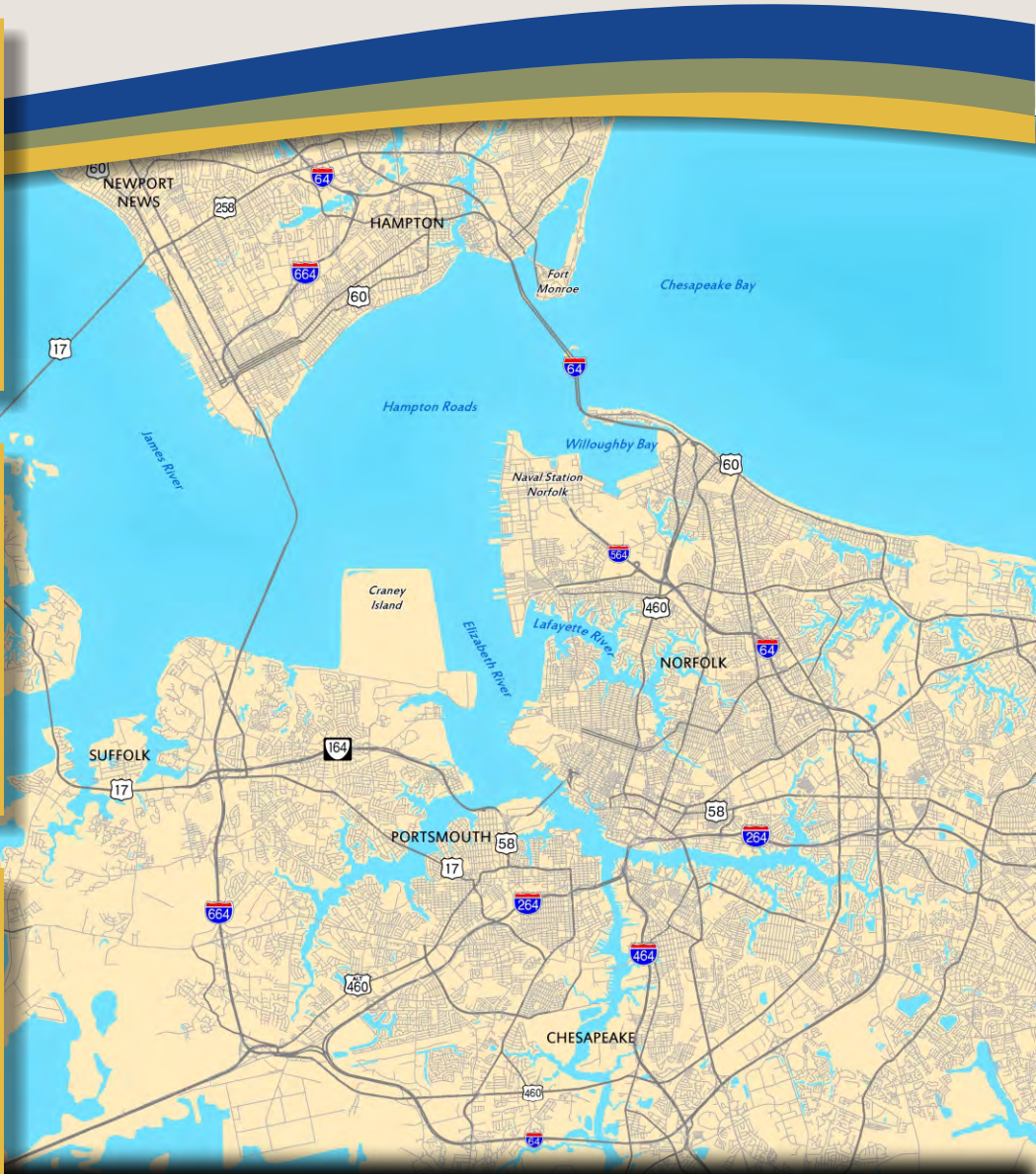
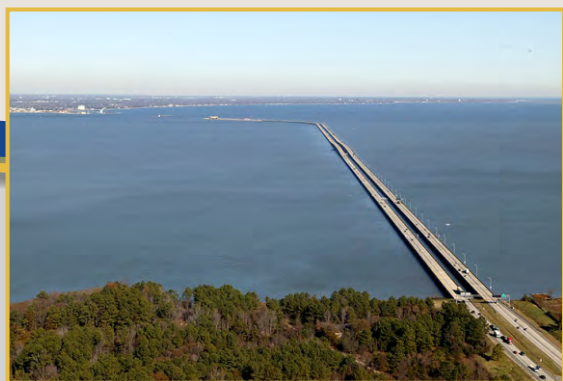


Visual Resources Technical Memorandum

Prepared in Support of the Supplemental Environmental Impact Statement



VISUAL RESOURCES TECHNICAL MEMORANDUM

HRCs SEIS Hampton Roads Crossing Study SEIS



Prepared in support of the Supplemental Environmental Impact Statement

VDOT Project #: 0064-965-081, P101

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing a Supplemental Environmental Impact Statement (SEIS) for the Hampton Roads Crossing Study (HRCS). The Study is located in the cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Suffolk, Virginia. The SEIS re-evaluates the findings of the 2001 HRCS Final Environmental Impact Statement (FEIS) and Record of Decision (ROD). The three alternatives retained for analysis in the 2001 FEIS, as well as input received from the public during initial scoping for the SEIS, were used to establish the Study Area Corridors shown in **Figure 1-1**. The purpose and need of the SEIS is summarized below.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, FHWA is preparing an SEIS because of the time that has lapsed since the 2001 FEIS and new information indicating significant environmental impacts not previously considered. The SEIS, prepared in accordance with the implementing regulations of NEPA (23 CFR §771.130), the SEIS is intended to aid in ensuring sound decision-making moving forward by providing a comparative understanding of the potential effects of the various options.

The purpose of this *HRCS Visual Resources Technical Memorandum* is to inventory the visual characteristics of the Study Area Corridors and analyze potential impacts that could result from the implementation of the Build Alternatives. Information in this Memorandum, described below, will support discussions presented in the SEIS.

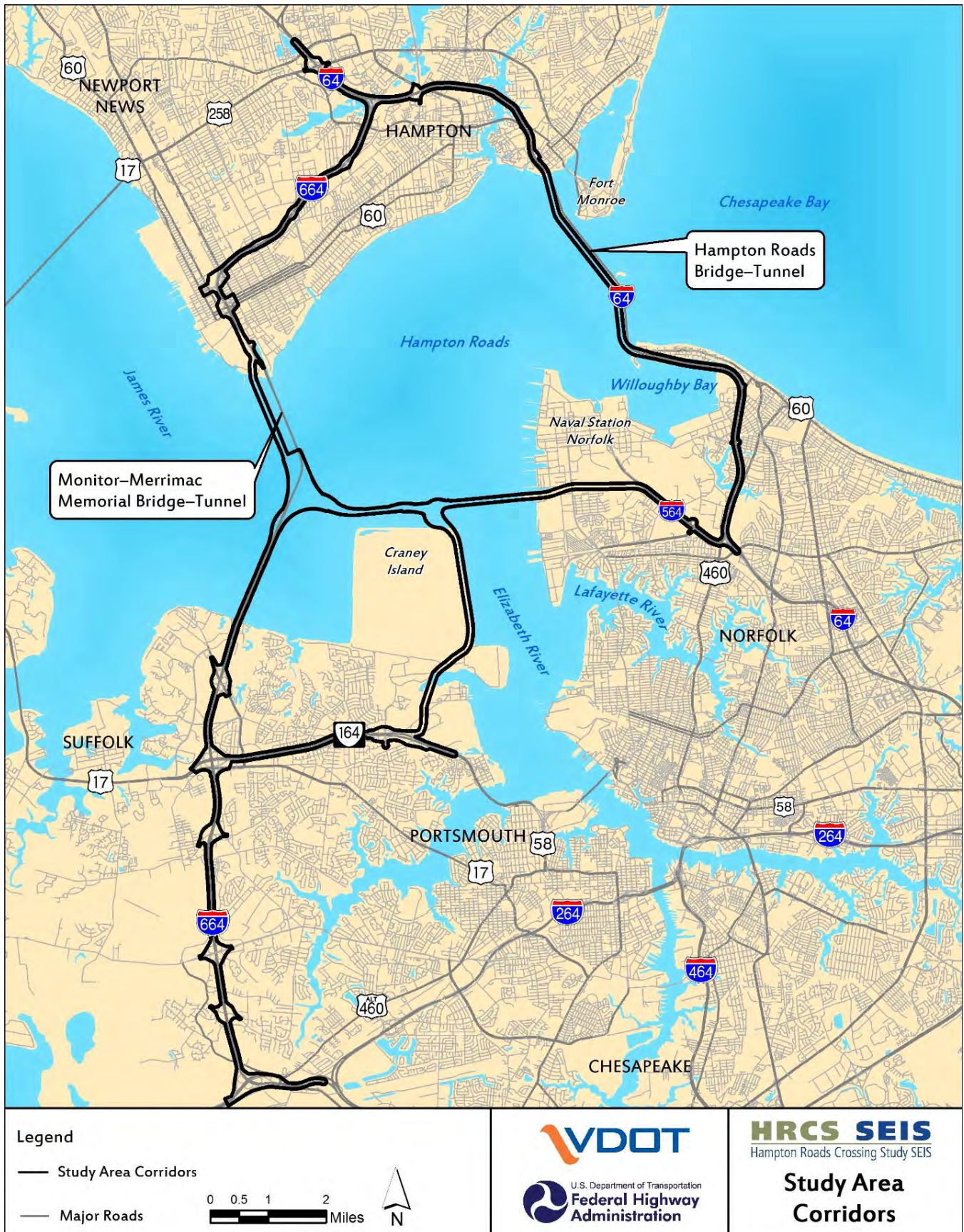
- **Section 1** provides an overview of the study and outlines the methods used to assess impacts to visual resources.
- **Section 2** provides an overview of existing conditions (affected environment) and identifies the landscape units in the Study Area Corridors with respect to several distinct viewer groups, including community residents; business owners, employees, and customers; motorists; and parks and recreation visitors.
- **Section 3** provides a summary of the potential impacts to visual resources associated with the alternatives retained for analysis in the Draft SEIS.
- **Section 4** describes potential minimization measures.
- **Section 5** includes references for the data and information contained in this Technical Memorandum.

1.1.1 Purpose and Need

The purpose of the HRCS is to relieve congestion at the I-64 Hampton Roads Bridge-Tunnel (HRBT) in a manner that improves accessibility, transit, emergency evacuation, and military and goods movement along the primary transportation corridors in the Hampton Roads region, including the I-64, I-664, I-564, and VA 164 corridors. The HRCS will address the following needs (in the order of presentation in Chapter 1 of the Draft SEIS):

- Accommodate travel demand – capacity is inadequate on the Study Area Corridors, contributing to congestion at the HRBT;
- Improve transit access – the lack of transit access across the Hampton Roads waterway;
- Increase regional accessibility – limited number of water crossings, inadequate highway capacity, and severe congestion decrease accessibility;
- Address geometric deficiencies – insufficient vertical and horizontal clearance at the HRBT contribute to congestion;

Figure 1-1: Study Area Corridors



- Enhance emergency evacuation capability – increase capacity for emergency evacuation, particularly at the HRBT;
- Improve strategic military connectivity – congestion impedes military movement missions; and
- Increase access to port facilities – inadequate access to interstate highway travel in the Study Area Corridors impacts regional commerce.

1.1.2 Alternatives

Five alternatives, including the No-Build Alternative, are under consideration for the Draft SEIS and are assessed in this Technical Memorandum. The proposed limits of the four Build Alternatives are shown on **Figure 1-2**. Each Technical Report and Memorandum prepared in support of the Draft SEIS assesses existing conditions and environmental impacts along the Study Area Corridors (as shown on **Figure 1-1**) for each alternative. Each alternative is comprised of various roadway alignments, used to describe the alternatives and proposed improvements, shown on **Figure 1-3**.

The No-Build Alternative

This alternative includes continued routine maintenance and repairs of existing transportation infrastructure within the Study Area Corridors, but there would be no major improvements.

