National Park Service
U.S. Department of the Interior

George Washington Memorial Parkway,
Chesapeake, and Ohio Canal National Historical Park,
and Clara Barton Parkway
Maryland

RECORD OF DECISION
I-495 & I-270 MANAGED LANES STUDY
ENVIRONMENTAL IMPACT STATEMENT

George Washington Memorial Parkway,

Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway

Maryland

INTRODUCTION

The Federal Highway Administration (FHWA) and the Maryland Department of Transportation State Highway Administration (MDOT SHA), pursuant to the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations at 40 CFR 1505.2, prepared their Final Environmental Impact Statement (FEIS)/Final Section 4(f) Evaluation and Record of Decision (ROD) for the I-495 & I-270 Managed Lanes Study (Study). The Study evaluated alternatives to address roadway congestion within the project area. The FHWA ROD approved the Preferred Alternative, Alternative 9 Phase 1 South, as their Selected Alternative, which includes improvements that will construct two new high-occupancy toll (HOT) managed lanes in each direction along I-495 and I-270 within the Phase 1 South limits, also referred to as the Project in this document. The limits of Phase 1 South follow I-495 from the George Washington Memorial Parkway in Virginia, 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. There is no action nor any proposed improvements included at this time on I-495 east of the I-270 east spur to MD 5. Additional detail on the Selected Alternative is provided in Chapter 3 of the FEIS, published on June 17, 2022, and is described in the FHWA ROD.

The FHWA served as the lead agency and MDOT SHA was the co-lead agency and local project sponsor. The National Park Service (NPS) served as a cooperating agency because FHWA and MDOT SHA's Selected Alternative required NPS approval for use of land from three units of the national park system: George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway (part of the George Washington Memorial Parkway). As a cooperating agency and in accordance with CEQ regulations at 40 CFR 1501.6, the NPS actively participated in the NEPA process for the Study. The FHWA signed its ROD for the Study on August 25, 2022. (Attachment A).

After consultation with FHWA and MDOT SHA and review of the FEIS and other NEPA documentation, the NPS, in accordance with 43 CFR 46.120, is adopting the I-495 & I-270 Managed Lanes Study FEIS and making its decision to authorize the use of land within the George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway as described in this ROD. The NPS concludes that the FEIS fulfills the requirements of NEPA and applicable implementing regulations (40 CFR 1500-1508) and meets the policies set forth in NPS Director's Order 12, *Conservation Planning, Environmental Impact Analysis and Decision-Making*, and the NPS 2015 NEPA Handbook.

This ROD documents NPS's decision to authorize the use of land from the George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway for the Selected Alternative, Alternative 9 – Phase 1 South, as described in the FEIS published on June 17, 2022, and as described in the FHWA ROD. That authorization will occur through an NPS Special Use Permit and a Highway Easement Deed. In consultation with the NPS, FHWA and MDOT SHA identified and committed to specific avoidance, minimization, and mitigation measures to reduce the impact of the Selected Alternative on the three NPS units listed above. This approval is conditional upon implementation of these mitigation measures and commitments relating to NPS lands and resources, as well as those listed in the FEIS, the FHWA's ROD, Statement of Findings, Section 4(f) determination, and the Programmatic Agreement between the FHWA, MDOT SHA, NPS, Virginia State Historic Preservation Officer, the Maryland State Historic Preservation Officer, and the Advisory Council on Historic Preservation.

The decision made by the NPS and documented in this ROD resulted from consultation efforts throughout the NEPA process, as well as the process outlined in Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 4(f) of the U.S. Department of Transportation Act. The NPS served as a consulting party for the Section 106 process and as an official with jurisdiction for Section 4(f).

This ROD includes a brief description of the Study's purpose, need, background, the role of the NPS, the Selected Alternative, and other alternatives considered; a statement of the NPS decision and basis for the decision; impacts and measures to minimize and mitigate harm to resources; and an overview of public involvement and agency coordination in the decision-making process. Attachments to this ROD include:

- Attachment A: Federal Highway Administration's Record of Decision
- Attachment B: Section 106 Programmatic Agreement
- Attachment C: Statement of Findings for Wetlands and Floodplains
- Attachment D: Section 4(f) Determination
- Attachment E: Determination of Non-Impairment

PURPOSE AND NEED

The Study purpose and need statement was developed collaboratively with other Federal, State, and local agencies and the public during the NEPA public scoping process, which included examination of multiple transportation and regional planning studies that had been conducted over the past 20 or more years and an analysis of the environmental and socioeconomic conditions of the region. The NPS concurred with the purpose and need on May 16, 2018.

The Study purpose is to address congestion, improve trip reliability on I-495 and I-270 within the study limits, and enhance existing and planned multimodal mobility and connectivity.

The needs for the Study are to:

- Accommodate Existing Traffic and Long-Term Traffic Growth
- Enhance Trip Reliability
- Provide Additional Roadway Travel Choices
- Improve Movement of Goods and Services
- Accommodate Homeland Security

Additional objectives of the Study were to incorporate environmentally responsible decision-making and to identify and utilize alternative funding sources to achieve financial viability. The NPS purpose of the I-495 & I-270 Managed Lanes Study action is to respond to FHWA and MDOT SHA's expressed need, as stated above, which would occur within lands under NPS jurisdiction.

BACKGROUND

I-495 and I-270 in Maryland are the two most heavily traveled freeways in the National Capital region. Concerns with congestion on I-495 and I-270 and plans to accommodate anticipated future growth have been the subject of numerous studies conducted by the MDOT SHA, Virginia Department of Transportation (VDOT), and regional planning agencies for many years. These studies reflect how the Washington metropolitan area has continued to experience considerable growth, including a population increase of 20.1 percent in Montgomery County between 2000 and 2020. Continued growth is anticipated as the Metropolitan Washington Council of Governments estimates that the population of this county will further increase approximately 16.3 percent between 2020 and 2045.

The previously completed planning studies demonstrated the need in the National Capital region for a synergistic system of transportation solutions. None of the various analyses supported the principle that any individual highway or transit option could alleviate traffic congestion or accommodate anticipated future demand, as is best summarized in the conclusion of the 2002 Capital Beltway/Purple Line Study which analyzed circumferential rail corridors (approximately 42 miles) along the Capital Beltway Corridor. It was also recommended that studies of the highway and transit alternatives be conducted separately because transit operates more efficiently if it serves areas where people live and work.

The Study was initiated in early 2018 with the publication of a Notice of Intent (NOI) to develop an Environmental Impact Statement followed by a formal public scoping period to determine the range of issues to be addressed by the Study. The Draft Environmental Impact Statement (DEIS) was published on July 10, 2020. A Supplemental DEIS (SDEIS) was published on October 1, 2021, to consider new information relative to the identification of the Preferred Alternative, Alternative 9 – Phase 1 South. The SDEIS refined analyses presented in the DEIS and provided new information while referencing the DEIS for information that remained consistent. The FEIS was published on June 17, 2022, and presented the final analyses completed for the Preferred Alternative, design refinements since the SDEIS, and responses to public and stakeholder comments on the DEIS and SDEIS. Design refinements, coordination, and consultation efforts over the course of the Study resulted in a Selected Alternative that significantly avoids and minimizes impacts to natural, cultural, and community resources compared to the DEIS Build Alternatives.

The Selected Alternative for the project, as described in the FHWA and MDOT SHA FEIS and ROD, proposes construction activities on lands under NPS jurisdiction: within the George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway. Descriptions of these resources are provided below.

Chesapeake and Ohio Canal National Historical Park

The Chesapeake and Ohio Canal National Historical Park is a publicly owned park and recreation area encompassing 19,628.10 acres. It 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. The Chesapeake and Ohio Canal National Historical Park became a unit of the NPS as a national monument in 1961 and was then established as a national park in 1971.

The Chesapeake and Ohio Canal National Historical Park was designated 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. It contains more than 1,300 historic structures, including one of the largest collections of 19th century canal features and buildings in the national park system.

The Chesapeake and Ohio Canal National Historical Park was listed in the National Register of Historic Places (NRHP) on October 15, 1966, prior to becoming a national historical park. A supplementary listing under the name "Chesapeake and Ohio Canal National Historical Park" was added to the NRHP on February 3, 2015. The Chesapeake and Ohio Canal National Historical Park is listed in the NRHP under Criteria A, C, and D. In addition to 455 contributing resources previously listed in the NRHP, the supplemental listing added 796 contributing resources comprising 106 buildings, 175 sites, 483 structures, and 32 objects.

George Washington Memorial Parkway

The George Washington Memorial Parkway is a publicly owned park that extends along the Potomac River from I-495 to Mount Vernon in Virginia. The George Washington Memorial Parkway is a scenic roadway honoring the nation's first president, and it protects and preserves cultural and natural resources along the Potomac River below Great Falls to Mount Vernon. Features within George Washington Memorial Parkway include the Potomac Heritage National Scenic Trail and Turkey Run Park conservation area. The park boundary of George Washington Memorial Parkway extends 38.3 miles and comprises approximately 7,300 acres including all administrative units and features.

George Washington Memorial Parkway is also a Historic District that was listed in the NRHP on June 2, 1995. It is historically significant under Criterion B for its association with the life of George Washington and Criterion C for its embodiment of the distinctive characteristics of a parkway.

Clara Barton Parkway

The Clara Barton Parkway is an administrative unit of George Washington Memorial Parkway. Clara Barton Parkway is an extension of the scenic roadway in Maryland and preserves cultural and natural resources where it extends 6.6 miles along the northern shore of the Potomac River between the Naval Surface Warfare Center at Carderock and the Chain Bridge in Washington, DC. The historic boundary in Maryland comprises 96.2 acres. Though Clara Barton Parkway has a separate historic boundary in Maryland, it is part of the larger George Washington Memorial Parkway Historic District.

SCOPE OF NPS RESPONSIBILITY

The NPS role is to decide whether to authorize the elements of the Selective Alternative that affect lands within NPS jurisdiction. These include the temporary use of land under its jurisdiction through a Special Use Permit for construction, and the permanent use of land under its jurisdiction through a Highway Easement Deed, pursuant to the authority of 23 U.S.C. 107(d), which will grant a non-exclusive easement to MDOT SHA for highway purposes so as to allow MDOT SHA to maintain and operate the Selected Alternative.

NPS DECISION (SELECTED ACTION)

The NPS will allow MDOT SHA, through an NPS Special Use Permit, to construct the Selected Alternative within the three NPS properties described above. Upon NPS concurrence with a Letter of Consent from

FHWA, the FWHA will develop and execute a non-exclusive Highway Easement Deed to MDOT SHA for highway purposes to allow for the operation and maintenance of structures built and developed under the Selected Alternative on NPS lands.

Selected Alternative Description

Selected Alternative outside of NPS Administered Properties - As described in the FEIS and FHWA ROD, the Selected Alternative consists of adding two new HOT managed lanes in each direction of I-495 from the George Washington Memorial Parkway to west of MD 187. The extent of work along I-495 between the I-270 west and east spurs is limited to west of MD 187. On I-270, the Selected Alternative consists of converting the one existing high-occupancy vehicle (HOV) lane in each direction to a HOT managed lane and adding one new HOT managed lane in each direction from I-495 to just north of I-370 and on the I-270 east and west spurs. The HOT managed lanes would be separated from the general-purpose lanes using flexible delineators placed within a buffer. Transit buses and HOV 3+ vehicles would be allowed toll-free passage in the HOT managed lanes.

Along I-270, the existing collector-distributor (C-D) lane separation from Montrose Road to I-370 will be removed as part of the proposed improvements. MDOT SHA included this proposed lane reconfiguration and repurposing of pavement on I-270 for the Build Alternatives in the DEIS to address the current imbalanced traffic utilization along the C-D Road segment and in response to public comments to keep the improvements within the existing pavement footprint. As a result, the amount of roadway widening along I-270 needed for the Selected Alternative is limited. MDOT SHA's ongoing I-270 Innovative Congestion Management (ICM) project is providing a series of improvements to address mobility and safety at key points along I-270, which are targeted to reduce congestion at bottlenecks along the corridor in the near future. Elements of the ICM that will be maintained within the Selected Alternative limits include ramp metering, an auxiliary lane added in both directions along the I-270 west spur and I-270 mainline up to Montrose Road, and the addition of auxiliary lanes in both directions along I-270 between the MD 189 and MD 28 interchanges.

Virginia's 495 Express Lanes Northern Extension (495 NEXT) project would extend the existing Express Lanes on I-495 in Virginia by approximately three miles from the I-495 and Dulles Toll Road interchange to the vicinity of the American Legion Bridge (ALB). The Selected Alternative will overlap and tie-in with the 495 NEXT improvements on I-495 at the George Washington Memorial Parkway interchange. MDOT has coordinated closely with the Virginia Department of Transportation (VDOT) to refine the preliminary design concept to consolidate and provide compatible movements at the interchange.

Selected Alternative within NPS Administered Properties - The Selected Alternative will require the use of land from the three units under NPS jurisdiction identified above: George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway. (FEIS, Chapter 5). MDOT SHA will implement the specific measures described in the "Minimization and Mitigation Measures" section of this ROD.

Within the George Washington Memorial Parkway, the Selected Alternative includes the construction, operation, and future maintenance of new direct access ramps to the managed lanes on I-495; the installation, operation, and future maintenance of electrical conduit and permanent signage to inform the travelling public of toll rates and operation of the facility; resurfacing of George Washington Memorial Parkway for maintenance of traffic during construction; construction of a shared use path for pedestrian and bicycle use along the I-495 inner loop; and construction and maintenance of a retaining wall. Impacts are summarized in Table 1 below. The Selected Alternative will result in temporary closure of the Potomac Heritage National Scenic Trail within the Limits of Disturbance (LOD) during construction. A detour route, if determined to be necessary and feasible, will be developed by MDOT SHA and the Developer in

coordination with NPS, Fairfax County, and VDOT. The segment of the trail within the LOD would be restored on a new alignment after construction is completed, if determined to be necessary. A total of 4.4 acres of impact will occur: 0.6 acres of permanent impacts and 3.8 acres of temporary impacts. Impacts to the George Washington Memorial Parkway by resource appear in Table 1.

Table 1: Impacts to George Washington Memorial Parkway for the Selected Alternative

Resource	Permanent	Temporary	Total
George Washington Memorial Parkway (acres)	0.6	3.8	4.4
Waters (sq feet)	129	424	553
Waters (linear feet)	5	42	47
Wetlands (acres)	0	0	0
Wetlands 25ft Buffer (acres)	0	0	0
Forest Canopy (acres)	0.30	1.48	1.78
Live Tree Impacts (#/DBH[a])	76/1,113	N/A	76/1,113
Standing Dead Tree Impacts (#/DBH)	9/113	N/A	9/113
FEMA 100-Year Floodplain (sq feet)	881	3,714	4,595
FIDS[b] (acres)	0.03	0.08	0.11
FIDS (DNR) (acres)	0	0	0
Rare, Threatened, and Endangered Species (# species impacted)	0		

[a]Diameter at breast height
[b]Forest Interior-dwelling Species' Habitat

Within the Chesapeake and Ohio Canal National Historical Park, the Selected Alternative includes construction of a temporary access road for vehicles, equipment, and materials needed to build the new ALB and remove the existing structure; reconstruction, operation, and maintenance of the I-495 northbound ramp to Clara Barton Parkway and the eastbound Clara Barton Parkway ramp to northbound I-495; and construction of a trail connection between a multi-use path on the east side of the new ALB and the C&O Canal towpath.

A total of 1.0 acres of the Chesapeake and Ohio Canal National Historical Park will be converted to permanent transportation use and 9.1 acres will be temporarily impacted during construction but will be rehabilitated after the construction activities have concluded. Park resources will be affected during construction of the new I-495 northbound and southbound bridges over the towpath, Canal, and eastbound Clara Barton Parkway, and during removal of the existing structures. Study impacts to the Chesapeake and Ohio Canal National Historical Park by resource appear in Table 2.

Access to the Chesapeake and Ohio Canal towpath will be maintained for pedestrian and bike traffic during construction and will be returned to its original condition upon completion of construction. The proposed construction access road would be horizontally offset from the Chesapeake and Ohio Canal towpath to separate pedestrian traffic from construction equipment and to minimize impacts to the historic towpath. Use of land on Plummers Island will be required for the new ALB substructure, including permanent use for three discrete, approximately 10-foot diameter pier foundations, and for temporary construction activities. Temporary construction activities may include efforts such as excavation, access for demolition of existing bridge foundation and piers adjacent to the island, and slope protection. Access to the existing and proposed piers is required for these activities.

The Selected Alternative includes the expansion of the ALB within the park boundaries, increasing visual and physical intrusions into the setting of the park and resulting in diminishment of the setting. Long-term

construction access and staging is also required, which will cause additional temporary diminishment of setting, feeling, and association for the duration of the construction.

Table 2: Impacts to Chesapeake and Ohio Canal National Historical Park for the Selected Alternative

Resource	Permanent	Temporary	Total
C&O Canal National Historical Park (acres)	1.0	9.1	10.1
Waters (sq feet)	14	7,171	7,185
Waters (linear feet)	11	1,094	1,118
Wetlands (acres)	0.17	0.35	0.52
Wetlands 25ft Buffer (acres)	0.38	0.21	0.59
Forest Canopy (acres)	0.74	5.69	6.43
Live Tree Impacts (#/DBH)[a]	815/10,148	N/A	815/10,148
Standing Dead Tree Impacts (#/DBH)	115/1,317	N/A	115/1,317
FEMA 100 Year Floodplain (sq feet)	33,230	293,190	326,420
FIDS[b] (acres)	0.32	1.87	2.19
FIDS (DNR) (acres)	0.38	4.71	5.09
RTEs (# species impacted)	6		

[a]Diameter at breast height
[b]Forest Interior-dwelling Species' Habitat

Within the Clara Barton Parkway, the Selected Alternative will include construction of a temporary access road for construction vehicles and materials to build the new ALB, removal of the existing ALB structure, reconstruction and maintenance of I-495 northbound ramp to Clara Barton Parkway and the eastbound Clara Barton Parkway ramp to northbound I-495. A total of 1.7 acres of impacts will occur: 1.1 acres of permanent impacts and 0.6 acres of temporary impacts. Study impacts to the Clara Barton Parkway by resource appear in Table 3.

