

ATTACHMENT 5



Phase 3 Update of Qualitative Evaluation

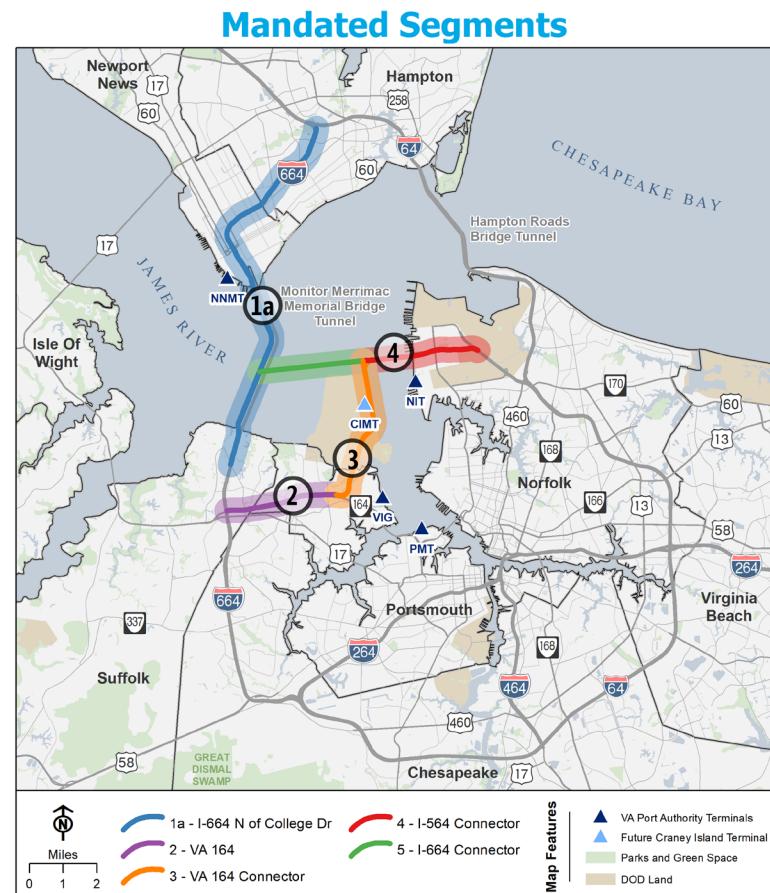
PREPARED SEPTEMBER 20, 2022

UPDATED FROM APRIL 15, 2022 DRAFT

RCS Phase 3 – Summary of Qualitative Evaluation of Mandated Segments

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Regional Connectors Study

Readiness Evaluation Criteria

Summary of Changes

Segment 1a: I-664 N. of College Dr.

Operational independence shift from moderate to most as a result of operational benefits.

Phasing potential shifted from moderate to most as a result of operational benefits.

HRTAC rating shifted from moderate to most as a result of congestion relief benefits.

Segment 3: VA 164 Connector

IIJA funding shifted from moderate to least due to lack of detail plan with no dedicated funding.

Segment 4: I-564 Connector

IIJA funding shifted from moderate to least due to lack of detail plan with no dedicated funding.

Permitting Issues Evaluation Criteria

Summary of Changes

Segment 2: VA 164

Stakeholder coordination shifted from moderate to high due to community impact concerns.

Segment 3: VA 164 Connector

404 permit issues changed from moderate to high with modifications to alignment.

408 permit issues changed from moderate to high with modifications to alignment.

Note that other segment ratings did not change, but all were re-examined with updated segment designs and/or new information as applicable. Additional observations are provided in the Technical Evaluation Tables.

Construction Complexity Evaluation Criteria

Omitted from this document and reflected in Cost Estimates going forward.

List of Abbreviations

Abbreviations	Meaning
AC	Acres
ACOE	Army Corps of Engineers
APE	Area of Potential Effects
BMP	Best Management Practices
CC	Collection Concern
CFR	Code of Federal Regulations
CGP	Construction General Permit
CIDMMA	Craney Island Dredged Material Management Area
CIFD	Craney Island Fuel Terminal
Conn	Connector
COSS	Corridor of Statewide Significance
CWA	Clear Water Act
DOD	Department of Defense
DON	Department of the Navy
E&S	Erosion Sediment
ERC	Elizabeth River Crossings
ESA	Environmental Site Assessment
FESE	Federal Endangered, State Endangered
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate maps
FTSE	Federal Threatened, State Endangered
FTST	Federal Threatened, State Threatened
GWMA	Groundwater Management Areas
HOT	High Occupancy Toll
HRBT	Hampton Road Bridge Tunnel
HREL	Hampton Roads Express Lanes
HRSD	Hampton Roads Sanitation District
HRTAC	Hampton Roads Transportation Accountability Commission
HRTPO	Hampton Roads Transportation Planning Organization

Abbreviations	Meaning
IIJA	Infrastructure Investment and Job Act
IMR	Interchange Modification Report
LEDPA	Least Environmental Damaging Practicable Alternative
LOD	Limits of Disturbance
LRTP	Long Range Transportation Plan
LWCF	Land and Water Conservation Fund
MMBT	Monitor-Merrimac Bridge Tunnel
MMMBT	Monitor-Merrimac Memorial Bridge-Tunnel
N/A	Not Applicable
NAS	Naval Station
NAVSTA	Naval Station in Norfolk
NEPA	National Environmental Policy Act
NIT	Norfolk International Terminals
N-MMBT	Northern - Monitor-Merrimac Bridge Tunnel
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NRHP	National Register of Historic Places
NSA	Naval Support Activity
PCB	Polychlorinated biphenyls
RCRA	Resource Conservation and Recovery Act
RCSII	Regional Connectors Study Phase II
ROW	Right-of-way
SE	State Endangered
SEIS	Supplemental Environmental Impact Statement
SMART SCALE	System for the Management and Allocation of Resources for Transportation – Safety, Congestion Mitigation, Accessibility, Land Use, and Economic Development and environment
SPUI	Single Point Urban Interchange
ST	State Threatened
SWPPP	Stormwater Pollution Prevention Plan
TBD	To-Be-Determined

List of Abbreviations (continued)

Abbreviation	Meaning
TMDL	Total Maximum Daily Load
US	United States
USACE	United State Army Corps of Engineers
USACOE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United State Fish and Wildlife Service
USS	United States Ship
VA	Virginia
VAC	Virginia Administration Code
VaFWIS	Virginia Fish and Wildlife Information Service
VDACS	Virginia Department of Agriculture and Consumer Services
VDEQ	Virginia Department of Environmental Quality

Abbreviation	Meaning
VDGIF	Virginia Department of Game and Inland Fisheries
VDOT	Virginia Department of Transportation
VESCH	Virginia Erosion and sediment Control Handbook
VIG	Virginia International Gateway
VIMS SAV	Virginia Institute of Marine Science - Submerged
VLR	Virginia Landmark Register
VMRC	Virginia Marine Resources Commission
VPA	Virginia Port Authority
VSMP	Virginia Storm Water Program
VTrans	Virginia's Statewide Transportation Plan
VWPP	Virginia Water Protection Permit
W-RNHT	Washington-Rochambeau Revolutionary Route National Historic Trail

Segments Evaluated

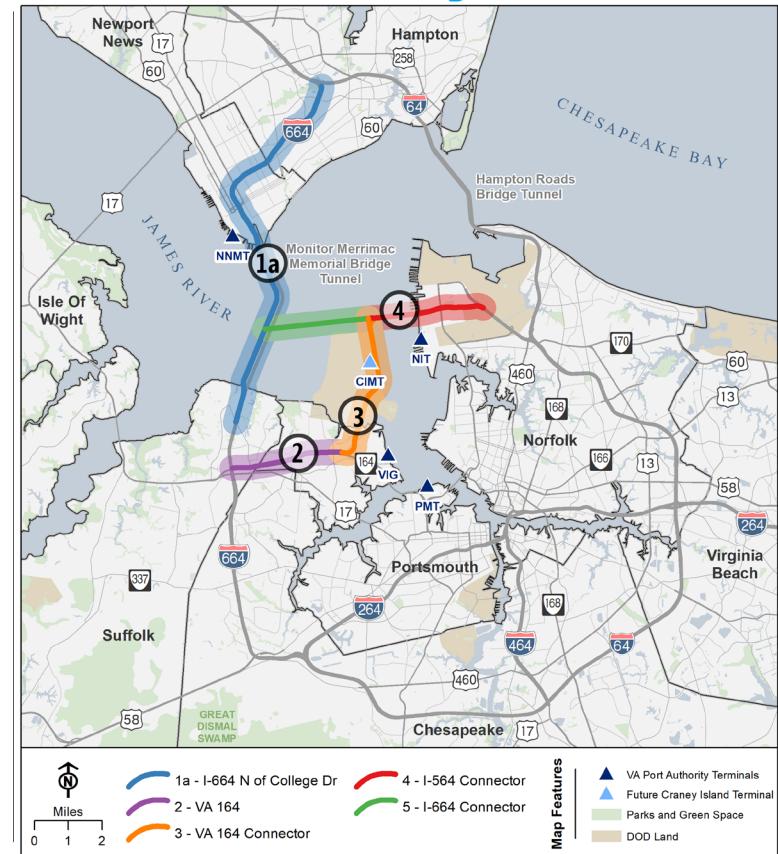
- 1a I-664 North of College Drive – Starting with general alignment of SEIS Alternative D – *adapted lane configuration* to 8 lanes with 4 GP lanes and 4 managed lanes.
- 2 VA 164 – Widen toward the median to 6 GP lanes per SEIS (adding one in each direction) – *expanded corridor by 20' each side as a cautionary measure to allow for inside crash wall depth for freight rail.*
- 3 VA 164 Connector – SEIS alignment (4 GP lanes)
- 4 I-564 Connector – SEIS Alternative D (4 GP lanes)
- 5 I-664 Connector – SEIS Alternative D (4 GP lanes)

For EJ evaluation, also considered demographics of surrounding 500' corridor

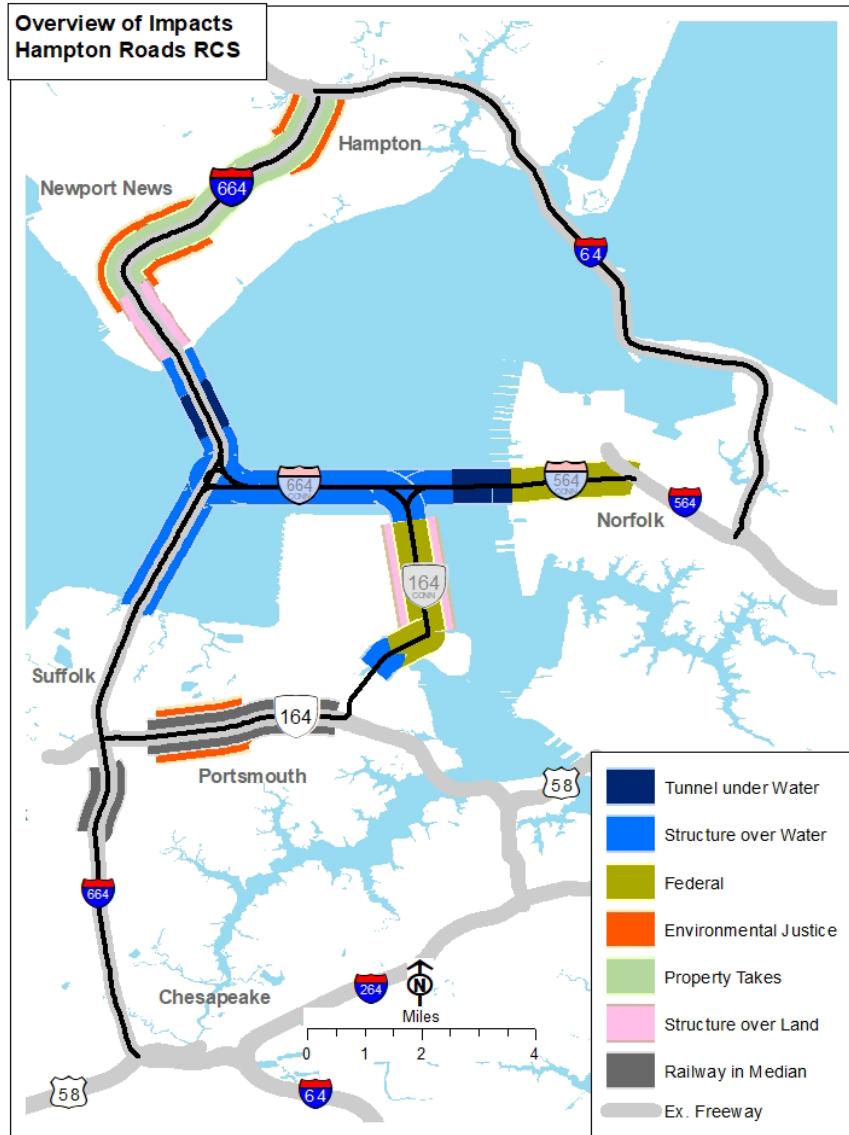
Final SEIS available at the HRBT Resources Page at
<https://www.hrbtexpansion.org/resources-and-documents/default.asp>

Segment drawings showing limits of disturbance (LOD) and profiles available by contacting the project team via email:
connectorstudy@prr.biz

Mandated Segments



Evaluation Summary Tables and Map



Step 2 Qualitative Evaluation Highlights - Key Features

Permitting Issues Technical Evaluation

Permitting Issues Evaluation Criteria

Summary of Changes

Segment 2: VA 164 Connector

Stakeholder coordination shifted from moderate to high due to community impact concerns.

Segment 3: VA 164 Connector

404 permit issues changed from moderate to high with modifications to alignment.

408 permit issues changed from moderate to high with modifications to alignment.

Note that other segment ratings did not change, but all were re-examined with updated segment designs and/or new information as applicable. Additional observations are provided in the Technical Evaluation Tables.

Step 1 Evaluation Measures – Segment Comparison

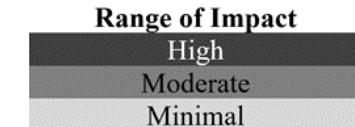
Range of Impact

High
Moderate
Minimal

Permitting Issues and Key Environmental Impacts

Permitting Issues	Segment 1a: I-664 N of College Dr.	Segment 2: VA 164	Segment 3: VA 164 Connector	Segment 4: I-564 Connector	Segment 5: I-664 Connector
	1a	2	3	4	5
Community impacts (right-of-way, consistency with local plans)					
Sensitive property impacts (noise, community facilities, cultural)					
Environmental Justice (low income and minority communities)					
USACOE Section 404 Permit Issues			*		
USACOE Section 408 Permit Issues			*		
USACOE Section 10 permit					
USCG Bridge Permit					
NOAA Incidental Harassment Authorization					
VDEQ Section 401 Virginia Water Protection Permit					
VMRC Subaqueous Bottomlands Permit					
VDEQ Virginia Construction General Permit					
Local Wetlands Board Permit Issues					
Mitigation Complexity and Cost					
Permit Stakeholder Coordination (i.e. Maritime Stakeholders)		*			
Effect on other Federal Navigation Projects					
Potential Future Changes in Policy Issues					

* Evaluations that have been revised since original April 2022 draft



Definitions of Evaluation Framework:

Impact Rating Concern – This evaluation category captures the potential effect of the project and its construction on the natural and social environment. Some of the most common environmental impacts are:

- social and community environment
- noise impacts
- water resources and wetlands
- protected species
- damage to ecosystems and loss of biodiversity
- historic resources
- regulatory requirements and complexity
- mitigation cost and complexity
- interdependence or conflict with other projects

Human well-being depends directly on biodiversity and ecosystems. It is therefore vital to try to measure, plan and minimize any segment activity that might alter the ecological balance.

- *Minimal: No or Minimal impacts to ecosystems (including social and natural)*
- *Moderate: Impacts that have reasonable solutions to ecosystems (including social and natural)*
- *High: Challenging or Unknown impacts to ecosystems (including social and natural)*

Feasibility Concern - Resource feasibility concerns indicate whether the segment will interfere with the socioeconomic activities within the corridor and identify potential issues and problems that could arise from pursuing the project.

- *Minimal: No or Minimal impacts to existing operations or other transportation projects occurring within the segment*
- *Moderate: Impacts that have reasonable solutions to existing operations or other transportation projects occurring within the segment*
- *High: Challenging or Unknown impacts to existing operations or other transportation projects occurring within the segment*

Timing Implications - It is important that such regionally significant projects can be reliably scheduled so that funding pipelines and adjacent projects are not disrupted by setbacks from the permitting issues being evaluated. While these considerations will be presented as notes for each category, below is a general range of how the timing impacts will be viewed:

- *Minimal: No or Minimal likelihood of timing issues or schedule impacts*
- *Moderate: Impacts that have reasonable solutions of timing issues or schedule impacts*
- *High: Challenging or Unknown (i.e. likelihood of future changes in policies related to permitting) impacts of timing issues or schedule impacts*

Resource Impacts – Reference to the HRTPO Corridor Evaluation Technical Memorandum Table of Resources for a detailed overview of resources potentially present within the segment.

