



I-495 & I-270 Managed Lanes Study

# **APPENDIX H**

## **FINAL VISUAL IMPACT ASSESSMENT**

**June 2022**



U.S. Department  
of Transportation

**Federal Highway  
Administration**



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# 1 INTRODUCTION

## 1.1 Overview

The Federal Highway Administration (FHWA), as the Lead Federal Agency, and the Maryland Department of Transportation State Highway Administration (MDOT SHA), as the Local Project Sponsor, are preparing a Final Environmental Impact Statement (FEIS) in accordance with the National Environmental Policy Act (NEPA) for the I-495 & I-270 Managed Lanes Study (Study). The I-495 & I-270 Managed Lanes Study (Study) is the first environmental study under the broader I-495 & I-270 Public-Private Partnership (P3) Program.

This Final Visual Impact Assessment has been prepared to support the FEIS and focuses on the analysis of the Preferred Alternative. The Preferred Alternative, also referred to as Alternative 9 – Phase 1 South, includes building a new American Legion Bridge and delivering two high-occupancy toll (HOT) managed lanes in each direction on I-495 from the George Washington Memorial Parkway in Virginia to west of MD 187 on I-495, and on I-270 from I-495 to north of I-370 and on the I-270 eastern spur from east of MD 187 to I-270. Refer to **Figure 1**. This Preferred Alternative was identified after extensive coordination with agencies, the public and stakeholders to respond directly to feedback received on the DEIS to avoid displacements and impacts to significant environmental resources, and to align the NEPA approval with the planned project phased delivery and permitting approach.

The purpose of the Final Visual Impact Assessment is to present the existing conditions, an assessment of potential direct impacts of the Preferred Alternative to viewsheds and aesthetics and final mitigation, if applicable, for unavoidable impacts. This Final Visual Impact Assessment builds upon the analysis in the DEIS, Draft Visual Impact Assessment and Supplemental DEIS (SDEIS). It has been prepared to support and inform the FEIS.

## 1.2 Study Corridors and the Preferred Alternative

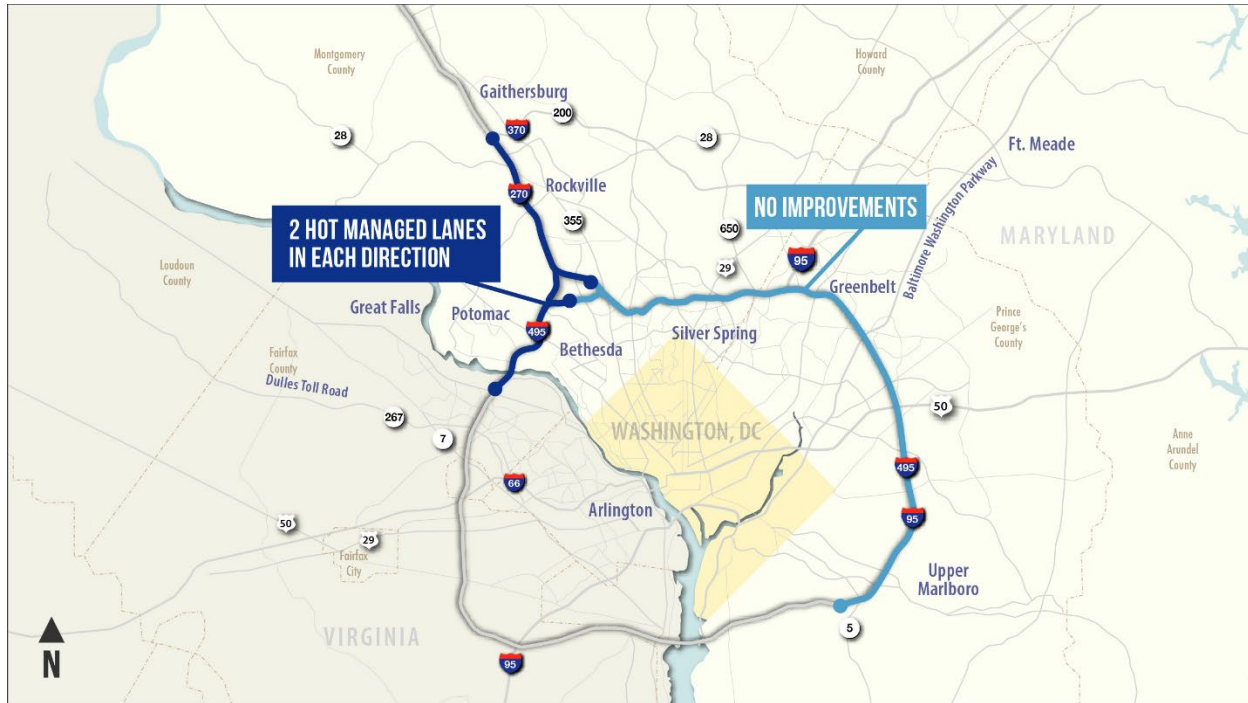
In the SDEIS, published on October 1, 2021, FHWA and MDOT SHA identified the Preferred Alternative: Alternative 9 – Phase 1 South to be consistent with the previously determined phased delivery and permitting approach, which focuses on Phase 1 South. As a result, Alternative 9 – Phase 1 South includes the same improvements proposed as part of Alternative 9 in the DEIS but focuses the build improvements within the Phase 1 South limits only. The limits of Phase 1 South are along I-495 from the George Washington Memorial Parkway to west of MD 187 and along I-270 from I-495 to north of I-370 and on the I-270 east and west spurs as shown in **dark blue** in **Figure 1**. The improvements include two new HOT managed lanes in each direction along I-495 and I-270 within the Phase 1 South limits. There is no action, or no improvements included at this time on I-495 east of the I-270 east spur to MD 5 (shown in **light blue** in **Figure 1**). While the Preferred Alternative does not include improvements to the remaining parts of I-495 within the Study limits, improvements on the remainder of the interstate system may still be needed in the future. Any such improvements would advance separately and would be subject to additional environmental studies and analysis and collaboration with the public, stakeholders and agencies.

The 48-mile corridor Study limits remain unchanged: I-495 from south of the George Washington Memorial Parkway in Fairfax County, Virginia, to west of MD 5 and along I-270 from I-495 to north of I-



370, including the east and west I-270 spurs in Montgomery and Prince George's Counties, Maryland (shown in both dark and light blue in **Figure 1**).

**Figure 1: I-495 & I-270 Managed Lanes Study Corridors – Preferred Alternative**

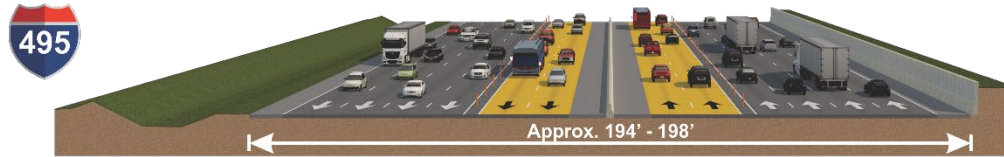


### 1.3 Description of the Preferred Alternative

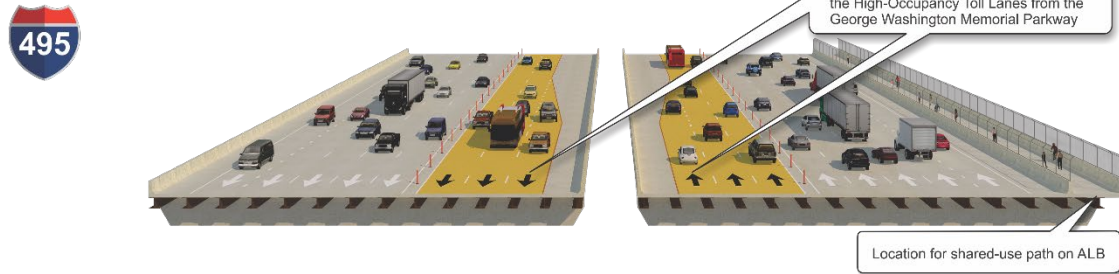
The Preferred Alternative includes a two-lane HOT managed lanes network on I-495 and I-270 within the limits of Phase 1 South only (**Figure 2**). On I-495, the Preferred Alternative consists of adding two, new HOT managed lanes in each direction from the George Washington Memorial Parkway to west of MD 187. On I-270, the Preferred Alternative consists of converting the one existing HOV lane in each direction to a HOT managed lane and adding one new HOT managed lane in each direction on I-270 from I-495 to north of I-370 and on the I-270 east and west spurs. There is no action, or no improvements included at this time on I-495 east of the I-270 east spur to MD 5. Along I-270, the existing collector-distributor (C-D) lanes from Montrose Road to I-370 would be removed as part of the proposed improvements. The managed lanes would be separated from the general purpose lanes using pylons placed within a four-foot wide buffer. Transit buses and HOV 3+ vehicles would be permitted to use the managed lanes toll-free.

**Figure 2: Preferred Alternative Typical Sections (HOT Managed lanes Shown in Yellow)**

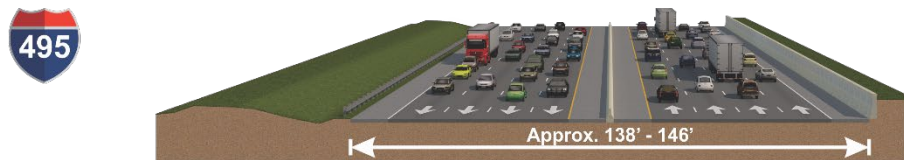
I-495 from the George Washington Memorial Parkway to west of MD 187



I-495: American Legion Bridge (Looking north towards Maryland)



I-495 west of MD 187 to west of MD 5 - NO ACTION AT THIS TIME



I-270 from I-495 to I-370



## 2 METHODOLOGY

### 2.1 Identification of Key Locations

During the development of the DEIS and SDEIS, coordination with regulatory agencies and affected large-land owners, public workshops, hearings, pop-up events, presentations to multiple communities, and regular updates to the study website as well as electronic and print media announcements occurred. Detailed documentation of outreach events is provided in **FEIS, Appendix R**. Among comments received were inquiries about the visual changes that may impact viewsheds of travelers of the highway and the surrounding neighbors. In response to agency coordination and public comments and in accordance with FHWA's 2015 *Guidelines for Visual Impact Assessment of Highway Projects*, MDOT SHA prepared the following visual impact assessment (VIA). This VIA measures the potential changes to the visual environment surrounding the Preferred Alternative, Alternative 9 - Phase 1 South. This VIA reports the existing visual quality at four key locations along the study corridor and assesses the potential impacts of the Preferred Alternative for the Study. The extent of the potential visual impacts affects the acceptance of the Study by the community, as it changes their visual environment.

Key locations were identified in response to the aforementioned comments and consultation, and also serve as representative and well-known views along the study corridors. These locations include public parks and facilities under the jurisdiction of the National Park Service, as well as locations within Montgomery County, Maryland, as identified in **Figure 3**.

#### **NPS Properties:**

- George Washington Memorial Parkway
- Chesapeake and Ohio Canal National Historic Park
- Clara Barton Parkway

#### **Montgomery County Locations:**

- Seven Locks Road - Near Cabin John Stream Valley Park, Unit 2
- Cabin John Regional Park - Near I-270 and Campground

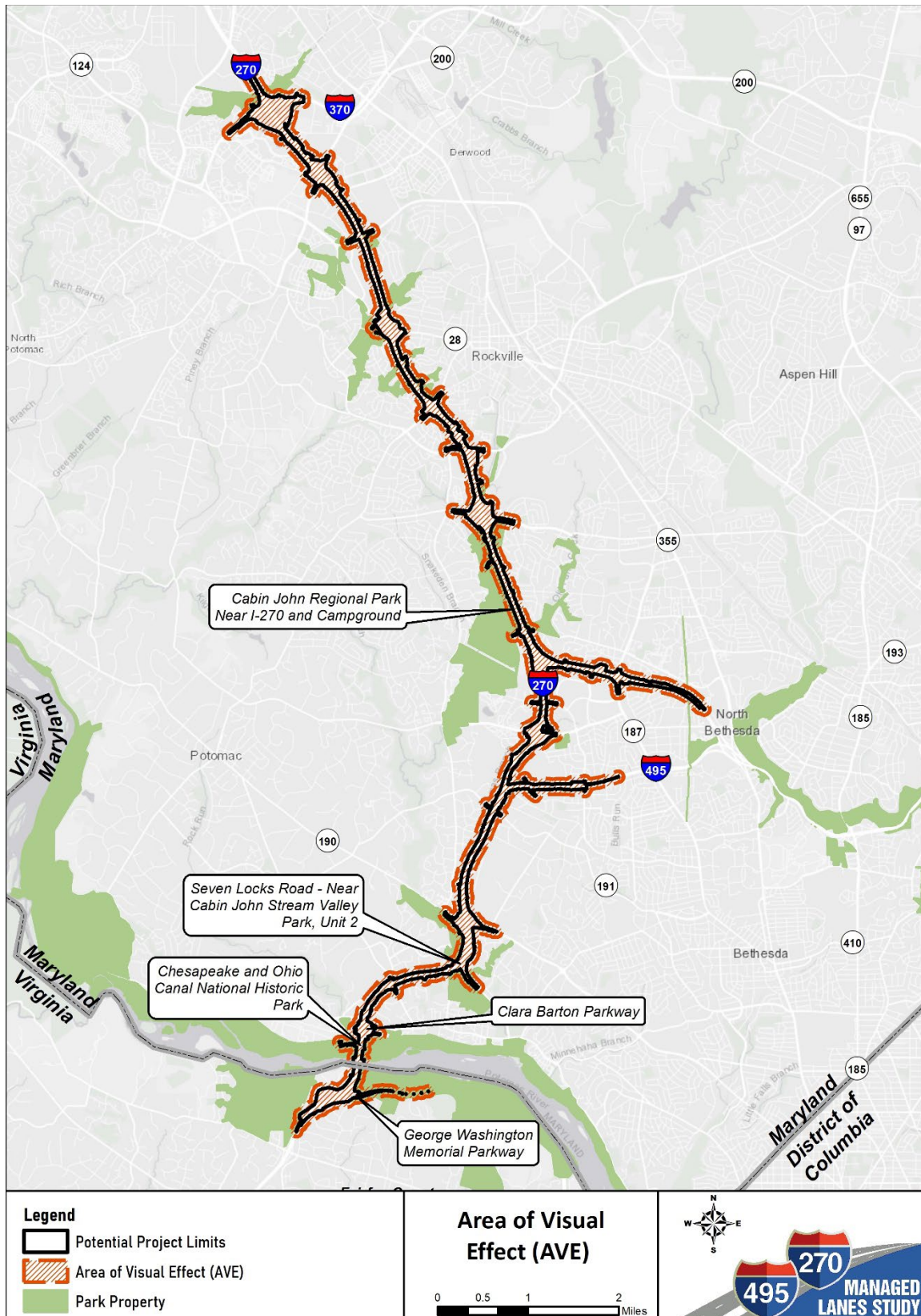
### 2.2 Regulatory Context

Section 101 [42 U.S.C. § 4331] of the National Environmental Policy Act (NEPA) was established in part to "assure for all Americans safe, healthful, productive, and **aesthetically** and culturally pleasing surroundings. NEPA further directs federal agencies to thoroughly assess the environmental consequences of "major federal actions significantly affecting the environment," including consequences to the surrounding environment. An environmental assessment is required for all proposed Federal projects and alternative actions to understand the environmental effects before action is taken. The environmental effects are taken into consideration when determining if the project is in the public's best interest. The visual impacts must be assessed as they are part of the environmental effects.

In response to NEPA, and related Federal requirements, the Federal Highway Administration (FHWA) developed 2015 *Guidelines for Visual Impact Assessment of Highway Projects*. This VIA has been prepared in accordance with the FHWA Guidelines.



### Figure 3: Area of Visual Effect (AVE)



As described in these Guidelines the context of a VIA within a transportation study is:

*A VIA is part of a larger environmental review process, which in turn is part of a still larger highway project development process. As part of this process, the VIA is intended to provide decision makers with information on the adverse and beneficial impacts on visual quality that can influence the selection of a preferred project alternative. The VIA provides designers with the information they need to most effectively mitigate adverse impacts on visual quality while implementing concepts to enhance existing visual quality (page 1-4).*

The National Trails System Act (16 USC § 1241) established national trails to conserve the qualities of the area in which the trails are located and provide outdoor recreation. These trails and their visual resources are protected under the act. The Potomac Heritage National Scenic Trail parallels the Potomac River along its southern shore and is a protected national trail. The visual resources and environment of this trail will be considered within the VIA.