Table 3: Impacts to Clara Barton Parkway for the Selected Alternative

Resource (unit)	Permanent	Temporary	Total
Clara Barton Parkway (acres)	1.1	0.6	1.7
Waters (sq feet)	0	0	0
Waters (linear feet)	0	0	0
Wetlands (acres)	0	0	0
Wetlands 25ft Buffer (acres)	0	0	0
Forest Canopy (acres)	0.92	0.65	1.57
Live Tree Impacts (#/DBH)[a]	270/3,429	N/A	270/3,429
Standing Dead Tree Impacts (#/DBH)	45/569	N/A	45/569
FEMA 100 Year Flood (sq feet)	0	0	0
FIDS[b] (acres)	0	0	0
FIDS (DNR) (acres)	0	0.01	0.01
RTEs (# species impacted)	0		

[a]Diameter at breast height
[b]Forest Interior-dwelling Species' Habitat

All other elements of the Selected Alternative are outside of NPS jurisdiction and are described in the FHWA FEIS and ROD.

As also documented in the Study 106 Programmatic Agreement, signed June 14, 2022, the NPS will continue to coordinate with FHWA, MDOT SHA, and the P3 Partner regarding the design and construction of the Study, including minimization and mitigation measures as they are related to land under the NPS jurisdiction.

ALTERNATIVES CONSIDERED

The CEQ regulations require a ROD to "identify alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives considered environmentally preferable." (40 CFR 1505.2) Through the NPS involvement in the NEPA, Section 106, and Section 4(f) processes, it considered multiple alternatives prior to identifying an environmentally preferable alternative in this ROD. The alternatives development and screening process for the Study followed five steps to narrow the Preliminary Range of Alternatives under consideration to the Preferred Alternative (FEIS page 2-1).

Preliminary Alternatives

Fifteen Preliminary Alternatives were identified from previous studies and planning documents, input from the public, and input from Federal, State, and local agencies during the NEPA scoping process. The Preliminary Alternatives consisted of the No Build Alternative as well as alternatives that included elements such as Transportation Systems Management (TSM)[1]/Transportation Demand Management (TDM)[2], additional general-purpose lanes, HOV lanes, priced managed lanes, C-D lanes, contraflow lanes, reversible lanes, and transit alternatives. Stand-alone transit options included three transit modes: heavy rail, light rail, and bus. Additionally, options were identified for alternatives that could be applied to either I-495 or I-270 as well as different transit modes. Some of the alternatives included lettered options which reflect whether the options were exclusively applicable to I-495 or I-270 or were related to a specific transit mode. Details regarding these Preliminary Alternatives can be found in the FEIS (Page 2-2).

Screened Alternatives

The Preliminary Alternatives were evaluated by applying the screening criteria established from the Study's purpose and need (as described in the FEIS, Chapter 2, Section 3), using a general, qualitative assessment of readily available information. An alternative was dropped from further consideration only if the available information demonstrated it clearly did not meet the Study's purpose and need. Screened Alternatives were identified as those that met the screening criteria or required additional analysis to determine their ability to meet the purpose and need.

As a result of the initial screening, seven alternatives were recommended to be advanced for further detailed analysis and 13 alternatives were dropped from further consideration. Alternatives 1, 5, 8, 9, 10, 13B, and 13C were recommended for further analysis and environmental evaluation as the Screened Alternatives.

Alternatives Retained for Detailed Study (ARDS) and Evaluated in the DEIS

In February 2019, the Screened Alternatives were presented to the public through the Study website via written documentation and a video. Additional engineering, traffic, financial, and environmental analyses were completed and used to determine the reasonableness of the Screened Alternatives to be carried forward

[1] TSM are actions that improve the operation and coordination of transportation services and facilities.
[2] TDM is a variety of strategies, techniques, or incentives aimed at providing the most efficient and effective use of existing transportation services and facilities (e.g., rideshare and telecommuting promotion, managed lanes, preferential parking, road pricing, etc.).

as the ARDS. The Recommended ARDS included all seven Screened Alternatives. For details on this process see the FEIS, Section 2.4.

Following the Cooperating Agencies' concurrence on the ARDS, MDOT SHA and FHWA evaluated an additional alternative, called Alternative 9 Modified (Alternative 9M), in response to public and agency input. Alternative 9M consisted of a blend of Alternatives 5 and 9 with the primary difference on the top side of I-495 between I-270 and I-95 being the addition of one managed lane per direction instead of two managed lanes. Alternative 9M was evaluated and determined to be a reasonable alternative, and thus was included as a Build Alternative in the DEIS. NPS concurred on the Revised ARDS document on October 28, 2019.

Selected Alternative

In January 2021, MDOT SHA identified Alternative 9 as the Recommended Preferred Alternative based on the results of traffic, engineering, financial, and environmental analyses, as well as public comment. However, after several months of further coordinating with agencies and stakeholders and reviewing public comments, FHWA and MDOT SHA identified a new Preferred Alternative: Alternative 9 – Phase 1 South. The agencies received many comments supporting the need to address improvements to the ALB, a major regional traffic bottleneck, as soon as possible; to avoid property displacements; to avoid and minimize public parkland impacts to the maximum extent practicable in compliance with Section 4(f) regulations; to coordinate with planned managed lane projects in Northern Virginia to provide a seamless regional managed lanes system; and to increase multi-modal transportation options in the study area. Alternative 9 – Phase 1 South, as documented in the SDEIS and updated in the FEIS, is the Selected Alternative discussed in this ROD. The Selected Alternative is the result of over four years of extensive collaboration with the public, stakeholders, and agencies and incorporates significant measures to avoid, minimize, and mitigate environmental impacts while addressing the staggering congestion that has plagued the National Capital Region for decades.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA documents. According to CEQ implementing regulations for NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative that "causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources." While the Selected Alternative does have non-park benefits, it does not meet the definition of environmentally preferable. The Selected Alternative will expand the presence of transportation infrastructure within lands under NPS jurisdiction that will have temporary and permanent impacts. Therefore, the environmentally preferred alternative is the No Build Alternative. However, the No Build Alternative will not meet the purpose and need of the Study as stated above and in the FEIS.

In comparison to the Build Alternatives presented in the DEIS, the Selected Alternative results in significantly fewer and less severe impacts to the three parks under NPS jurisdiction around the ALB. Regular, extensive coordination with NPS occurred since the DEIS to evaluate ways to avoid, minimize, and mitigate impacts to NPS-owned parklands and environmental resources within those parks. In the DEIS, Alternative 9 impacted 29.4 acres of these three properties, the SDEIS Preferred Alternative minimized impacts to 17 acres, and the FEIS Preferred Alternative further minimized impacts to 16.2 acres, of which 2.7 acres are considered permanent impacts and the remaining are considered temporary for construction purposes. Efforts to minimize impacts to these three parks under NPS jurisdiction, as discussed below, have been a focus of much attention by MDOT SHA and FHWA throughout the Study.

Basis for NPS Decision

In this ROD, the NPS has decided it will authorize the use of NPS land for the Selected Alternative within the George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway, conditional upon implementation of the mitigation measures and commitments relating to NPS lands and resources described in this ROD, as well as those listed in the FEIS, the FHWA's ROD, Statement of Findings, Section 4(f) determination, and the Programmatic Agreement between the FHWA, MDOT SHA, NPS, Virginia State Historic Preservation Officer, the Maryland State Historic Preservation Officer, and the Advisory Council on Historic Preservation. The basis for this decision is summarized below. The Selected Alternative best serves the purpose and need for the Study and will address congestion, improve trip reliability on I-495 and I-270 within the study limits, and enhance existing and planned multimodal connectivity. In relation to Section 4(f), there is no feasible and prudent avoidance alternative to the use of Section 4(f) resources and the Selected Alternative includes all possible planning to minimize harm. The Selected Alternative is the Build Alternative with least overall harm. Through extensive coordination, the design of the Selected Alternative was refined during the EIS process, where feasible and to the greatest extent practicable, to avoid or minimize impacts to historic and cultural resources, natural resources, and parkland within the three NPS properties. The Selected Alternative results in significantly fewer impacts to the three NPS properties as compared to the Build Alternatives presented in the DEIS. Where adverse effects of the Selected Alternative remain, MDOT SHA has committed to specific minimization and mitigation measures, developed in coordination with NPS, that are intended to offset remaining impacts to George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway. These commitments are described in this ROD, the FHWA ROD, the FEIS, and the Section 106 Programmatic Agreement.

The Selected Alternative was developed as an alternative to incorporate resource avoidance and minimization efforts based in part on extensive coordination with and input from agencies and stakeholders, including the OWJs for Section 4(f) properties. Comments received on the DEIS and Draft Section 4(f) Evaluation from agencies and stakeholders specifically requested avoidance of significant parkland and historic resources within the study area. The impacts associated with the Selected Alternative were avoided and minimized to the greatest extent practicable in all areas and avoidance and minimization techniques were specifically refined in some areas of sensitive or recreationally valuable resources.

The Selected Alternative results in significantly fewer and less severe impacts to the three NPS properties including a reduction of 13.2 acres, of which only 2.7 acres are considered permanent.

The MDOT SHA, FHWA, and NPS agreed it is appropriate that Section 4(f) impacts to Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway include areas that currently have an existing transportation use. The area within NPS property defined as transportation use includes existing I-495 at-grade roadway sections to the toe of slope, Clara Barton Parkway Interchange ramp sections to the toe of slope, existing pier locations for the structure over the Chesapeake and Ohio Canal National Historical Park and eastbound Clara Barton Parkway, and existing pier locations for the ALB. The Selected Alternative LOD accounts for structures over NPS land; however, these structures would not require a permanent acquisition of land, only an aerial easement.

The three NPS parks are also historic properties listed on the NRHP. Under the Selected Alternative, the Chesapeake and Ohio Canal National Historical Park (including Plummers Island), George Washington Memorial Parkway, and Clara Barton Parkway will experience an adverse effect to historic properties under Section 106 of the NHPA.

American Legion Bridge Strike Team

Avoidance and minimization measures focused on NPS properties around the ALB. The MDOT SHA and FHWA met with the NPS on December 8, 2020, to discuss the LOD in the vicinity of the ALB that was presented for the Build Alternatives in the DEIS. The NPS requested that MDOT SHA reassess the LOD in the vicinity of the ALB to reduce impacts to NPS land and its natural and cultural resources. Thereafter, MDOT SHA convened an "ALB Strike Team" composed of national and local experts on bridge design, natural resources, and cultural resources who were charged with the following mission: "To develop and evaluate alternatives for the replacement of the ALB to avoid impacts, to the greatest extent practicable, and reduce overall acreage impacts to the Chesapeake and Ohio Canal National Historical Park and George Washington Memorial Parkway units of the NPS." Plummers Island is part of the Chesapeake and Ohio Canal National Historical Park. An additional goal of the ALB Strike Team was to develop and evaluate alternatives for the avoidance and minimization of Plummers Island as it is a recognized ecologically sensitive and an NRHP-eligible historic property in addition to being part of the larger Chesapeake and Ohio Canal National Historical Park. Details about the ALB Strike Team can be found in pages 5-28 of the FEIS.

In coordination with NPS, the MDOT SHA, FHWA, and the ALB Strike Team undertook extensive efforts to reduce impacts in the vicinity of the ALB by evaluating alternative bridge designs and construction staging methods. Those efforts resulted in the elimination of a construction access area within George Washington Memorial Parkway that was previously proposed for a construction crane. A new interchange configuration removed roadwork from the George Washington Memorial Parkway mainline within the park boundary and a refined signing layout was developed to limit ground disturbance to only those areas where signs will be removed or placed and where electrical conduit must be installed. A retaining wall was included in the design adjacent to the proposed shared-use pedestrian path that runs parallel to I-495 to further reduce impacts. Within the Chesapeake and Ohio Canal National Historical Park, minimization measures included the elimination of one proposed access road east of I-495. An overall reduction in the LOD was achieved due to the ALB Strike Team analysis which resulted in a proposed construction method requiring less work area within the park relative to the DEIS. Impacts to Plummers Island were minimized by strategically locating the new piers near the existing piers, such that a single access method could be used for demolition of the existing structures and construction of the proposed structures. At Clara Barton Parkway, detailed construction evaluation resulted in the elimination of one proposed access road in the southwest quadrant of the bridge and Potomac River, just south of the Clara Barton Parkway.

The NPS considered MDOT's refinements to the Selected Alternative as well as the minimization and mitigation commitment to NPS and determined through application of the criteria in Section 1.4.5 of its 2006 Management Policies that implementing the Study's Selected Alternative on the three NPS parks will not cause impairment of their resources or values (Attachment E).

MITIGATION AND COMMITMENTS

Mitigation actions developed for this Study were identified to reduce, offset, and compensate for impacts to NPS resources resulting from the Selected Alternative. Identified mitigating actions include specific means to protect natural and cultural resources, replacement parklands, and various design and construction commitments described in greater detail below. MDOT SHA, FHWA, and the NPS worked together to identify and develop effective mitigation actions that will mitigate the impacts to park resources. The MDOT SHA, in coordination with the NPS, will continue to identify opportunities to avoid and minimize impacts throughout the remainder of the design process to the greatest extent practicable.

The following subsections describe the mitigation actions and commitments identified in the Study and agreed to by the NPS, FHWA, and MDOT SHA that apply to the three NPS properties as they relate to

resource protection, replacement parkland, design and construction commitments, the Section 106 Programmatic Agreement (PA), and the highway easement deed (FEIS, Section 7.2). Mitigation actions have been also documented in a mitigation agreement between the NPS and MDOT SHA (Attachment F).

Resource Protection

Measures to protect natural resources within NPS properties include the following, as described in the FEIS and FHWA ROD:

- Develop and implement a Comprehensive Ecological Restoration Plan and Cost Estimate for Restoring LOD to Preexisting Conditions for the impacted area. The plan shall include the following components:
    - Forest and terrestrial vegetation restoration including:
        - Avoiding and minimizing impacts to trees within and surrounding the LOD through a robust tree protection plan.
        - Surveying impacted vegetation community prior to construction to determine existing community composition and develop replanting plan based on survey results.
        - Replanting forest (including shrub and herbaceous layers) inch-for-inch within LOD in temporary impact areas and providing non-native invasive species control and maintenance and monitoring for 5 years within reforestation area.
        - 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.
        - Provide $750,365 for remaining tree impacts, based on inch-for-inch replacement of DBH impacted.
    - Rare, Threatened and Endangered plant species restoration including:
        - Conducting a final pre-construction RTE plant inspection.
        - Collecting seeds and/or individual RTE plant species from impact area prior to construction.
        - Cultivating plants and storing seeds/propagating plants from seed in an off-site nursery.
        - Reestablishing RTE species from stored seed and cultivated and propagated plants following construction and topsoil restoration.
    - Topsoil salvage and restoration including:
        - Salvaging topsoil from impact area and storing in nearest possible stockpile location.
        - Restoring subsoils and reducing compaction via ripping, discing, plowing or double digging following construction.
        - Placing salvaged topsoil in impact area following construction.
    - Herpetofauna translocation including:

        - Conducting herpetofauna relocation effort immediately prior to construction activities.
        - Conducting a sweep through a portion of the impact area with approximately 10 biologists searching for and capturing reptiles and amphibians and logging all captures.
        - Relocating captured individuals safely away from the impact area.
        - Conducting a second sweep through the same portion of impact area, logging all captures and relocating captured individuals.
        - Conducting a third sweep and relocate effort, if the number of captured individuals is not dramatically reduced and continue sweeping the portion of the work area until the number of captured individuals is minimal.
        - Continuing the multiple sweep process until the entire work area is cleared.
    - Downed woody debris salvage and restoration including:
        - Moving all downed woody debris from the impact area to the edge of the impact area just outside of the E&S measures as part of the clearing operation.
        - Restoring downed woody debris to the impact area, if appropriate, following construction and topsoil restoration.
- Create/restore 1.53 acres of wetland northwest of American Legion Bridge per the Wetland Statement of Findings.
- Contribute an amount equal to the fair market value (valued at $2,350,000.00) of James Audia property toward the scope and repairs identified in the Class C cost estimate for the repair and rehabilitation of the historic locks and bypass flumes with the Seven Locks area of the C&O Canal NHP, between locks 8 and 14.

Replacement Parkland

Acquisition of replacement parkland for impacts to NPS properties includes the following, as described in the FEIS and FHWA ROD (FEIS, Section 5.4.4):

- Convey a portion of the MDOT SHA owned former Ridenour property (38.7 acres) to the NPS as replacement parkland for impacts to Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway.

MDOT will provide replacement land by donation to the United States.

Design and Construction Commitments

Design and construction-related commitments include the following, as described in the FEIS and FHWA ROD:

- Install new white legend and border on brown background guide signs along I-495 for the George Washington Memorial Parkway exit.
- Shift bridge piers north of Lock 13 to the maximum extent possible while maintaining adequate vertical clearance of 12 feet, 6 inches, between towpath and bottom of bridge steel to accommodate NPS equipment. Design new ALB to capture all drainage outfall using downspouts. The downspouts will be located so the water does not drop onto areas with frequent pedestrian use.
- Complete a pre-construction condition assessment and develop construction drawings with Class C cost estimates for the repair and rehabilitation of the historic locks and bypass flumes within the

Seven Locks area of the Chesapeake and Ohio Canal National Historical Park, between Locks 8 and 14. Copies of the assessment will be provided to the NPS and to the Maryland State Historic Preservation Officer. MDOT SHA will contribute $4 million towards the scope and repairs identified in the assessment. Develop interpretive product on archeological sites; create web-based story map, waysides, and/or brochures.