- *Minimal: No or Minimal impacts to resources*
- *Moderate: Impacts that have reasonable solutions to resources*
- *High: Challenging or Unknown impacts to resources*

SEGMENT: *1a: I-664 North of College Dr.*

<i>1a: I-664 North of College Dr.</i> Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Social Environment		
Community impacts (right-of-way, consistency with local plans)	Moderate	Most resources are adjacent to the LOD; however, final LOD requirements may show that minor right-of-way acquisitions will be needed and further detailed design may avoid and/or minimize potential impacts. Construction activities would result in temporary interruptions to vehicular traffic patterns, including the potential temporary closure of roads and temporary interruptions to vehicular traffic patterns. Construction activities would cause intermittent fluctuations in noise levels throughout the construction area. The degree of noise impact would vary, as it is directly related to the types of equipment used and the proximity to the noise-sensitive land uses within the project area. Based on a review of the project area, no considerable, long-term construction-related noise impacts are anticipated.
Sensitive property impacts (noise, community facilities, cultural)	Moderate	Most sensitive resources are located outside the LOD; however, final LOD requirements may show that minor right-of-way acquisitions will be needed. Some sensitive properties immediately adjacent to the limits of disturbance may be impacted including Park Place Playground and Kingdom Hall of Jehovah's Witnesses.
Environmental Justice (low income and minority communities)	Moderate	<p>Widening of the existing corridor in an urban environment provides limited adjacent land for construction. Identified Environmental Justice impacts anticipated within the LOD; however, further detailed design may avoid and/or minimize potential impacts.</p> <p>All communities within 500 feet of the proposed construction to the north and south of the corridor are majority minority, with most over 75% minority. All communities in Newport News within 500 feet of the proposed edge of the corridor have over 25% poverty, and many have 75-100% poverty. There are 3 apartment buildings, 11 apartment blocks, and 45 houses within 500 feet of the corridor in Newport News. In Hampton, poverty is less severe, though the communities next to I-664 are also majority minority. In the indirectly impacted areas of Hampton that have over 25% poverty, there are 144 homes and a senior living facility, as well as a High School.</p> <p><i>All segments have undergone an initial environmental justice review with additional evaluations occurring as more detailed design information becomes available.</i></p>

1a: I-664 North of College Dr. Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Federal Permits		
USACOE Section 404 Permit Issues	Moderate	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Federal Regulatory Agencies; however, the segment will be widening of the existing corridor. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
USACOE Section 408 Permit Issues	Moderate	Section 408 is the process that allows alteration to a federally authorized project. The proposed project cannot pose a risk to the public interest and will not impair the usefulness of the federally authorized project. Construction activities requiring access to the James River (Newport News Channel) maintained channel for potential barge work zones and safe harbor sites will most likely be required.
USACOE Section 10 permit	Moderate	Maintenance of operations and traffic will be required for all identified Maintained Federal Channels and the existing I664 Monitor Merrimack transportation corridor.
USCG Bridge Permit	Moderate	The segment does cross the James River (Newport News Channel), construction activities requiring access to potential barge work zones and safe harbor sites in or adjacent to the James River (Newport News Channel) will most likely be required.
NOAA Incidental Harassment Authorization	Moderate	There is moderate potential for incidental harassment within this segment.
State Permits		
VDEQ Section 401 Virginia Water Protection Permit	Moderate	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies; however, the segment will be widening of the existing corridor. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
VMRC Subaqueous Bottomlands Permit	Moderate	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies; however, the segment will be widening of the existing corridor. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
VDEQ Virginia Construction General Permit	Minimal	Assumption that all required stormwater controls and requirements pursuant to this permit will be obtained and adhered to. It is assumed for this segment that all additional stormwater controls would be located within the boundaries of the LOD.

1a: I-664 North of College Dr. Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Local Permits		
Local Wetlands Board Permit Issues	Moderate	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Local Wetlands Boards; however, the segment will be widening of the existing corridor. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
Additional Factors		
Mitigation Complexity and Cost	High	<p>This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River (Newport News Channel), Elizabeth River, and current operations at the Newport News Marine Terminals. Moderate to extensive mitigation costs would be required for wetland and US waters impacts; however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential mitigation costs.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team. Additional coordination with mitigation banks to ensure sufficient capacity for required purchases will occur as design progresses and more precise impacts can be determined.</i></p>
Permit Stakeholder Coordination (i.e. Maritime Stakeholders)	High	Extensive stakeholder coordination with Federal Navigation Projects along the James River (Newport News Channel), Elizabeth River, rail facilities, and current operations at the Newport News Marine Terminals will be required and may pose design and/or construction schedule risk.
Effect on other Federal Navigation Projects	Moderate	This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River (Newport News Channel), Elizabeth River, and current operations at the Newport News Marine Terminals; however, the segment is the widening of the existing corridor.
Potential Future Changes in Policy Issues	Minimal	<p>No major regulatory policy changes are anticipated at this time.</p> <p><i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation.</i></p>

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: 2: VA 164

2: VA 164 Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Social Environment		
Community impacts (right-of-way, consistency with local plans)	Minimal	<p>Construction activities would result in temporary interruptions to vehicular traffic patterns, including the potential temporary closure of roads and temporary interruptions to vehicular traffic patterns. Construction activities would cause intermittent fluctuations in noise levels throughout the construction area. The degree of noise impact would vary, as it is directly related to the types of equipment used and the proximity to the noise-sensitive land uses within the project area. Based on a review of the project area, no considerable, long-term construction-related noise impacts are anticipated.</p> <p><i>Communities within 500 feet of the preliminary Limits of Disturbance for VA 164 are diverse racially and in income. As this and future planning and project development processes continue, outreach, partnering and collaboration with neighboring communities will engage these communities to mitigate any potential impacts.</i></p>
Sensitive property impacts (noise, community facilities, cultural)	Minimal	<p>Many sensitive property identified resources are located outside of the limits of disturbance. It does not appear that the LOD will exceed the ROW parcel edge along this segment; therefore, there will be no impact to existing businesses, schools, residences, places of worship, or cemeteries. Expansion to the eastbound side of VA-164 may require a portion of easement from Ebony Heights Park; however, further detailed design may avoid and/or minimize any potential impacts.</p> <p><i>At this qualitative stage, noise and air quality were not specifically measured or modeled, but described generally as potential impacts. Noise wall information will be incorporated into the more detailed planning and design reviews.</i></p>
Environmental Justice (low income and minority communities)	Moderate	<p>Expansion to the eastbound side of VA-164 may require a portion of easement from Ebony Heights Park; however, further detailed design may avoid and/or minimize any potential impacts. No residents or neighboring communities would be relocated.</p> <p>Communities within 500 feet of the proposed construction to the north and south of the corridor are majority minority with over 25% of households in poverty. 102 houses 58 2-story apartments, 44 garden apartment blocks, and 3 churches.</p>

2: VA 164 Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Environmental Justice cont'd		<i>Communities within 500 feet of the preliminary Limits of Disturbance for VA 164 are diverse racially and in income. As this and future planning and project development processes continue, outreach, partnering and collaboration with neighboring communities will engage these communities to mitigate any potential impacts.</i>
Resource Federal Permits		
USACOE Section 404 Permit Issues	Minimal	Non-tidal US Waters and wetlands were identified within the segment; however, however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential impacts. <i>As more detailed design continues the exploration of more project-specific measures to control turbidity will be evaluated.</i>
USACOE Section 408 Permit Issues	Minimal	No rivers or harbors are located within the boundaries of the LOD evaluated.
USACOE Section 10 permit	Minimal	This segment does not contain bridge structures over or adjacent to Federal Navigation Projects nor does this segment cross any maintained Federal Channels.
USCG Bridge Permit	Minimal	This segment does not contain bridge structures over or adjacent to Federal Navigation Projects or mat.
NOAA Incidental Harassment Authorization	Minimal	There is no potential for incidental harassment within this segment.
State Permits		
VDEQ Section 401 Virginia Water Protection Permit	Minimal	Non-tidal US Waters and wetlands were identified within the segment; however, however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential impacts. <i>As more detailed design continues the exploration of more project-specific measures to control turbidity will be evaluated.</i>
VMRC Subaqueous Bottomlands Permit	Minimal	No subaqueous bottomlands were identified within the boundaries of the evaluated LOD.
VDEQ Virginia Construction General Permit	Minimal	Assumption that all required stormwater controls and requirements pursuant to this permit will be obtained and adhered to. It is assumed for this segment that all additional stormwater controls would be located within the boundaries of the LOD. <i>At this early planning stage, it is unknown what additional impervious surface will be constructed. The future design process will develop better estimates of impervious surface burden to determine what best management practices to implement, and where, in the future timeframe that is indicated in the RCS segment tiering recommendation.</i>

2: VA 164 Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Local Permits		
Local Wetlands Board Permit Issues	Minimal	No tidal US Waters or wetlands were identified within the boundaries of the LOD of this segment. Limited coordination would be required with Local Wetlands Boards.
Additional Factors		
Mitigation Complexity and Cost	Minimal	No business impacts are anticipated within the segment corridor. Minimal anticipated mitigation costs would be required for wetland and US waters; however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential mitigation costs.
Permit Stakeholder Coordination (i.e. Maritime Stakeholders)	High *	Transportation facilities identified within the LOD; however, it is the assumption that all transportation facilities will remain at existing or improved functionality. Stakeholder coordination with railroad facilities elevates this segment to Moderate status since coordination will be required and may pose design and/or construction schedule risk. <i>Portsmouth will be included in the discussion as the planning and design process outreach, with opportunities to raise, raise, document and resolve concerns. This inclusive process including Portsmouth will continue as detailed planning proceeds at a later date.</i>
Effect on other Federal Navigation Projects	Minimal	This segment does not contain bridge structures over or adjacent to Federal Navigation Projects.
Potential Future Changes in Policy Issues	Minimal	No major regulatory policy changes are anticipated at this time.

* Evaluations that have been revised since original April 2022 draft

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: 3: VA 164 Connector

3: VA 164 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Social Environment		
Community impacts (right-of-way, consistency with local plans)	High	<p>Construction activities would result in temporary interruptions to vehicular traffic patterns, including the potential temporary closure of roads and temporary interruptions to vehicular traffic patterns. Construction activities would cause intermittent fluctuations in noise levels throughout the construction area. The degree of noise impact would vary, as it is directly related to the types of equipment used and the proximity to the noise-sensitive land uses within the project area. Based on a review of the project area, no considerable, long-term construction-related noise impacts are anticipated. Segment traverses through a host of Military/DOD/USACOE facilities. Setback requirements for Anti-Terrorism Force Protection, Security Requirements, and Gate Access for all noted facilities.</p> <p><i>The northern terminus of this segment falls within the Craney Island Dredged Material Management Area (CIDDMA) updated boundary. We will continue to work with the COE to understand the operations requirements for the Craney Island Dredge Disposal Facility and incorporate all requirements into the planning and design. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p> <p><i>As a result of this required specification for safety distance requirements from public highway to the facilities at Craney Island Fuel Terminal, the RCS Team is developing the VA 164 connector corridor with an 1,800-foot distance from the planned refueling in addition to a visual barrier in future design iterations.</i></p> <p><i>There are also noise walls along a portion of the bridge on the outside edge to serve as visual barriers to the fuel line and future facility per the Navy's current force protection standard.</i></p>
Sensitive property impacts (noise, community facilities, cultural)	Minimal	<p>Many sensitive property identified resources are located outside of the limits of disturbance. It does not appear that the LOD will exceed the ROW parcel edge along this segment; therefore, there will be no impact to existing schools, residences, places of worship, or cemeteries. Current design has 2 total business takes required. Identified Businesses and/or Business Access impacts anticipated within the LOD; however, further detailed design may avoid and/or minimize potential impacts. Additional detailed design and analysis required. Current design has three total</p>

3: VA 164 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Sensitive property impacts, cont'd		<i>business takes required. Identified Businesses and/or Business Access impacts anticipated within the LOD; however, further detailed design may avoid and/or minimize potential impacts.</i>
Environmental Justice (low income and minority communities)	Minimal	<p>Past and present growth and development - expansion of controlled access roadways have separated neighboring communities No residents or neighboring communities would be relocated.</p> <p><i>All segments have undergone an initial environmental justice review with additional evaluations occurring as more detailed design information becomes available.</i></p>
Federal Permits		
USACOE Section 404 Permit Issues	High *	<p>Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Federal Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>Craney Island Dredge Disposal Facility Section 404 status and new GIS boundary received May 2022. The status of this segment will be changed for ongoing and future tiering coordination.</i></p> <p><i>A portion of this segment falls within the Craney Island Dredged Material Management Area (CIDDMA) updated boundary. We will continue to work with the COE to understand the operations requirements for the Craney Island Dredge Disposal Facility and incorporate all requirements into the planning and design. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p>
USACOE Section 408 Permit Issues	High *	<p>Section 408 is the process that allows alteration to a federally authorized project. The proposed project cannot pose a risk to the public interest and will not impair the usefulness of the federally authorized project. Although the segment does not cross the Elizabeth River, construction activities requiring access to potential barge work zones and safe harbor sites in or adjacent to the Elizabeth River will most likely be required.</p> <p><i>Craney Island Dredge Disposal Facility Section 408 status and new GIS boundary received May 2022. The status of this segment will be changed for ongoing and future tiering coordination.</i></p>

3: VA 164 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
USACOE Section 408 Permit Issues, cont'd		<i>A portion of this segment falls within the Craney Island Dredged Material Management Area (CIDDMA) updated boundary. We will continue to work with the COE to understand the operations requirements for the Craney Island Dredge Disposal Facility and incorporate all requirements into the planning and design. The RCS team will not be the project owner in the final stages of planning, design and construction.</i>
USACOE Section 10 permit	Moderate	This segment does contain a bridge structures over Craney Island Creek which is a tributary of the adjacent Elizabeth River, a maintained Federal Channel. Although the segment does not cross the Elizabeth River, construction activities requiring access to potential barge work zones and safe harbor sites in or adjacent to the Elizabeth River will most likely be required.
USCG Bridge Permit	Moderate	This segment does contain a bridge structures over Craney Island Creek.
NOAA Incidental Harassment Authorization	Minimal	There is limited potential for incidental harassment within this segment.
State Permits		
VDEQ Section 401 Virginia Water Protection Permit	Moderate	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
VMRC Subaqueous Bottomlands Permit	Moderate	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
VDEQ Virginia Construction General Permit	Minimal	Assumption that all required stormwater controls and requirements pursuant to this permit will be obtained and adhered to. It is assumed for this segment that all additional stormwater controls would be located within the boundaries of the LOD.
Local Permits		
Local Wetlands Board Permit Issues	Moderate	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Local Wetlands Boards. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.

