Palmetto Commerce Interchange

Project Updates

December 5, 2023

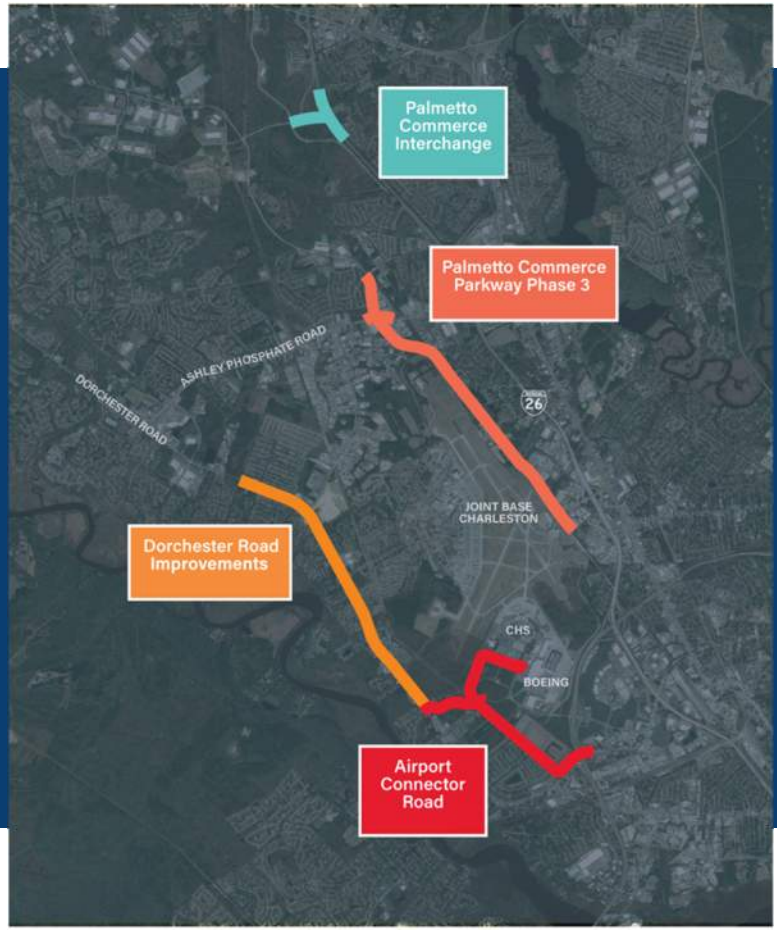
Project History

In May 2013, County Council adopts a resolution to provide preliminary authorization for funding of Area Airport Roads Improvements Project through Special Source Revenue Bonds.

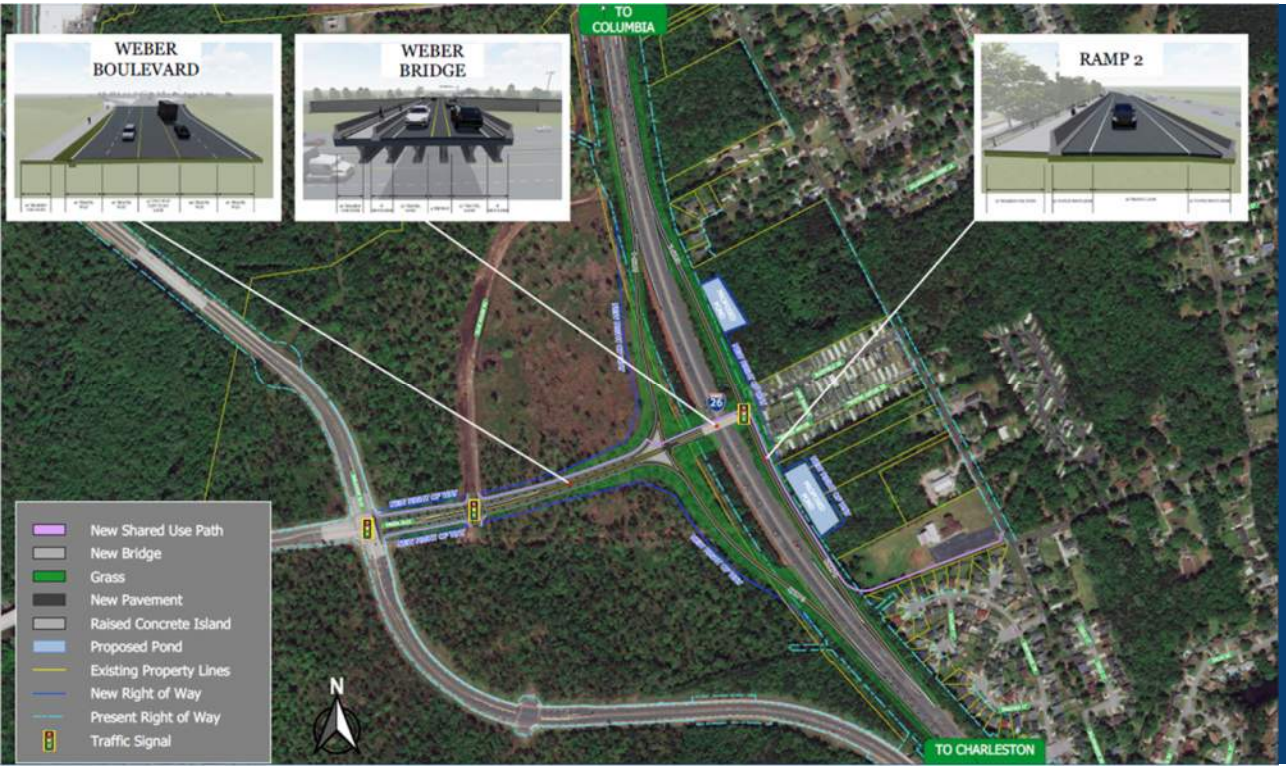
In November 2016, citizens voted to add second ½ cent sales tax for no more that 25 years or until a total of $2.1 Billion collected.

Includes 12 projects of local & regional significance

4 Projects in this airport area have collective price tag of $420 Million



Project Summary



The Palmetto Commerce Interchange project is located along the I-26 corridor between US 78 (University Boulevard) and Ashley Phosphate Road.