Alternative A

Alternative A begins at the I-64/I-664 interchange in Hampton and creates a consistent six-lane facility by widening I-64 to the I-564 interchange in Norfolk. A parallel bridge-tunnel would be constructed west of the existing I-64 HRBT. During the public review of the HRBT DEIS, there was a clear lack of public or political support for the level of impacts associated with any of the build alternatives. Specifically, potential impacts to the historic district at Hampton University, Hampton National Cemetery, and the high number of displacements were key issues identified by the public, elected officials, and University and Veterans Affairs officials. Given this public opposition, a Preferred Alternative was not identified and the study did not advance. On August 20, 2015, FHWA rescinded its Notice of Intent to prepare the HRBT DEIS, citing public and agency comments and concerns over the magnitude of potential environmental impacts to a variety of resources, such as impacts to historic resources as well as communities and neighborhoods. Consequently, VDOT and FHWA have committed that improvements proposed in the HRCS SEIS to the I-64 corridor would be largely confined to existing right-of-way. To meet this commitment, Alternative A considers a six-lane facility. Alternative A lane configurations are summarized in **Table 1-1**.

Table 1-1: Alternative A Lane Configurations

Roadway Alignments	Existing Lanes	Proposed Lanes
I-64 (Hampton)	4-6	6
I-64 (HRBT and Norfolk)	4	6

Alternative B

Alternative B includes all of the improvements included under Alternative A, and the existing I-564 corridor that extends from its intersection with I-64 west towards the Elizabeth River. I-564 would be extended to connect to a new bridge-tunnel across the Elizabeth River (I-564 Connector). A new roadway (VA 164 Connector) would extend south from the I-564 Connector, along the east side of the Craney Island Dredged Material Management Area (CIDMMA), and connect to existing VA 164. VA 164 would be widened from this intersection west to I-664. Alternative B lane configurations are summarized in **Table 1-2**.

Figure 1-2: Build Alternatives



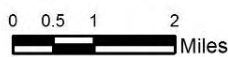
Figure 1-3: Roadway Alignments



Legend

— Study Area Corridors

— Major Roads



HRCS SEIS
Hampton Roads Crossing Study SEIS

**Roadway
Alignments**

Table 1-2: Alternative B Lane Configurations

Roadway Alignments	Existing Lanes	Proposed Lanes
I-64 (Hampton)	6	6
I-64 (HRBT and Norfolk)	4	6
I-564	6	6
I-564 Connector	none	4
VA 164 Connector	none	4
VA 164	4	6

Note: The I-564 Intermodal Connector (IC) project is a separate project from HRCS that lies between the I-564 Connector and I-564. It would be constructed regardless of whether the HRCS improvements are made and therefore is included under the No-Build Alternative and is not listed with other proposed improvements.

Alternative C

Alternative C includes the same improvements along I-564, the I-564 Connector, and the VA 164 Connector that are considered in Alternative B. This alternative would not propose improvements to I-64 or VA 164 beyond the VA 164 Connector. Alternative C includes dedicated transit facilities in specific locations. DRPT completed a study in November 2015 that recommended high frequency bus rapid transit (BRT) service in a fixed guideway or in a shared high occupancy vehicle (HOV) or high occupancy toll (HOT) lanes (DRPT, 2015). Based on that recommendation, for the purposes of this Draft SEIS, transit assumes Bus Rapid Transit (BRT). In the Final SEIS, transit could be redefined or these lanes may be used as managed lanes. Alternative C converts one existing HOV lane in each direction on I-564 in Norfolk to transit only. The I-564 Connector and the I-664 Connector would be constructed with transit only lanes. This alternative also includes widening along I-664 beginning at I-664/I-64 in Hampton and continuing south to the I-264 interchange in Chesapeake. One new transit lane is included along I-664 between I-664/I-64 in Hampton and the new interchange with the I-664 Connector. Alternative C lane configurations are summarized in **Table 1-3**.

Table 1-3: Alternative C Lane Configurations

Roadway Alignments	Existing Lanes	Proposed Lanes
I-664 (from I-64 to the proposed I-664 Connector)	4-6	8 + 2 Transit Only
I-664 (from the proposed I-664 Connector to VA 164)	4	8
I-664 (from VA 164 to I-264)	4	6
I-564	6	4 + 2 Transit Only
I-564 Connector	none	4 + 2 Transit Only
VA 164 Connector	none	4
I-664 Connector	none	4 + 2 Transit Only

Note: The I-564 IC project is a separate project from HRCS that lies between the I-564 Connector and I-564. It would be constructed regardless of whether the HRCS improvements are made and therefore is included under the No-Build Alternative and is not listed with other proposed improvements.

Alternative D

Alternative D is a combination of the sections that comprise Alternatives B and C. Alternative D lane configurations are summarized in **Table 1-4**.

Table 1-4: Alternative D Lane Configurations

Roadway Alignments	Existing Lanes	Proposed Lanes
I-64 (Hampton)	4-6	6
I-64 (HRBT and Norfolk)	4	6
I-664 (from I-64 to VA 164)	4-6	8
I-664 (from VA 164 to I-264)	4	6
I-664 Connector	none	4
I-564	6	6
I-564 Connector	none	4
VA 164 Connector	none	4
VA 164	4	6

Note: The I-564 IC project is a separate project from HRCS that lies between the I-564 Connector and I-564. It would be constructed regardless of whether the HRCS improvements are made and therefore is included under the No-Build Alternative and is not listed with other proposed improvements.

1.1.3 Operationally Independent Sections

Given the magnitude and scope of the alternatives, it is expected that a Preferred Alternative would be constructed in stages or operationally independent sections (OIS). An OIS is a portion of an alternative that could be built and function as a viable transportation facility even if other portions of the alternative are not advanced. The OIS are comprised of various roadway alignments and were developed by identifying sections of roadway improvements that if constructed, could function independently. In order to facilitate the identification of a Preferred Alternative, the alternative impacts are quantified, as appropriate, based on roadway alignment sections and are presented in **Appendix A** of the Draft SEIS.

1.2 METHODOLOGY

Visual resources are those physical features that comprise the visual landscape, including land, water, vegetation, and man-made elements. These elements are the stimuli upon which a person’s visual experience is based. Notable visual and aesthetic resources within the Study Area Corridors include historic structures, parks, and undeveloped open space/natural areas. Viewsheds for historic structures and parks are covered in separate technical reports including the *HRCS Cultural Resources Management Report* and the *Draft Section 4(f)*. There are no other resources in the area that warrant separate evaluation beyond that which is provided under each Landscape Unit. Potential sensitive visual receptors include areas or users affected by changes in the visual and aesthetic environment.

NEPA and Council on Environmental Quality (CEQ) regulations address visual impacts under the heading of aesthetics. These regulations identify aesthetics as one of the elements or factors in the human environment that must be considered in determining the effects of a particular action. Furthermore, 23 USC 109(h) cites “aesthetic values” as a consideration in developing a project.

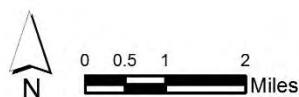
Site visits, reviews of local planning documents, and reviews of satellite imagery and Geographic Information Systems (GIS) data were conducted to identify the potential effects of the proposed Build Alternatives on the surrounding viewshed. Both static (such as what neighbors of the road see) and dynamic viewsheds (what travelers on the road see) have been considered in determining the Area of Visual Effect (AVE) of the proposed alternatives. Because the Study Area Corridors are within developed urban and suburban areas, the AVE for this visual and aesthetic resource assessment is primarily limited to adjacent land uses (**Figure 1-4**). Within the open areas of bridge approaches, the AVE was determined to extend one mile from a proposed alignment to incorporate land uses across water features. The AVE

Figure 1-4: Area of Visual Effect



Legend

- Alternative Alignments
- ▨ Area of Visual Effect
- Major Roads



HRCS SEIS
Hampton Roads Crossing Study SEIS

**Area of
Visual Effect**

for alternatives that propose new water crossings incorporates Hampton Roads Harbor between the HRBT and the I-664 Monitor-Merrimac Memorial Bridge-Tunnel (MMMBT). It also extends one mile from the HRBT toward the Chesapeake Bay and from the MMMBT up the James River to the west.

This Technical Memorandum is consistent with the FHWA's Visual Impact Assessment for Highway Projects (2015) and FHWA Technical Advisory T6640.8A (1987). Visual analyses are subjective; visual character terms are therefore descriptive and non-evaluative, meaning that they are based on defined attributes which are neither positive nor negative by themselves. Changes in visual character cannot be described as having positive or negative attributes until compared with viewer responses to the change.

Visual quality is evaluated based on consideration of landscape qualities related to natural and / or man-made features, specifically:

- Natural features, including topography, water courses, rock outcrops, and natural vegetation;
- The perceived positive and negative effects of man-made alterations to the environment and built structures on visual quality; and
- Visual composition, including an assessment of the complexity and vividness of patterns that exist in the landscape.

Visual sensitivity is based on the number and types of users, viewers, or sensitive receptors typically found within the AVE. Generally, viewers in parks and residential areas are assumed to be the most sensitive to visual and aesthetic changes and viewers in industrial areas are assumed to be the least sensitive. Several distinct viewer groups with varying degrees of sensitivity to visual and aesthetic changes to the AVE are identified for this analysis. These include:

Community Residents: Residents are expected to have the highest awareness of visual changes of any viewer groups, since the Study Area Corridors are located within their immediate environment or surroundings.

Business Owners, Employees, and Customers: This viewer group is associated with existing offices and businesses along the Study Area Corridors. These viewers are anticipated to have a low level of concern regarding changes to the visual environment; their principal concern is more likely to be the effect of alternatives on business activities.

Regular Motorists: Included in this viewer group are commuters and local residents and workers who frequently travel within the Study Area Corridors. These viewers are aware of any changes to the visual environment because of their repeated exposure. They have a moderate level of concern for changes in the visual environment.

Occasional Motorists/Tourists: These viewers include tourists and regional residents from outside the immediate area who infrequently travel through the area. These viewers generally have a low exposure and awareness of changes to the visual environment.

Park/Recreation Area Visitors: These viewers include visitors to the many parks and recreational facilities in the region. These viewers may have infrequent exposure to the corridor but could be more aware of the visual environment.

The visual impact of the alternatives is determined by assessing the change in visual resources due to the alternatives and predicting viewer response to that change. Visual resource change is the total change in visual character and visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed alternatives with the existing visual character of the landscape. The second

step is to compare the visual quality of the existing resources with the projected visual quality after the alternative is constructed. Viewer response to the changes is the sum of viewer exposure and viewer sensitivity to the alternative. The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change. The magnitude of impacts to the visual resources within the AVE from specific vantage points is described as minor, moderate or major. Minor impacts would be those which are not detectable, slightly detectable, or localized within a relatively small area. Moderate impacts would be those that are readily apparent but do not contribute to a change in the character of the landscape. Major impacts would be substantial, highly noticeable, and/or result in changing the character of the landscape. The final step is to summarize potential impacts and consider mitigation measures to alleviate certain visual impacts, if warranted. Proposed improvements have also been divided into OIS sections that could potentially be implemented in phases over several years. As such, changes in visual quality to the AVE from implementation of a series of OIS would be staggered and include periods in between projects where people could adjust to the changes, before moving forward with additional changes to the visual environment.

The AVE encompasses a mix of residential, industrial, institutional, commercial, government/military, and open space land and water uses. The AVE varies greatly, from limited suburban-type views with the interstate visible to large expansive water views of the Chesapeake Bay, Hampton Roads Harbor, and the James River from the HRBT and MMMBT bridges and the shorelines of these waterbodies. Generally, topography in the region is fairly flat with landward viewsheds only limited by vegetation or structures. Sound walls limit the AVE from the interstate in many areas along the Study Area Corridors. The AVE may also be temporarily obscured by atmospheric conditions, such as fog over the harbor and the James River. Several visually sensitive resources such as historic properties are located within the AVE. Visual impacts to historic properties are assessed under Section 106 of the National Historic Preservation Act reported in the *HRCS Cultural Resources Management Report*.