3: VA 164 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Additional Factors		
Mitigation Complexity and Cost	Moderate	<p>Current design has total business take required. Identified Businesses and/or Business Access impacts anticipated within the LOD. Moderate to Extensive anticipated mitigation costs would be required for wetland and US waters impacts; however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential mitigation costs.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Permit Stakeholder Coordination (i.e. Maritime Stakeholders)	High	<p>Extensive stakeholder coordination with Military/DOD/USACOE facilities, the City of Portsmouth Landfill, and railroad facilities will be required and may pose design and/or construction schedule risk.</p> <p><i>A portion of this segment falls within the Craney Island Dredged Material Management Area (CIDDMA) updated boundary. We will continue to work with the COE to understand the operations requirements for the Craney Island Dredge Disposal Facility and incorporate all requirements into the planning and design. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p> <p><i>The RCS evaluation team acknowledges that strategic importance of Craney Island within the context of Naval Station Norfolk and are staying in communication with stakeholders like the Navy throughout the process to ensure that the planning process evolves into a design and construction process that serves both the strategic and regional needs of the Hampton Roads region.</i></p> <p><i>The RCS report in May of 2022 was a qualitative assessment, and the RCS team is now working on refining the quantitative understanding of traffic demand modeling and design needs. The RCS team and the agencies that carry this planning process forward to design, construction and operations will work in partnership with the Navy to develop, design, and construct the VA 164 connector alignment, roadway, and facilities in a way that does not impair the planned functions of Craney Island.</i></p>

3: VA 164 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Effect on other Federal Navigation Projects	High	<p>This segment does contain roadway structures landside to Federal Navigation Projects along the Elizabeth River and current operations at the US Army Corps of Engineers Craney Island Disposal Area. At the present time, the affect would be considered High; however, the status would change to Moderate once the US Army Corps of Engineers Craney Island Disposal Area were identified as end of operational life.</p> <p><i>Section 408 permit requirements for the Craney Island Dredge Disposal Facility will be taken into consideration.</i></p>
Potential Future Changes in Policy Issues	Minimal	<p>No major regulatory policy changes are anticipated at this time.</p> <p><i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation if policy regulations change.</i></p>

* Evaluations that have been revised since original April 2022 draft

Strikethrough and italicized text reflects revision made in response to stakeholder comments

SEGMENT: *4: I-564 Connector*

4: I-564 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Social Environment		
Community impacts (right-of-way, consistency with local plans)	High	<p>Construction activities would result in temporary interruptions to vehicular traffic patterns, including the potential temporary closure of roads and temporary interruptions to vehicular traffic patterns. Construction activities would cause intermittent fluctuations in noise levels throughout the construction area. The degree of noise impact would vary, as it is directly related to the types of equipment used and the proximity to the noise-sensitive land uses within the project area. Based on a review of the project area, no considerable, long-term construction-related noise impacts are anticipated. Segment traverses through the DON and NIT properties. Need additional information regarding potential anti-terrorism force protection requirements.</p> <p><i>As the project moves into design and construction, the project owner will be able to make decisions about equipment height and clearance to accommodate the Navy's operational needs in Norfolk.</i></p> <p><i>The loss of operational use at the Lineage Logistics at Talon Marine Terminals, NIT Pier 3 needs more information in order to determine all of the factors to be considered.</i></p> <p><i>It should be noted that the fueling facility referred to in this comment is within 300 feet of the existing Intermodal connector, which is currently planned to have the same alignment as the proposed I-564 connector. There are currently walls separating the Navy's fuel facility from the existing Intermodal connector. To satisfy the 1,800 foot setback from the fueling facility would require a significant re-evaluation of the I-564 connector by FHWA, VDOT, Norfolk, and Port of Virginia.</i></p> <p><i>Evolving security and visibility technology may resolve these security concerns as the I-564 corridor progresses from planning to design. Evolving transportation technology may change the corridor design as well. Horizontal and vertical clearances required by the Navy for essential security will be considered in the future planning and design process.</i></p>

4: I-564 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Community impacts, cont'd		<p><i>At the end of the Phase 3 (Step 2) Quantitative analysis, which we are conducting now, we will recommend tiering of the segments into three tiers that correspond to timing of/readiness for implementation, with Tier 1 the most ready and Tier 3 the least ready. At the time of project design and construction, the project owner will be able to make decisions about equipment height and clearance to accommodate the Navy's operational needs in Norfolk. At this early planning stage of the segment tiering process the Regional Connectors study is not considering an elevated section between the end of the existing Intermodal connector and the end of Norfolk International Terminal Pier 3. Instead, the I-564 connector is planned to be underground along the length of existing NIT Pier 3 and tunnel under the Elizabeth River shipping lanes to surface at a bridge to the west of the NIT and to the north of Craney island.</i></p> <p><i>It may be possible to tunnel the I-564 connector further East approaching the Hampton Boulevard underpass, but that design will involve additional costs.</i></p>
Sensitive property impacts (noise, community facilities, cultural)	Minimal	<p>Sensitive property resources are located outside of the limits of disturbance. It does not appear that the LOD will exceed the ROW parcel edge along this segment; therefore, there will be no impact to existing businesses, schools, residences, places of worship, or cemeteries. May have disturbance within the LOD for Fleet Recreation Park (park access/maintenance roads); however, further detailed design may avoid and/or minimize any potential impacts.</p>
Environmental Justice (low income and minority communities)	Minimal	<p>Past and present growth and development - expansion of controlled access facilities such as military installations like NAVSTA Norfolk have separated neighboring communities. No residents or neighboring communities would be relocated.</p> <p><i>All segments have undergone an initial environmental justice review with additional evaluations occurring as more detailed design information becomes available.</i></p>
Federal Permits		
USACOE Section 404 Permit Issues	High	<p>Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Federal Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues</i></p>

4: I-564 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
USACOE Section 404 Permit Issues, cont'd	High	<p><i>for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p> <p><i>Additional mitigation measures for bird nesting impacts will be evaluated as more detailed design allows for the determination of potential bird nesting impacts. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p>
USACOE Section 408 Permit Issues	High	Section 408 is the process that allows alteration to a federally authorized project. The proposed project cannot pose a risk to the public interest and will not impair the usefulness of the federally authorized project. The segment does cross the Elizabeth River and is adjacent to the James River (Newport News Channel), construction activities requiring access to potential barge work zones and safe harbor sites in or adjacent to the Elizabeth River and the James River (Newport News Channel) will most likely be required.
USACOE Section 10 permit	High	The loss of operational use at the Lineage Logistics at Talon Marine Terminals, NIT Pier 3 needs more information in order to determine all of the factors to be considered.
USCG Bridge Permit	High	The segment does cross the Elizabeth River and is adjacent to the James River (Newport News Channel), construction activities requiring access to potential barge work zones and safe harbor sites in or adjacent to the Elizabeth River and the James River (Newport News Channel) will most likely be required.
NOAA Incidental Harassment Authorization	High	There is moderate/high potential for incidental harassment within this segment.
State Permits		
VDEQ Section 401 Virginia Water Protection Permit	High	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
VMRC Subaqueous Bottomlands Permit	High	Tidal and non-tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.

4: I-564 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
VDEQ Virginia Construction General Permit	Minimal	Assumption that all required stormwater controls and requirements pursuant to this permit will be obtained and adhered to. It is assumed for this segment that all additional stormwater controls would be located within the boundaries of the LOD.
Local Permits		
Local Wetlands Board Permit Issues	High	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Local Wetlands Boards. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
Additional Factors		
Mitigation Complexity and Cost	High	<p>No business impacts are anticipated within the segment corridor. High anticipated mitigation costs would be required for wetland and US waters impacts due to construction of the new island required for the tunnel segment.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Permit Stakeholder Coordination (i.e. Maritime Stakeholders)	High	<p>Extensive stakeholder coordination with Military/DOD/USACOE facilities, transportation facilities, Lineage Logistics at Talon Marine Terminals, NIT Pier 3, and railroad facilities will be required and may pose design and/or construction schedule risk.</p> <p><i>The Regional Connectors Study is a conceptual planning stage of design. The future stages of the project will be carried forward by regional or commonwealth such as HRTAC and VDOT. They will maintain communication and coordination with stakeholders and decisionmakers throughout the planning, design, and construction process.</i></p>

<i>4: I-564 Connector Resource</i>	Impact Rating	Comments on Resource Impacts or Timing Implications
Effect on other Federal Navigation Projects	Moderate	No impacts to Federal Navigational Channels and Civil Works Projects are anticipated. All Maintained Navigational Channels will be avoided by the tunnel design.
Potential Future Changes in Policy Issues	Minimal	No major regulatory policy changes are anticipated at this time.

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: 5: I-664 Connector

5: I-664 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Social Environment		
Community impacts (right-of-way, consistency with local plans)	High	This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River (Newport News Channel), Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. At the present time, the affect would be considered High; however, the status would change to Moderate once the US Army Corps of Engineers Craney Island Disposal Area were identified as end of operational life. <i>Project limits are outside of the updated CIDDMA Site Boundary as received by the USACOE.</i>
Sensitive property impacts (noise, community facilities, cultural)	Minimal	No sensitive properties are located within the limits of disturbance.
Environmental Justice (low income and minority communities)	Minimal	No residents or neighboring communities would be relocated.
Federal Permits		
USACOE Section 404 Permit Issues	High	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Federal Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design. <i>As more detailed design continues the exploration of more project-specific measures to control turbidity will be evaluated.</i>
USACOE Section 408 Permit Issues	High	Section 408 is the process that allows alteration to a federally authorized project. The proposed project cannot pose a risk to the public interest and will not impair the usefulness of the federally authorized project. Construction activities requiring access to the Elizabeth River and James River (Newport News Channel) maintained channels for potential barge work zones and safe harbor sites will most likely be required.
USACOE Section 10 permit	High	This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River, Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. Need more information on the US Army Corps of Engineers Craney Island Disposal Area anticipated end of operational life.
USCG Bridge Permit	High	The segment does cross the Elizabeth River and James River (Newport News Channel), construction activities requiring access to potential barge work zones and

5: I-664 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
USCG Bridge Permit, cont'd		safe harbor sites in or adjacent to the Elizabeth River and the James River (Newport News Channel) will most likely be required.
NOAA Incidental Harassment Authorization	High	There is moderate/high potential for incidental harassment within this segment.
State Permits		
VDEQ Section 401 Virginia Water Protection Permit	High	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design. <i>As more detailed design continues the exploration of more project-specific measures to control turbidity will be evaluated.</i>
VMRC Subaqueous Bottomlands Permit	High	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with State Regulatory Agencies. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
VDEQ Virginia Construction General Permit	Minimal	Assumption that all required stormwater controls and requirements pursuant to this permit will be obtained and adhered to. It is assumed for this segment that all additional stormwater controls would be located within the boundaries of the LOD.
Local Permits		
Local Wetlands Board Permit Issues	High	Tidal US Waters and wetlands were identified within the boundaries of the LOD of this segment. Extensive coordination would be required with Local Wetlands Boards. Field surveys and additional detailed detail to avoid and/or minimize impacts would be evaluated with more detailed design.
Additional Factors		
Mitigation Complexity and Cost	High	<p>This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River (Newport News Channel), Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. Moderate to extensive mitigation costs would be required for wetland and US waters impacts; however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential mitigation costs.</p> <p><i>Additional coordination with mitigation banks to ensure sufficient capacity for required purchases will occur as design progresses and more precise impacts can be determined.</i></p>

5: I-664 Connector Resource	Impact Rating	Comments on Resource Impacts or Timing Implications
Mitigation Complexity and Cost, cont'd	High	<p><i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation if policy regulations change.</i></p> <p><i>Anticipate strong interest in and public objections to impacts to colonial nesting birds. Mitigation requirements for displaced birds may be required under Migratory Bird Treaty Act.</i></p>
Permit Stakeholder Coordination (i.e. Maritime Stakeholders)	High	Extensive stakeholder coordination with Military/DOD/USACOE facilities will be required and may pose design and/or construction schedule risk.
Effect on other Federal Navigation Projects	High	<p>This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River, Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. Need more information on the US Army Corps of Engineers Craney Island Disposal Area anticipated end of operational life. <i>Project limits are outside of the updated CIDDMA Site Boundary as received by the USACOE.</i></p>
Potential Future Changes in Policy Issues	Minimal	<p>No major regulatory policy changes are anticipated at this time.</p> <p><i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation.</i></p>

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

Range of Impact
High
Moderate
Minimal

Note that detailed resource evaluations are documented in the Technical Resource Memos for Permitting

Definitions of Tiering Framework:

Impact Rating Concern – This evaluation category captures the potential effect of the project and its construction on the natural and social environment. Some of the most common environmental impacts are:

- social and community environment
- noise impacts
- water resources and wetlands
- protected species
- damage to ecosystems and loss of biodiversity
- historic resources
- regulatory requirements and complexity
- mitigation cost and complexity
- interdependence or conflict with other projects

Human well-being depends directly on biodiversity and ecosystems. It is therefore vital to try to measure, plan and minimize any segment activity that might alter the ecological balance.

- *Minimal: No or Minimal impacts to ecosystems (including social and natural)*
- *Moderate: Impacts that have reasonable solutions to ecosystems (including social and natural)*
- *High: Challenging or Unknown impacts to ecosystems (including social and natural)*

Feasibility Concern - Resource feasibility concerns indicate whether the segment will interfere with the socioeconomic activities within the corridor and identify potential issues and problems that could arise from pursuing the project.

- *Minimal: No or Minimal impacts to existing operations or other transportation projects occurring within the segment*
- *Moderate: Impacts that have reasonable solutions to existing operations or other transportation projects occurring within the segment*
- *High: Challenging or Unknown impacts to existing operations or other transportation projects occurring within the segment*

Timing Implications - It is important that such regionally significant projects can be reliably scheduled so that funding pipelines and adjacent projects are not disrupted by setbacks from the permitting issues being evaluated. While these considerations will be presented as notes for each category, below is a general range of how the timing impacts will be viewed:

- *Minimal: No or Minimal likelihood of timing issues or schedule impacts*
- *Moderate: Impacts that have reasonable solutions of timing issues or schedule impacts*
- *High: Challenging or Unknown (i.e. likelihood of future changes in policies related to permitting) impacts of timing issues or schedule impacts*

Resource Impacts – Reference to the HRTPO Corridor Evaluation Technical Memorandum Table of Resources for a detailed overview of resources potentially present within the segment.

- *Minimal: No or Minimal impacts to resources*
- *Moderate: Impacts that have reasonable solutions to resources*
- *High: Challenging or Unknown impacts to resources*

Readiness Technical Evaluation

Readiness Evaluation Criteria

Summary of Changes

Segment 1a: I-664 N. of College Dr.

Operational independence shift from moderate to most as a result of operational benefits. Phasing potential shifted from moderate to most as a result of operational benefits. "HRTAC" criterion shifted from moderate to most as a result of congestion relief benefits.

Segment 3: VA 164 Connector

IIJA funding shifted from moderate to least due to lack of detail plan with no dedicated funding.

Segment 4: I-564 Connector

IIJA funding shifted from moderate to least due to lack of detail plan with no dedicated funding.

Least
Moderate
Most

Project Readiness

<i>Readiness Issues</i>	<i>Segment 1a: I-664 N of College Dr.</i>	<i>Segment 2: VA 164</i>	<i>Segment 3: VA 164 Connector</i>	<i>Segment 4: I-564 Connector</i>	<i>Segment 5: I-664 Connector</i>
	<i>1a</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Project Independence					
Independence from other segments to achieve operational benefits	*				
Phasing Potential	*				
Integration with HREL					
Project Development					
Adopted by a regional agency					
Stakeholder / Review Agency Engagement					
Advancement of Project Study					
Funding Opportunities Eligibility					
HRTAC	*				
SMART Scale High Priority Project					
Infrastructure Investment and Jobs Act (IIJA) Grant Funding			*	*	

* Evaluations that have been revised since original April 2022 draft

Range of Readiness
Least
Moderate
Most

Definitions of Evaluation Framework:

Readiness – This evaluation category captures the effort required to move a project through development, to identify the independent nature of each segment, the ability to move through the regional planning and prioritization process, as well as the project’s ability to obtain funding.

Level of Project Independence – Each segment of the RCS II will improve the overall regional network. However, benefits are more easily achieved if a segment function has independent benefits or functions as an extension of an ongoing project. Additionally, some segments can be phased to provide interim benefits in a cost-effective manner or extend the region’s express lanes project (HREL) which has been identified as a regional priority project.

Operational Independence/Benefits

- *High Readiness:* Segment provides operational benefits with existing logical termini currently under construction
- *Moderate Readiness:* Segment provides operational benefits with programmed improvements
- *Low Readiness:* Project operationally dependent on completion of adjacent project
- *Unknown*

Phasing Potential

- *High Readiness:* Project segments/phases provide operational benefits and are easily expanded for ultimate build out
- *Moderate Readiness:* Project segments/phases result in minor operational benefits but are easily expanded for ultimate build out
- *Low Readiness:* Project segments/phases do not result in operational benefits and/or create challenges for ultimate build out
- *Unknown*

Integration with HREL

- *High Readiness:* Project segments/phases will extend the HREL that is currently underway
- *Moderate Readiness:* Project segments/phases will create a future connection to the HREL network
- *Low Readiness:* Project segments/phases will not include HREL
- *Unknown*

Level of Project Development – A key step in project development process is gaining consensus in the planning process which involves prioritizing projects and ranking based on cost and benefits. In order to increase projects rankings, independent efforts may have taken place or are underway that provide more detailed information that enhance a project ranking. Stakeholder engagements are included in every step of the project development, but input or concerns vary based on where a project is in the overall process.

Adopted by a regional agency (In the existing LRTP)

- *High Readiness:* Included in more than one Long Range Transportation Plan (LRTP) and within the constrained model
- *Moderate Readiness:* Included in the LRTP vision plan
- *Low Readiness:* Not included in long-range planning
- *Unknown*

Range of Readiness
Least
Moderate
Most

Stakeholder / Review Agency Engagement (Excluding SEIS effort)

- *High Readiness:* Documentation of support by local, state, and federal agencies
- *Moderate Readiness:* Neither support nor opposition documented
- *Low Readiness:* Documentation of opposition by local, state, and federal agencies
- *Unknown*

Advancement of Project Study

- *High Readiness:* Project segment or phase is independently being studied or standalone study has been completed within last 3-5 years
- *Moderate Readiness:* Project segment or phase has been previously studied or is part of another study such as an interchange modification report
- *Low Readiness:* No activity has occurred beyond the SEIS
- *Unknown*

Funding Opportunities Eligibility – All of the segments included in the RCSII will have significant costs and the current regional needs far exceed available funding for traditional financial sources. Therefore, it is important to identify projects that may be able to take advantage of federal, state, or future earmark funding sources.