Project Goals

Reduced Travel Time

Increase Mobility + Connectivity

Enhance Commutes

Project Summary

Purpose & Need #1

- Provide improved travel times and access options to the rapidly growing, high density employment centers along Palmetto Commerce Parkway and Ingleside Boulevard,
  - Access to I-26 is limited because of adjacent interchanges are 4 miles apart and each is currently congested by traffic serving nearby high density employment centers. Because of amount of future travel demand to Ingleside/Northside and PCP, a more direct or additional access to I-26 is needed.
  - The improved access provided by the interchange is needed for employees and contractors/service providers, travel to port terminals and rail yards, and distribution of supplies and products. Existing interchanges in this segment of I-26 are already heavily congested and expected to grow worse in the future. Recent CHATS (Charleston Area Transportation Study) and VISSIM traffic modeling show traffic volumes are expected to reach levels where the entire regional network is anticipated to have decreased mobility and unmet travel demand by 2040.

Project Summary

Purpose & Need #2

- Improve traffic mobility for the area served by the Ashley Phosphate Road/I-26 Interchange, and
  - The existing traffic volumes along Ashley Phosphate Road are at levels where many of the intersections between Palmetto Commerce Parkway and I-26 experience a failing Level of Service (LOS) during the AM and PM peak traffic hours. This congestion is expected to increase as developments in the Palmetto Commerce Park and Ingleside area are constructed, with delays exceeding 100 seconds by 2040.
  - Along I-26, the current AADT volume is 102,600 vehicles per day with traffic volumes estimated to increase to 134,600 by 2040. The traffic congestion and delays along Ashley Phosphate Road are expected to worsen and intersections along Palmetto Commerce Parkway, US Highway 78, and Ashley Phosphate are expected to degrade to a failing Level of Service. Additionally, the Level of Service along Ladson Road from Palmetto Commerce Parkway to University Blvd and along University Blvd from Ladson road are projected to fail based on the increase in traffic due to development in the area.

Project Goals

Table 2.2.2 – Peak Hour Levels of Service (LOS)

Surrounding Intersections	AM Peak Hour Levels of Service	
	2020 No-Build	2040 No Build
US 78/Ladson Rd	F	F
US 7 8 / Medical Plaza Dr. / Excellence Way	C	D
US 7 8 / Medical Plaza Drive / BUC Club Blvd.	B	C
Ladson Rd. / Lincolnville Rd.	D	D
Palmetto Comm. Pkwy. / Ladson Rd.	C	D
Palmetto Comm. Pkwy. / Patriot Blvd.	F	F
Ashley Phosphate Rd. / Stall Rd.	C	D
Ashley Phosphate Rd. / Northside Dr.	D	D
Ashley Phosphate Rd. / Rivers Ave.	F	F
Ashley Phosphate Rd. / I-26 EB Ramps	D	E

Surrounding Intersections	PM Peak Hour Levels of Service	
	2020 No-Build	2040 No Build
US 78/Ladson Rd	F	F
US 7 8 / Medical Plaza Dr. / Excellence Way	D	F
US 7 8 / Medical Plaza Drive / BUC Club Blvd.	C	D
Ladson Rd. / Lincolnville Rd.	D	F
Palmetto Comm. Pkwy. / Ladson Rd.	D	F
Palmetto Comm. Pkwy. / Patriot Blvd.	F	F
Ashley Phosphate Rd. / Stall Rd.	C	E
Ashley Phosphate Rd. / Northside Dr.	C	C
Ashley Phosphate Rd. / Rivers Ave.	E	F
Ashley Phosphate Rd. / I-26 EB Ramps	D	E

Source: Stantec, VISSIM analysis conducted for the PCI Project, January, 2019

Signalized Intersection Levels of Service (LOS)

LOS A: Free Flow-
Most vehicles travel through green light without stopping.

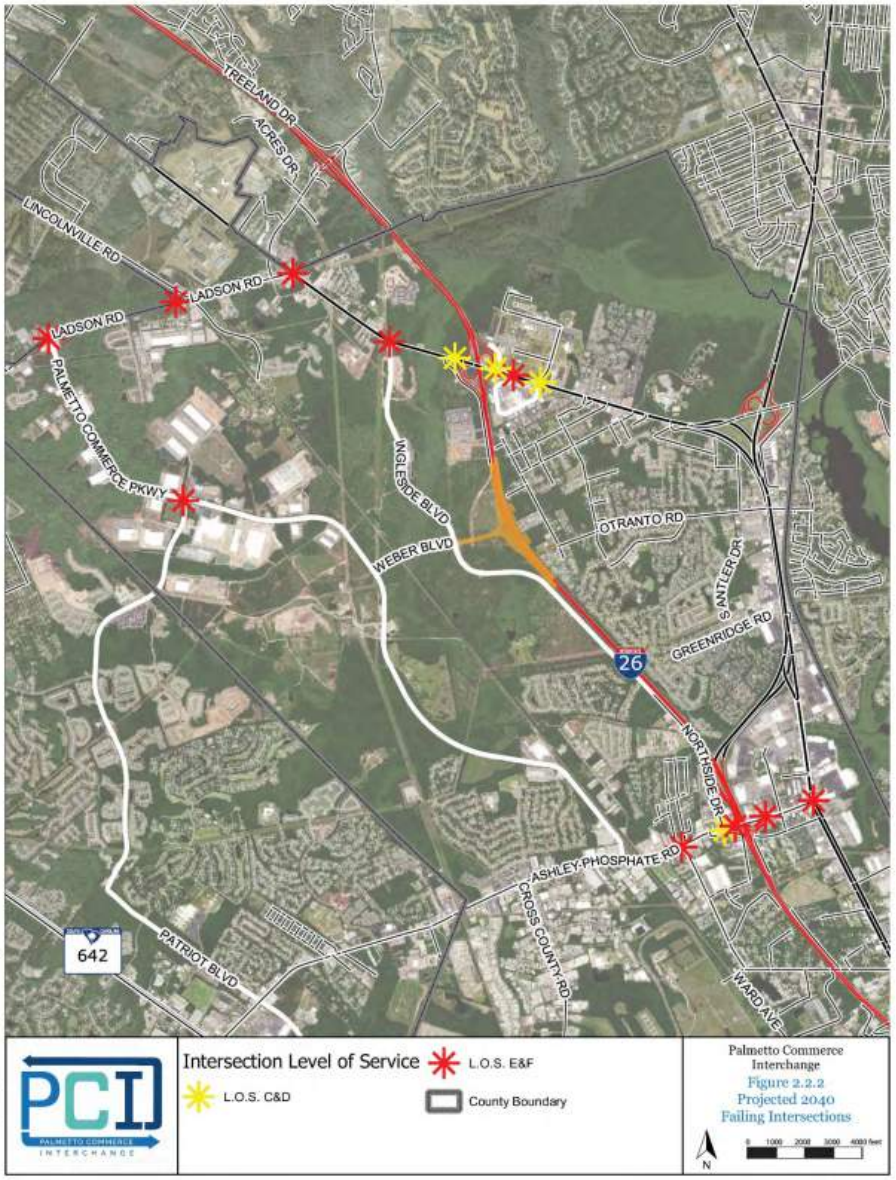
LOS B: Stable Flow-
Vehicles move through intersection very well, but more have to stop for red light.

