

Palmetto Commerce Parkway Phase 3  
Crossing Portions of Joint Base Charleston (JBC-CHS)  
Description of Proposed Action and Alternatives (DOPAA)

To: Recipients of Invitation for Consultation:

The attached *“Purpose and Need for Action”* and the *“Description of Proposed Action and Alternatives”* (DOPAA) are to aid in your review of the Palmetto Commerce Parkway Phase 3 Project.

Additional project details may be found in the *“TECHNICAL MEMORANDUM: Traffic Study/Alternatives Analysis/Statement of Work”*.

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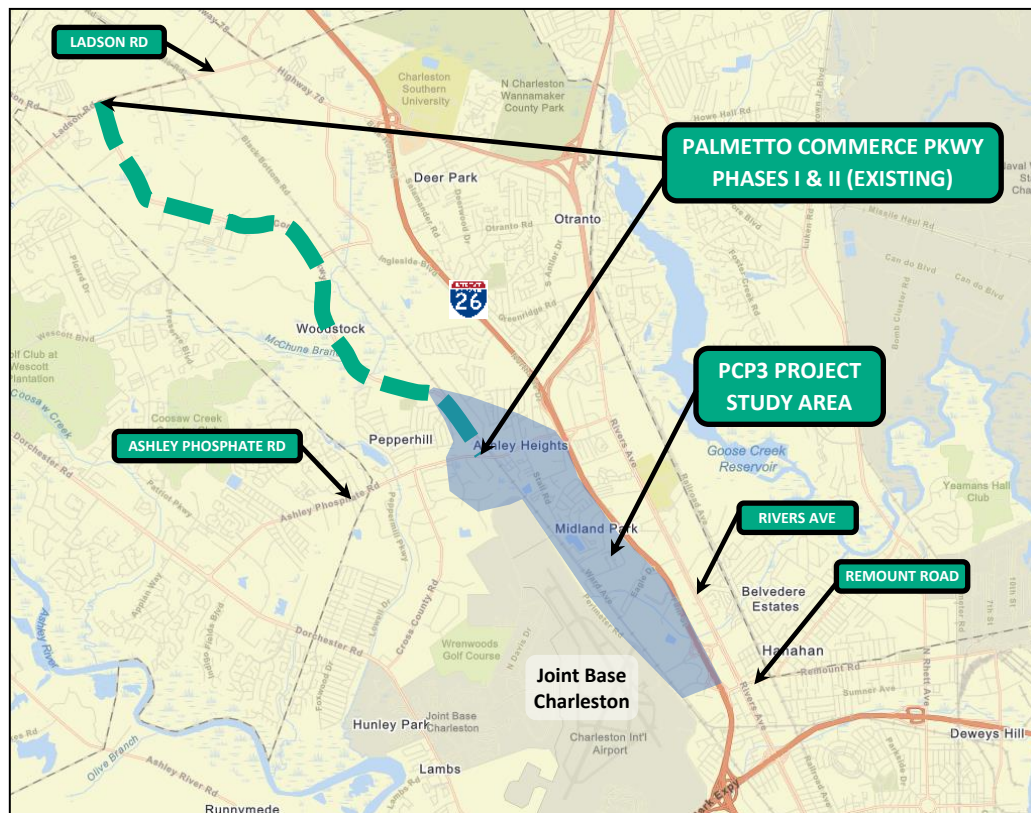
#### 4. PURPOSE AND NEED FOR ACTION

##### 4.1. Purpose of the action

The Palmetto Commerce Parkway Phase III (PCP3) Project is the third and final part of a three-phased roadway corridor initiated by Charleston County. The project is designed to provide improved traffic operations, better opportunities for bicycle and pedestrian use, and enhanced access to commercial and industrial lands in North Charleston. Phase I and II of the Palmetto Commerce Parkway have already been constructed and included a four-lane parkway with landscaped medians, a multiuse (walking and bicycle) path, traffic signals, and lighting.<sup>1</sup> The first two phases provided a connection between Ladson Road and Ashley Phosphate Road.

The PCP3 Project is proposed to continue the roadway south from Ashley Phosphate Road to Remount Road and will provide an alternative route to I-26 and promote better distribution of traffic in the area immediately north of the I-26/ I-526 Interchange. All three phases of the parkway and related improvements will ultimately result in more than 8 miles of new and improved roadway in an area that is undergoing rapid growth and economic expansion. The study area for the PCP3 project is illustrated in **Figure 1**.