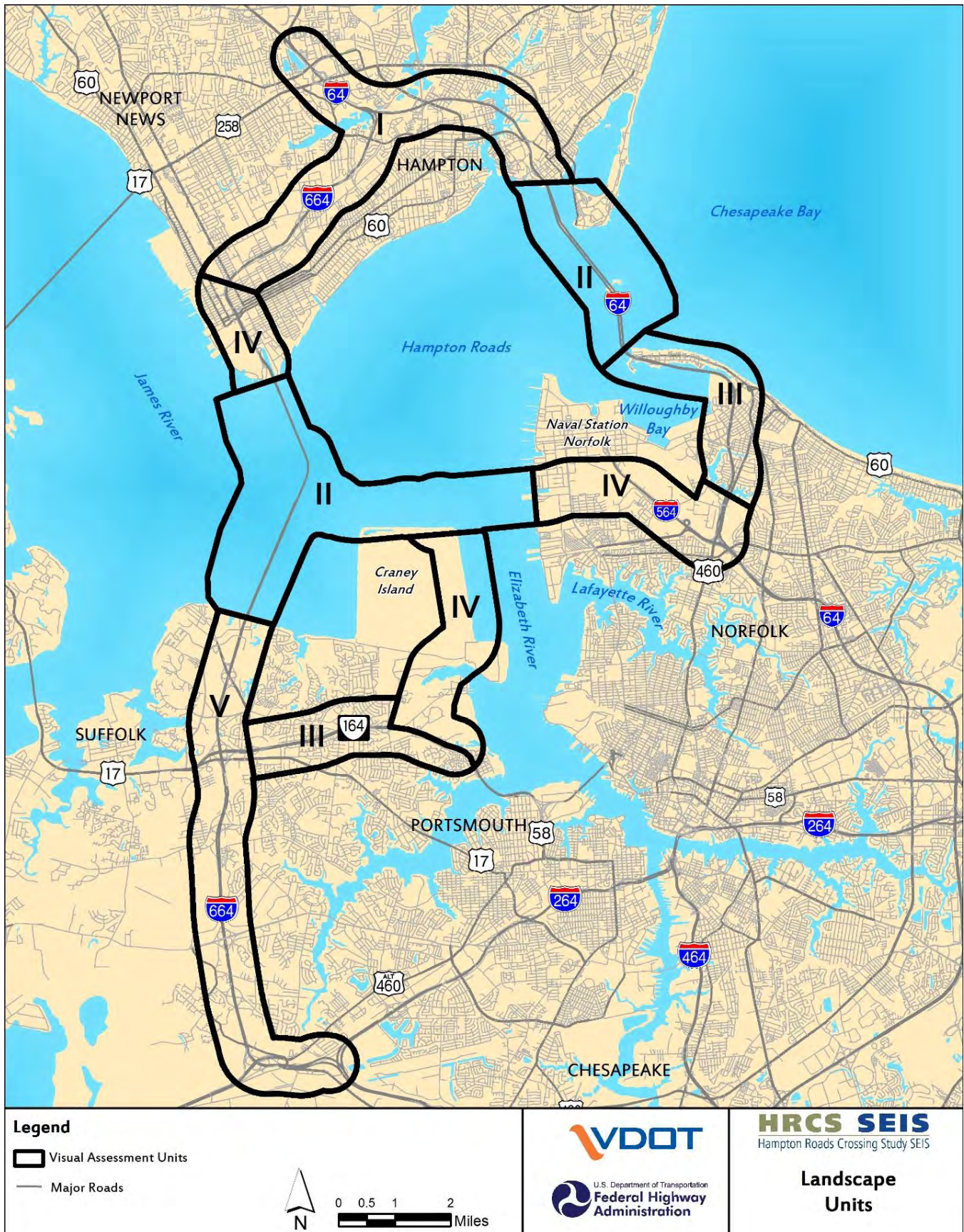
For the purposes of this Memorandum, the AVE is divided into five landscape units centered on the Study Area Corridors (**Figure 1-5**). These five landscape units break down the AVE into areas having similar types of land use, visual characteristics, and potential impacts to viewsheds. Figures have been provided using both Google Earth and pictures taken from the field to illustrate the AVE in each landscape unit. Renderings of proposed alternatives in their respective settings have not been provided for this phase of the study.

The following presents the existing conditions within each landscape unit and the potential effects of the Build Alternatives to visual quality in each respective unit. Because the No-Build Alternative would not make any changes to the visual character of the AVE and would have similar visual impacts within all defined landscape units, its consequences are summarized below.

1.2.1 The No-Build Alternative

The No-Build Alternative could diminish the existing visual character in the AVE. Since this alternative does not address congestion issues at any of the Study Area Corridors, it would result in an increase in views of traffic by motorists and nearby residences and businesses in all landscape units. The exception would be where the I-664 Connector, I-564 Connector, and VA 164 Connector are proposed, as no roadways currently exist in those areas. This alternative would not result in any temporary construction impacts to visual resources.

Figure 1-5: Landscape Units



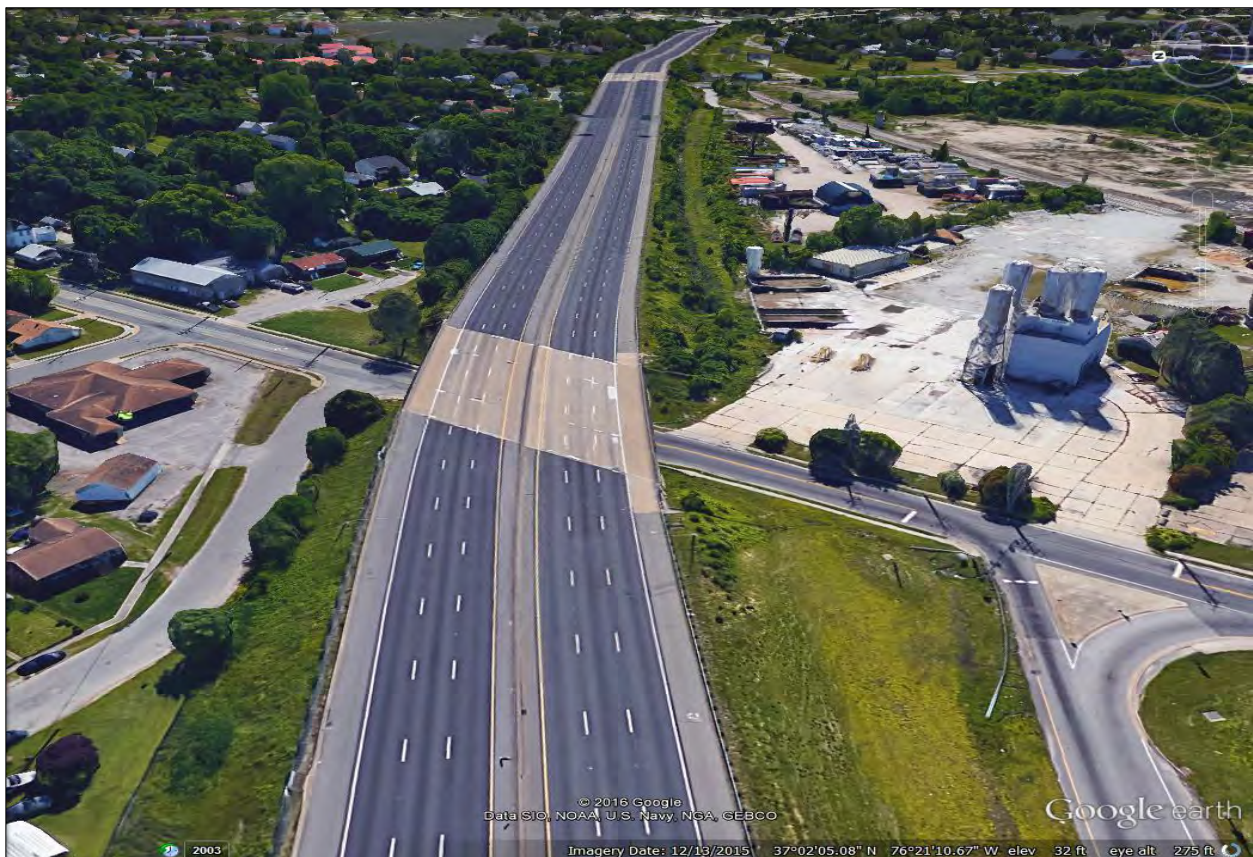
2. EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

2.1 LANDSCAPE UNIT I

2.1.1 Existing Conditions

Landscape Unit I consists of portions of I-64 and I-664 located on the Peninsula in the cities of Hampton and Newport News (**Figure 1-5**). These portions of the Study Area Corridors are intensively developed with multiple land use designations. Represented among these land use types are residential, industrial, institutional, commercial, open space, and government uses. An aerial photograph of this area is provided in **Figure 1-6**. A patchwork of varying land uses throughout Landscape Unit I creates a wide range of visual characteristics and potential visual impacts.

Figure 1-6: I-64 Eastbound at Rip Rap Road



I-64

Within Landscape Unit I, I-64 extends from approximately 1.5 miles north of the I-664 interchange in Hampton to the shoreline of the Hampton Roads Harbor and the northern terminus of the HRBT.

Hampton Coliseum, Hampton Town Center, Bluebird Gap Farm, and Newmarket Creek are located at the northern end of this landscape unit. Between I-664 and LaSalle Avenue, open space is immediately adjacent to I-64 as it crosses over Newmarket Creek, with a mix of commercial and residential land uses beyond the open space (City of Hampton, 2015). Between LaSalle Avenue and Rip Rap Road the land use is primarily residential. West of King Street, adjacent land uses are primarily residential to the north and industrial to the south (City of Hampton, 2015). The area between King Street and the Hampton River is

largely single-family residential, encompassing the Pasture Point Historic District and River Street Park. Residents in this area may be sensitive to changes in their view of the Hampton River. Continuing to the south, there are a few residences near the Hampton River, the Hampton National Cemetery, the Woodlands Golf Course, and residences (including Phoebus Historic District) to the east of I-64. Hampton University and Hampton Veterans Affairs Medical Historic District lie to the west of I-64. Residences are located along the shoreline east of I-64 at the start of the HRBT. Many residences in the vicinity of South Willard Avenue in Hampton have existing water views and would be sensitive to visual changes. VDOT has designated the section of I-64 between Mercury Boulevard and the HRBT as a 'Scenic Road' due to the association with the Peninsula Campaign of the Civil War. Scenic roads border areas of historical, natural, or recreational significance (VDOT, 2015).

Notable visually sensitive resources within I-64 Study Area Corridor of Landscape Unit I include: parks and recreation areas, historic districts, the historic Emancipation Tree at Hampton University, the Hampton National Cemetery, residential views, and historic Fort Monroe. Viewers in this portion of the AVE mainly include residents, business owners, employees and customers, regular motorists, occasional motorists such as tourists, students, and park/recreational area visitors.

I-664

This portion of I-664 in Landscape Unit I begins at the interchange of I-664 and I-64 in Hampton and continues west through Newport News ending at the Jefferson Avenue interchange. The I-64/I-664 interchange occurs over Newmarket Creek. I-664 heads west passing through residential areas and by Hampton High School before intersecting with Power Plant Parkway. From Power Plant Parkway west to Newport News, the adjacent land uses north and south of I-664 are largely industrial, with two small pockets of single family residential areas (City of Hampton, 2016), as shown in **Figure 1-7**. The land use on either side of I-664 in Landscape Unit I in Newport News is similar to that within Hampton, with a mixture of industrial and manufacturing areas with pockets of commercial and residential areas (City of Newport News, 2016).