LOS C: Stable Flow-
A substantial number of vehicles will have to stop for red light.

LOS D: Approaching Unstable Flow-
Many vehicles have to stop for a red light and traffic starts stacking at intersections.

LOS E: Unstable Flow-
Traffic volumes are higher than the intersection can handle with lines of stopped vehicles.

LOS F: Forced Flow-
Traffic flow has broken down. Traffic volumes are high and long backups at intersections.

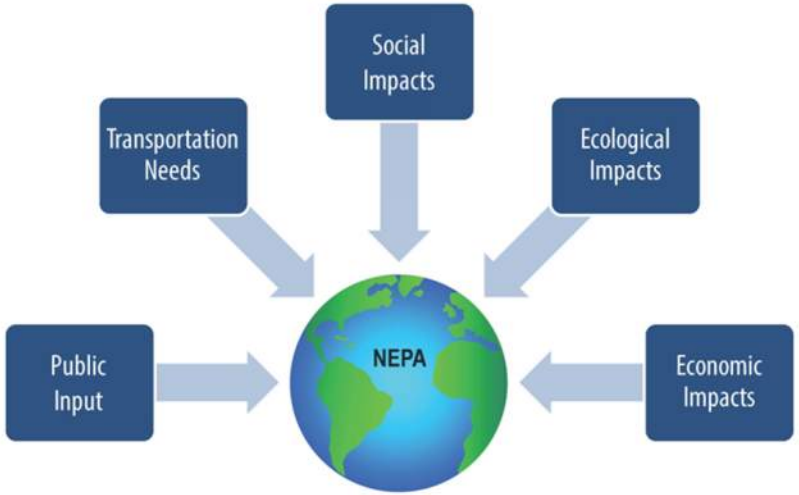

TREELAND DR
ACRES DR
LINCOLNVILLE RD
LADSON RD
LADSON RD
PALMETTO COMMERCE PKWY
INGLESIDE BLVD
WEBER BLVD
OTRANTO RD
S ANTLER DR
GREENRIDGE RD
26
NORTHSIDE DR
ASHLEY PHOSPHATE RD
CROSS COUNTY RD
WARD AVE
642
PATRIOT BLVD
Intersection Level of Service
L.O.S. E&F
L.O.S. C&D
County Boundary
Palmetto Commerce Interchange
Figure 2.2.2
Projected 2040
Failing Intersections
N

Project Summary

Purpose & Need #3

- Provide more efficient commute options within the portion of the regional network that relies on access to I-26 by increasing the number of trips allowed and decreasing delays.
    - This section of I-26 corridor serves approximately two-thirds of the traffic volume for the region living west of Ashley Phosphate Road. The rapid residential development in the area is projected to increase the demand by regional commuters. Travel times, delays, and congestion at the existing interchange along the corridor, especially at Ashley Phosphate Road and University Blvd, are expected to increase in the future. The lack of adequate access points to the interstate is likely to create bottlenecks and cause delays entering and existing the mainline I-26 in the future.