- Complete a pre-construction condition assessment of Potomac Heritage Trail within the LOD and develop and implement a plan to improve the trail within the LOD.
- Prepare Visitor and Ecological Impact Study.
- Provide monetary compensation up to $60,000 to update and refine the George Washington Memorial Parkway Climate Action Plan.
- Develop a detour for the section of the Potomac Heritage National Scenic Trail, within the LOD, that will be temporarily closed during construction. The segment of the trail within the LOD will be restored on a new alignment after construction is completed.
- 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, within the LOD.
- Design and construct, in coordination with NPS and the Washington Biologists' Field Club, slope armoring along the upstream side of Plummers Island to mitigate for future slope erosions as a result of tree clearing with the LOD. The slope armoring could include but is not limited to a rip-rap slope, live staking, and brush layering or any combination of armoring that will provide a blended natural aesthetic with the topography and historic nature of the island.
- Develop and evaluate additional options for the ALB during final design that would further minimize or avoid physical impact to Plummers Island.

Commitments from Section 106 Programmatic Agreement

Commitments listed in the Section 106 Programmatic Agreement, which is included as **Attachment B**, that pertain to the NPS properties include the following. MDOT SHA will be responsible for implementation of the following commitments during final design and development of the Project.

1. **George Washington Memorial Parkway (including Clara Barton Parkway)**

MDOT SHA will continue property-specific Design-Review consultation with NPS and State Historic Preservation Offices (SHPOs) to ensure a context-sensitive design for new facilities, and through the ongoing design process minimize, to the extent practicable, impacts to character-defining features and resources that contribute to the George Washington Memorial Parkway/Clara Barton Parkway as a historic property. Key elements for NPS review include the bridge design, trail connections, retaining walls, ramp improvements, signage plans and barrier. MDOT SHA will provide NPS and SHPOs a comment opportunity on plans at a draft level of design and a second opportunity prior to finalization of design, for elements on NPS property or within the area of potential effects (APE) adjacent to NPS property; for each review there will be a minimum 30-day review period. In the event of objections relating to the final design from NPS or SHPOs that cannot be resolved, MDOT SHA and FHWA will follow Stipulation XIII of the PA.

MDOT SHA will provide funding in an amount not to exceed $250,000 for a Cultural Landscape Report (CLR) for Clara Barton Parkway. The CLR will include historical narrative, updated existing conditions and analysis and evaluation, and treatment guidelines for management of character-defining features. NPS will complete the CLR within five (5) years of receipt of funds from MDOT SHA and provide a copy of

the completed CLR, along with a summary of implementation of any treatment measures in a timely manner following their implementation, to MD SHPO and MDOT SHA.

2. Dead Run Ridges Archaeological District (44FX3922) and individual sites

In consultation with VA SHPO, NPS, and other appropriate consulting parties including consulting Tribes, MDOT SHA will develop and implement Phase III data recovery on sites 44FX0374, 44FX0379, 44FX0389 and the Dead Run Ridges Archaeological District (44FX3922) as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

MDOT SHA will prepare a NRHP nomination form for the Dead Run Ridges Archaeological District, no later than 12 months following finalization of the report documenting the Phase III data recovery in Stipulation V.B.1, basing the nomination on the report findings. MDOT SHA will provide a copy of the draft nomination to NPS staff for review and comment prior to formal submission of the draft nomination to VA SHPO. MDOT SHA will work with VA SHPO's Register Program to develop a final draft nomination for the Dead Run Ridges Archaeological District, and VA SHPO's Register Program will process the final draft for listing in the NRHP pursuant to its established policies and procedures. The Department of Historic Resources State Review Board is under no obligation to approve the nomination for listing in the NRHP. Should the nomination be unsuccessful, or additional information be requested beyond the scope of the completed data recovery efforts, it will not be required to complete further fieldwork or analysis beyond what is agreed to in the treatment plan specified in Stipulation VI, or otherwise pursue nomination of the district.

3. Chesapeake and Ohio Canal National Historical Park

MDOT SHA will continue property-specific Design-Review consultation with NPS to ensure a context-sensitive design for new facilities constructed as part of the Project, and, through the ongoing design process, minimize to the extent practicable impacts to character-defining features and resources that contribute to the Chesapeake and Ohio Canal National Historical Park as a historic property. MDOT SHA will provide NPS and MD SHPO a comment opportunity on design plans at a draft level of design, and a second opportunity prior to finalization of design for elements within the APE on or adjacent to NPS property; for each review there will be a minimum 30-day review period. In the event of objections from NPS or MD SHPO that cannot be resolved relating to the final design, MDOT SHA and FHWA will follow Stipulation XIII of the PA.

MDOT SHA will locate new bridge piers away from Lock 13 as part of the new Clara Barton Parkway Bridge and will avoid placing piers for the new structure closer to Lock 13 than the current bridge piers, as shown in the Selected Alternative.

MDOT SHA will protect Lock 13 in place during construction, by limiting LOD around the lock structure and providing an appropriate buffer to prevent damage. MDOT SHA will rehabilitate or restore the structure if needed following construction, with treatment determined by or in consultation with NPS and MD SHPO as described in Stipulation V.C.4 and VC.5. As part of the Archaeological Treatment Plan in Stipulation VI, MDOT SHA will include archaeological monitoring or other treatment approaches during construction in the area around Lock 13.

MDOT SHA will conduct a condition assessment of lock structures, the Canal and the Towpath within the Project LOD prior to construction and provide copies of the assessment to MD SHPO and NPS. MDOT SHA will provide for rehabilitation of lock structures, the Canal, and Towpath within the Project LOD

following completion of substantial construction within the affected area. MDOT SHA will provide NPS and MD SHPO with a draft rehabilitation plan for review and comment prior to implementing the plan.

MDOT SHA will provide for vibration damage monitoring of other susceptible historic structures at Chesapeake and Ohio Canal National Historical Park within the APE during construction, specifically, Lock 12 and Lock 14. Additional vulnerable structures or features (such as masonry walls) to be monitored may be identified in consultation with NPS during the preparation and review of the condition assessment identified in Stipulation V.C.4.

- Should notable acute or incremental damage directly resulting from construction means or methods be identified as a result of the vibration monitoring, MDOT SHA will follow Section A of the Inadvertent Discovery Plan.
- General wear or degradation of the historic fabric during construction that is not attributable to specific construction practices or incidents will be remediated by the rehabilitation plan in Stipulation V.C.4.
- 18MO749 Archaeological Site (C&O Canal)
    - In consultation with the MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery and associated public interpretation commitments as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.
- 18MO751 Archaeological Site (C&O Canal)
    - In consultation with the MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.
- Plummers Island
    - MDOT SHA will prepare a NRHP Nomination for the Washington Biologists' Field Club on Plummers Island. Provide a copy of the draft nomination to NPS staff and the Washington Biologists' Field Club for review prior to submittal to MD SHPO and address any comments prior to formal submission of the nomination. Should the nomination be unsuccessful, it will not be required to resubmit the nomination or otherwise complete additional studies or research after addressing comments by NPS staff.
    - MDOT SHA will place temporary fencing along the LOD within Plummers Island to delimit construction activities.
    - MDOT SHA will fund or implement a photographic survey documenting conditions before, during and after construction is completed adjoining Plummers Island, within the APE boundary, and provide the results to Washington Biologists' Field Club and NPS.
    - MDOT SHA will fund or develop GIS maps to document known current and historical study locations and key natural resource features within the APE to assist in documenting change over time and provide these files to Washington Biologists' Field Club and NPS.
    - MDOT SHA will procure a sub-meter accurate GPS unit for Washington Biologists' Field Club to use in long-term monitoring of plant locations, collection sites, and other historical research features.
    - MDOT SHA, subject to any availability or rights restrictions, will provide for digitization and cataloging of historical records related to the Washington Biologists' Field Club that

are under the control of Washington Biologists' Field Club but housed at the Smithsonian Museum of Natural History, specifically the collection, "SIA RU102005, Smithsonian Institution, Washington Biologists' Field Club, circa 1900-1966 Records" that are not currently available in electronic format, and provide the files to Washington Biologists' Field Club and NPS.

- MDOT SHA will provide Washington Biologists' Field Club historical content, such as a synthesis of these digitized materials to incorporate into their website.
- MDOT SHA will complete these Plummers Island stipulations, other than those requiring longer timeframes (such as photographic survey after construction), unless continued consultation should necessitate a longer timeframe, within two (2) years of commencement of construction activities on Plummers Island.

HIGHWAY EASEMENT DEED

The FHWA will officially request use of the lands for the highway via a Request for a Letter of Consent. Following the NPS's concurrence with a Letter of Consent from FHWA, the FHWA will develop and execute a non-exclusive Highway Easement Deed for highway purposes to MDOT SHA to allow for the use of approximately 2.7 acres of NPS parkland (1.0 acres Chesapeake and Ohio Canal National Historical Park, 1.1 acres Clara Barton Parkway, and 0.6 acres George Washington Memorial Parkway) for highway purposes. The execution of a Highway Easement Deed will be done in compliance with 23 U.S.C. 107(d), which authorizes the FHWA to arrange with Federal agencies to provide rights-of-way to State DOTs whenever such rights-of-way are required for the Interstate System, and NPS Director's Order #87D: Non-NPS Roads, which sets forth NPS operational policies and procedures for responding to requests for use of national parks for non-NPS highway projects under this authority.

PUBLIC AND AGENCY INVOLVEMENT IN THE EIS PROCESS

Public and agency involvement has had an essential role in the design and planning of the Study. As a Cooperating Agency and in accordance with CEQ regulations (40 CFR 1501.8), NPS actively participated in the NEPA process for the Study that culminated in the FEIS and this ROD. Details of public engagement for the Study can be found in the FEIS, Chapter 8.

Public Scoping

The Study's public involvement efforts began immediately after the publication of the NOI in the *Federal Register* on March 16, 2018, announcing initiation of the Study. Following the NOI, public involvement efforts were organized by subsequent engagement stages: Scoping, Preliminary Alternatives, and ARDS. Sixteen public workshops were held along the study corridors in Montgomery and Prince George's Counties, four of which were for Scoping, four of which were for the Preliminary Alternatives, and eight of which were for the ARDS. In the workshops, attendees were able to assess Study information, ask questions, and provide comments to agency officials. Comment periods were assigned for each series of Public Workshops. The Scoping comment period occurred from March 16, 2018, to May 1, 2018; the Preliminary Alternatives comment period occurred from July 17, 2018, to August 27, 2018; and the ARDS comment period occurred from April 11, 2019, to June 14, 2019.

Public Review of the DEIS

The DEIS was published on July 10, 2020, and was made available on the I-495 & I-270 Public-Private Partnership (P3) Program webpage (https://oplanesmd.com/DEIS/) and on the U.S. Environmental Protection Agency (USEPA) EIS Database webpage. The DEIS was also available to view in hard copy at multiple locations along the study corridors in Montgomery and Prince George's Counties in Maryland,

Fairfax County in Virginia, and Washington, DC. The DEIS comment period lasted 123 days, from July 10, 2020, to November 9, 2020. Four virtual hearings and two in-person hearings were held during the DEIS comment period. In addition to verbal testimony, opportunities to comment were also provided through an online comment form, email, written comment form, letters, and voicemail.

Public Review of the SDEIS

The SDEIS was published on October 1, 2021 and was made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/sdeis/), USEPA EIS Database webpage, and in 18 public libraries in Montgomery, Prince George's, and Fairfax Counties and Washington DC. MDOT SHA and FHWA granted a 15-day extension of the public comment period for the SDEIS, which lasted 60 days from October 1, 2021, to November 30, 2021. A virtual public hearing with two sessions was held during the SDEIS comment period. In addition to verbal testimony, opportunities to comment were also provided through an online comment form, email, letters, and voicemail.

Public Review of the FEIS

The FEIS was published on June 17, 2022, and was made available on the I-495 & I-270 P3 Program webpage, USEPA EIS Database webpage, and in 17 public libraries in Montgomery, Prince George's, and Fairfax Counties and Washington DC. The FEIS was made available for a 30-day review period. The FEIS responded to over 5,000 public and agency comments received on the DEIS and SDEIS.

Additional Stakeholder Coordination

Since the time of DEIS publication in July 2020, MDOT SHA extensively coordinated with NPS, hosting more than 30 meetings and 10 Section 106 Consulting Parties meetings to review and discuss the impacts associated with the NPS properties. The Washington Biologists' Field Club (WBFC) on Plummers Island, located entirely within Chesapeake and Ohio Canal National Historical Park, participated in many of those coordination meetings. Plummers Island will experience impacts from the Selected Alternative; however, impacts were significantly reduced in scope and severity over the duration of the study when compared to the other Build Alternatives, owing to the efforts of the American Legion Bridge Strike Team and the agencies. MDOT SHA and the Developer will continue to coordinate with NPS and the WBFC to minimize and mitigate potential impacts to the island and its resources.

In addition to the formal public reviews, MDOT SHA attended over 200 meetings with stakeholders and communities during the study. MDOT SHA met with VDOT and other Virginia agencies numerous times, attended public hearings in Virginia, and coordinated with Fairfax County and McLean, Virginia, where hard copies of the DEIS, SDEIS, and FEIS were housed for public review.

Agency Coordination

As documented in the FEIS and FHWA ROD, the Federal, State, regional, and local agencies, as well as the adjacent counties, Metropolitan Planning Organizations, and other stakeholders were actively engaged throughout the Study, simultaneously with other public involvement efforts. NPS served as a Cooperating Agency and was involved in the process from Scoping through the FEIS. Meetings focused on discussing comments from agencies and stakeholders and working toward a resolution of critical Study topics. As a result of this continuous and extensive coordination effort, MDOT SHA was able to address many agency and stakeholder comments on the DEIS and SDEIS by choosing a Selected Alternative that avoids significant impacts to natural, cultural, and historic resources and by refining the design to further avoid and minimize impacts to resources. As mentioned above, NPS served as a consulting party for the Section 106 process and as an OWJ for Section 4(f).

REGULATORY AGENCY AND OTHER CONSULTATION

U.S. Department of Transportation Act - Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966, 49 U.S.C. 303(c), is a Federal law that protects publicly owned parks, recreation areas, wildlife and/or waterfowl refuges, as well as significant historic sites, whether publicly or privately owned. FHWA cannot approve a transportation project that uses a Section 4(f) property as defined in 23 CFR 774.17, unless FHWA determines that:

- There is no feasible or prudent avoidance alternative to the use of land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 774.3(a)); or
- The use of the Section 4(f) property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a *de minimis* impact on the property (23 CFR 774.3(b)).

Section 4(f) applies to all transportation projects that require funding from the U.S. Department of Transportation (USDOT). As a USDOT agency, and because the Selected Alternative will use portions of several properties protected by Section 4(f) including George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway, FHWA completed a Section 4(f) evaluation as part of the Study in accordance with the Section 4(f) regulations at 23 CFR Part 774.

The NPS properties qualify as Section 4(f) resources because they are publicly owned parks and historic properties that are listed on the NRHP. The Selected Alternative will permanently use 0.6 acres of George Washington Memorial Parkway, 1.0 acres of Chesapeake and Ohio Canal National Historical Park (including 0.1 acres of Plummers Island), and 1.1 acres of Clara Barton Parkway to accommodate the Selected Alternative right-of-way. The Selected Alternative will temporarily use 3.8 acres of George Washington Memorial Parkway, 9.1 acres of Chesapeake and Ohio Canal National Historical Park (including 0.27 acres of Plummers Island), and 0.6 acres of Clara Barton Parkway during construction.

As an Organization with Jurisdiction for the Section 4(f) properties and as a NEPA Cooperating Agency, NPS coordinated with FHWA and MDOT SHA to refine the Selected Alternative design. This refinement process resulted in a design that minimizes impacts to the NPS properties in the vicinity of the ALB and provides appropriate mitigation and commitments for the remaining impacts. Based on the considerations in the FEIS and Final Section 4(f) Evaluation, there is no feasible and prudent avoidance alternative to the use of Section 4(f) resources and the Selected Alternative includes all possible planning to minimize harm. The Selected Alternative is the alternative with least overall harm.

National Historic Preservation Act – Section 106

Assessment of the Study's impacts to historic properties was completed in compliance with Section 106 of the NHPA of 1966, as amended (54 U.S.C. 306108), and its implementing regulations (36 CFR Part 800). These regulations outline a consultation process with specific parties to complete the required review: NPS served as a consulting party throughout the Study's Section 106 process.

An effect to a historic property occurs when there is an alteration to the characteristics of an historic property qualifying it for inclusion in or eligibility for the NRHP (36 CFR 800.16(i)). An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association (36 CFR 800.5(a)(1)).

Properties under NPS jurisdiction that will experience an adverse effect from the Selected Alternative include Chesapeake and Ohio Canal National Historical Park, George Washington Memorial Parkway, Clara Barton Parkway, and Plummers Island.

In a letter dated March 12, 2020, the Maryland Historical Trust (MHT) concurred with the adverse effects determination for the Study as well as the need for further Phase I and II archeological investigation in specified areas. Further, on October 8, 2021, MHT concurred with MDOT SHA's eligibility determination and finding of adverse effect for Plummers Island.

Due to the complexity of the Study and current state of design, MDOT SHA and FHWA will conclude the Section 106 process through execution of a Programmatic Agreement. MDOT SHA and FHWA have worked with NPS to mitigate the adverse effects through development of appropriate mitigation measures, as described above, which are detailed in the PA. MDOT SHA will oversee implementation of the PA as the project continues, following the ROD.

Wetlands Statement of Findings

Executive Order (EO) 11990, "Protection of Wetlands," issued May 24, 1977, directs all Federal agencies to avoid to the maximum extent possible the long- and short-term adverse impacts associated with the occupancy, destruction, or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. In the absence of such alternatives, NPS must modify actions to preserve and enhance wetland values and minimize degradation.

To comply with EO 11990 within the context of the agency's mission, NPS developed a set of policies and procedures in Director's Order (DO) 77-1: Wetland Protection and Procedural Manual #77-1: Wetland Protection. This policy and related procedures emphasize: 1) exploring all practical alternatives to building on, or otherwise adversely affecting, wetlands; 2) reducing impacts to wetlands whenever possible; and 3) providing direct compensation for any unavoidable wetland impacts by restoring degraded or destroyed wetlands on other NPS properties. If a Selected Alternative would have adverse impacts on wetlands, a Statement of Findings (SOF) must be prepared that documents the above steps and presents the rationale for choosing an alternative that would have adverse impacts on wetlands. The Study's Final Wetland and Floodplain SOF (Attachment C) includes wetlands within NPS park boundaries that would be affected by the Selected Alternative. The results are summarized below.