*Figure 1: Study Area for Palmetto Commerce Parkway Phase 3*



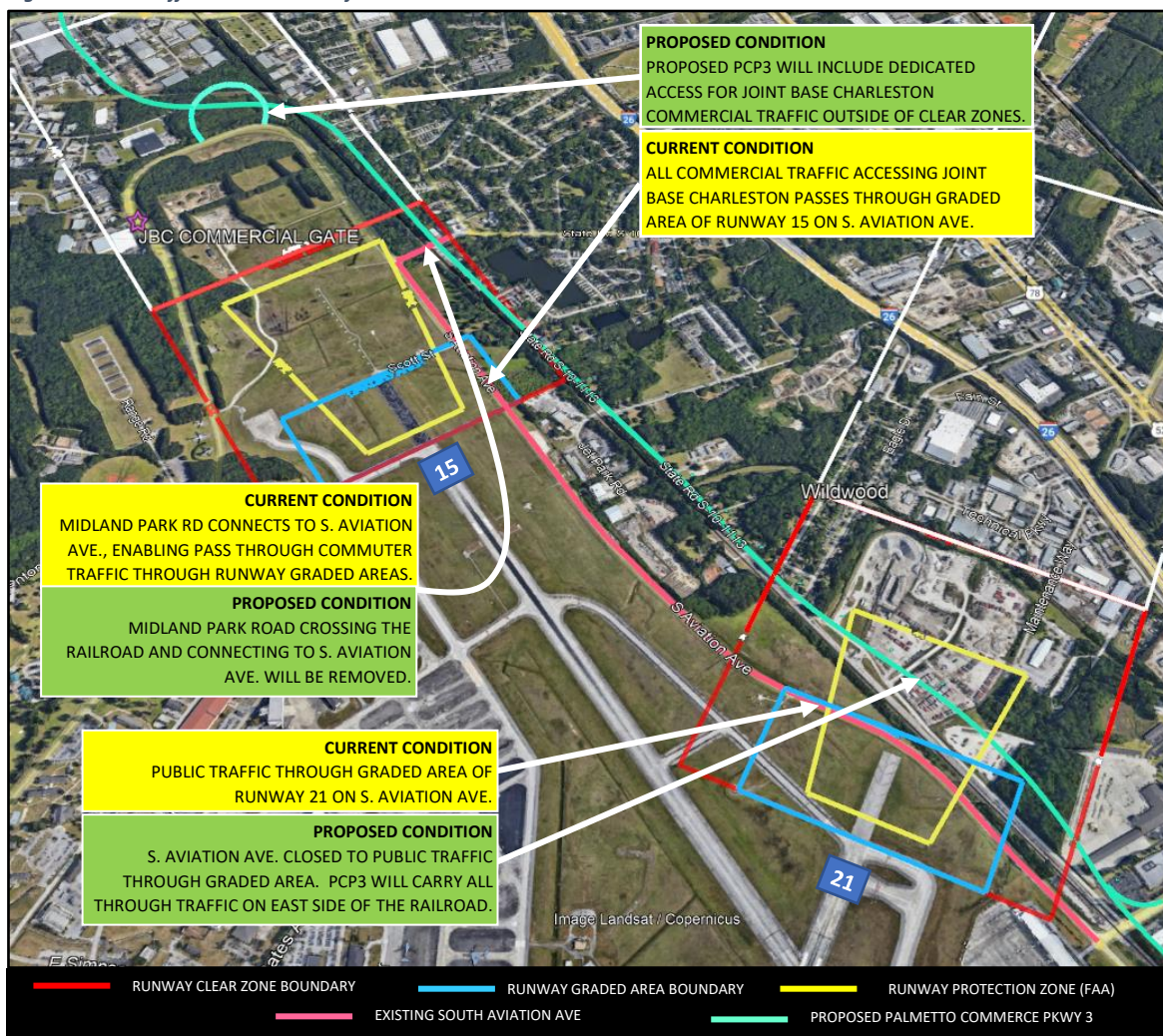
<sup>1</sup> <https://www.charlestoncounty.org/departments/da-transportation/pcp3-pm.php>

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The primary purpose of the project is to develop a roadway connection between Ashley Phosphate Road and Remount Road that will relieve traffic congestion and improve mobility and reliability along parallel and connecting roads such as Dorchester Road, Rivers Avenue, Ashley Phosphate Road and I-26. The project will improve the reliability of the roadway network by providing a four-lane grade separated crossing over the Norfolk Southern right of way, where increased freight traffic is forecast due to a recent expansion of the Port of Charleston.

The project will also reduce the extent of deficiencies within the clear zones and accident potential zones of Runway 15 and Runway 21 at Joint Base Charleston. More specifically, the project will move public traffic off of South Aviation Avenue, which passes through the graded area of both runways, and place it on a roadway that is located on the opposite side of the railroad tracks that run parallel to Runway 15-33. The existing and proposed conditions are illustrated in **Figure 2**.

*Figure 2: PCP3 Traffic and Access Benefits to Joint Base Charleston*



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**4.2. Need for the action**

**4.2.1. Growth in Population and Employment**

The rapid growth and development of the Charleston Region has made it one of the most sought-after areas in the Country. There is an increasing demand for transportation facilities to support existing and projected growth.<sup>2</sup> The population of the Charleston-North Charleston Metropolitan Statistical Area (MSA) grew by 20% between 2010 and 2019. The City of North Charleston experienced an 18% increase in population during the same period.

This transportation area is also of great importance to employment in the region. Commuting patterns on the primary east-west corridors of Dorchester Road, Rivers Avenue and I-26 are dominantly eastbound (toward I-526) in the morning peak hour, and westbound in the afternoon peak hour. There are no plans to add capacity to Rivers Avenue or to I-26 between Ashley Phosphate Avenue and Aviation Avenue. Two of the largest employers in the area, Joint Base Charleston and the Boeing Company, are located adjacent to the project study area.

**4.2.2. Decreased Mobility and Increased Traffic Congestion on Existing Corridors**

The existing road network in the vicinity of the proposed project consists of three major roadway corridors that serve as routes connecting Summerville, Goose Creek and other developments west of US 78 to North Charleston, Charleston, and Mount Pleasant. These three roadways; US Highway 52/Rivers Avenue, Interstate 26, and SC 642/Dorchester Road, are essentially parallel routes along which daily commuter traffic travels.

Interstate 526 serves as a dividing line at the east end of the study area, because a large percentage of the traffic is distributed at this point, either to the West Ashley area of Charleston, further east on the Charleston peninsula, or east on I-526 to Daniel Island and Mount Pleasant. Major connecting arterial roadways collect and distribute traffic between these corridors, and generally include a corridor formed by Ladson Road and US 78, Ashley Phosphate Road, and the US 52 Connector.

Existing traffic conditions within the project area result in significant congestion along I-26, Dorchester Road, Rivers Avenue, Ashley Phosphate Road, I-526, and International Boulevard. **Figure 3** shows existing levels of service (LOS) on freeways and arterial intersections within the project area. Future traffic forecasts were made utilizing the Charleston Area Transportation Study (CHATS) Travel Demand Model developed and maintained by the Berkeley Charleston Dorchester Council of Governments (BCDCOG).

