)	No. of Impacted Receptors	No. of Benefited Receptors	% Impacted Receptors Achieving 5 dBA Reduction	% Impacted Receptors Achieving 8 dBA Reduction	Estimated Cost per Benefited Receptor (\$)	Estimated Construction Cost (\$)
May 2019 FEIS	5,697	25	33	30	76	48	N/A	N/A
DB Team (2021) Final Design	5,693	25	31	26	84	50	N/A	4,981,375

Table 3 in Attachment A summarizes the results of the Noise Barrier X evaluation. Figure 1 in Attachment B illustrates the results of the Noise Barrier X evaluation. The TNM 2.5 files are in Attachment C. The TNM 2.5 sound level outputs are included in Attachment D. The barrier height data is summarized in Attachment E. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier X is in Attachment F.

3.3 Noise Barrier Y Re-Evaluation

The location of Noise Barrier Y was determined based on noise impacts provided in the May 2019 Detailed Noise Analysis Technical Report and as a result of the DB Team (2021) Final Design noise impacts. Noise Barrier Y was analyzed to begin at station 9003+00 and end at station 9028+00 (Morning Hill Drive

alignment). It would be located approximately 55 feet to 160 feet east of the centerline of I-126 and would be approximately 3,092 feet in length. The feasibility and reasonableness of constructing Noise Barrier Y was re-evaluated as part of this noise addendum.

Noise Barrier Y was analyzed for feasibility which resulted in 10 of the 10 (100 percent) impacted receivers behind the barrier experiencing a reduction in sound levels of 5 dB(A) or greater. Therefore, per SCDOT policy, Noise Barrier Y is feasible to construct.

The reasonableness analysis for Noise Barrier Y included noise barrier panels that were 25 feet tall to achieve the largest number of benefited receptors and maximize the benefit at each receptor. The reasonableness analysis resulted in 53 percent of the benefited front row receivers achieving an 8 dB(A) reduction which is below SCDOT policy of more than 80 percent of the benefitted front row receivers achieve an 8 dB(A) reduction. The estimated construction cost for Noise Barrier Y is \$2,705,220 and the benefit achieved by constructing Noise Barrier Y is \$159,131 per benefitted receiver, which is above SCDOT policy of \$30,000 per benefitted receiver. For these two reasons, Noise Barrier Y does not meet SCDOT's policy and is not reasonable to construct.

The associated design changes for Noise Barrier Y are listed in **Table 3**.

Table 3: Noise Barrier Y Design Changes

Report	Length (Ft.)	Wall Height Range (Min Ft. - Max Ft.)	No. of Impacted Receptors	No. of Benefited Receptors	% Impacted Receptors Achieving 5 dBA Reduction	% Impacted Receptors Achieving 8 dBA Reduction	Estimated Cost per Benefited Receptor (\$)	Estimated Construction Cost (\$)
May 2019 FEIS	2,760	25	9	17	100	56	N/A	N/A
DB Team (2021) Final Design	3,092	25	10	17	100	53	N/A	2,705,220

Table 4 in Attachment A summarizes the results of the Noise Barrier Y evaluation. Figure 1 in Attachment B illustrates the results of the Noise Barrier Y evaluation. The TNM 2.5 files are located in Attachment C. The TNM 2.5 sound level outputs are included in Attachment D. The barrier height data is summarized in Attachment E. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier Y is in Attachment F.

3.4 Noise Barrier Z Re-Evaluation

The location of Noise Barrier Z was determined based on noise impacts provided in the May 2019 Detailed Noise Analysis Technical Report and as a result of the DB Team (2021) Final Design noise impacts. Noise Barrier Z was analyzed to begin at station 73+00 (I-126) and end at station 201+50 (Ramp D). It would be located approximately 22 feet to 375 feet east of the centerline of I-126 and would be approximately 3,313 feet in length. The feasibility and reasonableness of constructing Noise Barrier Z was re-evaluated as part of this noise addendum.

Noise Barrier Z was analyzed for feasibility which resulted in 41 of the 41 (100 percent) impacted receivers behind the barrier experiencing a reduction in sound levels of 5 dB(A) or greater. In addition to acoustical feasibility, the SCDOT Noise Policy includes consideration of engineering factors as part of the feasibility evaluation of a noise abatement measure. There are engineering constraints including an existing retaining wall, frontage road, and utilities in the vicinity of the Noise Barrier Z that could impede constructability and lead to increased cost. These constraints were evaluated in further detail under cost

effectiveness as part of the reasonableness criteria. According to SCDOT policy, Noise Barrier Z is feasible to construct.

The reasonableness analysis for Noise Barrier Z included noise barrier panels that were 25 feet tall to achieve the largest number of benefited receptors and maximize the benefit at each receptor. The reasonableness analysis resulted in 77 percent of the benefited front row receivers achieving an 8 dB(A) reduction, which is below SCDOT policy of more than 80 percent of the benefitted front row receivers achieving an 8 dB(A) reduction.

The engineering constraints discussed above in the feasibility evaluation (existing retaining wall, frontage road, and utilities) were included in the reasonableness evaluation to determine how the constraints may impact the cost to construct Noise Barrier Z. It is undesirable, due to structural and geotechnical stability considerations, to construct Noise Barrier Z on top of the existing retaining wall. Therefore, Noise Barrier Z is proposed to be constructed on the frontage road side of the existing retaining wall. To avoid conflict with the retaining wall foundation and accommodate the noise barrier in this location, it would be necessary to relocate the frontage road, a sanitary sewer line, and a sanitary sewer pump station. In addition, the frontage road relocation and placement of additional safety barrier would result in additional retaining walls and significant access issues at existing driveway locations. These constraints result in an estimated additional cost of \$4.25 million dollars bringing the total cost to construct Noise Barrier Z to \$7,148,980. The benefit achieved by constructing Noise Barrier Z is \$45,247 per benefitted receiver which is above SCDOT policy of \$30,000 per benefited receiver. For these reasons, Noise Barrier Z does not meet SCDOT's policy and is not reasonable to construct.

The associated design changes for Noise Barrier Z are listed in **Table 4**.

Table 4: Noise Barrier Z Design Changes

Report	Length (Ft.)	Wall Height Range (Min Ft. - Max Ft.)	No. of Impacted Receptors	No. of Benefited Receptors	% Impacted Receptors Achieving 5 dBA Reduction	% Impacted Receptors Achieving 8 dBA Reduction	Estimated Cost per Benefited Receptor (\$)	Estimated Construction Cost (\$)
May 2019 FEIS	3,769	15-25	52	152	100	82	46,237	7,028,030
DB Team (2021) Final Design	3,313	25	41	158	100	77	45,247	7,148,980

Table 5 in Attachment A summarizes the results of the Noise Barrier Z evaluation. Figure 1 in Attachment B illustrates the results of the Noise Barrier Z evaluation. The TNM 2.5 files are in Attachment C. The TNM 2.5 sound level outputs are included in Attachment D. The barrier height data is summarized in Attachment E. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier Z is in Attachment F.

4. WHAT ARE THE CONCLUSIONS?

This addendum documents the geometric alignment changes proposed by the DB Team as design has been finalized for the I-126 at Colonial Life Boulevard interchange. Additionally, this addendum documents the analysis and resulting changes to the design of Noise Barriers V, X, Y, and Z as a result of the DB Team (2021) Final Design. Noise Barrier W was not reanalyzed because the DB Team (2021) Final Design proposed no geometric changes near NSA W, therefore the Noise Barrier W results documented in the May 2019 FEIS remain valid.

The DB team identified an alternate interchange configuration for the I-126 at Colonial Life Boulevard interchange. Specifically, the proposed project would construct a partial DDI that provides access to the interchange from the north, east and west along with modifying the system-to-system ramp from I-26 westbound to I-126 eastbound, modifying the right-turn movement from the I-126 westbound exit ramp to northbound Colonial Life Boulevard, modifying the intersection of Colonial Life Boulevard and West Colonial Life Boulevard from a right-in/right-out into a full intersection, and expanding the existing partial interchange with direct connectors to the east serving Columbia traffic and direct connectors to and from the west of the interchange.

Noise Barrier V, X, Y and Z have been re-evaluated based on the DB Team (2021) Final Design. The feasibility and reasonableness of constructing each noise barrier was evaluated in this noise addendum.

Noise Barrier V – Not Recommended for Construction

The feasibility analysis for Noise Barrier V indicates that 23 percent of the impacted receivers behind the barrier will experience a reduction in sound levels of 5 dB(A) or greater. Therefore, according to SCDOT policy, Noise Barrier V is not feasible to construct. According to SCDOT policy, reasonableness was not evaluated because the feature was found to be not feasible. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier V is in Attachment F. This noise addendum does not affect the outcome of the viewpoint summary that was completed in the FONSI.

Noise Barrier X – Not Recommended for Construction

The feasibility analysis for Noise Barrier X indicates that 84 percent of the impacted receivers behind the barrier will experience a reduction in sound levels of 5 dB(A) or greater. Therefore, according to SCDOT policy, Noise Barrier V is feasible to construct. The reasonable analysis for Noise Barrier X included 25-foot-tall noise barrier panels and resulted in 50 percent of the benefited front row receivers achieving an 8 dB(A) reduction, which is below SCOT policy of more than 80 percent of the benefitted front row receivers achieving an 8 dB(A) reduction. The estimated construction cost is \$4,981,375 and the benefit achieved is \$166,046 per benefitted receiver, which is above SCDOT policy of \$30,000 per benefitted receiver. For these two reasons, Noise Barrier X does not meet SCDOT's policy and is not reasonable to construct. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier X is in Attachment F. This noise addendum does not affect the outcome of the viewpoint summary that was completed in the FONSI.

Noise Barrier Y – Not Recommended for Construction

The feasibility analysis for Noise Barrier Y indicates that 100 percent of the impacted receivers behind the barrier will experience a reduction in sound levels of 5 dB(A) or greater. Therefore, according to SCDOT policy, Noise Barrier Y is feasible to construct.

The reasonableness analysis for Noise Barrier Y included 25-foot-tall noise barrier panels and resulted in 53 percent of the benefited front row receivers achieving an 8 dB(A) reduction, which is below SCDOT policy of more than 80 percent of the benefitted front row receivers achieving an 8 dB(A) reduction. The estimated construction cost is \$2,705,220 and the benefit achieved is \$159,131 per benefitted receiver, which is above SCDOT policy of \$30,000 per benefitted receiver. For these two reasons, Noise Barrier Y does not meet SCDOT's policy and is not reasonable to construct. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier Y is in Attachment F. This noise addendum does not affect the outcome of the viewpoint summary that was completed in the FONSI.

Noise Barrier Z – Not Recommended for Construction

The feasibility analysis for Noise Barrier Z indicates 100 percent of the impacted receivers behind the barrier will experience a reduction in sound levels of 5 dB(A) or greater. Therefore, according to SCDOT policy, Noise Barrier Z is feasible to construct.

The reasonableness analysis for Noise Barrier Z included 25-foot-tall noise barrier panels and resulted in 77 percent of the benefited front row receivers achieving an 8 dB(A) reduction, which is below SCDOT policy of more than 80 percent of the benefitted front row receivers achieving an 8 dB(A) reduction. The estimated construction cost is \$7,148,980, which includes an additional \$4.25 million dollars related to site constraints. The benefit achieved by constructing Noise Barrier Z is \$45,247 per benefitted receiver, which is above SCDOT policy of \$30,000 per benefited receiver. For these two reasons, Noise Barrier Z does not meet SCDOT's policy and is not reasonable to construct. An updated SCDOT Feasibility and Reasonableness worksheet for Noise Barrier Z is in Attachment F. This noise addendum does not affect the outcome of the viewpoint summary that was completed in the FONSI.

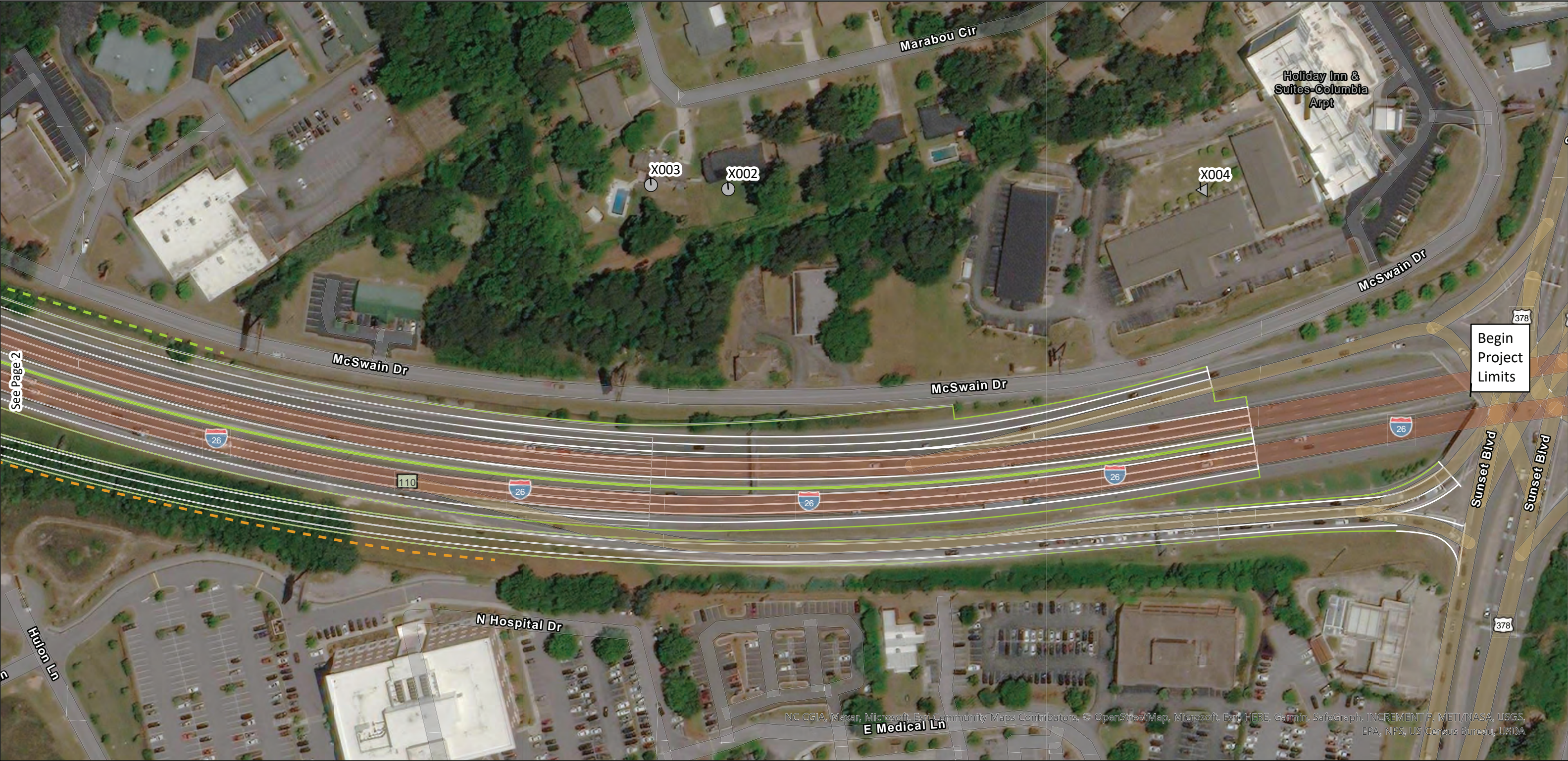
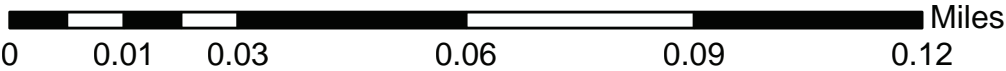


Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
- Barrier V
- Barrier W
- Barrier X
- Barrier Y
- Barrier Z

- NAC B Impacted
- NAC C Impacted
- NAC E Impacted
- NAC B Not Impacted
- NAC C Not Impacted
- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed
- Design Build Noise Impact
- SCDOT Build Noise Impact

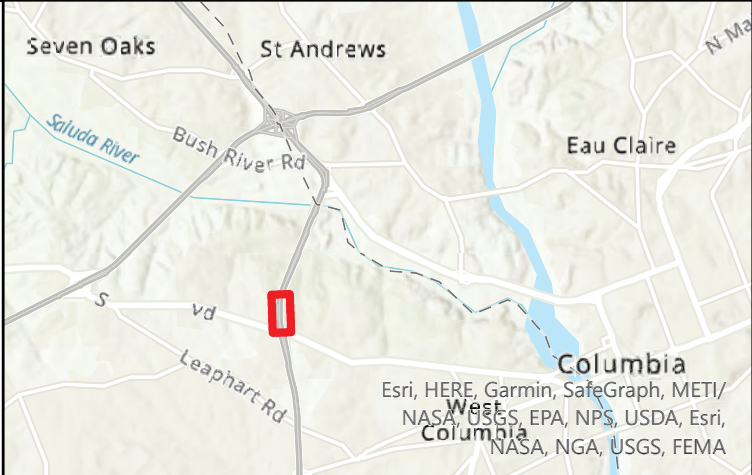
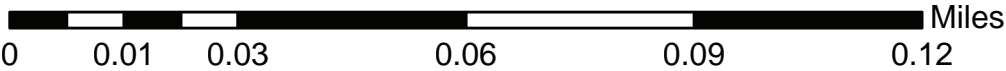
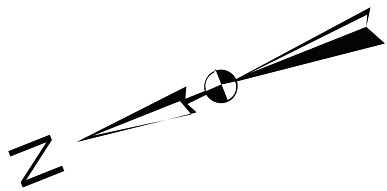




Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
- Barrier V
- Barrier W
- Barrier X
- Barrier Y
- Barrier Z

- NAC B Impacted
- NAC C Impacted
- NAC E Impacted
- NAC B Not Impacted
- NAC C Not Impacted
- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed

- Design Build Noise Impact
- SCDOT Build Noise Impact

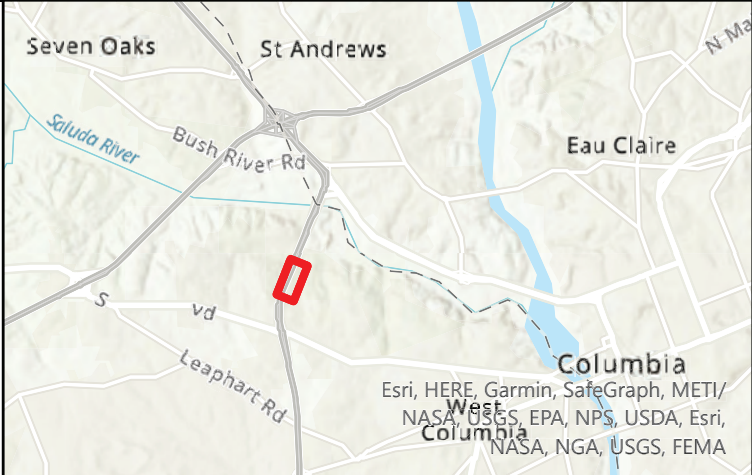
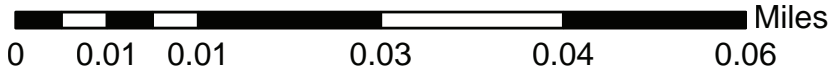
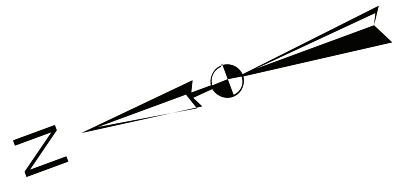




Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
- Barrier V
- Barrier W
- Barrier X
- Barrier Y
- Barrier Z

- NAC B Impacted
- NAC C Impacted
- NAC E Impacted
- NAC B Not Impacted
- NAC C Not Impacted
- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed
- Design Build Noise Impact
- SCDOT Build Noise Impact

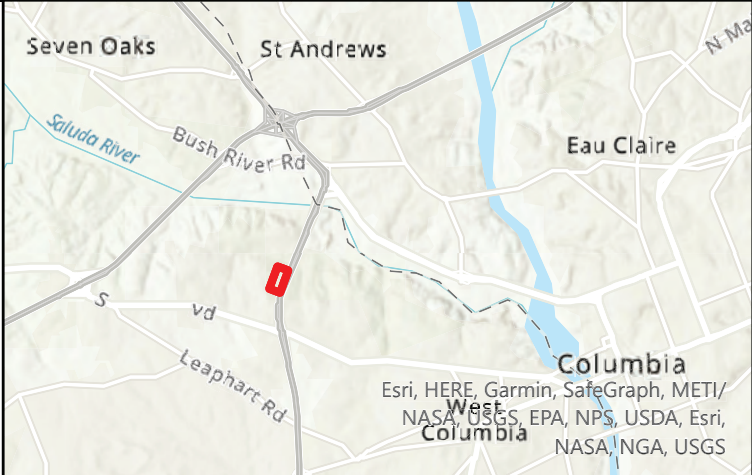
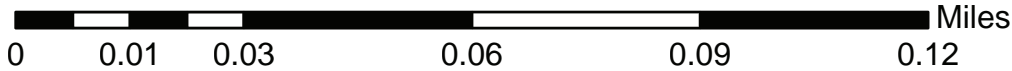
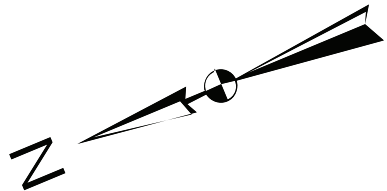




Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
- Barrier V
- Barrier W
- Barrier X
- Barrier Y
- Barrier Z

- NAC B Impacted
- NAC C Impacted
- NAC E Impacted
- NAC B Not Impacted
- NAC C Not Impacted
- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed

- Design Build Noise Impact
- SCDOT Build Noise Impact

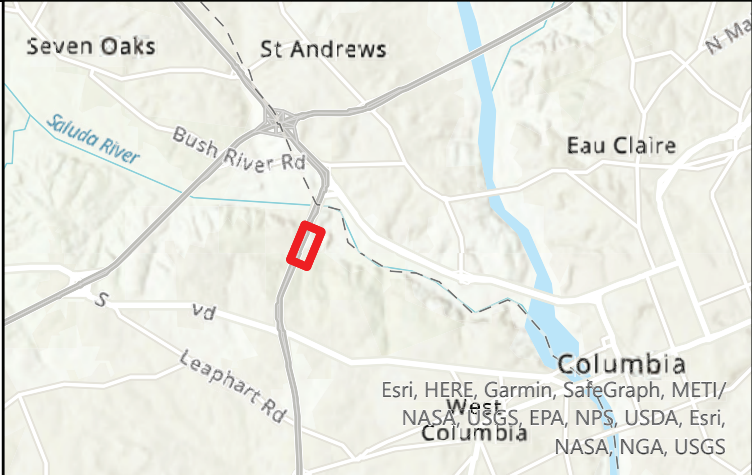
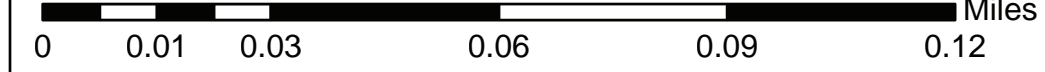
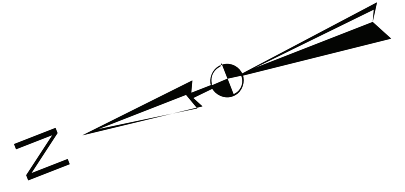




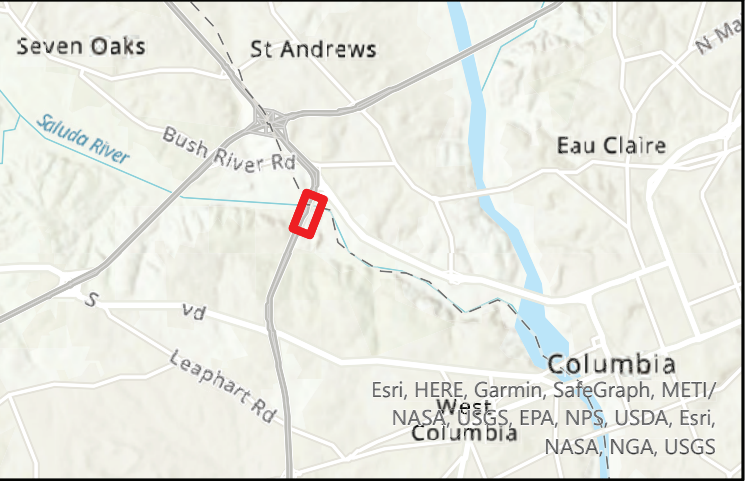
Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
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- Barrier V
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- NAC E Impacted
- NAC B Not Impacted
- NAC C Not Impacted
- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed



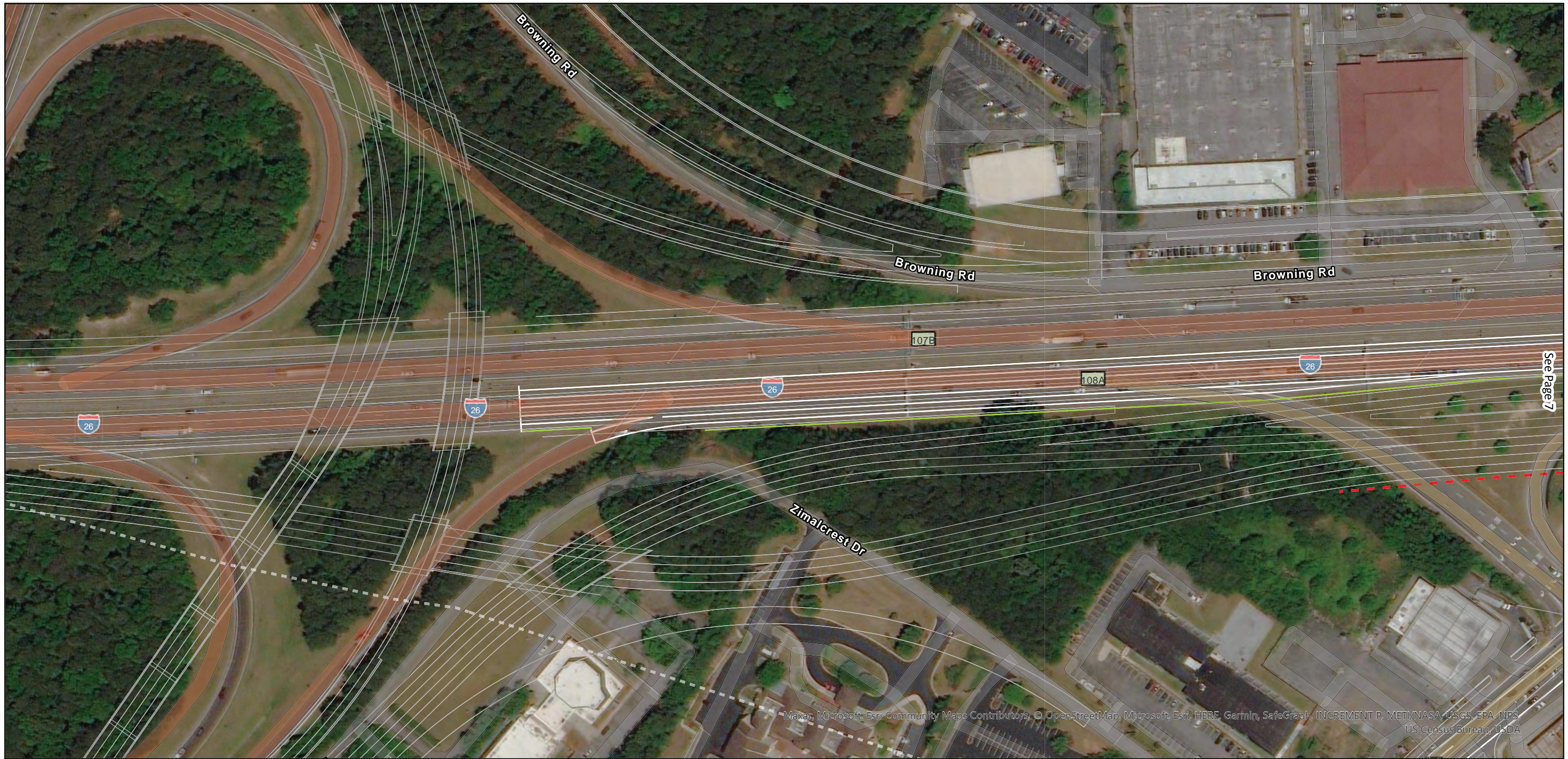
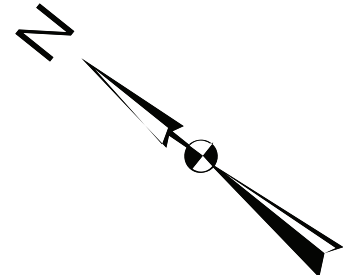


Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



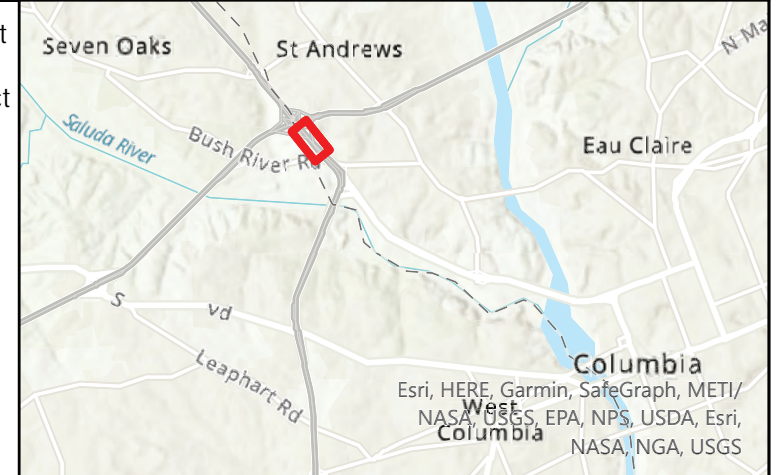
0 0.01 0.03 0.06 0.09 0.12 Miles

Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
- Barrier V
- Barrier W
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- Barrier Y
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- NAC C Not Impacted
- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed

- Design Build Noise Impact
- SCDOT Build Noise Impact



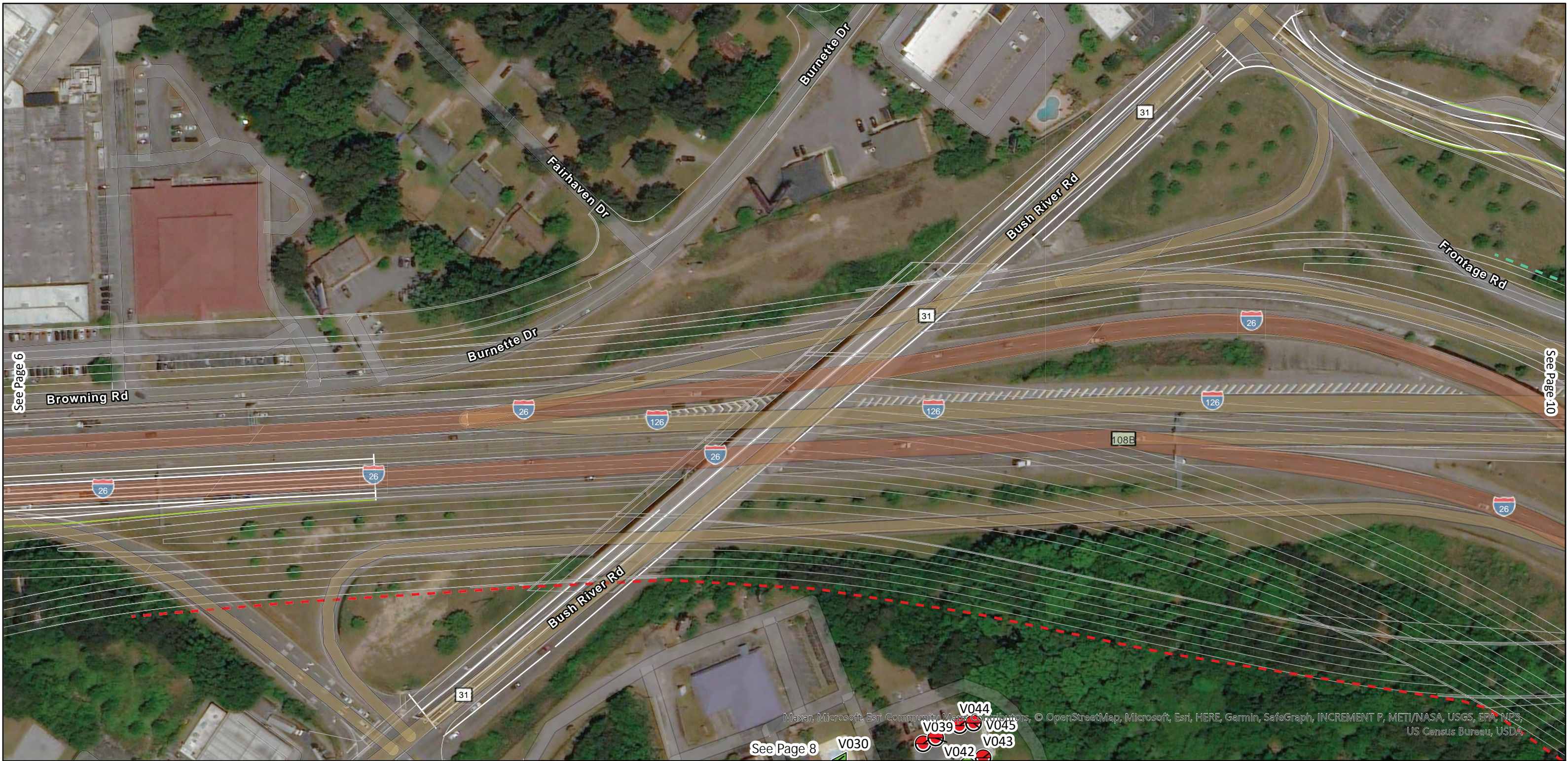
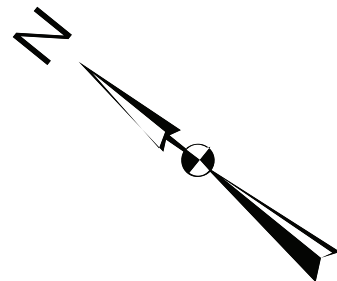


Figure 1 | Build Comparison Map
Carolina Crossroads Phase I

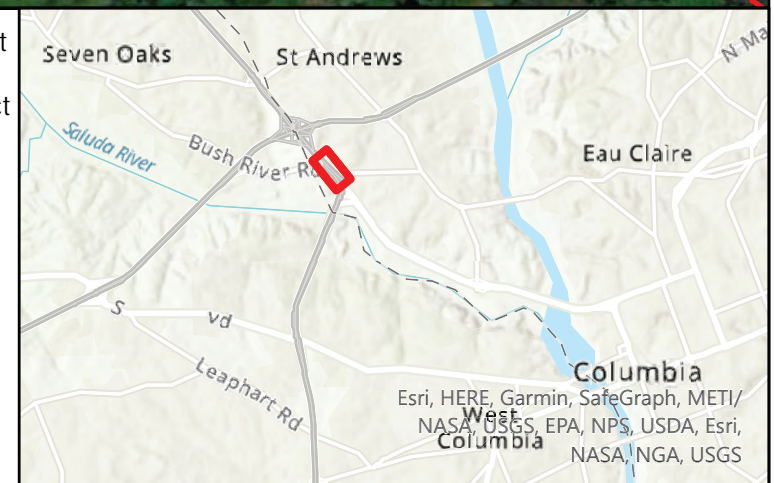


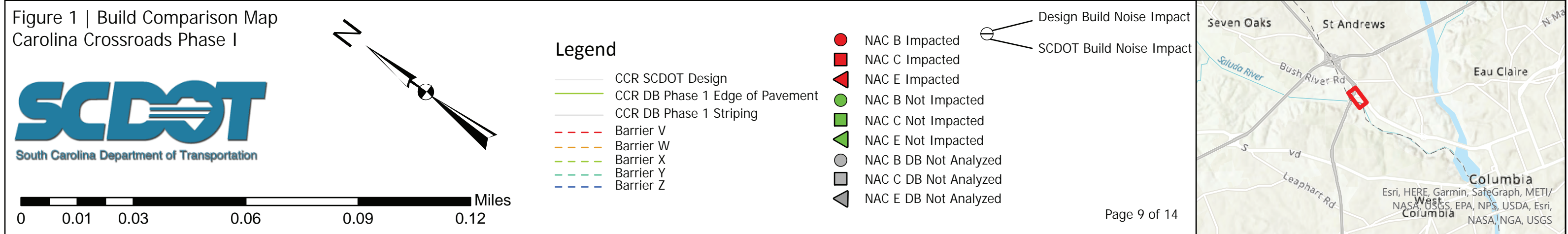
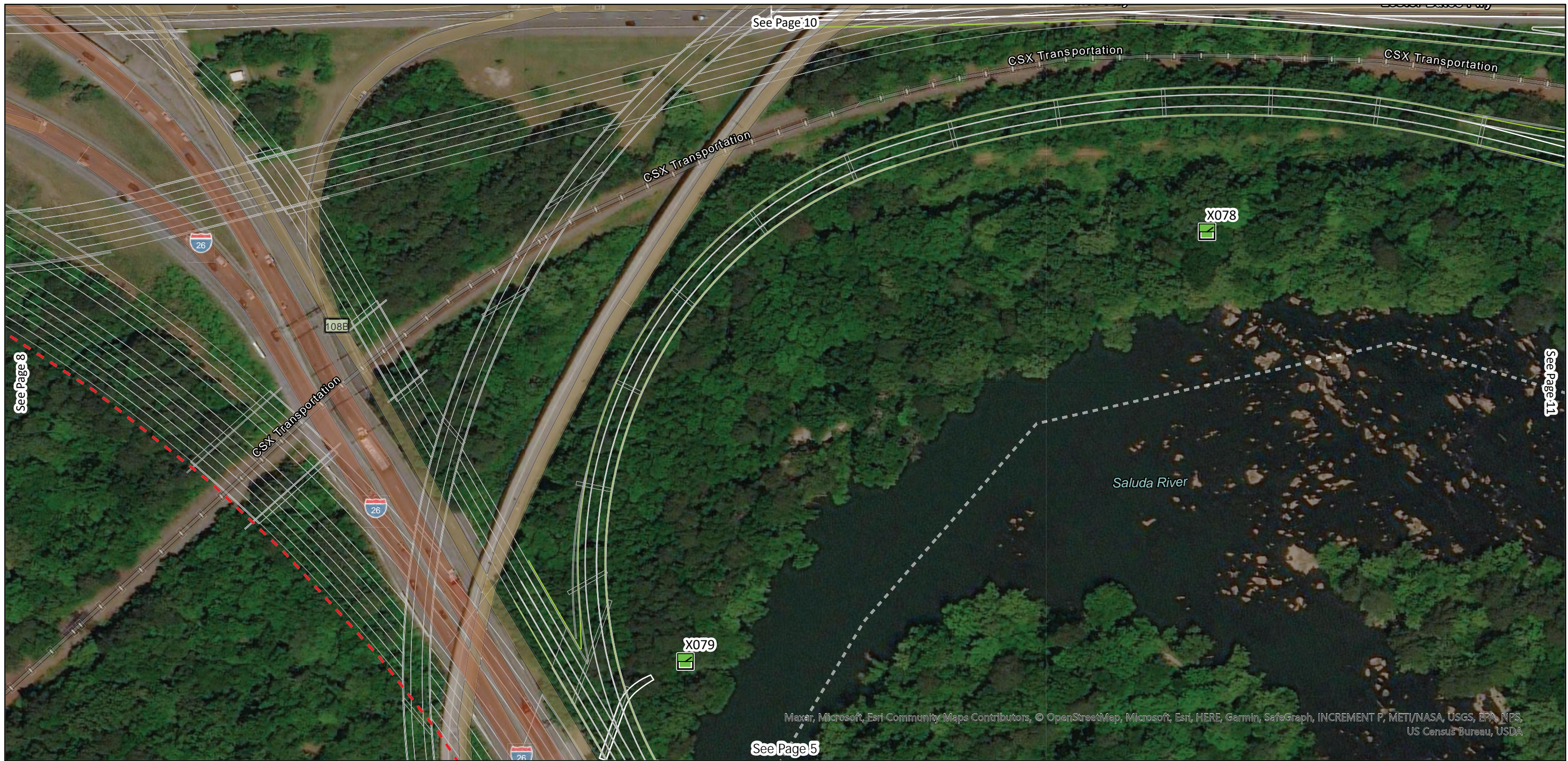
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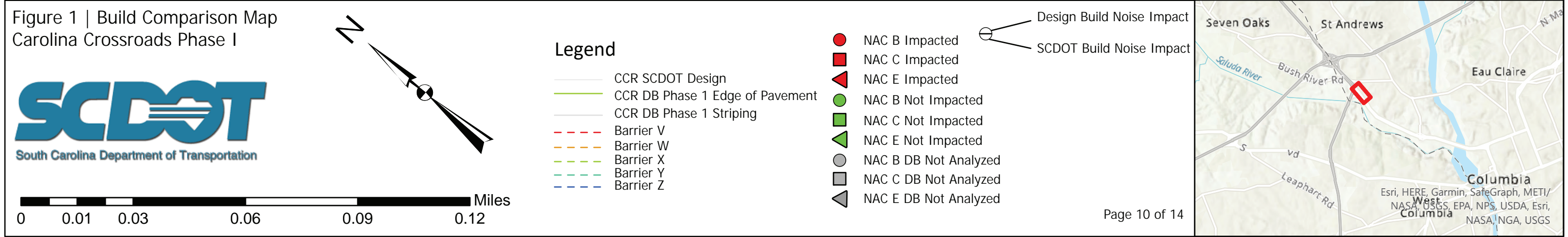
Legend

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- NAC E Not Impacted
- NAC B DB Not Analyzed
- NAC C DB Not Analyzed
- NAC E DB Not Analyzed
- Design Build Noise Impact
- SCDOT Build Noise Impact







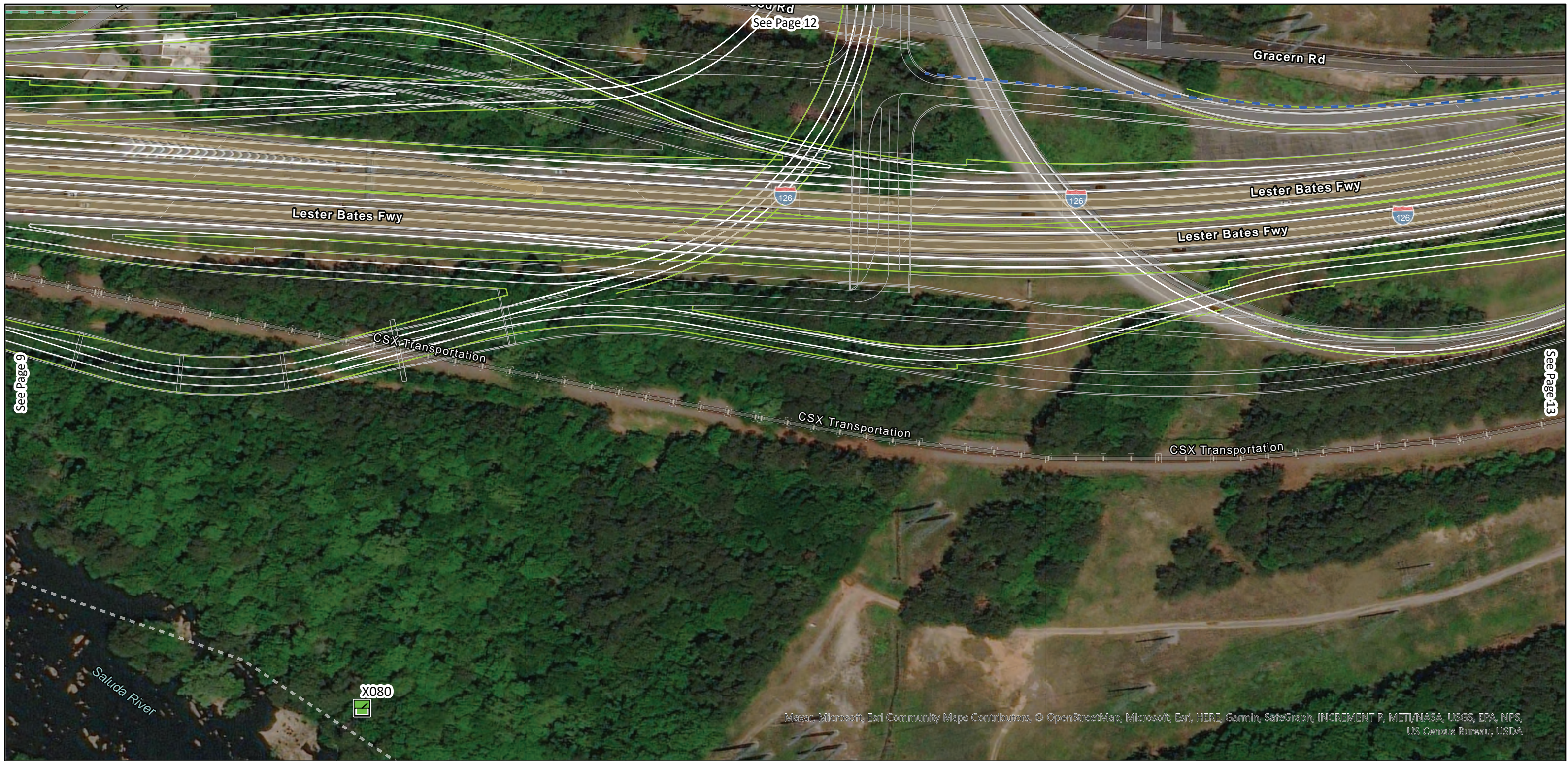
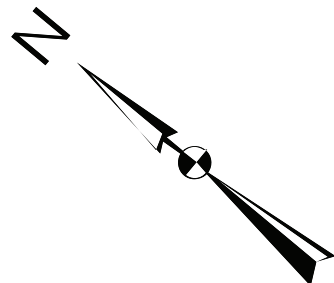


Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



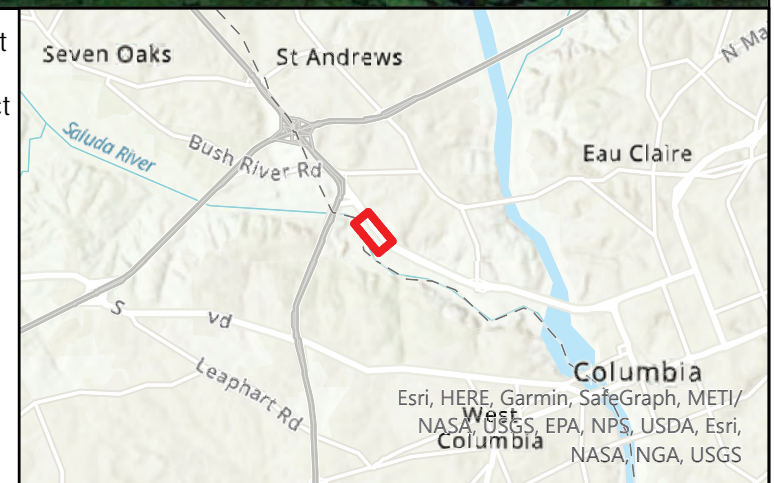
0 0.01 0.03 0.06 0.09 0.12 Miles

Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
- - - Barrier V
- - - Barrier W
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- NAC B DB Not Analyzed
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- ▲ NAC E DB Not Analyzed

- Design Build Noise Impact
- SCDOT Build Noise Impact



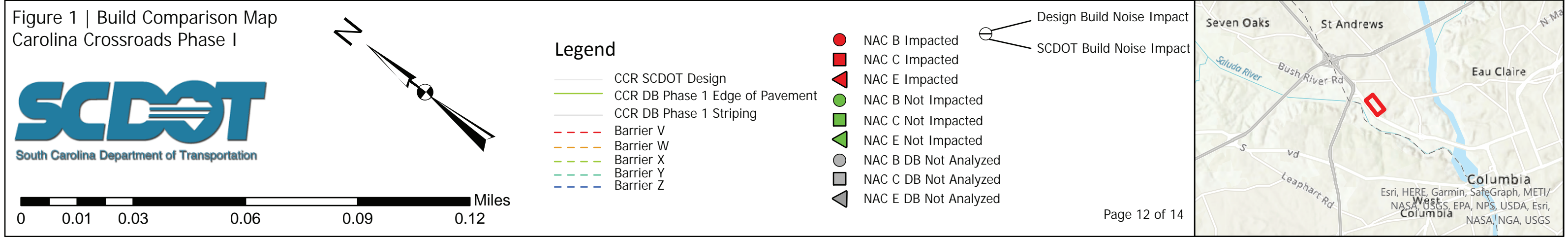
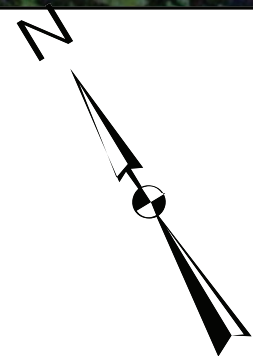




Figure 1 | Build Comparison Map
Carolina Crossroads Phase I



0 0.01 0.03 0.06 0.09 0.12 Miles

Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping
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- NAC C DB Not Analyzed
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- Design Build Noise Impact
- SCDOT Build Noise Impact

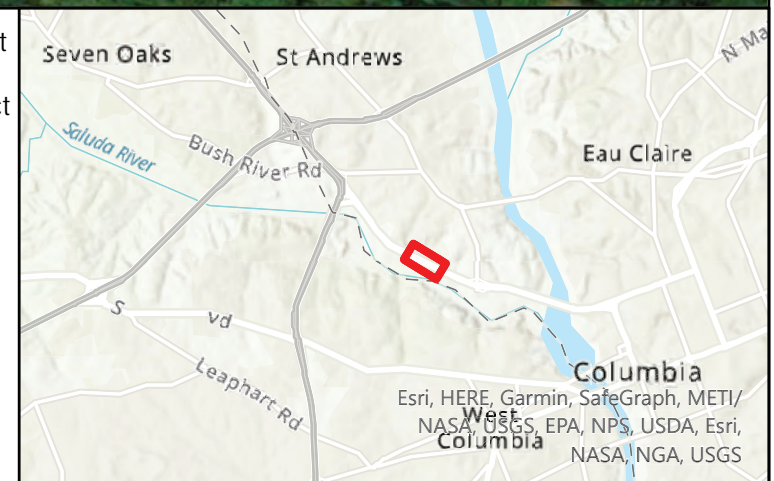




Figure 2 | SCDOT Design vs Design Build Team Design
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping

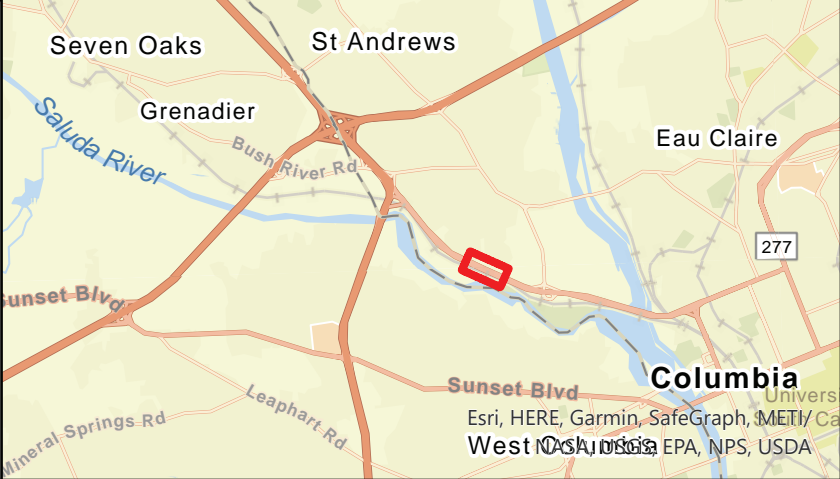
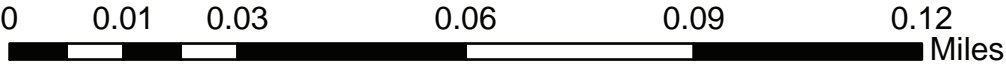
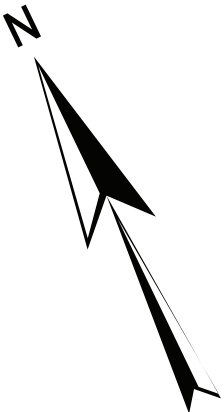


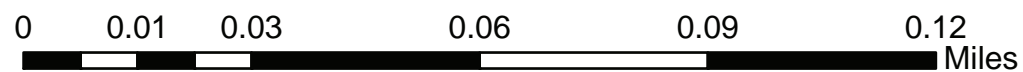
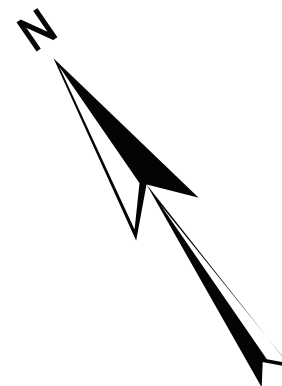


Figure 2 | SCDOT Design vs Design Build Team Design
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping



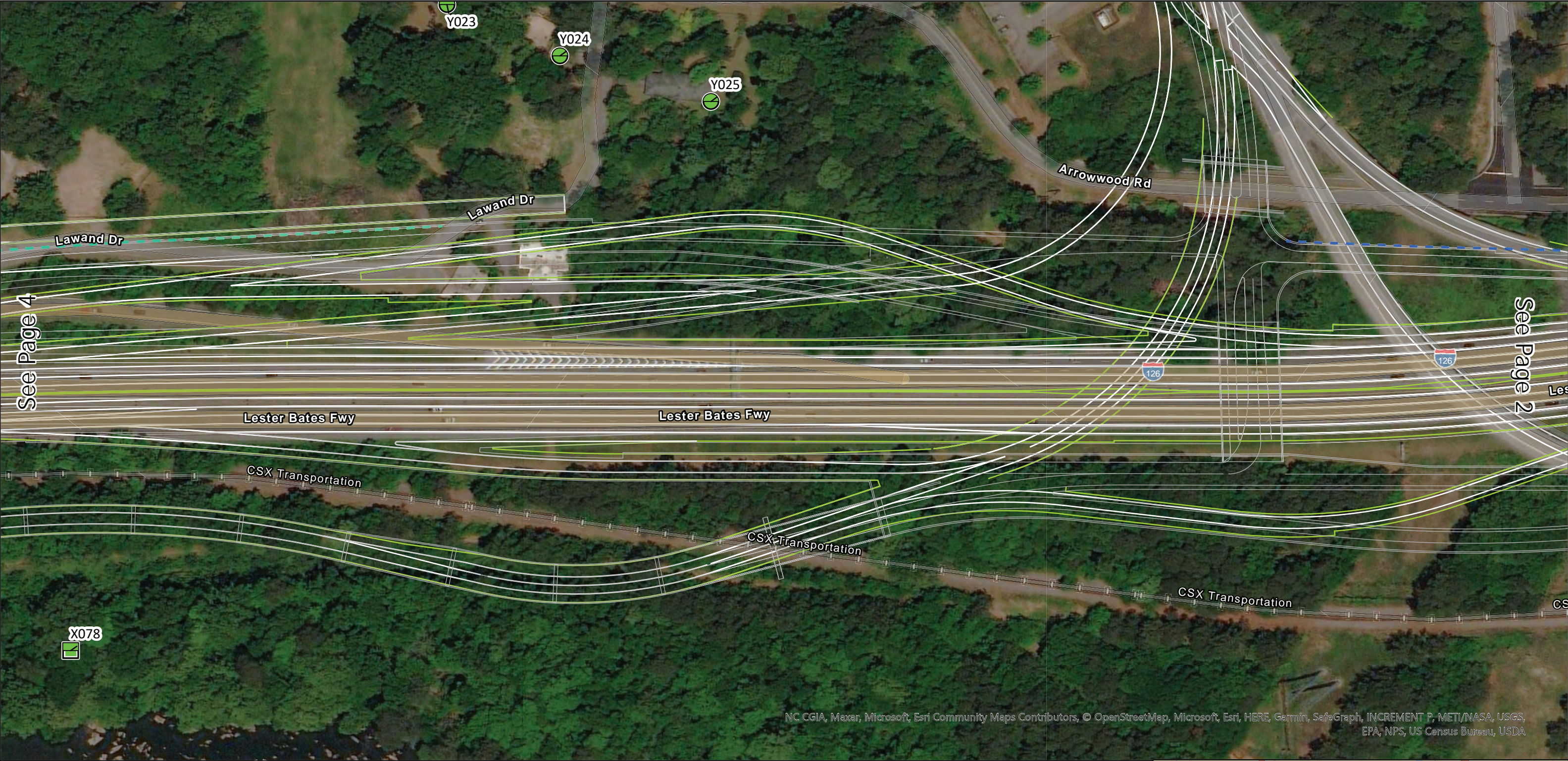
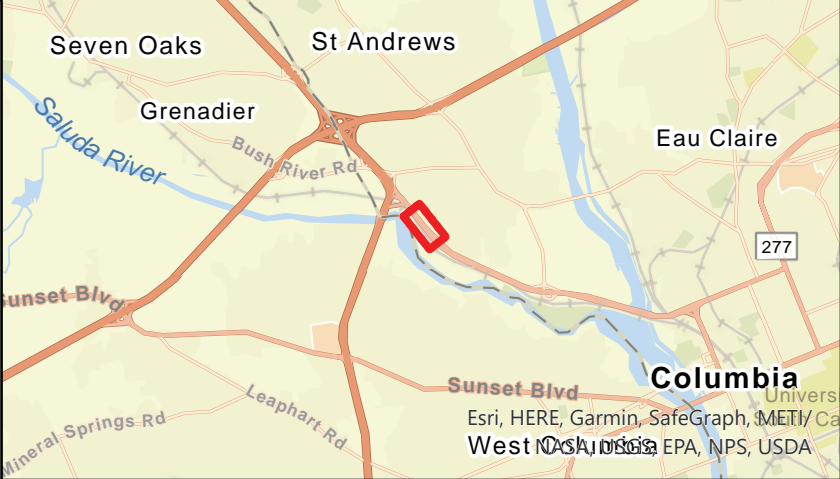
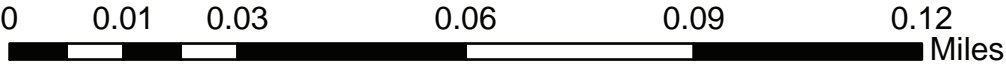
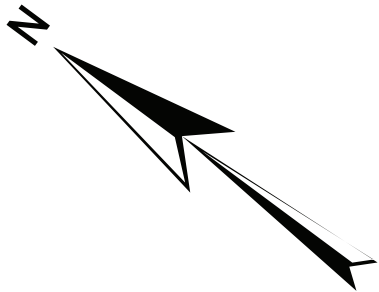