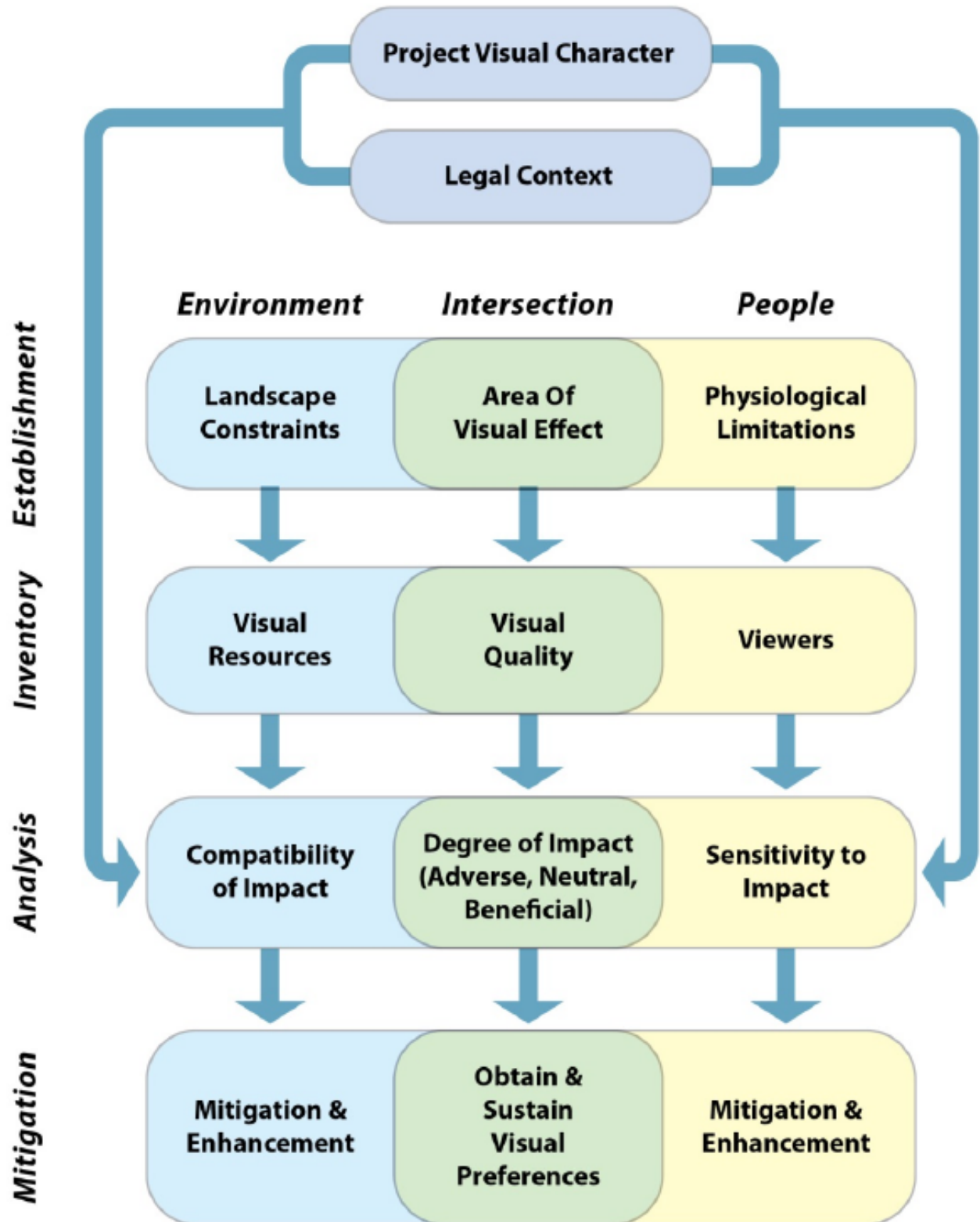
The National Historic Preservation Act of 1966 protects historic properties from adverse effects that harm the integrity of the historic features. The adverse effects of projects on historic properties are required to be analyzed. The setting and viewshed of a historic property are often an important historic feature that cannot be compromised by a project. Visual impacts of the proposed action will be considered as they relate to historic features within the VIA.

The Department of Transportation Act Section 4(f) restricts federal highway projects from using protected public land, recreation areas, and refuges. The visual impact of a highway project on properties protected by Section 4(f) must be evaluated in the VIA. During development of the DEIS, it was determined that there are no parks or recreation areas along the study corridors that are subject to protection under Section 6(f) of the Land and Water Conservation Fund Act.

## **2.3 Level of Visual Impact Assessment**

As described in FHWA's *Guidelines for the Visual Impact Assessment of Highway Projects* neither NEPA nor the CEQ NEPA regulations prescribe any specific method for evaluating visual impacts, leaving each Federal agency to develop its own approaches tailored to the actions of a particular agency. The FHWA's Guidelines use changes in visual character and viewer groups sensitivity to assess visual impacts. The VIA process is performed in four phases: Establishment, Inventory, Analysis, and Mitigation in which visual effects occur as a result of an interaction between viewers and the environment that surrounds them, the process is shown in **Figure 4**. Section 3.3.2 of FHWA's Guidelines describes two methods for determining the appropriate level of VIA: 1) a VIA scoping questionnaire or 2) a comparative matrix. FHWA's Guidelines explain that either method can be used. However, as the VIA is developed analysts should evaluate whether the level of analysis and documentation is appropriate for the project and adjust as necessary to new information.

Figure 4: Visual Impact Assessment Process



To determine the appropriate level of VIA, the team completed the scoping questionnaire (**Appendix A**). The scoping questionnaire consists of 10 questions. The questions cover two topics: environmental compatibility and viewer sensitivity. For each question, the team selected an answer from a set of multiple-choice responses. For each response, the project team considered the scope of the study, anticipated impacts, and comments received throughout the project duration. The rationale for each response is documented in the completed scoping questionnaire. According to FHWA’s Guidance, the total of the score determines the type of VIA analysis and documentation (**Table 1**). The total VIA Scoping Questionnaire score for the Study is 20.

**Table 1: Scores and Suggested VIA Documentation**

Total score	Recommended VIA Document
6-9	None Needed
10-14	VIA Memorandum
15-19	Abbreviated VIA
20-24	Standard VIA
25-30	Expanded VIA

Per FHWA’s Guidance, the Standard VIA presented here reports the findings of the establishment, inventory, analysis, and mitigation phases of the VIA process. The Standard VIA was developed with input from affected regulatory agencies and the public obtained through the NEPA process to ascertain viewer preferences directly and accurately.

## 2.4 Area of Visual Effect (AVE)

The area of visual effect (AVE) is the area in which views of the corridor would be visible as influenced by the presence or absence of intervening topography, vegetation, and a variety of bridge and ramping structures with barriers or retaining walls on one or both sides. The varied topography within the study area allows for a blend of screened and clear views of the highway and surroundings. The Census Bureau designates the entire study area as urban. Land use within the study area primarily includes forested parks and greenspace as well as developed residential areas. Adjacent structures vary in size and density, including multi- and single-story business and residential buildings.

The study corridor consists of mostly homogeneous visual resources. The typical width is variable, with I-495 between 138 and 146 feet, and I-270 between 228-256 feet. White concrete dividers separate the direction lanes. Portions of the I-495 are bifurcated, with the inner loop higher. Galvanized metal can be seen in many of the structural elements along the I-495 study corridor, including guardrails and light poles. The bridges along the I-495 study corridor are steel with concrete parapets painted green. Dissimilarly, the structural elements within I-270 study corridor are painted brown, including guardrails, light poles, and bridges. Throughout the study corridor, pedestrian guardrails are primarily galvanized chain link with a curved top and pedestrian bridges are steel truss structures with powder coated chain link fence. Noise barriers are present throughout the study corridor and are mostly brown, concrete formliner with the



bridge-mounted noise walls being painted corrugated metal. Some sections of noise barriers are set back from the roadside to provide a planting shelf. In many areas deciduous trees, of varying density, around the highway provide a screen between the highway and adjacent development. Most of the developed land adjacent to the highway is built-out to the edge of the right-of-way fencing or noise barriers. As such, the AVE for the proposed action encompasses a 300-foot corridor study boundary within the Phase 1 South Limits, including the corridor itself as well as those properties directly adjacent to the proposed improvements.

## 2.5 Viewsheds

Within the AVE there are two types of viewsheds – dynamic and static.

Dynamic views are described from the perspective of travelers using the highway, or “views from the road.” Within the AVE, the most prominent travelers include commuting, touring, and shipping travelers, as defined by Section 5.3 of FHWA’s Guidance. Commuting travelers regularly travel the Preferred Alternative corridor, following the same route. Their main priority is project coherence to make the commonly traveled visual environment cohesive. Touring travelers use the highway for longer trips to visit a destination for enjoyment. These travelers care equally about project coherence, natural harmony, and cultural order. Touring travelers are using the highway for enjoyment and usually have passengers thus the natural and cultural views are more important to them than to commuting travelers. Shipping travelers use the highway to transfer goods along a mostly routine route. The main interest of this type of traveler is project coherence. Natural harmony and cultural order primarily are viewed as an aid to wayfinding. The Traveler’s view includes wooded areas on one or both sides interrupted by noise barriers with some wooded vegetated areas in front of the barriers and a turf median or concrete barrier in the center. Portions of the traveler’s view include noise barriers with no vegetation in front of the barrier and areas of mature deciduous wooded areas in front of the noise barriers. Wooded areas vary in depth. Also, a planting shelf with vines, shrubs, and ornamental grasses as well as groupings of trees are clustered throughout the study area. Views above and beyond the noise barriers are of mature deciduous forests in good condition and more extensive in nature.

Static views are described from the perspective of neighbors or people who are adjacent to the highway and have “views of the road.” Within the AVE, neighbors include residential, recreational/parks, and institutional neighbors, as defined by Section 5.3 of FHWA’s Guidance. However, this VIA focuses on the views from recreational/parks neighbors at four key locations, as previously detailed. Static views from parks are predominantly mitigated with noise barriers. Views of the noise barriers are often buffered with varying depths of deciduous wooded vegetation. Recreational/parks neighbors are those who use the parks and trails along the Preferred Alternative corridor. While these users are mostly transitory, they visually prefer natural harmony and not further influencing the visual resources of the parks, upholding the natural environment.

The visual quality and impacts to visual quality are addressed for each viewshed in **Section 3**.

## 2.6 Visual Quality

A description of visual quality, e.g., existing conditions, is provided for each of the four key locations listed in **Section 1**. Visual quality considers landform, landcover, viewer, and the proximity of viewer to the proposed action. Visual Quality is described from both dynamic and static viewsheds.



Visual Quality, as described in the FHWA VIA Guidelines, is the experience of having visual perceptions. The FHWA VIA Guidelines recognize three types of visual perception including: natural harmony, cultural order, and project coherence. FHWA's Guidance (Section 5.4.3) clearly states that it is not necessary to analyze degrees of harmony, orderliness, and coherence for each viewer group. Stating which side of the dichotomy viewer groups perceive the visual environment is adequate. Individuals have their own experiences and expectations, through which they view the visual environment and determine whether it is pleasing or not. Due to the consistency in human perception of what a pleasing landscape is, most viewer groups would be on the same side of whether there is harmony, order, or coherence.

Natural harmony is evaluated when people view the natural environment and feel a sense of harmony or lack thereof. The perception of the natural visual resources being harmonious or inharmonious change based on the viewers expectations of what constitutes natural harmony. These natural visual resources include land, water, vegetation, animals, and atmospheric conditions.

Cultural order is evaluated when people view the cultural environment and have a sense of cultural order. People have their own perception of what constitutes as cultural order. Viewing the character of cultural visual resources through the viewer's preferences can determine whether the cultural environment is orderly or disorderly. The visual character of the cultural environment can be seen in the buildings, infrastructure, structures, and art in the AVE.

Project coherence is evaluated when people view the project environment and find the project elements coherent or incoherent. The viewers concept of what constitutes cohesion within a project influences their perception of the level of project coherence within the project environment of the AVE. The project visual resources include highway geometrics, grading, constructed elements, vegetative cover, and traffic control devices.

## **2.7 Evaluate Impacts on Visual Quality and Assess the Degree of Impact**

Impacts are any changes to the environment or to the viewers. The impacts of the Preferred Alternative on the visual quality of the AVE is assessed as beneficial, adverse, or neutral. Per FHWA Guidelines (Section 6.2), the *compatibility* of the impact and *sensitivity* to the impact is measured and synthesized to determine the *degree* of the impact.

*Compatibility* measures whether the project and the environment have compatible visual characters, which allows the project to be integrated into the existing environment. This will be measured as either compatible or incompatible with the natural, cultural, and project environments based on the project's scale, form, and materials contrasting or not with the environment.

*Sensitivity* measures the viewer sensitivity to the changes of the visual resources, with them being sensitive or insensitive. Viewer sensitivity is evaluated by viewer exposure and viewer awareness. Viewer exposure can be assessed by the proximity to the impacts, extent of the number of viewers, and duration the viewer sees the scene. Viewer awareness is measured by the viewer's attention, focus, and protection.

*Degree* may be either a beneficial, adverse, or neutral change to visual quality. A proposed project may benefit visual quality by either enhancing visual resources or by creating better views of those

resources and improving the experience of visual quality by viewers. Similarly, it may adversely affect visual quality by degrading visual resources or obstructing or altering desired views.

The overall results of the changes, combining the compatibility and sensitivity to make a beneficial, neutral, or adverse change to visual quality of the natural, cultural, and project environments has been documented for each key location.

### 3 VIEWSHED ANALYSIS AT KEY LOCATIONS

#### 3.1 George Washington Memorial Parkway

##### 3.1.1 Visual Character

I-495 and associated AVE encompass the western terminus of George Washington Memorial Parkway. George Washington Memorial Parkway is a publicly-owned park and National Register of Historic Places (NRHP)-listed historic district that extends along the Potomac River from I-495 to Mount Vernon in Virginia. The George Washington Memorial Parkway is administered by the NPS. The George Washington Memorial Parkway is a scenic roadway honoring the nation's first president that protects and preserves cultural and natural resources along the Potomac River below Great Falls to Mount Vernon. It is also a historic district listed in the NRHP for its association with twentieth-century parkway design, engineering, landscape architecture, park planning and conservation, commemoration, and its association with George Washington. Trucks more than 10,000 pounds Gross Vehicle Weight and bicycles are not permitted on George Washington Memorial Parkway. Commercial vehicles require a permit. The interchange with I-495 does not contribute to the significance of the parkway.

The National Trails System designated Potomac Heritage National Scenic Trail as a recreational trail and feature of George Washington Memorial Parkway that parallels the Potomac River, crossing beneath the ALB, within the AVE. The Potomac Heritage National Scenic Trail is a network of trails between the mouth of the Potomac River and the Alleghany Highlands. Bicycles are forbidden to use the Potomac Heritage National Scenic Trail. The Potomac River and associated gorge displays steep slopes, limited access, and upland river terraces. This is the fourth largest river along the East Coast of the US and is state-designated as Scenic under the Maryland Scenic and Wild Rivers Program (*DEIS, Appendix L Natural Resources Technical Report (May 2020)*).

The dynamic viewshed, as experienced by travelers of I-495 in the vicinity of the George Washington Memorial Parkway is a compilation of mature deciduous forests up to the right-of-way on both sides of the roadway and built roadway features (**Appendix B, Figure 1**). The roadway median is a concrete barrier dividing traffic while also providing a central point for mounting galvanized stanchions for signage and lightpoles with cobra head fixtures. Concrete, mostly brown, noise barriers define the right-of-way along portions of the study corridor. The overpass supporting George Washington Memorial Parkway is green painted steel with concrete parapets and piers (**Appendix B, Figure 2**). Thickly wooded areas throughout the line of sight and the curvilinear alignment of the I-495 corridor soften the line between the natural and built environment. Materials, including concrete median and noise barriers as well as galvanized stanchions and light fixtures within this section of I-495 are consistent with the travelers' experience along other portions of the study corridor. The consistent use of materials in the roadway features as well as

the use of the existing landform and surrounding vegetation work together to create a coherent visual character for the I-495 corridor.

The static viewshed includes views from George Washington Memorial Parkway as well as the Potomac Heritage National Scenic Trail. The static views from George Washington Memorial Parkway are dominated by mature deciduous tree coverage and shoulders defined by mountable stone or concrete curbs and mown grass presented within the rolling topography. A 20- to 30-foot-wide median is also defined by mountable stone or concrete curbs with mown grass and landscaped shrubs separating the north and southbound lanes of George Washington Memorial Parkway. The vegetation and topography work in tandem to screen views of the study corridor for much of the approach to I-495. As George Washington Memorial Parkway nears the study corridor, vegetative coverage thins and the roadway features become more uniform in material with those of the study corridor; exhibiting asphalt shoulders, no curbs, aluminum guardrails at the median, painted aluminum siderails, and concrete parapets bridging I-495 and forming a ramp that merges with I-495 (**Appendix B, Figure 5 and 6**). The visual character balances elements of the natural environment and built roadway features to create a cohesive environment, consistent with traveler expectations as they transition between the interstate and parkway experience.