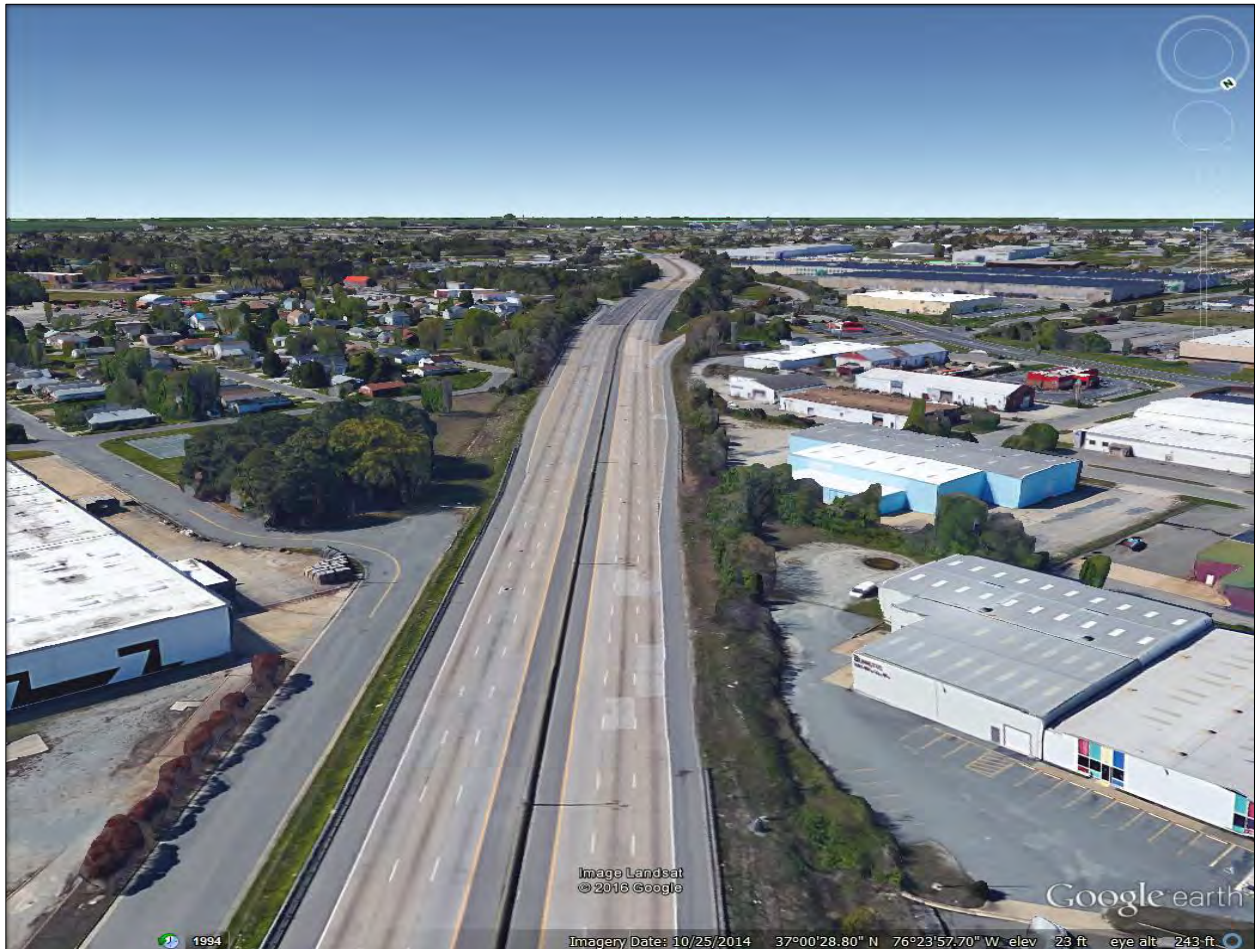
Notable visually sensitive resources within the I-664 area of Landscape Unit I include wetland and creek views of Newmarket Creek at the I-664/I-64 interchange. Viewers in this portion of Landscape Unit I mainly include residents, business owners, employees and customers, regular motorists, and occasional motorists such as tourists.

Alternative A

I-64

Within Landscape Unit I, I-64 extends from approximately 1.5 miles north of the I-664 interchange in Hampton to the shoreline of the Hampton Roads Harbor and the beginning of the HRBT. Under Alternative A, no mainline I-64 improvements would be made except from the north end of the HRBT to just south of Settlers Landing Road westbound, and eastbound beginning just north of Settlers Landing Road to the northern end of the HRBT. Improvements made through the I-64 segment of this landscape unit would result in a consistent six-lane facility by widening eastbound I-64 from four lanes to six lanes from just north of Settlers Landing Road south to the shoreline of Hampton, and from four lanes to six lanes westbound from the northern end of the HRBT to just south of Settlers Landing Road.

Figure 1-7: I-664 Southbound at Park Place Neighborhood (Looking South)



2.1.2 Environmental Consequences

The viewshed from Settlers Landing to the HRBT includes Hampton National Cemetery, and residential areas (including Phoebus Historic District) to the east of I-64. Hampton University and Hampton Veterans Affairs Medical Historic District lie to the west of I-64. Because widening this alignment would not require extending out of the current VDOT right-of-way, sensitive visual resources would not be disturbed. Residences are located along the shoreline east of I-64 at the north end of the HRBT; those with water views would not have adverse visual effects as the expansion under Alternative A would occur on the western side of the existing HRBT because the existing view is already dominated by the existing structure. However, there could be increased views of sound walls for the surrounding neighborhoods and University properties (refer to the *HRCS Noise Analysis Technical Report* for the location of potential sound walls).

The views for motorists within the area would change as a result of an increased amount of roadway pavement, potential new or replaced sound walls, and increased width of bridges over secondary roads that pass through this part of the Study Area Corridor. Additionally, current views would improve from reduced congestion and frequency of stalled traffic. Temporary visual impacts, such as visibility of construction materials, and other equipment, would occur during construction, but would be relatively short-term. **Table 2-1** summarizes the visual impacts of this and other alternatives within Landscape Unit I.

Table 2-1: Summary of Visual Impacts for Landscape Unit I

Alternatives	Physical Change	Visibility From	Types of Viewers	Viewer Sensitivity	Visual Impact
A and B	I-64 increase of 4 lanes to 6 lanes from Settlers Landing in Hampton to the HRBT.	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Hampton University • Roadways • Parks/Recreational Facilities 	• Community Residents	High	Moderate
			<ul style="list-style-type: none"> • Regular Motorists • Students • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
C	I-664 increase of 4-6 lanes to 8 lanes in Hampton/New port News from I-64/I-664 interchange to Jefferson Avenue	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways • Parks/Recreational Facilities 	• Community Residents	High	Moderate
			<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
D	Combination of all changes listed above	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Hampton University • Roadways • Parks/Recreational Facilities 	• Community Residents	High	Moderate
			<ul style="list-style-type: none"> • Regular Motorists • Students • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employee and Customers • Tourists/Occasional Motorists 	Low	Minor

Alternative B

I-64

The visual impacts to viewers under Alternative B along the I-64 corridor in Landscape Unit I would be similar as described for Alternative A, except there would be less congestion leading to fewer views of traffic build-up (**Table 2-1**). This is because traffic capacity would be increased over a larger area and additional route options would be provided to travelers via the I-564 Connector.

Alternative C

I-664

This section of Landscape Unit I begins at the interchange of I-664 and I-64 in Hampton and continues west through Newport News, ending at the I-664/Jefferson Avenue intersection. Improvements implemented through this portion of the landscape unit include the expansion of the roadway from an existing four to six lanes (depending upon location) to a proposed eight lanes.

The viewshed along this section includes largely industrial and / or institutional areas with two small pockets of single-family residential areas. Visual impacts through this segment would include a loss of natural area views (Newmarket Creek) due to widening of the roadway, a more direct view of I-664 or associated sound walls from nearby residences or businesses, potential displacement and replacement of sound walls, an increase in roadway pavement, potential property encroachments, widening of bridge structures, and elimination of existing roadside vegetation. Improvements to the viewshed would include less congestion for travelers and therefore fewer views of traffic jams. Because the improvements would occur along an existing interstate, the views to and from the interstate would not be dramatically altered (**Table 2-1**). The viewshed is already in a highly urban setting, thus minimal impacts to visual quality would occur. Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but would not be long-term.

Alternative D

I-64

Visual quality impacts under Alternative D in Landscape Unit I along I-64 would be the same as those described for Alternatives A and B, but with fewer views of congestion due to roadway improvements over a much larger area.

I-664

Visual impacts to viewers in Landscape Unit I along I-664 under Alternative D would be the similar to that described for Alternative C but with fewer views of congestion due to roadway improvements occurring over a larger area, including making improvements to I-64 and a new crossing of the Hampton Roads Harbor from construction of the I-664 Connector and I-564 Connector.

2.2 LANDSCAPE UNIT II

2.2.1 Existing Conditions

Landscape Unit II encompasses the portion of the AVE containing expansive open water views from the Study Area Corridors (**Figure 1-5**). This includes the I-64/HRBT, the I-664/MMMBT, the proposed I-664 Connector, and the proposed I-564 Connector.

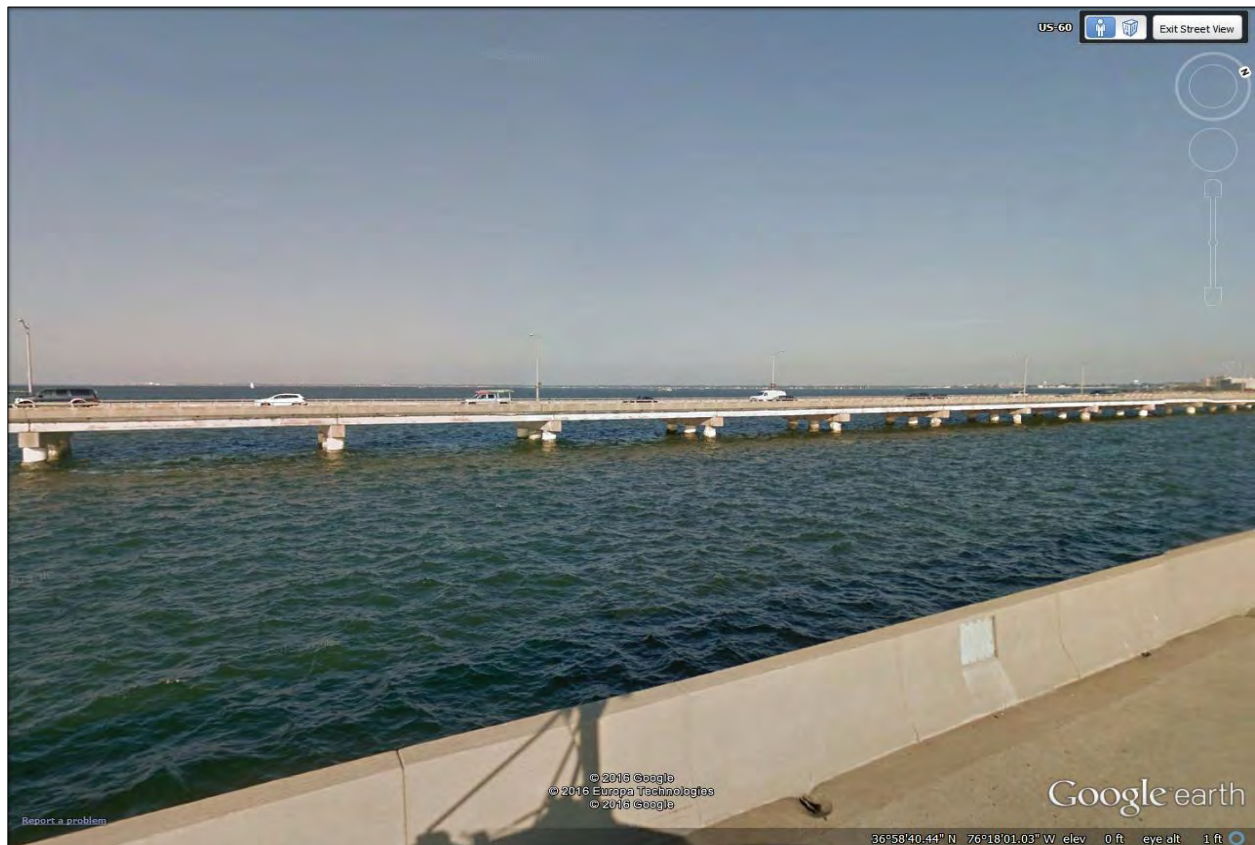
These portions of the Study Area Corridors have wide sweeping views of the Hampton Roads Harbor, the Chesapeake Bay, and the Elizabeth and James Rivers. This landscape unit does not have assigned land use designations, except for Fort Wool (public/government), as it is located completely over water. Landscape Unit II encompasses the most visually appealing sections of the Study Area Corridors because of the panoramas and nearby historical sites such as Fort Wool and Fort Monroe.

I-64/HRBT

I-64 through this landscape unit is a state-designated 'Scenic Road' across the entire HRBT. Heading south on the HRBT from Hampton mainland, eastbound vehicle occupants are provided a view of the Hampton Roads Harbor on the west (right side), and the twin I-64 trestle bridge and Fort Monroe on the east (left side) with Naval Station (NAVSTA) Norfolk visible on the shoreline to the south. Depending on time of day and atmospheric conditions, the Newport News Middle Ground Lighthouse and MMMBT can be visible to the west. While not within the I-64 Study Area Corridor, Fort Monroe, designated a National Monument, is located approximately 0.3 miles east of I-64 as the roadway crosses over Hampton Roads Harbor and is visible to eastbound motorists, but is most easily viewed from the westbound lanes. Views to and from Fort Monroe are important because the Fort is an historic attraction and tourist destination. Continuing south on the HRBT, travelers enter the HRBT portal and proceed through the tunnel, emerging at the south tunnel island. From there, the view remains the same for eastbound travelers until near the shore, where the Willoughby Spit waterfront beach homes are visible to the east and the Willoughby Bay and a marina are located to the west.

