

Introduction

The third and final phase of the Regional Connectors Study (RCS) will develop, evaluate and recommend a preferred alternative of transportation improvements to enhance connectivity between the Peninsula and Southside of Hampton Roads. Multiple study efforts over the last two decades have undertaken similar charges. It is a mandated component of the RCS to consider those roadway segments not selected for funding from the 2016 Hampton Roads Crossing Study SEIS – Alternatives Technical Report (2016 HRCS)¹. The following paragraphs describe the useful information on those mandated segments gleaned from the SEIS reports.

Mandated Segments the 2016 HRCS SEIS

The 2016 HRCS looked at four Build Alternatives that were comprised of numerous smaller sub-segments (Figure 1, Page 2). The majority of those sub-segments comprise the mandated segments to be considered in the RCS. Improvements along the I-64 corridor (Segments 8 and 9) were identified in the 2016 HRCS and subsequently funded and programmed for construction and expected to be completed in 2025. Thus, no additional improvements along the I-64 corridor between I-664 (in Hampton) and I-564 (in Norfolk) are mandated to be considered in the RCS. The mandated segments for this study are:

- I-664
- I-664 Connector
- I-564 Connector
- VA 164
- VA 164 Connector

Summary of Alignment Segments

The Build Alternatives from the 2016 HRCS were composed of the alignment segments listed in the table below. These numbers correspond to the alignment segments shown in Figure 1 an extracted figure from the 2016 HRCS SEIS. The mandated segment of I-664 is comprised of sub-segments 1-7. Sub-segments 10, 11, 13 and 14 are the I-564 Connector, I-664 Connector, VA 164 Connector and VA 164, respectively. Sub-segment 12 is the interchange between the I-564, I-664 and VA 164 Connectors. This was separated out due to the difference combinations of segments in the 2016 HRCS.

Number	2016 HRCS SEIS Segment
1*	I-664 from US 58 (Bowers Hill) to I-264
2*	I-664 from VA 164 to US 58 (Bowers Hill)
3*	I-664 and VA 164 Interchange
4*	I-664 from I-664 Connector to VA 164

¹ Virginia Department of Transportation, *Hampton Roads Crossing Study SEIS – Alternatives Technical Report*, (2016)

https://www.hrbtexpansion.org/documents/201608/finaltechnicalreports/alternatives_technical_report.pdf

**REGIONAL
CONNECTORS STUDY | Summary of Identified Preliminary Alternatives**

5*	I-664 from Terminal Avenue Interchange to I-664 Connector
6*	I-664 Terminal Avenue Interchange
7*	I-664 from I-64 to Terminal Avenue Interchange
10	I-564 and I-564 Connector
11	I-664 Connector including I-664 Interchange
12	I-564 Connector, I-664 Connector, and VA 164 Connector Interchange
13	VA 164 Connector
14	VA 164

*Segments 1–7 from the 2016 HRCS SEIS comprise the I-664 segment within the RCS study



Figure 1

I-664 (2016 HRCS SEIS Segments 1-7)

2016 HRCS SEIS Segment 1: I-664 from US 58 (Bowers Hill) to I-264

One lane of widening was proposed in each direction in this segment. The typical section in the segment would have the following characteristics:

- 12-foot travel lanes
- 12-foot outside shoulders
- 14-foot inside shoulders, plus guardrail, widened from 3 feet
- Up to 23 feet of inside widening on both sides of the highway that extends into the 66-foot grass median

2016 HRCS SEIS Segment 2: I-664 from VA 164 to US 58 (Bowers Hill)

This segment proposed widening of one lane in each direction. The typical section would have the following characteristics:

- 12-foot travel lanes
- 12-foot outside shoulders
- 14-foot inside shoulders, plus a guardrail, widened from 3 feet
- Up to 25 feet of inside widening on both sides of the highway that extends into the 66-foot grass median

2016 HRCS SEIS Segment 3: I-664 and VA 164 Interchange

The existing loop ramp at northbound I-664 to westbound VA 164 and westbound VA 164 to southbound I-664 would be replaced with directional flyover ramps. These directional ramps would include 16-foot wide travel lanes, 8-foot paved right shoulders, and 4-foot paved left shoulders. At the I-664 and VA 164 interchange area, the widening would transition from two lanes to one lane in each direction.