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<sup>2</sup> <http://www.charlestoncountydevelopment.org/data-center/population-data/> Accessed 08/04/2022



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Figure 3: 2015 Level of Service on Regional Arterials in PCP3 Study Area

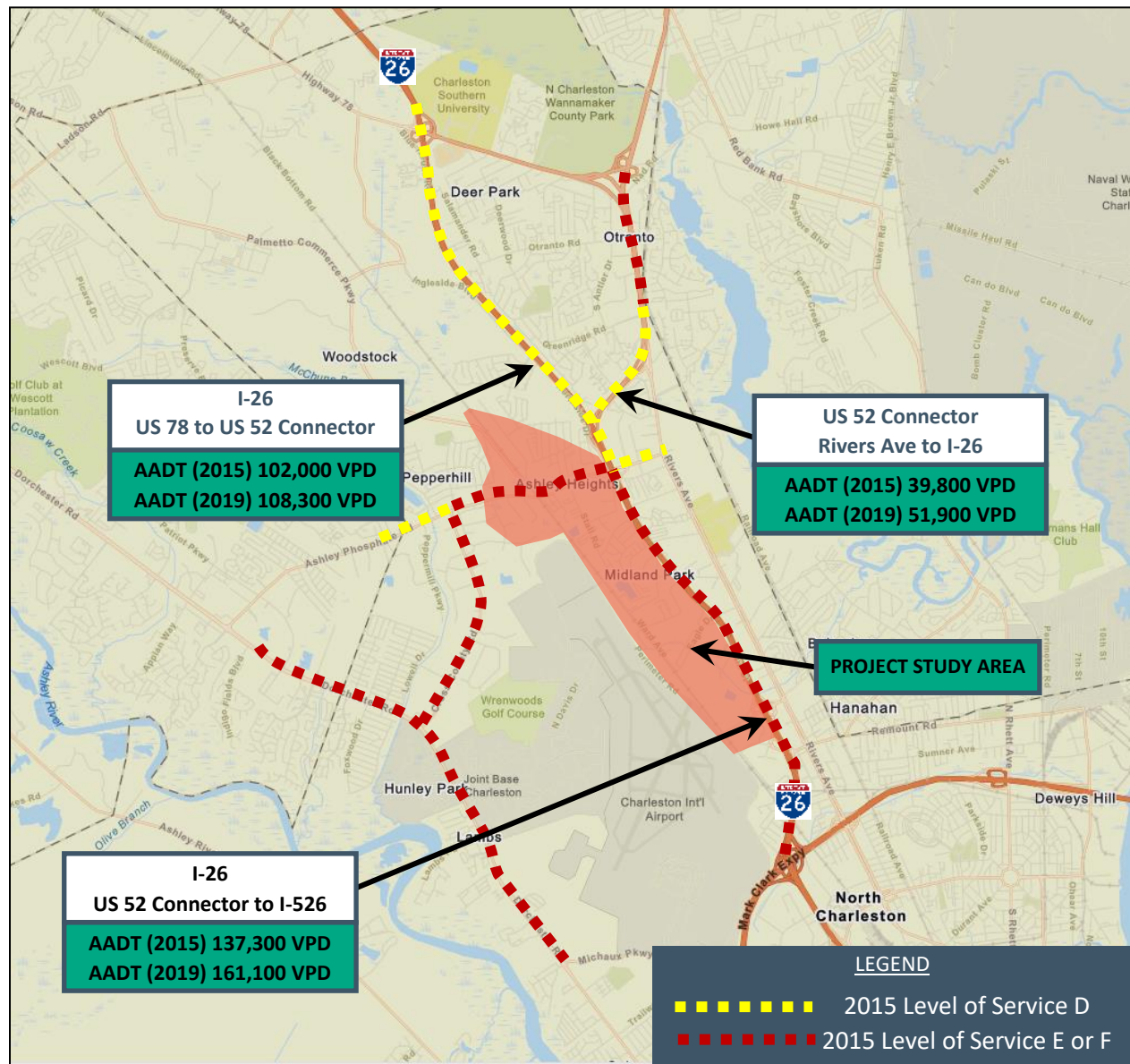
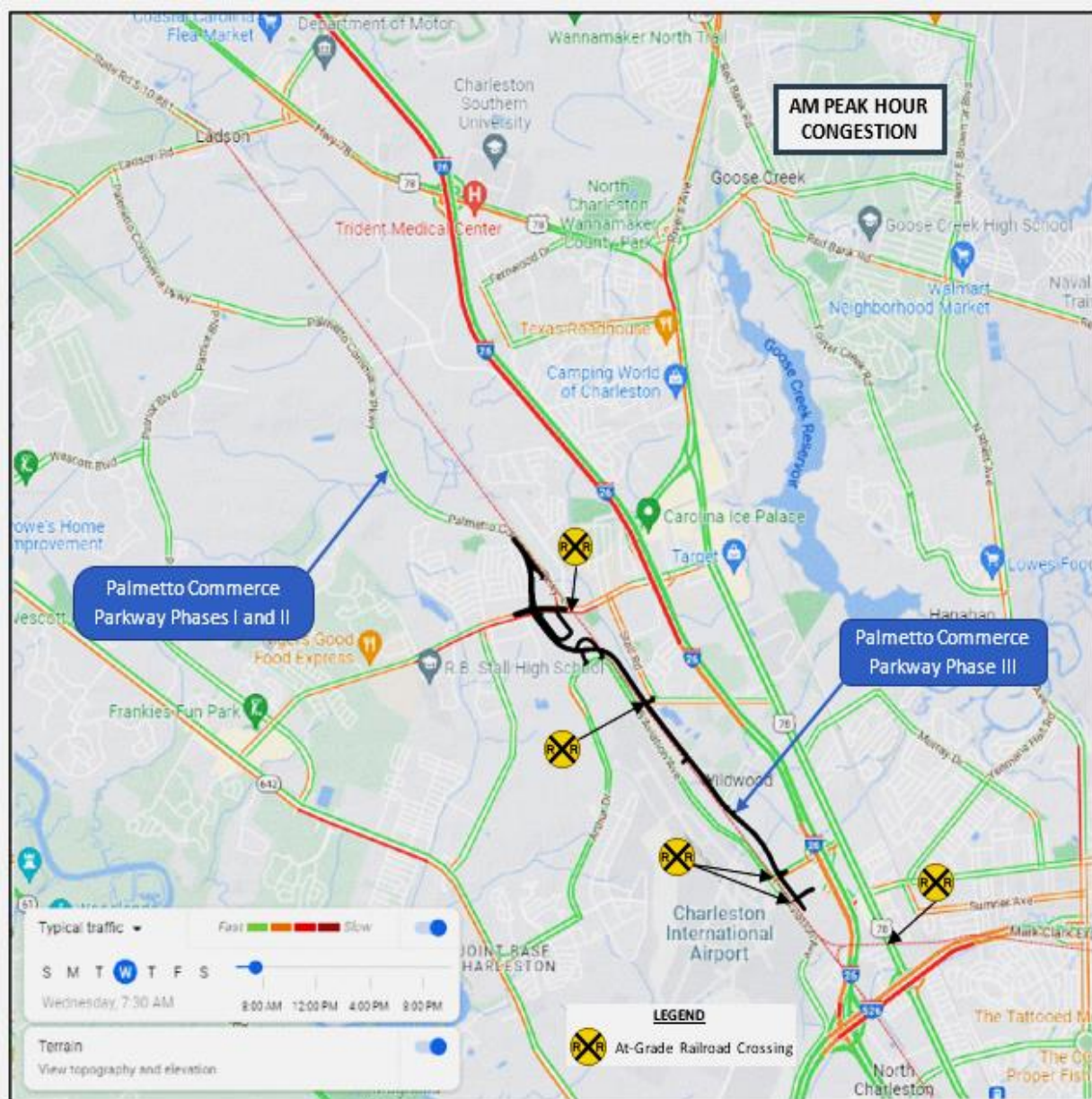