Environmental Review

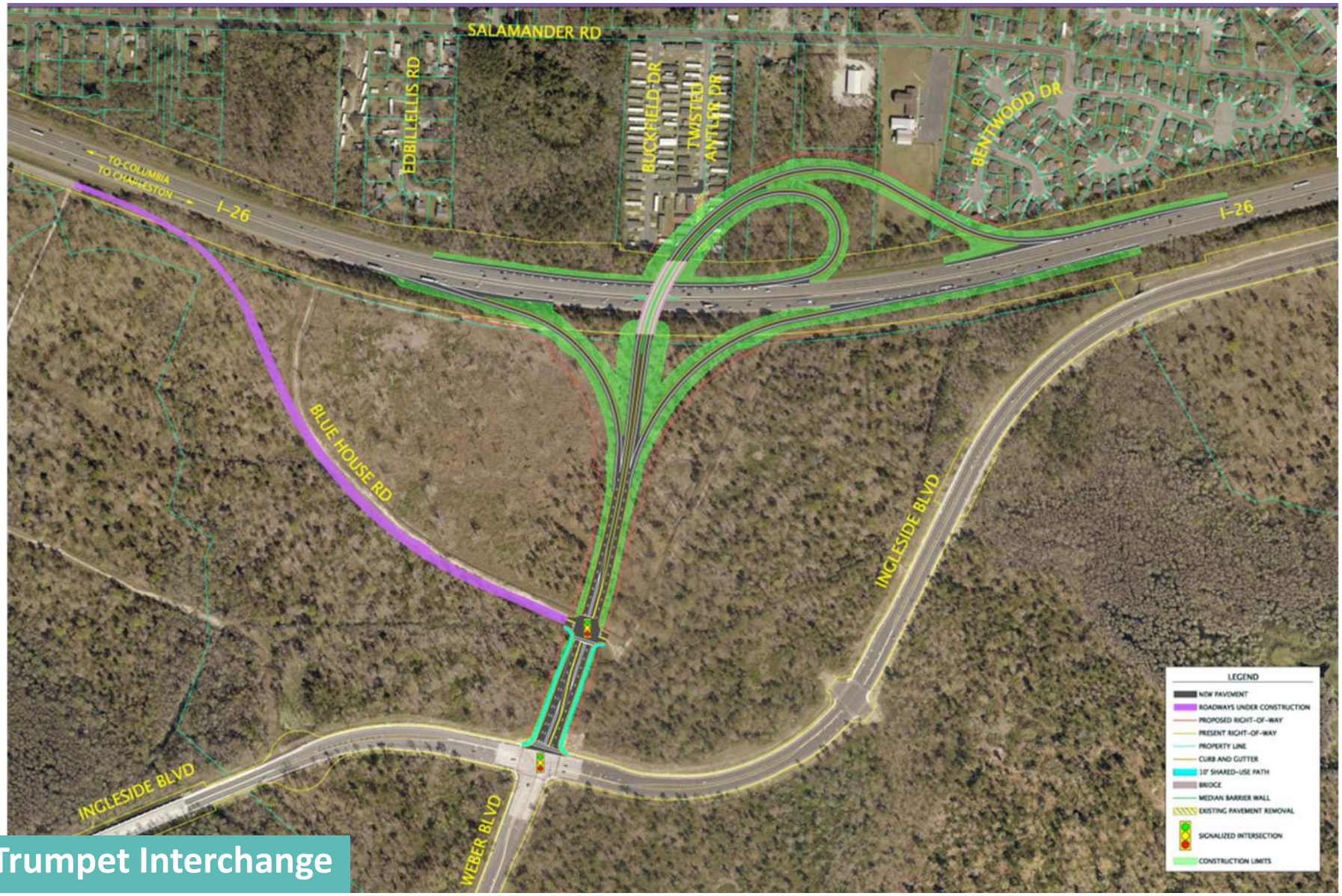


- Air Quality
- Biotic Resources
- Coastal Resources
- Endangered & Threatened Species
- Natural Resources
- Farmland
- Wetlands
- Wild and Scenic Rivers
- Construction Impacts and Sustainable Design
- Community Impacts
- Induced Socioeconomic Impacts
- Energy Supplies
- Floodplains
- Hazardous Materials
- Solid Waste
- Water Quality
- Compatible Land Use
- Recreational Resources
- Environmental Justice
- Historical, Architectural, Archeological or Cultural Property
- Light Emissions & Visual Effects
- Noise