HRTAC – Congestion Benefit (Transit not an option)

- *High Readiness:* Eligible; capacity improvements provide significant level of congestion relief
- *Moderate Readiness:* Unknown
- *Low Readiness:* Non-Eligible; capacity improvements provide non-congestion benefits
- *Unknown* N/A

SMART Scale High Priority Project

- *High Readiness:* Meets VTrans and is a High Priority Need
- *Moderate Readiness:* Meets VTrans need
- *Low Readiness:* Does not meet VTrans need
- *Unknown*

Infrastructure Investment and Jobs Act (IIJA) Grant Funding – to be further defined as funding opportunities are documented

Funding not clearly defined at this time; preliminary criteria identified the following objectives

- *Freight Funding – Rail Crossing (requires additional research)*
- *Transit Funding (requires additional research)*

- *High Readiness:* N/A – not defined at this time

Range of Readiness
Least
Moderate
Most

- *Moderate Readiness: Priority – direct benefit to currently identified objectives*
- *Low Readiness: Non-Priority – no or indirect benefit to currently identified objectives*
- *Unknown*

SEGMENT: *1a: I-664 North of College Dr.*

Readiness Criteria	Rating	Description of Readiness
Project Independence		
Independence from other RCS segments to achieve operational benefits	Most *	Segment adds capacity. Consistent mainline cross section with northeastern termini at I-664/I-64 interchange, which is part of HRBT expansion (currently under construction). Capacity improvements fully realized upon completion of I-664 S widening to Bowers Hill.
Phasing Potential	Most *	Capacity improvements would have incremental benefits if phasing occurred between interchanges. Interim solutions may create interim bottlenecks at termini. Ability to support HREL system, phasing will depend on points of entry to the HREL system within each segment. MMBT Project may be a standalone project if adjacent land side projects completed first; would be last phased segment;
Integration with HREL	Most	HREL included in adjacent HRBT project and referenced as Ph 4A/4B
Project Development		
Adopted by a regional agency	Moderate	Included in 2045 Vision Plan, not fiscally constrained plan
Stakeholder / Review Agency Engagement	Moderate	No documented support nor opposition from stakeholders
Advancement of Project Study	Least	No effort has occurred beyond SEIS
Funding Opportunities Eligibility		
HRTAC	Most *	Likely candidate for HRTAC Funding based on Level of congestion benefit and support HREL completion and transportation reliability
SMART Scale High Priority Project	Most	VTrans High Priority – Corridor of Statewide Significance (COSS)
Infrastructure Investment and Jobs Act (IIJA) Grant Funding	Least	Project is still within the concept phase with no current funding plan.

* Evaluations that have been revised since original April 2022 draft

Range of Readiness
Least
Moderate
Most

SEGMENT: 2: VA 164

Readiness Criteria	Rating	Description of Readiness
Project Independence		
Independence from other RCS segments to achieve operational benefits	Moderate	Segment adds capacity. Inconsistent mainline cross section with eastern and western termini. Potential bottlenecks created until VA 164 Connector and I-664 widening projects completed.
Phasing Potential	Moderate	Capacity improvements would have incremental benefits if phasing occurred between interchanges. Interim solutions would create interim bottlenecks at termini.
Integration with HREL	Least	HREL not included along VA 164
Project Development		
Adopted by a regional agency	Most	Included in 2045 Fiscally Constrained Plan
Stakeholder / Review Agency Engagement	Least	Documented opposition from stakeholders (Portsmouth)
Advancement of Project Study	Moderate	Previous IMR completed by Port of Virginia <i>VDOT is advancing a corridor planning study IMR/Final Report was completed by Port of Virginia in coordination with VDOT and FHWA. Given the time lapse since that Study, a new Interchange Analysis Report would need to be developed.</i>
Funding Opportunities Eligibility		
HRTAC	Most	Included in the HRTAC Plan of Finance
SMART Scale High Priority Project	Moderate	VTrans Priority, not COSS; benefits to VA 164 assist port/truck travel therefore promoting VTrans goals of economic prosperity and connected places
Infrastructure Investment and Jobs Act (IIJA) Grant Funding	Moderate	Currently Unknown as no specific criteria has been published <i>Project moving forward in detail study and HRTAC funding has been identified</i>

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

Range of Readiness
Least
Moderate
Most

SEGMENT: 3: VA 164 Connector

Readiness Criteria	Rating	Description of Readiness
Project Independence		
Independence from other RCS segments to achieve operational benefits	Least	Requires either I-664 Connector or I-564 Connector for interstate connection OR requires VA 164 widening to be complete.
Phasing Potential	Least	Capacity improvements contingent on VA 164 widening and I-564 Connector project.
Integration with HREL	Least	HREL not included along VA 164
Project Development		
Adopted by a regional agency	Moderate	Included in 2045 Vision Plan, not Fiscally Constrained Plan
Stakeholder / Review Agency Engagement	Least	Noted challenges from ACOE, DOD
Advancement of Project Study	Moderate	Craney Island Access Road Study funded (LRTP proj. 2045-604)
Funding Opportunities Eligibility		
HRTAC	Least	New roadway facilities do not have existing congestion and unlike to support HRTAC funding criteria.
SMART Scale High Priority Project	Least	New roadway facilities do not have existing congestion, therefore do not achieve high scores within SMARTSCALE Criteria
Infrastructure Investment and Jobs Act (IIJA) Grant Funding	Least *	Project is still within the concept phase with no current funding plan.

* Evaluations that have been revised since original April 2022 draft

SEGMENT: *4: I-564 Connector*

Readiness Criteria	Rating	Description of Readiness
Project Independence		
Independence from other RCS segments to achieve operational benefits	Least	Requires either VA 164 connector or I-664 connector for interstate connection
Phasing Potential	Least	Phases not feasible based on water crossing
Integration with HREL	Least	Project not adjacent to existing or proposed HREL expansion and would trigger an ERC compensation event
Project Development		
Adopted by a regional agency	Moderate	Included in 2045 Vision Plan, not Fiscally Constrained Plan
Stakeholder / Review Agency Engagement	Least	Noted challenges from ACOE, DOD
Advancement of Project Study	Least	No effort has occurred beyond SEIS
Funding Opportunities Eligibility		
HRTAC	Least	New roadway facilities do not have existing congestion and therefore are not eligible for HRTAC funding.
SMART Scale High Priority Project	Least	New roadway facilities do not have existing congestion, therefore do not achieve high scores within SMARTSCALE Criteria
Infrastructure Investment and Jobs Act (IIJA) Grant Funding	Least *	Project is still within the concept phase with no current funding plan.

* Evaluations that have been revised since original April 2022 draft

SEGMENT: *5: I-664 Connector*

Readiness Criteria	Rating	Description of Readiness
Project Independence		
Independence from other RCS segments to achieve operational benefits	Least	Requires either VA 164 connector or I-564 connector for interstate connection
Phasing Potential	Least	Phases not feasible based on water crossing
Integration with HREL	Least	HREL not included along VA 164 connector and would trigger an ERC compensation event
Project Development		
Adopted by a regional agency	Moderate	Included in 2045 Vision Plan, not Fiscally Constrained Plan
Stakeholder / Review Agency Engagement	Least	Noted challenges from ACOE
Advancement of Project Study	Least	No effort has occurred beyond SEIS
Funding Opportunities Eligibility		
HRTAC	Least	New roadway facilities do not have existing congestion and therefore are not eligible for HRTAC funding.
SMART Scale High Priority Project	Least	New roadway facilities do not have existing congestion, therefore do not achieve high scores within SMARTSCALE Criteria
Infrastructure Investment and Jobs Act (IIJA) Grant Funding	Least	Project is still within the concept phase with no current funding plan.

Range of Readiness
Least
Moderate
Most

Definitions of Tiering Framework:

Readiness – This evaluation category captures the effort required to move a project through development, to identify the independent nature of each segment, the ability to move through the regional planning and prioritization process, as well as the project’s ability to obtain funding.

Level of Project Independence – Each segment of the RCS II will improve the overall regional network. However, benefits are more easily achieved if a segment function has independent benefits or functions as an extension of an ongoing project. Additionally, some segments can be phased to provide interim benefits in a cost-effective manner or extend the region’s express lanes project (HREL) which has been identified as a regional priority project.

Operational Independence/Benefits

- *High Readiness:* Segment provides operational benefits with existing logical termini currently under construction
- *Moderate Readiness:* Segment provides operational benefits with programmed improvements
- *Low Readiness:* Project operationally dependent on completion of adjacent project
- *Unknown*

Phasing Potential

- *High Readiness:* Project segments/phases provide operational benefits and are easily expanded for ultimate build out
- *Moderate Readiness:* Project segments/phases result in minor operational benefits but are easily expanded for ultimate build out
- *Low Readiness:* Project segments/phases do not result in operational benefits and/or create challenges for ultimate build out
- *Unknown*

Integration with HREL

- *High Readiness:* Project segments/phases will extend the HREL that is currently underway
- *Moderate Readiness:* Project segments/phases will create a future connection to the HREL network
- *Low Readiness:* Project segments/phases will not include HREL
- *Unknown*

Level of Project Development – A key step in project development process is gaining consensus in the planning process which involves prioritizing projects and ranking based on cost and benefits. In order to increase projects rankings, independent efforts may have taken place or are underway that provide more detailed information that enhance a project ranking. Stakeholder engagements are included in every step of the project development, but input or concerns vary based on where a project is in the overall process.

Adopted by a regional agency (In the existing LRTP)

- *High Readiness:* Included in more than one Long Range Transportation Plan (LRTP) and within the constrained model
- *Moderate Readiness:* Included in the LRTP vision plan
- *Low Readiness:* Not included in long-range planning

Range of Readiness
Least
Moderate
Most

- *Unknown*

Stakeholder / Review Agency Engagement (Excluding SEIS effort)

- *High Readiness:* Documentation of support by local, state, and federal agencies
- *Moderate Readiness:* Neither support nor opposition documented
- *Low Readiness:* Documentation of opposition by local, state, and federal agencies
- *Unknown*

Advancement of Project Study

- *High Readiness:* Project segment or phase is independently being studied or standalone study has been completed within last 3-5 years
- *Moderate Readiness:* Project segment or phase has been previously studied or is part of another study such as an interchange modification report
- *Low Readiness:* No activity has occurred beyond the SEIS
- *Unknown*

Funding Opportunities Eligibility – All of the segments included in the RCSII will have significant costs and the current regional needs far exceed available funding for traditional financial sources. Therefore, it is important to identify projects that may be able to take advantage of federal, state, or future earmark funding sources.

HRTAC – Congestion Benefit (Transit not an option)

- *High Readiness:* Eligible; capacity improvements provide significant level of congestion relief
- *Moderate Readiness:* Unknown
- *Low Readiness:* Non-Eligible; capacity improvements provide non-congestion benefits
- *Unknown* N/A

SMART Scale High Priority Project

- *High Readiness:* Meets VTrans and is a High Priority Need
- *Moderate Readiness:* Meets VTrans need
- *Low Readiness:* Does not meet VTrans need
- *Unknown*

Infrastructure Investment and Jobs Act (IIJA) Grant Funding – to be further defined as funding opportunities are documented

Funding not clearly defined at this time; preliminary criteria identified the following objectives

- *Freight Funding – Rail Crossing (requires additional research)*
- *Transit Funding (requires additional research)*
- *High Readiness:* N/A – not defined at this time

Range of Readiness
Least
Moderate
Most

- *Moderate Readiness: Priority – direct benefit to currently identified objectives*
- *Low Readiness: Non-Priority – no or indirect benefit to currently identified objectives*
- *Unknown*

Permitting Issues Technical Resource Memos

SEGMENT: *1a: I-664 North of College Dr.*

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
<i>Social Environment</i>		
Community Resources		
Military/DOD/USACOE	n/a	No resources within the LOD
Transportation Facilities	<p>North Side:</p> <ul style="list-style-type: none"> ▪ Overpass at W. Queen Street ▪ Braemer Drive ▪ Balmoral Drive ▪ Keswick Lane ▪ Interchange at Powhatan Parkway ▪ 50th Street (<i>would need to be permanently closed due to LOD from Industry Drive to Howmet Drive</i>) ▪ Maxwell Drive (<i>would need to be permanently closed due to LOD from G Street to 50th Street</i>) ▪ <i>Partial closure of 50th Street (Business access relocation would be required)</i> ▪ Interchange at Aberdeen Road ▪ Overpass of Railway Line (near Greenlawn Avenue) ▪ <i>Railroad adjacent to 39th Street</i> ▪ Overpass at Chestnut Avenue ▪ Overpass at Roanoke Avenue ▪ Overpass at Marshall Avenue ▪ Overpass at 39th Street ▪ Overpass of Railway Lines (near Terminal Avenue) ▪ Terminal Avenue (several locations) (<i>may require partial closure or permanent re-route</i>) ▪ Overpass at 35th Street ▪ Overpass at 36th Street ▪ Interchange at Route 60 ▪ Overpass at 28th Street ▪ Overpass at 27th Street ▪ Overpass at 26th Street ▪ Overpass at 25th Street ▪ Overpass at 21th Street ▪ 19th Street ▪ 17th Street ▪ 14th Street ▪ Harbor Road ▪ Commonwealth Road ▪ Club Drive ▪ Wagon Road ▪ Armstead Road ▪ College Drive (VA-135) 	<p>Transportation facilities identified within the LOD. Assumption that all transportation facilities will remain at existing or improved functionality.</p> <p>Stakeholder coordination with railroad facilities will be required and may pose construction schedule risk.</p>

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
Virginia Port Authority (VPA)	Newport News Marine Terminals	May require right-of-way acquisition and/or construction easements. Maintenance of terminal operations and traffic will be required.
Businesses/Business Access	North Side: <ul style="list-style-type: none"> ▪ 1 utility impact ▪ 2 telecom impacts ▪ 1 active and 1 inactive rail corridor impact ▪ 1 police impact ▪ 1 house of worship impact ▪ 12-13 commercial impacts, including ▪ 1 restaurant impact ▪ 1 grocery impact ▪ 1 probable Navy impact ▪ 3 core structure impacts ▪ 6 Driveway impacts ▪ <i>Tidewater Tire</i> ▪ <i>Ashcraft Services – storage yard</i> ▪ <i>Chesapeake Bay Parking</i> 	Identified Businesses and/or Business Access impacts anticipated within the LOD; however, further detailed design may avoid and/or minimize potential impacts.
Sensitive Resources		
Parks & Recreation	North Side: <ul style="list-style-type: none"> ▪ Superblock Park (2601 Washington Avenue) ▪ King Lincoln Park (600 Jefferson Ave) ▪ Park Place Playground (50th Street) 	May have disturbance within the LOD for Park Place Playground; however, further detailed design may avoid and/or minimize potential impacts.
Section 4(f) Properties (publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places)	Section 4(f) resources are identified within the segment corridor – refer to individual line items for each resource type. North Side: <ul style="list-style-type: none"> ▪ Park Place Playground (50th Street) 	It is anticipated that all efforts to avoid any identified Section 4(f) resource will be evaluated. All impacts to Section 4(f) properties are anticipated to either not be considered a Section 4(f) use, or are considered a <i>de minimis</i> use, per 23 CFR 774 and the Section 4(f) Policy Paper.
Section 6(f) Properties	Any property that was planned, purchased, or improved with Land and Water Conservation Fund (LWCF) money (recreational lands that are also regulated under Section 4(f))	No resources within the LOD
Places of Worship	North Side: <ul style="list-style-type: none"> ▪ New Covenant Baptist Church ▪ Agape Hands Cathedral Church ▪ Kingdom Hall of Jehovah's Witnesses 	Kingdom Hall of Jehovah's Witnesses – impacts within LOD; however, further detailed design may avoid and/or minimize potential impacts.
Cemetery	North Side: <ul style="list-style-type: none"> ▪ Pleasant Shade Cemetery ▪ Greenlawn Cemetery ▪ Greenlawn Memorial Park 	No resources within the LOD