For westbound travelers on the HRBT, from the south shore, views to the west are similar to those of eastbound travelers, except the twin I-64 bridge trestle is also visible looking west (**Figure 2-1**). To the east, there is a brief view of the Willoughby Spit waterfront and beach homes that opens to the Chesapeake Bay as I-64 curves to the north. To the northwest, distant views of Hampton shoreline and the MMMBT are possible depending upon weather and time of day.

Figure 2-1: I-64 Westbound, Looking Northwest toward Hampton



As the viewer approaches the south tunnel island and HRBT portal, Fort Wool (a state and National Historic Landmark) is visible to the east; the Fort is only accessible by boat. As the viewer emerges from the north end of the tunnel, the shoreline of Fort Monroe is about 0.3 miles across the water to the east. Proceeding north, the viewshed on the east includes the bridge connecting Fort Monroe to Hampton waterfront that is primarily residential with a mix of institutional and industrial uses.

Notable visually sensitive resources within this portion of the landscape unit are the open water views across Hampton Roads Harbor and the Chesapeake Bay, views of Norfolk and City of Hampton shorelines, and scenes of Forts Wool and Monroe. Viewers in this portion of the AVE mainly include residents, business owners, employees and customers, regular motorists, occasional motorists such as tourists, students, and park/recreational area visitors.

I-664/MMMBT

I-664/MMMBT connects the cities of Newport News and Suffolk over the Hampton Roads Harbor. Traveling southbound on the MMMBT provides motorists a view of the James River and the shorelines of Suffolk and Isle of Wight County to the west (the right) and the Hampton Roads Harbor to the east (to the left). Also to the east, the Newport News Middle Ground Lighthouse is visible in the center of the harbor and the twin I-664 bridge trestle is in the viewshed. Looking to the east, one can see cranes in the distance at the Norfolk International Terminals (NIT) and Virginia International Gateway Terminals (VIG). Continuing southbound, viewers approach the mainland of the cities of Suffolk and Portsmouth, which share a view of a mostly natural shoreline combined with residential areas. CIDMMA is located to the east on the approach to mainland Suffolk; however, its visual distinction is obscured due to distance and vegetation on the shoreline.

Northbound viewers on the MMMBT have similar views of those of the southbound viewers. Heading towards Newport News travelers will see the James River, the shorelines of Isle of Wight County, the James River Bridge (weather dependent), and the twin I-664 bridge trestle to the west (on the left). To the east (on the right) will be scenes of the Hampton Roads Harbor, the Newport News Middle Ground Lighthouse, and depending upon weather conditions, NAVSTA Norfolk and the HRBT (**Figure 2-2**). To the northeast the coastlines of Newport News and Hampton are visible.

Notable visually sensitive resources within the AVE of this landscape unit are water views, views of Suffolk, Portsmouth, Hampton, and Newport News. The Newport News Middle Ground Light House, CIDMMA, and NAVSTA Norfolk are also visible areas of note. Viewers in this portion of the Study Area Corridor mainly include residents, business owners, employees and customers, regular motorists, occasional motorists such as tourists, and park/recreation area visitors.

Proposed New Hampton Roads Harbor Crossings

Several alternatives propose a new crossing over the Hampton Roads Harbor that together would extend from the shoreline at NIT and NAVSTA Norfolk west, connecting to CIDMMA and/or the I-664/MMMBT. Travelers heading west would see Hampton Roads Harbor and the shorelines of the cities of Hampton and Newport News to the north (right). To the south (left) would be views of CIDMMA. Traveling east motorists would see Hampton Roads Harbor, the shorelines of the cities of Hampton and Newport News, and NAVSTA Norfolk to the north (left). To the south (right) would be views of CIDMMA (**Figure 2-3**).

Notable visually sensitive resources within the AVE of this landscape unit are water views of Hampton Roads, views of city shorelines, CIDMMA, and NAVSTA Norfolk. Viewers in this portion of the Study Area

Corridor mainly include business owners, employees and customers, regular motorists, occasional motorists such as tourists, and park/recreation area visitors.

Figure 2-2: I-664 Westbound, Looking West to HRBT

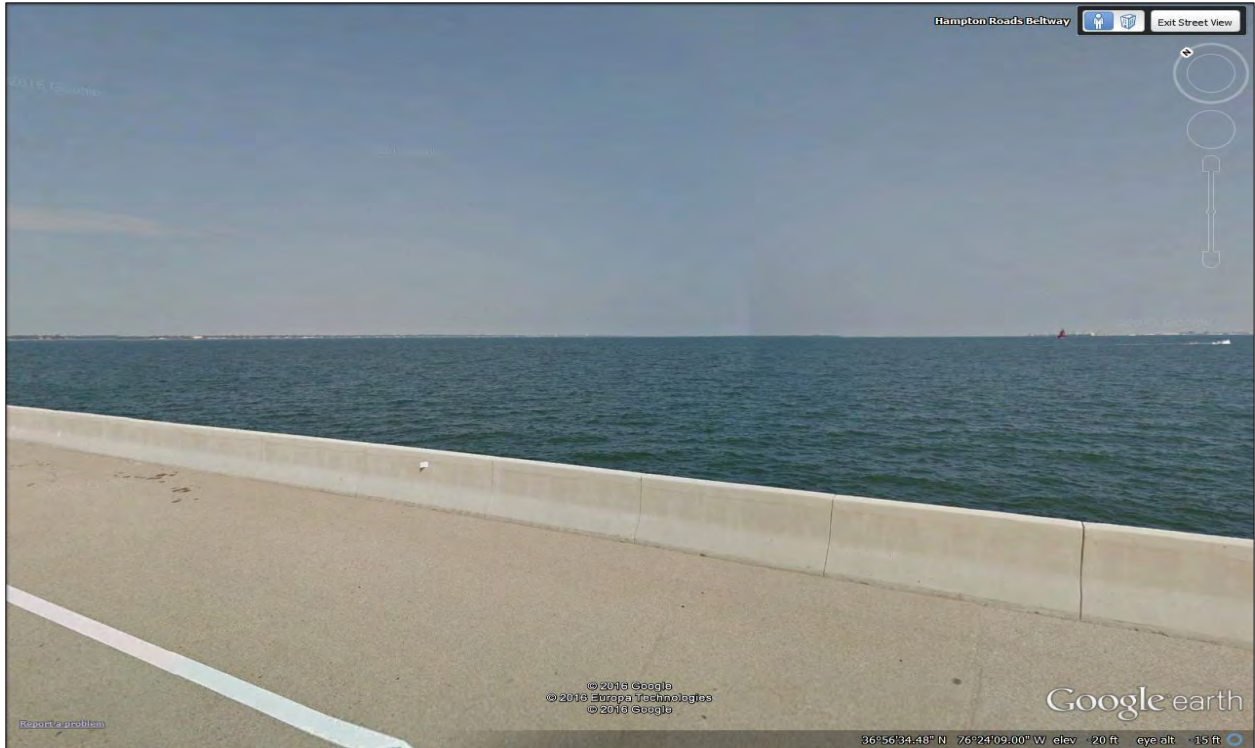


Figure 2-3: Proposed Location of New Crossings (Looking East)



2.2.1 Environmental Consequences

Alternative A

I-64/HRBT

Improvements along this segment of the Study Area Corridor consist of an increase from four lanes to six lanes in a new tunnel. Through this portion of Landscape Unit II the overall viewshed would not vary much from the existing visual environment. The increase from four lanes to six lanes would result in a change in views for regular motorists and parks/recreational visitors and boaters from an increased amount of roadway pavement over the waterway. There would be the construction and addition of larger new bridge-tunnel islands and trestles to connect the new tunnel, which would change the view for motorists. Additionally, views of traffic congestion and gridlock would be reduced due to increased capacity of the roadway. Because improvements would be made to an existing transportation facility and expansion of I-64 would not eliminate any areas of natural or cultural significance, and the views toward and from the roadway would not drastically change (**Table 2-2**), overall visual impacts would be minor. Residential and commercial areas would not see much impact as the improvements would be on the western side of the existing HRBT. Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but would be relatively short-term.

Alternative B

I-64

Visual impacts to viewers in Landscape Unit II from improvements to I-64 under Alternative B would be similar to those of Alternative A. Views of traffic congestion and gridlock would be less than experienced under Alternative A because of the increased roadway capacity and route options for travelers would reduce congestion. Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but it would be relatively short-term.

I-564 Connector

Under Alternative B, the proposed I-564 Connector would be a six general lane facility extending westward from the Norfolk shoreline under the Elizabeth River via a bridge-tunnel and meet the proposed VA 164 Connector north of CIDMMA. Were this section to be constructed, the viewshed for regular motorists, business owners/employees, and tourists would change to construction on new alignment. Changes would include a new tunnel island and bridges in the Elizabeth River north of CIDMMA. The new tunnel island and bridges would be approximately 2 to 4 miles from Norfolk shoreline, over 4.5 miles from Hampton shoreline, 3.8 miles from the Newport News shoreline, 3.5 miles from the nearest City of Suffolk shoreline, and 2.8 miles from the nearest Portsmouth residential areas. Travelers on the south half of the MMMBT would be approximately 2.5 miles from the western portion of the I-564 Connector, and it is over 5 miles distant from southbound travelers on the HRBT. The new I-564 Connector would therefore not be normally visible to viewers in these areas such as residents, businesses, and motorists, but could be visible to the closest areas under favorable conditions. NAVSTA Norfolk and NIT workers would see the new eastern tunnel portal but the western tunnel portal would not be highly visible from shore. Boaters near the mouth of the Elizabeth River would continue to have largely unobstructed overwater views because a submerged tunnel would be placed there, but they would see the new western tunnel island-and bridges north of CIDMMA. CIDMMA itself and the portion of City of Portsmouth adjacent to it is primarily industrial, with viewers less sensitive to a change in visual quality. No major adverse effects to visual quality would result from implementation of Alternative B in Landscape Unit II (see **Table 2-2**).

Table 2-2: Summary of Visual Impacts for Landscape Unit II

Alternatives	Physical Change	Visibility From	Types of Viewers	Viewer Sensitivity	Visual Impact
A	I-64 increase of 4 lanes to 6 lanes on the HRBT	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Moderate
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
B	New 4 lane Bridge-Tunnel I-564 Connector and 4 lane VA 164 Connector	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Moderate
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
C	Increase of 4 lanes to 8 lanes on the MMMBT and construction of 4 lanes from MMMBT east to I-564 Connector, and I-564 Connector 4 lanes and bridge-tunnel	<ul style="list-style-type: none"> • Businesses • Roadways 	<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
D	Combination of all changes listed above	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Hampton University • Roadways • Parks/Recreational Facilities 	• Community Residents	High	Minor
			<ul style="list-style-type: none"> • Regular Motorists • Students • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employee and Customers • Tourists/Occasional Motorists 	Low	Minor

Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but it would be relatively short-term.

Alternative C

I-664/MMMBT

Improvements along this portion of I-664 through Landscape Unit II include an increase from an existing four lanes to a proposed eight lanes, with an additional tunnel tube added to the west of the existing MMMBT. The overall viewshed of this segment that spans the Hampton Roads Harbor would not change much from the existing visual environment. The addition of lanes would result in an increased amount of roadway pavement over the waterway and the placement of new bridge-tunnel islands and new bridge trestles would be most visible to southbound travelers, but the views from shore and of boaters over the open water would not substantially change (see **Table 2-2**). Additionally, views of traffic congestion would be reduced relative to Alternatives A and B due to increased capacity of the roadway and further route options for travelers. Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but would not be permanent.

I-664 Connector

The proposed I-664 Connector would include new bridges providing four lanes originating on the southeast end of the MMMBT and heading east toward the north end of CIDMMA. Under Alternative C, the I-664 Connector would meet with the I-564 and VA 164 Connectors at a new interchange which would rise above the water higher than the proposed bridge trestle.

Groups that are located permanently on land, such as residents and businesses, would not be able to clearly see the proposed bridges as they would be located more than a mile offshore (**Table 2-2**). The closest landform that this proposed roadway would pass is CIDMMA, which is a currently in-use government dredge spoils facility. Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but would be short-term.

I-564 Connector

Improvements in the form of the I-564 Connector under Alternative C in Landscape Unit II would construct a new interchange where it would meet the I-664 Connector north of CIDMMA. Similar to Alternative B it would also build six lanes, but would include four general purpose and two dedicated transit lanes. The interchange construction would be similar to the western tunnel island and bridges that would be built under Alternative B, therefore, the visual quality impacts would be the same as described for Alternative B.