Viewsheds from the Potomac Heritage National Scenic Trail and Potomac River are focused on the natural environment. The natural surface trail winding along the banks of the Potomac feature mature deciduous tree coverage as well as dense vegetative ground cover, punctuated by large rocks and steep topography. Vegetative cover thins approaching the ALB to expand views of the Potomac River and bridge above. As the viewer nears the bridge structures its mass and volume dominate views (**Appendix B, Figure 8**). Consistent with other interstate elements, the bridge piers are concrete while the decking and support frame structure overhead is green painted steel. The built structures are large against the backdrop of the natural environment resulting in an experience out of harmony with the natural environment and unaltered cultural order. These built features are cohesive with the expectations one may have for an interstate structure; however, they contrast with the views experienced by visitors along other sections of the trail and river, outside of views of the ALB.

### 3.1.2 Impacts on Visual Quality

The Preferred Alternative would construct a new ALB and deliver two high occupancy toll (HOT) managed lanes in each direction on I-495, through this area. This effort would include adjustment of the existing ramps connecting George Washington Memorial Parkway with I-495 inner and outer loops as well as new flyover ramps providing direct access to the HOT managed lanes from George Washington Memorial Parkway. South of the ALB on I-495 outer loop, a new exchange ramp will be constructed from Maryland HOT managed lanes to Virginia general purpose (GP) lanes.

The Preferred Alternative also includes a new pedestrian and bicycle shared use path to provide multi-modal connectivity across the Potomac River. This facility would likely be located along the east side of the reconstructed ALB. Public comments supporting a direct connection of the shared use path from the ALB to the Chesapeake and Ohio Canal towpath were received by MDOT SHA, FHWA and NPS during the SDEIS public comment period. To be responsive, a direct connection to the Chesapeake and Ohio Canal towpath has been incorporated into the preliminary design and is accounted for in the Preferred Alternative LOD and impact analyses. The three shared use path options connecting to MacArthur

Boulevard presented in the SDEIS are no longer under consideration in this FEIS. The direct connection to the Chesapeake and Ohio Canal towpath results in fewer NPS property and natural resource impacts. MDOT SHA and the Developer will continue to coordinate with NPS to review the condition of the existing connection between the Chesapeake and Ohio Canal towpath and the MacArthur Boulevard sidepath outside of the Study Area. Additionally, MDOT SHA and the Developer will evaluate drainage and sight distance considerations at the intersection of the shared use path and Chesapeake and Ohio Canal towpath during final design in coordination with NPS. The alignment of the proposed shared use path connection to the Chesapeake and Ohio Canal towpath is shown in **FEIS, Appendix E**.

The Preferred Alternative would include the expansion of structures, some noise barriers, railing, and signage throughout the study corridors. This construction would also require vegetation and tree removal. In some areas, this would reduce the buffer between static viewpoints and the highway, impacting the views to and from this key location. MDOT SHA is working closely with NPS to develop a final mitigation plan to ensure the protection of significant resources. The design of all highway elements would follow aesthetic and landscaping guidelines and would be visually consistent with the existing highway setting. The final mitigation plan highlights mitigation commitments to address impacts to facilities under the jurisdiction of NPS throughout the study corridor. For example, the installation of new white legend and border on brown background guide signs along I-495 for the George Washington Memorial Parkways exit. The final mitigation plan, as presented in **FEIS, Chapter 7**, also highlights forest and terrestrial restoration including:

- Avoiding and minimizing of impacts to trees within and surrounding the limits of disturbance (LOD)<sup>1</sup> to the maximum extent practicable.
- Survey impacted vegetation community prior to construction to determine existing community composition and develop replanting plan based on survey results.
- Replanting forest inch-for-inch within the LOD in construction areas and providing non-native invasive species control and maintenance for five years within the reforestation areas.
- Softening edge effects associated with disturbance by treating and removing non-native invasive species within a 50-foot buffer of the LOD and replanting native trees and shrubs in any gaps resulting from the removal of mature trees or non-native invasive species. In coordination with NPS during design, sensitive areas, such as areas of known archeological resources, within the 50-foot buffer will be excluded if ground disturbance is required.
- Providing monetary compensation for remaining tree impacts, based on inch for inch replacement.

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<sup>1</sup> Limits of Disturbance (LOD) is defined as the proposed boundary within which all construction, staging, materials storage, grading, clearing, erosion and sediment control, landscaping, drainage, stormwater management (SWM), noise barrier replacement/construction, and related construction activities would occur.

Further, mitigation commitments include the completion of a condition assessment of the Potomac Heritage National Scenic Trail within the LOD and coordination with NPS to develop and implement a plan to restore and improve the trail within the LOD.

Construction would not introduce new elements incompatible with the existing visual character of viewsheds in the vicinity of George Washington Memorial Parkway. Any aesthetic impacts within the viewsheds of the Potomac Heritage National Scenic Trail and the Potomac River would be mostly temporary, during construction activities. However, replacement or major modification of the ALB could have a longer-term aesthetic effect on the Scenic designated rivers and would therefore be designed to protect the scenic value of the resource. As noted in **Section 5.13.2** of the FEIS, MDNR will assist the MDOT SHA with coordination for Maryland Scenic Rivers. Construction will require extensive in-stream work. Construction approaches that minimize the temporal extent of in-water activities in the Potomac River surrounding the ALB will be considered to the extent practicable. As a result, the contextual compatibility impact of the proposed action would be low.

Renderings have been developed to demonstrate viewshed impacts for the Preferred Alternative (**Appendix B, Figures 9 - 21**). The visual change for both dynamic and static views, as shown in these renderings, is minor when compared to the existing expectations, duration, and orientation for an interstate facility (**Appendix B, Figures 1 - 8**).

Public comments received through the project duration, including those received during the public comment period for the DEIS and SDEIS, expressed concern that the reduction in the vegetative buffer would increase air, noise, and visual impacts of the proposed improvements. Reviewing agencies also noted concern for potential impacts to views from their subject resources. However, the majority of viewer groups utilizing this area are transitory; further, the visual change is minor with mitigation implementation as outlined in the preceding forest and terrestrial restoration mitigation commitment; therefore, the general viewer sensitivity to the Preferred Alternative is low.

The overall visual effect of the Preferred Alternative to static and dynamic views is low.

## **3.2 Chesapeake and Ohio Canal National Historic Park and Clara Barton Parkway**

### **3.2.1 Visual Character**

The ALB spans the Chesapeake and Ohio Canal National Historic Park (NHP), which is an NRHP-listed historic district and publicly-owned park and recreation area encompassing 19,575 acres. The Chesapeake and Ohio Canal NHP stretches along the Potomac River from Rock Creek at Georgetown in Washington, DC, to Cumberland, Maryland, for 184.5 miles. Construction on the Chesapeake and Ohio Canal began in 1828 and concluded in 1850. It served as a major transportation corridor operating as a conduit for coal, lumber, and agricultural products to propel western development and satisfy demands from eastern US markets until 1924. The Chesapeake and Ohio Canal became a unit of the NPS as a national monument in 1961 and then established as a national historical park in 1971. The purpose of the Chesapeake and Ohio Canal NHP is to preserve and interpret the 19th century transportation canal and its associated scenic, natural, and cultural resources; and to provide opportunities for education and appropriate outdoor recreation.

Clara Barton Parkway extends 6.6 miles along the northern shore of the Potomac River between the Naval Surface Warfare Center at Carderock and the Washington, DC border with Maryland, crossing under I-495 within the AVE. The Clara Barton Parkway is an administrative unit of George Washington Memorial Parkway in Maryland. The historic boundary in Maryland comprises 96.2 acres. Clara Barton Parkway is under the jurisdiction of NPS and was designed for recreational driving, to link sites that commemorate important episodes in American history, and to preserve habitat for local wildlife. The Clara Barton Parkway is also an historic site and was listed in the NRHP on June 2, 1995. Trucks more than 10,000 pounds Gross Vehicle Weight and bicycles are not permitted on Clara Barton Parkway. Commercial vehicles require a permit. The I-495 bridges and interchange complex do not contribute to the historical significance of the parkway.

The dynamic viewshed near the Chesapeake and Ohio Canal NHP and Clara Barton Parkway is similar in many ways to the perspective near the George Washington Memorial Parkway. The viewshed includes mature deciduous forests up to the right-of-way on both sides of I-495 filtering the views of travelers to features outside of the interstate corridor (seen in **Appendix B, Figures 23 and 24**). This section of roadway features concrete noise barriers as well as a concrete barrier dividing traffic and featuring galvanized stanchions supporting signage and lightpoles with cobra head fixtures. The view across the Potomac extends due to the straight road alignment and slight decline in grade toward the river. The mature deciduous forests outside of the road corridor buffer and soften the visual transition between the built hardscape and natural environment. While the Chesapeake and Ohio Canal towpath is partially visible from the study corridor, this view is obscured by parapet walls and vegetative cover. The speed of travelers through this area reduces their view of the towpath below to glimpses. From the I-495 overpass, the Clara Barton Parkway can be seen cutting through the same deciduous forests that are in the background of the highway. The continuity of the vegetation brings a sense of natural harmony. There are no visible buildings or structures from this viewpoint. Clara Barton Parkway is part of the infrastructure of the cultural environment, along with the electrical and telecommunication utilities perceived by travelers of I-495. Cultural order is seen in the direction of these infrastructure elements. The consistent use of materials in the roadway features as well as the use of the existing landform and surrounding vegetation work together to create a project coherence for travelers of the I-495 corridor.

The static viewshed is focused primarily on the natural environment and cultural order. The Chesapeake and Ohio Canal NHP and towpath are used by a variety of walkers, bikers, and other viewers. Thick forested areas on either side of the canal and the towpath provide a natural environment (**Appendix B, Figures 25 and 26**). Historic locks and associated wood and cement structures tell the story of the canal's use as a primary transportation facility within the region through 1924. While vegetation is a prominent aesthetic feature of this viewshed, the linear canal offers unimpeded views of the bridge piers and deck structure from east and west towpath approaches. As the viewer nears the bridge structures its mass and volume dominate views. Consistent with other interstate elements, the bridge piers are concrete while the decking and support frame structure overhead is green painted steel. The built structures are large against the backdrop of the natural environment and cultural order of the canal towpath; however, the materials used are consistent with expected features of an interstate. The built environment does little to support a sense of the natural environment. However, the interstate features juxtaposed against the historic canal towpath offer a comparison of the ways transport of goods and services and transportation facilities have changed through the years. There is cultural order between the historic canal with towpath



and the highway overpass. These built features are cohesive with the expectations one may have for an interstate structure, but they contrast with the trail users experience and sense of coherence.

The static views of Clara Barton Parkway are similar in many ways to that of travelers along George Washington Memorial Parkway. Views are dominated by mature deciduous tree coverage and grass shoulders. A variable width median is defined by mountable stone or concrete curbs with mown grass of vegetated areas separating the north and southbound lanes of Clara Barton Parkway (shown in **Appendix B, Figures 27 - 29**). The vegetation screens views of the study corridor for much of the approach. As the Parkway divides into ramps that merge with I-495, steel backed timber guardrails frame the roadway. These features fade as ramps merge with I-495; where vegetative coverage thins and the material of roadway features becomes more uniform with those of the study corridor; exhibiting asphalt shoulders, no curbs, aluminum guardrails at the median and painted aluminum siderails and concrete parapets forming a ramp that merges with I-495. The current project environment provides a reasonable sense of the natural environment, cultural order, and a cohesive environment as the constructed elements and vegetative cover work with the environment.

### 3.2.2 Impacts on Visual Quality

The Preferred Alternative would expand this section of I-495 to include two HOT managed lanes in each direction. This effort would include widening the bridge carrying I-495 over the Chesapeake and Ohio Canal and Clara Barton Parkway to accommodate the new lanes and adjustment of existing ramps at the I-495 Interchange with Clara Barton to accommodate widened mainline. A new exchange ramp from Virginia GP lanes to Maryland HOT managed lanes on the I-495 inner loop north of Clara Barton Parkway will be included in the Preferred Alternative.

Also, an existing connection from the MacArthur Boulevard sidepath to the Chesapeake and Ohio Canal towpath exists just outside of the Study Area, supporting regional connectivity. Through coordination with agency stakeholders including NPS, MCDOT, M-NCPPC, and USACE, three preliminary options were evaluated and presented in the SDEIS for a proposed shared use path connection between the ALB and MacArthur Boulevard in Maryland. A description of these three options is summarized in the bullets below. Note, Option 1 was eliminated from further consideration in coordination with the agency stakeholders. The shared use path options were included in the LOD for the Preferred Alternative.

- Option 2 would provide the shortest path between the ALB and MacArthur Boulevard, traversing approximately 1,600 feet (**Appendix B, Figures 31, 35, 39, 42, 45, and 49**). From the ALB to north of eastbound Clara Barton Parkway, the path would be adjacent to and barrier-separated from I-495, thus presenting a single bridge structure over the towpath, Canal, and Parkway and limiting the visual effect of the path. North of the eastbound Clara Barton Parkway, the alignment of Option 2 would rise to cross over the northbound I-495 to eastbound Clara Barton Parkway ramp on a bridge and over Clara Barton Parkway westbound, connecting to the sidepath along MacArthur Boulevard. This alignment would allow for a natural buffer between the trail and I-495 ramps at the Clara Barton Parkway interchange, enhancing the user experience and reducing the visual effect of the trail from the Parkway.

- Option 3 is similar to Option 2 and is approximately 1,770 feet long between the ALB and MacArthur Boulevard (**Appendix B, Figures 31, 35, 39, 42, 45, and 49**). From the ALB to north of the eastbound Clara Barton Parkway, Option 3 would be adjacent to and barrier-separated from I-495, thus presenting a single bridge structure over the towpath, Canal, and Eastbound Parkway and limiting the visual effect of the path. North of eastbound Clara Barton Parkway, the alignment would rise to cross over the northbound I-495 to eastbound Clara Barton Parkway ramp and over Clara Barton Parkway westbound on a bridge, connecting to the sidepath along MacArthur Boulevard. This option would keep the path alignment close to, but above, the existing loop ramp and would connect to MacArthur Boulevard further west than Option 2. The alignment would not provide a vegetative buffer between the trail and I-495 ramps.
- Option 4 would provide an alignment approximately 2,050 feet long between the ALB and MacArthur Boulevard, which would remain parallel to I-495 while raising the elevation of the path to cross over the roadway ramps to and from the I-495 inner loop to Clara Barton Parkway (**Appendix B, Figures 32, 36, 40, 43, 46, and 50**). To meet vertical grade requirements of the Americans with Disabilities Act, Option 4 would include a switchback ramp north of the ALB to facilitate the grade change required to cross over the I-495 ramp to Clara Barton Parkway. This option would be on a continuous structure above I-495, from the switchback ramp to MacArthur Boulevard. The trail would horizontally consolidate impacts with I-495 but would be more visible for a greater distance along the Chesapeake and Ohio Canal towpath and Clara Barton Parkway due to the height. It would also need to include additional safety measures due to the height and length of the structure.

Public comments supporting a direct connection of the shared use path from the ALB to the Chesapeake and Ohio Canal towpath were received by MDOT SHA, FHWA and NPS during the SDEIS public comment period (shown in **Appendix B, Figures 30, 34, 37, 38, 41, 44, 47, and 48**). To be responsive, a direct connection to the Chesapeake and Ohio Canal towpath has been incorporated into the preliminary design and is accounted for in the Preferred Alternative LOD and impact analyses. The three shared use path options connecting to MacArthur Boulevard presented in the SDEIS are no longer under consideration in this FEIS. The direct connection to the Chesapeake and Ohio Canal towpath results in fewer NPS property and natural resource impacts. MDOT SHA and the Developer will continue to coordinate with NPS to review the condition of the existing connection between the Chesapeake and Ohio Canal towpath and the MacArthur Boulevard sidepath outside of the Study Area. Additionally, MDOT SHA and the Developer will evaluate drainage and sight distance considerations at the intersection of the shared use path and the Chesapeake and Ohio Canal towpath during final design in coordination with NPS. The alignment of the proposed shared use path connection to the Chesapeake and Ohio Canal towpath is shown in **FEIS, Appendix E**.

The Preferred Alternative would include the expansion of structures, some noise barriers, railing, and signage throughout the study corridors. Vegetation removal would be required for construction and the expansion of the bridge. The design of all highway elements would follow aesthetic and landscaping guidelines and would be visually consistent with the existing highway setting.

Construction would not introduce new elements incompatible with the existing visual character or qualities along I-495. MDOT SHA is working closely with NPS to develop a final mitigation plan to ensure



the protection of significant resources. The design of all highway elements would follow aesthetic and landscaping guidelines and would be visually consistent with the existing highway setting. Initial drafts of the final mitigation plan highlight mitigation commitments to address impacts to facilities under the jurisdiction of NPS throughout the study corridor. The forest and terrestrial restoration elements of the final mitigation plan detailed in **Section 3.1.2** would also apply to impacts within the Chesapeake and Ohio Canal NHP and Clara Barton Parkway. Additional mitigation commitments outlined in the final mitigation plan include shifting the bridge piers north of Lock 13 and new bridge design to capture and pipe all drainage outfall using downspouts, with the downspouts being located so that water does not drop onto areas with frequent pedestrian use. Also, MDOT SHA would complete a condition assessment of locks, masonry walls, towpath, and canal prism throughout the entire LOD and coordinate with NPS to develop and implement a plan for repairs identified through the condition assessment. Further, this mitigation plan includes providing monetary compensation for the preparation of a Cultural Landscape Report for Clara Barton Parkway. Fulfilling these commitments would reduce the visual and physical impacts of the bridge at this key location, resulting in a net benefit to the Chesapeake and Ohio Canal NHP and Clara Barton Parkway. As a result, the contextual compatibility impact of the proposed action would be low.