Figure 4a and Figure 4b are screenshots from Google Maps traffic layer showing the typical congestion during the weekday AM Peak Hour and PM Peak Hour, respectively. In these views, levels of congestion are expressed from green (free flowing) to dark red (approaching gridlock).

With rapid growth forecast for the future, completion of another east-west corridor paralleling I-26 will become an even greater need.

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FIGURE 4a: Road Network Bottlenecks and Rail/Roadway Conflicts – AM Peak Hour Congestion

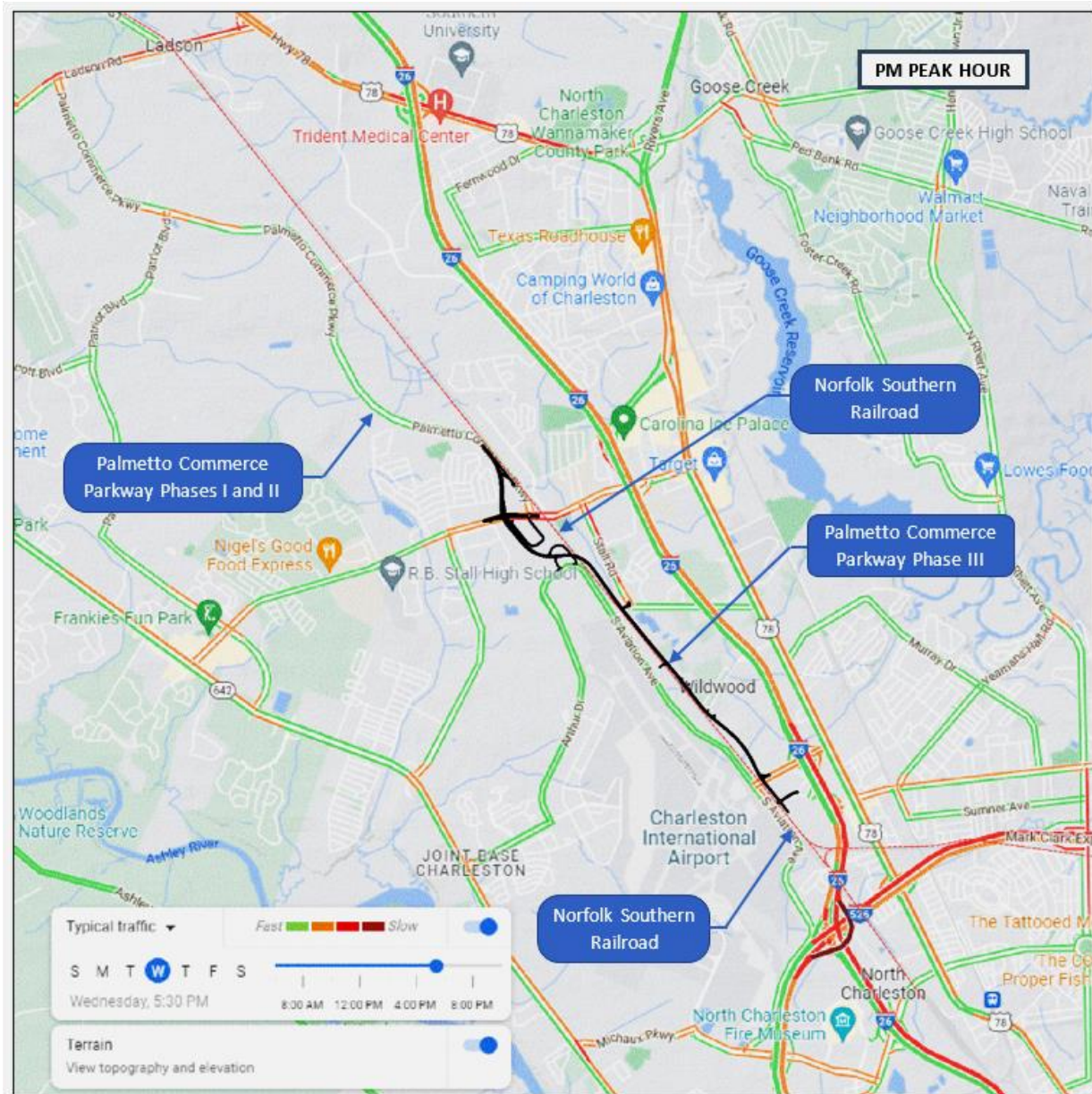


Map Source: Google Maps



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FIGURE 4b: Road Network Bottlenecks and Rail/Roadway Conflicts – PM Peak Hour Congestion



Map Source: Google Maps

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The I-26/I-526 interchange is a major point of congestion in both AM and PM peak hours, and this will be addressed when this interchange is rebuilt as part of the I-526 Lowcountry Corridor Project<sup>3</sup>. A separate congestion point along eastbound I-26 occurs at the point at the Ashley Phosphate on-ramp merge. This condition brings eastbound I-26 to a stop, extending back approximately 10 miles. In the PM peak, traffic is congested in the westbound direction from I-526 to beyond the US 78 interchange.

#### 4.2.3. Safety and Reliability – Increased Railroad Conflicts

Congestion along Ashley Phosphate Road and along West Aviation Avenue between South Aviation Avenue and I-26 grows with the congestion on I-26. This condition is expected to worsen in the future as freight rail traffic on the Norfolk Southern Railroad increases.