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
School/University	North Side: <ul style="list-style-type: none">▪ Hampton High School (adjacent to LOD)▪ BT Washington Middle School (adjacent to LOD)	No resources within the LOD
Apartment Complexes/Residences	North Side: <ul style="list-style-type: none">▪ Tidewater Senior Apartments▪ Single family residences along Braemar Drive▪ Single family residences along Azaela Drive▪ Single family residences along Birch Avenue▪ Single family residences along Byrd Street	Most resources are adjacent to the LOD; however, final LOD requirements may show that minor right-of-way acquisitions will be needed.
Children's Health & Safety	The most likely locations of potential effects on children (other than at residences abutting right-of-way) would be at schools where there are outdoor activity areas for children. <ul style="list-style-type: none">▪ Hampton High School (adjacent to LOD)▪ BT Washington Middle School (adjacent to LOD)	No resources within the LOD
Environmental Justice		
Environmental Justice	North Side: <ul style="list-style-type: none">▪ 35 private residence impacts in the Jefferson neighborhood and Azalea Garden subdivision, including▪ 1 driveway impact▪ 9 structure (outbuilding) impacts (<i>adjacent to 41st Street</i>)▪ There may be a catering business on the 1100 block of 41st street▪ Concentration of poverty and population is on the west side of the corridor in East End, Marshall & Huntington. Populations in this area south of I-664 are predominately African American south of I-664, with an increasing minority Hispanic population north of I-664	Identified Environmental Justice impacts anticipated within the LOD; however, further detailed design may avoid and/or minimize potential impacts. <i>All segments have undergone an initial environmental justice review with additional evaluations occurring as more detailed design information becomes available.</i>
Federal State, and Local Permits		
Water Resources		
Tidal Waters/Tidal Streams/Subaqueous bottom	North Side: <ul style="list-style-type: none">▪ <i>Newport News Creek (E1UBL) – most likely temporary construction access impacts (0.3 acres)</i>▪ Newport News Creek (E1UBL) – adjacent but direct impact▪ North Island Tunnel (24 acres)▪ James River (E1UBL)(north bridge/trestle) (16 acres) (28 acres)▪ South Island Tunnel (27 acres)▪ James River (E1UBL)(south bridge/trestle) (43 acres)	Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate. Tidal Waters/Tidal Streams from Trestle construction: 59 acres - 71 acres Subaqueous bottom for island construction: 51 acres

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
		<p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Non-Tidal Waters	<p>North Side:</p> <ul style="list-style-type: none"> ▪ Freshwater roadway drainage ditch at Howmet Corporation (approx. 190 270 linear feet) ▪ Freshwater roadway drainage ditch W Pembroke Ave (approx. 1500 linear feet) 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>Non-Tidal Waters: 1,690 1,770 linear feet</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
Maintained Navigational Channels and Civil Works Projects	<ul style="list-style-type: none"> ▪ Newport News Creek (E1UBL) – adjacent but direct impact ▪ Newport News Channel 	No impacts to Maintained Navigational Channels and Civil Works Projects is anticipated. All Maintained Navigational Channels will be avoided by the tunnel design.
Wetlands	n/a	No resources within the LOD
Waterfront Development Areas		
Commercial Ports	<ul style="list-style-type: none"> ▪ River Port ▪ Blue Night Energy Partners ▪ Chesapeake Bay Fish Packing ▪ Seafood Industrial Park ▪ Davis Boat Works ▪ Boat Marina along Seawall 	Impacts TBD when southern terminus with tunnel structure LOD alignment is complete; however anticipated to be outside limits of LOD.
Commercial Fishing Piers	<ul style="list-style-type: none"> ▪ Green Mile Fishing Pier ▪ King-Lincoln Park Fishing Pier 	No resources within the LOD
Wildlife Habitat		
Colonial Waterbird Nesting	<ul style="list-style-type: none"> ▪ Urban, Newport News South, Newport News (outside LOD) ▪ 22nd Avenue (outside LOD) ▪ Peterson Yacht Basin (outside LOD) ▪ Salters Creek (outside LOD) ▪ Craney Island, Northwest (outside LOD) 	<p>No resources within the LOD</p> <p>Habitat is present for the Gull-billed tern, Piping plover, Red knot, and Wilson's plover.</p> <p><i>Anticipate strong interest in and public objections to impacts to colonial nesting birds. Mitigation requirements for displaced birds may be required under Migratory Bird Treaty Act. Consultant will make note of all comments during the public involvement stage of this project.</i></p>
Benthic Species	<ul style="list-style-type: none"> ▪ Hard Clam Habitat (571 acres) ▪ Hard Clam Habitat Tunnels (294 acres) ▪ Public Clamming Grounds (0 acres) ▪ Blue Crab (<i>Callinectes sapidus</i>) (0 acres) ▪ Oyster Reefs (<i>Crassostrea virginica</i>) (0 acres) ▪ Oyster Sanctuary (0 acres) ▪ Public Baylor Grounds (93 acres) ▪ Private Shellfish Leases (0 acres) <p>The introduction of additional hard substrate such as pilings and riprap protection could provide beneficial habitat where it did not previously exist for oysters and other marine benthic organisms.</p>	<p>The entire footprint beneath each segment is considered potential hard clam habitat because the entire bottom is composed of sand, mud, or a combination suitable for hard clams.</p> <p>Construction BMPs, including conforming to the guidelines contained in the VESCH, would be employed to reduce turbidity and sediment disturbance. The time of year and length of dredging operations may need to be considered as prolonged dredging would result in disturbance to the benthos and adjacent water column over a longer period of time dependent upon the nature of the bottom substrate, tidal fluctuations, and estuarine dynamics. Strict adherence to erosion and</p>

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
		<p>sediment control measures and permit requirements would minimize water quality impacts due to sedimentation and turbidity during construction. Long-term effects to benthic communities due to changes in water quality would be minimized and avoided through implementation of stormwater management plans designed to minimize impacts from increases in impervious surfaces, mitigate increases in runoff volume, and satisfy requirements to reduce pollutant loads below existing baseline conditions, as required by the VSMP regulations and Chesapeake Bay TMDL.</p> <p><i>No specific mitigation measures can be determined at this level of engineering design.</i></p>
Historic Resources		
Architectural Resources / Historic Districts	<p>North Side:</p> <ul style="list-style-type: none"> ▪ 121-0032 (St. Vincent de Paul Catholic Church)(NRHP-Listed 2005) ▪ 121-0033 (Brown Manufacturing Coca-Cola Bottling Works, Daily Press Building)(Recommended Potentially Eligible 2016) ▪ 121-0157 (Peninsula Catholic High School/St. Vincent's School for Girls)(Recommended Potentially Eligible 2016) ▪ 121-0299 (Noland Company Building)(NRHP-Listed 2010) ▪ 121-5318 (Jefferson Avenue Commercial Historic District) ▪ 121-5277 (Jefferson Avenue Commercial Historic District) ▪ 121-0020 (Middle Ground Light Station)(NRHP Listing, VLR Listing) 	<p>The area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.</p> <p>No direct APE impacts.</p> <p>No anticipated indirect APE (viewshed) impacts.</p>
Archaeological Resources	<p>North Side:</p> <ul style="list-style-type: none"> ▪ Captain John Smith Chesapeake National Historic Trail (first water trail designated under the National Trails System Act) ▪ Washington-Rochambeau Revolutionary Route National Historic Trail (designated a National Historic Trail under the National Trails System Act)(The W-RNHT is located within what is now a highly 	<p>If any significant archaeological sites associated with the Captain John Smith Chesapeake National Historic Trail and Washington-Rochambeau Revolutionary Route National Historic Trail are eventually identified within the LOD, they likely would meet the regulatory exception to the requirements of Section 4(f)</p>

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
	industrialized and developed area in which few remnants of the historic landscape survive)	approval: the sites likely would be important chiefly for the information they contain, which can be retrieved through data recovery, and would have minimal value for preservation in place.
Additional Factors		
Mitigation Complexity and Cost	<ul style="list-style-type: none"> ▪ Wetland, US waters, and subaqueous bottomlands impacts 	<p>High anticipated mitigation costs would be required for wetland and US waters impacts due to construction of the new island required for the tunnel segment.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p> <p><i>Additional coordination with mitigation banks to ensure sufficient capacity for required purchases will occur as design progresses and more precise impacts can be determined.</i></p>
Permit Stakeholder Coordination	<ul style="list-style-type: none"> ▪ Transportation facilities identified within the LOD (north side). ▪ Newport News Marine Terminals identified within the LOD (north side). ▪ Railroad facilities identified within the LOD (north side). ▪ River Port LLC facilities identified within the LOD (north side). ▪ Blue Night Energy Partners facilities identified within the LOD (north side). ▪ Adjacent Property Owners (Residents and Businesses) 	Extensive stakeholder coordination with Federal Navigation Projects along the James River (Newport News Channel), Elizabeth River, rail facilities, and current operations at the Newport News Marine Terminals will be required and may pose design and/or construction schedule risk.
Effect on other Federal Navigation Projects	<ul style="list-style-type: none"> ▪ Newport News Creek (E1UBL) – adjacent but direct impact ▪ Newport News Channel 	This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River (Newport News Channel), Elizabeth

1a: I-664 N of College Dr. Resource	Resources Identified	Comments
		River, and current operations at the Newport News Marine Terminals.
Potential Future Changes in Policy Issues		No major regulatory policy changes are anticipated at this time. <i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation.</i>

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: **2: VA 164**

2: VA 164 Resource	Resources Identified	Comments
Social Environment		
Community Resources		
Military/DOD/USACOE	n/a	No resources within the LOD
Transportation Facilities	<ul style="list-style-type: none"> ▪ VA-164 ▪ Western Branch Boulevard ▪ College Drive ▪ Town Point Road ▪ Cedar Lane ▪ Railway Facilities 	<p>Transportation facilities identified within the LOD. Assumption that all transportation facilities will remain at existing or improved functionality.</p> <p>Stakeholder coordination with railroad facilities will be required and may pose construction schedule risk.</p>
Businesses/Business Access	No business impacts.	<p>No resources within the LOD.</p> <p><i>Businesses are located adjacent to the LOD; however, this is a constrained corridor that will be addressed as the planning process continues. More advanced conceptual design will be done later in the planning process that will further identify corridor constraints and impacts. There are business parking lots near the LOD to the western end of this segment.</i></p>
Sensitive Resources		
Parks & Recreation	Ebony Heights Park	<p>Expansion to the eastbound side of VA-164 may require a portion of easement from Ebony Heights Park; however, further detailed design may avoid and/or minimize any potential impacts. <i>more advanced conceptual design will be done later in the planning process. At this first tier planning stage, it does not appear that Ebony Heights Park falls within the preliminary and developing Limits of Disturbance. The planning process is still in its early stages, and will continue to solicit, document and resolve comments and concerns about relocation, displacement and property from Portsmouth in later stages of planning and design.</i></p>
Section 4(f) Properties	<p>Publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places.</p> <ul style="list-style-type: none"> ▪ Ebony Heights Park 	<p>Expansion to the eastbound side of VA-164 may require a portion of easement from Ebony Heights Park; however, further detailed design may avoid and/or minimize any potential impacts.</p>

2: VA 164 Resource	Resources Identified	Comments
		<i>more advanced conceptual design will be done later in the planning process. At this first tier planning stage, it does not appear that Ebony Heights Park falls within the preliminary and developing Limits of Disturbance. The planning process is still in its early stages, and will continue to solicit, document and resolve comments and concerns about relocation, displacement and property from Portsmouth in later stages of planning and design.</i>
Section 6(f) Properties	Any property that was planned, purchased, or improved with Land and Water Conservation Fund (LWCF) money (recreational lands that are also regulated under Section 4(f))	No resources within the LOD
Places of Worship	<ul style="list-style-type: none"> ▪ New Beginning Cristian Center ▪ New Beginning Pentecostal Church 	No resources within the LOD
Cemetery	<ul style="list-style-type: none"> ▪ New Beginning Pentecostal Church Cemetery ▪ <i>Churchland Cemetery in Ebony Heights Park.</i> 	No resources within the LOD
School/University	n/a	No resources within the LOD
Apartment Complexes/Residences	<ul style="list-style-type: none"> ▪ Stonebridge Apartments ▪ Churchland Square Apartments ▪ Westwinds Apartments ▪ Preston Trails Apartments ▪ 3833 Old Farm Rd – appears to have cleared into the right of way 	No resources within the LOD <i>At this first tier planning stage, it does not appear that any residential structures fall within the preliminary and developing Limits of Disturbance. The planning process is still in its early stages, and will continue to solicit, document and resolve comments and concerns about relocation, displacement and property from Portsmouth in later stages of planning and design.</i>
Children's Health & Safety	n/a	No resources within the LOD
Environmental Justice		
Environmental Justice	<p>Past and present growth and development - expansion of controlled access roadways have separated neighboring communities.</p> <ul style="list-style-type: none"> ▪ Expansion to the EB side of VA-164 may require a portion of easement from Ebony Heights Park 	<p>No residents or neighboring communities would be relocated.</p> <p><i>Communities within 500 feet of the preliminary Limits of Disturbance for VA 164 are racially and income diverse. As this and future planning and project development processes continue, outreach, partnering and collaboration with neighboring communities will engage these</i></p>

2: VA 164 Resource	Resources Identified	Comments
		<i>communities to mitigate any potential impacts.</i>
Federal State, and Local Permits		
Water Resources		
Tidal Waters/Tidal Streams/Subaqueous bottom	n/a	No resources within the LOD
Non-Tidal Waters	<ul style="list-style-type: none"> ▪ Non-Tidal channel at Lilac Drive (approx. 500 linear feet) 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>Non-Tidal Waters: 500 linear feet</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design <i>as well as coordination with mitigation banks to ensure sufficient capacity for required purchases.</i></p>
Maintained Navigational Channels and Civil Works Projects	n/a	No resources within the LOD
Wetlands	<p>Several wetland systems within the segment corridor are located outside the LOD.</p> <ul style="list-style-type: none"> ▪ PFO at Harvey Street (0.06 acres) – adjacent to ROW ▪ PFO at Bowden Street (0.24 acres) – adjacent to ROW ▪ PFO at Pond Lane (0.18 acres) – adjacent to ROW 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>PFO Wetlands: 0.48 acres</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design <i>as well as coordination with mitigation banks to ensure sufficient capacity for required purchases.</i></p>
Waterfront Development Areas		
Commercial Ports	n/a	No resources within the LOD
Commercial Fishing Piers	n/a	No resources within the LOD
Wildlife Habitat		
Colonial Waterbird Nesting	<ul style="list-style-type: none"> ▪ Urban, Newport News South, Suffolk (outside LOD) <p>Habitat is present for the Gull-billed tern, Piping plover, Red knot, and Wilson's plover.</p>	No resources within the LOD.
Benthic Species	n/a	No resources within the LOD
Historic Resources		
Architectural Resources / Historic Districts	<ul style="list-style-type: none"> ▪ 133-5542: Camellia Historic District (adjacent to ROW) 	The area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly

2: VA 164 Resource	Resources Identified	Comments
	<ul style="list-style-type: none"> ▪ 124-5264: Churchland West Historic District (adjacent to ROW) ▪ 124-5265: Churchland West Historic District (adjacent to ROW) ▪ 124-5261: Churchland Square Apartments (adjacent to ROW)(not eligible) ▪ 124-5262: Preston Trails Apartments (adjacent to ROW) (not eligible) ▪ 124-5260: Stone Ridge Apartments (adjacent to ROW) (not eligible) ▪ 124-5266: Merrifields Historic District (adjacent to ROW) 	<p>cause alterations in the character or use of historic properties.</p> <p>No direct APE impacts.</p> <p>No anticipated indirect APE (viewshed) impacts.</p>
Archaeological Resources	n/a	No resources within the LOD
Additional Factors		
Mitigation Complexity and Cost	<ul style="list-style-type: none"> ▪ Wetland, US waters, and subaqueous bottomlands impacts 	<p>Minimal anticipated mitigation costs would be required for wetland, US waters, and subaqueous bottomlands impacts throughout the corridor.</p> <p><i>Additional coordination with mitigation banks to ensure sufficient capacity for required purchases will occur as design progresses and more precise impacts can be determined.</i></p>
Permit Stakeholder Coordination	<ul style="list-style-type: none"> ▪ Transportation facilities identified within the LOD. ▪ Railroad facilities identified within the LOD. ▪ Adjacent Property Owners (Residents and Businesses) ▪ <i>City of Portsmouth</i> 	<p>Assumption that all transportation facilities will remain at existing functionality. Stakeholder coordination with railroad facilities will be required and may pose construction schedule risk.</p> <p><i>Portsmouth will be included in the discussion as the planning and design process outreach, with opportunities to raise, raise, document and resolve concerns. This inclusive process including Portsmouth will continue as detailed planning proceeds at a later date.</i></p>
Effect on other Federal Navigation Projects	n/a	Resources outside the LOD.
Potential Future Changes in Policy Issues		No major regulatory policy changes are anticipated at this time.