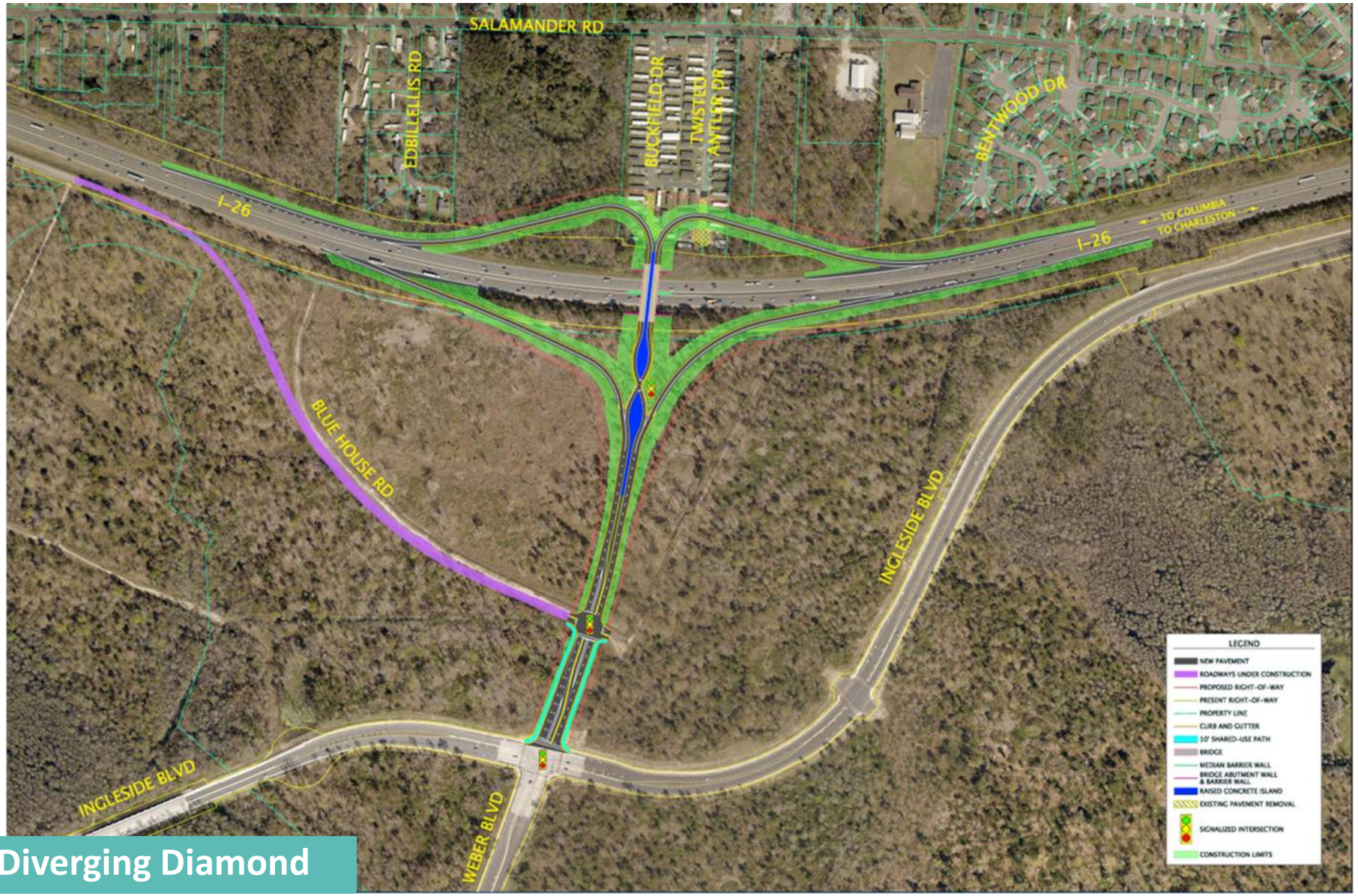
Environmental Review

Table 3.2.1 – Alternative Eliminations

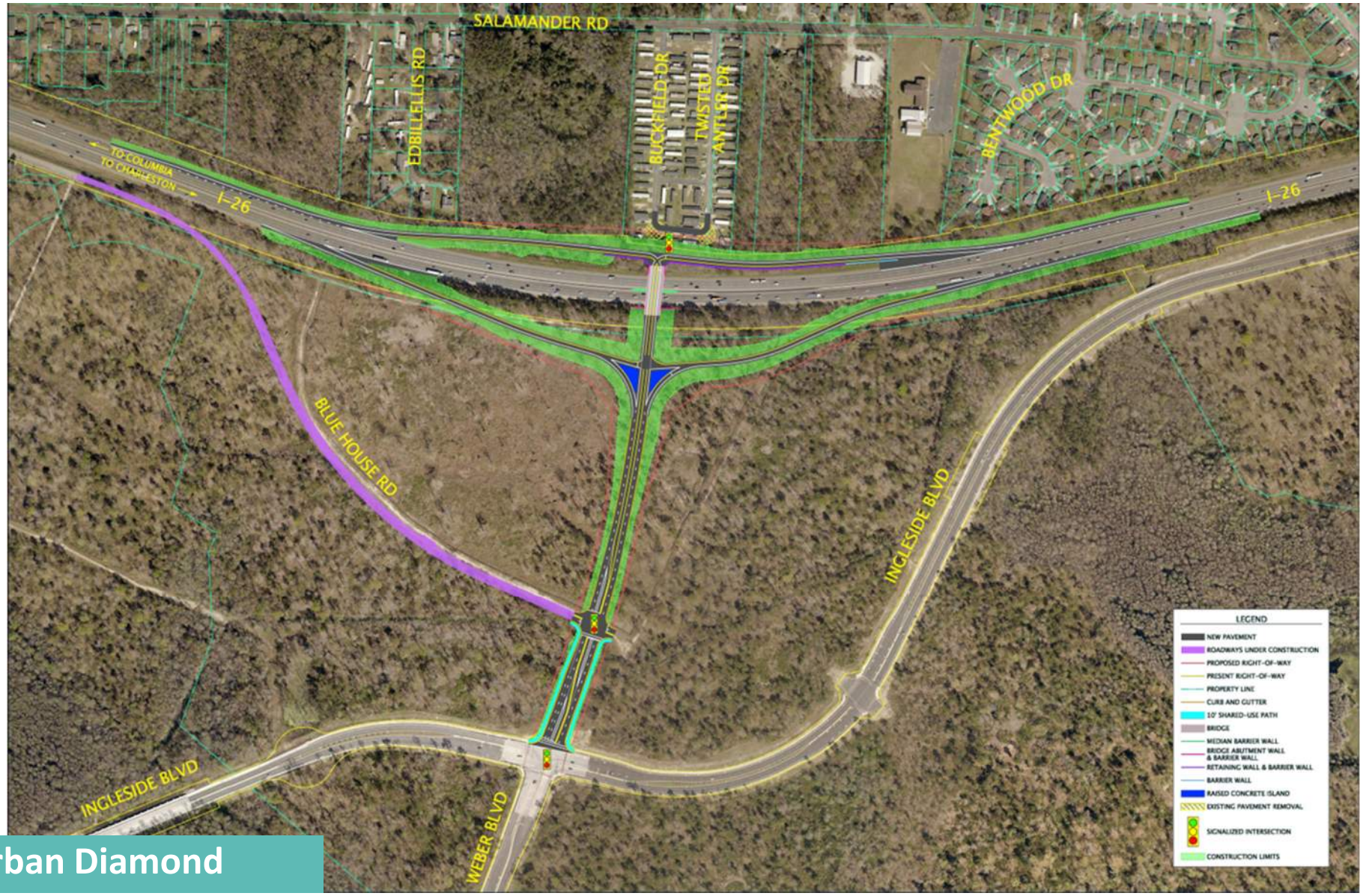
Resources	Preliminary Alternatives Screening							
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8
Tier 1 Screening								
Wetland Impacts (ac)	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4
Perennial Stream/ Ditch Impacts (lf)	267	662	324	416	664	957	509	479
Carry forward to Tier 2 Screening?	Yes	No	Yes	Yes	No	No	Yes	Yes
Tier 2 Screening								
Residential Relocations	47		15	17			17	5
Parcels Impacted	15		13	20			10	10
Total ROW Acquisition (ac)	26.4		22	25			19.9	18.5
Carry forward to Tier 3 Screening?	No		Yes	No			Yes	Yes
Tier 3 Screening								
Reasonable Build Alternative			Yes				Yes	Yes



Alt 3- Trumpet Interchange



Alt 7- Diverging Diamond



Alt 8- Urban Diamond

Environmental Review

NEPA determined the County will construct an urban diamond interchange (Alt 8).

This alternative will best meet the goals of the project while having the least amount of impact to the surrounding environment.

Category	Evaluation Criteria	Alternative 3	Alternative 7	Alternative 8
Traffic Operations	Meets Minimum Access Spacing for Interchange Area (Ramp to first signalized intersection)	No	Yes	Yes
	Ramp Storage Capacity (ft)	3700	1850	1500
Community Impacts	Residential Relocations	15	17	5
	Parcels Impacted	13	10	10
	Total ROW Acquisition (ac)	22	20	19
Environmental Impacts	Potential Jurisdictional Wetland Impacts (ac) *	3.65	3.97	4.04
	Potential Jurisdictional Stream/ Ditch Impacts (lf) *	1183	1582	1468
	100 Year Floodplain Impacts (ac)	0.36	0.25	0.37
	Cultural/Historic Resources	No Known Impacts	No Known Impacts	No Known Impacts
	Section 4(f) Resources	No Known Impacts	No Known Impacts	No Known Impacts
	Federally Protected Species	May Affect, but not Likely to Adversely Affect	May Affect, but not Likely to Adversely Affect	May Affect, but not Likely to Adversely Affect
	Potential Hazardous Material Sites	No Known Impacts	No Known Impacts	No Known Impacts
	Total Estimated Project Costs	$ 47,100,000	$ 42,100,000	$ 46,300,000