Freight rail traffic is expected to increase on Class I railroads in the region due in part to the completion of the Hugh K. Leatherman, Jr. container terminal. That project is expected to increase the capacity of the Port of Charleston by fifty percent (50%). The portion of the increasing freight, particularly containerized freight, that will be shipped by rail is also increasing, and is being facilitated by the construction of a new intermodal container transfer facility, known as the Navy Base Intermodal Facility (NBIF)<sup>4</sup>, which will be operated by Palmetto Railways. An Environmental Impact Statement (EIS) for the NBIF was completed and recently authorized by Record of Decision (ROD) issued by the US Army Corps of Engineers. The NBIF is currently under construction.

The EIS for the NBIF identifies certain existing roadway-railway at-grade intersections that will adversely affect the mobility of roadway users in these key corridors. One of these is the intersection of the Norfolk Southern Railroad and Rivers Avenue, just north of the intersection of Rivers Avenue and Taylor Street. According to rail forecasts produced by Palmetto Railways and reported in the EIS, this crossing will experience four (4) added trains per day by the opening year of the NBIF. By the design year of the NBIF, 2038, the length of these (intermodal) trains is expected to increase and the corresponding delays to traffic on Rivers Avenue will be exacerbated. The delays and traffic queues associated with the increased rail traffic are shown in **Table 1**.

**Table 1: Increased Traffic Delay with NBIF at Rivers Avenue At-Grade Crossing with Norfolk Southern Railroad**

Year	NBIF Condition	Other Trains		ICTF Trains		Max Queue (ft)	Network Delay (sec)	LOS
		Crossings Per Day	Avg Duration Per Crossing (min:sec)	Crossings Per Day	Avg Duration Per Crossing (min:sec)			
2013	No-Build	2.2	3:53	--	--	2125	--	A
2018	No-Build	2.2	4:09	--	--	2300	7.7	A
2018	Build	2.2	4:07	4	5:34	2850	19.7	B
2038	Build	2.1	5:13	4	10:52	>5280	65.9	E

<sup>3</sup> <https://www.526lowcountrycorridor.com/west/>

<sup>4</sup> <https://railroads.dot.gov/environment/environmental-reviews/palmetto-railways-navy-base-intermodal-facility>



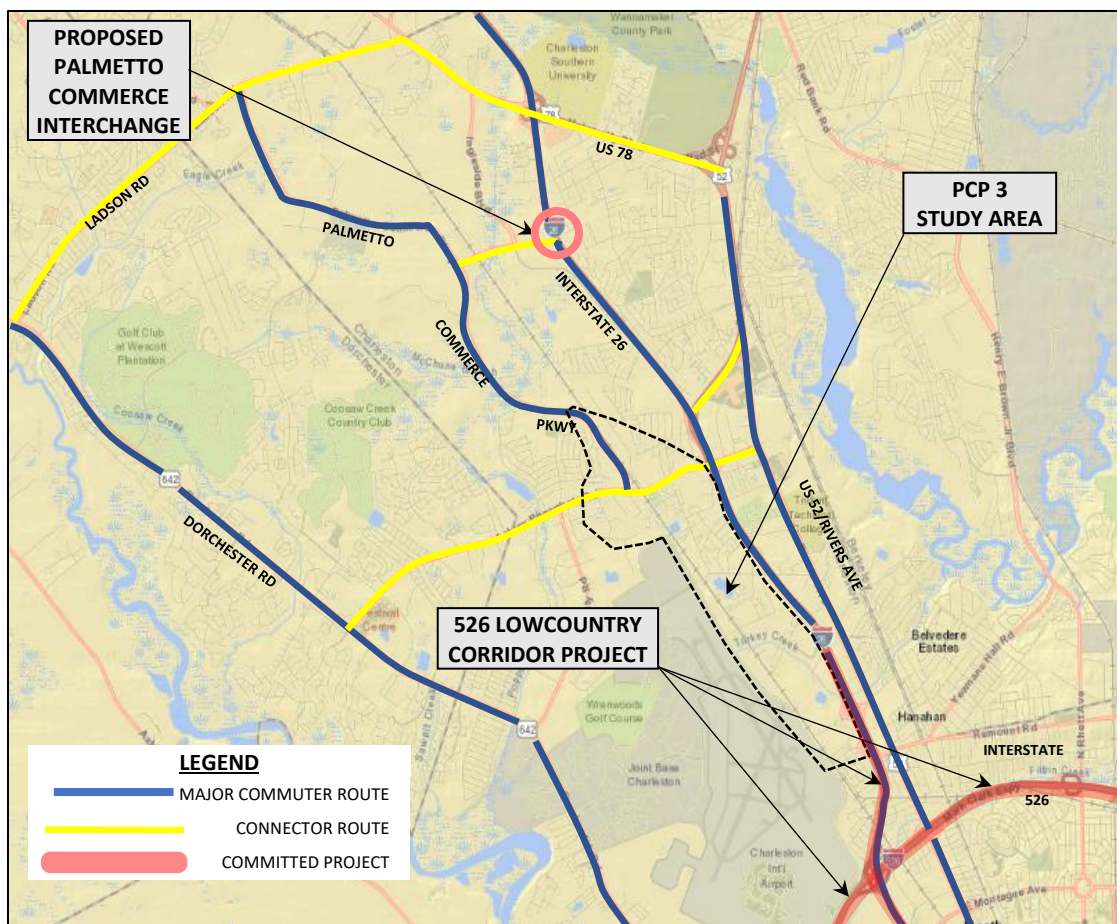
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The ICTF trains referenced in **Table 1** represent four new intermodal trains per day that will cross Rivers Avenue on the Norfolk Southern tracks as a result of the NBIF. These trains will continue on the tracks which turn and parallel South Aviation Avenue, blocking road crossings on Remount Road, West Aviation Avenue, Midland Park Road, and Ashley Phosphate Avenue. These are labeled as at-grade crossings in **Figures 4a** and **4b**.