Renderings have been developed to demonstrate viewshed impacts for the Preferred Alternative (**Appendix B, 30 - 50**). These renderings include images of the four proposed shared-use path connections. Of the four proposed shared-use path connections, the direct connection to the Chesapeake and Ohio Canal NHP would be the least visually impactful. This option would include no additional park impacts outside of roadway and bridge construction needs within Clara Barton Parkway and it would not require construction of new path bridges over the Chesapeake and Ohio Canal Towpath or Clara Barton Parkway. Further, this connection would be visible for a limited distance along the towpath and not visible from Clara Barton Parkway. Of the three options that were evaluated for the shared use path connection between the ALB and MacArthur Boulevard in the SDEIS, Option 4 would be most visually impactful due to its height. However, the visual change to both dynamic and static views, as shown in these renderings, is minor when compared to the existing expectations, duration, and orientation for an interstate facility (**Appendix B, Figures 22 - 29**).

Public comments received through the project duration, including those received during the public comment period for the DEIS and SDEIS, expressed concern that the reduction in the vegetative buffer would increase air, noise, and visual impacts of the proposed improvements. Reviewing agencies also noted concern for potential impacts to views from their subject resources. However, the majority of viewer groups utilizing this area are transitory; further, the visual change is minor; therefore, the general viewer sensitivity to the Preferred Alternative is low.

The overall visual effect of the Preferred Alternative to the dynamic and static viewshed of I-495 and Chesapeake and Ohio Canal NHP as well as Clara Barton Parkway is low when compared to the existing viewsheds.

### **3.3 Seven Locks Road – Near Cabin John Stream Valley Park, Unit 2**

#### **3.3.1 Visual Character**

Seven Locks Road, in Bethesda, Maryland, is bridged by I-495. This roadway intersects a portion of Cabin John Stream Valley Park and provides access to Morningstar Tabernacle No.88 Moses Hall and Cemetery within the AVE. Cabin John Stream Valley Park is a publicly-owned park and recreation area comprised of

six individual units under the jurisdiction of M-NCPPC Montgomery County. Cabin John Stream Valley Park, Unit 2 extends north-south across I-495 from south of River Road to Cabin John Parkway. Cabin John Stream Valley Park features portions of the natural-surface Cabin John Trail that runs north-south and connects the stream valley park's Potomac Area to Cabin John Parkway. The park also features undeveloped wooded area that provides a protective buffer along Cabin John Creek. The Morningstar Tabernacle No. 88 Moses Hall and Cemetery, herein after the Morningstar property, is situated south of I-495, bounded to the east by Seven Locks Road and to the south by the Evergreen residential neighborhood. The 1.5-acre Morningstar property was the site of a late nineteenth-century African American benevolent society, including a lodge building (Moses Hall) and cemetery. The property is eligible for listing in the NRHP under Criterion A for its association with the African American community in Cabin John and under Criterion C for its example of a vernacular African American cemetery.

Visual quality of the dynamic views is similar in many ways to the perspective of the other key locations. The viewshed includes mature deciduous forests up to the right-of-way on both sides of the roadway filtering the views of travelers to features outside of the interstate corridor (**Appendix B, Figure 51**). The section of roadway includes noise barriers defining the outside limits of the outer beltway while steel guard rails define the outside limits of the inner beltway. The roadway median is a concrete barrier dividing traffic and featuring galvanized stanchions supporting signage and lightpoles with cobra head fixtures along this section of I-495. From the bridge carrying I-495 over Seven Locks Road, the roadway and utility lines are seen cutting through the same deciduous forests that are in the background of the highway. The continuity of the vegetation brings a sense of natural harmony. Seven Locks Road is part of the infrastructure of the cultural environment perceived by travelers of I-495. Cultural order is seen in the materials comprising the infrastructure elements; however, this order is disrupted by views the residential homes adjacent to the inner beltway. The consistent use of materials in the roadway features as well as the use of the existing landform and surrounding vegetation work together to create a project coherence for travelers of the I-495 corridor.

Visual quality from static views includes the viewers from Seven Locks Road, adjacent residences and the Morningstar property neighbors, and recreational visitors to Cabin John Stream Valley Park. From Seven Locks Road, the static views include the dense deciduous forest of Cabin John Stream Valley Park and surrounded contiguous forest lands with adjacent residences on the other side of the road (shown in **Appendix B, Figure 52**). The steel support beams of the I-495 bridge over Seven Locks Road are painted the same green shade and concrete piers and abutments form the base of the bridge, similar to interstate elements throughout the AVE. Rocks shore up the slopes on either side of the underpass. A metal barrier on the I-495 inner loop bridge wall separates neighbors from observing passing I-495 traffic, but the structure remains as a prominent feature within the viewshed of neighboring properties, including the Morningstar property. Typical area residences are characterized by sizable yards with mature landscaping, from many of which interstate structures can be seen.

Parallel to the northbound lane of Seven Locks Road, a paved trail connects Cabin John Stream Valley Park units that are bisected by I-495. A small gravel parking area for the park and trail is located on Seven Locks Road immediately north of I-495, where the trailhead is located. From the natural surface trail, the view of I-495 is filtered by heavy vegetation and deciduous forest, although it becomes a more dominant feature as the trail goes under the bridge (**Appendix B, Figure 53 and 54**). The park and neighboring landscapes preserve the natural environment within this area. Where neighbors are immediately

adjacent, the interstate is a prominent feature within static viewshed of Seven Locks Road, adjacent residences, the Morningstar property, and recreational visitors to Cabin John Stream Valley Park; reducing the natural environment and cultural order. However, the dense vegetation and topography of this area restrict the effect of the interstate on visual quality to those nearest to the facility. The consistent use of materials in the roadway features create project coherence with the way neighbors throughout the AVE experience the interstate.

The static views from the Morningstar property include vegetation covered ground and a prominent view of I-495. The Morningstar property is separated from I-495 by a vegetation covered chain-link right-of-way fence (**Appendix B, Figure 55 - 57**). The fence creates a physical barrier between the property and the highway but does not provide a visual or noise barrier. Traffic on the road is a prominent view as well as other highway features including tall lightpoles, that are similar to elements throughout the AVE. Deciduous forest can be seen across I-495 bringing in an element of natural environment. However, the proximity and visual and noise exposure of the highway decreases the visual quality of the viewshed as well as the natural harmony and cultural order felt by the neighbors at the Morningstar property.

### 3.3.2 Impacts on Visual Quality

The Preferred Alternative would widen this section of I-495 to deliver two HOT managed lanes in either direction. This effort would include expanding the I-495 overpass above Seven Locks Road to accommodate the managed lanes, reconstructing the existing Cabin John Parkway interchange, and adding a direct access interchange at Cabin John Parkway. The Preferred Alternative would include the expansion of noise barriers, railing, and signage throughout this project corridor. Some vegetation and trees would be removed for the construction and expansion of the overpass and lanes of I-495. In some areas, this would reduce the visual and noise buffer between static viewpoints and the highway. Mitigation for tree removal will be based on state and local agency standards to minimize the impact on visual quality for neighbors of the highway. As stated in other viewsheds, aesthetic and landscaping guidelines would provide standards to uphold the visual character of the project environment.

The Preferred Alternative will avoid ground disturbance and right-of-way impacts to the Morningstar property. To avoid impacts to this property, the typical section has been modified to include a narrow right shoulder along the reconstructed I-495 inner loop general purpose lanes adjacent to the cemetery property. The width of the right shoulder will be reduced from 12 feet to 6 feet wide (measured between the edge of travel lane and face of concrete barrier) for a total length of approximately 400 feet including tapers. A proposed noise barrier along the right shoulder and the cemetery would be located two feet behind the concrete traffic barrier. The proposed 24-foot-high noise barrier is provided to mitigate for noise and will have the additional benefit of screening the highway from view. Twenty-four feet is an anticipated maximum height and may be somewhat reduced in final design to within the 16-to-24-foot height range. This segment of I-495 was completed in 1962, and the current view of the highway from the Morningstar property is not a historically significant or character-defining feature. MDOT SHA has committed to context-sensitive treatment of the noise barrier through a Programmatic Agreement developed in compliance with Section 106 of the National Historic Preservation Act. Treatments may include sympathetic design treatment of new noise barrier that faces the cemetery.

Construction would not introduce new elements incompatible with the existing visual character or qualities along I-495 or that experienced by neighbors of I-495. It is expected that aesthetic and

landscaping guidelines will detail materials, lighting, signage, and vegetation standards contextually compatible with the study corridor. Aesthetic and landscaping guidelines will vary along the study corridor to incorporate the aesthetic and context of the neighbor stakeholders and surrounding resources. By inviting neighbor stakeholders in the development of the aesthetic and landscaping guidelines, the design team would ensure that the Preferred Alternative would be consistent with applicable laws, ordinances, regulations, policies, and standards. As a result, the contextual compatibility impact of the proposed action would be low.

Renderings, developed in coordination with the project engineering team, have been developed to demonstrate viewshed impacts for the Preferred Alternative (**Appendix B, Figures 58- 62**). The visual change in dynamic and static views, as shown in renderings, is minor when compared to the existing expectations, duration, and orientation for an interstate facility (**Appendix B, Figures 51 - 57**).

Public comments received through the project duration, including those received during the public comment period for the DEIS and SDEIS, expressed concern that the reduction in the vegetative buffer would increase air, noise, and visual impacts of the proposed improvements. Reviewing agencies also noted concern for potential impacts to views from their subject resources. Neighbor viewer groups include transient, recreational, and resident user groups. Coordination with the public and stakeholders will continue through project development to ensure that the visual change imposed by the Preferred Alternative is minor; therefore, the general viewer sensitivity to the Preferred Alternative is minor.

The overall visual effect of the Preferred Alternative the dynamic and static viewsheds of I-495 in the vicinity of Seven Locks Road is low.

### **3.4 Cabin John Regional Park – Near I-270 and Campground**

#### **3.4.1 Visual Character**

Cabin John Regional Park is a publicly-owned park and recreation area situated between Democracy Boulevard and southbound I-270. The 513.8-acre park contains a playground, dog park, picnic shelters, a miniature train, grills, horseshoe pits, and restrooms. Cabin John Regional Park has more than four miles of natural surface trails and two miles of hard surface trails. Athletic facilities include an indoor ice rink, baseball field, five softball fields, a volleyball court, and indoor tennis center. The Locust Grove Nature Center and Robert C. McDonnell Campground are also within the park. Cabin John Regional Park is under the jurisdiction of M-NCPPC Montgomery County. Portions of the parks trails and campgrounds, are located within the AVE.

Visual quality of the dynamic views on I-270 near Cabin John Regional Park and the Robert C. McDonnell Campground is dominated by six travel lanes in both the north and southbound directions, flanked by full inside and outside shoulders (**Appendix B, Figure 63**). The roadway median is a concrete barrier dividing traffic and featuring galvanized stanchions supporting signage and lightpoles with cobra head fixtures along this section of I-270. The outside roadway boundaries feature a formliner retaining wall of varying height bounded immediately by deciduous forest and increasing slopes. The slopes and vegetation limit the view of I-270 travelers to the immediate project corridor. The continuity of the vegetation introduces an element of natural harmony across this vastly hardscaped environment. Cultural order is represented by the consistent use of materials in the roadway features. Similarly, the consistent use of materials in the

roadway features as well as the use of the existing landform and surrounding vegetation work together to create a project coherence for travelers of the I-270 corridor.

Static views from the Cabin John Regional Park campground and trails show a heightened awareness of the natural environment and cultural order (**Appendix B, Figure 64**). The natural character of the trails includes deciduous forests dominated by tall, early growth trees with the natural surface trail. A small stream with a rock bed flanked by herbaceous vegetation meanders through this area. Views of the highway increase as the trail bends and the vegetative buffer between trail and highway is decreased. A vegetation covered chain-link fence provides a physical barrier between the trail and the highway where the trail is at a higher elevation than the road. When the trail elevation drops below the level of the highway, a guard rail provides a physical barrier. All lanes and signage of the highway can be seen through the trees from the trail. Thus, the highway, at this location becomes a prominent feature within the static viewshed of trail users and campers, reducing the natural environment and cultural order within this park facility, disrupting the coherence of this area with other park elements.

### 3.4.2 Impacts on Visual Quality

The Preferred Alternative on I-270 includes two HOT managed lanes in each direction. The one existing HOV lane in each direction will be converted to HOT managed lanes and one additional HOT managed lane will be added in each direction. Flexible delineators would be added to separate the HOT managed lanes and GP lanes with a four-foot buffer. This would widen roadways, increase amounts of pavement, and could require raising elevation of some structures. The Preferred Alternative would include the expansion of structures, retaining wall, railing, and signage throughout the study corridors. Construction of the widened highway would require removal some vegetation and trees around the existing limits of the roadway. In some areas, this would reduce the buffer between static viewpoints and the highway, impacting the views to and from this key location and other neighbors. Mitigation for tree removal will minimize the impact on the visual quality for this resource. Consistent with other areas of the project, all constructed and new elements would follow aesthetic and landscaping guidelines, including mitigation for tree removal based on M-NCPPC Montgomery County standards, and would be visually compatible with the existing highway setting.

Construction would not introduce new elements incompatible with the existing visual character or qualities along I-270 or that experienced by neighbors of I-270. It is expected that aesthetic and landscaping guidelines will detail materials, lighting, signage, and vegetation standards contextually compatible with the study corridor. Aesthetic and landscaping guidelines will vary along the study corridor to incorporate the aesthetic and context of the neighbor stakeholders and surrounding resources. By inviting M-NCPPC Montgomery County in the development of the aesthetic and landscaping guidelines, the design team would ensure that the Preferred Alternative would be consistent with applicable laws, ordinances, regulations, policies, and standards. As a result, the contextual compatibility impact of the proposed action would be low.

Renderings have been developed to demonstrate viewshed impacts for the Preferred Alternative (**Appendix B, Figures 65 and 66**). As noted in the *Final Section 4(f) Evaluation (FEIS, Appendix G)*, impacts would also occur to the connecting trail between the Highway Loop Trail and Kidney Bean Loop Trail. A portion of the connecting trail between the Highway Loop Trail and Kidney Bean Loop Trail would need to be realigned in coordination with M-NCPPC. Access to the trail would be maintained throughout

construction. The visual change to the dynamic and static views, as shown in these renderings, is minor when compared to the existing expectations, duration, and orientation for an interstate facility.

Public comments received through the project duration, including those received during the public comment period for the DEIS and SDEIS, expressed concern that the reduction in the vegetative buffer would increase air, noise, and visual impacts of the proposed improvements. Reviewing agencies also noted concern for potential impacts to views from their subject resources. Neighbor viewer groups generally use this area for recreational purposes. Coordination with the public and M-NCPPC Montgomery County will continue through project development to ensure that the visual change imposed by the Preferred Alternative is minor; therefore, the general viewer sensitivity to the Preferred Alternative is minor.

The overall visual effect of the Preferred Alternative to the dynamic and static viewshed of I-270 and Cabin John Regional Park is low.

## 4 SUMMARY OF FINDINGS

The No Build Alternative would not result in any study-related construction and would therefore not directly impact visual and aesthetic resources. Since this alternative does not address congestion issues on the study corridors, it would result in an increase in view of traffic by motorists and nearby residences and businesses.

The construction of the Preferred Alternative would include managed lanes, shoulders, traffic barriers, cut and fill slopes, SWM facilities, retaining walls, and noise barriers along the existing highway corridor. Additionally, the Preferred Alternative would require modifications at existing interchanges to accommodate the mainline widening and direct access at-grade auxiliary lanes or ramps. This may require the reconstruction of structures spanning the study corridors to lengthen or raise the elevation of these structures. Construction of the Preferred Alternative would also require relocation of signage, guardrails, communications towers, and light poles due to the widening of the roadway. These ancillary features would be the same or similar in appearance as the existing interstate features. Under the Preferred Alternative they may be positioned closer to the adjacent land uses (residential areas, commercial enterprises, and community facilities).

Where noise barriers already exist, they would be replaced. Additional noise barriers may be constructed as detailed in the FEIS. Under the Preferred Alternative, noise barriers may be positioned closer to the surrounding land uses (residential areas, commercial enterprises, and community facilities); however, they would be of similar height, material, and aesthetic as the existing noise barriers. (Refer to the *Environmental Resource Mapping* in **FEIS, Appendix E** for the proposed locations of the noise barriers.)

Construction would require the removal of vegetation to varying degrees throughout the study corridors. Larger areas of tree removal near the American Legion Bridge on NPS property will be needed for construction and cannot be accommodated elsewhere due to the steep slopes. As a result of the vegetation removal, the wider interstates, added ramps, retaining walls, and noise barriers would become more visible and prominent from both the dynamic and static views. The static views from adjacent properties, including residential properties, commercial enterprises, parkland/open space properties, and a number of community resources would experience an impact. In general, however, impacts would be



consistent with existing views along the majority of the study corridors because of the dominant presence of the existing interstate facilities and the surrounding area's urbanized nature.