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: *3: VA 164 Connector*

<i>3: VA 164 Connector</i> Resource	Resources Identified	Comments
<i>Social Environment</i>		
<i>Community Resources</i>		
Military/DOD/USACOE	<ul style="list-style-type: none"> ▪ US Army Corps of Engineers Craney Island Disposal Area (CIDDMA) ▪ Craney Island Naval Supply Center ▪ US Coast Guard Sector Virginia ▪ US Coast Guard Base Portsmouth ▪ US Navy Craney Island Fuel Depot (CIFD Terminal) ▪ US Navy 	<p>Segment traverses through all the facilities noted.</p> <p>Would require major right-of-way acquisition and/or construction easements. Setback requirements for Anti-Terrorism Force Protection, Security Requirements, and Gate Access for all noted facilities.</p> <p><i>The northern terminus of this segment falls within the Craney Island Dredged Material Management Area (CIDDMA) updated boundary. We will continue to work with the COE to understand the operations requirements for the Craney Island Dredge Disposal Facility and incorporate all requirements into the planning and design. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p> <p><i>As a result of this required specification for safety distance requirements from public highway to the facilities at Craney Island Fuel Terminal, the RCS Team is developing the VA 164 connector corridor with an 1,800-foot distance from the planned refueling in addition to a visual barrier in future design iterations.</i></p> <p><i>There are also noise walls along a portion of the bridge on the outside edge to serve as visual barriers to the fuel line and future facility per the Navy's current force protection standard.</i></p>
City of Portsmouth	<ul style="list-style-type: none"> ▪ City of Portsmouth Landfill 	Segment bisects the City of Portsmouth Landfill

3: VA 164 Connector Resource	Resources Identified	Comments
Transportation Facilities	<ul style="list-style-type: none"> ▪ Outer limit ring road of US Army Corps of Engineers Craney Island Disposal Area ▪ Waterfront Drive ▪ Oyster Shell Drive ▪ Main Road ▪ Main Drive ▪ South Perimeter Road ▪ Coast Guard Boulevard ▪ Access Road off Coast Guard Boulevard ▪ Railroad Facilities ▪ Old Coast Guard Boulevard ▪ Renfrow Road ▪ Wyatt Drive ▪ Wild Duck Lane ▪ Western Freeway (VA-164) ▪ Cedar Lane ▪ West Norfolk Road ▪ Virginia International Gateway Boulevard ▪ Sunnyside Avenue ▪ Gail Court 	<p>Transportation facilities identified within the LOD.</p> <p>Stakeholder coordination with railroad facilities will be required and may pose construction schedule risk.</p> <p><i>Noted: Segment alignment was proposed adjacent to the corner where Midway Road intersects Waterfront Drive, this area of Navy property has been approved and designated for the construction of four additional above ground fuel storage tanks. In addition, the proposed segment crosses further West over Navy property where the above ground main fuel supply lines are located. As a result of this required buffer, the RCS Team is developing the VA 164 connector corridor with an 1,800-foot distance from the planned refueling in addition to a visual barrier in future design iterations.</i></p>
Businesses/Business Access	<ul style="list-style-type: none"> ▪ <i>Coast Guard Building & Parking Facility</i> ▪ Driveway impact on Commercial Ready Mix off Coast Guard Boulevard ▪ Aire Serv HVAC Contractor on W. Norfolk Rd off of the Old Coast Guard Road 	<p>Current design has <i>three</i> total business takes required. Identified Businesses and/or Business Access impacts anticipated within the LOD; however, further detailed design may avoid and/or minimize potential impacts.</p>
Sensitive Resources		
Parks & Recreation	<ul style="list-style-type: none"> ▪ Hoffler Creek Wildlife Preserve (Lake Ballard) ▪ <i>Churchland Park</i> 	No resources within the LOD
Section 4(f) Properties	Publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places	No resources within the LOD
Section 6(f) Properties	Any property that was planned, purchased, or improved with Land and Water Conservation Fund (LWCF) money (recreational lands that are also regulated under Section 4(f))	No resources within the LOD
Places of Worship	Liberty Christian Fellowship Liberty New Testament Church West Norfolk Baptist	No resources within the LOD
Cemetery	n/a	No resources within the LOD
School/University	<ul style="list-style-type: none"> ▪ Churchland High School 	No resources within the LOD

3: VA 164 Connector Resource	Resources Identified	Comments
Apartment Complexes/Residences	West Norfolk Road Apartments	No resources within the LOD
Children's Health & Safety	The most likely locations of potential effects on children (other than at residences abutting right-of-way) would be at schools where there are outdoor activity areas for children.	No resources within the LOD
Environmental Justice		
Environmental Justice	Past and present growth and development - expansion of controlled access roadways have separated neighboring communities.	<p>No residents or neighboring communities would be relocated.</p> <p><i>All segments have undergone an initial environmental justice review with additional evaluations occurring as more detailed design information becomes available.</i></p>
Federal State, and Local Permits		
Water Resources		
Tidal Waters/Tidal Streams/Subaqueous bottom	<ul style="list-style-type: none"> ▪ Estuarine and Marine Wetland (E2USN) at Craney Island Creek (2.25 acres) <i>Bridge structure</i> (2.89 acres) ▪ Estuarine and Marine Deepwater at Craney Island Creek (0.4 0.3 acres) ▪ Estuarine and Marine Wetland (E2USN) at Craney Island Creek (3.01 acres) ▪ Estuarine and Marine Wetland (E2USN) at Craney Island Creek (0.41 acres) <p><i>The revised segment now includes the ramp connections to 564/664 Connector segments.</i></p>	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>Tidal Waters/Tidal Streams: 5.67 3.19 acres</p> <p>Subaqueous bottom: 0.4 acres</p> <ul style="list-style-type: none"> ▪ <i>Revised ramp inclusions:</i> 43.6 acres <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Non-Tidal Waters	<ul style="list-style-type: none"> ▪ Non-Tidal channel (drainage ditch) on Craney Island (approx. 260 190 linear feet) 	Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.

3: VA 164 Connector Resource	Resources Identified	Comments
	<ul style="list-style-type: none"> ▪ Non-Tidal channel (drainage ditch) on Craney Island (approx. 1400 270 linear feet) ▪ Non-Tidal channel (drainage ditch) on Craney Island (approx. 650 535 linear feet) ▪ Non-Tidal channel (drainage ditch) south of Craney Island Creek (approx. 325 401 linear feet) ▪ Non-Tidal channel (drainage ditch) south of Craney Island Creek (approx. 325 297 linear feet) 	<p>Non-Tidal Waters: 2,635 1,693 linear feet</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Maintained Navigational Channels and Civil Works Projects	<ul style="list-style-type: none"> ▪ Newport News Channel ▪ Elizabeth River ▪ <i>Craney Island Dredged Material Management Area (CIDDMA)</i> 	<p>No resources within the LOD</p> <p><i>A portion of this segment falls within the Craney Island Dredged Material Management Area (CIDDMA) updated boundary. We will continue to work with the COE to understand the operations requirements for the Craney Island Dredge Disposal Facility and incorporate all requirements into the planning and design. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p>
Wetlands	<ul style="list-style-type: none"> ▪ Craney Island Disposal Area is classified as Lake (L2UBFh) – (0 acres) 15 acres with elevated structure / bridge ▪ PEM wetland near Oyster Shell Road Main Street (1.25 0.38 and 0.57 acres) ▪ PEM wetland south of Craney Island Creek (3.27 3.18 acres) ▪ PFO at Coast Guard Boulevard (0.04 3.1 acres) ▪ PFO at Coast Guard Boulevard (0.13 2.2 acres) ▪ PSS at Coast Guard Boulevard (5.7 acres) ▪ PSS at Coast Guard Boulevard (3.6 acres) 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>▪ Craney Island Disposal Area is classified as Lake (L2UBFh) – (0 acres) 15 acres with elevated structure / bridge will have limited footprint impacts</p> <p><i>Lake (L2UBFh) – 15 acres PEM Wetlands - 4.13 acres PSS Wetlands – 9.3 acres PFO Wetlands: 31.34 12.1 acres</i></p>

3: VA 164 Connector Resource	Resources Identified	Comments
	<ul style="list-style-type: none"> ▪ PFO at Wild Duck Lane (12–5.5 acres) ▪ PFO at Wyatt Drive (1.3 acres) ▪ PFO at Western Freeway (1.75 acres) 	<p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers wetland resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Waterfront Development Areas		
Commercial Ports	<ul style="list-style-type: none"> ▪ VIG Portsmouth 	Access to VIG Portsmouth
Commercial Fishing Piers	n/a	No resources within the LOD
Wildlife Habitat		
Colonial Waterbird Nesting	<ul style="list-style-type: none"> ▪ Craney Island ▪ Urban, Norfolk North, Portsmouth ▪ Craney Island Northwest (outside LOD) ▪ Urban, Norfolk South, Portsmouth (outside LOD) ▪ Lovett Point (outside LOD) ▪ Pinehurst ▪ Winston Colony ▪ Winston 	<p>Colonial Waterbird Nesting sites located on the eastern terminus of the segment LOD.</p> <p>Habitat is present for the Gull-billed tern, Piping plover, Red knot, and Wilson's plover.</p> <p><i>Additional mitigation measures for bird nesting impacts will be evaluated as more detailed design allows for the determination of potential bird nesting impacts. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p>
Benthic Species	<ul style="list-style-type: none"> ▪ Hard Clam Habitat (0 acres) 43.6 acres ▪ Hard Clam Habitat Tunnels (0 acres) ▪ Public Clamming Grounds (0 acres) ▪ Blue Crab (<i>Callinectes sapidus</i>) (0 acres) ▪ Oyster Reefs (<i>Crassostrea virginica</i>) (0 acres) ▪ Oyster Sanctuary (0 acres) ▪ Public Baylor Grounds (0 acres) 101 acres ▪ Private Shellfish Leases (0 acres) 	<p>No resources within the LOD</p> <p>The entire footprint beneath each segment is considered potential hard clam habitat because the entire bottom is composed of sand, mud, or a combination suitable for hard clams.</p> <p>Construction BMPs, including conforming to the guidelines contained in the VESCH, would be employed to reduce turbidity and</p>

3: VA 164 Connector Resource	Resources Identified	Comments
		<p>sediment disturbance. The time of year and length of dredging operations may need to be considered as prolonged dredging would result in disturbance to the benthos and adjacent water column over a longer period of time dependent upon the nature of the bottom substrate, tidal fluctuations, and estuarine dynamics. Strict adherence to erosion and sediment control measures and permit requirements would minimize water quality impacts due to sedimentation and turbidity during construction. Long-term effects to benthic communities due to changes in water quality would be minimized and avoided through implementation of stormwater management plans designed to minimize impacts from increases in impervious surfaces, mitigate increases in runoff volume, and satisfy requirements to reduce pollutant loads below existing baseline conditions, as required by the VSMP regulations and Chesapeake Bay TMDL.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Historic Resources		
Architectural Resources / Historic Districts	n/a	No resources within the LOD
Archaeological Resources	<ul style="list-style-type: none"> ▪ Captain John Smith Chesapeake National Historic Trail (first water trail designated under the National Trails System Act) ▪ Washington-Rochambeau Revolutionary Route National Historic Trail (designated a National Historic Trail under the National 	If any significant archaeological sites associated with the Captain John Smith Chesapeake National Historic Trail and Washington-Rochambeau Revolutionary Route National Historic Trail are eventually

3: VA 164 Connector Resource	Resources Identified	Comments
	Trails System Act)(The W-RNHT is located within what is now a highly industrialized and developed area in which few remnants of the historic landscape survive)	identified within the LOD, they likely would meet the regulatory exception to the requirements of Section 4(f) approval: the sites likely would be important chiefly for the information they contain, which can be retrieved through data recovery, and would have minimal value for preservation in place.
Additional Factors		
Mitigation Complexity and Cost	<ul style="list-style-type: none"> ▪ Wetland, US waters, and subaqueous bottomlands impacts ▪ Business Takes 	<p>Current design has total business take required. Identified Businesses and/or Business Access impacts anticipated within the LOD. Moderate to Extensive anticipated mitigation costs would be required for wetland and US waters impacts; however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential mitigation costs.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Permit Stakeholder Coordination	<ul style="list-style-type: none"> ▪ Transportation facilities identified within the LOD. ▪ Railroad facilities identified within the LOD. ▪ Maritime Stakeholders ▪ US Army Corps of Engineers Craney Island Disposal Area ▪ Craney Island Naval Supply Center ▪ US Coast Guard Sector Virginia ▪ US Coast Guard Base Portsmouth ▪ US Navy Craney Island Fuel Depot (CIFD Terminal) ▪ US Navy ▪ City of Portsmouth 	<p>May require major right-of-way acquisition and/or construction easements. Maintenance of terminal operations and traffic will be required.</p> <p>Extensive setback requirements for Anti-Terrorism Force Protection, Security Requirements, and Gate Access for all noted facilities.</p> <p>Stakeholder coordination with facilities will be required and may pose construction schedule risk.</p>

3: VA 164 Connector Resource	Resources Identified	Comments
	<ul style="list-style-type: none"> ▪ Adjacent Property Owners (Residents/Businesses) 	<p><i>The RCS evaluation team acknowledges that strategic importance of Craney Island within the context of Naval Station Norfolk and are staying in communication with stakeholders like the Navy throughout the process to ensure that the planning process evolves into a design and construction process that serves both the strategic and regional needs of the Hampton Roads region.</i></p> <p><i>The RCS report in May of 2022 was a qualitative assessment, and the RCS team is now working on refining the quantitative understanding of traffic demand modeling and design needs. The RCS team and the agencies that carry this planning process forward to design, construction and operations will work in partnership with the Navy to develop, design, and construct the VA 164 connector alignment, roadway, and facilities in a way that does not impair the planned functions of Craney Island.</i></p>
Effect on other Federal Navigation Projects	<ul style="list-style-type: none"> ▪ Newport News Channel ▪ Elizabeth River ▪ US Army Corps of Engineers Craney Island Disposal Area 	<p>No anticipated impact to the Newport News Channel. This segment does contain roadway structures landside to Federal Navigation Projects along the Elizabeth River and to current operations at the US Army Corps of Engineers Craney Island Disposal Area.</p> <p><i>Section 408 permit requirements for the Craney Island Dredge Disposal Facility will be taken into consideration.</i></p>
Potential Future Changes in Policy Issues		<p>No major regulatory policy changes are anticipated at this time.</p> <p><i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation if policy regulations change.</i></p>

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: *4: I-564 Connector*

4: I-564 Connector Resource	Resources Identified	Comments
<i>Social Environment</i>		
<i>Community Resources</i>		
Military/DOD/USACOE	<ul style="list-style-type: none"> ▪ NSA Hampton Roads ▪ Norfolk International Terminals ▪ Norfolk Naval Station ▪ Norfolk Naval Air Station ▪ US Marine Corps ▪ United States Department of the Navy ▪ Marine Corps Personnel Support ▪ Camp Elmore ▪ NAS Norfolk Air Passenger Terminal 	<p>Segment traverses through the DON and NIT properties. Need additional information regarding potential anti-terrorism force protection requirements.</p> <p><i>As the project moves into design and construction, the project owner will be able to make decisions about equipment height and clearance to accommodate the Navy's operational needs in Norfolk.</i></p> <p><i>It should be noted that the fueling facility referred to in this comment is within 300 feet of the existing Intermodal connector, which is currently planned to have the same alignment as the proposed I-564 connector. There are currently walls separating the Navy's fuel facility from the existing Intermodal connector. To satisfy the 1,800 foot setback from the fueling facility would require a significant re-evaluation of the I-564 connector by FHWA, VDOT, Norfolk, and Port of Virginia.</i></p> <p><i>At the time that the segment design is developed further the appropriate mitigation will be determined in consideration of the security protocols in place at that time.</i></p>
Transportation Facilities	<ul style="list-style-type: none"> ▪ Northgate Road ▪ Hampton Boulevard (337) ▪ Seabee Road ▪ Intermodal Connector ▪ Admiral Taussig Boulevard (564) ▪ Patrol Road ▪ VPA Rail Facilities 	<p>Transportation facilities identified within the LOD. Assumption that all transportation facilities will remain at existing or improved functionality.</p> <p>Stakeholder coordination with railroad facilities will be required and may pose construction schedule risk.</p> <p><i>Evolving security and visibility technology may resolve these security concerns as the I-564 corridor</i></p>

4: I-564 Connector Resource	Resources Identified	Comments
		<p><i>progresses from planning to design. Evolving transportation technology may change the corridor design as well. Horizontal and vertical clearances required by the Navy for essential security will be considered in the future planning and design process.</i></p> <p><i>At the end of the Phase 3 (Step 2) Quantitative analysis, which we are conducting now, we will recommend tiering of the segments into three tiers that correspond to timing of/readiness for implementation, with Tier 1 the most ready and Tier 3 the least ready. At the time of project design and construction, the project owner will be able to make decisions about equipment height and clearance to accommodate the Navy's operational needs in Norfolk. At this early planning stage of the segment tiering process the Regional Connectors study is not considering an elevated section between the end of the existing Intermodal connector and the end of Norfolk International Terminal Pier 3. Instead, the I-564 connector is planned to be underground along the length of existing NIT Pier 3 and tunnel under the Elizabeth River shipping lanes to surface at a bridge to the west of the NIT and to the north of Craney island.</i></p> <p><i>It may be possible to tunnel the I-564 connector further East approaching the Hampton Boulevard underpass, but that design will involve additional costs.</i></p>
Norfolk International Terminals	Lineage Logistics at Talon Marine Terminals, NIT Pier 3	<p><i>The loss of operational use at the Lineage Logistics at Talon Marine Terminals, NIT Pier 3 needs more information in order to determine all of the factors to be considered.</i></p> <p><i>The boundaries of Naval Station Norfolk as codified in the CFR begin along the northern edge of NIT pier</i></p>