#### 4.2.4. Consistency with Regional Transportation Plans

The PCP3 project is a vital component of the committed and long-range transportation plan<sup>5</sup>. Currently committed projects include the 526 Lowcountry Corridor Project and the Palmetto Commerce Interchange Project. These projects are highlighted in **Figure 5**. The 526 Lowcountry Corridor Project which will add capacity to Interstate 526 from Virginia Avenue to Paul Cantrell Boulevard. This project will upgrade the system-to-system interchange between I-26 and I-526. The completion of PCP3 was considered a committed project in the development of concepts for the 526 Lowcountry Corridor.

*Figure 5. Committed Projects with Forecast including PCP3*



<sup>5</sup> <https://www.bcdco.com/transportation/planning/long-range-transportation-plan/>

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The completion of the connection between Ashley Phosphate Road and Remount Road with a corridor parallel to I-26 was considered in the development of the interchange concepts at I-26 and West Aviation Avenue, I-26 and Remount Road, and I-26 and I-526. The capacity of the collector-distributor roads serving the West Aviation and Remount interchanges on I-26 will have added capacity to accept the traffic from the PCP3 project and convey it through the system-to-system interchange at I-526.

The Palmetto Commerce Interchange<sup>6</sup> is a new access point to I-26, between Ashley Phosphate Road and US 78. This project is scheduled to begin construction in 2020. The new interchange will provide an access point to I-26 from a growing commercial and residential corridor of Ingleside Boulevard. The PCP3 project was included in the travel demand model network used to forecast the future traffic for this new interchange, and its acceptable operations are dependent on the completion of PCP3.

#### **4.3. Related EISs/EAs and other documents**

An Environmental Assessment is being prepared for the PCP3 project. The PCP3 project references the following as committed projects that contribute to either its purpose, need, or both:

- A. I-526 Lowcountry Corridor West: Consists of the replacement of the I-26/I-526 system interchange and widening of I-526 between Virginia Avenue and Paul Cantrell Boulevard. The Final EIS and Record of Decision can be found at <https://www.526lowcountrycorridor.com/west/feis-rod/>. The public input period has closed and a Final EIS has since been submitted and is under review. The PCP3 project is coordinated with the design and traffic operations of the new system interchange.
- B. Palmetto Commerce Interchange: Consists of a new interchange on I-26 approximately one mile south of US 78 at Weber Boulevard. The approved EA can be found at [https://static1.squarespace.com/static/59c01e98a803bb8494cef12c/t/5cfec5ef7c92bf0001116b84/1560200697998/PCI+EA\\_compressed.pdf](https://static1.squarespace.com/static/59c01e98a803bb8494cef12c/t/5cfec5ef7c92bf0001116b84/1560200697998/PCI+EA_compressed.pdf)
- C. Navy Base Intermodal Facility (NBIF): Consists of an intermodal transfer facility to enable the movement of more containerized freight from the Port of Charleston to be shipped by rail. The project will result in more daily intermodal trains, up to 2 miles in length, using the tracks adjacent to Joint Base Charleston, crossing Ashley Phosphate Road, Midland Park Road, West Aviation Avenue, and Remount Road. The Final EIS can be found at <https://palmettorailwaysintermodal.com/eis/>

#### **4.4. Benefits to Joint Base Charleston**

In addition to the removal of public traffic from South Aviation Avenue as described above in paragraph 4.1 and illustrated in **Figure 2**, PCP3 project will benefit Joint Base Charleston in the following ways.

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<sup>6</sup> <https://www.palmettocommerceinterchange.com/>



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- A. Improved Access: A new grade separated interchange will be constructed over Ashley Phosphate Road, relieving congestion that currently exists as a result of an over-capacity at-grade intersection. Additionally, dedicated connector roads will provide exclusive access between PCP3 and South Aviation Avenue/Arthur Drive for traffic entering the base at the commercial gate. These improvements will provide more direct and efficient access from Interstate 26 and Joint Base Charleston for commercial vehicles. The proposed JBC commercial gate ingress/egress plan is shown in **Figure 5**.

*Figure 5. Proposed Access to/from JBC Commercial Gate from PCP3*





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- B. Removal of Incompatible Land Uses: **Table 2** provides an estimate of the reduction in incompatible land uses by zone, expressed in dwellings or inhabitants removed, or employees removed in commercial or industrial areas. These reflect current land use of developed parcels as well as potential land use based on zoning of undeveloped parcels. The parcels are located on the east side of the Norfolk Southern Railroad, or north of the northern boundary of Joint Base Charleston. These changes in land use or potential land use will occur by virtue of the right of way acquisition necessary for the construction of PCP3.

*Table 2: Incompatible Land Uses to be Removed from Runway Safety Areas*

Runway	Zone	Land Area Removed (acres)	Dwellings Removed	Inhabitants Removed	Building Area <sup>a</sup> Removed (sq. ft.)	Employees Removed
15	APZ 1	33.5	47	118.4	467,261	454.1
15	APZ 2	14.4	0	0	251,321	244.2
15	CZ	2.4	25	63.5	5,137	5.0
21	CZ	0.7	3	7.6	0	0.0
<b>Totals</b>		<b>51.0</b>	<b>74.6</b>	<b>189.5</b>	<b>723,719</b>	<b>703.3</b>

<sup>a</sup> Building area was established using the setbacks (front, rear, side yards) of the actual zoning classification. Building coverage of 40% of the parcel was used, based on the highest current coverage of the affected parcels along PCP3.