Construction of the Preferred Alternative would not introduce new elements incompatible with the existing visual character or qualities along the study corridors or that experienced by neighbors. Vegetation removal will be mitigated based on state and local agency requirements and standards to maintain the visual quality of the key locations. It is expected that aesthetic and landscaping guidelines will detail materials, lighting, signage, and vegetation standards contextually compatible with the study corridor. Aesthetic and landscaping guidelines will vary along the study corridor to incorporate the aesthetic and context of the neighbor stakeholders and surrounding resources. By inviting neighbor stakeholders in the development of the aesthetic and landscaping guidelines, MDOT SHA would ensure that the Preferred Alternative would be consistent with applicable laws, ordinances, regulations, policies, and standards. As a result, the contextual compatibility impact of the proposed action would be low.

Renderings, developed in coordination with the project engineering team, demonstrate viewshed impacts for the Preferred Alternative. The visual change for both dynamic and static views, as demonstrated in these renderings, is minor when compared to the existing expectations, duration, and orientation for an interstate facility.

Public comments received throughout the NEPA Study, including those received during the public comment periods for the DEIS and SDEIS, expressed concern that the reduction in the vegetative buffer would increase air, noise, and visual impacts of the proposed improvements. Resource agencies also noted concern for potential impacts to views from their subject resources. Replacing vegetative buffers to the maximum extent practical, as discussed under mitigation below, will mitigate for the concerns noted and reduce the visual impact from removal of existing vegetative buffers. Additionally, as construction of the Preferred Alternative would not introduce new elements incompatible with the existing visual character or qualities along the study corridors, the general viewer sensitivity to the Preferred Alternative would be minor. The overall visual effect of the Preferred Alternative to the dynamic and static viewsheds would be low.

Mitigation measures to lessen the visual impact of the improvements have been considered as appropriate. For example, MDOT SHA reduced the number of signs along the NPS and M-NCPPC parkways per NPS and M-NCPPC request. Vegetation removal will be minimized, and additional landscaping may be incorporated in other areas as well. Mitigation for tree removal will be done in accordance with the Maryland Reforestation Law, federal, state and local requirements, such as on-site planting, when feasible and to the maximum extent practicable.

MDOT SHA and FHWA have worked closely with NPS to develop a final mitigation plan to ensure the protection of significant resources. The final mitigation plan highlights mitigation commitments to address impacts to facilities under the jurisdiction of NPS near the southern terminus of the Phase 1 South limits. Mitigation commitments specifically effecting key locations are highlighted below here:

- Restore forest and terrestrial areas including:
  - Avoiding and minimizing of impacts to trees within and surrounding the LOD to the maximum extent practicable.

- Survey impacted vegetation community prior to construction to determine existing community composition and develop replanting plan based on survey results
- Replanting forest inch-for-inch within the LOD in construction areas and providing non-native invasive species control and maintenance for five years within the reforestation areas
- Softening edge effects associated with disturbance by treating and removing non-native invasive species within a 50-foot buffer of the LOD and replanting native trees and shrubs in any gaps resulting from the removal of mature trees or non-native invasive species. In coordination with NPS during design, sensitive areas, such as areas of known archeological resources, within the 50-foot buffer will be excluded if ground disturbance is required.
- Providing monetary compensation for remaining tree impacts, based on inch for inch replacement

MDOT SHA and FHWA have also worked with M-NCPPC to develop a final mitigation plan to ensure the protection of significant park resources. The final mitigation plan highlights mitigation commitments to address impacts to park facilities. Mitigation commitments specifically effecting key locations are highlighted below here:

- Stream stabilization including removing concrete structures and rebuilding using natural stabilization techniques.
- Replanting riparian buffer with native seed, shrubs and trees.
- Development and implementation of forest and terrestrial vegetation mitigation.
- Controlling non-native species over an extended period following with infill plantings consisting of understory and canopy trees.

Over the course of the Study, MDOT SHA and FHWA have consulted with interested stakeholders to evaluate ways to avoid and minimize impacts to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery. The historic cemetery is located within the Seven Locks Road Key Location. Direct impacts to the cemetery property are completely avoided by the Preferred Alternative; however, a noise barrier is proposed along the right shoulder of I-495, to be located two feet behind the concrete traffic barrier. The proposed 24-foot-high noise barrier is provided to mitigate for noise and will have the additional benefit of screening the cemetery from the existing highway view. Twenty-four feet is an anticipated maximum height and may be reduced in final design to within the 16-to-24-foot height range. This segment of I-495 was completed in 1962, and the current view of the highway from the cemetery property is not a historically significant or character-defining feature. MDOT SHA has committed to context-sensitive treatment of the noise barrier through a Programmatic Agreement developed in compliance with Section 106 of the National Historic Preservation Act. Treatments may include sympathetic design treatment of the new noise barrier that faces the cemetery.



During final design, MDOT SHA and the Developer would establish and follow aesthetic and landscaping guidelines of all highway elements in consultation with the local jurisdictions, private interest groups (private developers or companies), local community or business associations, as well as local, state, and Federal agencies. The goal will be to design highway elements to be sensitive to the context of the surrounding land use, including historic and park resources. Further, mitigation for resource impacts would be developed in accordance with jurisdictional agency requirements. Refer to **FEIS, Chapter 7** for a complete list of the mitigation and commitments for the project.

## APPENDIX A: VIA Scoping Questionnaire

# MLS Visual Impact Assessment Scoping Questionnaire

Project Name: I-495 & I-270 MLS

Site Visit Date: n/a

Location: Montgomery and Prince  
George's Counties, Maryland  
and Fairfax County, Virginia

Time: n/a

Special conditions/ [NOTES]  
Notes:

Conducted By: Alexis Morris

## Environmental Compatibility

### 1. *Will the project result in a noticeable change in the physical characteristics of the existing environment?*

Consider all project components and construction impacts - both permanent and temporary, including landform changes, structures, noise barriers, vegetation removal, railing, signage, and contractor activities.

- ☐ High level of permanent change (3)      ☒ Moderate level of permanent change (2)
- ☐ Low level of permanent or temporary change (1)      ☐ No Noticeable Change (0)

**Rationale:** *The Preferred Alternative would include the expansion of structures, noise barriers, railing, and signage throughout the study corridors. This construction would also require vegetation removal, diminishing the buffer between static viewpoints and the highway. The Preferred Alternative would require modification at existing interchanges to accommodate the mainline widening and direct access ramps. This may require the reconstruction of structures spanning the existing roadways to lengthen or raise the elevation of these structures. Additional impacts would include widened roadways, increased amounts of pavement, and new ramps and elevated structures adjacent to the existing study corridors. However, views outside of the study corridors and to the periphery would not be affected. The design of all highway elements would follow aesthetic and landscaping guidelines and would be visually consistent with the existing highway setting. The aesthetic and landscaping guidelines would be developed by the P3 Developer in consultation with local jurisdictions, private interest groups (private developers or companies), local community or business associations, as well as local, state, and federal agencies.*

### 2. *Will the project complement or contrast with the visual character desired by the community?*

Evaluate the scale and extent of the project features compared to the surrounding scale of the community. Is the project likely to give an urban appearance to an existing rural or suburban community? Do you anticipate that the change will be viewed by the public as positive or negative? Research planning documents or talk with local planners and community representatives to understand the type of visual environment local residents envision for their community.

- ☐ Low Compatibility (3)      ☒ Moderate Compatibility (2)

☐ High compatibility (1)

**Rationale:** Construction would not introduce new elements incompatible with the existing visual character or qualities along the study corridors as the Preferred Alternative would expand existing interstates. Where new direct access at-grade auxiliary lanes or ramps would be constructed, visual impacts would be readily apparent, but would not contribute to a change in the character of the existing viewsheds. As described above, the design of all highway elements would follow aesthetic and landscaping guidelines that would be developed by the P3 Developer in consultation with local jurisdictions, private interest groups (private developers or companies), local community or business associations, as well as local, state, and federal agencies.

**3. What level of local concern is there for the types of project features (e.g., bridge structures, large excavations, sound barriers, or median planting removal) and construction impacts that are proposed?**

Certain project improvements can be of special interest to local citizens, causing a heightened level of public concern, and requiring a more focused visual analysis.

☐ High concern (3)

☒ Moderate concern (2)

☐ Low concern (1)

☐ Negligible Project Features (0)

**Rationale:** Public comments received to date, including those received during the public comment period for the DEIS and SDEIS, expressed local concern for visual impacts at key locations. Additionally, reviewing agencies have noted their concern for potential impacts to viewsheds as a result of construction of the proposed improvements. National Park Service (NPS) stated concern that the visual impacts to NPS resources by vegetation removal would affect views from and to the park during construction and well into the future.

**4. Is it anticipated that to mitigate visual impacts, it may be necessary to develop extensive or novel mitigation strategies to avoid, minimize, or compensate for adverse impacts or will using conventional mitigation strategies, such as landscape or architectural treatment adequately mitigate adverse visual impacts?**

☐ Extensive Non-Conventional Mitigation Likely (3)

☐ Some non-conventional Mitigation Likely (2)

☒ Only Conventional Mitigation Likely (1)

☐ No Mitigation Likely (0)

**Rationale:** Through coordination with local jurisdictions, private interest groups (private developers or companies), local community or business associations, as well as local, state, and federal agencies, the P3 Developer will develop aesthetic and landscaping guidelines that detail materials, lighting, signage, and vegetation standards that mitigate visual impacts. While it is anticipated that aesthetic and landscaping guidelines may vary along the study corridor to incorporate the aesthetic and context of the surrounding resources.

**5. Will this project, when seen collectively with other projects, result in an aggregate adverse change (cumulative impacts) in overall visual quality or character?**

Identify any projects [both state and local] in the area that have been constructed in recent years and those currently planned for future construction. The window of time and the extent

of area applicable to possible cumulative impacts should be based on a reasonable anticipation of the viewing public's perception.

- ☐ Cumulative Impacts likely: 0-5 years (3)      ☒ Cumulative Impacts likely: 6-10 years (2)
- ☐ Cumulative Impacts unlikely (1)

**Rationale:** Past transportation projects have had impacts to communities, including visual and aesthetic impacts from construction and the expansion of transportation facilities. Some examples of major past projects have included the I-270/Watkins Mill Interchange completed in 2020, the Intercounty Connector (MD 200) completed in 2014, and the previous widening of I-270 completed in 1990. A current major project with community impacts, including visual and aesthetic impacts, is the Purple Line, currently under construction. The Maryland Transit Administration worked with adjacent communities, reviewing agencies and local jurisdictions on avoidance, minimization and mitigation strategies for the design of the Purple Line.

### Viewer Sensitivity

**1. What is the potential that the project proposal may be controversial within the community, or opposed by any organized group?**

This can be researched initially by talking with the state DOT and local agency management and staff familiar with the affected community's sentiments as evidenced by past projects and/or current information.

- ☐ High Potential (3)      ☒ Moderate Potential (2)
- ☐ Low Potential (1)      ☐ No Potential (0)

**Rationale:** Public comments received to date, including those received during the public comment period for the DEIS and SDEIS, expressed some concern that the reduction in the vegetative buffer would increase air, noise, and visual impacts of the proposed improvements. Additionally, NPS and M-NCPPC have noted their concern for vegetation removal during construction and the resulting potential impacts to views from their park properties. Renderings are being developed to demonstrate viewshed impacts for the Preferred Alternative. These renderings are being coordinated with the reviewing agencies and will be provided as supporting documentation to the FEIS.

**2. How sensitive are potential viewer-groups likely to be regarding visible changes proposed by the project?**

Consider among other factors the number of viewers within the group, probable viewer expectations, activities, viewing duration, and orientation. The expected viewer sensitivity level may be scoped by applying professional judgment, and by soliciting information from other DOT staff, local agencies and community representatives familiar with the affected community's sentiments and demonstrated concerns.

- ☐ High Sensitivity (3)      ☒ Moderate Sensitivity (2)

☐ Low Sensitivity (1)

**Rationale:** *The Preferred Alternative would not introduce new elements incompatible with the existing visual character or qualities along the study corridors as the Preferred Alternative would expand existing interstates. Where new direct access at-grade auxiliary lanes or ramps would be constructed, visual impacts would be readily apparent, but would not contribute to a change in the character of the existing viewsheds. Additionally, NPS and M-NCPPC have noted their concern for vegetation removal during construction and the resulting potential impacts to views from their park properties. The design of all highway elements would follow aesthetic and landscaping guidelines that would be developed by the P3 Developer in consultation with the local jurisdictions, private interest groups (private developers or companies), local community or business associations, as well as local, state, and federal agencies.*

**3. To what degree does the project's aesthetic approach appear to be consistent with applicable laws, ordinances, regulations, policies or standards?**

☐ Low Compatibility (3)

☐ Moderate Compatibility (2)

☒ High compatibility (1)

**Rationale:** *Aesthetic and landscaping guidelines would be developed by the P3 Developer in consultation with local jurisdictions, private interest groups (private developers or companies), local community or business associations, as well as local, state, and federal agencies. By inviting these varied stakeholders to take part in the development of these guidelines, the Preferring Alternatives would be consistent with applicable laws, ordinances, regulations, policies and standards. Areas identified for tree removal on the NPS and M-NCPPC property will be further minimized as the study progresses. Mitigation for tree removal in areas under the jurisdiction of NPS and M-NCPPC will be completed in accordance with applicable requirements developed in partnership between MDOT SHA, NPS and M-NCPPC.*

**4. Are permits going to be required by outside regulatory agencies (i.e., Federal, State, or local)?**

Permit requirements can have an unintended consequence on the visual environment. Anticipated permits, as well as specific permit requirements - which are defined by the permitter, may be determined by talking with the project environmental planner and project engineer. Note: coordinate with the state DOT representative responsible for obtaining the permit prior to communicating directly with any permitting agency. Permits that may benefit from additional analysis include permits that may result in visible built features, such as infiltration basins or devices under a storm water permit or a retaining wall for wetland avoidance or permits for work in sensitive areas such as coastal development permits or on Federal lands, such as impacts to Wild and Scenic Rivers.

☒ Yes (3)

☐ Maybe (2)

☐ No (1)

**Rationale:** *Permits from outside regulatory agencies are required and will be obtained for various elements of the project, as will be detailed in the FEIS.*

**5. Will the project sponsor or public benefit from a more detailed visual analysis in order to help reach consensus on a course of action to address potential visual impacts?**

Consider the proposed project features, possible visual impacts, and probable mitigation recommendations.

☒ Yes (3)

☐ Maybe (2)

☐ No (1)

**Rationale:** *While the project would result in minimal changes and visual impacts, public comments received during the public comment period for the DEIS and SDEIS, included local concern for visual impacts at key locations. Additionally, reviewing agencies have noted their concern for impacts to viewsheds as a result of construction of the proposed improvements. More detailed visual analysis is proposed at key locations to address potential visual impacts.*

**Determining the Level of Visual Impact Assessment**

Total the scores of the answers to all ten questions on the Visual Impact Assessment Scoping Questionnaire.

**Total score: 20**

Based on this score, the recommended level of VIA for this project is:

☐ **Score 25-30: Expanded VIA**

An Expanded VIA is usually reserved for very complex or controversial projects where resolving visual issues has been identified as being key to public acceptance of a project. To report an Expanded VIA, follow the same outline as a Standard VIA, except report findings with more detail. In particular, the inventory of Landscape Units and Viewers Groups may be more fine-grained, rendering more subtlety in defining existing visual quality and impacts to it.

☒ **Score 20-24: Standard VIA**

A Standard VIA would typically be used for EA or EIS projects that are anticipated as having substantial adverse or beneficial visual impacts. In the Standard VIA document, report the findings of the establishment, inventory, analysis, and mitigation phases of the VIA process. The Standard VIA is developed with input from the NEPA public involvement process to directly and accurately ascertain viewer preferences.

☐ **Score 15-19: Abbreviated VIA**

An Abbreviated VIA is a document that succinctly reports the findings of a VIA. It includes a brief project description and a report of the findings of the VIA's establishment, inventory, analysis, and mitigation phases. Maps, aerial photography and photographs are used sparingly and only when such illustrations reduce the need for text. An Abbreviated VIA is typically used for an EA or EIS-level project when it has been identified during scoping that there are minimal visual concerns. It may also be used for CEs, if a VIA Memorandum will not suffice and a slightly more detailed analysis is needed to address visual impacts.

☐ **Score 10-14: VIA Memorandum**

A VIA Memorandum is simply a short memorandum from the VIA author to the NEPA project manager stating that the potential for the project to cause adverse or beneficial impacts to visual resources, viewers, or visual quality is negligible and explaining the approach used to reach that conclusion. A VIA Memorandum is usually reserved for projects that are Categorical Exclusions (CEs) but may include Environmental Assessment (EA) or Environmental Impact Statement (EIS)-level projects with little or no visual impacts.