2016 HRCS SEIS Segment 4: I-664 from I-664 Connector to VA 164

Improvements along this segment included two lanes of widening in each direction along with modifications to allow it to tie into the Monitor-Merrimac Memorial Bridge Tunnel (MMMBT). A new bridge west of the existing bridges would be constructed to accommodate four new southbound travel lanes. The existing southbound approach bridge would be converted for northbound traffic to provide the four northbound lanes. A typical section here would have the following characteristics:

- 12-foot travel lanes
- 14-foot outside shoulders
- Both the northbound and southbound directions would be separated by concrete barriers
- 12-foot inside shoulder, widened from 8 feet (14 feet for bridge sections)

- Up to 25 feet of outside pavement widening
- Widening that extends into the existing 50-foot grass median

2016 HRCS SEIS Segment 5: I-664 from Terminal Avenue Interchange to I-664 Connector

Two configurations were proposed for this segment of I-664. One proposed widening this segment to include four general purpose and two transit-only lanes, one in each direction. The other proposed four new general-purpose lanes, but without the transit only lanes. In both cases, the four new general-purpose lanes would serve southbound traffic while existing southbound lanes would be converted to serve northbound traffic. The transit-only lanes would also require new facilities. A new tunnel adjacent to the MMMBT would be required.

2016 HRCS SEIS Segment 6: Terminal Avenue Interchange

Two configurations were proposed for this segment of I-664. The first proposed widening this segment by two lanes in each direction—one general-purpose lane and one transit lane. The northbound widening would be accounted for by existing southbound lanes at the Terminal Avenue interchange. The second proposed widening consisted of only one general purpose lane in each direction. Currently there are six general-purpose lanes in this section of I-664.

Since the mainline travel lanes are elevated on structure, the southbound roadway would separate from the northbound roadway and transition to the location of the new tunnel portal on new roadway to be located west of the existing Blue Night Energy Partners fuel tank facility.

2016 HRCS SEIS Segment 7: I-664 from I-64 to Terminal Avenue Interchange

Two typical sections were proposed for this segment with the first being to widen by two lanes in each direction—one travel lane and one dedicated transit lane.

A typical section here would have the following characteristics:

- 12-foot travel lane
- 12-foot inside shoulder
- 14-foot outside shoulder
- Concrete barriers between eastbound and westbound lanes
- The total pavement widening to the outside on both sides of the highway would vary from 25 feet to 80 feet

At Exit 5 – Warwick Boulevard/34th Street/35th Street and Exit 6 – 26th Street/27th Street, the roadway widening would be shifted east to reduce impacts. The northbound I-664 off-ramp would be reconstructed with a larger radius to accommodate the widened roadway section. This would cause the intersection of 35th and Jefferson Avenue to move one block south to 34th Street and Jefferson Avenue.

The second proposed typical section included only widening one lane in each direction. The southbound merge lane at the I-64 interchange would be converted to an additional lane, while in the northbound direction, four lanes would continue to the I-64 interchange. The total outside pavement widening would range from 25 to 68 feet on both sides of the highway.

Improvements at Exit 2 – Powhatan Parkway; Exit 3 – Aberdeen Road; and Exit 4 – Chestnut Street would be limited to ramp gore adjustments. At Exit 5 – Warwick Boulevard/34th Street/35th Street and Exit 6 – 26th Street/27th Street the roadway widening would be shifted east to reduce impacts.

I-564 and I-564 Connector (2016 HRCS SEIS Segment 10)

Like some portions of I-664, two typical sections were proposed for the I-564 Connector. Both included a new roadway segment with two lanes in each direction. The travel lanes would be 12 feet wide and have 12-foot shoulders. However, the difference between the two is the inclusion of a dedicated transit lane in each direction.

This segment connects to the soon to be completed I-564 Intermodal Connector, where a single-point urban diamond intersection (SPUI) would provide access to the Naval Station Norfolk and the Norfolk International Terminal (NIT). All traffic exiting these facilities would be able to travel eastbound or westbound on the I-564 Connector.

The mainline of the I-564 Connector would cross over the entrance to NAVTSA Norfolk, NIT and Hampton Boulevard on structure. The alignment for this segment would be within the median of the I-564 Intermodal Connector and merge into the Intermodal Connector east of the SPUI interchange. The transit lanes would continue to I-564 and merge into existing HOV lanes.