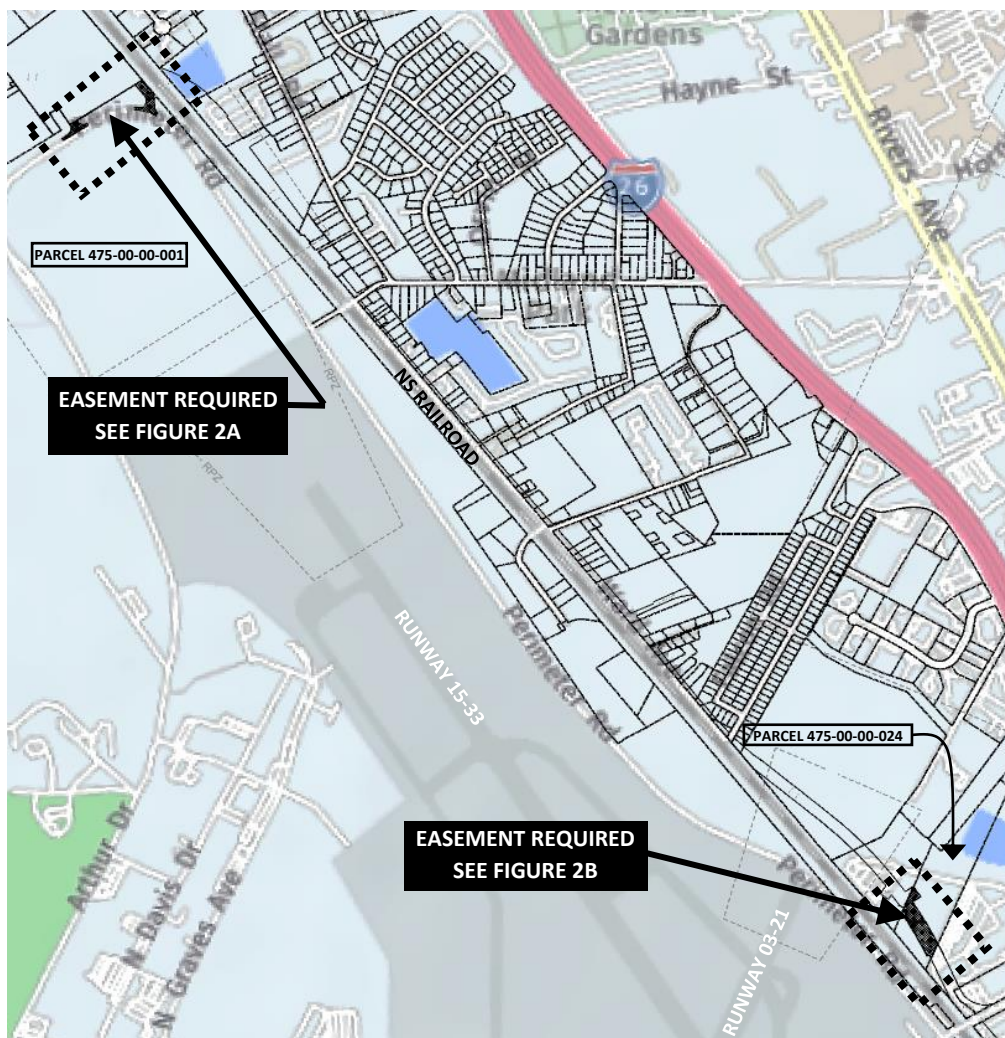
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**5. DESCRIPTION OF PROPOSED ACTION (DOPAA)**

**5.1. Description of Proposed Action (in brief)**

Palmetto Commerce Parkway Phase III (PCP3), a four-lane divided roadway, will extend from north of Ashley Phosphate Road, connecting to the existing Palmetto Commerce Parkway, and terminate at Remount Road. The project will include work on Joint Base Charleston. There are two general locations where work will take place on Joint Base Charleston. Both are shown on the location map **Figure 1**. One location is at the north end of the airfield, where two roadway connections are planned to connect the proposed PCP3 to Perimeter Road for access to the JBC commercial gate. This is on tract having a Parcel ID No. 475-00-00-001, shown in more detail on **Figure 2a**.

*Figure 1: Project Actions on Joint Base Charleston for Palmetto Commerce Parkway Phase 3*



The other is on a tract owned by the US Air Force on the east side of the Norfolk Southern Railroad with a Parcel ID No 475-00-00-024 and shown in more detail on **Figure 2b**.

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*Figure 2a: Work Areas on Parcel No. 475-00-00-006*



The connections to Perimeter Drive shown in **Figure 2a** will each consist of a two-way, two-lane at-grade roadway. Excavation is expected to be no more than 2 feet in depth, and the depth of fill above existing ground should be no more than 3 feet. These roadways will be paved up to the edge of Perimeter Drive and the geometry will accommodate turning movements by a typical interstate tractor-trailer truck having an AASHTO designation of WB-67.

*Figure 2b: Work Areas on Parcel No. 475-00-00-024*



The construction on the Air Force owned tract shown in **Figure 2b** across the clear zone of Runway 21 will be a two-way, four-lane roadway with a non-traversable (landscaped) median. This will be an at-grade roadway. Median landscaping will be limited to grasses and potentially low shrubs. No trees will be planted across the clear zone. The construction will require excavation to depths no greater than 3 feet, and fill heights above existing ground no greater than 3 feet.

The project will be subject to permitting by the US Army

Corps of Engineers, South Carolina Department of Health and Environmental Control, the City of North Charleston and Charleston County.



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**5.2. Anticipated Environmental Issues**

General impacts resulting from the project are described as follows:

**5.2.1. Physical**

The project will include the acquisition of property, clearing, grading, storm drainage improvements roadway paving, curbs sidewalks, landscaping, lighting, pavement marking, signing and traffic signals.

**5.2.2. Biological**

Pursuant to Section 7 of the Endangered Species Act, a field biological survey for the proposed project was conducted within the 1,503-acre study area that extends from approximately 4,500 feet north of Ashley Phosphate Road to 500 feet south of Remount Road, and generally bound by South Aviation Avenue on the west and Interstate 26 on the east. A current list of species that are federally endangered, threatened, proposed threatened, and/or federally protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act was obtained from the US Fish and Wildlife Service for Charleston County. There was no suitable habitat found for any of the species on the list, and therefore, the project will have no effect on these species. A copy of the draft biological survey report is attached.

**5.2.3. Economic**

A detailed study of economic impacts of the project has not been completed. The reduction of congestion and delay for commuters can be monetized and will be determined as the environmental document is completed for the project.

**5.2.4. Social**

The social impacts of the project have not been fully identified at the time of this request. Public outreach activities have been suspended until the proponent can confirm that an easement will be granted across the Air Force controlled property for the construction of the project. Since public input is required to determine the full extent of social impacts, the range of social impacts will follow.

**5.2.5. Environmental Justice**

Each of the census block groups within the project study area exceeds the threshold to be considered an Environmental Justice (EJ) area based on either sizable minority population and/or low-income population when compared to the county and state levels. EJ impacts will be fully assessed after the appropriate level of public outreach is completed.