Alternative D

I-64/HRBT

Visual impacts to viewers from improvements to I-64/HRBT in Landscape Unit II under Alternative D would be similar to Alternatives A and B discussed above. Views of traffic congestion and traffic jams along I-64/HRBT would be minimized the most under Alternative D due to capacity improvements over a larger area that includes increasing capacity to two of the Hampton Roads Harbor crossings (HRBT and MMMBT) as well as building a new third crossing that increases route options for travelers.

I-664/MMMBT

Visual impacts to viewers in Landscape Unit II from improvements to I-664/MMMBT proposed in Alternative D would be similar to those described for Alternative C above, however Alternative D would have fewer (eight) travel lanes and therefore the roadway cross-section in Landscape Unit II would not be as wide. Also, because Alternative D would improve two Hampton Roads Harbor crossings (HRBT and

MMMMBT) and provide a new third crossing over the entire harbor, there would be less congestion on I-664 and therefore fewer views of traffic gridlock than under Alternative C.

I-564 Connector

I-564 Connector improvements under Alternative D in Landscape Unit II would be similar to that as described under Alternative C and would therefore have similar visual impacts as described above.

I-664 Connector

Construction of the I-664 Connector under Alternative D would be similar to that described for Alternative C as both would be six lanes but all would be general travel lanes under Alternative D. Hence, the Alternative D visual impacts of the I-664 Connector in Landscape Unit II would be the same as described for Alternative C.

2.3 LANDSCAPE UNIT III

2.3.1 Existing Conditions

Landscape Unit III is composed of the majority of the I-64 Study Area Corridor located within Norfolk and the VA 164 corridor in Portsmouth (**Figure 1-5**). Land use in this landscape unit is primarily residential with smaller areas of commercial, industrial, institutional, government, and open space. Large portions of these Study Area Corridors are lined with sound walls through residential areas

I-64

The I-64 portion of this landscape unit begins on the shore of Willoughby Spit and continues south to Mason Creek. Interstate 64 is a designated state 'Scenic Road' from the HRBT to 4th View Street in Norfolk. Along Willoughby Spit is a largely residential area located on the northern side of I-64 (City of Norfolk, 2016). The southern side of I-64 through Willoughby Spit has little land area that is a mix of commercial and residential properties with views of Willoughby Bay and NAVSTA Norfolk. Residents in this area are likely to place a high value on existing water views and could be sensitive to changes in the landscape.

Proceeding eastbound on I-64, the interstate leaves land again to cross Willoughby Bay via a trestle bridge. Along the north side of the bridge on Willoughby Spit are more residences and Captain's Quarters Nature Center and Park, on the south is Willoughby Bay and NAVSTA Norfolk just beyond. Where the bridge abuts land again, to the south lies undeveloped government-owned land and a wetland area. As I-64 begins to turn south, the area to either side of I-64 is primarily residential (City of Norfolk, 2016) as illustrated in **Figure 2-4**. Sound walls begin to line the Study Area Corridor in this area and extend most of the way to Mason Creek, a natural creek and wetland system. Residents located near the I-64 bridges over Mason Creek may be particularly sensitive to changes in lines of sight.

Westbound travelers will have similar views to eastbound travelers. Beginning at Mason Creek and heading northward, the area to either side of I-64 is primarily residential and sound walls begin to line the Study Area Corridor extending to the 4th View interchange. Continuing, westbound travelers arrive at the Willoughby Bay Bridge and have views of Willoughby Bay to the south (left) and of Willoughby Spit, Captains Quarters Nature Park, and Willoughby Spit residences on the north (right).

Notable visually sensitive resources within the AVE along this section of I-64 are the views of Willoughby Bay, open/natural green spaces, and coastal residences mentioned above. Viewers in this visual assessment unit mainly include residents, business owners, employees and customers, regular motorists, occasional motorists such as tourists, and park/recreational area visitors.

Figure 2-4: I-64 in Norfolk (Looking South)



VA 164

In the Study Area Corridor, VA 164 extends east-west for approximately 3.4 miles from Virginia International Gateway Boulevard to I-664, passing through the Cities of Portsmouth and Suffolk. An active railway is within the median of VA 164 which serves the VIG terminal.

In Landscape Unit III, beginning at Virginia International Gateway Boulevard and heading west, the south side of VA 164 has a buffer of undeveloped vacant land with low to mid-density residential areas located behind it (the north side is discussed as part of Landscape Unit IV). Continuing west from Cedar Lane to Towne Point Road, the adjacent land use continues to be low to mid-density residential areas. Sound walls along VA 164 begin at the Cedar Lane interchange and continue towards the I-664 interchange. Closer to Towne Point Road, the north side of VA 164 transitions to a higher density multi-family residential area and the south side of VA 164 continues as a low to mid-density residential area interspersed amongst small vacant parcels (City of Portsmouth, 2016). From Towne Point Road continuing west to College Drive, land use on the north side of VA 164 begins again as a multi-family residential area that transitions back into a low-mid density residential area; the southern side of VA 164 follows this same pattern (City of Portsmouth, 2016), both bound by sound walls (**Figure 2-5**). Just before College Drive, the north of VA 164 becomes an institutional land use zone where an extension of Old Dominion University is located, while the south side of VA 164 becomes commercial. As VA 164 continues towards I-664 the north side is again bound by a single-family residential area while the south contains vacant parcels that are zoned for

office/institutional areas (City of Portsmouth, 2016). All residential areas are separated from VA 164 by sound walls.

Figure 2-5: VA 164 Looking West



Views to travelers eastbound along VA 164 are similar to those traveling westbound, just reversed. Eastbound land use begins with commercial and institutional areas near the interchange with I-664 that transitions into residential areas. The sections of VA 164 that pass through the residential areas are bound on both sides by sound walls. Near the eastern end of VA 164 the view transitions into undeveloped-forested areas that are zoned industrial.

Notable visually sensitive resources within the AVE on VA 164 are the undeveloped forested areas at the eastern end of VA 164 that are vacant parcels zoned as industrial. Otherwise, VA 164 is bound by sound walls or open to commercial areas. Viewers in this portion of the Study Area Corridor would mainly include business owners, employees and customers, regular motorists, and occasional motorists such as tourists.

2.3.2 Environmental Consequences

Alternative A

I-64

Traveling eastbound from the shoreline of Willoughby Spit to the intersection of I-64 and Mason's Creek, the land use in Unit III is primarily residential and built out. Although this alternative would increase from four lanes to six lanes along I-64, the improvements could be accomplished without moving existing sound walls out of the existing right-of-way (refer to the *HRCS Noise Analysis Technical Report* for the location of potential sound walls).

There would be increases in roadway pavement, and decreases in natural open space areas. Views over Willoughby Bay would not change as the southern views would still offer open water views and scenes of NAVSTA Norfolk, and the northern views would still be of beachfront residential areas. Expansion of I-64

would not have major visual effects in Landscape Unit III as the majority of the I-64 corridor is bounded by sound walls. Some residences along Mason’s Creek could be sensitive to visual change due to increases in bridge widths and encroachments upon wetlands and waterways (**Table 2-3**). Temporary visual impacts, such as visibility of construction materials, barges, and other equipment, would occur during construction, but would not be long-term. Overall, no major effects to visual quality in Landscape Unit III would occur under Alternative A.

Table 2-3: Summary of Visual Impacts for Landscape Unit III

Alternatives	Physical Change	Visibility From	Types of Viewers	Viewer Sensitivity	Visual Impact
A and B	Increase of 4 to 6 lanes on I-64 beginning on Willoughby Spit and ending at Mason’s Creek in Norfolk	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
B	Increase of 4 lanes to 6 lanes on VA 164	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
D	Combination of all changes listed above	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			<ul style="list-style-type: none"> • Regular Motorists • Park/Recreational Visitors 	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor

Alternative B

I-64

Visual impacts along I-64 in Landscape Unit III under Alternative B would be the same as for Alternative A because the proposed improvements would be the same, as described above (**Table 2-3**).

VA 164

Impacts upon the visual resources of the AVE around VA 164 in Landscape Unit III would be minimal. The proposed expansion of VA 164 from four to six lanes would potentially result in the displacement and replacement of sound walls through the Study Area Corridor limits. Lane expansion would have to occur in the outer limits of the Study Area Corridor as the median contains the Commonwealth Rail/Norfolk Southern/CSX shared railway. As the current land use is primarily residential, viewer sensitivity to visual changes could be high. However, because the roadway is lined with sound walls for the majority of its length, the likelihood that the viewshed would extensively change for any viewer group is minimal. Any expansion would include the re-lining of the corridor with sound walls (refer to the *HRCS Noise Analysis Technical Report* for the location of potential sound walls), with visual quality remaining very similar to existing conditions.

An expansion of the Study Area Corridors through Landscape Unit III would not have significant impacts to the existing viewsheds (**Table 2-3**). Expansion would not eliminate any areas of natural or cultural significance, and the views toward and from the roadway would not drastically change. Temporary visual impacts, such as visibility of construction materials, barges, lighting and other equipment, would occur during construction, but would be short term.

Alternative C

Alternative C would make no improvements to Study Area Corridors in Landscape Unit III except to tie the VA 164 Connector into VA 164. As the area is industrial and VA 164 is an existing facility, minimal change to the AVE would occur.

Alternative D

I-64

Impacts to visual resources along I-64 under Alternative D in Landscape Unit III would be the same as described for Alternative A above because the proposed improvements are the same.

VA 164

Improvements to VA 164 under Alternative D in Landscape Unit III would be the same as Alternative B and would have similar visual impacts.

2.4 LANDSCAPE UNIT IV

2.4.1 Existing Conditions

Landscape Unit IV is composed of segments of the Study Area Corridor in which the land use is largely industrial or under government/military ownership (**Figure 1-5**). This landscape unit includes I-64 in Norfolk from Masons Creek through the I-64/I-564 interchange and I-564 to NIT and NAVSTA Norfolk. This landscape unit also includes the proposed VA 164 Connector in Portsmouth from the northern end of CIDMMA to its proposed interchange location with the existing VA 164 near Coast Guard Boulevard, Renfrow Road, and Wild Duck Lane. Landscape Unit IV also includes I-664 in Newport News from Jefferson Avenue/ 35th Street interchanges to the MMMBT.

I-64 and I-564

The I-64 portion of Landscape Unit IV begins south of Mason Creek and ends at the interchange with I-564 near Wards Corner. Travelers heading eastbound on this portion of the landscape unit will see

NAVSTA Norfolk properties to the west (right). These areas of NAVSTA Norfolk have recreational parks and forested areas located along the corridor prior to the intersection with I-564. Forest Lawn Cemetery lays to the east (left) of I-64 before the I-564 junction. South of the I-64/I-564 interchange is the Wards Corner commercial area and a small area of multi-family residences (**Figure 2-6**).

I-564 in Norfolk is the primary access between NAVSTA Norfolk, Naval Support Activity Hampton Roads (NSA Hampton Roads), and the NIT on the west and I-64 on the east, a distance of approximately 3 miles. Heading west on I-564 to the interchange with Terminal Boulevard, railroad tracks and a single-family residential area skirts the southern boundary while adjacent undeveloped and forested areas on the northern side of I-564 are located on the military base. Continuing west from Terminal Boulevard, both sides of I-564 are government/military land uses. Sewell's Point Golf Course is south of the interstate while undeveloped land that transitions into NAVSTA Norfolk Chambers Field are on the north side. Past the golf course, the viewshed to the south of I-564 contains military housing and recreational fields to a point 0.3 miles southeast of Chambers Field.

Figure 2-6: I-64/I-564 Interchange (Looking North)



At this point, the I-564 alignment currently under design as the I-564 Intermodal Connector extends west across NAVSTA Norfolk toward the Navy docks and NIT, following the Norfolk Southern railroad. This portion of the base north of I-564 is open space maintained as an Air Installation Compatible Use Zone (AICUZ) for Chambers Field (City of Norfolk, 2016). The AICUZ zoning restricts land uses to maintain safe

and open clearance for operation of the airfield. Land use on the southern side begins as open-space and wetlands on the base, transitioning into the Glenwood Park neighborhood and then a commercial area near Hampton Boulevard (City of Norfolk, 2016). From that point westward are NAVSTA Norfolk dock facilities to the north and NIT to the south.

Notable visually sensitive resources within the AVE to this point are the undeveloped forested areas within government property boundary lines, the military airport, and the open green space incorporated into the airport. Viewers in this portion of the Study Area Corridor would mainly include military personnel, employees, business owners and customers, regular motorists, and occasional motorists such as tourists.