Noise Impact Analysis

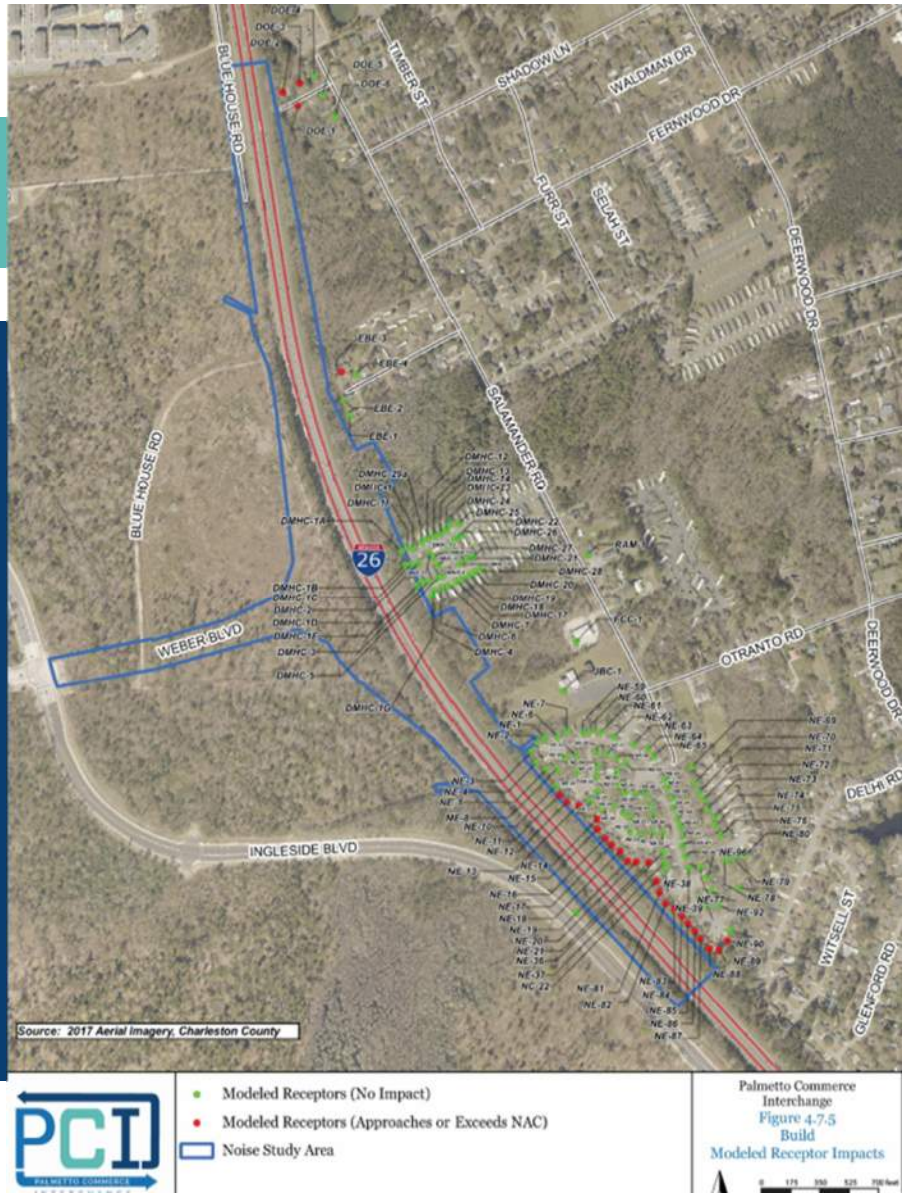
As apart of the Environmental assessment, a noise impact analysis was completed for the PCI in 2019 to look at existing and future noise levels.

An additional noise impact analysis for Northwoods Estates Community was completed in 2020 based of numerous comments from residents during the public involvement process.