**5.2.6. Cultural Resources**

The parcel shown in **Figure 2a** with Charleston County Parcel ID No. 475-00-00-024 has been identified as the Andre Michaux Site (38CH1022). A Phase III data recovery has been requested by the State Historical Preservation Office (SHPO) in the event the roadway impacts identified resources. A copy of the cultural resources report prepared by Brockington Associates, and a letter responding to the report from SHPO, are attached.

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### 5.3. Design, Evaluation, and Selection Criteria

#### 5.3.1. Mission Requirements

The proposal provides an important corridor in the regional transportation network and will relieve congestion on I-26, Rivers Avenue, Ashley Phosphate Road and other roadways. The project removes public traffic from South Aviation Avenue, which passes through the graded areas of Runways 15 and 21 at Joint Base Charleston.

#### 5.3.2. Environmental Standards

Charleston County anticipates that the federal lead agency for the overall PCP3 project will be the US Army Corps of Engineers (USACOE), by virtue of the perceived requirement for an individual permit under Section 404 of the Clean Water Act. Other agencies include the City of North Charleston and Charleston County (MS4 / Land Disturbance) and South Carolina Department of Health and Environmental Control (SCDHEC). The County is conducting environmental studies and preparing environmental documentation that follow the framework of an Environmental Assessment. When the documentation is submitted to the USACOE, the required documentation and environmental standards will be determined.

### 5.4. Description of Alternatives

#### 5.4.1. No-action alternative

The *Technical Memorandum: Traffic Study / Alternatives Analysis / Statement of Work* dated June 2022 (hereinafter called "SOW") was prepared for Charleston County by Stantec Consulting Inc. and provides a comparison of no-build and build conditions. Reference the following in the SOW regarding no-build conditions, specifically the effects on Joint Base Charleston:

**SOW Section 3.1:** Comparison of Vehicle Occupancy in Runway Clear Zones

This section describes the number of vehicles in the AM and PM peak periods on South Aviation Avenue (no-build) compared to the traffic on PCP3 (build).

**SOW Section 3.2:** No-Build vs Build Magnitude and Position of Traffic Within Clear Zones.

This section provides a weighted position of traffic volumes, relative to Runways 15 and 21, illustrating corresponding positions of aircraft accidents in clear zones based on studies presented in the California Airport Land Use Planning Handbook. The studies used accident data from the National Transportation Safety Board (NTSB) to predict the distribution of accidents by the distance from the runway end.

This section also illustrates the comparative vertical clearance over South Aviation and over the proposed PCP3, relative to the 50:1 approach-departure slope of Runway 21. This is also shown in Figure 3. Note the relative improvement in vertical clearance over the public traffic when carried on PCP3 (build condition) compared to the current condition on South Aviation Avenue (no-build condition).

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**5.4.2. Proposed action**

The proposed action includes a two-way, four-lane divided roadway extending Palmetto Commerce Parkway over Ashley Phosphate Road by way of a grade-separated interchange, turning east and crossing over the Norfolk Southern railroad by way of an overpass, then paralleling and bordering the railroad right of way southeasterly terminating at Remount Road. The project accomplishes the following:

- Moves public traffic out of the graded areas of Runways 15 and 21.
- Improves reliability and travel time for commuters given the significant increases in intermodal freight rail traffic on the Norfolk Southern Railroad. This includes the crossing at Ashley Phosphate Road, which currently carries over 70,000 vehicles per day between this railroad and Interstate 26.
- Improves safety by eliminating two at-grade highway-railroad crossings; one at Midland Park Road, and the other at West Aviation Avenue.
- Improves access between I-26, I-526 and the commercial gate at Joint Base Charleston.
- The PCP3 project considers the I-526 Lowcountry Corridor project a committed project. This is justified, since as of the date of this document, the Federal Highway Administration has issued a Record of Decision in response to the approval of the project's Environmental Impact Statement. The project is funded. The proposed PCP3 alignment is well-coordinated with that project, as the collector-distributor roads along I-26 between West Aviation Avenue and I-526 will be widened to accept the additional traffic carried by PCP3.
- The *Joint Base Charleston and North Auxiliary Airfield Air Installations Compatibility Use Zones (AICUZ) Study*, March 2019, indicates the following in Table A-1. Land Use Compatibility Recommendations in APZs and CZs:
  - Railroads – Not a compatible land use.
  - Highway and street right of way – AICUZ states that “Roads within the graded portion of the Clear Zone are prohibited. All roads within the Clear Zone are discouraged, but if required, they should be no wider than two lanes and the rights of way should be fenced (frangible) and not include sidewalks or bicycle trails.”

The wording of these statements indicates that removing traffic/roadways from the graded area would be a higher priority than limiting a roadway that is outside of the graded area to two lanes.

**5.4.3. Another reasonable action alternative**

A wide range of preliminary alternatives was developed and screened. Sixteen (16) different alignments were evaluated using the Charleston Area Transportation Study (CHATS) regional travel demand model developed by the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG).

The alternative screening process is detailed in Appendix 1 of the SOW.



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**SOW Appendix 1 - Section 1.0: Corridor Alignment Alternatives**

This section introduces the screening criteria necessary to be met in order to satisfy the project's purpose and need. Tier 1 screening determined the relative ability of each alignment to attract traffic from the corridors intended to be relieved by the new roadway. Tier 2 evaluated intersections/junctions with key connecting routes to determine the relative feasibility of achieving a reasonable level of service.

**SOW Appendix 1 – Section 2.0: Alternative Alignment Screening**

The results of the screening process are tabulated in this section, and illustrations of the 16 alignments are provided.

The modeling and screening processes illustrate that alignments that diverged away from the railroad and toward I-26 lost attractiveness. Midland Park Road and Eagle Drive that cross under I-26 pulled traffic from the proposed alignments that veered closer to I-26, and as a result produced an underutilized facility that failed to relieve congestion on Rivers Avenue. This would include alignments that attempted to avoid the runway clear zones in their entirety. Note that the clear zone of Runway 21 extends very close to the right of way of I-26. These alignments (Alignments A, B, F, G, H, I, J, and K) intersect West Aviation Avenue too close to its interchange with I-26 and West Aviation Avenue to provide a functional intersection.

The results of the travel demand modeling conclude that there are no reasonable alternatives that completely avoid the runway clear zones.