Figure 2 | SCDOT Design vs Design Build Team Design
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping



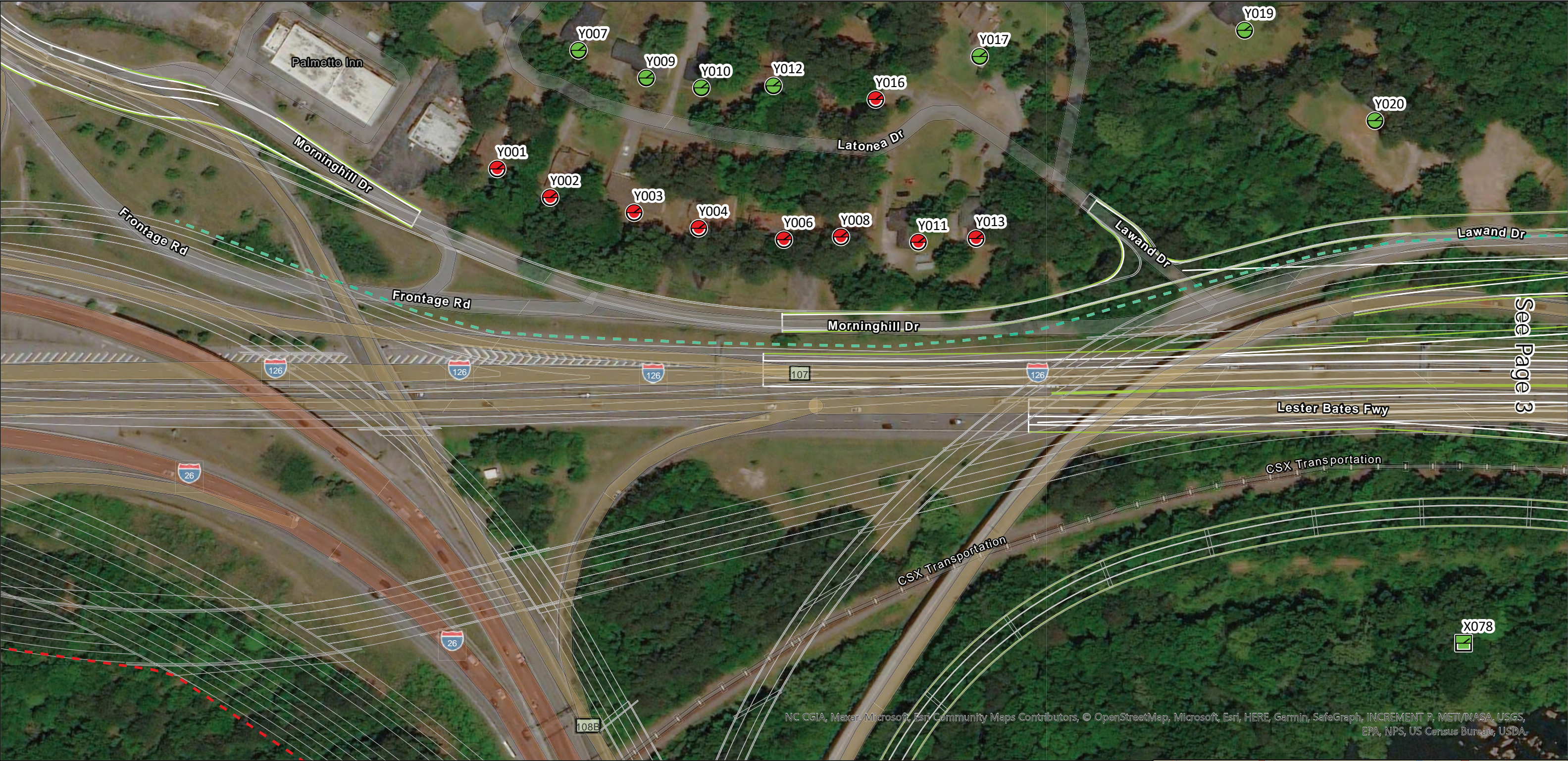
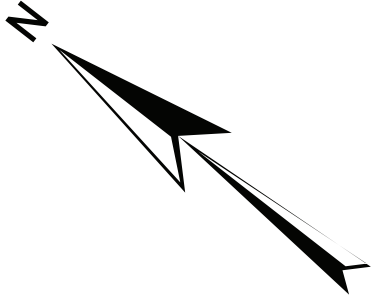


Figure 2 | SCDOT Design vs Design Build Team Design
Carolina Crossroads Phase I



Legend

- CCR SCDOT Design
- CCR DB Phase 1 Edge of Pavement
- CCR DB Phase 1 Striping



0 0.01 0.03 0.06 0.09 0.12 Miles



Table 1 - TNM Noise Results Output Summary Table

Receiver ID	# of Receptors	NAC Category	Outdoor Area of frequent use Yes or No*	May 2019 FEIS Existing Sound Level (dBA)	May 2019 FEIS Build Sound Level (dBA)	June 2020 ReEvaluation	DB Team (2021) Build Sound Level (dBA)	Delta DB vs FEIS or June 2020 Addendum	Impacted (DB Team 2021 Build)
V001	1	B	Yes	63.1	63.1		63.0	-0.1	No
V002	1	B	Yes	65.1	65.1		65.0	-0.1	No
V003	1	B	Yes	63.5	63.5		63.5	0.0	No
V004	1	B	Yes	56.2	56.2		55.4	-0.8	No
V005	1	B	Yes	57.9	57.9		57.0	-0.9	No
V006	1	B	Yes	56.7	56.7		56.1	-0.6	No
V007	1	B	Yes	58.4	58.4		57.7	-0.7	No
V008	1	B	Yes	56.5	56.5		55.8	-0.7	No
V009	1	B	Yes	58.2	58.2		57.4	-0.8	No
V010	1	B	Yes	56.1	56.1		55.6	-0.5	No
V011	1	B	Yes	57.7	57.7		57.0	-0.7	No
V012	1	B	Yes	67.0	67.0		67.1	0.1	Yes
V013	1	B	Yes	68.4	68.4		68.6	0.2	Yes
V014	1	B	Yes	67.5	67.5		67.7	0.2	Yes
V015	1	B	Yes	69.3	69.3		69.5	0.2	Yes
V016	1	B	Yes	60.7	60.7		60.8	0.1	No
V017	1	B	Yes	61.6	61.6		61.6	0.0	No
V018	1	B	Yes	58.5	58.5		58.5	0.0	No
V019	1	B	Yes	60.9	60.9		60.7	-0.2	No
V021	1	B	Yes	62.3	62.3		61.9	-0.4	No
V022	1	B	Yes	65.1	65.1		64.8	-0.3	No
V023	1	B	Yes	61.9	61.9		61.3	-0.6	No
V024	1	B	Yes	64.8	64.8		64.4	-0.4	No
V025	1	B	Yes	62.1	62.1		61.6	-0.5	No
V026	1	B	Yes	65.6	65.6		65.4	-0.2	No
V027	1	B	Yes	62.7	62.7		62.3	-0.4	No
V028	1	B	Yes	64.6	64.6		64.2	-0.4	No
V029	1	B	Yes	59.8	59.8		59.9	0.1	No
V030	1	E	Yes	69.5	69.5		69.6	0.1	No
V031	1	B	Yes	61.4	61.4		61.5	0.1	No
V032	1	B	Yes	65.9	65.9		65.9	0.0	No
V033	1	B	Yes	67.5	67.5		67.6	0.1	Yes
V034	1	B	Yes	61.7	61.7		61.9	0.2	No
V035	1	B	Yes	63.5	63.5		63.7	0.2	No
V036	1	B	Yes	64.5	64.5		64.7	0.2	No
V037	1	B	Yes	67.4	67.4		67.4	0.0	Yes
V038	1	B	Yes	65.6	65.6		65.8	0.2	No
V039	1	B	Yes	70.9	70.9		70.9	0.0	Yes
V040	1	B	Yes	69.5	69.5		69.6	0.1	Yes
V041	1	B	Yes	64.9	64.9		65.1	0.2	No
V042	1	B	Yes	72.5	72.5		72.5	0.0	Yes
V043	1	B	Yes	68.0	68.0		68.2	0.2	Yes
V044	1	B	Yes	72.3	72.3		72.3	0.0	Yes
V045	1	B	Yes	73.7	73.7		73.8	0.1	Yes
V046	1	B	Yes	65.4	65.4		65.4	0.0	No
V047	1	B	Yes	70.2	70.2		70.3	0.1	Yes
V048	1	B	Yes	70.5	70.5		70.5	0.0	Yes
V049	1	B	Yes	63.9	63.9		64.1	0.2	No
V050	1	B	Yes	64.2	64.2		64.4	0.2	No
V051	1	B	Yes	69.5	69.5		69.6	0.1	Yes
V052	1	B	Yes	69.7	69.7		69.9	0.2	Yes
V053	1	B	Yes	66.4	66.4		66.3	-0.1	Yes
V054	1	B	Yes	66.4	66.4		66.4	0.0	Yes
V055	1	B	Yes	60.7	60.7		60.4	-0.3	No
V056	1	B	Yes	61.0	61.0		60.7	-0.3	No
V057	1	B	Yes	61.0	61.0		60.7	-0.3	No
V058	1	B	Yes	59.6	59.6		59.4	-0.2	No
V059	1	B	Yes	65.8	65.8		65.5	-0.3	No
V060	1	B	Yes	66.1	66.1		65.8	-0.3	No
V061	1	B	Yes	66.4	66.4		66.2	-0.2	Yes
V062	1	B	Yes	67.6	67.6		67.6	0.0	Yes
W001	1	B	Yes	54.7	54.7				
W002	1	B	Yes	56.7	56.7				
W003	1	B	Yes	55.0	55.0				
W004	1	B	Yes	58.3	58.3				
W005	1	B	Yes	59.0	59.0				
W006	1	B	Yes	62.9	62.9				
W007	1	B	Yes	58.9	58.9				

Table 1 - TNM Noise Results Output Summary Table

Receiver ID	# of Receptors	NAC Category	Outdoor Area of frequent use Yes or No*	May 2019 FEIS Existing Sound Level (dBA)	May 2019 FEIS Build Sound Level (dBA)	June 2020 ReEvaluation	DB Team (2021) Build Sound Level (dBA)	Delta DB vs FEIS or June 2020 Addendum	Impacted (DB Team 2021 Build)
W008	1	B	Yes	62.8	62.8				
W009	1	B	Yes	52.8	52.8				
W010	1	B	Yes	55.6	55.6				
W011	1	B	Yes	52.2	52.2				
W012	1	B	Yes	54.7	54.7				
W013	1	B	Yes	55.8	55.8				
W014	1	B	Yes	57.2	57.2				
W015	1	B	Yes	54.5	54.5				
W016	1	B	Yes	56.3	56.3				
W017	1	B	Yes	58.4	58.4				
W018	1	B	Yes	61.8	61.8				
W019	1	B	Yes	58.6	58.6				
W020	1	B	Yes	62.1	62.1				
W021	1	B	Yes	59.7	59.7				
W022	1	B	Yes	61.8	61.8				
W023	1	B	Yes	60.4	60.4				
W024	1	B	Yes	62.1	62.1				
W025	1	C	Yes	61.1	61.1				
W026	1	C	Yes	58.6	58.6				
W027	1	B	Yes	59.3	59.3				
W028	1	B	Yes	65.1	65.1				
W029	1	B	Yes	60.3	60.3				
W030	1	B	Yes	65.5	65.5				
W031	1	B	Yes	56.8	56.8				
W032	1	B	Yes	57.2	57.2				
W033	1	B	Yes	53.2	53.2				
W034	1	B	Yes	57.1	57.1				
W035	1	B	Yes	63.0	63.0				
W036	1	B	Yes	58.9	58.9				
W037	1	B	Yes	63.3	63.3				
W038	1	B	Yes	59.1	59.1				
W039	1	B	Yes	64.0	64.0				
W040	1	B	Yes	59.6	59.6				
W041	1	B	Yes	64.3	64.3				
W042	1	B	Yes	60.7	60.7				
W043	1	B	Yes	65.4	65.4				
W044	1	B	Yes	60.3	60.3				
W045	1	B	Yes	56.4	56.4				
W046	1	B	Yes	67.4	67.4				
W047	1	B	Yes	63.3	63.3				
W048	1	B	Yes	60.7	60.7				
W049	1	B	Yes	59.5	59.5				
W050	1	B	Yes	63.5	63.5				
W051	1	B	Yes	70.2	70.2				
W052	1	B	Yes	65.8	65.8				
W053	1	B	Yes	70.5	70.5				
W054	1	B	Yes	66.5	66.5				
W055	1	C	Yes	65.8	65.8				
W056	1	B	Yes	52.8	52.8				
W057	1	B	Yes	68.1	68.1				
W058	1	B	Yes	49.1	49.1				
W059	1	B	Yes	71.6	71.6				
W060	1	B	Yes	52.3	52.3				
W061	1	B	Yes	68.5	68.5				
W062	1	B	Yes	71.6	71.6				
W063	1	B	Yes	48.9	48.9				
W064	1	B	Yes	52.7	52.7				
W065	1	B	Yes	69.1	69.1				
W066	1	B	Yes	49.9	49.9				
W067	1	B	Yes	71.7	71.7				
W068	1	B	Yes	69.4	69.4				
W069	1	B	Yes	53.4	53.4				
W070	1	B	Yes	49.5	49.5				
W071	1	B	Yes	71.8	71.8				
W072	1	B	Yes	69.9	69.9				
W073	1	B	Yes	71.9	71.9				
W074	1	B	Yes	70.1	70.1				
W075	1	B	Yes	72.2	72.2				