I-664 Connector including I-664 Interchange (2016 HRCS SEIS Segment 11)

The I-664 Connector was proposed with two different typical sections. The new roadway would include two general-purpose lanes in each direction; however, one typical section included a transit-only lane and the other did not. These lanes would be 12 feet wide with 14-foot shoulders.

This segment would be connected to I-664 by a new interchange. A flyover ramp would be used for I-664 southbound general-purpose traffic wishing to travel east on this segment. Westbound general-purpose traffic would connect to I-664 via a directional ramp for northbound or flyover ramp for southbound traffic. The transit-only lane for southbound would also use the flyover and not continue south on I-664. The transit-only lane from eastbound would utilize the directional ramp to I-664 northbound.

The U.S. Army Corps of Engineers (USACE) has noted that it requires unconstrained navigable access to Craney Island Dredged Material Management Area (CIDMMA). The proposed bridge for this segment provided 100 feet of vertical clearance across an 800-foot wide channel to the CIDMMA. It is unclear if this would satisfy the USACE's needs.

I-564 Connector, I-664 Connector, and VA 164 Connector Interchange (2016 HRCS SEIS Segment 12)

Two typical sections for the interchange were considered in the 2016 HRCS. The first was two general-purpose lanes in each direction. The second was two general-purpose lanes and one transit-only lane in each direction. The interchange would be entirely on structure with 12-foot lanes and 14-foot shoulders. Depending on the Build Alternative combination, the interchange could connect the I-564 Connector, the I-664 Connector and/or VA 164 Connector. For the combination with transit lanes, the transit lanes would go from I-664 Connector would continue to the I-564 Connector, but not south to the VA 164 Connector.

VA 164 Connector (2016 HRCS SEIS Segment 13)

The VA 164 Connector included a new roadway segment consisting of two lanes in each direction. These lanes would be 12 feet wide with 12-foot shoulders at grade and 14-foot shoulder on structure. This segment has the VA 164 Connector running along the east side of the existing CIDMMA, where the CIDMMA expansion extends to the east of the roadway. The 2016 SEIS notes that the expansion plans included right-of-way for the VA 164 Connector. The proposed alignment is consistent with the planned right-of-way. Additional coordination would be needed with USACE, USCG, US Navy, and the Virginia Port Authority to determine required design parameters to meet the agencies security and access needs. This segment has been designed to accommodate two future interchanges to access the proposed marine terminal site that's expected to open in the not too distant future..

This segment also includes the interchange with VA 164, where directional flyover ramps connect eastbound VA 164 to the northbound VA 164 Connector and southbound VA 164 Connector to westbound VA 164. The existing VA 164 interchange at Virginia International Gateway (VIG) Boulevard would require reconfiguration, and collector-distributor roads would need to be constructed in order to accommodate the ramp traffic at the VA interchange with the VA 164 Connector, the VA 164 interchange with VIG Boulevard, and the westbound entrance ramp to VA 164 from Cedar Lane.

The ramp from eastbound VA 164 to northbound VA 164 Connector would require a portion of Wild Duck Lane to be relocated. Due to the reconstruction of the VA 164 interchange with VIG Boulevard, a cul-de-sac would be built along Wyatt Drive. Norfolk Road would provide the needed access.

VA 164 (2016 HRCS SEIS Segment 14)

This segment, from the College Avenue interchange to the Cedar Lane interchange, would require widening into the median. Two Commonwealth Railway rail lines occupy the existing median on VDOT property. Therefore, a six-foot high, two and one-half foot wide crash wall would be erected between the travel lanes and the rail lines in each direction.

The ramp gores at VA 135/College Drive, Towne Point Road, and Cedar Lane would require adjustments to accommodate the widened mainline. A third travel lane would be added in the eastbound direction at the I-664 interchange with VA 164. Currently, it drops at the I-664 northbound on-ramp. The third travel

lane would exit onto I-664 as a lane drop in the westbound direction. The proposed widening at the eastern edge of VA 164 would tie into the improvements at the VA 164 and VA 164 Connector.

Summary of data from previous study to use in RCS

The RCS study team requested and received support information from the previous study relating to the mandated study segments. Included in the support data from the 2016 HRCS were the design and mapping files, VDOT's Project Cost Estimating System (PCES) spreadsheets and report graphics for the overview figures and typical sections. The information provided from the previous study team provides the RCS with valuable information to assist with the evaluation of the mandated segments, particularly, in evaluating impacts and updating cost estimates using current year data.