VA 164 Connector

Certain alternatives propose roadways on new alignments to connect VA 164 via a north-south extension along the eastern shoreline of CIDMMA to proposed new water crossings connecting to either I-564 on the east and/or the I-664/MMMBT on the west. Beginning just north of CIDMMA and heading south, travelers would pass between CIDMMA on the west (right) and the currently under construction Craney Island Marine Terminal (CIMT) and the Elizabeth River on the east (left). CIDMMA is federally-owned property used for dredge spoils management and CIMT, once completed, will be an industrial port area.

Continuing south, motorists would cross through what is now part of Portsmouth's Craney Island Landfill, consisting of active landfill and open green space. Viewers traveling on the road would then proceed south across Craney Island Creek, an open waterway with fringe marsh and wetlands, and then through part of what is now the US Coast Guard Station – Portsmouth; this area in the Study Area Corridor is mostly undeveloped. The viewshed to the east and west would then consist of the VIG Terminal property, up to the proposed connection with existing VA 164. This area of the VIG Terminal is zoned industrial, but is currently undeveloped and forested (City of Portsmouth, 2016).

For travelers heading north on the VA 164 Connector, the views would slightly change. Beginning on VA 164, travelers would pass through the undeveloped and forested areas of VIG, the US Coast Guard property, over Craney Island Creek and across Portsmouth's landfill. Travelers heading north would have very similar views to those heading south. The views change once the Connector runs alongside CIDMMA. Travelers going north would similarly have eastern views of the CIMT and the Elizabeth River as well as western views of CIDMMA, but the northern view would now include the Hampton Roads Harbor and to the northeast NAVSTA Norfolk and NIT (**Figure 2-7**).

From Virginia International Gateway Boulevard heading west to Cedar Lane, the northern side of VA 164 consists of undeveloped forested areas that are designated as industrial land use and undeveloped vacant land (City of Portsmouth, 2016).

Notable visually sensitive resources within the AVE in this landscape unit are the water views from the northern shoreline of CIDMMA, the wetland areas of Craney Island Creek, undeveloped forested areas located within government property, and undeveloped forested areas that are within private properties zoned as industrial. Viewers in this portion of the Study Area Corridor would mainly include business owners, employees and customers, regular motorists, and occasional motorists such as tourists, and boaters on the Elizabeth River.

Figure 2-7: Proposed VA 164 Connector Area (Looking North toward CIDMMA)



I-664

The portion of I-664 that is included in Landscape Unit IV is located between the MMMBT and the 35th street overpasses/Jefferson Avenue interchange. As shown in **Figure 2-8**, the land use on either side of I-664 is a mixture of heavy industrial and manufacturing areas with smaller pockets of commercial and residential areas, with many currently vacant properties on the east side of I-664 under redevelopment.

Figure 2-8: I-664 Downtown Newport News (Looking South toward MMMBT)



The western edge of King-Lincoln Park is also within Landscape Unit IV, but is not typical of the visual environment in this Unit.

Notable visually sensitive resources within the AVE to this point are water views from the approach to the MMMBT and King-Lincoln Park. Viewers in this portion of the Study Area Corridor mainly include residents, business owners, employees and customers, regular motorists, and occasional motorists such as tourists.

2.4.2 Environmental Consequences

Alternative A

I-64

Improvements made along I-64 in Landscape Unit IV would be found from Mason's Creek to the interchange of I-64/I-564. This is a segment that is proposed to remain within the boundaries of the current VDOT right-of-way under a proposed expansion from four lanes to six lanes. Mason's Creek has fringe marshes and wetlands which would be affected by expansion of the bridge to either side. Additionally, Mason's Creek has residences located on the northern shoreline that would have their views impacted by widening the creek crossing. Sound walls line the west side of I-64 just north of Mason's Creek Bridge and would likely remain in the same location. Traveling south from Mason's Creek, the western side of I-64 becomes NAVSTA Norfolk property and the eastern side becomes Forest Lawn Cemetery. As shown on **Figure 2-9**, forest borders the I-64 right-of-way so only limited views of Forest Lawn Cemetery are possible from the roadway, as are views of the interstate from the cemetery. Expansion through this area to the interchange of I-64/I-564 would result in the partial loss of forested areas which would not affect the viewshed of travelers or neighbors because the I-64 improvements would still be screened by remaining forest (**Table 2-4**).

Figure 2-9: I-64 in Norfolk (Looking North)

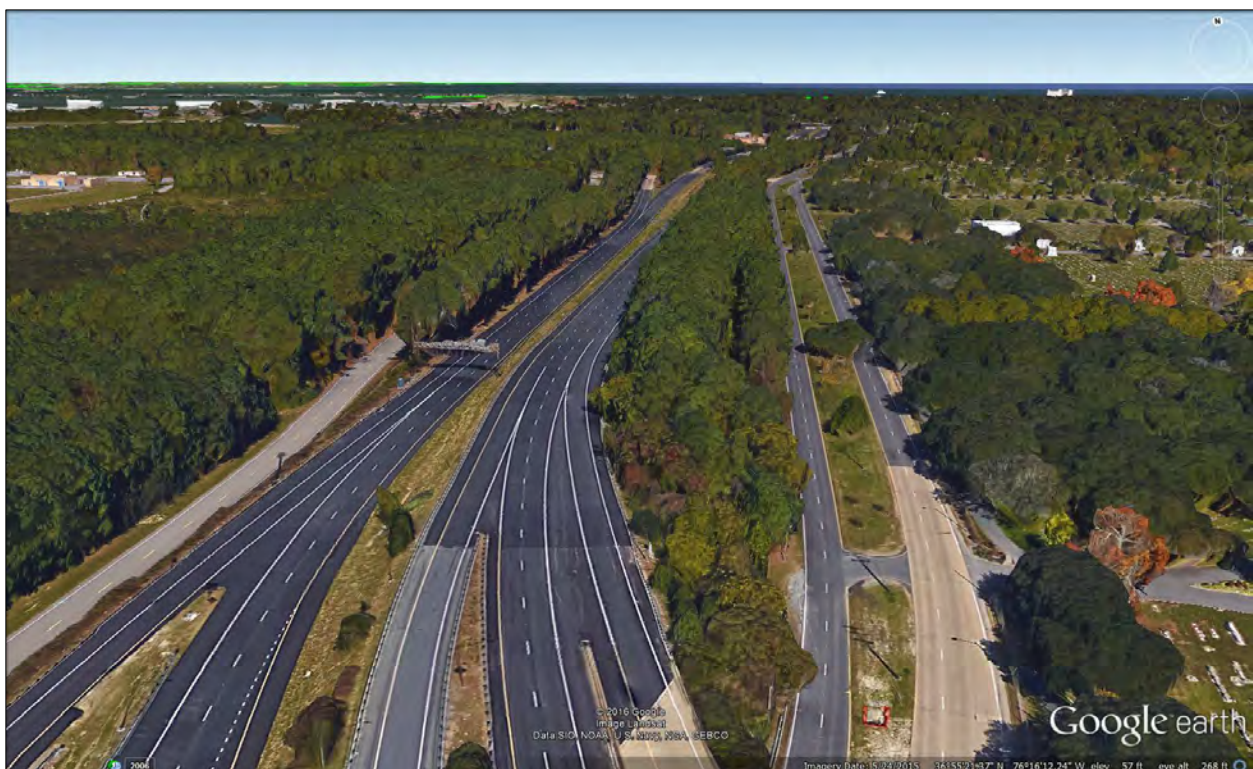


Table 2-4: Summary of Visual Impacts for Landscape Unit IV

Alternatives	Physical Change	Visibility From	Types of Viewers	Viewer Sensitivity	Visual Impact
A and B	Increase of 4 lanes to 6 lanes on I-64 from Mason's Creek to I-564 interchange	<ul style="list-style-type: none"> • Businesses • Roadways 	• Community Residents	High	Minor
			• Regular Motorists	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
B	No increase to existing 6 lanes of I-564, 4 lanes proposed as VA 164 Connector	<ul style="list-style-type: none"> • Businesses • Roadways 	• Community Residents	High	Minor
			• Regular Motorists	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists/Boaters 	Low	Minor
C	Increase from 4-6 lanes to 10 (Alternative C) and 8 lanes (Alternative D) of I-664 from Jefferson Avenue to MMMBT in Newport News	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			• Regular Motorists	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
D	Combination of all changes listed above	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Minor
			• Regular Motorists	Moderate	Minor
			<ul style="list-style-type: none"> • Business Owners/Employees and Customers • Tourists/Occasional Motorists 	Low	Minor

Alternative B

I-64

Impacts to the visual character of I-64 under Alternative B in Landscape Unit IV would be the same as described for Alternative A because the proposed improvements would be the same.

I-564

The I-564 segment of Landscape Unit IV is currently six lanes that head in a southeast-northwest direction from the I-64/I-564 interchange to the Norfolk Southern Railroad tracks on the south side of the interstate. The majority of this area is government / military-owned properties. Land use in this area encompasses forested and wetland open spaces, recreational open space, single-family and multi-family residential areas, as well as a commercial area. No changes to this section of I-564 are proposed under Alternative B, thus, there would not be any altered views or impacts to the viewshed in any direction.

From the Norfolk Southern tracks on the south side of existing I-564, the interstate is currently being extended as a four-lane divided highway west under the I-564 Intermodal Connector project, following the tracks toward NAVSTA Norfolk docks and NIT. Alternative B does not propose improvements to this portion of the I-564 Study Area Corridor except to construct the eastern tunnel portal to the proposed I-564 Connector at the shoreline. Temporary construction visual quality impacts would occur with visible construction equipment and disturbed ground, but this would be short-term. As this area is heavily industrial associated with the adjacent Navy docks and NIT, viewer sensitivity would be low with minor visual quality impacts (**Table 2-4**). Impacts to visual quality associated with open water views at the shoreline are evaluated under the Landscape Unit II discussion above.

VA 164 Connector

The proposed VA 164 Connector improvements would include construction of a new four-lane highway through man-made CIDMMA and areas of Portsmouth in designated industrial or military lands. Temporary construction impacts to visual quality would occur with visible equipment, lighting, and earth disturbance. These areas are largely undeveloped in the proposed VA 164 Connector corridor. The proposed corridor of the VA 164 Connector is not within sight of residential areas or other areas in the AVE of Landscape Unit IV with sensitive viewers except boaters. However, the area is already heavy industrial which would not substantially change under Alternative B, and so, the visual environment of this proposed corridor would not be affected (**Table 2-4**).

Alternative C**I-664**

The section of I-664 within Landscape Unit IV is in Newport News between the I-664 intersection with Jefferson Avenue and the beginning of the MMMBT. Improvements through this section would widen I-664 from four to six lanes to 10 lanes. This is a largely industrial area, with views from the highway primarily of heavy industry to the west and vacant residential lots to the east. The views for northbound and southbound motorists along I-664 within the area would change as a result of an increased amount of roadway pavement and increased width of bridges over secondary roads that pass through this part of the Study Area Corridor. However, views on the periphery would remain those of heavily industrial and / or vacant lots. Residential neighborhoods to the north would experience visual changes by constructing new lanes that would encroach closer to the neighborhood boundaries, but as they currently see the existing interstate, this would not be a substantial change. Temporary visual impacts, such as visibility of construction materials, barges, lighting and other equipment, would occur during construction, but would be short-term. Viewer sensitivity in this industrial area would be low, thus the proposed improvements would have minimal impact to visual quality. Open water views at the shoreline of Landscape Unit IV are evaluated in the Landscape Unit II section above.

Alternative D

I-64

Improvements to I-64 through Landscape Unit IV under Alternative D would be the same as described for Alternatives A and B and thus would have similar minor visual quality impacts as described above.

I-564

Alternative D proposed improvements to I-564 in Landscape Unit IV would be the same as Alternative B and C, thus visual quality impacts would be the same as discussed for these alternatives.

VA 164 Connector

Improvements to VA 164 in Landscape Unit IV under Alternative D would be the same as under Alternatives B and C. Minor visual quality effects would occur as described for Alternatives B and C.

I-664

Under Alternative D, I-664 through Landscape Unit IV would be widened from four to six lanes to eight lanes. As this area is primarily industrial and improvements would be made to an existing interstate as discussed under Alternative C, viewer sensitivity would be primarily low, resulting in minor visual quality impacts as described for Alternative C.

2.5 LANDSCAPE UNIT V

2.5.1 Existing Conditions

Landscape Unit V is comprised of the I-664 Study Area Corridor extending through primarily suburban areas from the south end of the MMMBT, southward through the cities of Suffolk and Chesapeake to the I-264 interchange. The existing viewsheds along the corridor are mostly residential, open space or undeveloped, but city land use plans specify a mix of land uses such as residential, commercial, institutional, industrial, and open space/conservation.