4: I-564 Connector Resource	Resources Identified	Comments
		<p>3. The RCS study does not plan nor contemplate exceeding the northern edge of Pier 3 of the NIT during the construction or operations of the I-564 connector. The RCS team will plan for and produce cost estimates to account for the need for vetting and hiring personnel with sufficient security clearances to work in the vicinity of Norfolk Naval Station Pier 1.</p> <p>The Regional Connectors Study is a conceptual planning stage of design. The future stages of the project will be carried forward by regional or commonwealth such as HRTAC and VDOT. They will maintain communication and coordination with stakeholders and decisionmakers throughout the planning, design, and construction process.</p>
Businesses/Business Access	n/a	Resources outside the LOD.
Sensitive Resources		
Parks & Recreation	<ul style="list-style-type: none"> ▪ Fleet Recreation Park (DON facility) ▪ Sewells Point Golf Course (DON facility) (adjacent only) 	May have disturbance within the LOD for Fleet Recreation Park (park access/maintenance roads).
Section 4(f) Properties	Publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places	Resources outside the LOD.
Section 6(f) Properties	Any property that was planned, purchased, or improved with Land and Water Conservation Fund (LWCF) money (recreational lands that are also regulated under Section 4(f))	Resources outside the LOD.
Places of Worship	n/a	Resources outside the LOD.
Cemetery	n/a	Resources outside the LOD.
School/University	n/a	Resources outside the LOD.
Apartment Complexes/Residences	n/a	Resources outside the LOD.
Children's Health & Safety	n/a	Resources outside the LOD.
Environmental Justice		

4: I-564 Connector Resource	Resources Identified	Comments
Environmental Justice	Past and present growth and development - expansion of controlled access facilities such as military installations like NAVSTA Norfolk have separated neighboring communities.	No residents or neighboring communities would be relocated. <i>All segments have undergone an initial environmental justice review with additional evaluations occurring as more detailed design information becomes available.</i>
Federal State, and Local Permits		
Water Resources		
Tidal Waters/Tidal Streams/Subaqueous bottom	<ul style="list-style-type: none"> ▪ East tunnel (on upland) ▪ West tunnel (30 acres) 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>Subaqueous bottom for island construction: 30 acres</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Non-Tidal Waters	<ul style="list-style-type: none"> • Non-tidal channel along Intermodal Connector (approx. 200 linear feet) • Non-tidal channel near Patrol Road (approx. 190 linear feet) 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>Non-Tidal Waters: 390 linear feet</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude</i></p>

4: I-564 Connector Resource	Resources Identified	Comments
		<i>impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i>
Maintained Navigational Channels and Civil Works Projects	<ul style="list-style-type: none"> ▪ Newport News Channel ▪ Elizabeth River Channel 	No impacts to Maintained Navigational Channels and Civil Works Projects is anticipated. All Maintained Navigational Channels will be avoided by the tunnel design.
Wetlands	Wetlands are adjacent to portions of the corridor but none identified within the bounds of the LOD	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Waterfront Development Areas		
Commercial Ports	<ul style="list-style-type: none"> ▪ Virginia Port Authority - Lineage Logistics at Talon Marine Terminals, NIT Pier 3 	The loss of operational use at the Lineage Logistics at Talon Marine Terminals, NIT Pier 3 needs more information in order to determine all of the factors to be considered.
Commercial Fishing Piers	n/a	Resources outside the LOD.
Wildlife Habitat		

4: I-564 Connector Resource	Resources Identified	Comments
Colonial Waterbird Nesting	<ul style="list-style-type: none"> ▪ Craney Island ▪ Urban, Norfolk North, Portsmouth ▪ Craney Island, Northwest ▪ Willoughby Spit ▪ Hermitage (outside LOD) ▪ Algonquin Park (outside LOD) ▪ Lochhaven (outside LOD) 	<p>Colonial Waterbird Nesting sites are located within the LOD. Proactive measures such as the use of bird dogs could be employed during construction within the bird nesting season (April – September 1) so as to deter colonial bird nesting in these sites.</p> <p>Habitat is present for the Gull-billed tern, Piping plover, Red knot, and Wilson's plover.</p> <p><i>Additional mitigation measures for bird nesting impacts will be evaluated as more detailed design allows for the determination of potential bird nesting impacts. The RCS team will not be the project owner in the final stages of planning, design and construction.</i></p>
Benthic Species	<ul style="list-style-type: none"> ▪ Hard Clam Habitat Tunnels (30 acres) ▪ Public Clamming Grounds (0 acres) ▪ Blue Crab (<i>Callinectes sapidus</i>) (0 acres) ▪ Oyster Reefs (<i>Crassostrea virginica</i>) (0 acres) ▪ Oyster Sanctuary (0 acres) ▪ Public Baylor Grounds (0 acres) ▪ Private Shellfish Leases (0 acres) <p>The introduction of additional hard substrate such as pilings and riprap protection could provide beneficial habitat where it did not previously exist for oysters and other marine benthic organisms.</p>	<p>The entire footprint beneath each segment is considered potential hard clam habitat because the entire bottom is composed of sand, mud, or a combination suitable for hard clams.</p> <p>Construction BMPs, including conforming to the guidelines contained in the VESCH, would be employed to reduce turbidity and sediment disturbance. The time of year and length of dredging operations may need to be considered as prolonged dredging would result in disturbance to the benthos and adjacent water column over a longer period of time dependent upon the nature of the bottom substrate, tidal fluctuations, and estuarine dynamics. Strict adherence to erosion and sediment control measures and permit requirements would minimize water quality impacts due to sedimentation and turbidity during construction.</p> <p>Long-term effects to benthic communities due to changes in water quality would be minimized and avoided through implementation of stormwater management plans designed to minimize impacts from</p>

4: I-564 Connector Resource	Resources Identified	Comments
		<p>increases in impervious surfaces, mitigate increases in runoff volume, and satisfy requirements to reduce pollutant loads below existing baseline conditions, as required by the VSMP regulations and Chesapeake Bay TMDL.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Historic Resources		
Architectural Resources / Historic Districts	<ul style="list-style-type: none"> ▪ 121-0020 (Middle Ground Light Station)(NRHP Listing, VLR Listing) ▪ 122-0410 (Norfolk Naval Base Historic District) ▪ 122-5045 (Norfolk Naval Base Golf Historic District) ▪ 122-0334 (Sewells Point Docks (Historic); Virginia Port Authority (Current)) 	<p>The area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.</p> <p>Alignment segment does bisect the 122-0334 (Sewells Point Docks (Historic); Virginia Port Authority (Current)); however, the area is currently an operational facility for VPA and no direct APE impacts are anticipated.</p> <p>No anticipated indirect APE (viewshed) impacts are anticipated for the adjacent 122-5045 (Norfolk Naval Base Golf Historic District) since existing transportation facility exists in the corridor.</p>
Archaeological Resources	<ul style="list-style-type: none"> ▪ Captain John Smith Chesapeake National Historic Trail (first water trail designated under the National Trails System Act) ▪ Washington-Rochambeau Revolutionary Route National Historic Trail (designated a National Historic Trail under the National Trails System Act) (The W-RNHT is located within what is now a highly 	<p>If any significant archaeological sites associated with the Captain John Smith Chesapeake National Historic Trail and Washington-Rochambeau Revolutionary Route National Historic Trail are eventually identified within the LOD, they likely would meet the regulatory exception</p>

4: I-564 Connector Resource	Resources Identified	Comments
	industrialized and developed area in which few remnants of the historic landscape survive)	to the requirements of Section 4(f) approval: the sites likely would be important chiefly for the information they contain, which can be retrieved through data recovery, and would have minimal value for preservation in place.
Additional Factors		
Mitigation Complexity and Cost	<ul style="list-style-type: none"> ▪ Wetland, US waters, and subaqueous bottomlands impacts 	<p>High anticipated mitigation costs would be required for wetland and US waters impacts due to construction of the new island required for the tunnel segment.</p> <p><i>At this time in the evaluation, we only have rough order of magnitude impacts numbers for tidal and nontidal US Waters resources. As detailed design continues for specific bundles, more detailed impact numbers will be available to the project owner and coordination on available credits with approved commercial banks will be completed. Final planning, design, and construction will continue under the project owner, after the term of the RCS team.</i></p>
Permit Stakeholder Coordination	<ul style="list-style-type: none"> ▪ Transportation facilities identified within the LOD. ▪ Railroad facilities identified within the LOD. ▪ Craney Island ▪ Lineage Logistics at Talon Marine Terminals, NIT Pier 3 ▪ NSA Hampton Roads ▪ Norfolk International Terminals ▪ Norfolk Naval Station ▪ Norfolk Naval Air Station ▪ US Marine Corps ▪ United States Department of the Navy ▪ Marine Corps Personnel Support ▪ Camp Elmore ▪ NAS Norfolk Air Passenger Terminal ▪ Maritime Stakeholders ▪ Adjacent Property Owners 	<p>Extensive stakeholder coordination with Military/DOD/USACOE facilities, transportation facilities, Lineage Logistics at Talon Marine Terminals, NIT Pier 3, and railroad facilities will be required and may pose design and/or construction schedule risk.</p> <p><i>The Regional Connectors Study is a conceptual planning stage of design. The future stages of the project will be carried forward by regional or commonwealth such as HRTAC and VDOT. They will maintain communication and coordination with stakeholders and decisionmakers throughout the planning, design, and construction process.</i></p>
Effect on other Federal Navigation Projects	<ul style="list-style-type: none"> ▪ Newport News Channel ▪ Elizabeth River Channel (Norfolk Harbor Reach) 	No impacts to Federal Navigational Channels and Civil Works Projects are anticipated. All Maintained

4: I-564 Connector Resource	Resources Identified	Comments
		Navigational Channels will be avoided by the tunnel design.
Potential Future Changes in Policy Issues		No major regulatory policy changes are anticipated at this time.

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

SEGMENT: *5: I-664 Connector*

<i>5: I-664 Connector</i> Resource	Resources Identified	Comments
<i>Social Environment</i>		
<i>Community Resources</i>		
Military/DOD/USACOE	<ul style="list-style-type: none"> ▪ US Army Corps of Engineers Craney Island Disposal Area 	Maintenance of operations and traffic will be required for all identified Craney Island facilities, Maintained Federal Channels, and the connection to the existing I664 Monitor Merrimack transportation corridor. Need more information on the US Army Corps of Engineers Craney Island Disposal Area anticipated end of operational life. <i>Project limits are outside of the updated CIDDMA Site Boundary as received by the USACOE.</i>
Transportation Facilities	<ul style="list-style-type: none"> ▪ I-664 (Monitor Merrimac Bridge Tunnel) ▪ US Army Corps of Engineers Craney Island Disposal Area North East Ring Road 	Project is dependent on improvements to I664 (North MMMBT) segment.
Norfolk International Terminals	Lineage Logistics at Talon Marine Terminals, NIT Pier 3	No resource within the LOD
Businesses/Business Access	n/a	No resource within the LOD
<i>Sensitive Resources</i>		
Parks & Recreation	n/a	No resource within the LOD
Section 4(f) Properties	Publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places	No resource within the LOD
Section 6(f) Properties	Any property that was planned, purchased, or improved with Land and Water Conservation Fund (LWCF) money (recreational lands that are also regulated under Section 4(f)	No resource within the LOD
Places of Worship	n/a	No resource within the LOD
Cemetery	n/a	No resource within the LOD
School/University	n/a	No resource within the LOD
Apartment Complexes/Residences	n/a	No resource within the LOD
Children's Health & Safety	n/a	No resource within the LOD
<i>Environmental Justice</i>		
Environmental Justice	n/a	No resource within the LOD

5: I-664 Connector Resource	Resources Identified	Comments
Federal State, and Local Permits		
Water Resources		
Tidal Waters/Tidal Streams/Subaqueous bottom	<ul style="list-style-type: none"> ▪ Bridge/Trestle (144 acres) (153 acres) 	<p>Impacts are not based on surveyed field delineations but are meant to provide a conservative quantitative estimate.</p> <ul style="list-style-type: none"> ▪ Tidal Waters/Tidal Streams from Trestle construction: (144 acres) (153 acres) <p>Field surveys and additional detail to avoid and/or minimize impacts would be evaluated with more detailed design. <i>As more detailed design continues the exploration of more project-specific measures to control turbidity will be evaluated.</i></p>
Non-Tidal Waters	n/a	No resource within the LOD
Maintained Navigational Channels and Civil Works Projects	<ul style="list-style-type: none"> ▪ Newport News Channel ▪ Elizabeth River Channel 	<p>This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River, Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. <i>Project limits are outside of the updated CIDDMA Site Boundary as received by the USACOE.</i></p>
Wetlands	n/a	No resource within the LOD
Waterfront Development Areas		
Commercial Ports	n/a	No resource within the LOD
Commercial Fishing Piers	n/a	No resource within the LOD
Wildlife Habitat		
Colonial Waterbird Nesting	<ul style="list-style-type: none"> ▪ Craney Island ▪ Urban, Norfolk North, Portsmouth ▪ Craney Island, Northwest ▪ Willoughby Spit ▪ Hermitage (outside LOD) ▪ Algonquin Park (outside LOD) ▪ Lochhaven (outside LOD) 	<p>Colonial Waterbird Nesting sites are located within the LOD. Proactive measures such as the use of bird dogs could be employed during construction within the bird nesting season (April – September 1) so as to deter colonial bird nesting in these sites.</p> <p>Habitat is present for the Gull-billed tern, Piping plover, Red knot, and Wilson's plover.</p>

5: I-664 Connector Resource	Resources Identified	Comments
Benthic Species	<ul style="list-style-type: none"> ▪ Hard Clam Habitat (144 acres) (153 acres) ▪ Public Clamming Grounds (0 acres) ▪ Blue Crab (<i>Callinectes sapidus</i>) (0 acres) ▪ Oyster Reefs (<i>Crassostrea virginica</i>) (0 acres) ▪ Oyster Sanctuary (0 acres) ▪ Public Baylor Grounds (approx. 290 acres 31 acres) ▪ Private Shellfish Leases (0 acres) <p>The introduction of additional hard substrate such as pilings and riprap protection could provide beneficial habitat where it did not previously exist for oysters and other marine benthic organisms.</p>	<p><i>Anticipate strong interest in and public objections to impacts to colonial nesting birds. Mitigation requirements for displaced birds may be required under Migratory Bird Treaty Act.</i></p> <p>The entire footprint beneath the segment is considered potential hard clam habitat because the entire bottom is composed of sand, mud, or a combination suitable for hard clams.</p> <p>Construction BMPs, including conforming to the guidelines contained in the VESCH, would be employed to reduce turbidity and sediment disturbance. The time of year and length of dredging operations may need to be considered as prolonged dredging would result in disturbance to the benthos and adjacent water column over a longer period of time dependent upon the nature of the bottom substrate, tidal fluctuations, and estuarine dynamics. Strict adherence to erosion and sediment control measures and permit requirements would minimize water quality impacts due to sedimentation and turbidity during construction.</p> <p>Long-term effects to benthic communities due to changes in water quality would be minimized and avoided through implementation of stormwater management plans designed to minimize impacts from increases in impervious surfaces, mitigate increases in runoff volume, and satisfy requirements to reduce pollutant loads below existing baseline conditions, as required by the VSMP regulations and Chesapeake Bay TMDL.</p> <p><i>As more detailed design continues the exploration of more project-specific measures to control turbidity will be evaluated. Pilings and riprap from new bridge and tunnel structures are probably not sufficient to offset impacts to benthic species but no</i></p>

5: I-664 Connector Resource	Resources Identified	Comments
		<i>specific measures can be determined at this level of engineering design.</i>
Historic Resources		
Architectural Resources / Historic Districts	<ul style="list-style-type: none"> ▪ 121-0020 (Middle Ground Light Station) (NRHP Listing, VLR Listing) 	<p>The area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.</p> <p>No direct APE impacts are anticipated.</p> <p>No anticipated indirect APE (viewshed) impacts are anticipated.</p>
Archaeological Resources	<ul style="list-style-type: none"> ▪ Captain John Smith Chesapeake National Historic Trail (first water trail designated under the National Trails System Act) ▪ Washington-Rochambeau Revolutionary Route National Historic Trail (designated a National Historic Trail under the National Trails System Act) (The W-RNHT is located within what is now a highly industrialized and developed area in which few remnants of the historic landscape survive) 	<p>If any significant archaeological sites associated with the Captain John Smith Chesapeake National Historic Trail and Washington-Rochambeau Revolutionary Route National Historic Trail are eventually identified within the LOD, they likely would meet the regulatory exception to the requirements of Section 4(f) approval: the sites likely would be important chiefly for the information they contain, which can be retrieved through data recovery, and would have minimal value for preservation in place.</p>
Additional Factors		
Mitigation Complexity and Cost	<ul style="list-style-type: none"> ▪ Wetland, US waters, and subaqueous bottomlands impacts 	<p>This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River, Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. Moderate to extensive mitigation costs would be required for wetland and US waters impacts; however, field surveys and additional detailed design may avoid and/or minimize impacts to further reduce potential mitigation costs. <i>Additional coordination with mitigation banks to ensure sufficient capacity for required purchases will occur as design progresses and more precise impacts can be determined. Impacts to shallow water habitat (are less</i></p>

5: I-664 Connector Resource	Resources Identified	Comments
		<i>than 2 meters deep) may require in-kind compensation if policy regulations change.</i>
Permit Stakeholder Coordination	<ul style="list-style-type: none"> ▪ Transportation facilities identified within the LOD. ▪ Maritime Stakeholders 	Extensive stakeholder coordination with Military/DOD/USACOE facilities will be required and may pose design and/or construction schedule risk.
Effect on other Federal Navigation Projects	<ul style="list-style-type: none"> ▪ Newport News Channel ▪ Elizabeth River Channel (Norfolk Harbor Reach) 	This segment does contain bridge and roadway structures within water and landside to Federal Navigation Projects along the James River, Elizabeth River, and current operations at the US Army Corps of Engineers Craney Island Disposal Area. Need more information on the US Army Corps of Engineers Craney Island Disposal Area anticipated end of operational life. <i>Project limits are outside of the updated CIDDMA Site Boundary as received by the USACOE.</i>
Potential Future Changes in Policy Issues		No major regulatory policy changes are anticipated at this time. <i>Impacts to shallow water habitat (are less than 2 meters deep) may require in-kind compensation if policy regulations change.</i>

Strikethrough and italicized text reflects revision made in response to stakeholder comments.