Despite efforts to avoid and minimize impacts to wetlands on NPS lands, impacts are unavoidable due to the extensive network of features that are located adjacent to and flow beneath the existing roadway. The Selected Alternative will result in unavoidable short- and long-term impacts to NPS wetlands that are greater than 0.1 acres total and will therefore require mitigation. Wetland compensation requirements were determined based on guidelines in Section 5.2.3 of the Procedural Manual #77-1: Wetland Protection. Replacement ratios for each NPS wetland were determined based on the impact type and functional loss of each feature.

Based on the impact replacement ratios, a total of 0.90 acres of wetland mitigation is required to compensate for unavoidable impacts of the Selected Alternative. In collaboration with NPS, MDOT SHA identified a 1.49-acre wetland proximate to the Study area that will be restored, ultimately exceeding the wetland mitigation requirement of 0.90 acres. The wetland site is located in Montgomery County, Maryland, within the Chesapeake and Ohio Canal National Historical Park, just northwest of the ALB. Restoration of the proposed wetland site will provide full replacement of NPS wetland functions and values that will be lost due to the proposed Project.

A detailed wetland mitigation plan and appropriate State and Federal permits will be required for the proposed mitigation effort. These documents will be prepared when design and survey efforts have been completed for the site. The funding source for the restoration project will be the applicant (MDOT SHA) which is consistent with the funding source restrictions listed in Procedural Manual #77-1; therefore, the NPS commitment for funding the compensatory restoration will meet the requirements of Section 5.2.3, paragraph 6 of Procedural Manual #77-1. Long-term monitoring plans of the restored mitigation site will be required and will be created, implemented, and funded by MDOT SHA.

The Study is in compliance with NPS DO #77-1. The Study has avoided and minimized impacts to wetlands to the greatest extent practicable and has provided a SOF that presents the unavoidable impacts to wetlands on NPS land resulting from the Selected Alternative and a proposed compensatory mitigation plan that would result in No Net Loss of wetland functions and values on NPS lands.

Floodplain Statement of Finding

EO 11988, "Floodplain Management," issued May 24, 1977, USDOT Order 5650.2, "Floodplain Management and Protection", and the National Flood Insurance Act of 1968 govern the construction and fill of floodplains to ensure proper consideration to the avoidance, minimization, and mitigation of floodplain development and associated adverse effects.

Despite efforts to avoid and minimize impacts to floodplains on NPS lands, the Selected Alternative will result in unavoidable short- and long-term impacts to floodplains within NPS properties totaling 331,015 square feet (Tables 1-3). Work within floodplains on NPS lands must adhere to NPS Floodplain Management DO #77-2 unless exempted. Floodplain approvals will be obtained by the appropriate jurisdiction. Pursuant to EO 11988 and the NPS Procedural Manual 77-2: Floodplain Management, MDOT SHA evaluated flooding hazards related to the proposed project in the Study's Final Wetland and Floodplain SOF.

The Study is in compliance with NPS DO #77-2. The Study has avoided and minimized impacts to floodplains to the greatest extent practicable and has provided a SOF that presents the unavoidable impacts to floodplains on NPS land resulting from the Selected Alternative. Floodplain mitigation will not be required for the unavoidable impacts to floodplains on NPS land resulting from the Selected Alternative as they are exempt based on the project will not have a net sum increase to human safety. The Study will comply with the National Flood Insurance Program and will not increase flooding on NPS land.

CONCLUSION

As documented in the FEIS and ROD, the following key factors support implementation of the Selected Alternative:

- The Selected Alternative will meet the Study's purpose and need. In particular, the Selected Alternative will address congestion, improve trip reliability on I-495 and I-270 within the Study limits, and enhance existing and planned multimodal connectivity.
- The Selected Alternative, where feasible and to the greatest extent practicable, avoids, minimizes, or mitigates impacts to George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway.
- NPS issuance of construction permits based on the Selected Alternative will be conditional upon MDOT SHA enacting the extensive mitigation measures as described in the FEIS. These measures will be required to avoid, minimize, and mitigate impacts to environmental resources on the three NPS properties.

The FHWA ROD presented the basis for the decision to identify Alternative 9 – Phase 1 South as the Selected Alternative and identified the environmental commitments that will be incorporated into the Study before, during, and after construction.

The NPS has determined that the Selected Alternative approved in this ROD is the same as the Selected Alternative covered in the FHWA ROD and has concluded that its comments and suggestions have been satisfied. Therefore, this ROD can be issued without recirculating the Study's FEIS under 40 CFR 1506.3 (b). The officials responsible for implementing the selected action are the Superintendent of George Washington Memorial Parkway and the Superintendent of Chesapeake and Ohio Canal National Historical Park.

Based upon the above considerations, the NPS, in cooperation with FHWA and MDOT SHA, approves the Selected Alternative for the I-495 & I-270 Managed Lanes Study for implementation.

KIMBERLY HALL

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03/20/2024

Kym A. Hall
Regional Director
National Capital Region

Date

Attachment A: Federal Highway Administration's Record of Decision
Attachment B: Section 106 Programmatic Agreement
Attachment C: Statement of Findings for Wetlands and Floodplains
Attachment D: Section 4(f) Determination
Attachment E: Determination of Non-Impairment
Attachment F: Mitigation Agreement

Attachment A

U.S. Department of Transportation

Federal Highway Administration

Maryland Division

RECORD OF DECISION

I-495 & I-270 Managed Lanes Study
Montgomery and Prince George's Counties, Maryland
and Fairfax County, Virginia

Federal Highway Administration, Maryland Division

10 South Howard Street, Suite 2450
Baltimore, MD 21201

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and Fairfax County, Virginia

I. Decision

This Record of Decision (ROD) was prepared in accordance with National Environmental Policy Act (NEPA) (42 USC § 4321 et seq.), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500 to 1508), and the Federal Highway Administration (FHWA) Environmental Impact and Related Procedures (23 CFR Part 771).This ROD announces selection of the Preferred Alternative, Alternative 9 – Phase 1 South, as the Selected Alternative for the I-495 and I-270 Managed Lanes Study (Study) located in Montgomery and Prince George's Counties, Maryland, and Fairfax County, Virginia. The FHWA hereby approves the Selected Alternative which includes adding two high-occupancy toll (HOT) managed lanes in each direction along I-495 and the conversion of the existing high-occupancy vehicle (HOV) lane to a HOT managed lane and adding one, new HOT managed lane in each direction on I-270 within the Phase 1 South limits (hereafter "the Project"). The Selected Alternative is fully described in **Section V.2** of this ROD and in the Final Environmental Impact Statement (FEIS), Chapter 3[1].

This decision relies on the Project administrative record, including information and analysis described in the Draft Environmental Impact Statement (DEIS), Supplemental DEIS (SDEIS), FEIS, all supporting technical reports, public and agency comments received during official review periods, and input received throughout the review process from the public and interested local, state, and federal agencies. In making this decision, the FHWA considered the Project's potential impacts and a reasonable range of alternatives under the National Environmental Policy Act (NEPA), Section 4(f) of the US Department of Transportation Act of 1966, 49 USC 303 (c), and many other laws. The final decision balances the need for safe, fast and efficient transportation and public services with the goal of avoiding, minimizing, or mitigating adverse environmental and community effects.

II. Project Location

The 48-mile study corridor or study area limits have remained unchanged throughout the Study: 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. The Selected Alternative, Alternative 9 - Phase 1 South (shown in **dark blue** in **Figure 1**), includes build improvements within the limits of Phase 1 South only totaling approximately 15 miles of proposed improvements. The Phase 1 South limits extend from I-495 from the George Washington Memorial Parkway in Virginia to west of MD 187 and along I-270 from I-495 to north of I-370

[1] https://oplanesmd.com/wp-content/uploads/2022/06/MLS_FEIS_03_Preferred-Alternative_June-2022p-1.pdf

and on the I-270 east and west spurs as shown in **dark blue** in **Figure 1**. 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**).

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

III. Project Background

Congestion has plagued the National Capital Region for decades. The National Capital Region is the most congested region in the nation based on annual delay and congestion per auto commuter. I-495 and I-270 in Maryland are the two most heavily traveled freeways in the National Capital Region and the state of Maryland experiences the second longest commuting times in the nation[2]. Concerns with congestion on I-495 and I-270 and planning to accommodate anticipated future growth have been the subject of numerous studies conducted by the Maryland Department of Transportation State Highway Administration (MDOT SHA), Virginia Department of Transportation (VDOT), and regional planning agencies for many years. (https://oplanesmd.com/environmental/resources/). These studies reflect how the Washington metropolitan area has continued to experience considerable growth, including a population increase of 20.1 percent in Montgomery County and 14.6 percent in Prince George's County between 2000 and 2020. Continued growth is anticipated as the Metropolitan Washington Council of Governments (MWCOG) estimates that between 2020 and 2045, the population of these counties will further increase approximately 16.3 percent and 7.9 percent, respectively.

[2] Specifically, I-495 west of I-270 had an Average Annual Daily Traffic (AADT) of 255,000 vehicles per day and I-270 had an AADT volume over 265,000 vehicles per day in 2019 (MDOT SHA, 2020), FEIS, Chapter 1 (https://oplanesmd.com/wp-content/uploads/2022/06/MLS_FEIS_01_PurposeNeed_June-2022p-1.pdf)

The area adjacent to the study corridors is one of the most intensive employment, residential and transportation corridors in the State. A series of past planning studies[3] (dating back almost 20 years) considered a wide breath of congestion relief solutions within the study corridors. As detailed in the Purpose and Need statement, these studies demonstrated the need in the National Capital Region for a synergistic system of transportation solutions. None of the various analyses supported the principle that any individual highway or transit option could alleviate traffic congestion or accommodate anticipated future demand and is best summarized in the conclusion of the 2002 Capital Beltway/Purple Line Study[4] (2002 Study) which analyzed circumferential rail corridors (approximately 42 miles) along the Capital Beltway Corridor. This analysis concluded: "Congestion on the Beltway itself as well as demand on the other transportation facilities is so great that no single highway or transit improvement will provide significant relief to the long-term demand" (2002 Study, page S-17). It was also recommended that studies of the highway and transit alternatives be conducted separately because transit operates more efficiently if it serves areas where people live and work.

Importantly, these studies considered various transit, highway, and traffic management improvements. For example, the Purple Line was identified as the major transit option. The State opted to move forward with the Purple Line which is currently under construction. These studies evaluated various options of building managed lanes along these highways and means to connect to other regional transportation facilities.

At the same time as Maryland, VDOT proceeded with its own studies and the 495 Express Lanes Northern Extension (495 NEXT[5]) project, which would extend the existing Express Lanes on I-495 in Virginia by approximately three miles from the I-495 and Dulles Toll Road interchange to the vicinity of the ALB. (Refer to **Section V.2** for additional information on this project and MDOT SHA and VDOT's coordination.)

In 2017, the MWCOG's Transportation Planning Board (TPB) evaluated and approved a set of 10 regional initiatives[6] for further study. MWCOG, is an independent, nonprofit association where area leaders address regional issues affecting the District of Columbia, suburban Maryland, and northern Virginia. This group analyzed managed lanes on the portions of I-495 and I-270 included in the Study. For example, Initiative 1. Regional Express Transit Network: Express toll lanes network (free to HOV and transit) with added lanes where feasible on existing limited access highways (including remaining portion of Capital Beltway, I-270, Dulles Toll Road, US 50); includes expanded American Legion Bridge (page 8, https://www.mwcog.org/assets/1/28/07192017_-_Item_8_-_LRPTF_Resolution_R1-2018_and_Memo.pdf). Then, in October 2018, the TPB approved the "Visualize 2045" plan which included a variety of financially constrained projects related to potential toll lanes on I-495 and I-270. The National Capital Region Transportation Planning Board (NCRTPB) updated the Visualize 2045 Long Range Transportation Plan Update and Transportation Sector Greenhouse Gas reduction Goals and Strategies in June of this year.

[3] https://oplanesmd.com/wp-content/uploads/2020/07/DEIS_AppA_PN_web.pdf and https://oplanesmd.com/environmental/resources/

[4] https://oplanesmd.com/wp-content/uploads/2019/07/Capital_Beltway_Purple_Line_Study_2002.pdf

[5] http://www.495northernextension.org/

[6] https://www.mwcog.org/assets/1/28/07192017_-_Item_8_-_LRPTF_Resolution_R1-2018_and_Memo.pdf

In March of 2018, FHWA issued a Notice of Intent to prepare an EIS followed by Scoping Public Workshops in April 2018. The alternatives development phase, described in greater detail in **Section VI** of this ROD and **DEIS, Chapter 2** and **DEIS, Appendix B**, included coordination with and input from federal, state, and local agencies and public outreach. Public input included presentations of the current thinking at relevant times: Preliminary Alternatives in July 2018 and Alternatives Retained for Detailed Study (ARDS) in April to May 2019.

Throughout the Study, the FHWA and MDOT SHA met with and considered input from federal, state, and local agencies as well as the public. The DEIS was published in July 2020 and was made available for formal public and agency review and comment for a 123-day comment period. The SDEIS was published on October 1, 2021 and was prepared to consider new information relative to the Preferred Alternative, Alternative 9 - Phase 1 South. The SDEIS was available for review to the public and agencies for a 60-day comment period.

The FEIS was published on June 17, 2022, and presented the final analyses completed for the Preferred Alternative, design refinements since the SDEIS, as well as responses to comments on the DEIS and SDEIS. The FEIS responds to the over 5,000 public and agency comments received on the DEIS and SDEIS. The FEIS was available for a 30-day review period between the publication of the FEIS and the ROD. During this 30-day period, public comments were received and considered by FHWA and MDOT SHA. New and substantive comments received during the FEIS review period are summarized in **Section XI** and **Appendix D** of this ROD.

The advancement of conceptual mitigation for unavoidable effects to environmental resources from the Selected Alternative has occurred during each of the NEPA Document milestones for the Study: the DEIS, SDEIS and FEIS. The final mitigation was based on priorities identified by the Officials with Jurisdiction (OWJ) and regulatory agencies over the resource to achieve no net loss, with a goal of net benefit. FHWA will require the MDOT SHA, as part of this approval, to implement the extensive mitigation and commitments planned for this Project and described in **Appendix A** of this ROD, and stipulations negotiated as part of an approved Programmatic Agreement concerning adverse effects to cultural and historic resources, **Appendix C** of this ROD. The mitigation and commitments address the full range of resources discussed in the EIS documents: water resources (wetlands, floodplains, groundwater hydrology, watershed and surface waters); forests (including vegetation and terrestrial habitat); rare, threatened, and endangered species; terrestrial wildlife; aquatic biota; parks and recreational facilities; unique and sensitive areas; historical, architectural, and archaeological resources; noise; air quality; property acquisitions; hazardous materials; topography, geology, and soils; community facilities; environmental justice; and visual/aesthetic resources.

The website for Op Lanes Maryland Program and the Project (https://oplanesmd.com/) has been and will continue to be maintained to provide updates, announcements and access to project documents following the ROD.

IV. Purpose and Need

As described above in **Section III**, improvements to address the severe congestion on I-495 and I-270 have been evaluated for decades, with similar consensus regarding the need for highway, transit and other transportation management measures. The congestion on these corridors also has negative effects on

access to and usage of other transportation modes. Besides enhanced performance on I-495 and I-270 themselves, improvements to provide congestion relief on these facilities will also enhance existing and proposed multimodal transportation services by improving connectivity and mobility through enhancing trip reliability and providing additional travel choices for efficient travel during times of extensive congestion. Improved direct and indirect connections to park and ride lots, Metrorail, bus and other transit facilities are anticipated to occur as a result of addressing congestion on these regional roadways, thus providing a system of systems approach to addressing overall transportation needs in the National Capital Region.

The Study Purpose and Need Statement was developed through a collaborative process with other federal, state and local agencies and the public during the NEPA scoping process that included examination of multiple transportation and regional planning studies that had been conducted over the past 20+ years, and an analysis of the environmental and socioeconomic conditions of the region. Refer to **DEIS, Appendix A** for the Purpose and Need Statement (https://oplanesmd.com/wp-content/uploads/2020/07/DEIS_AppA_PN_web.pdf).

This Study analyzed travel demand management solution(s) and reasonable alternatives that address these identified needs of the study area. The Project purpose is to address congestion, improve trip reliability on I-495 and I-270 within the study limits and enhance existing and planned multimodal mobility and connectivity.

The needs for the Study are:

- Accommodate Existing Traffic and Long-Term Traffic Growth
- Enhance Trip Reliability
- Provide Additional Roadway Travel Choices
- Improve Movement of Goods and Services
- Accommodate Homeland Security.

Two goals for the Study were identified in addition to the needs: 1) the use of alternative funding approaches for financial viability and 2) environmental responsibility.

For additional details on the Study's Purpose and Need refer to:

- DEIS, Chapter 1: Purpose and Need (https://oplanesmd.com/wp-content/uploads/2020/11/2020-06-02_DEIS_01_Purpose_and_Need.pdf)
- DEIS, Appendix A: Purpose and Need Statement (https://oplanesmd.com/wp-content/uploads/2020/07/DEIS_AppA_PN_web.pdf)
- SDEIS, Chapter 1: Purpose and Need (https://oplanesmd.com/wp-content/uploads/2021/09/SDEIS_01_PurposeNeed.pdf)
- FEIS, Chapter 1: Purpose and Need (https://oplanesmd.com/wp-content/uploads/2022/06/MLS_FEIS_01_PurposeNeed_June-2022p-1.pdf)

V. Alternatives Considered

A. No Build Alternative

The No Build Alternative, often called the base case, includes all other projects in Visualize 2045 adopted by the MWCOG, TPB in 2018, except improvements considered under this Study. Specifically, the Visualize 2045 reflects the extension of the I-495 express lanes in Virginia from the Dulles Toll Road interchange to the George Washington Memorial Parkway. The No Build Alternative also includes the I-270 Innovative Congestion Management (ICM) project, which is providing a series of improvements to address mobility and safety at key points along I-270 targeted to reduce congestion at key bottlenecks along the corridor. All ICM improvements are anticipated to be completed by the end of 2022. While the ICM improvements will improve mobility and safety, they will not address the long-term capacity need for the I-270 corridor.