Table 1 - TNM Noise Results Output Summary Table

Receiver ID	# of Receptors	NAC Category	Outdoor Area of frequent use Yes or No*	May 2019 FEIS Existing Sound Level (dBA)	May 2019 FEIS Build Sound Level (dBA)	June 2020 ReEvaluation	DB Team (2021) Build Sound Level (dBA)	Delta DB vs FEIS or June 2020 Addendum	Impacted (DB Team 2021 Build)
W076	1	B	Yes	70.5	70.5				
W077	1	B	Yes	62.6	62.6				
W078	1	B	Yes	72.6	72.6				
W079	1	B	Yes	71.0	71.0				
W080	1	B	Yes	72.4	72.4				
W081	1	B	Yes	60.1	60.1				
W082	1	B	Yes	70.5	70.5				
W083	1	B	Yes	63.2	63.2				
W084	1	B	Yes	72.6	72.6				
W085	1	B	Yes	71.2	71.2				
W086	1	B	Yes	73.0	73.0				
W087	1	B	Yes	61.0	61.0				
W088	1	B	Yes	70.8	70.8				
W089	1	B	Yes	72.4	72.4				
W090	1	B	Yes	63.2	63.2				
W091	1	B	Yes	70.9	70.9				
W092	1	B	Yes	60.9	60.9				
X001	1	C	Yes	68.0	68.0				
X002	1	B	Yes	63.9	63.9				
X003	1	B	Yes	63.2	63.2				
X004	1	E	Yes	57.0	57.0				
X008	1	B	Yes	68.6	68.6				
X009	1	B	Yes	64.5	64.5				
X010	1	B	Yes	60.0	60.0				
X011	1	B	Yes	67.4	67.4				
X012	1	B	Yes	69.5	69.5				
X013	1	B	Yes	57.2	57.2				
X014	1	B	Yes	70.0	70.0				
X015	1	B	Yes	58.2	58.2				
X016	1	B	Yes	57.4	57.4				
X017	1	B	Yes	67.1	67.1				
X018	1	B	Yes	58.3	58.3				
X019	1	B	Yes	56.0	56.0				
X020	1	B	Yes	56.8	56.8				
X021	1	B	Yes	66.3	66.3				
X022	1	B	Yes	53.4	53.4				
X023	1	B	Yes	74.8	74.8				
X024	1	B	Yes	60.6	60.6				
X025	1	B	Yes	61.9	61.9				
X026	1	B	Yes	64.9	64.9				
X027	1	B	Yes	70.6	70.6				
X028	1	B	Yes	70.0	70.0				
X029	1	B	Yes	60.8	60.8				
X030	1	B	Yes	65.1	65.1				
X031	1	B	Yes	68.5	68.5				
X032	1	B	Yes	67.7	67.7				
X033	1	B	Yes	60.4	60.4				
X034	1	B	Yes	65.0	65.0				
X035	1	B	Yes	67.5	67.5				
X036	1	B	Yes	64.5	64.5				
X037	1	B	Yes	64.0	64.0				
X038	1	B	Yes	65.6	65.6				
X039	1	B	Yes	72.6	72.6				
X040	1	B	Yes	71.1	71.1	69.7	71.1	1.4	Yes
X041	1	B	Yes	65.6	65.6	65.4	65.6	0.2	No
X042	1	B	Yes	67.6	67.6	65.9	67.6	1.7	Yes
X043	1	B	Yes	67.3	67.3	66.4	67.3	0.9	Yes
X044	1	B	Yes	67.4	67.4	67.4	67.4	0.0	Yes
X045	1	B	Yes	65.8	65.8	66.6	65.9	-0.7	No
X046	1	B	Yes	61.1	61.1	59.7	60.7	1.0	No
X047	1	B	Yes	66.8	66.8	68.6	66.9	-1.7	Yes
X048	1	B	Yes	67.5	67.5	69.3	67.6	-1.7	Yes
X049	1	B	Yes	60.7	60.7	59.8	60.4	0.6	No
X050	1	B	Yes	69.3	69.3	70.3	69.7	-0.6	Yes
X051	1	B	Yes	69.6	69.6	70.1	70.1	0.0	Yes
X052	1	B	Yes	59.7	59.7	58.8	59.2	0.4	No
X053	1	B	Yes	69.2	69.2	69.7	69.5	-0.2	Yes
X054	1	B	Yes	69.3	69.3	69.7	69.4	-0.3	Yes

Table 1 - TNM Noise Results Output Summary Table

Receiver ID	# of Receptors	NAC Category	Outdoor Area of frequent use Yes or No*	May 2019 FEIS Existing Sound Level (dBA)	May 2019 FEIS Build Sound Level (dBA)	June 2020 ReEvaluation	DB Team (2021) Build Sound Level (dBA)	Delta DB vs FEIS or June 2020 Addendum	Impacted (DB Team 2021 Build)
X055	1	B	Yes	73.6	73.6	74.1	73.6	-0.5	Yes
X056	1	B	Yes	68.2	68.2	68.5	68.2	-0.3	Yes
X057	1	B	Yes	60.0	60.0	59.4	59.7	0.3	No
X058	1	B	Yes	60.6	60.6	59.5	60.2	0.7	No
X059	1	B	Yes	69.2	69.2	69.6	69.2	-0.4	Yes
X060	1	B	Yes	71.9	71.9	72.5	72.1	-0.4	Yes
X061	1	B	Yes	60.0	60.0	60.1	59.7	-0.4	No
X062	1	B	Yes	70.9	70.9	71.4	70.6	-0.8	Yes
X063	1	B	Yes	60.9	60.9	60.7	60.7	0.0	No
X064	1	B	Yes	59.9	59.9	59.9	59.6	-0.3	No
X065	1	B	Yes	70.7	70.7	71.6	70.0	-1.6	Yes
X066	1	B	Yes	59.4	59.4	59.3	59.0	-0.3	No
X067	1	B	Yes	62.2	62.2	62.3	62.2	-0.1	No
X068	1	B	Yes	61.0	61.0	60.9	60.8	-0.1	No
X069	1	B	Yes	68.6	68.6	69.6	68.2	-1.4	Yes
X070	1	B	Yes	62.8	62.8	62.8	62.7	-0.1	No
X071	1	B	Yes	63.6	63.6	63.6	63.5	-0.1	No
X072	1	B	Yes	58.6	58.6	58.5	58.2	-0.3	No
X073	1	B	Yes	66.5	66.5	66.9	66.2	-0.7	Yes
X074	1	B	Yes	61.5	61.5	61.6	61.4	-0.2	No
X075	1	B	Yes	60.5	60.5	60.5	60.3	-0.2	No
X076	1	B	Yes	61.6	61.6	61.6	61.4	-0.2	No
X077	1	B	Yes	65.0	65.0	65.3	64.8	-0.5	No
X078	1	C	Yes	62.7	62.7	62.8	63.0	0.2	No
X079	1	C	Yes	63.7	63.7	63.7	63.8	0.1	No
X080	1	C	Yes	56.0	56.0	56.0	56.1	0.1	No
Y001	1	B	Yes	69.0	69.0		69.0	0.0	Yes
Y002	1	B	Yes	69.9	69.9		69.9	0.0	Yes
Y003	1	B	Yes	70.1	70.1		70.2	0.1	Yes
Y004	1	B	Yes	70.7	70.7		70.8	0.1	Yes
Y005	1	B	Yes	59.8	59.8		59.4	-0.4	No
Y006	1	B	Yes	71.0	71.0		71.0	0.0	Yes
Y007	1	B	Yes	64.3	64.3		64.2	-0.1	No
Y008	1	B	Yes	71.4	71.4		71.3	-0.1	Yes
Y009	1	B	Yes	64.9	64.9		64.9	0.0	No
Y010	1	B	Yes	65.2	65.2		65.2	0.0	No
Y011	1	B	Yes	72.9	72.9		72.9	0.0	Yes
Y012	1	B	Yes	65.9	65.9		65.9	0.0	No
Y013	1	B	Yes	73.2	73.2		73.2	0.0	Yes
Y014	1	B	Yes	62.1	62.1		61.9	-0.2	No
Y016	1	B	Yes	67.1	67.1		67.2	0.1	Yes
Y017	1	B	Yes	64.1	64.1		64.4	0.3	No
Y018	1	B	Yes	62.6	62.6		62.4	-0.2	No
Y019	1	B	Yes	63.4	63.4		63.5	0.1	No
Y020	1	B	Yes	64.5	64.5		65.4	0.9	No
Y021	1	B	Yes	62.1	62.1		60.4	-1.7	No
Y023	1	B	Yes	63.6	63.6		60.6	-3.0	No
Y024	1	B	Yes	65.3	65.3		61.5	-3.8	No
Y025	1	B	Yes	64.9	64.9		61.9	-3.0	No
Y029	1	B	Yes	59.3	59.3		57.8	-1.5	No
Y030	1	B	Yes	61.3	61.3		59.7	-1.6	No
Y031	1	B	Yes	58.8	58.8		58.4	-0.4	No
Z001	1	B	Yes	58.4	58.4		57.8	-0.6	No
Z002	1	B	Yes	61.8	61.8		61.6	-0.2	No
Z003	1	B	Yes	50.8	50.8		50.8	0.0	No
Z004	1	B	Yes	54.0	54.0		54.8	0.8	No
Z005	1	B	Yes	51.0	51.0		52.7	1.7	No
Z006	1	B	Yes	49.7	49.7		51.6	1.9	No
Z007	1	B	Yes	51.8	51.8		52.3	0.5	No
Z008	1	B	Yes	50.0	50.0		51.7	1.7	No
Z009	1	B	Yes	51.1	51.1		51.4	0.3	No
Z010	1	B	Yes	50.6	50.6		50.6	0.0	No
Z011	1	B	Yes	50.5	50.5		50.3	-0.2	No
Z012	1	B	Yes	70.2	70.2		70.1	-0.1	Yes
Z013	1	B	Yes	72.1	72.1		71.9	-0.2	Yes
Z014	1	B	Yes	66.0	66.0		64.9	-1.1	No
Z015	1	B	Yes	61.7	61.7		61.3	-0.4	No
Z016	1	B	Yes	69.8	69.8		69.9	0.1	Yes

Table 1 - TNM Noise Results Output Summary Table

Receiver ID	# of Receptors	NAC Category	Outdoor Area of frequent use Yes or No*	May 2019 FEIS Existing Sound Level (dBA)	May 2019 FEIS Build Sound Level (dBA)	June 2020 ReEvaluation	DB Team (2021) Build Sound Level (dBA)	Delta DB vs FEIS or June 2020 Addendum	Impacted (DB Team 2021 Build)
Z017	1	B	Yes	55.1	55.1		54.7	-0.4	No
Z018	1	B	Yes	71.9	71.9		71.8	-0.1	Yes
Z019	1	B	Yes	59.6	59.6		59.3	-0.3	No
Z020	1	B	Yes	69.5	69.5		69.7	0.2	Yes
Z024	1	B	Yes	63.9	63.9		63.9	0.0	No
Z028	1	B	Yes	71.7	71.7		71.7	0.0	Yes
Z029	1	B	Yes	55.2	55.2		54.7	-0.5	No
Z030	1	B	Yes	63.0	63.0		62.6	-0.4	No
Z031	1	B	Yes	61.8	61.8		61.5	-0.3	No
Z032	1	B	Yes	64.3	64.3		64.2	-0.1	No
Z033	1	B	Yes	60.1	60.1		59.7	-0.4	No
Z034	1	B	Yes	62.4	62.4		62.7	0.3	No
Z035	1	B	Yes	60.1	60.1		59.7	-0.4	No
Z036	1	B	Yes	63.4	63.4		62.8	-0.6	No
Z037	1	B	Yes	65.2	65.2		65.0	-0.2	No
Z038	1	B	Yes	62.5	62.5		62.1	-0.4	No
Z039	1	B	Yes	64.7	64.7		64.6	-0.1	No
Z040	1	B	Yes	65.5	65.5		65.2	-0.3	No
Z041	1	B	Yes	65.1	65.1		64.1	-1.0	No
Z042	1	B	Yes	63.4	63.4		62.2	-1.2	No
Z043	1	B	Yes	65.5	65.5		64.9	-0.6	No
Z044	1	B	Yes	63.4	63.4		62.6	-0.8	No
Z045	1	B	Yes	65.6	65.6		65.2	-0.4	No
Z046	1	B	Yes	62.4	62.4		61.2	-1.2	No
Z047	1	B	Yes	55.0	55.0		54.5	-0.5	No
Z048	1	B	Yes	69.1	69.1		69.3	0.2	Yes
Z049	1	B	Yes	54.4	54.4		53.9	-0.5	No
Z050	1	B	Yes	71.3	71.3		71.3	0.0	Yes
Z051	1	B	Yes	57.2	57.2		56.7	-0.5	No
Z052	1	B	Yes	67.9	67.9		68.4	0.5	Yes
Z053	1	B	Yes	54.1	54.1		53.6	-0.5	No
Z062	1	B	Yes	70.8	70.8		70.9	0.1	Yes
Z063	1	B	Yes	58.6	58.6		57.4	-1.2	No
Z066	1	B	Yes	59.6	59.6		59.3	-0.3	No
Z067	1	B	Yes	61.3	61.3		60.4	-0.9	No
Z068	1	B	Yes	51.8	51.8		51.4	-0.4	No
Z069	1	B	Yes	62.7	62.7		61.8	-0.9	No
Z070	1	B	Yes	59.9	59.9		58.7	-1.2	No
Z071	1	B	Yes	62.6	62.6		61.7	-0.9	No
Z072	1	B	Yes	62.1	62.1		61.3	-0.8	No
Z073	1	B	Yes	57.7	57.7		57.3	-0.4	No
Z074	1	B	Yes	61.7	61.7		60.9	-0.8	No
Z075	1	B	Yes	58.5	58.5		57.9	-0.6	No
Z076	1	B	Yes	61.1	61.1		60.4	-0.7	No
Z077	1	B	Yes	62.6	62.6		61.7	-0.9	No
Z078	1	B	Yes	61.1	61.1		60.2	-0.9	No
Z079	1	B	Yes	58.3	58.3		57.4	-0.9	No
Z080	1	B	Yes	67.4	67.4		67.7	0.3	Yes
Z081	1	B	Yes	54.2	54.2		53.7	-0.5	No
Z082	1	B	Yes	70.9	70.9		70.9	0.0	Yes
Z083	1	B	Yes	62.5	62.5		61.8	-0.7	No
Z084	1	B	Yes	74.3	74.3		73.6	-0.7	Yes
Z085	1	B	Yes	69.6	69.6		69.7	0.1	Yes
Z086	1	B	Yes	73.3	73.3		72.6	-0.7	Yes
Z087	1	B	Yes	72.6	72.6		72.1	-0.5	Yes
Z088	1	B	Yes	67.5	67.5		67.7	0.2	Yes
Z089	1	B	Yes	71.3	71.3		71.0	-0.3	Yes
Z090	1	B	Yes	66.6	66.6		66.9	0.3	Yes
Z091	1	B	Yes	69.8	69.8		70.0	0.2	Yes
Z092	1	B	Yes	65.3	65.3		65.8	0.5	No
Z093	1	B	Yes	68.2	68.2		68.7	0.5	Yes
Z094	1	B	Yes	64.2	64.2		65.0	0.8	No
Z095	1	B	Yes	64.3	64.3		65.8	1.5	No