☐ **Score 6-9: No physical changes**

No noticeable physical changes to the environment are proposed and no further analysis is required. Print out a copy of this completed questionnaire for your project file to document that there is no effect. A *VIA Memorandum* may be used to document that there is no effect and to explain the approach used for the determination.

Find the requirements for the different types of VIAs in the [FHWA's VIA Guidelines for Highway Projects](#), Appendix D.

Confirm that the level suggested by the checklist is consistent with the project teams' professional judgments. If there remains doubt about whether a VIA needs to be completed, it may be prudent to conduct an Abbreviated VIA. If there remains doubt about the level of the VIA, begin with the simpler VIA process. If visual impacts emerge as a more substantial concern than anticipated, the level of VIA documentation can always be increased.



## **APPENDIX B: Key Locations Existing Images and Proposed Renderings**

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## GEORGE WASHINGTON MEMORIAL PARKWAY

**Figure 1: Existing Aerial I-495 at George Washington Memorial Parkway Looking North**



Satellite Map showing GWMP and I-495 interchange. Google Earth, <https://earth.google.com/web/>

**Figure 2: Existing I-495 Inner Loop at George Washington Memorial Parkway Interchange**





**Figure 3: Existing I-495 Outer Loop - Looking South Toward GWMP Bridge**



Street view of I-495. Google Maps, <https://www.google.com/maps/>

**Figure 4: Existing I-495 Inner Loop - Looking North Toward GWMP Bridge**



Street view of I-495. Google Earth, <https://earth.google.com/web/>



**Figure 5: Existing George Washington Memorial Parkway Northbound Ramp to I-495 Inner Loop**



**Figure 6: Existing George Washington Memorial Parkway Northbound Exit Ramp to I-495 Inner Loop**





**Figure 7: Existing Westbound George Washington Memorial Parkway Looking Toward I-495**



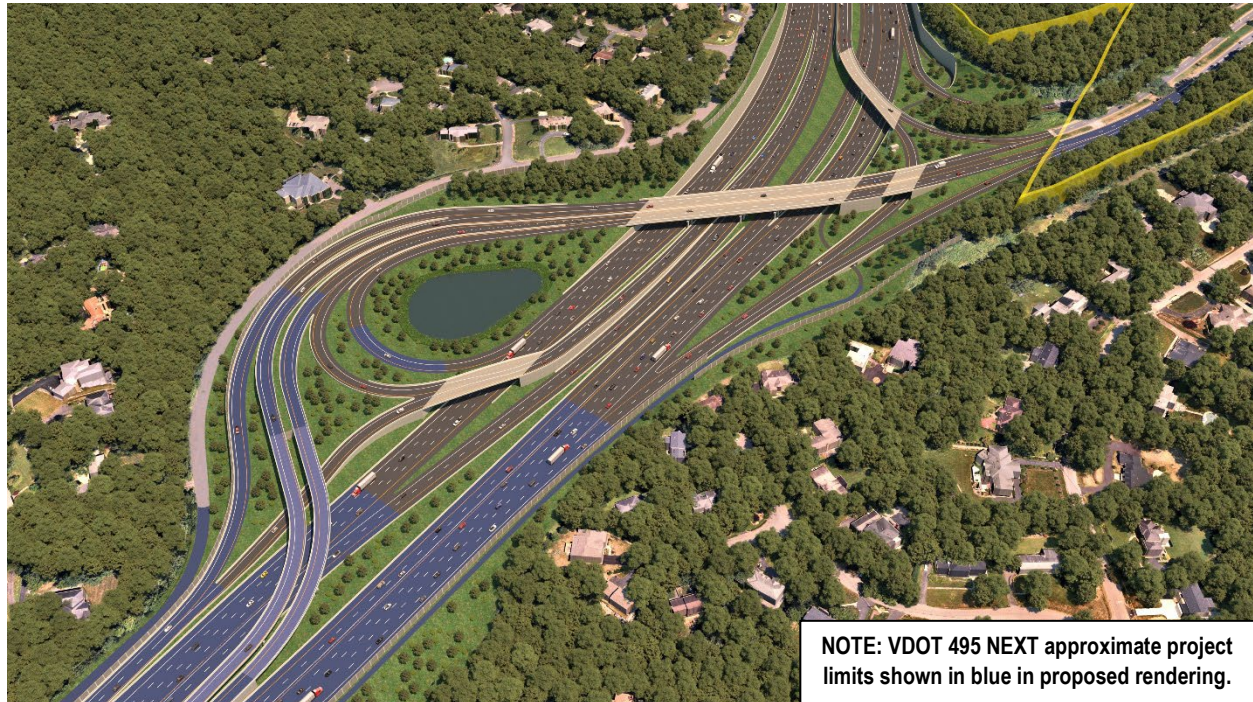
Street view of GWMP. Google Earth, <https://earth.google.com/web/>