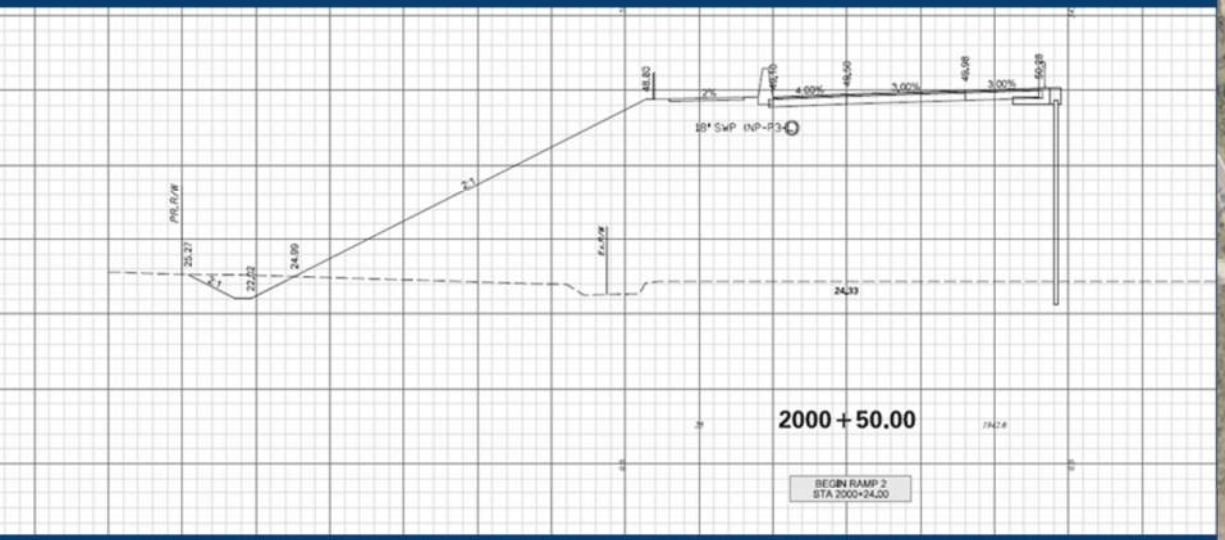
Noise Impact Analysis

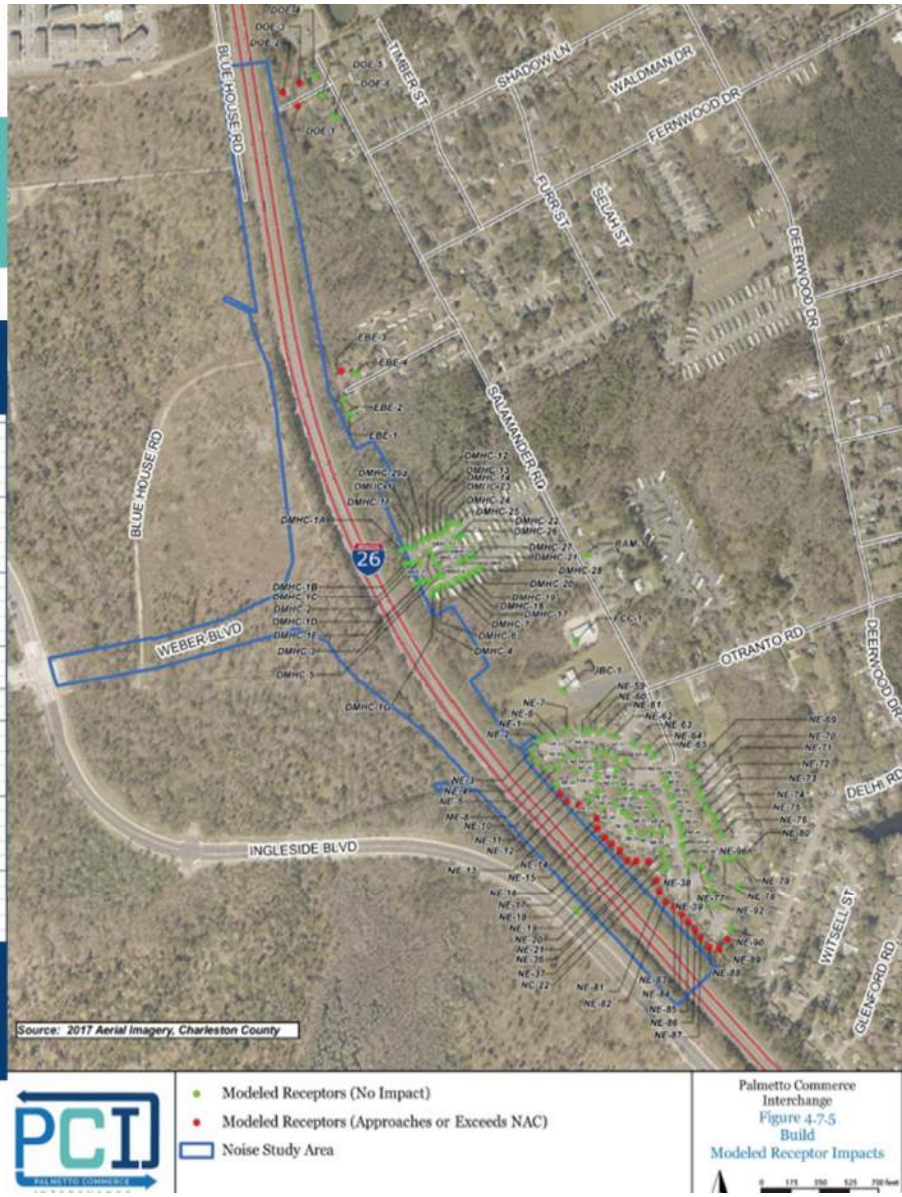
Results:

- Modeled Existing (2020) Noise Levels
  - 54 receivers impacted
- Modeled Future (2040) Noise Levels
  - 26 receivers impacted
- 3 Potential noise barriers analyzed

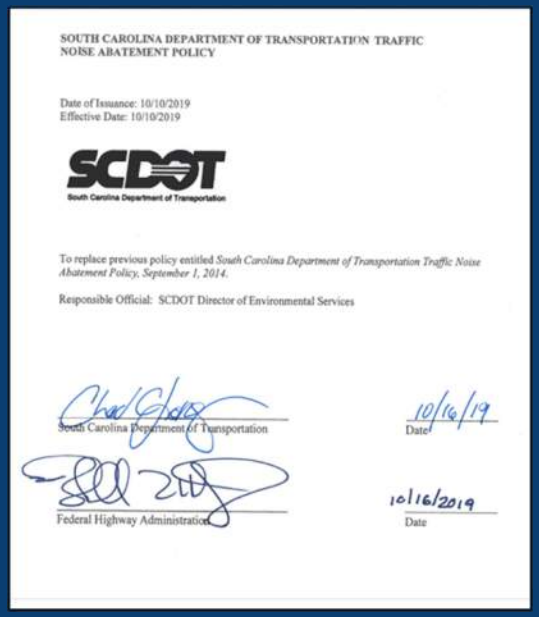


Noise Impact Analysis





Noise Impact Analysis



SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION TRAFFIC NOISE ABATEMENT POLICY

Date of Issuance: 10/10/2019
Effective Date: 10/10/2019

SCDOT
South Carolina Department of Transportation

To replace previous policy entitled *South Carolina Department of Transportation Traffic Noise Abatement Policy, September 1, 2014.*

Responsible Official: SCDOT Director of Environmental Services

South Carolina Department of Transportation — Date: 10/16/19

Federal Highway Administration — Date: 10/16/2019

1. **Feasibility**
   - Acoustic Feasibility
   - Engineering Feasibility
2. **Reasonableness**
   - Noise Reduction Design Goal
   - Cost Effectiveness
   - Viewpoints of Property Owners & Residents of Benefited Receivers

Table 5: Barrier Evaluation Summary								
Barrier	Receiver Number	Acoustically Feasible? (Y/N)	Engineering Feasibility? (Y/N)	Overall Feasible ? (Y/N)	Meets Noise Reduction Goal? (Y/N)	Is Barrier Cost Effective? (Y/N)	Overall Reasonable? (Y/N)	Conclusion
B1	DOE 1 - DOE 6	Y	Y	Y	Y	N	N	Feasible, but not reasonable
B2	EBE 1 – EBE 4	Y	Y	Y	N	--	N	Feasible, but not reasonable
B3	NE 1 – NE 101	Y	Y	Y	Y	N	N	Feasible, but not reasonable