The No Build Alternative also includes the Visualize 2045 transit improvement projects including the Purple Line, improvements to MARC, and the construction of a BRT network. The MDOT Maryland Transit Administration (MTA) and Montgomery County have Bus Rapid Transit (BRT) studies underway to provide additional travel choices and relieve congestion on the adjacent roadway networks.

Routine maintenance and safety improvements along I-495 and I-270 are included in the No Build Alternative. However, it does not include new capacity improvements to I-495 and I-270. The No Build Alternative does not meet the Study's Purpose and Need and is only retained for the purposes of comparison with the Build Alternatives in accordance with the regulations for implementing NEPA (40 CFR §1502.14(d)).

B. Alternative 9 – Phase 1 South (Selected Alternative)

As outlined in the FEIS, the Selected Alternative is anticipated to address the Study's Purpose and Need concerning existing and future congestion in at least the following ways.

Reduce system-wide delay for the entire study area by 13% during the AM peak period and by 38% during the PM peak period compared to 2045 No Build conditions. [FEIS, page 4-10]

Improve travel speeds and provide the option for a free flow trip in the HOT managed lanes with an average speed of 60 mph, see Table 4-6 [FEIS, page 4-12], and provide benefits to the existing lanes by improving average speeds in the general purpose lanes by four mph on average throughout the study corridors during peak periods compared to the No Build condition. Detailed corridor travel speed results by peak hour and direction for the general purpose lanes and the managed lanes are provided in Table 4-7. [FEIS, page 4-13]

Provide increased throughput by 2,000 vehicles per hour compared to the No Build Alternative, from an average of 15,700 vehicles per hour to an average of 17,700 vehicles across the ALB and on I-270 north to I-370 while reducing congestion. [FEIS, page 4-15]

Reduce delay on surrounding local roadways, including a 4.8% reduction in daily delay on the arterials in Montgomery County, with some localized increases in arterial traffic near the managed lane access interchanges. [FEIS, page 4-17]

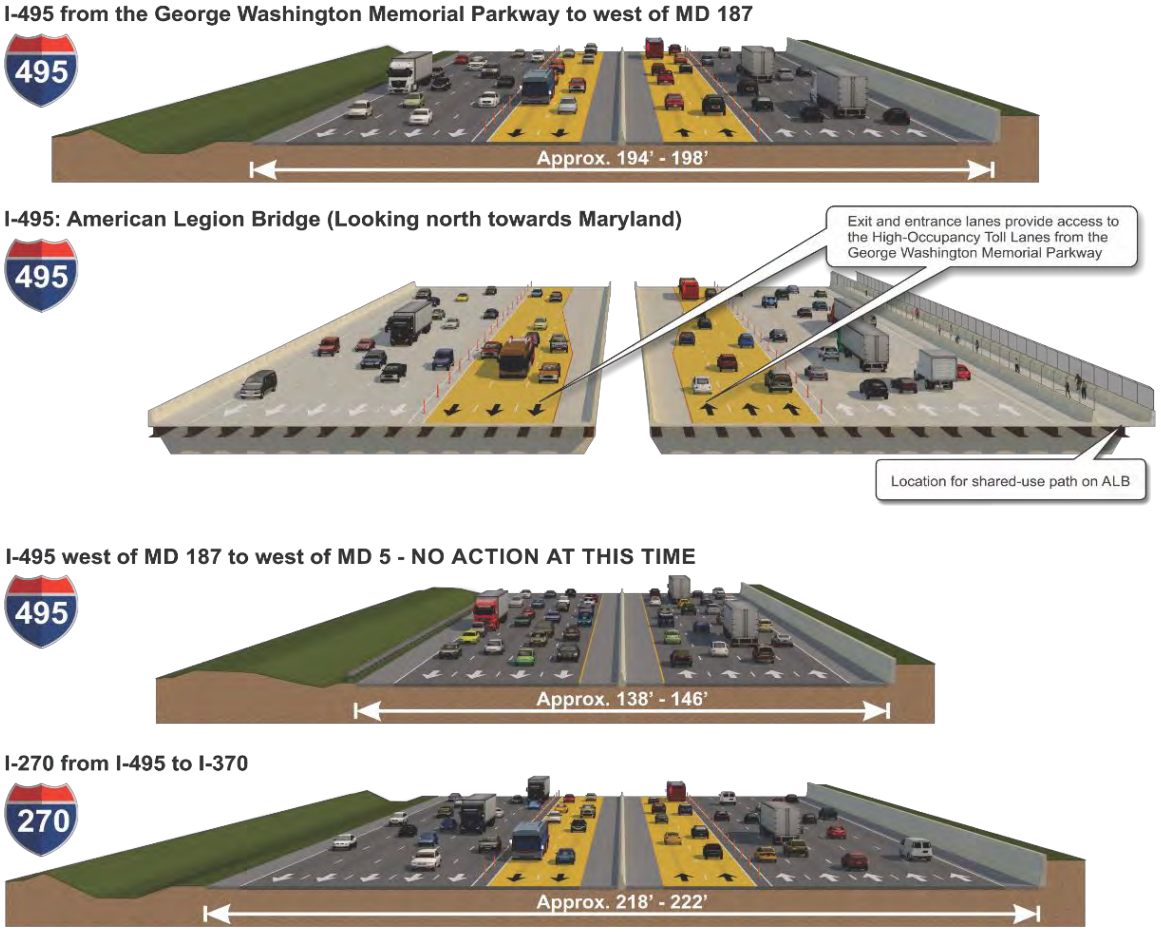
Some congestion would still be present during the PM peak period on I-270 northbound and the I-495 inner loop in the design year of 2045 due to downstream bottlenecks outside of the Selected Alternative limits, but travelers on most corridors would experience significantly faster, more reliable trips.

The Selected Alternative reflects no action or improvements on I-495 east of the I-270 east spur to MD 5 (Figure 1). The elements of the Selected Alternative are described in the following sections and include: alignment and cost, interchanges and HOT managed lanes, transit-related elements, pedestrian and bicycle facilities, stormwater management, cross culverts, and tolling.

Alignment and Cost

On I-495, the Selected Alternative consists of adding two new, HOT managed lanes in each direction from the George Washington Memorial Parkway to west of MD 187. The extent of work along I-495 between the I-270 west and east spurs is limited to west of MD 187. On I-270, the Selected 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 from I-495 to just north of I-370 and on the I-270 east and west spurs. The proposed typical sections for the Selected Alternative along I-495 and I-270 are shown in **Figure 2**. The HOT managed lanes will be separated from the general purpose lanes using flexible delineators placed within a buffer, as shown in **Figure 2**. Transit buses and HOV 3+ vehicles will be allowed free passage in the HOT managed lanes.

Figure 2: Alternative 9 - Phase 1 South Typical Sections (HOT Managed Lanes Shown in Yellow)



Along I-270, the existing collector-distributor (C-D) lane separation from Montrose Road to I-370 will be removed as part of the proposed improvements. MDOT SHA included this proposed lane reconfiguration and repurposing of pavement on I-270 for the Build Alternatives in the DEIS to address the current imbalanced traffic utilization along the C-D Road segment and in response to public comments to keep the improvements within the existing pavement footprint. The proposed improvements will tie into the existing C-D road segment that would remain along northbound I-270 north of I-370. As a result, the amount of roadway widening along I-270 needed for the Selected Alternative is minimized.

Virginia's 495 Express Lanes Northern Extension (495 NEXT) project would extend the existing Express Lanes on I-495 in Virginia by approximately three miles from the I-495 and Dulles Toll Road interchange to the vicinity of the ALB. The project needs[7] are reduce congestion and improve roadway safety, provide additional travel choices, and improve travel reliability. The 495 NEXT will provide new and improved express lanes connections at the Dulles Corridor and George Washington Memorial Parkway interchanges. The Selected Alternative will overlap and tie-in with the 495 NEXT improvements on I-495 at the George Washington Memorial Parkway interchange. MDOT has coordinated closely with the Virginia Department of Transportation (VDOT), a Cooperating Agency on the Study, to refine the preliminary design concept to consolidate and provide compatible movements at the interchange. Specifically, design concepts at the George Washington Memorial Parkway interchange, along I-495 in Virginia south of the ALB, consolidates movements and provides coordinated movements with the recently approved 495 NEXT in Virginia. Other than buses, vehicles with greater than two axles are not currently permitted to use the Express Lanes in Virginia. The HOT lanes in Maryland will not prohibit vehicles that are permitted to use the HOT lanes. The interchange at the George Washington Memorial Parkway has been designed to accommodate this difference in the Virginia Express Lanes and Maryland HOT lanes. The Selected Alternative also adds a pair of exchange ramps to provide vehicles the opportunity to exit the managed lanes along the I-270 west spur north of I-495 in Maryland.

Additionally, MDOT SHA's ongoing I-270 ICM project is providing a series of improvements to address mobility and safety at key points along I-270 targeted to reduce congestion at bottlenecks along the corridor in the short-term. Elements of the ICM that will be maintained within the Selected Alternative limits include ramp metering; the additional auxiliary lane added in both directions along the I-270 west spur and I-270 mainline up to Montrose Road; and auxiliary lanes in both directions along I-270 between the MD 189 and MD 28 interchanges.

The limit of disturbance (LOD) is the proposed boundary within which all mainline construction, construction access, staging, materials storage, grading, clearing, erosion and sediment control, landscaping, drainage, stormwater management, noise barrier replacement/construction, and related activities would occur. The LOD for the Selected Alternative was determined from the proposed roadway typical section, interchange configuration, and roadside design elements and is shown on the *Environmental Resource Mapping* (**FEIS, Appendix E**).

The preliminary, estimated capital cost for the Selected Alternative in 2022 dollars ranges between $3.75 and $4.25 billion. The cost range in year or expenditure (YOE) dollars, which accounts for inflation between now and when the project is anticipated to be constructed (2026), is between $4.5 and $5.0 billion. The methodology, assumptions, and components of the cost estimate have been refined since the

[7] http://www.495northernextension.org/about_the_study/default.asp

SDEIS based on the level of information available and the preliminary design concept presented in the FEIS. This estimate includes costs for preliminary and final design, construction, property acquisition, and environmental mitigation commitments. The cost estimate was prepared using major quantities in accordance with the MDOT SHA Highway Construction Cost Estimating Manual with additional construction elements quantified and appropriate contingencies added based on past construction experience and engineering judgment to reflect the increased level of detail available at this time. The cost estimate also includes costs for design and construction risks determined through a cost and schedule risk assessment (CSRA) workshop completed with FHWA in spring 2022.

Interchanges and HOT Managed Lanes

There are a total of 34 existing interchanges within the study limits, with 14 existing interchanges within the limits of Phase 1 South of the Selected Alternative. All 14 interchanges within Phase 1 South will be modified as needed to accommodate the managed lanes. The HOT managed lanes traveling in the same direction as the general purpose lanes would be separated from the general purpose lanes by a buffer and flexible delineators as shown in the typical sections (**Figure 2**). Access to and from the HOT managed lanes would be provided via direct access ramps at select existing interchanges; direct access ramps at two new interchanges; exchange ramps between Virginia and Maryland where ingress to the Maryland HOT managed lanes from the general purpose lanes along the inner loop and egress from the Maryland HOT managed lanes to the general purpose lanes along the outer loop would be provided; exchange ramps providing ingress to and egress from the HOT managed lanes in both directions along the I-270 West Spur; and at the limits of the build improvements for the Selected Alternative.

In total, access to and from the HOT managed lanes is proposed at nine locations (five existing interchanges, two new interchanges, and two exchange ramp locations), as well as at the termini of the HOT managed lanes along I-495 west of MD 187, along the I-270 east spur south of MD 187, and along I-270 north of I-370. The interchanges that will be modified as part of the Selected Alternative are listed in **Table 1**.

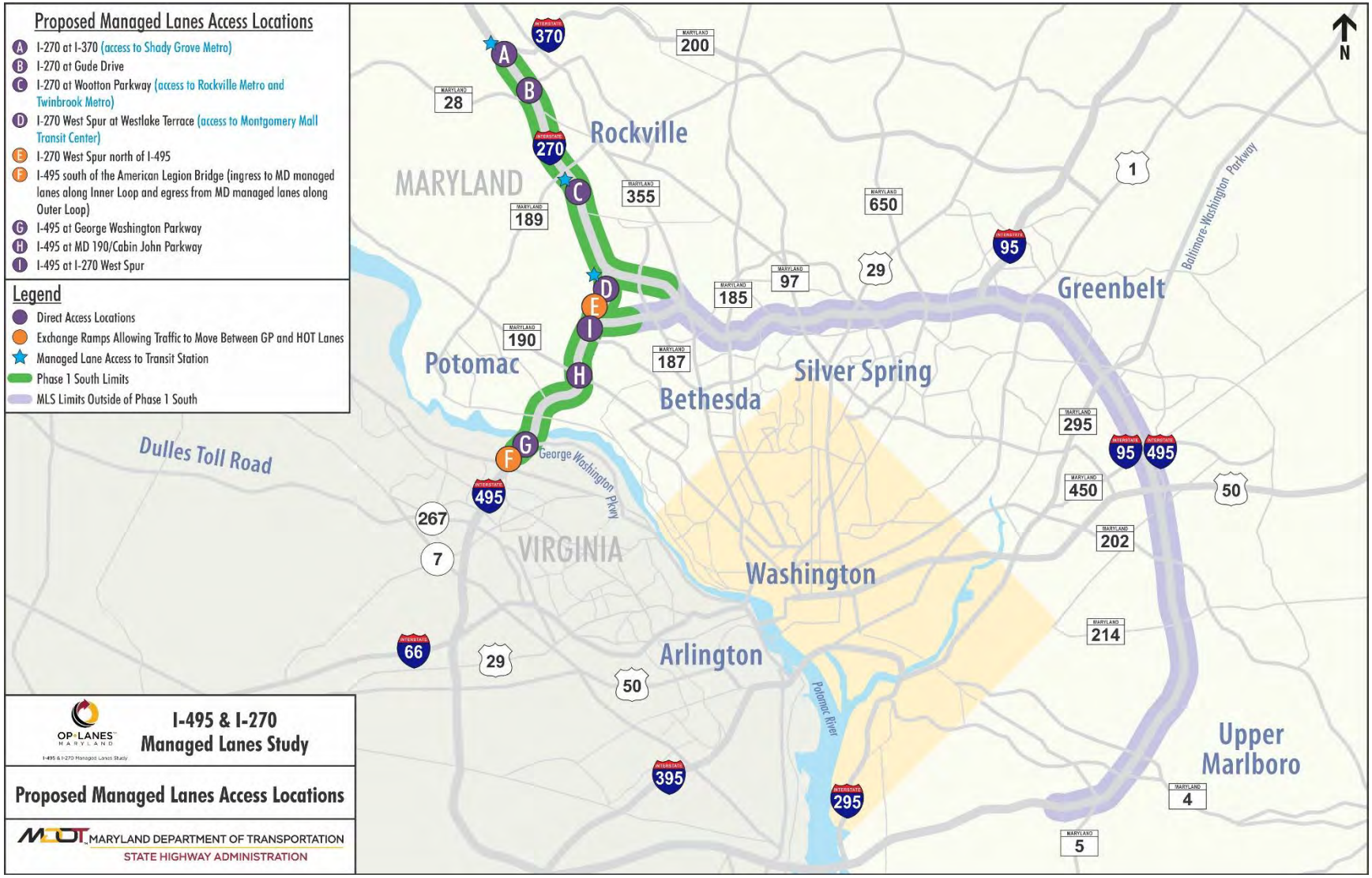
Table 1: Interchange Improvements/HOT Managed Lane Access Locations under Selected Alternative

Location	Modification
Interface with Virginia I-495 HOT Lanes south of the ALB (see location 'F' on Figure 3)	• Exchange ramp from Maryland HOT managed lanes to Virginia general purpose lanes (outer loop only) • Exchange ramp from the Virginia general purpose lanes to Maryland HOT managed lanes (inner loop only)
I-495/George Washington Memorial Parkway Interchange (see location 'G' on Figure 3)	• Direct access to HOT managed lanes in Maryland • Adjusted interchange ramps to accommodate widened mainline
I-495/Clara Barton Parkway Interchange	• Adjusted interchange ramps to accommodate widened mainline
I-495/MD 190/Cabin John Parkway Interchange (see location 'H' on Figure 3)	• HOT managed lanes direct access interchange • Adjusted interchange ramps to accommodate widened mainline
I-495/I-270 west spur Interchange (see location 'I' on Figure 3)	• HOT managed lanes direct access interchange • Reconstructed interchange to accommodate HOT managed lanes
I-495/MD 187 Interchange	• No proposed interchange improvements

Location	Modification
I-495/I-270 east spur/MD 355 Interchange	• No proposed interchange improvements
I-495/MD 185 Interchange	• No proposed interchange improvements
I-495/MD 97 Interchange	• No proposed interchange improvements
I-495/US 29 Interchange	• No proposed interchange improvements
I-495/MD 193 Interchange	• No proposed interchange improvements
I-495/MD 650 Interchange	• No proposed interchange improvements
I-495/ I-95 Interchange	• No proposed interchange improvements
I-495/US 1 Interchange	• No proposed interchange improvements
I-495/Greenbelt Metro Interchange	• No proposed interchange improvements
I-495/MD 201 Interchange	• No proposed interchange improvements
I-495/Baltimore-Washington Parkway Interchange	• No proposed interchange improvements
I-495/MD 450 Interchange	• No proposed interchange improvements
I-495/US 50 Interchange	• No proposed interchange improvements
I-495/MD 202 Interchange	• No proposed interchange improvements
I-495/Arena Drive Interchange	• No proposed interchange improvements
I-495/MD 214 Interchange	• No proposed interchange improvements
I-495/Ritchie Marlboro Interchange	• No proposed interchange improvements
I-495/MD 4 Interchange	• No proposed interchange improvements
I-495/MD 337/Suitland Road Interchange	• No proposed interchange improvements
I-495/MD 5 Interchange	• No proposed interchange improvements
I-270 west spur north of I-495 (see location 'E' on Figure 3)	• Exchange ramps allowing ingress to and egress from the HOT managed lanes to general purpose lanes
I-270 west spur/Democracy Boulevard Interchange	• Adjusted interchange ramps to accommodate widened mainline
I-270 west spur/Westlake Terrace Interchange (see location 'D' on Figure 3)	• Repurposed existing HOV only ramps to/from north to HOT managed lanes direct access ramps • Added HOT managed lanes direct access ramps to/from south
I-270 Y-Split Interchange	• Reconstructed interchange to accommodate HOT managed lanes
I-270/Montrose Road Interchange	• Adjusted interchange ramps to accommodate widened mainline
I-270/Wootton Parkway Interchange *(new interchange)* (see location 'C' on Figure 3)	• New interchange for HOT managed lanes direct access only
I-270/MD 189 Interchange	• Reconfigured interchange ramps to accommodate widened mainline
I-270/MD 28 Interchange	• Adjusted interchange ramps to accommodate widened mainline
I-270/Gude Drive Interchange *(new interchange)* (see location 'B' on Figure 3)	• New interchange for HOT managed lanes direct access only
I-270/Shady Grove Road Interchange	• Adjusted interchange ramps to accommodate widened mainline
I-270/I-370 Interchange (see location 'A' on Figure 3)	• HOT managed lanes direct access interchange (to/from south only) • Adjusted ramps to accommodate widened mainline
I-270 east spur/MD 187/Rockledge Drive Interchange	• Adjusted interchange ramps to accommodate widened mainline

1 Note: The rows shaded in blue indicate HOT managed lanes access locations.

Figure 3: Selected Alternative HOT Managed Lanes Access Locations



Transit-Related Elements

Severe congestion on I-495 and I-270 adversely affects the regional and local roadway network, especially in and around the interchanges and arterial roads in the study area. The congestion on these corridors also has negative effects on access to and usage of other transportation modes. Besides enhanced performance on I-495 and I-270 themselves, improvements to provide congestion relief on these facilities will also enhance existing and proposed multimodal transportation services by improving connectivity and mobility through enhancing trip reliability and providing additional travel choices for efficient travel during times of extensive congestion. Improved direct and indirect connections to park and ride lots, Metrorail, bus and other transit facilities are anticipated to occur as a result of addressing congestion on these regional roadways, thus providing a system of systems approach to addressing overall transportation needs in the National Capital Region.