**Figure 8: Existing Potomac Heritage National Scenic Trail looking toward the American Legion Bridge**

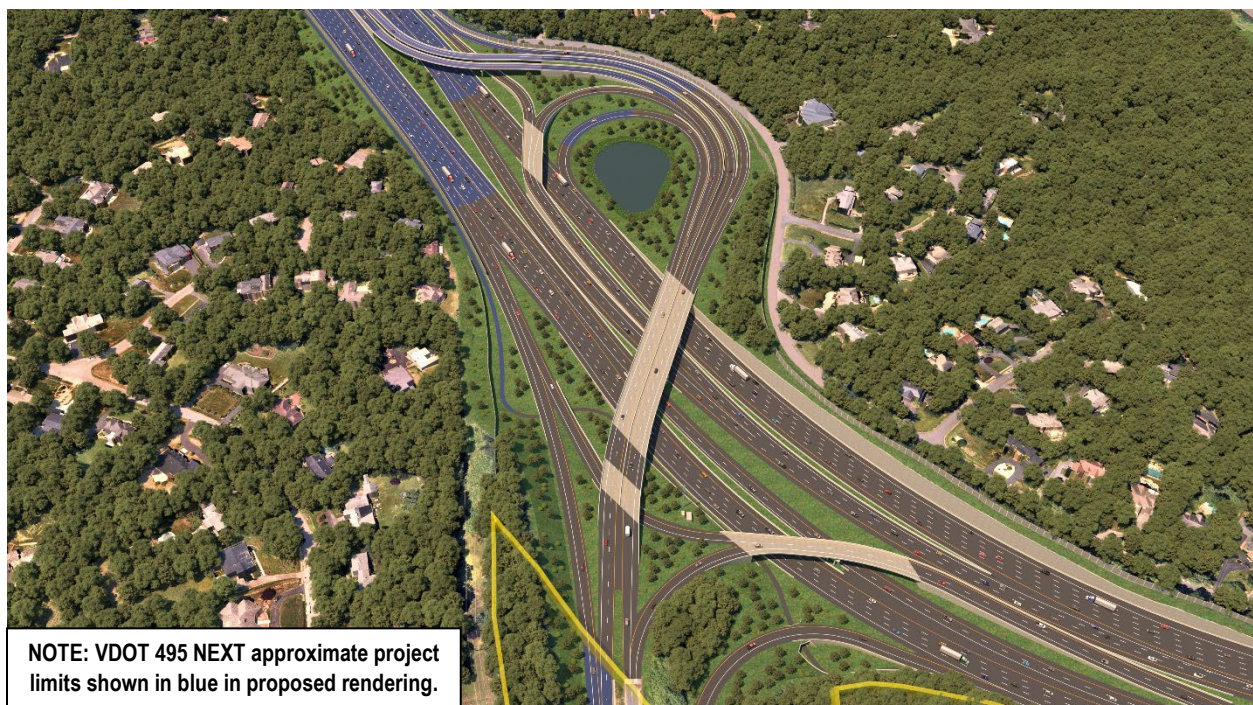




**Figure 9: Proposed Aerial I-495 at George Washington Memorial Parkway Looking North**

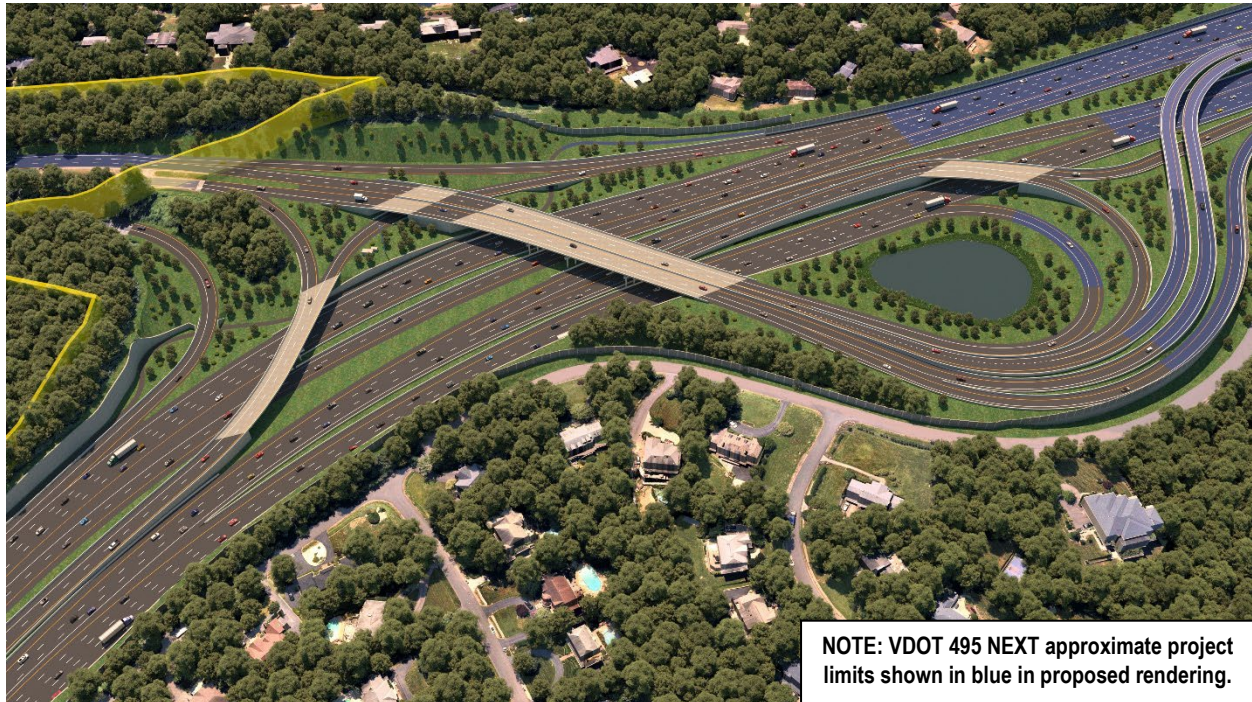


**Figure 10: Proposed Aerial I-495 at George Washington Memorial Parkway Looking South**

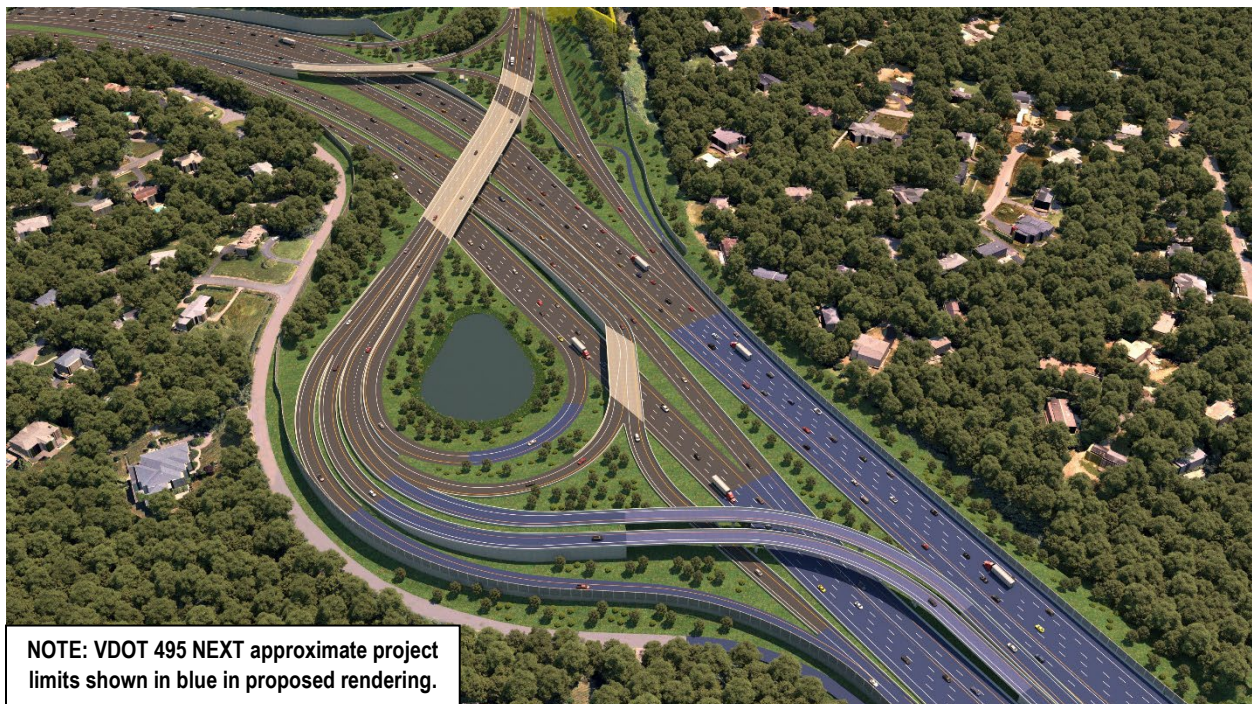




**Figure 11: Proposed Aerial I-495 at George Washington Memorial Parkway Looking Southeast**



**Figure 12: Proposed Aerial I-495 at George Washington Memorial Parkway Looking Northeast**

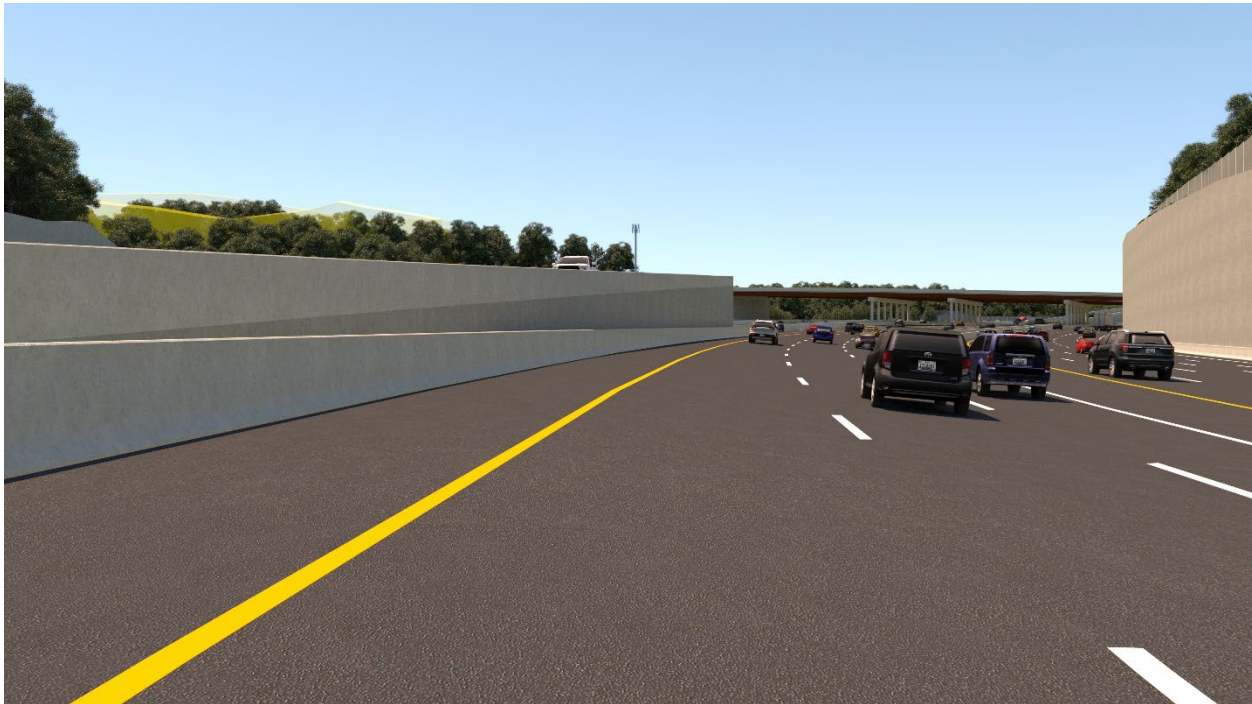




**Figure 13: Proposed I-495 Outer Loop - Looking South Toward GWMP Bridge**



**Figure 14: Proposed I-495 Outer Loop HOT Managed Lanes - Looking South Toward GWMP Bridge**



**Figure 15: Proposed I-495 Outer Loop HOT Managed Lanes approaching GWMP Bridge**



**Figure 16: Proposed I-495 Inner Loop - Looking North Toward GWMP Bridge**





**Figure 17: Proposed I-495 Inner Loop HOT Managed Lanes - Looking North Toward GWMP Bridge**



**Figure 18: Proposed George Washington Memorial Parkway Northbound Ramp toward American Legion Bridge**

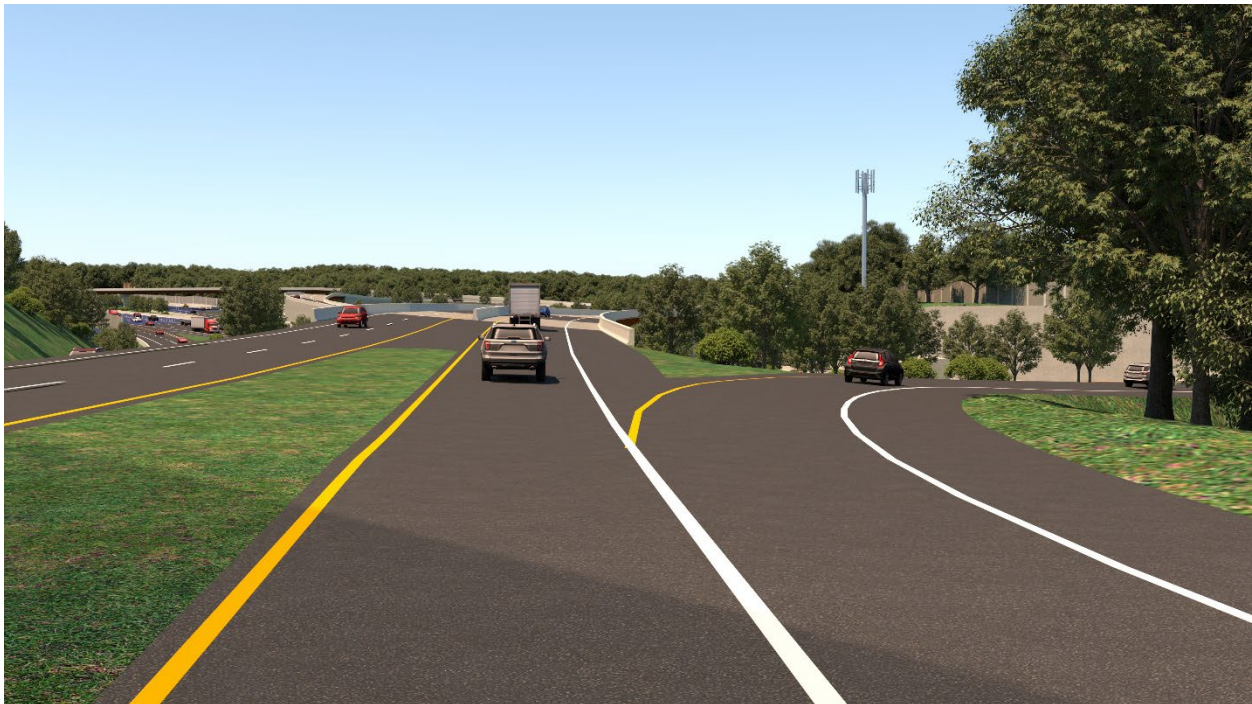




**Figure 19: Proposed Westbound George Washington Memorial Parkway Exit Ramp looking toward I-495**



**Figure 20: Proposed Westbound George Washington Memorial Parkway looking toward I-495**





**Figure 21: Proposed Potomac Heritage National Scenic Trail looking toward the American Legion Bridge**





## CHESAPEAKE & OHIO CANAL NATIONAL HISTORICAL PARK AND CLARA BARTON PARKWAY

**Figure 22: Existing Aerial View of I-495 at Clara Barton Parkway – Looking West**



Satellite Map of I-495 and Clara Barton Interchange. Google Earth, <https://earth.google.com/web>

**Figure 23: Existing I-495 Outer Loop – Looking South toward ALB**





**Figure 24: Existing I-495 Inner Loop Looking North toward Clara Barton Parkway**



**Figure 25: Existing C&O Canal Towpath looking toward I-495**





**Figure 26: Existing C&O Canal Towpath looking West between Lock 11 and Lock 12**





**Figure 27: Existing Eastbound Clara Barton Parkway**



**Figure 28: Existing Eastbound Clara Barton Parkway looking toward I-495**



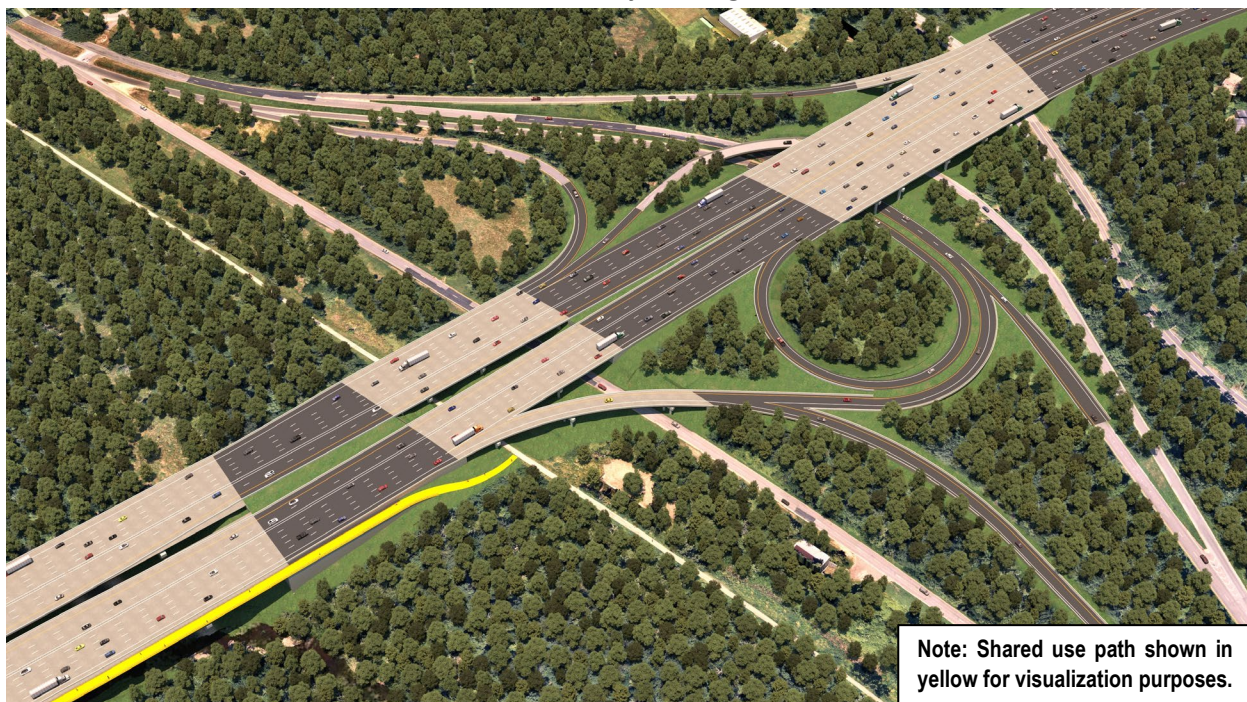


**Figure 29: Existing Westbound Clara Barton Parkway looking West toward I-495**



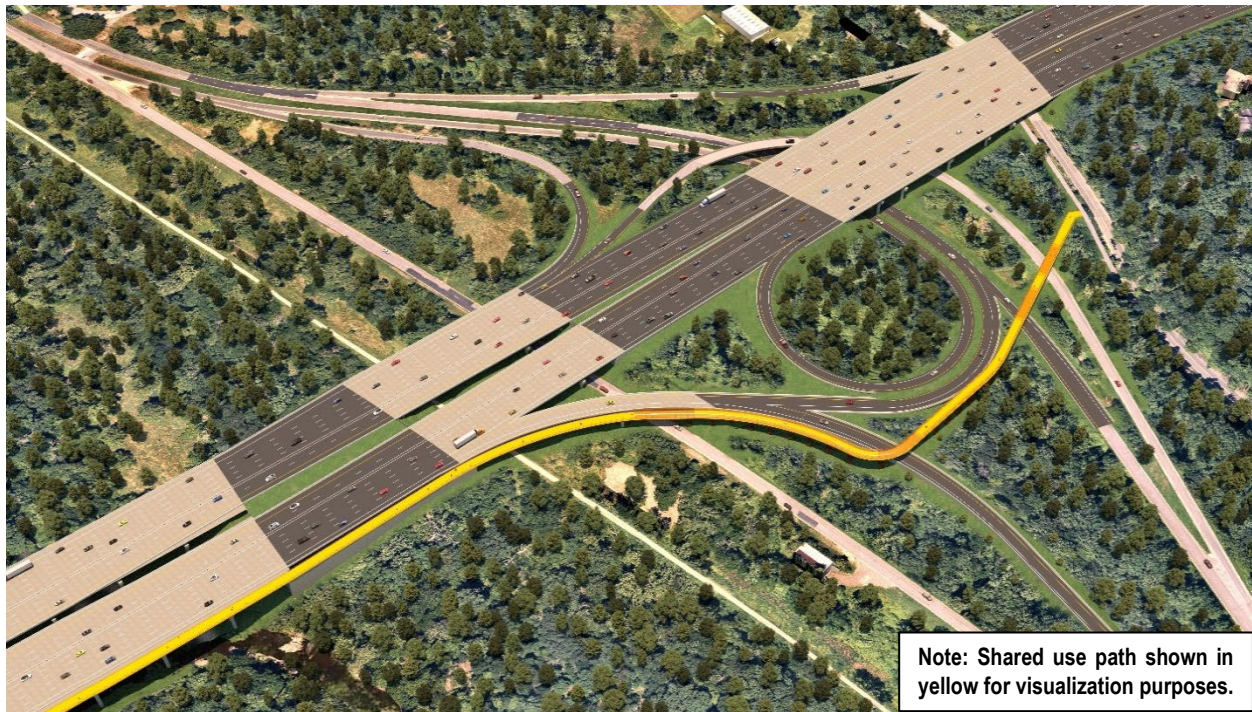
Street view of WB Clara Barton Parkway. Google Maps, <https://www.google.com/maps/>

**Figure 30: Proposed Option: Direct C&O Canal Towpath Connection – Aerial View of I-495 at Clara Barton Parkway Looking West**

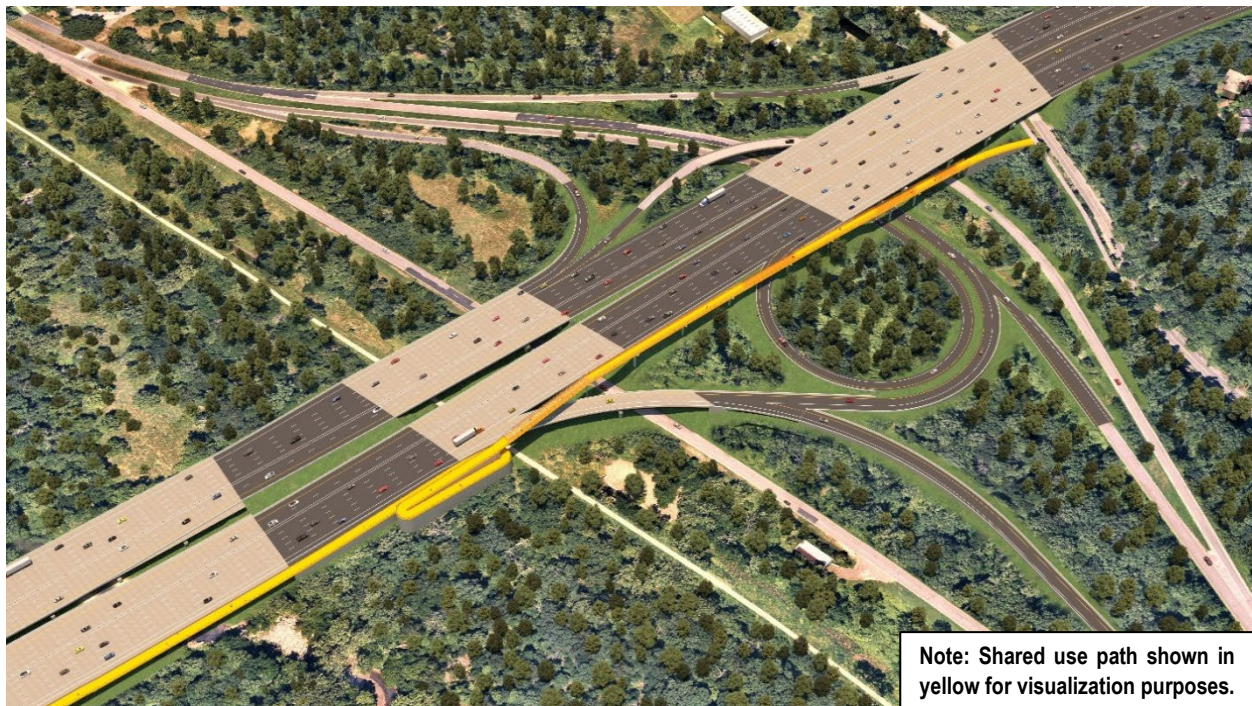




**Figure 31: Proposed Option 3: MacArthur Boulevard Connection – Aerial View of I-495 at Clara Barton Parkway Looking West**

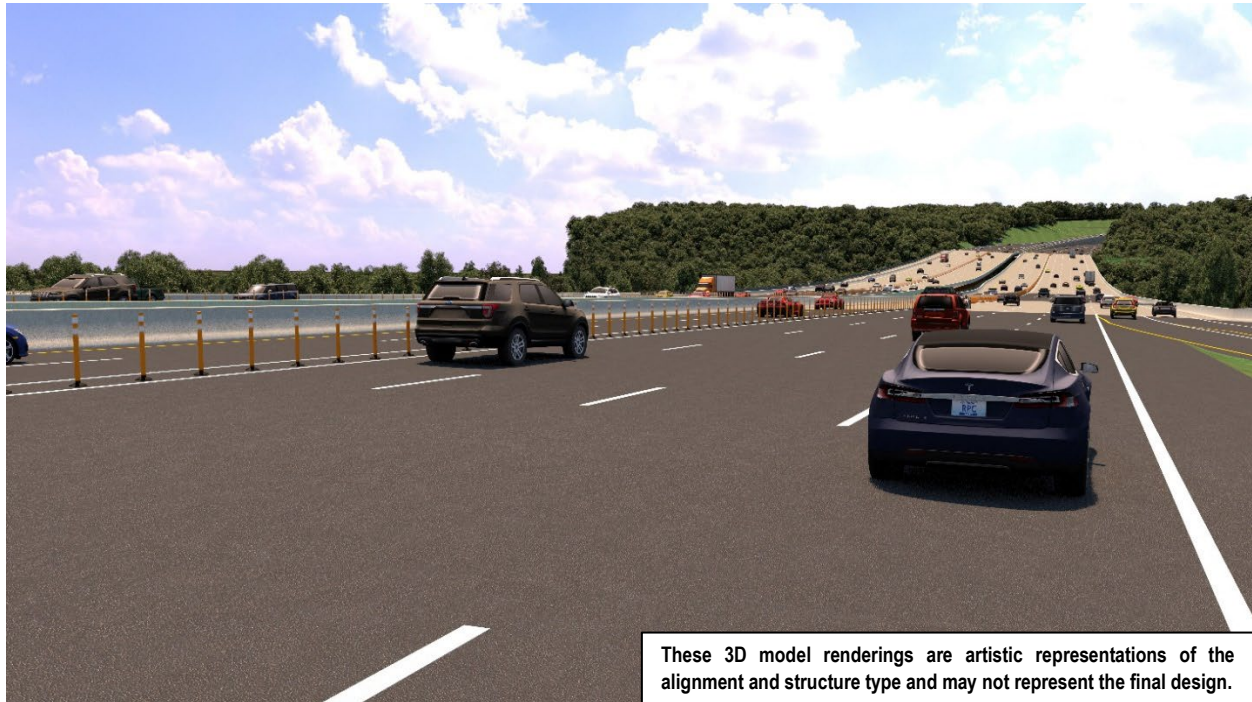


**Figure 32: Proposed Option 4: MacArthur Boulevard Connection – Aerial View of I-495 at Clara Barton Parkway Looking West**





**Figure 33: Proposed I-495 Outer Loop – Looking South toward ALB**



**Figure 34: Proposed Option: Direct C&O Canal Towpath Connection – I-495 Inner Loop Looking North toward Clara Barton Parkway**



**Figure 35: Proposed Options 2 & 3: MacArthur Boulevard Connection – I-495 Inner Loop Looking North toward Clara Barton Parkway**