Design Elements

Design Elements

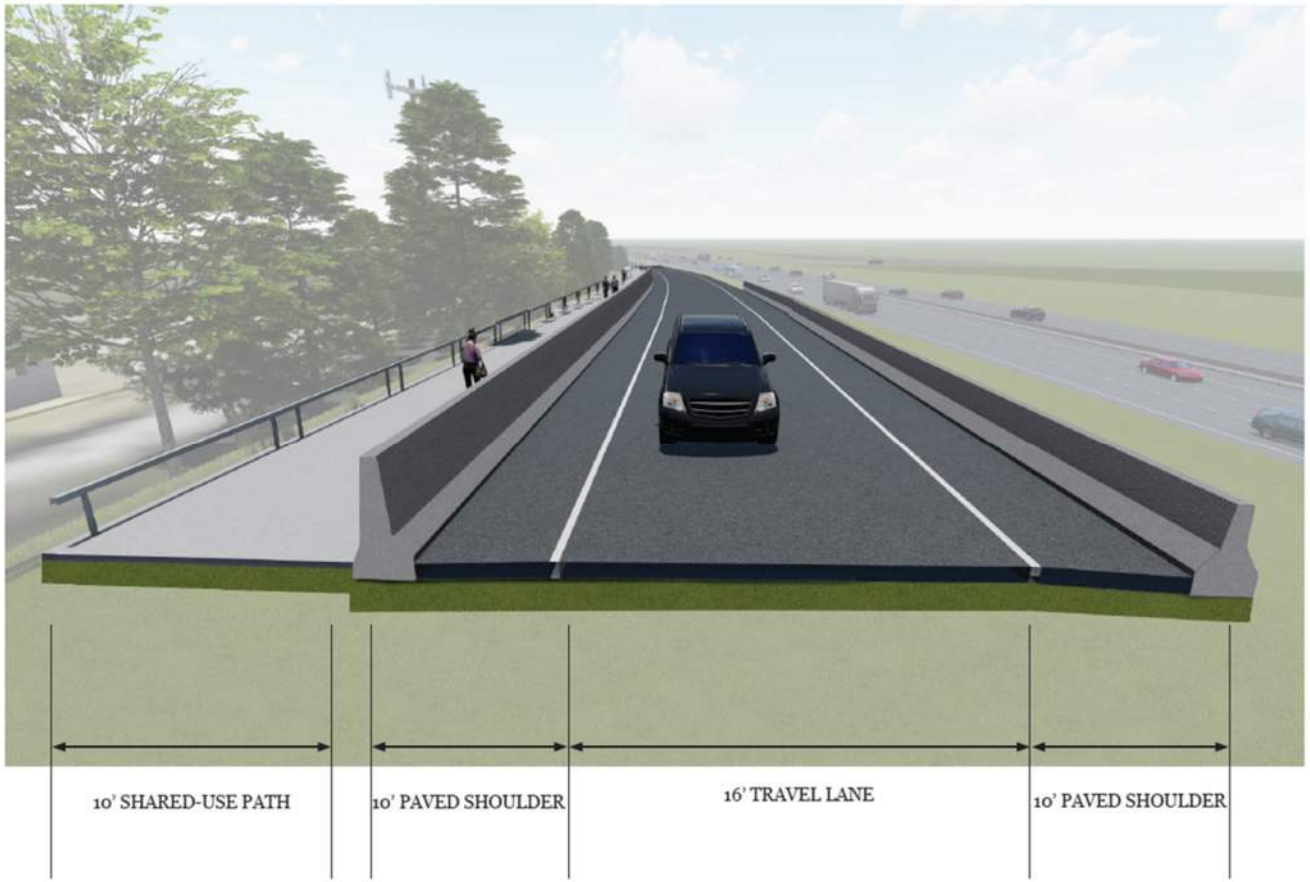
Design Elements

Design Elements

Design Elements

Design Elements

Design Elements



Construction

Construction Overview

Owner:
Charleston County

Engineer of Record:
Davis and Floyd

Contractor:
Banks Construction

CEI Services:
HDR

Construction Contract Value:
$52,363,321

Small Business Enterprises (SBE) Requirement:
12.2%

Notice To Proceed Date:
August 1, 2023

Contract Completion Date:
920 Calendar Days from NTP (February 2026)

Project Status

Land Clearing Operations

Permanent Construction Signage

Erosion Control (Silt Fence)

Project Status

Earthwork Operations

36,198 CY

Borrow Fill

6,962 CY

Unclassified Excavation

19,779 CY

Muck Excavation

Upcoming Construction Activities

Future Updates

NEWS LETTER
for Palmetto Commerce Interchange

December 2023

Project Summary

The Palmetto Commerce Interchange project is located in a rapidly growing area of the I-26 corridor between US 78 (University Boulevard) and Ashley Phosphate Road.

Led by Charleston County, the project will reduce congestion at surrounding intersections, improve access options to existing and planned developments, increase traffic mobility in the I-26/Ashley Phosphate Road area, and provide a more efficient commute.

The completion of the National Environmental Policy Act (NEPA) process determined the County will construct an urban diamond interchange which is a type of highway interchange that uses less space than most freeway interchanges by constructing closely spaced ramp intersections. This alternative will best meet the goals of the project while having the least amount of impact to the surrounding environment.

Construction on this project began on August 1, 2023. The County anticipates the project to be substantially completed early in 2026.

Project Overview

Owner: Charleston County	**Engineer of Record:** Davis and Floyd
Contractor: Banks Construction	**Construction Engineering and Inspection Services:** HDR
Construction Contract Value: $52,363,321	**Notice to Proceed Date:** August 1, 2023
Contract Completion Date: 920 Calendar Days from NTP	**Small Business Enterprises (SBE) Requirement:** 12.2%

Urban Diamond Interchange Design

According to the Federal Highway Administration, (FHWA) the key operational aspect of an Urban Diamond Interchange is signal coordination to ensure efficient progression of traffic and minimum storage of vehicles between the terminals (signal points). Other traffic flow parameters like saturation flow rate, clearance times, and turning speeds in an Urban Diamond Interchange are the same as a conventional at-grade intersection. Typically, an Urban Diamond Interchange requires a four-phase signal phasing with overlapping for both intersections.

The renderings and typical sections to the left show the proposed new interchange and details of the proposed ramps and bridges.

Quarterly Updates:

- Public Meetings
- Website
- Newsletter

Thank you!

Mackenzie Kelley, PMP

Construction Project Manager

Charleston County Public Works

Roads@CharlestonCounty.org

843-202-7617

www.PalmettoCommerceInterchange.com