The Selected Alternative includes transit-related elements that provide access/connectivity and enhance mobility for transit vehicles and passengers to support the Study's purpose of enhancing existing and planned multimodal mobility and connectivity. Additionally, MDOT SHA has prepared the Transit Service Coordination Report as the initial product from the I-495 & I-270 Managed Lanes Transit Work Group to assist affected counties and transit providers in prioritizing capital and operating investments(https://oplanesmd.com/transit-service-coordination-report/).

MDOT SHA has identified opportunities to enhance transit mobility and connectivity as part of the Selected Alternative. These include the following elements, which were documented in the SDEIS and FEIS:

- Free bus transit usage of the HOT managed lanes to provide an increase in speed of travel, assurance of a reliable trip, and connection to local bus service/systems on arterials that directly connect to activity and economic centers.
- Access from the proposed HOT managed lanes to existing transit stations and planned Transit Oriented Development via direct and indirect connections. A direct connection is where the HOT managed lanes ramps connect to an arterial at or near the location of a transit facility like at the Westfield Montgomery Mall Transit Center on Westlake Terrace. A connection is considered indirect where the transit facility is not adjacent to, but in relatively close proximity to the HOT managed lanes access point, like at the Shady Grove Metro Station on I-370, and the Twinbrook and Rockville Metro Stations near Wootton Parkway. New or existing bus routes can take advantage of the relative proximity to the HOT managed lanes for express bus service or other direct connections.
- Construct new bus bays at Washington Metropolitan Area Transit Authority's Shady Grove Metrorail Station and increase parking capacity at the Westfield Montgomery Mall Transit Center.

MDOT SHA and the Public-Private Partnership (P3) Developer have committed to additional regional transit improvements and investments in transit services and projects as part of the P3 Agreement. Refer to **FEIS, Chapter 7, Section 7.3 and ROD, Appendix A, Table 2**. While these commitments are not required as part of the Project, the Study efforts identified these additional means to enhance existing and planned transit and support new opportunities for regional transit service, including:

- Construct and equip the Metropolitan Grove Operations and Maintenance Facility including the necessary bus fleet.
- After financial close of the Phase 1 South Section P3 Agreement, fund not less than $60 million from the Development Rights Fee provided by the P3 Developer for the design and permitting of high priority transit investments in Montgomery County
- Provide not less than $300 million of additional transit investment funding inclusive of the P3 Developer's proposed transit investment to implement high priority transit projects in Montgomery County over the operating term of Phase 1 South.
- Working with Montgomery, Frederick, and Prince George's Counties to expand transit fare subsidies for eligible low-income riders.
- Design and construct the ALB such that a future capital improvement project will have one or more feasible options to achieve the full design and implementation of a transit line across the ALB. These options will be enabled by designing the northbound and southbound structures to not preclude a possible future transit line including the addition of foundation and substructure elements.

Pedestrian and Bicycle Facilities

The Selected Alternative reflects a commitment to provide pedestrian and bicycle connectivity and mobility in the study area consistent with comments received throughout the NEPA process. Existing pedestrian and bicycle facilities impacted by the Selected Alternative would be replaced in kind or upgraded to meet the current master plan[8] recommended facilities. Provision of these upgraded facilities would be subject to maintenance agreements between MDOT SHA and the local jurisdictions in compliance with Maryland law. The design approach for facilities along crossroads where the crossroad bridge would be reconstructed is to replace, upgrade, or provide new pedestrian/bicycle facilities (that are consistent with the current master plan), where adjacent connections on either side of the bridge currently exist. Where the I-495 and I-270 mainline or ramps cross over a roadway or pedestrian/bicycle facility and the bridge would be replaced, the mainline and ramp bridges would be lengthened to accommodate the footprint for the master plan facility under the structure. The two locations where lengthening of the mainline bridges is included in the Selected Alternative are described below and included in **Section 3.2.2** in **Chapter 3** of the **FEIS**:

- Lengthen the I-495 bridge over Seven Locks Road to accommodate pedestrian/bicycle facilities along Seven Locks Road. MDOT has committed to constructing the master plan recommended facilities along Seven Locks Road

- Lengthen the I-270 bridge over Tuckerman Lane to accommodate future pedestrian/bicycle facilities along Tuckerman Lane. Montgomery County would construct the master plan recommended facilities along Tuckerman Lane in the future.

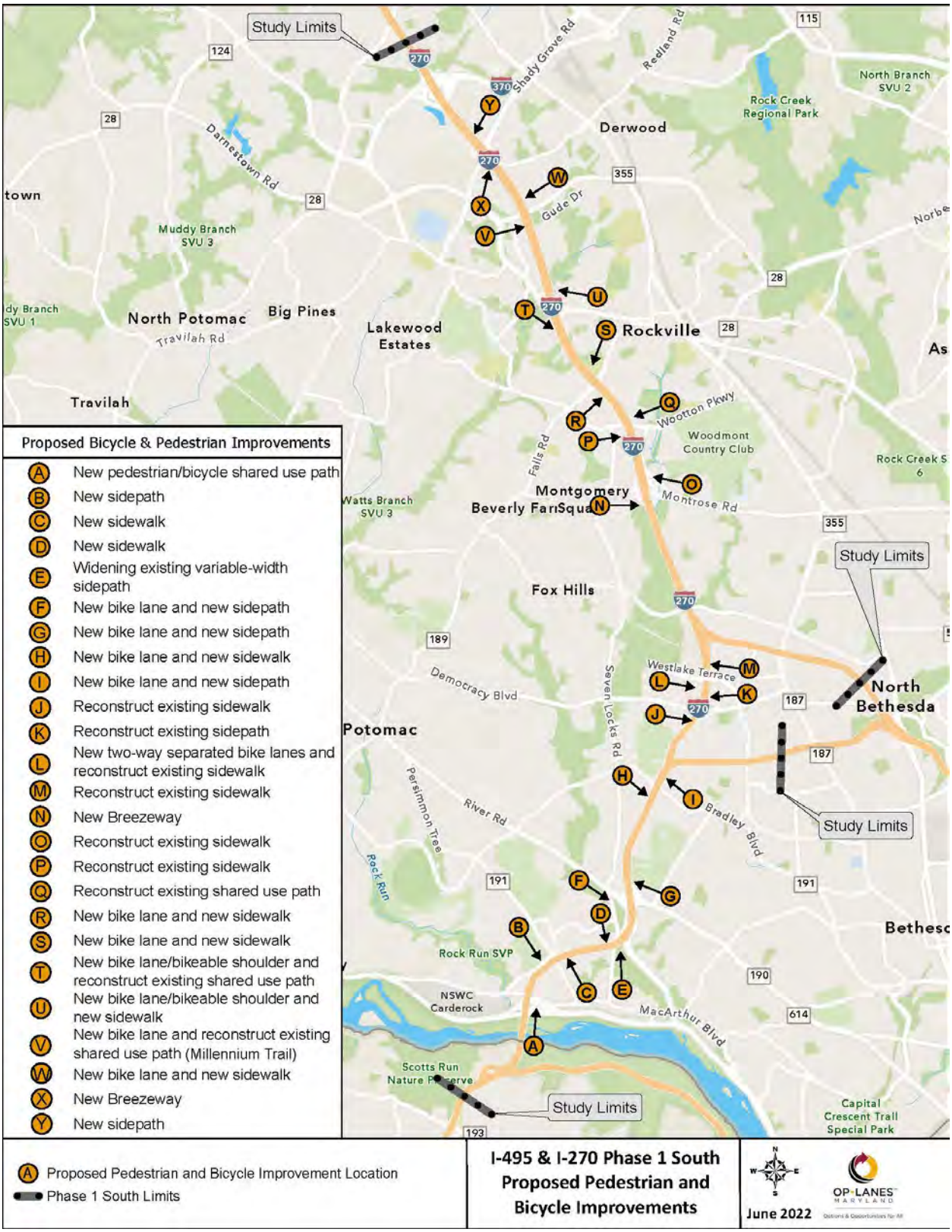
In response to public comments supporting a direct connection of the shared use path from the ALB to the Chesapeake and Ohio Canal towpath, a direct connection to the Chesapeake and Ohio Canal towpath has been incorporated into the Selected Alternative's preliminary design and final impact analysis. The

[8] MDOT SHA Bicycle Policy & Design Guidelines (January 2015), Montgomery County Planning Department's Bicycle Facility Design Toolkit (May 2018), and City of Rockville's Bikeway Master Plan (April 2017)

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(s) to the east and west of the ALB between the Chesapeake and Ohio Canal towpath and the MacArthur Boulevard sidepath outside of the study area to ensure the existing connection(s) can handle any increased usage from the new shared use path connection to the Chesapeake and Ohio Canal towpath. The alignment of the proposed shared use path connection to the Chesapeake and Ohio Canal towpath is shown in the **FEIS, Appendix E**.

The proposed pedestrian and bicycle facilities that would be constructed as part of the Selected Alternative are listed in **Table 3-2** in **Chapter 3** of the **FEIS** and shown in **Figure 4** of this ROD. Identification of the proposed pedestrian and bicycle facilities was conducted during the NEPA process in coordination with the Maryland-National Capital Park and Planning Commission (M-NCPPC), the Montgomery County Department of Transportation (MCDOT), and the City of Rockville. Coordination with these key agency stakeholders will continue through final design. The new facilities or upgrades included in the Selected Alternative were designed at a planning level in accordance with MDOT SHA, Montgomery County, or City of Rockville design requirements, including consideration of the recent Montgomery County Complete Streets Design Guide.

Figure 4: Bicycle and Pedestrian Improvements



Stormwater Management

The *Maryland Stormwater Management Act of 2007* emphasizes environmental site design (ESD) and consideration of SWM early in the planning stage of a project to better balance transportation needs, right-of-way considerations, and requirements of the Act, which include both water quality (i.e., ESD) and water quantity management. Water quality management treats the first flush of rainfall to remove pollutants and improve downstream conditions. Water quantity management stores and slowly releases water to reduce downstream flooding.

The Selected Alternative will be required to meet all SWM permitting requirements for Maryland and Virginia, which includes both water quality treatment and water quantity control. In Maryland, water quality treatment must be provided onsite to the maximum extent practicable for all new impervious area and a minimum of 50 percent of reconstructed existing impervious area to mimic the runoff characteristics of woods in good conditions.

MDOT SHA reevaluated stormwater needs and locations for the overall Project management approach during the NEPA process using a more detailed volume-based analysis and developing a SWM Concept. The SWM Concept applies standard Maryland Department of the Environment (MDE) approved hydrology and hydraulic procedures, which includes a volumetric approach for calculating stormwater credit. A total of 167 Points of Investigation (POI) or Lines of Investigation (LOI), defined as locations where project-related stormwater runoff leaves the MDOT SHA right-of-way, were identified for Phase 1 South. Required and provided stormwater needs were then tabulated for each POI/LOI. A planning-level, conceptual identification of stormwater management (SWM) needs was considered throughout the Phase 1 South limits when establishing the LOD for the Selected Alternative.

The total impervious area requiring treatment (IART) was determined for the Selected Alternative and is presented in **Table 2** below. A total of approximately 116 acres of new impervious area is anticipated for Phase 1 South. All new impervious area will need to be treated for both water quality and water quantity. In addition, approximately 72 acres of existing impervious area will require water quality treatment and approximately 22 acres of existing water quality treatment is expected to be impacted by the Project and must be replaced.

Table 2: Stormwater Management Requirements for the Selected Alternative

IART from Loss of Water Quality (ac)	IART from Redevelopment (ac)	IART from New Development (ac)	Total IART (ac)
21.75	72.03	116.20	209.98

Note: Stormwater requirements are for work in Maryland only.

Proposed SWM facilities for the FEIS include wet ponds, extended detention ponds, underground quantity facilities, submerged gravel wetlands, grass swales, bioswales, micro-bioretentions, bioretentions, underground sand filters, etc. The proposed, large surface SWM features are shown on the *Environmental Resource Mapping* (**FEIS, Appendix E**). Due to existing site constraints, the estimated impervious area treated (IAT) onsite for the Selected Alternative is 207.59 acres and the estimated remaining IART must be treated off-site using compensatory SWM is 2.39 acres.

The Compensatory SWM Mitigation Plan, **FEIS, Appendix D** provides compensatory SWM sites to meet the target IART for the Selected Alternative through use of mainly environmental site design SWM facilities within the same MDE 12-digit and/or 8-digit watershed Washington Metropolitan (No. 021402). The amount of compensatory IAT identified, 27.39 acres, exceeds the need of 2.39 acres. The plan includes an excess of potential compensatory SWM sites to allow for the more detailed analysis performed during final design. Detailed design will include avoidance and minimization of impacts that may result from SWM sites. In addition, the use of alternate sites which could have fewer, or no impacts, will be considered in final design.

The Selected Alternative will also include work in Virginia, located between the George Washington Memorial Parkway and the southern bank of the Potomac River. Coordination with VDOT on the 495 NEXT project is ongoing and will continue through final design. The preliminary stormwater analysis identified a pond retrofit and expansion to meet both the water quantity and quality requirements. Preliminary calculations indicated that the retrofit would provide both two-year and ten-year management. In addition, the retrofit is estimated to provide between 75 and 90 percent of the required nutrient load reduction. Credits for the remaining required nutrient load reduction can be purchased from a Nutrient Credit Bank. The exact nutrient load credits to be purchased will be determined during final design.

Cross Culverts

All major cross culverts, defined as culverts 36 inches in diameter or greater with a drainage area greater than 25 acres, were identified and analyzed to determine if they would need additional capacity in the proposed conditions. Major culverts were identified by desktop analysis using the MDOT SHA large and small structure database; LiDAR (light detection and ranging) topographic data with one-foot contours; the MDOT SHA NPDES database; and field observations.

If an existing culvert crossing is predicted to need additional capacity in the proposed conditions, then an auxiliary culvert has been proposed to meet the need. It was assumed that the auxiliary culverts could be installed using trenchless technologies (installing the culvert underground without disturbing the existing road) so as not to disrupt traffic traveling on the existing road. The LOD of the Selected Alternative includes all areas identified for culvert augmentation and shown in the mapping in **FEIS, Appendix E**.

Detailed hydrologic and hydraulic analysis will be completed during final design to confirm that augmentation is required. The detailed design will utilize additional data, including roadway and stream topographic survey, to analyze each culvert crossing location more thoroughly and will assess the hydraulic impacts associated with augmentation to confirm that the proposed design will meet the regulatory requirements. The increased capacity from culvert augmentation can lead to increased downstream discharges and velocities, which may result in increased downstream flooding. The addition of a culvert barrel can also lead to redistribution of channel flows and sediment transport, leading to aquatic organism passage barriers. Culvert augmentations will be designed with these considerations in mind. During final design, it is possible that culvert augmentation will not be needed at some previously identified locations or will be needed at other additional locations based on the detailed design.

MDOT SHA also refined the approach to relocate, pipe, or maintain the existing alignment of Thomas Branch located along the I-270 west spur. The Selected Alternative design concept proposes to eliminate

the existing culvert crossing of the I-270 west spur north of Democracy Boulevard to reduce the total length of culvert along Thomas Branch and maintain portions in an open channel.

Tolling

The Selected Alternative includes tolling of the HOT managed lanes as a variably priced facility that will utilize dynamic pricing. The toll rates and toll rate ranges were determined through a multi-step process that is codified in Maryland law and regulation [Transportation Article §4-312 of the Annotated Code of Maryland and COMAR Title 11 Department of Transportation, Subtitle 07 Maryland Transportation Authority DTA, Chapter 05 Public Notice of Toll Schedule Revisions (11.07.05)], which provides for public input through public hearings.