Table 2 - Noise Barrier V - TNM Results Output Summary Table

Barrier	Length	Barrier Cost	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
V	3,570	\$ 3,124,345	25	19	22	23%	\$ 164,439			5%	1
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
V001	1	89,267	No	0	0	0	63.2	60.0	3.2		0
V002	1	89,267	No	0	0	0	65.1	61.5	3.6		0
V003	1	89,267	No	0	0	0	63.6	60.9	2.7		0
V004	1	89,267	No	0	0	0	55.0	50.9	4.1		0
V005	1	89,267	No	0	0	0	57.0	52.9	4.1		0
V006	1	89,267	No	0	0	0	55.7	51.1	4.6		0
V007	1	89,267	No	0	0	0	57.6	52.7	4.9		0
V008	1	89,267	No	0	0	0	55.5	51.2	4.3		0
V009	1	89,267	No	0	0	0	57.2	52.7	4.5		0
V010	1	89,267	No	0	0	0	55.1	50.2	4.9		0
V011	1	89,267	No	0	0	0	57.2	52.4	4.8		0
V012	1	89,267	No	0	1	0	67.2	62.9	4.3		0
V013	1	89,267	No	0	1	0	68.6	64.5	4.1		0
V014	1	89,267	No	0	1	0	67.8	63.3	4.5		0
V015	1	89,267	No	0	1	0	69.5	65.1	4.4		0
V016	1	89,267	Yes	1	0	0	60.7	52.0	8.7		1
V017	1	89,267	Yes	1	0	0	61.5	54.7	6.8		0
V018	1	89,267	Yes	1	0	0	58.3	51.7	6.6		0
V019	1	89,267	Yes	1	0	0	60.7	55.4	5.3		0
V021	1	89,267	Yes	1	0	0	61.1	55.8	5.3		0
V022	1	89,267	Yes	1	0	0	64.3	58.8	5.5		0
V023	1	89,267	Yes	1	0	0	60.7	55.6	5.1		0
V024	1	89,267	Yes	1	0	0	64.1	58.7	5.4		0
V025	1	89,267	Yes	1	0	0	60.9	55.7	5.2		0
V026	1	89,267	Yes	1	0	0	64.9	59.0	5.9		0
V027	1	89,267	Yes	1	0	0	61.5	56.0	5.5		0
V028	1	89,267	Yes	1	0	0	63.8	58.7	5.1		0
V029	1	89,267	No	0	0	0	59.8	57.1	2.7	1	0
V030	1	89,267	Yes	1	1	1	69.6	63.7	5.9	1	0
V031	1	89,267	No	0	0	0	61.5	58.1	3.4	1	0
V032	1	89,267	No	0	1	0	66.1	61.9	4.2	1	0
V033	1	89,267	No	0	1	0	67.7	64.2	3.5	1	0
V034	1	89,267	No	0	0	0	61.8	58.9	2.9	1	0
V035	1	89,267	No	0	0	0	63.7	59.9	3.8	1	0
V036	1	89,267	No	0	0	0	64.7	61.4	3.3	1	0
V037	1	89,267	No	0	1	0	67.5	63.2	4.3	1	0
V038	1	89,267	No	0	0	0	65.8	62.3	3.5	1	0
V039	1	89,267	Yes	1	1	1	70.9	63.8	7.1	1	0
V040	1	89,267	No	0	1	0	69.6	65.9	3.7	1	0
V041	1	89,267	No	0	0	0	65.1	61.1	4.0	1	0
V042	1	89,267	No	0	1	0	72.6	68.1	4.5	1	0
V043	1	89,267	No	0	1	0	68.1	64.8	3.3	1	0
V044	1	89,267	Yes	1	1	1	72.4	65.0	7.4	1	0
V045	1	89,267	No	0	1	0	73.9	69.4	4.5	1	0
V046	1	89,267	No	0	0	0	65.4	62.3	3.1		0
V047	1	89,267	No	0	1	0	70.4	68.6	1.8	1	0
V048	1	89,267	No	0	1	0	70.6	68.9	1.7	1	0
V049	1	89,267	No	0	0	0	64.0	61.2	2.8	1	0

Table 2 - Noise Barrier V - TNM Results Output Summary Table

Barrier	Length	Barrier Cost	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
V	3,570	\$ 3,124,345	25	19	22	23%	\$ 164,439			5%	1
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
V050	1	89,267	No	0	0	0	64.4	61.5	2.9	1	0
V051	1	89,267	No	0	1	0	69.6	66.4	3.2		0
V052	1	89,267	No	0	1	0	69.8	66.5	3.3		0
V053	1	89,267	No	0	1	0	66.4	63.6	2.8		0
V054	1	89,267	No	0	1	0	66.4	63.7	2.7		0
V055	1	89,267	No	0	0	0	60.3	57.7	2.6		0
V056	1	89,267	No	0	0	0	60.7	57.8	2.9		0
V057	1	89,267	No	0	0	0	60.7	57.5	3.2		0
V058	1	89,267	No	0	0	0	59.4	56.4	3.0		0
V059	1	89,267	Yes	1	0	0	65.4	59.5	5.9		0
V060	1	89,267	Yes	1	0	0	65.7	59.6	6.1		0
V061	1	89,267	Yes	1	1	1	66.0	59.9	6.1		0
V062	1	89,267	Yes	1	1	1	67.4	61.7	5.7		0

Table 3 - Noise Barrier X - TNM Results Output Summary Table

Barrier	Length	Barrier Cost	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
X	5,693	\$ 4,981,375	25	30	31	84%	\$ 166,046			50%	15
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
X001	1	142,325	Yes	1	1	1	67.9	58.7	9.2	1	1
X002	1	142,325	No	0	0	0	63.9	63.8	0.1		0
X003	1	142,325	No	0	0	0	63.2	63.1	0.1		0
X004	1	142,325	No	0	0	0	57.0	56.9	0.1		0
X008	1	142,325	Yes	1	1	1	67.6	59.2	8.4	1	1
X009	1	142,325	Yes	1	0	0	64.2	57.5	6.7	1	0
X010	1	142,325	Yes	1	0	0	59.9	54.8	5.1	1	0
X011	1	142,325	Yes	1	1	1	66.3	59.6	6.7	1	0
X012	1	142,325	Yes	1	1	1	68.8	60.6	8.2	1	1
X013	1	142,325	No	0	0	0	57.1	54.4	2.7		0
X014	1	142,325	Yes	1	1	1	69.9	61.7	8.2	1	1
X015	1	142,325	No	0	0	0	58.0	56.1	1.9		0
X016	1	142,325	No	0	0	0	57.3	55.3	2.0		0
X017	1	142,325	No	0	1	0	66.6	61.9	4.7		0
X018	1	142,325	No	0	0	0	58.4	56.8	1.6		0
X019	1	142,325	No	0	0	0	56.8	55.4	1.4		0
X020	1	142,325	No	0	0	0	57.2	56.6	0.6		0
X021	1	142,325	No	0	1	0	66.4	62.0	4.4		0
X022	1	142,325	No	0	0	0	53.8	53.5	0.3		0
X023	1	142,325	Yes	1	1	1	74.9	64.0	10.9	1	1
X024	1	142,325	No	0	0	0	60.8	59.2	1.6		0
X025	1	142,325	No	0	0	0	62.0	60.1	1.9		0
X026	1	142,325	No	0	0	0	65.3	61.8	3.5		0
X027	1	142,325	Yes	1	1	1	70.7	61.4	9.3	1	1
X028	1	142,325	Yes	1	1	1	70.1	63.1	7.0	1	0
X029	1	142,325	No	0	0	0	61.1	59.6	1.5		0
X030	1	142,325	No	0	0	0	65.5	61.9	3.6		0
X031	1	142,325	Yes	1	1	1	68.7	62.7	6.0	1	0
X032	1	142,325	Yes	1	1	1	67.9	62.3	5.6	1	0
X033	1	142,325	No	0	0	0	60.8	59.1	1.7		0
X034	1	142,325	No	0	0	0	65.2	61.9	3.3		0
X035	1	142,325	No	0	0	0	0.0	0.0	0.0		0
X036	1	142,325	No	0	0	0	64.8	60.4	4.4		0
X037	1	142,325	No	0	0	0	64.6	60.8	3.8		0
X038	1	142,325	No	0	0	0	65.9	61.4	4.5		0
X039	1	142,325	Yes	1	1	1	72.8	64.5	8.3	1	1
X040	1	142,325	Yes	1	1	1	70.7	57.4	13.3	1	1
X041	1	142,325	Yes	1	0	0	64.6	58.2	6.4	1	0
X042	1	142,325	Yes	1	1	1	67.0	57.4	9.6	1	1
X043	1	142,325	Yes	1	1	1	67.5	57.8	9.7	1	1
X044	1	142,325	Yes	1	1	1	67.9	58.3	9.6	1	1
X045	1	142,325	Yes	1	1	1	66.5	57.9	8.6	1	1
X046	1	142,325	No	0	0	0	58.9	54.5	4.4		0
X047	1	142,325	Yes	1	1	1	67.5	58.8	8.7	1	1
X048	1	142,325	Yes	1	1	1	67.9	61.3	6.6	1	0
X049	1	142,325	Yes	1	0	0	59.7	54.7	5.0	1	0
X050	1	142,325	No	0	1	0	69.5	65.1	4.4		0
X051	1	142,325	Yes	1	1	1	69.9	64.9	5.0	1	0

Table 3 - Noise Barrier X - TNM Results Output Summary Table

Barrier	Length	Barrier Cost	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
X	5,693	\$ 4,981,375	25	30	31	84%	\$ 166,046			50%	15
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
X052	1	142,325	No	0	0	0	57.6	53.6	4.0		0
X053	1	142,325	Yes	1	1	1	69.4	64.3	5.1	1	0
X054	1	142,325	Yes	1	1	1	69.3	62.9	6.4	1	0
X055	1	142,325	Yes	1	1	1	73.2	60.6	12.6	1	1
X056	1	142,325	Yes	1	1	1	68.2	62.0	6.2	1	0
X057	1	142,325	No	0	0	0	59.6	55.7	3.9		0
X058	1	142,325	No	0	0	0	60.0	55.2	4.8		0
X059	1	142,325	Yes	1	1	1	68.9	61.9	7.0	1	0
X060	1	142,325	Yes	1	1	1	71.6	60.1	11.5	1	1
X061	1	142,325	No	0	0	0	60.1	59.7	0.4		0
X062	1	142,325	Yes	1	1	1	70.0	64.5	5.5	1	0
X063	1	142,325	No	0	0	0	60.6	60.5	0.1		0
X064	1	142,325	No	0	0	0	59.8	59.5	0.3		0
X065	1	142,325	No	0	1	0	69.9	66.7	3.2		0
X066	1	142,325	No	0	0	0	59.0	58.7	0.3		0
X067	1	142,325	No	0	0	0	62.0	61.7	0.3		0
X068	1	142,325	No	0	0	0	60.6	60.6	0.0		0
X069	1	142,325	No	0	1	0	67.9	66.9	1.0		0
X070	1	142,325	No	0	0	0	62.6	62.3	0.3		0
X071	1	142,325	No	0	0	0	63.3	63.1	0.2		0
X072	1	142,325	No	0	0	0	57.6	57.4	0.2		0
X073	1	142,325	No	0	0	0	65.7	65.2	0.5		0
X074	1	142,325	No	0	0	0	60.9	60.8	0.1		0
X075	1	142,325	No	0	0	0	59.8	59.7	0.1		0
X076	1	142,325	No	0	0	0	61.0	60.9	0.1		0
X077	1	142,325	No	0	0	0	64.1	63.8	0.3		0
X078	1	142,325	No	0	0	0	56.3	56.3	0.0		0
X079	1	142,325	No	0	0	0	61.4	61.4	0.0		0
X080	1	142,325	No	0	0	0	54.9	54.9	0.0		0

Table 4 - Noise Barrier Y - TNM Results Output Summary Table

Barrier	Length	Barrier Cost	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
Y	3,092	\$ 2,705,220	25	17	10	100%	\$ 159,131			53%	8
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
Y001	1	77,292	Yes	1	1	1	69.2	59.9	9.3	1	1
Y002	1	77,292	Yes	1	1	1	70.0	60.1	9.9	1	1
Y003	1	77,292	Yes	1	1	1	70.3	60.4	9.9	1	1
Y004	1	77,292	Yes	1	1	1	70.9	60.1	10.8	1	1
Y005	1	77,292	No	0	0	0	59.4	56.4	3.0		0
Y006	1	77,292	Yes	1	1	1	71.0	58.3	12.7	1	1
Y007	1	77,292	Yes	1	0	0	64.3	57.6	6.7	1	0
Y008	1	77,292	Yes	1	1	1	71.4	58.6	12.8	1	1
Y009	1	77,292	Yes	1	0	0	65.0	58.3	6.7	1	0
Y010	1	77,292	Yes	1	0	0	65.3	57.9	7.4	1	0
Y011	1	77,292	Yes	1	1	1	73.0	60.1	12.9	1	1
Y012	1	77,292	Yes	1	1	1	66.1	58.4	7.7	1	0
Y013	1	77,292	Yes	1	1	1	73.3	60.6	12.7	1	1
Y014	1	77,292	No	0	0	0	62.0	57.7	4.3		0
Y016	1	77,292	Yes	1	1	1	67.4	59.6	7.8	1	0
Y017	1	77,292	Yes	1	0	0	64.8	57.4	7.4		0
Y018	1	77,292	Yes	1	0	0	62.6	56.9	5.7		0
Y019	1	77,292	Yes	1	0	0	64.0	57.8	6.2	1	0
Y020	1	77,292	Yes	1	0	0	65.7	58.0	7.7	1	0
Y021	1	77,292	No	0	0	0	60.8	57.1	3.7		0
Y023	1	77,292	No	0	0	0	61.5	57.4	4.1		0
Y024	1	77,292	No	0	0	0	61.9	59.5	2.4		0
Y025	1	77,292	No	0	0	0	61.9	60.9	1.0		0
Y029	1	77,292	No	0	0	0	57.9	57.0	0.9		0
Y030	1	77,292	No	0	0	0	59.8	59.3	0.5		0
Y031	1	77,292	No	0	0	0	58.5	58.1	0.4		0