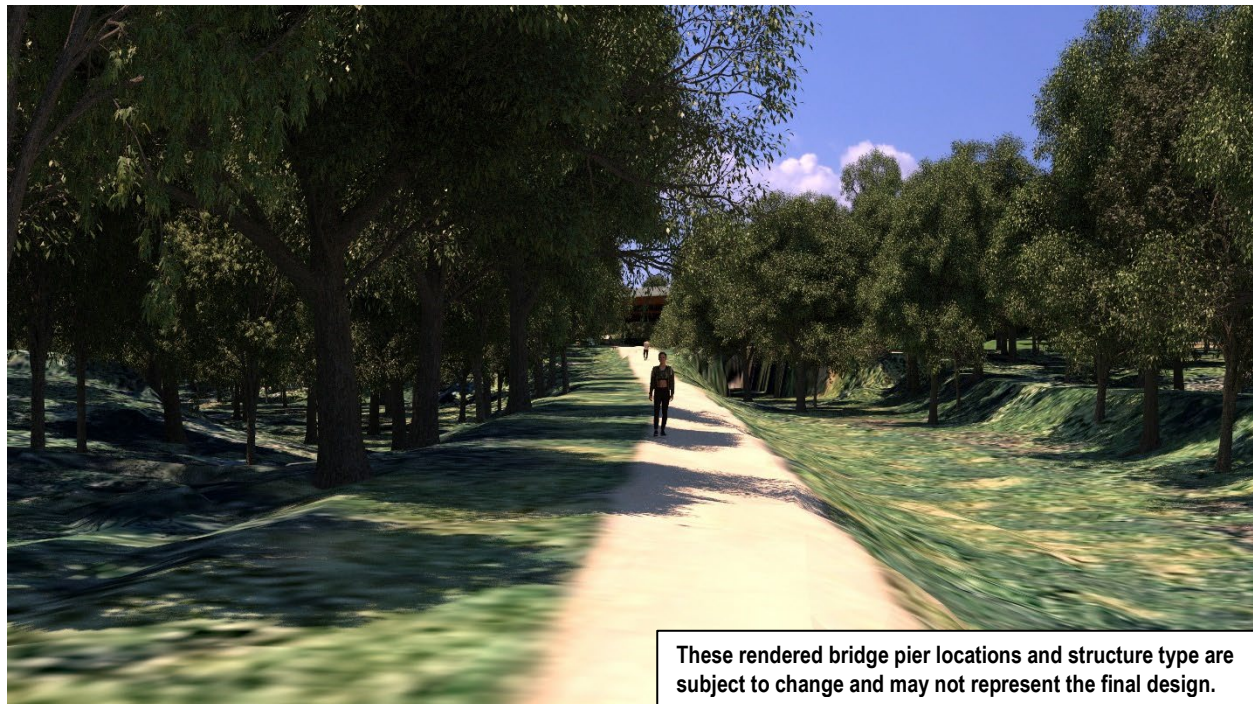


**Figure 36: Proposed I-495 Inner Loop – Looking North toward C & O Canal (Shared Use Path Option 4)**





**Figure 37: Proposed Option: Direct C&O Canal Towpath Connection – C&O Canal Towpath looking toward I-495**



**Figure 38: Proposed Option: Direct C&O Canal Towpath Connection – C&O Canal Towpath looking West**





**Figure 39: Proposed Options 2 & 3: MacArthur Boulevard Connection – C&O Canal Towpath looking West**



**Figure 40: Proposed Option 4: MacArthur Boulevard Connection – C&O Canal Towpath looking West**





**Figure 41: Proposed Option: Direct C&O Canal Towpath – Looking North toward C&O Canal**



**Figure 42: Proposed Options 2 & 3: MacArthur Boulevard Connection – Looking Northwest**





**Figure 43: Proposed Option 4: MacArthur Boulevard Connection – Looking Northeast**

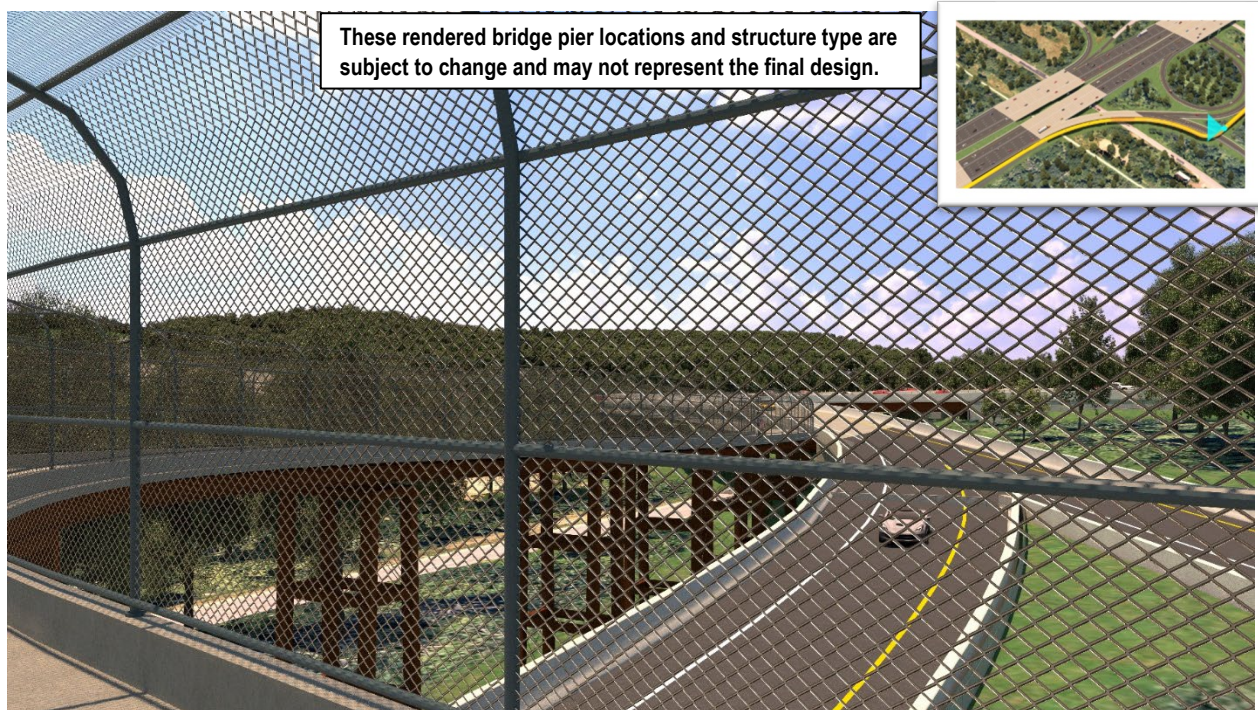


**Figure 44: Proposed Option: Direct C&O Canal Towpath – Looking South toward ALB**

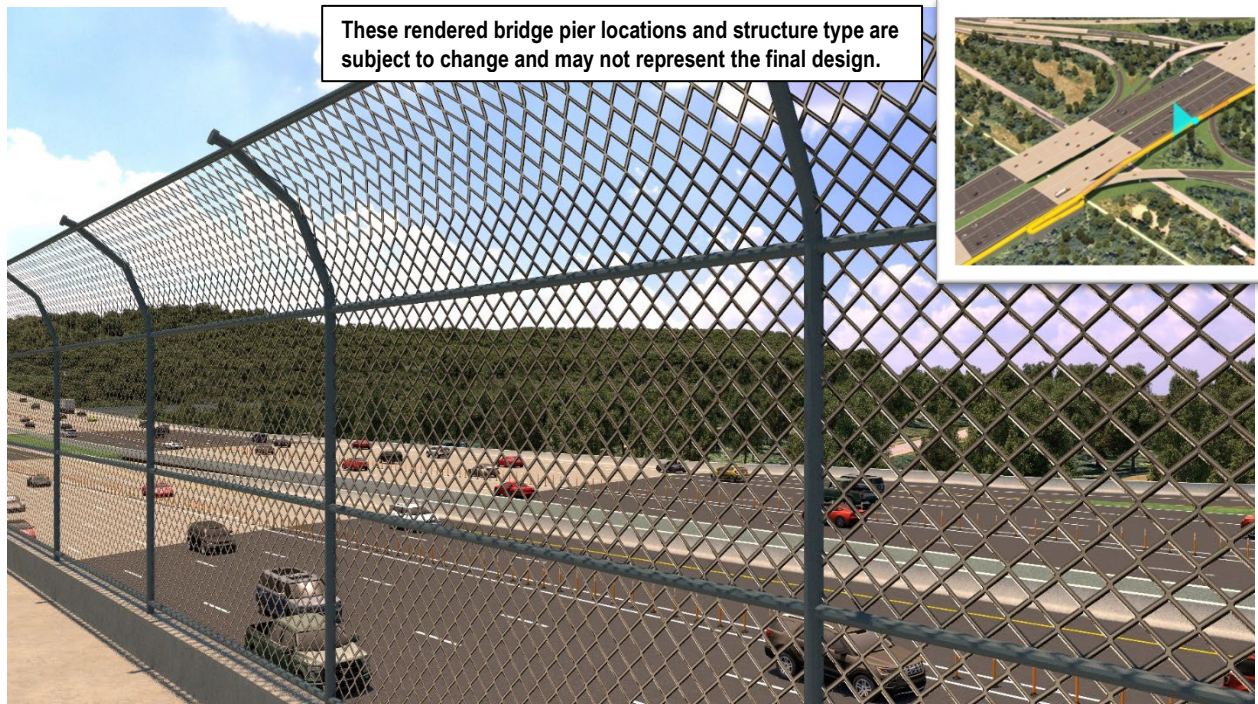




**Figure 45: Proposed Options 2 & 3: MacArthur Boulevard Connection – Looking Southwest toward ALB**

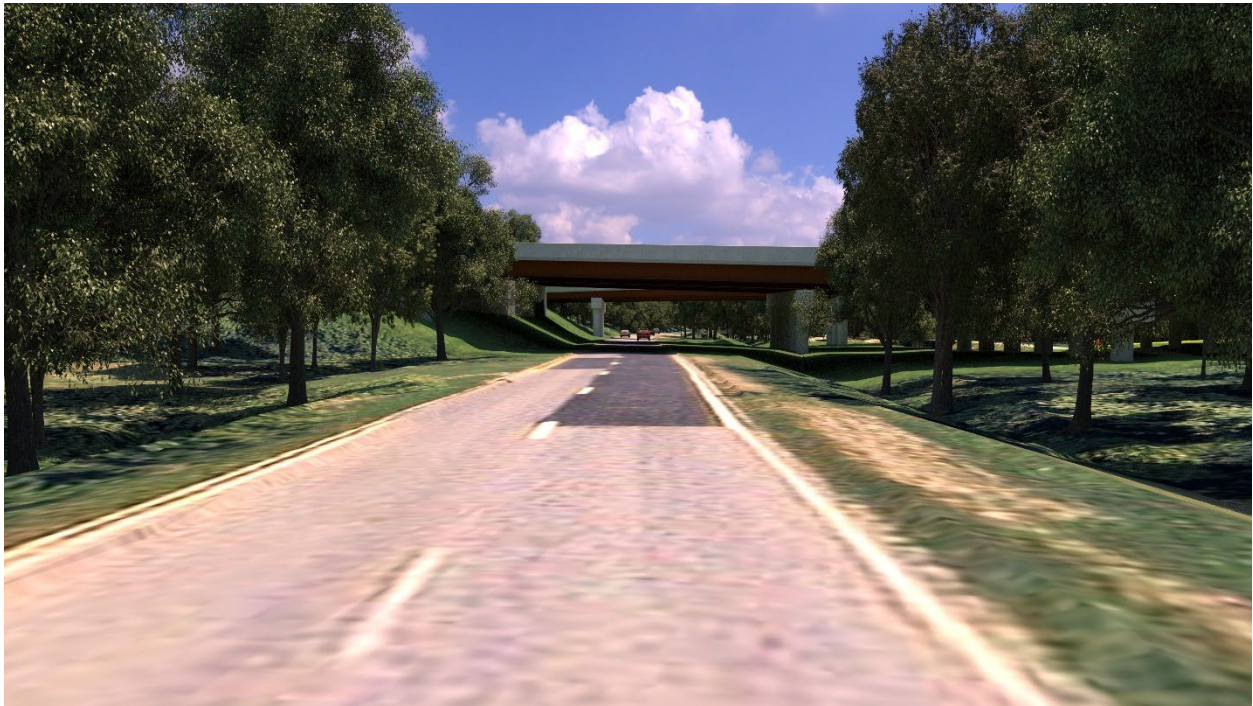


**Figure 46: Proposed Option 4: MacArthur Boulevard Connection – Looking Southwest toward ALB**

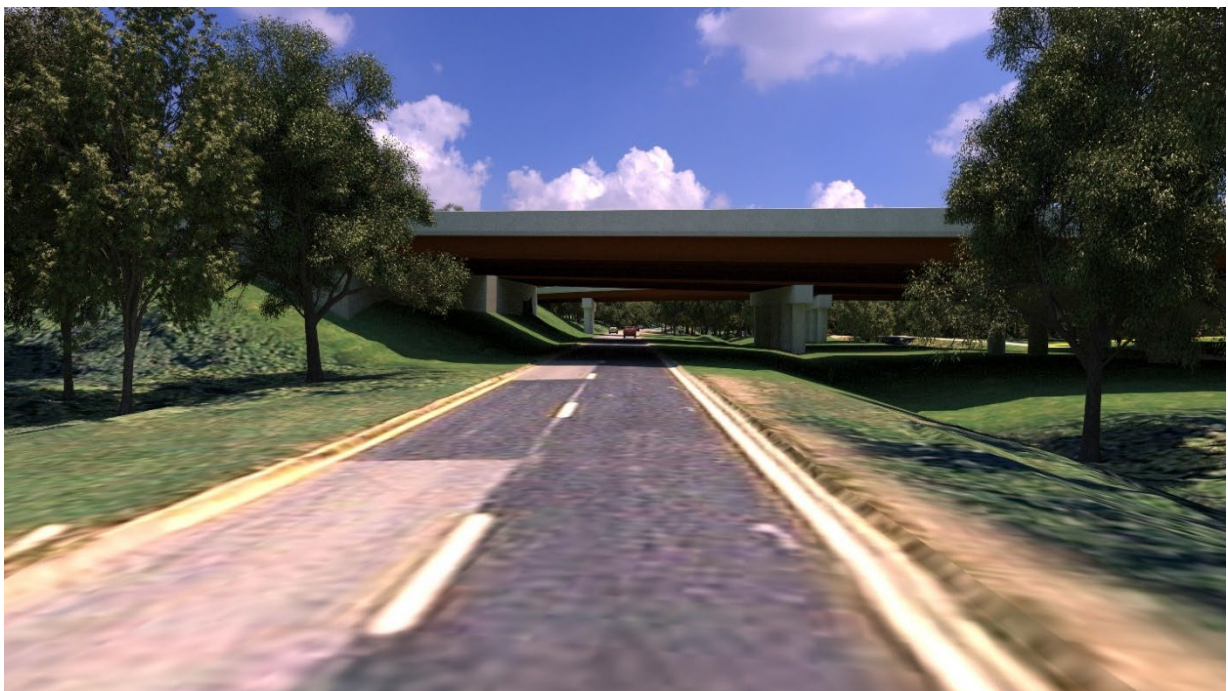




**Figure 47: Proposed Option: Direct C&O Canal Towpath Connection – Eastbound Clara Barton Parkway**



**Figure 48: Proposed Option: Direct C&O Canal Towpath Connection – Eastbound Clara Barton Parkway looking toward I-495**





**Figure 49: Proposed Options 2 & 3: MacArthur Boulevard Connection – Westbound Clara Barton Parkway looking West toward I-495**



**Figure 50: Proposed Option 4: MacArthur Boulevard Connection – Westbound Clara Barton Parkway looking West toward I-495**





## SEVEN LOCKS ROAD, NEAR CABIN JOHN STREAM VALLEY PARK, UNIT 2

**Figure 51: Existing I-495 Outer Loop approaching Seven Locks Road**



**Figure 52: Existing Seven Locks Road looking South at I-495 Bridge**





**Figure 53: Existing Cabin John SVP Trail South of I-495 – Looking North**



**Figure 54: Existing Cabin John SVP Trailhead North of I-495 - Looking South**





**Figure 55: Existing Morningstar property looking Northeast toward I-495**



**Figure 56: Existing Morningstar property looking West toward I-495**





**Figure 57: Existing Morningstar property looking North toward I-495**



**Figure 58: Proposed Cabin John SVP Trail looking North toward I-495, from the southside of the Inner Loop**





**Figure 59: Proposed Cabin John SVP Trailhead North of I-495 - Looking South**



**Figure 60: Proposed Morningstar property looking Northeast toward I-495**





**Figure 61: Proposed Morningstar property looking West toward I-495**



**Figure 62: Proposed Morningstar property looking North toward I-495**





## CABIN JOHN REGIONAL PARK – NEAR I-270 AND CAMPGROUND

**Figure 63: Existing I-270 near Cabin John Regional Park – Looking South**



**Figure 64: Existing Cabin John Regional Highway Loop Trail looking toward I-270**





**Figure 65: Proposed I-270 near Cabin John Regional Park – Looking South**



**Figure 66: Proposed Cabin John Regional Highway Loop Trail looking toward I-270**