Maryland law requires the establishment of toll rate ranges for variably priced facilities, including those utilizing dynamic pricing, which is a method of calculating the toll where the pricing mileage rate varies within the approved toll rate range in real time. A dynamic facility uses operational metrics to adjust the toll in real time to maintain free-flowing traffic by using pricing factors to influence the traffic flow—when lanes become more congested, the toll increases, and when the lanes become less congested, the toll decreases. The toll rates within each tolling segment could change as often as every five minutes based on real-time traffic volumes or speed in the HOT lanes to provide customers who choose to use the HOT lanes and pay a toll, a faster and more reliable trip. Customers will pay the toll rate in effect when they enter the managed lanes, regardless of toll rate changes that occur in any tolling segment during their trip.

The toll rate ranges were approved by the Maryland Transportation Authority (MDTA) Board in Fall 2021 and include minimum and maximum toll rate ranges, soft rate caps, a process for annual toll escalation, and toll discounts for certain types of vehicles. Refer to **Table 3**. The toll rate ranges are limited to only Phase 1 South. Any action to set, revise and fix tolls outside of Phase 1 South limits would require a separate toll setting process in accordance with State law.

The goal of the HOT managed lanes is to maintain free-flowing traffic by using pricing factors to influence traffic flow. The Selected Alternative was designed to maintain speeds of 45 mph or greater in the HOT managed lanes, in compliance with Title 23 United States Codes (U.S.C.) 129 and 166.

MDTA spent more than two years conducting due diligence activities on the toll rate range proposal which included traffic and revenue studies, post-model processing, and feedback from potential developers. The approved toll rate ranges are provided below in cost per mile ($/mile) for a passenger vehicle. The rate ranges for other vehicle classifications can be found on the MDTA webpage at https://mdta.maryland.gov/ALB270TollSetting/TollRateRangeSettingProcessAndApprovedTollRateRanges. The toll rate ranges will only apply to the HOT managed lanes; the existing free general purpose lanes will not be tolled. Customers will pay the toll rate in effect when they enter the managed lanes, regardless of toll rate changes that occur in any tolling segment during their trip. In addition, the approved rates include discounts for qualifying vehicles—including HOV 3+ (including carpools and vanpools), buses and motorcycles.[9]

[9] Other exemptions, such as emergency vehicles during emergency response, have been agreed upon as part of the toll operations between MDTA, MDOT SHA and the Developer.

Table 3: Approved Toll Rate Ranges, Soft Rate Caps, and Discounts[1] for Passenger Vehicle (2-axle) by Payment Type for the I-495 & I-270 Managed Lanes Study

General Purpose Lanes	HOT Managed Lanes					
	Payment Type	Approved Toll Rate Ranges for Passenger Vehicle (2-axle) (2021 $/mile)			HOV 3+ Vanpools Carpools	Buses / Motorcycles
		Minimum Toll Rate[2]	Soft Rate Cap	Maximum Toll Rate		
Free	Electronic Toll Collection (ETC) (*E-ZPass*)	$0.17	$1.50	$3.76	Free	Free
	Pay-By-Plate (Registered Video) (1.25x ETC)	$0.21	$1.88	$4.70		
	Video Tolling (Unregistered Video) (1.5x ETC)	$0.26	$2.25	$5.64		

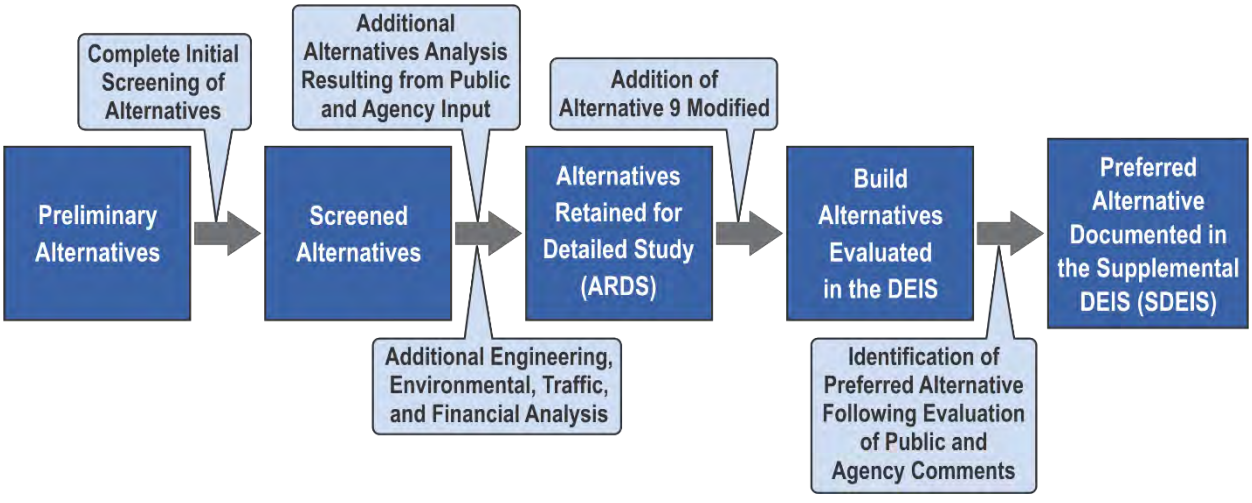
[1] MDTA uses the term discount to refer to all vehicles that could have a toll that is lower than the standard toll rate.

[2] The minimum trip toll (not per mile) by payment type for all vehicle types would be $0.50 for customers using E-ZPass®, $0.63 for customers using Pay-By-Plate (Registered Video), and $0.75 for customers using Video Tolling (Unregistered Video).

C. Alternatives Considered and Dismissed

The alternatives development and screening process for the Study followed five steps to narrow the Preliminary Range of Alternatives under consideration to the Preferred Alternative, refer to **Figure 5**. The results and documentation of the first four steps were presented in the Study's **DEIS, Chapter 2** and the last step, identification of the Preferred Alternative, was documented in the **SDEIS, Chapter 2**.

Figure 5: Alternatives Screening Process



1. Preliminary Alternatives

Fifteen Preliminary Alternatives were identified from previous studies and planning documents, and input from the public, and federal, state, and local agencies during the NEPA scoping process. The Preliminary Alternatives included the No Build Alternative as well as alternatives that included elements such as Transportation Systems Management (TSM)[10]/ Transportation Demand Management (TDM),[11] additional general purpose lanes, High-Occupancy Vehicle (HOV) lanes, priced managed lanes, collector-distributor lanes, contraflow lanes, reversible lanes, and transit. Stand-alone transit alternatives considered three transit modes: heavy rail, light rail, and bus. Additionally, options were identified for alternatives that could be applied to either I-495 or I-270 as well as different transit modes. Some of the alternatives included lettered options which reflect whether the options were exclusively applicable to I-495 or I-270 or were related to a specific transit mode. The Preliminary Alternatives were:

- Alternative 1: No Build
- Alternative 2: Transportation Systems Management/Transportation Demand Management (TSM/TDM)
- Alternative 3: Add one general purpose lane in each direction on I-495 and I-270
- Alternative 4: Add one HOV lane in each direction on I-495 and retain existing HOV lane in each direction on I-270
- Alternative 5: Add one priced managed lane in each direction on I-495 and convert one existing HOV lane in each direction to a priced managed lane on I-270
- Alternative 6: Add two general purpose lanes in each direction on I-495 and I-270
- Alternative 7: Add two HOV lanes in each direction on I-495 and retain one existing HOV lane and add one HOV lane in each direction on I-270
- Alternative 8: Add two priced managed lanes in each direction on I-495 and add one priced managed lane in each direction and retain one existing HOV lane in each direction on I-270
- Alternative 9: Add two priced managed lanes in each direction on I-495 and convert one existing HOV lane to a priced managed lane and add one priced managed lane in each direction on I-270
- Alternative 10: Add two priced managed lanes in each direction on I-495 and on I-270 and retain one existing HOV lane in each direction on I-270 only
- Alternative 11: Physically separate traffic using collector-distributor lanes, adding two general purpose lanes in each direction on I-495
- Alternative 12A: Convert existing general purpose lane on I-495 to contraflow lane during peak periods
- Alternative 12B: Convert existing HOV lane on I-270 to contraflow lane during peak periods
- Alternative 13A: Add two priced managed reversible lanes on I-495
- Alternative 13B: Convert existing HOV lanes to two priced managed reversible lanes on I-270

[10] TSM are actions that improve the operation and coordination of transportation services and facilities.

[11] TDM is a variety of strategies, techniques, or incentives aimed at providing the most efficient and effective use of existing transportation services and facilities (e.g., rideshare and telecommuting promotion, managed lanes, preferential parking, road pricing, etc.)

- Alternative 13C: Add two priced managed reversible lanes and retain one existing HOV lane in each direction on I-270
- Alternative 14A: Heavy Rail[12] transit
- Alternative 14B: Light Rail[13] transit
- Alternative 14C: Fixed guideway BRT[14] off alignment of existing roadway
- Alternative 15: Add one dedicated bus lane on I-495 and I-270

2. Screened Alternatives

The Preliminary Alternatives were evaluated by applying the screening criteria established from the Study's Purpose and Need (as described in the **FEIS, Chapter 2, Section 2.2 and in greater detail in DEIS, Appendix B**), performing assessments of readily available information. An alternative was dropped from further consideration only if the available information demonstrated it clearly did not meet the Study's Purpose and Need. Screened Alternatives were identified as those that met the screening criteria or required additional analysis to determine their ability to meet the Purpose and Need.

As a result of the initial screening, seven alternatives were recommended to be advanced for further detailed analysis and 13 alternatives were dropped from further consideration. Alternatives 1, 5, 8, 9, 10, 13B, and 13C were recommended for further analysis and environmental evaluation as the Screened Alternatives. In February 2019, the Screened Alternatives were presented to the public through the Study website via written documentation and a video.

3. Alternatives Retained for Detailed Study and Evaluated in the DEIS

Additional engineering, traffic, financial, and environmental analyses were completed for the Screened Alternatives which all were then carried forward as alternatives retained for detailed study (ARDS) and all were presented at eight, in person, Spring 2019 Public Workshops and were then further analyzed.

FHWA and MDOT SHA determined that Alternative 5 was deficient in addressing both existing traffic and long-term traffic growth and trip reliability, while only minimally less costly and impactful to property and environmental impacts and with these concerns and reduced anticipated usage it also raised concerns with the alternative's financial viability. Consequently, it was determined that Alternative 5 was not reasonable. However, the analysis of Alternative 5 was included in in **DEIS, Chapter 3** and **DEIS, Chapter 4** for comparison purposes.

Following the Spring 2019 Public Workshops and agency meetings, several Cooperating and Participating Agencies requested that MDOT SHA evaluate an alternative that would provide an alternate route for travelers to use MD 200 (Intercounty Connector) instead of the top side of I-495 between I-270 and I-95

[12] Heavy Rail is a mode of transit service (also called metro, subway, rapid transit, or rapid rail) operating on an electric railway with the capacity for a heavy volume of traffic. It is characterized by high speed and rapid acceleration passenger rail cars operating singly or in multi-car trains on fixed rails.

[13] Light Rail is a mode of transit service (also called streetcar, tramway, or trolley) operating passenger rail cars singly (or in short trains) on fixed rails. Light rail vehicles are typically driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph and driven by an operator on board the vehicle.

[14] Bus Rapid Transit is a high-quality bus-based transit system that delivers fast and efficient service that may include dedicated lanes, busways, traffic signal priority, off-board fare collection, elevated platforms, and enhanced stations.

to avoid or reduce impacts to significant, regulated resources and residential relocations. This new alternative, the MD 200 Diversion Alternative, was developed and analyzed with input from the agencies. After evaluation, it was determined that the MD 200 Diversion Alternative would not address the Study's Purpose and Need of accommodating long-term traffic growth, enhancing trip reliability, or improving the movement of goods and services. A summary of the MD 200 Diversion Alternative analysis was included in the **DEIS, Chapter 2** and **DEIS, Appendix B**, *Alternatives Technical Report*.

In response to public and agency input, MDOT SHA and FHWA evaluated another alternative, called Alternative 9 Modified (Alternative 9M). Alternative 9M consisted of a blend of Alternatives 5 and 9 with the primary difference on the top side of I-495 between I-270 and I-95 being the addition of one managed lane per direction instead of two managed lanes. Alternative 9M was evaluated and determined to be a reasonable alternative, and thus was included as a Build Alternative in the DEIS.

The following Cooperating Agencies provided concurrence[15] on the ARDS: US Environmental Protection Agency (USEPA), US Army of Engineers (USACE), NPS, MDE, Maryland Department of Natural Resources, and VDOT.

The **DEIS, Chapter 3**, **DEIS, Chapter 4,** and **DEIS, Appendix B**, *Alternatives Technical Report* presented the additional analysis and comparison of impacts between the Build Alternatives (Alternatives 8, 9, 9M, 10, 13B, 13C) and the No Build Alternative, plus Alternative 5 for comparison purposes.

4. Identification of the Preferred Alternative

In January 2021, Alternative 9 was announced as the MDOT SHA Recommended Preferred Alternative based on the results of traffic, engineering, financial, and environmental analyses, as well as public comment. However, after several months of further coordinating with and listening to agencies and stakeholders and reviewing public comments FHWA and MDOT SHA identified a new Preferred Alternative in the SDEIS: Alternative 9 – Phase 1 South and a No-Build for the balance of Alternative 9.

The FHWA and MDOT SHA's selection of the Preferred Alternative was based on currently available information and consideration of comments received on the DEIS. The agencies received many comments supporting the need to address improvements to the ALB, a major regional traffic bottleneck; to avoid property displacements, avoid and minimize public parkland impacts to the maximum extent practicable in compliance with Section 4(f) regulations; to coordinate with planned managed lane projects in Northern Virginia to provide a seamless regional managed lanes system; and to increase multi-modal transportation options in the study area.

Many of these key concerns and comments raised by the agencies and public through review of the DEIS were common among the Build Alternatives retained including, but not limited to, stormwater management, direct managed lanes access, transit elements, noise, property impacts, and proposed relocations. The efforts to further address comments, avoid and minimize impacts, and determine mitigation for unavoidable impacts continued through the development of the FEIS. The specific elements of the Selected Alternative are described in **Section V.2** of this document and **FEIS, Chapter 3**.

[15] NCPC abstained from concurring on the ARDS; M-NCPPC did not concur on the ARDS.

5. Environmentally Preferred Alternative

According to CEQ regulations implementing NEPA (40 CFR 1502.2(2)), the agency shall "identify all alternatives considered by the agency in reaching its decision, specifically the alternative or alternatives which were considered to be environmentally preferable." The environmentally preferred alternative is one that meets the project purpose and need and causes the least harm to natural and physical environment. Based on the analyses and evaluations conducted during the EIS process, specifically **Section VII.C** of this ROD and **FEIS, Chapter 5**, the Selected Alternative, as described in **Section V.2**, is deemed the environmentally preferred alternative.

VI. Factors in the Decision-Making Process, Including Measures to Minimize Harm

The DEIS, SDEIS, and FEIS detailed the extensive alternatives analysis conducted for this Study during the NEPA process. Consideration of input from partner agencies, stakeholders, and the public was an integral part of the alternatives development process and was a major factor in the identification of the Selected Alternative. Many comments received on the DEIS centered around the need to find an alternative that would avoid residential and business displacements and impacts to significant parkland on the topside and eastside of I-495. While other comments focused on providing support for alternatives that would include replacement of the aging and severely congested ALB. FHWA weighed the benefits and impacts and also considered a No Build Alternative in the decision of the Selected Alternative in this ROD.

The notable benefits of the Selected Alternative are that it will:

- Further align with the phased delivery and permitting approach
- Focus improvements on Phase 1 South, including the ALB, the biggest traffic chokepoint in the region. Replacement of the bridge is part of a bi-state effort to improve mobility and would provide a seamless regional system of managed lanes by connecting to Virginia over the ALB.
- Expedite replacement of the ALB with a private funding source.
- Provide options for travel by keeping all existing general purpose lanes free.
- Reduce reliance on single occupancy vehicles and permitting buses, carpool, vanpool, and personal vehicles with three or more people to travel faster and more reliably in the new HOT lanes free of charge any time of the day.
- Avoid all residential and commercial displacements.
- Minimize impacts by over 50% to National Parks near the ALB (George Washington Memorial Parkway, Clara Barton Parkway, and Chesapeake & Ohio Canal National Historical Park) and completely avoid three other National Parks: Baltimore Washington Parkway, Greenbelt Park, and Suitland Parkway.
- Avoid approximately 22 acres of Maryland-National Capital Park and Planning Commission parkland including Rock Creek, Sligo Creek, and Northwest Branch Stream Valley Parks.

As described in greater detail in **SDEIS, Chapter 3** and **FEIS, Chapter 4**, the Selected Alternative is projected to provide meaningful operational benefits to the regional system even though it includes no action for a large portion of the study area in an effort to avoid and minimize impacts. The Selected Alternative will significantly increase throughput across the ALB and on the southern section of I-270 while reducing congestion. It will also increase speeds, improve reliability, and reduce travel times and delays along I-

495, I-270, and the surrounding roadway network compared to the No Build Alternative, albeit to a lesser degree than the Build Alternatives presented in the DEIS that provided managed lanes throughout the full study area limits. Projected daily traffic volumes served would increase with development of the Selected Alternative when compared to the No Build Alternative because the freeways would be able to accommodate latent demand that would otherwise use the local roadway network to avoid congestion. Congestion would be present in the general purpose lanes during the PM peak period on I-270 northbound and the I-495 inner loop in the design year of 2045 due to downstream bottlenecks outside of the Selected Alternative limits, but overall operations would be significantly better than the No Build.

The key factors considered in deciding to approve the Preferred Alternative as the Selected Alternative are discussed below and include a summary of the planning process, NEPA process, Purpose and Need, alternatives considered, environmental impacts and measures to avoid and minimize impacts, and lastly a summary of the public outreach opportunities.