Table 5 - Noise Barrier Z - TNM Results Output Summary Table

Barrier	Length	Barrier Cost*	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
Z	3,313	\$ 7,148,980	25	158	41	100%	\$ 45,247			77%	117
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
Z001	1	82,828	No	0	0	0	57.0	56.6	0.4		0
Z002	1	82,828	No	0	0	0	60.9	56.2	4.7		0
Z003	1	82,828	No	0	0	0	50.7	50.6	0.1		0
Z004	1	82,828	No	0	0	0	53.2	52.8	0.4		0
Z005	1	82,828	No	0	0	0	50.0	48.5	1.5		0
Z006	1	82,828	No	0	0	0	49.0	47.6	1.4		0
Z007	1	82,828	No	0	0	0	51.6	50.7	0.9		0
Z008	1	82,828	No	0	0	0	49.7	48.6	1.1		0
Z009	1	82,828	No	0	0	0	50.4	49.6	0.8		0
Z010	1	82,828	No	0	0	0	50.1	49.2	0.9		0
Z011	1	82,828	No	0	0	0	49.8	48.8	1.0		0
Z012	1	82,828	Yes	1	1	1	68.8	56.6	12.2	1	1
Z013	1	82,828	Yes	1	1	1	70.8	59.3	11.5	1	1
Z014	1	82,828	Yes	1	0	0	63.4	52.6	10.8	1	1
Z015	1	82,828	Yes	1	0	0	60.5	53.3	7.2	1	0
Z016	1	82,828	Yes	1	1	1	68.6	56.2	12.4	1	1
Z017	1	82,828	Yes	1	0	0	54.2	49.1	5.1	1	0
Z018	1	82,828	Yes	1	1	1	70.7	59.2	11.5	1	1
Z019	1	82,828	Yes	1	0	0	59.0	53.0	6.0	1	0
Z020	1	82,828	Yes	1	1	1	68.5	56.1	12.4	1	1
Z024	1	82,828	Yes	1	0	0	61.7	53.1	8.6		1
Z028	1	82,828	Yes	1	1	1	70.7	59.2	11.5	1	1
Z029	1	82,828	Yes	1	0	0	54.3	48.6	5.7	1	0
Z030	1	82,828	Yes	1	0	0	61.0	50.9	10.1	1	1
Z031	1	82,828	Yes	1	0	0	59.6	50.4	9.2	1	1
Z032	1	82,828	Yes	1	0	0	62.2	52.4	9.8	1	1
Z033	1	82,828	Yes	1	0	0	55.7	49.6	6.1	1	0
Z034	1	82,828	Yes	1	0	0	57.0	50.2	6.8		0
Z035	1	82,828	Yes	1	0	0	56.7	51.2	5.5		0
Z036	1	82,828	Yes	1	0	0	61.2	50.9	10.3	1	1
Z037	1	82,828	Yes	1	0	0	63.0	52.5	10.5	1	1
Z038	1	82,828	Yes	1	0	0	60.5	50.6	9.9	1	1
Z039	1	82,828	Yes	1	0	0	62.5	52.2	10.3	1	1
Z040	1	82,828	Yes	1	0	0	63.3	52.6	10.7	1	1
Z041	1	82,828	Yes	1	0	0	62.3	52.2	10.1	1	1
Z042	1	82,828	Yes	1	0	0	60.5	50.3	10.2	1	1
Z043	1	82,828	Yes	1	0	0	62.8	52.2	10.6	1	1
Z044	1	82,828	Yes	1	0	0	60.9	50.6	10.3	1	1
Z045	1	82,828	Yes	1	0	0	63.1	52.5	10.6	1	1
Z046	1	82,828	Yes	1	0	0	60.1	52.4	7.7	1	0
Z047	1	82,828	Yes	1	0	0	54.1	48.2	5.9	1	0
Z048	1	82,828	Yes	1	1	1	68.2	55.8	12.4	1	1
Z049	1	82,828	Yes	1	0	0	53.5	47.6	5.9	1	0
Z050	1	82,828	Yes	1	1	1	70.3	58.8	11.5	1	1
Z051	1	82,828	Yes	1	0	0	56.5	50.4	6.1	1	0
Z052	1	82,828	Yes	1	1	1	67.0	54.9	12.1	1	1
Z053	1	82,828	Yes	1	0	0	53.2	46.7	6.5	1	0
Z062	1	82,828	Yes	1	1	1	70.0	58.4	11.6	1	1

Table 5 - Noise Barrier Z - TNM Results Output Summary Table

Barrier	Length	Barrier Cost*	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
Z	3,313	\$ 7,148,980	25	158	41	100%	\$ 45,247			77%	117
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
Z063	1	82,828	No	0	0	0	52.4	47.9	4.5		0
Z066	1	82,828	Yes	1	0	0	59.2	52.3	6.9	1	0
Z067	1	82,828	Yes	1	0	0	60.4	52.2	8.2	1	1
Z068	1	82,828	No	0	0	0	50.0	45.9	4.1		0
Z069	1	82,828	Yes	1	0	0	61.8	52.5	9.3	1	1
Z070	1	82,828	Yes	1	0	0	58.7	50.2	8.5	1	1
Z071	1	82,828	Yes	1	0	0	61.7	52.4	9.3	1	1
Z072	1	82,828	Yes	1	0	0	61.3	52.2	9.1	1	1
Z073	1	82,828	Yes	1	0	0	57.2	50.8	6.4	1	0
Z074	1	82,828	Yes	1	0	0	60.9	52.0	8.9	1	1
Z075	1	82,828	Yes	1	0	0	57.9	51.1	6.8	1	0
Z076	1	82,828	Yes	1	0	0	60.4	51.7	8.7	1	1
Z077	1	82,828	Yes	1	0	0	61.7	52.9	8.8	1	1
Z078	1	82,828	Yes	1	0	0	60.2	51.2	9.0	1	1
Z079	1	82,828	Yes	1	0	0	57.4	50.7	6.7	1	0
Z080	1	82,828	Yes	1	1	1	66.5	54.4	12.1	1	1
Z081	1	82,828	Yes	1	0	0	53.4	46.6	6.8	1	0
Z082	1	82,828	Yes	1	1	1	70.1	58.6	11.5	1	1
Z083	1	82,828	Yes	1	0	0	61.7	54.2	7.5	1	0
Z084	1	82,828	Yes	1	1	1	72.9	58.3	14.6	1	1
Z085	1	82,828	Yes	1	1	1	69.3	54.9	14.4	1	1
Z086	1	82,828	Yes	1	1	1	72.8	59.5	13.3	1	1
Z087	1	82,828	Yes	1	1	1	71.2	57.3	13.9	1	1
Z088	1	82,828	Yes	1	1	1	66.9	54.0	12.9	1	1
Z089	1	82,828	Yes	1	1	1	70.2	56.7	13.5	1	1
Z090	1	82,828	Yes	1	0	0	65.8	53.6	12.2	1	1
Z091	1	82,828	Yes	1	1	1	69.1	56.1	13.0	1	1
Z092	1	82,828	Yes	1	0	0	64.1	53.0	11.1	1	1
Z093	1	82,828	Yes	1	1	1	67.3	54.5	12.8	1	1
Z094	1	82,828	Yes	1	0	0	62.8	52.0	10.8	1	1
Z095	1	82,828	Yes	1	0	0	64.4	52.0	12.4	1	1
Z096	1	82,828	Yes	1	0	0	56.6	50.7	5.9	1	0
Z097	1	82,828	Yes	1	0	0	60.0	51.6	8.4	1	1
Z098	1	82,828	Yes	1	0	0	49.2	43.7	5.5	1	0
Z099	1	82,828	Yes	1	0	0	60.8	52.0	8.8	1	1
Z100	1	82,828	Yes	1	0	0	50.6	44.1	6.5	1	0
Z101	1	82,828	Yes	1	0	0	57.5	48.9	8.6	1	1
Z102	1	82,828	Yes	1	0	0	51.3	44.2	7.1	1	0
Z103	1	82,828	Yes	1	0	0	54.8	46.5	8.3	1	1
Z104	1	82,828	Yes	1	0	0	57.4	47.6	9.8	1	1
Z105	1	82,828	Yes	1	0	0	52.3	44.4	7.9	1	0
Z106	1	82,828	Yes	1	0	0	60.7	52.9	7.8	1	0
Z107	1	82,828	Yes	1	0	0	59.7	49.9	9.8	1	1
Z108	1	82,828	Yes	1	0	0	63.3	54.1	9.2	1	1
Z109	1	82,828	Yes	1	1	1	66.9	55.2	11.7	1	1
Z110	1	82,828	Yes	1	0	0	62.1	52.8	9.3	1	1
Z111	1	82,828	Yes	1	1	1	66.2	54.8	11.4	1	1
Z112	1	82,828	Yes	1	0	0	65.5	55.4	10.1	1	1

Table 5 - Noise Barrier Z - TNM Results Output Summary Table

Barrier	Length	Barrier Cost*	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
Z	3,313	\$ 7,148,980	25	158	41	100%	\$ 45,247			77%	117
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
Z113	1	82,828	Yes	1	1	1	68.2	56.6	11.6	1	1
Z114	1	82,828	Yes	1	1	1	69.8	57.5	12.3	1	1
Z115	1	82,828	Yes	1	1	1	66.9	55.9	11.0	1	1
Z116	1	82,828	Yes	1	1	1	68.8	56.7	12.1	1	1
Z117	1	82,828	Yes	1	1	1	67.8	55.9	11.9	1	1
Z118	1	82,828	Yes	1	1	1	70.2	57.8	12.4	1	1
Z119	1	82,828	Yes	1	1	1	71.4	58.4	13.0	1	1
Z120	1	82,828	Yes	1	0	0	52.5	47.0	5.5		0
Z121	1	82,828	Yes	1	0	0	56.0	48.8	7.2		0
Z122	1	82,828	Yes	1	0	0	57.7	50.4	7.3	1	0
Z123	1	82,828	Yes	1	0	0	53.3	48.2	5.1	1	0
Z124	1	82,828	Yes	1	0	0	56.8	49.7	7.1	1	0
Z125	1	82,828	Yes	1	0	0	53.2	47.4	5.8	1	0
Z126	1	82,828	Yes	1	0	0	56.5	49.0	7.5		0
Z127	1	82,828	Yes	1	0	0	52.5	45.5	7.0	1	0
Z128	1	82,828	Yes	1	0	0	57.5	50.3	7.2	1	0
Z129	1	82,828	Yes	1	0	0	52.5	47.1	5.4	1	0
Z130	1	82,828	Yes	1	0	0	57.1	47.9	9.2	1	1
Z131	1	82,828	Yes	1	0	0	53.4	46.0	7.4	1	0
Z132	1	82,828	Yes	1	0	0	58.0	48.6	9.4	1	1
Z133	1	82,828	Yes	1	0	0	54.3	46.0	8.3	1	1
Z134	1	82,828	Yes	1	0	0	53.2	45.6	7.6	1	0
Z135	1	82,828	Yes	1	0	0	56.9	47.4	9.5	1	1
Z136	1	82,828	Yes	1	0	0	59.2	49.3	9.9	1	1
Z137	1	82,828	Yes	1	0	0	56.3	47.3	9.0	1	1
Z138	1	82,828	Yes	1	0	0	59.9	52.0	7.9	1	0
Z139	1	82,828	Yes	1	0	0	54.9	46.6	8.3	1	1
Z140	1	82,828	Yes	1	0	0	62.6	51.0	11.6	1	1
Z141	1	82,828	Yes	1	0	0	57.4	47.9	9.5	1	1
Z142	1	82,828	Yes	1	0	0	60.7	50.0	10.7	1	1
Z143	1	82,828	Yes	1	0	0	58.4	48.8	9.6	1	1
Z144	1	82,828	Yes	1	0	0	59.4	49.6	9.8	1	1
Z145	1	82,828	Yes	1	0	0	62.8	50.8	12.0	1	1
Z146	1	82,828	Yes	1	0	0	59.1	49.1	10.0	1	1
Z147	1	82,828	Yes	1	0	0	62.9	51.2	11.7	1	1
Z148	1	82,828	Yes	1	0	0	61.4	51.0	10.4	1	1
Z149	1	82,828	Yes	1	0	0	64.5	52.1	12.4	1	1
Z150	1	82,828	Yes	1	1	1	66.4	53.3	13.1	1	1
Z151	1	82,828	Yes	1	1	1	72.9	56.5	16.4	1	1
Z152	1	82,828	Yes	1	1	1	69.7	54.9	14.8	1	1
Z153	1	82,828	Yes	1	0	0	62.8	52.1	10.7	1	1
Z154	1	82,828	Yes	1	1	1	71.4	57.9	13.5	1	1
Z155	1	82,828	Yes	1	1	1	66.9	54.1	12.8	1	1
Z156	1	82,828	Yes	1	0	0	61.0	50.5	10.5	1	1
Z157	1	82,828	Yes	1	0	0	57.1	49.2	7.9	1	0
Z158	1	82,828	Yes	1	0	0	57.8	49.5	8.3	1	1
Z159	1	82,828	Yes	1	0	0	61.7	50.9	10.8	1	1
Z160	1	82,828	Yes	1	0	0	62.2	51.2	11.0	1	1

Table 5 - Noise Barrier Z - TNM Results Output Summary Table

Barrier	Length	Barrier Cost*	Ht Range	Total Number of Benefits	Total Number of Impacts	% of Impacted, Benefited Receivers	Cost Per Benefited Receiver			% of First Row, Greater than 8 dBA	Total Number of Benefits Greater than 8 dBA
Z	3,313	\$ 7,148,980	25	158	41	100%	\$ 45,247			77%	117
Receiver #	# of Dwelling Units Represented	Barrier Area (sq foot)	Does Wall Achieve a 5 dBA Reduction	Benefitted Dwelling Units	Impacted?	Impacted and Benefitted?	Sound Level Without Wall	Sound Level With Wall	Decibel Reduction	First Row?	Greater than 8 dBA Reduction?
Z161	1	82,828	Yes	1	0	0	58.5	49.9	8.6	1	1
Z162	1	82,828	Yes	1	0	0	63.4	51.8	11.6	1	1
Z163	1	82,828	Yes	1	0	0	59.3	50.4	8.9	1	1
Z164	1	82,828	Yes	1	0	0	62.9	51.7	11.2	1	1
Z165	1	82,828	Yes	1	0	0	60.1	50.7	9.4	1	1
Z166	1	82,828	Yes	1	0	0	65.2	52.6	12.6	1	1
Z167	1	82,828	Yes	1	0	0	64.2	52.2	12.0	1	1
Z168	1	82,828	Yes	1	0	0	61.2	51.3	9.9	1	1
Z169	1	82,828	Yes	1	0	0	62.3	51.8	10.5	1	1
Z170	1	82,828	Yes	1	0	0	63.0	52.3	10.7	1	1
Z171	1	82,828	Yes	1	0	0	65.9	53.0	12.9	1	1
Z172	1	82,828	Yes	1	1	1	66.7	53.6	13.1	1	1
Z173	1	82,828	Yes	1	0	0	63.9	52.8	11.1	1	1
Z174	1	82,828	Yes	1	0	0	65.6	54.0	11.6	1	1
Z175	1	82,828	Yes	1	1	1	68.5	54.5	14.0	1	1
Z176	1	82,828	Yes	1	1	1	67.6	54.0	13.6	1	1
Z177	1	82,828	Yes	1	0	0	64.9	53.5	11.4	1	1
Z178	1	82,828	Yes	1	1	1	67.9	55.9	12.0	1	1
Z179	1	82,828	Yes	1	1	1	70.3	55.4	14.9	1	1
Z180	1	82,828	Yes	1	1	1	66.9	56.7	10.2	1	1
Z181	1	82,828	Yes	1	0	0	64.9	55.2	9.7	1	1
Z182	1	82,828	Yes	1	0	0	62.3	53.9	8.4	1	1
Z183	1	82,828	Yes	1	0	0	62.5	54.6	7.9	1	0
Z184	1	82,828	Yes	1	0	0	64.3	55.1	9.2	1	1
Z185	1	82,828	Yes	1	1	1	67.8	55.5	12.3	1	1
Z186	1	82,828	Yes	1	0	0	61.3	54.5	6.8	1	0
Z187	1	82,828	Yes	1	0	0	60.3	52.8	7.5		0