The I-664 Study Area Corridor is located in Suffolk's Northern Growth Area which is focused around major regional transportation corridors (I-664, VA 164, and US 17). The Northern Growth Area is a focal area for development, to reduce sprawl pressures in the rest of the city, and to provide more efficient and effective delivery of city services. The Northern Growth Area is primarily suburban in nature, with commercial uses located mainly in large-scale developments and shopping centers surrounded by residential subdivisions (City of Suffolk, 2015). Land use adjacent to I-664 on both the east and west is designated as commercial, industrial/manufacturing, or office/institutional, with a small pocket designated as residential (City of Suffolk, 2016). However, current land use adjacent to the I-664 Study Area Corridor is mostly undeveloped and/or forested wetlands (City of Suffolk, 2015) as shown in **Figure 2-10**.

I-664 from the Suffolk-Chesapeake city line continues south from Pughsville Road to the I-264 interchange. From the north City of Chesapeake line to Portsmouth Boulevard, adjacent land uses are mostly low density residential and commercial, with large areas of undeveloped, forested land (City of Chesapeake, 2016). Much of the undeveloped land is forested wetlands. Chesapeake's Comprehensive Plan *Moving Forward Chesapeake 2035* establishes a development pattern map for the year 2050 in which the areas within the Study Area Corridor along I-664 are designated as "dispersed suburban development areas", where the purpose is to provide a transition area between the urban areas of the city and the outlying rural areas (City of Chesapeake, 2014).

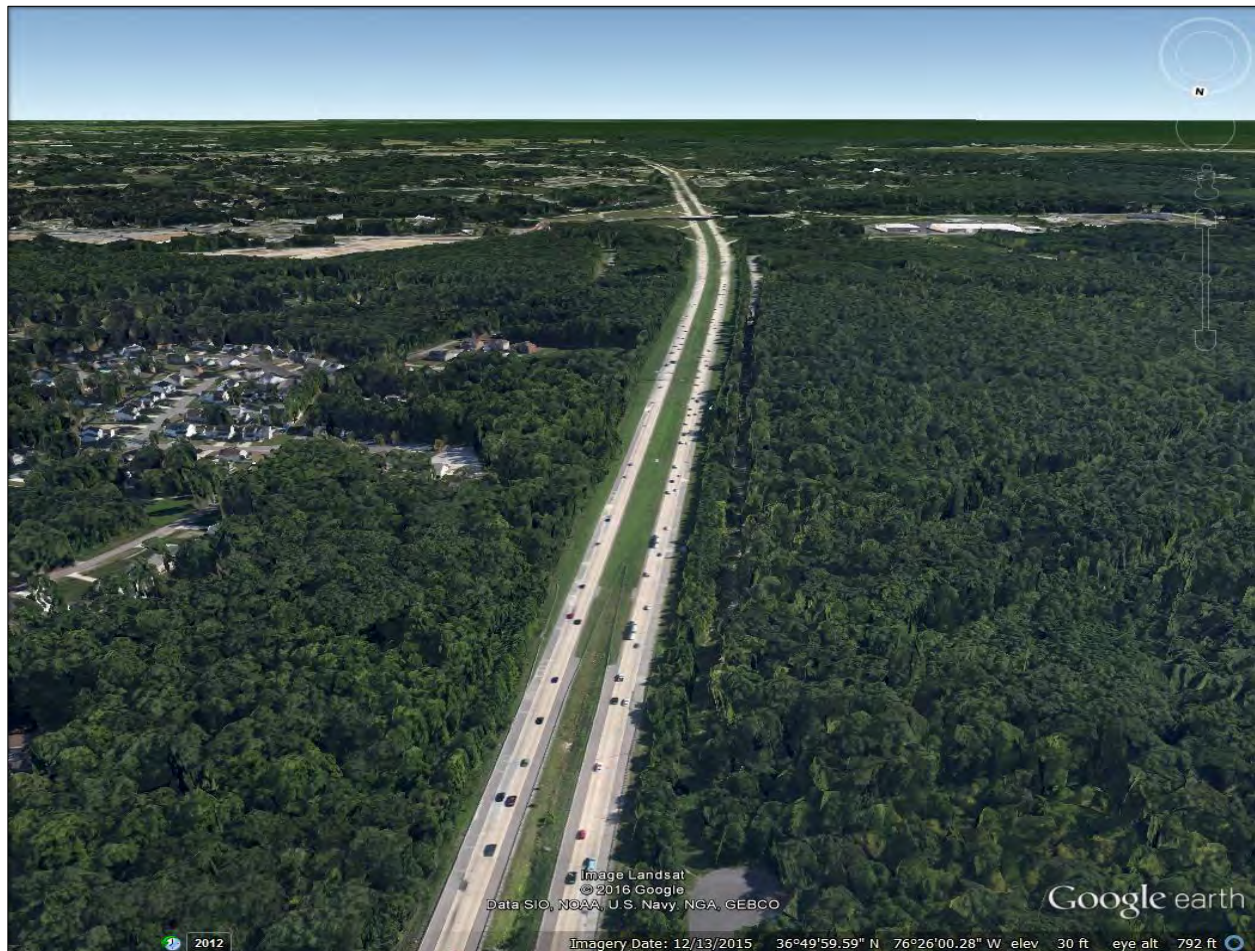
Figure 2-10: I-664 in Suffolk (Looking South)



From Portsmouth Boulevard continuing south, I-664 crosses Drum Point Creek, a conservation/wetland area. From there, the viewshed continues with largely low density residential areas on both sides of I-664 leading up to the Dock Landing Road interchange (City of Chesapeake, 2016). Continuing south from Dock Landing Road, I-664 crosses over Bailey Creek and its associated conservation/wetland area, followed by pockets of undeveloped areas, and low-density residential areas on both sides of the interstate (**Figure 2-11**). As I-664 approaches the interchange with I-264, agricultural areas come within view on the south side of the Study Area Corridor.

Notable visually sensitive resources within the AVE are the natural wetland and conservation areas, the undeveloped forested areas, and the agricultural areas towards the southern end of the Study Area Corridor. Viewers in this portion of the Study Area Corridor mainly include business owners, employees and customers, regular motorists, and occasional motorists such as tourists.

Figure 2-11: I-664 in Chesapeake



2.5.2 Environmental Consequences

Alternatives A and B

Alternative A and B do not propose any improvements to I-664 in Landscape Unit V, thus no change to existing visual quality would occur.

Alternative C

I-664

Because of more undeveloped space in the Landscape Unit V part of the I-664 Study Area Corridor, visual impacts under Alternative C would be moderate. Alternative C would widen I-664 from four lanes in this area to 10 lanes. Many of the areas adjacent to I-664 are currently forest and forested wetlands, although they are zoned for more mixed residential/commercial/industrial use by the cities of Suffolk and Chesapeake. Currently, no sound walls have been constructed along I-664 right-of-way through Landscape Unit V; however, sound walls may be included in the proposed improvements (refer to the *HRCS Noise Analysis Technical Report* for the location of potential sound walls). The proposed improvements of I-664 through Landscape Unit V would remove narrow strips of forest and vegetation where it occurs to accomplish the widening. Travelers on I-664 and nearby residences or businesses would see an increase in roadway pavement, potential property encroachments, widening of bridge structures, encroachment into forested areas and potentially wetlands, and possibly sound walls (**Table 2-5**).

Table 2-5: Summary of Visual Impacts for Landscape Unit V

Alternatives	Physical Change	Visibility From	Types of Viewers	Viewer Sensitivity	Visual Impact
C	I-664 Increase of 4 lanes to 10 lanes from MMMBT south to I-264 interchange	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Moderate
			• Regular Motorists	Moderate	Moderate
			<ul style="list-style-type: none"> • Business Owners/ Employees and Customers • Tourists/Occasional Motorists 	Low	Minor
D	I-664 Increase of 4 lanes to 8 lanes from MMMBT south to I-264 interchange	<ul style="list-style-type: none"> • Single/Multi-family residences • Businesses • Roadways 	• Community Residents	High	Moderate
			• Regular Motorists	Moderate	Moderate
			<ul style="list-style-type: none"> • Business Owners/ Employees and Customers • Tourists/Occasional Motorists 	Low	Minor

Temporary visual impacts from visibility of construction materials, barges at water crossings, lighting and other equipment, would also occur during construction, but would be short-term. Visual quality impacts to highly sensitive viewers such as neighboring residences would be moderate for the most part, including residences that would have adjacent sound walls constructed. This is because improvements would be made to an existing interstate and the view would not substantially change.

Alternative D

I-664

Proposed improvements to I-664 under Alternative D within Landscape Unit V consist of widening from four to eight lanes. The visual impacts would therefore be similar to those discussed above for Alternative C (Table 2-5).

3. SUMMARY OF VISUAL RESULTS

A summary of the visual results for each Build Alternatives is provided in **Table 3-1** and discussed in the subsequent sections.

3.1 Alternative A

Alternative A includes portions of Landscape Units I, II, and III along I-64. Visual impacts for all viewer sensitivity groups throughout this alternative are minor to moderate. None of the viewer sensitivity types would experience major visual impacts. Moderate visual impacts would occur for two viewer sensitivity types (community residents and regular motorists/students/park and recreational visitors). Minor impacts would occur for all viewer sensitivity types.

Minor impacts would be those which are not detectable, slightly detectable, or localized within a relatively small area. Moderate impacts would be those that are readily apparent but do not contribute to a change in the character of the landscape. Widened roadways, increased amounts of pavement, and new bridge-tunnel structures adjacent to the existing HRBT are the most pronounced effects to the visual character throughout this alternative. However, views outside of the roadway corridor and to the periphery would not be effected.

Table 3-1: Summary of Visual Impacts

Alternatives	Viewer Sensitivity Type	Visual Impacts (# of locations)		
		Major	Moderate	Minor
A	High	-	1	3
	Moderate	-	1	3
	Low	-	-	4
B	High	-	1	5
	Moderate	-	1	5
	Low	-	-	6
C	High	-	2	1
	Moderate	-	1	3
	Low	-	-	4
D	High	-	2	3
	Moderate	-	1	4
	Low	-	-	5

3.2 Alternative B

Alternative B includes portions of Landscape Units I, II, III, and IV. Visual impacts for all viewer sensitivity types throughout this alternative are minor to moderate. None of the viewer sensitivity types would experience major visual impacts. Moderate visual impacts would occur for two viewer sensitivity types (community residents and regular motorists/students/park and recreational visitors). Minor impacts would occur for all viewer sensitivity types.

Widened roadways, increased amounts of pavement with potential loss of vegetated areas, new bridge-tunnel structures, and new roadway corridors are the most pronounced effects to the visual character throughout this alternative. Minor impacts would be those which are not detectable, slightly detectable, or localized within a relatively small area. Moderate impacts would be those that are readily apparent but do not contribute to a change in the character of the landscape. Community residents and regular motorists would be most susceptible to changes in the visual character under Alternative B.

3.3 Alternative C

Alternative C includes portions of Landscape Units I, II, IV, and V. Visual impacts for all viewer sensitivity groups throughout this alternative are minor to moderate. None of the viewer sensitivity types would experience major visual impacts. Moderate visual impacts would occur for two viewer sensitivity types (community residents and regular motorists/park and recreational visitors). Minor impacts would occur for all viewer sensitivity types.

Widened roadways, increased amounts of pavement with potential loss of vegetated areas, new bridge-tunnel structures, and new roadway corridors would be the most pronounced effects to the visual character under this alternative.

3.4 Alternative D

Alternative D includes portions of all five Landscape Units. The visual impacts under Alternative D would include all of the effects previously mentioned for Alternatives A, B, and C.

4. MINIMIZATION

Several measures could be undertaken to minimize the potential effects of the Build Alternatives to visual quality. Specific measures would be determined and implemented once the selected alternative or OIS is advanced for design and construction. These measures could be implemented where potential construction impacts of alternatives to visual quality would be the same within and among the five landscape units analyzed.

Measures to minimize or mitigate visual quality effects often include landscaping and modifications to enhance the aesthetics of topography, structure, and lighting design. VDOT would coordinate with affected communities to identify specific approaches that would best address concerns of highly sensitive viewers such as residential communities. Visual quality impacts to moderately sensitive viewer types including parks and historic sites could also be similarly treated. Restoration of wetlands, streams, and tidal shorelines, if required, would address diminished visual quality from construction impacts to these resources.

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