Other Factors Evaluated and Considered

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164
Utilities					
Utilities					
Water Quality					
Water Quality					
Floodplains					
Floodplains					
Sediment Transportation, Bank Erosion, Shoaling and Hydrodynamic Modeling					
Sediment Transportation, Bank Erosion, Shoaling and Hydrodynamic Modeling					
Dredging and Disposal of Dredged Material					
Dredging and Disposal of Dredged Material					
Aquifers/Water Supply (ground water wells, surface water intakes, and springs)					
Aquifers/Water Supply (ground water wells, surface water intakes, and springs)					
Coastal Natural Resource Areas					
Coastal Natural Resource Areas					

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164
Aquatic Spawning, Nursery, and Feeding Grounds	<ul style="list-style-type: none"> ▪ James River ▪ Elizabeth River <p>Temporary increases in turbidity and releases of nutrients and potential contaminants from dredging activities are not expected to substantially impact juvenile or adult fish because of their mobility and because construction would be spread out over time and would occur within discrete areas. Spawning, eggs and larvae, however, would be more vulnerable to these impacts. Time-of-year restrictions would be implemented to avoid or minimize impacts on fish during early life stages. VDGIF typically recommends restrictions on all in-stream work within Anadromous Fish Use Areas and their tributaries between February 15 and June 30, though no time-of-year restrictions are recommended on the James River and its tributaries below the Route 17 Bridge or on the Elizabeth River unless the project spans the width of the River to an extent that it significantly impedes fish passage. Exact restrictions may vary depending on the species, type of work, and location.</p>				No overwater components of the James River or Elizabeth River Mainstem.
Coastal Primary Sand Dunes				No resources within the LOD	
Barrier Islands				No resources within the LOD	
Significant Wildlife Habitat Areas				No resources within the LOD	
Sand And Gravel Resources				No resources within the LOD	
Underwater Historic Sites			<ul style="list-style-type: none"> ▪ 114-5471; Battle of Hampton Roads (no significant archaeological resources) ▪ 122-5426; Battle of Sewells Point ▪ 124-5267; Battle of Craney Island (NRHP-Eligible)(the battlefield is located within the bounds of the present day US Navy Fuel Depot) ▪ USS Cumberland (44NN0073) have been identified and are located roughly one mile northwest of the centerline of the proposed improvements to the west side of the existing MMMBT 	No overwater components of the James River or Elizabeth River Mainstem.	

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164
Underwater Historic Sites, cont'd		The APE is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.			
		If any significant underwater resources associated with the Battle of Hampton Roads are eventually identified within the HRCS LOD, they likely would meet the regulatory exception to the requirements of Section 4(f) approval: i.e., the sites likely would be important chiefly for the information they contain, which can be retrieved through data recovery, and would have minimal value for preservation in place [23 CFR §774.13(b)(1)].			
Highly Erodible Soils		No resources within the LOD			
Coastal High Hazard Areas, including floodplains		Flood Insurance Rate maps (FIRMs) depict the 100-year floodplain within the corridor and involve encroachment within regulatory floodplains. Segment would involve encroachment within regulatory floodplains but will not pose a significant flooding risk. Segment would be designed to be consistent with procedures for the location and hydraulic design of highway encroachments on floodplains contained in 23 CFR 650 Subpart A; therefore, the segment is not expected to increase flood elevations, the probability of flooding, or the potential for property loss and hazard to life.			
Community Waterfronts		No residential community waterfronts or industrial community's identified.			
Virginia Public Beaches		No resources within the LOD			
Virginia Outdoors Plan		No resources within the LOD			
Wildlife Management Areas		No resources within the LOD			
Waterfront Recreational Land Acquisition		No resources within the LOD			
Waterfront Recreational Facilities		No resources within the LOD			
Waterfront Historic Properties		No resources within the LOD			
Terrestrial Wildlife / Habitat		The majority of the existing land cover within the segment consists of developed lands, natural terrestrial communities, and open water. Expanses of terrestrial habitat are uncommon and fragmented as residential, commercial, industrial, government/military, and open water areas are common, resulting in predominantly low-quality edge habitat.			
Essential Fish Habitat		<ul style="list-style-type: none"> ▪ James River (20 species) ▪ Elizabeth River (20 species) https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper		No overwater components of the James River or Elizabeth River Mainstem.	

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164
Essential Fish Habitat, cont'd	It is assumed that all time of year restrictions and construction special conditions as identified in regulatory permits will be strictly adhered to and will not cause impacts to construction schedule.				
Anadromous Fish	<ul style="list-style-type: none"> ▪ James River (7 species) ▪ Elizabeth River (3 species) ▪ alewife, American shad, Atlantic Sturgeon, striped bass, blueback herring, yellow perch, and hickory shad <p>It is assumed that all time of year restrictions and construction special conditions as identified in regulatory permits will be strictly adhered to and will not cause impacts to construction schedule.</p>				No overwater components of the James River or Elizabeth River Mainstem.
Submerged Aquatic Vegetation	VIMS SAV Mapping (https://mobjack.vims.edu/sav/savwabmap/) – no SAVs identified				
Invasive Species	Construction equipment used in the study area could carry seeds or propagative plant parts from other construction projects or infested areas. Removal of sediment and soil to offsite locations could spread invasive species and placement of fill from borrow sites could introduce invasive species to the study area. Exposed soil also allows invasive species to spread, which could contribute to encroachment of invasive species on vegetation communities. The potential for the establishment of invasive animal or plant species during construction would be minimized by following provisions in VDOT's Road and Bridge Specifications.				
Section 106 Process	Coordination with VDHR for concurrence on project evaluation will be required.				
Farmlands	According to VDACS, there are no active farmlands within the Study Area Corridor.				
Forestal Districts	No land in the Study Area Corridor is currently zoned or used for agriculture.				
Energy	Qualitative comparison of energy consumption associated with the construction and maintenance of the evaluated segments and vehicle operation on the affected roadway network. Accurate construction energy costs cannot be determined given the uncertainty of field variables at this point in the study. An increase in capacity would consume more direct energy by roadway travelers; however, this consumption would be partially offset by reducing congestion over a larger area. Measures to mitigate the energy usage during construction may include limiting the idling of machinery and optimizing construction methods to lower overall fuel use.				
Traffic	Construction activities would result in temporary interruptions to vehicular traffic patterns, including the potential temporary closure of roads. Traffic modelling will be evaluated in Tier 2 of this study evaluation.				

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164
Air Quality					The air quality analyses will be evaluated as part of the travel demand model to evaluate peak hour volumes will then be used to support the air analysis. Temporary air quality impacts from construction would consist primarily of emissions produced during the construction of this project by heavy equipment and vehicle travel to and from the construction areas. Earthmoving and ground-disturbing operations would also generate airborne dust. Construction emissions would be temporary in nature.
Noise					FHWA Traffic Noise Model evaluations is not included at this level of study. To assess the degree of impact of highway traffic and noise on human activity within the corridor, more detailed information is required. Construction activities would cause intermittent fluctuations in noise levels throughout the construction area. The degree of noise impact would vary, as it is directly related to the types of equipment used and the proximity to the noise-sensitive land uses within the project area. Based on a review of the project area, no considerable, long-term construction-related noise impacts are anticipated.
Soils & Erosion					Construction would result in soil disturbance, soil exposure and compaction that could cause potential adverse effects on shallow soil permeability, and soil erosion caused by water and wind. An Erosion and Sediment (E&S) Plan will be developed as part of the construction documents. The plan will identify measures to minimize impact to the construction sites and surrounding water bodies as a result of construction-related soil erosion.
Water Quality					Construction would potentially result in short-term impacts to water quality such as increased sedimentation, increased turbidity from in-stream work, and possible spills or non-point source pollutants entering groundwater or surface water from stormwater runoff. To minimize these impacts, appropriate erosion and sediment control practices would be implemented in accordance with the Virginia Erosion and Sediment Control Regulations.
Hazardous Materials					Sites containing hazardous or contaminated materials may exist within the Study Area Corridor. These include sites regulated by the Resource Conservation and Recovery Act (RCRA), petroleum release sites and facilities registered with the VDEQ, and sites that participate in the Virginia Voluntary Remediation Program. Prior to the acquisition of right-of-way and construction, a Phase I Environmental Site Assessment (ESA) as well as Phase II ESA (as needed) will be conducted to determine whether any of the sites are actually contaminated, and, if so, the nature and extent of that contamination. Any additional hazardous material sites discovered during construction will be removed and disposed of in compliance with all applicable federal, state, and local regulations. All necessary remediation would be conducted in compliance with applicable federal, state, and local environmental laws and would be coordinated with the EPA, VDEQ, and other federal or state agencies as necessary.
Visual					Temporary changes to the visual quality throughout the Study Area Corridor would occur during construction. These changes would primarily occur in the form of large construction equipment such as cranes and barges, as well as materials, storage and yarding areas, construction fences/barriers, traffic control devices, and changes to the landscape associated with land clearing and earth moving operations. These visual changes from construction equipment would occur only during the construction period and would be removed at the completion of construction.

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164			
Protected Species	VaFWIS Database Search							
All segments contain similar potential habitat for the identified protected species. Section 7 consultation will be completed before any irreversible or irretrievable commitments of resources are made expressly for construction activities.								
Kemp's Ridley Sea Turtle (<i>Lepidochelys kempii</i>)	FESE - Confirmed	FESE - Confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed		
Woodpecker, red-cockaded (<i>Picoides borealis</i>)	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed		
Atlantic Sturgeon (<i>Acipenser oxyrinchus</i>)	FESE - Confirmed	FESE - Confirmed	FESE - Confirmed	FESE - Confirmed	FESE - Confirmed	FESE - Not confirmed		
Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	n/a		
Hawksbill Sea Turtle (<i>Eretmochelys imbricata</i>)	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	FESE - Not confirmed	n/a		
Loggerhead Sea Turtle (<i>Caretta caretta</i>)	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed		
Red Knot (<i>Calidris canutus rufa</i>)	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed		
Rail, eastern black (<i>Laterallus jamaicensis jamaicensis</i>)	FTSE - Not confirmed	FTSE - Not confirmed	FTSE - Not confirmed	FTSE - Not confirmed	FTSE - Not confirmed	FTSE - Not confirmed		
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed		
Green Sea Turtle (<i>Chelonia mydas</i>)	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	FTST - Not confirmed	n/a		
Piping Plover (<i>Charadrius melanotos</i>)	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed	FTST - Confirmed	FTST - Potential		
Manatee, West Indian (<i>Trichechus manatus</i>)	n/a	n/a	FTSE - Not confirmed	FTSE - Not confirmed	FTSE - Not confirmed	FTSE - Not confirmed		
Wilson's Plover (<i>Charadrius wilsonia</i>)	SE - Potential	SE - Potential	SE - Potential	SE - Potential	SE - Potential	SE - Potential		

Resource	4: I-564 Connector	5: I-664 Connector	3: VA 164 Connector	1a: I-664 North of College Dr.	2: VA 164	
Little Brown Bat (<i>Myotis lucifugus lucifugus</i>)	SE - Not confirmed	SE - Not confirmed	n/a	SE - Not confirmed	SE - Not confirmed	n/a
Bat, Rafinesque's eastern big-eared (<i>Corynorhinus rafinesquii macrotis</i>)	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed
Tri-colored Bat (<i>Perimyotis subflavus</i>)	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed	SE - Not confirmed
Canebrake Rattlesnake (<i>Crotalus horridus</i>)	SE - Potential	SE - Potential	SE - Potential	SE - Potential	SE - Potential	SE - Potential
Peregrine Falcon (<i>Falco peregrinus</i>)	ST - Confirmed	ST - Confirmed	ST - Confirmed	ST - Confirmed	ST - Confirmed	ST - Confirmed
Shrike, loggerhead (<i>Lanius ludovicianus</i>)	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed
Sparrow, Henslow's (<i>Centronyx henslowii</i>)	ST - Not confirmed	ST - Not confirmed	n/a	ST - Not confirmed	ST - Not confirmed	n/a
Gull-billed Tern (<i>Sterna nilotica</i>)	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed
Mabee's Salamander (<i>Ambystoma mabeei</i>)	ST - Potential	ST - Potential	ST - Potential	ST - Potential	ST - Potential	ST - Potential
Shrike, migrant loggerhead (<i>Lanius ludovicianus migrans</i>)	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed	ST - Not confirmed
Terrapin, northern diamond-backed (<i>Malaclemys terrapin terrapin</i>)	CC - Confirmed	CC - Confirmed	CC - Confirmed	CC - Confirmed	CC - Confirmed	CC - Confirmed
Turtle, spotted (<i>Clemmys guttata</i>)	CC - Confirmed	CC - Confirmed	CC - Confirmed	CC - Confirmed	CC - Confirmed	CC - Not Confirmed
Kingsnake, scarlet (<i>Lampropeltis elapsoides</i>)	n/a	n/a	CC - Confirmed	CC - Not Confirmed	CC - Not Confirmed	CC - Not Confirmed

Permits Considerations:

- Federal US Army Corps of Engineers - Section 404 of CWA (Waters of the US) – Individual Permit (*The USACE and VDEQ can only permit the LEDPA (Least Environmentally Damaging Practicable Alternative)*)
- Federal: US Army Corps of Engineers - Section 408 permit under Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408). Work that may alter, occupy, or use a USACE Civil Works project, such as a USACE maintained navigation channel or USACE administered dredged material disposal area, requires authorization in the form of a Section 408 permit from the USACE under Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408).
- Federal: US Army Corps of Engineers - Section 10 permit
- Federal: USCG Bridge Permit (when crossing navigable waterways)
- Federal: USFWS Migratory Bird Permit
- State must certify that state water quality standards would not be violated by the Section 401 of CWA (VDEQ) - Virginia Water Protection Permit (VWPP) Program (9 VAC 25-210) – Individual Permit regulates activities in navigable waters, including tidal wetlands
- State: VMRC permit, under the authority of Chapter 12 of Title 28.2 of the Code of Virginia - Subaqueous Bottomlands Permit for subaqueous bottoms or bottomlands, tidal wetlands, and beaches and coastal primary sand dunes
- State: VDEQ Virginia Construction General Permit (CGP) (VAR10) outlines specific measures that development projects must address, including the development of a Stormwater Pollution Prevention Plan (SWPPP).
- State: VDEQ's Ground Water Withdrawal Permitting Program in their Office of Water Supply - proximity of public drinking water sources (ground water wells, surface water intakes, and springs)
- State: VDEQ Air Permits (for construction)
- State: VMRC cannot issue a permit to encroach upon Baylor Grounds unless the Virginia General Assembly removes that portion of the Baylor Grounds from the official survey.