A. Planning Process

As noted in **Section III** of this ROD, MDOT SHA, MDOT MTA VDOT have performed numerous studies[16] to evaluate a myriad of transportation solutions to address the regional congestion. Those solutions have demonstrated the need in this region to make use of all the tools in the transportation toolbox. MDOT SHA and other regional transportation partners have studied and, in many cases, already constructed and improved elements of the transportation system of systems needed to serve this important region. The various transportation facilities consist of interstate, circumferential and arterial highways, bus rapid transit, local bus services, commuter and freight rail, one of the world's most extensive metro rail, and light rail systems that move people and goods throughout the region.

Historically improvements to the severe congestion have been evaluated, with similar consensus regarding the need for all tools in the transportation toolbox. That is, they include the need for highway, transit and other transportation management measures. For example, in 2002, a combined highway and transit study, the Capital Beltway/Purple Line Study[16], was initiated by MDOT SHA and MDOT MTA, which identified adding HOV lanes to I-495 and constructing the Purple Line, a transit alignment inside the Beltway. This combined study concluded that fixed guideway transit was not recommended wholly along the Capital Beltway itself. In 2003, the transit and highway portions of the Capital Beltway/Purple Line Study were separated into two independent studies, the Purple Line Project and the Capital Beltway Study (MDOT SHA et al., 2013), with the justification that both projects were needed to meet the demands of the corridor. The Purple Line Project Final Environmental Impact Statement (FEIS) and Draft Section 4(f) Evaluation was signed in 2013 and a Record of Decision (ROD) was issued in 2014. This transit solution is currently under construction on a 16-mile, two-track light rail system from Bethesda to New Carrollton.

To promote effective transportation system connectivity, the role of each specific transportation project to the larger transportation network, is critical. One of the objectives of any major investment study is to identify facility improvements that also improve the linkage of the regional transportation system. As noted, I-495 and I-270 are critical elements of the National Highway System and the local transportation network. These highways have interregional connections to many radial routes in Maryland and Virginia that provide access to and from Washington, DC. Residential and employment activity centers and

[16] https://oplanesmd.com/environmental/resources/

recreational facilities are located along I-495 and I-270. I-270 provides the highway link from I-495 to I-370/ MD 200 and to I-70. For long distance travelers, a portion of I-495 is also I-95 which serves as a critical link in the Maine to Florida interstate route. I-95 is designated as a portion of the National Highway System, a key element of the multimodal National Transportation System.

Given the highly constrained area surrounding the interstates in the study area, the natural, cultural, historical, and recreational amenities that exist along this alignment are finite resources that cannot be easily replaced or replenished. From the initiation of this Study, MDOT SHA committed to avoid and minimize community, cultural, environmental, and parkland impacts, and mitigate for unavoidable impacts at an equal or greater value. MDOT SHA has worked with FHWA and with federal, state, and local resource agencies in a collaborative process to address all regulatory requirements and to ensure the protection of significant environmental and community resources.

In planning mitigation, MDOT SHA, worked with FHWA, federal, state and local agencies and the public to provide meaningful benefits to adjacent resources and improve the values, services, attributes, and functions which may be compromised. Innovative, creative solutions, including modern urban stormwater management and environmentally sensitive design techniques, will be utilized to mitigate for unavoidable impacts resulting from the project. Mitigation commitments are identified and included in this Record of Decision, refer to **Appendix A** of this document.

The Study's alternatives development process[17] was informed by numerous previous studies and planning documents[18]. The initial screening of the Preliminary Alternatives considered initiatives and projects outlined in Visualize 2045, the latest financially Constrained Long-Range Plan (CLRP) that was approved by the National Capital Region Transportation Planning Board on October 17, 2018. An update to this plan was approved by the National Capital Region Transportation Planning Board on June 15, 2022. Visualize 2045 identified Seven Aspirational Initiatives for a Better Future. One of the seven initiatives is "Expand Express Highway Network," which includes congestion-free toll roads, building on an emerging toll road network to encourage carpooling and new opportunities for transit and express buses to travel in the toll lanes. For more information on this initiative refer to:

http://mwcog.maps.arcgis.com/apps/Cascade/index.html?appid=debc2550777b4cc2bae2364c7712a151

Three specific, financially constrained projects in the approved 2018 *Visualize2045* Plan that relate to this Study are:

- CLRP-constrained element ID-1182: I-95/I-495 component of Traffic Relief Plan to include two managed lanes in each direction, between the Baltimore Washington Parkway and the Virginia State Line/Potomac River at the Woodrow Wilson Bridge.
- CLRP-constrained element ID-3281: I-95/I-495 component of Traffic Relief Plan to include two managed lanes in each direction, between the Baltimore Washington Parkway and the Virginia State Line/Potomac River at the ALB.
- CLRP-constrained element ID-1186: I-270 component of Traffic Relief Plan, to include two managed lanes in each direction, between I-495 and I-70/US 40.

[17] Refer to DEIS, Appendix B (https://oplanesmd.com/wp-content/uploads/2020/07/DEIS_AppB_Alts_web.pdf\).
[18] https://oplanesmd.com/environmental/resources/

For more information about these three projects, refer to *Appendix B – Summary of Projects in the Financially Constrained Element*: https://www.mwcog.org/documents/2018/10/17/visualize-2045-a-long-range-transportation-plan-for-the-national-capital-region-featured-publications-tpb-visualize-2045/.

B. NEPA Process

The Study was initiated in early 2018 with the publication of a Notice of Intent to develop an EIS followed by a formal scoping period to determine the range of issues to be addressed by the Study. During the Scoping process, potential Cooperating, Participating, and Notified Agencies at the federal, state, local, and regional levels were initially identified by FHWA and MDOT SHA, in accordance with 40 CFR 1501.6 and 23 U.S.C. § 139. The list of two Lead (Federal Agency and Local Project Sponsor), eight Cooperating, 18 Participating, and seven Notified agencies is provided in **DEIS, Chapter 7, Table 7-1**.

The entire NEPA process has been dedicated to obtaining, considering and responding to public and agency input. Along with FHWA, the MDOT SHA in evaluating the need for congestion relief along the 48-mile corridor, listened to public and agency input regarding alternative solutions, delayed the Study to add and consider new alternatives along through the process, carefully evaluated alternatives, screened a wide range into a set of 15 preliminary alternatives that were then studied in detail and presented in the DEIS. In an innovative manner, FHWA and MDOT SHA presented the DEIS to the public during the COVID-19 Pandemic with in-person and virtual opportunities that may have reached even more people than even traditional methods. FHWA and MDOT SHA also embarked on an evaluation of the long term and short term potential impacts of the pandemic on the region's traffic. MDOT SHA heard the concerns of the public, community and interest groups, and environmental resource agencies and developed a Preferred Alternative with shorter limits, Phase 1 South, which would satisfy the need for congestion relief set forth in the Study's Purpose and Need. The Preferred Alternative, with build improvements only within the limits of Phase 1 South, avoids over 100 acres of parkland and hundreds of wetland and stream features. The impacts associated with the Preferred Alternative were avoided and minimized to the greatest extent practicable in all areas at this preliminary stage of the Study, and avoidance and minimization techniques were specifically refined in some areas of sensitive or recreationally valuable resources, such as the NPS park properties around the ALB. The results were published in the SDEIS in October 2021.

As preliminary design advanced on the Preferred Alternative in coordination with the Developer, minor modifications occurred, which resulted in further avoidance and minimization of environmental resources and documented in the FEIS. In addition, coordination with the resource agencies on avoidance, minimization, and conceptual mitigation continued. The FEIS was published in June 2022 and included a comprehensive list of the mitigation and commitments to be carried forward into final design.

As summarized below, the NEPA Process for the Study documented in the DEIS, SDEIS, and FEIS, the substantial traffic, engineering, and environmental analyses for public review and comment.

The DEIS was published on July 10, 2020 and was made available for public and agency review for a 123-day comment period. The DEIS and supporting documents summarized the entire alternatives development process, including the analysis and screening of 15 Preliminary Alternatives, full consideration of two additional alternatives raised during the comment process, and a detailed

comparison of six Build Alternatives. The DEIS presented the results of draft analyses and the comparison of potential effects to social, cultural and natural environmental resources between the No Build and the six Build Alternatives.

The SDEIS was published on October 1, 2021 and was prepared to consider new information relative to the Preferred Alternative, Alternative 9 - Phase 1 South. Building on the analysis in the existing DEIS, the SDEIS disclosed information relevant to the Preferred Alternative focusing on new information, while referencing the DEIS for information that remained valid. The SDEIS also described the background and context in which the Preferred Alternative was identified. The SDEIS presented updated information on draft analyses that were presented in the DEIS. The SDEIS was available for review to the public and agencies for a 60-day comment period, including an extension of 15 days based on public and stakeholder requests.

The FEIS was published on June 17, 2022, and presented the final analyses completed for the Preferred Alternative, design refinements since the SDEIS, as well as responses to comments on the DEIS and SDEIS. The FEIS responds to the over 5,000 public and agency comments received on the DEIS and SDEIS. The FEIS includes the results of the final analyses of environmental impacts based on extensive avoidance and minimization efforts and presents final mitigation and commitments for unavoidable impacts. The FEIS was available for a 30-day review through the Project website (https://oplanesmd.com/feis/), the USEPA EIS Database and at 17 public libraries along or near the study corridors.

C. Environmental Impacts and Measures to Avoid and Minimize

The Selected Alternative is a resource avoidance and minimization alternative based in part on extensive coordination with and input from agencies and stakeholders, including the Officials with Jurisdiction (OWJs) for Section 4(f) properties. Comments received on the DEIS and Draft Section 4(f) Evaluation from agencies and stakeholders specifically requested avoidance of significant parkland and historic resources within the study area. The Selected Alternative is responsive to comments received and aligns the Study to be consistent with the previously determined phased delivery and permitting approach by limiting the build improvements to the area of Phase 1 South only while avoiding improvements on I-495 east of the I-270 East Spur. The result is complete avoidance of significant stream valley parks, including Rock Creek, Northwest Branch, Sligo Creek, Southwest Branch, and Henson Creek Stream Valley Parks, as well as historic parks of national significance including the Baltimore-Washington Parkway, Greenbelt Park and Suitland Parkway.

The impacts associated with the Selected Alternative were avoided and minimized to the greatest extent practicable in all areas at this preliminary stage of the Study, and avoidance and minimization techniques were specifically refined in some areas of sensitive or recreationally valuable resources. **Table 4** illustrates the avoidance and minimization that has occurred at each NEPA document milestone.

Table 4: Example Environmental Resource Impact Avoidance and Minimization Efforts at each NEPA Document Milestone

Resource	DEIS (Alt 9)	SDEIS (Pref Alt)	FEIS (Pref Alt)
Residential Displacements	**34**	**0**	**0**
Business Displacements	**4**	**0**	**0**
Park impacts (total acres)	**133.1**	**36.1**	**30.2**
NPS Park Property impacts (total acres)	**29.4**	**17.0**	**16.2**
M-NCPPC Park Property impacts (total acres)	**29.0**	**9.2**	**8.2**
Wetlands (total acres)	**16.3**	**4.3**	**3.9**
Waterways (total linear feet)	**155,922**	**46,553**	**42,286**
100-Year Floodplain (total acres)	**119.5**	**48.8**	**31.6**
Forest Canopy (total acres)	**1,497.0**	**500.1**	**455.0**

Under the Selected Alternative, impacts to Morningstar Tabernacle No. 88 Moses Hall and Cemetery boundary are avoided. In the DEIS, Alternative 9 would have impacted 0.3 acre of the Morningstar Cemetery. Based on further investigations of the property since the DEIS, the Preferred Alternative as presented in the SDEIS and FEIS avoids impacts to the historic Morningstar Tabernacle No. 88 Moses Hall and Cemetery boundary. Despite the avoidance efforts, MDOT SHA has committed in the ROD to the following (refer to **Appendix A, Table 1**):

- Construct a new sidewalk along the west side of Seven Locks Road under I-495 to re-establish a connection between Morningstar Tabernacle No. 88 Moses Hall and Cemetery and First Agape AME Zion Church (Gibson Grove Church) in the historically African American community of Gibson Grove.

- Convey a portion of existing MDOT SHA owned right-of-way located adjacent to the boundary of Morningstar Tabernacle No. 88 Moses Hall and Cemetery with an identified potential for unmarked graves to the Trustees of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery.

As noted in **Table 4**, the minimization efforts to NPS park properties resulted in 12 acres avoided under the Selected Alternative. However, the Selected Alternative still impacts 16.2 acres to three NPS park properties: George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway. In addition, impacts to Plummers Island, part of the Chesapeake and Ohio Canal National Historical Park, could not be avoided completely, but impacts have been reduced by 1.7 acres. In the DEIS, the Build Alternatives had 1.9 acres of impacts to Plummers Island. Under the Selected Alternative, there would be approximately 0.28 acres of impact, of which less than 0.1 acres would be permanent impact and 0.27 acres would be temporary impact. Impacts to Plummers Island are required for the ALB substructure, including permanent use for three, discrete, approximately 10-foot diameter pier foundations and temporary, construction activities. Temporary construction activities may include efforts such as excavation, access for demolition of existing bridge foundation and piers adjacent to the island, and slope protection. Access to the existing and proposed piers is required for these activities. In addition, MDOT SHA has made a commitment to evaluate additional options for the ALB during final design that would further minimize or avoid physical impact to Plummers Island, refer to **Appendix A, Table 1**.

A summary of the permanent and temporary effects associated with the Selected Alternative are shown in **Table 5.** The impacts presented are associated with the build improvements of the Selected Alternative. For additional details on the environmental impacts and efforts to avoid and minimize impact by resource refer to **FEIS, Chapter 5**. Specific mitigation and commitments are presented in **Appendix A** of this document.

Table 5: Summary of Impacts and Findings of the Selected Alternative

Summary of Selected Alternative Permanent and Temporary Impacts
Land Use and Zoning
• Conversion of 78.2 acres of existing land uses to transportation right-of-way • Located entirely within Priority Funding Areas and is consistent with the Maryland Smart Growth Priority Funding Areas Act
Communities and Community Facilities
• No residential or business displacements • Partial property impacts are dispersed throughout seven communities adjacent to I-495 and I-270 in the Phase 1- South area only. • Divisions or isolation of properties, persons, or groups would not occur due to the generally parallel nature of the LOD along I-495 and I-270 and the fact that no properties would be displaced. • Reduction in total traffic on all network local roads by 3.5%, which would lead to better access to facilities and improved emergency response times along local roadways • Benefits to the quality of life due to reduced congestion along the study corridors and improved trip reliability and travel choices to destination points within the region • Partial property acquisitions from: 1 correctional facility, 2 healthcare facilities, 4 places of worship, 1 recreation center, 2 schools, and 1 historic cemetery (refer to FEIS, Table 5-4)
Parks and Recreation Facilities
• 30.2 acres of right-of-way needed from park properties (refer to FEIS, Table 5-5) o 16.2 acres of impacts at 3 NPS properties: 2.7 acres of permanent and 13.5 acres of temporary impacts o 8.2 acres of impacts at 5 M-NCPPC properties: 7.5 acres of permanent and 0.7 acres of temporary impacts o 5.4 acres of impacts at 4 City of Rockville park properties: 5.2 acres of permanent and 0.2 acres of temporary impacts o 0.5 acres of impacts at 1 City of Gaithersburg park property: 0.4 acres of permanent and <0.1 acres of temporary impacts
Property Acquisitions
• No residential of business displacements • 92.8 acres of total property outside of the existing highway right-of-way is needed: 78.2 acres for permanent use and 14.7 acres for temporary use • 361 properties impacted: 255 residential and 106 business/other properties
Visual and Aesthetic Resources
• Construction of the Selected 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 • Aesthetic and landscaping guidelines of all highway elements will be established in consultation with local jurisdiction, private interest groups, local community and business associations, and local, state, and federal agencies

• Construction will result in the removal of vegetation along the study corridors and the addition of construction equipment into existing viewsheds
Historic Architectural and Archeological Resources
• Adverse effects to 4 historical architectural properties and 6 archeological properties • Additional archaeological delineation and treatment at the Poor Farm Cemetery is needed and is a commitment documented in the Programmatic Agreement • Avoids impacts to the historic Morningstar Tabernacle No. 88 Moses Hall and Cemetery boundary; determination of effects deferred until further investigations are completed as documented in the Programmatic Agreement • The signed Section 106 Programmatic Agreement is included in **Appendix B** of this document.
Air Quality
• In an attainment area for particulate matter (PM2.5) • Project would not be an exceedance of the carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) • Mobile Source Air Toxics (MSATs) pollutant emissions are expected to increase slightly with the Selected Alternative when compared to the No Build condition for 2025 and 2045, but all MSAT pollutant emissions are expected to significantly decline in the Opening (2025) and Design years (2045) when compared to existing conditions (2016) • Greenhouse gases (GHG) emissions with the Selected Alternative are expected to decline in the Opening (2025) and Design (2045) years for all GHG pollutants when compared to existing conditions. • Temporary air quality impacts are expected during construction, but measures will be implemented during construction to minimize emissions from construction vehicles
Noise
• 3 noise sensitive areas (NSA) in Virginia are predicted to have noise impacts • 45 NSAs in Maryland are predicted to have noise impacts • Noise impacts during construction are anticipated • Noise abatement for impacts is included in the Selected Alternative
Hazardous Materials
• 255 sites of concern were assigned a risk classification based on potential environmental impacts and proximity to the Selected Alternative LOD o 11 sites of high risk concern o 41 sites of moderate risk concern o 83 sites of low risk concern o 120 de minimis sites - unlikely for potential contamination
Topography, Geology and Soils
• Topography would be altered from construction of the Selected Alternative by surficial excavation and grading, thereby changing the relative ground elevation, but this work is not anticipated to have a substantial effect on underlying sediments • Soil removal or alterations to the soil profile and structure due to construction activities is expected • Measures to protect soils from erosion would be implemented based on approved Erosion and Sediment Control Plans (E&S Plans) prepared in accordance with Maryland and Virginia regulations.
Waters of the US and Waters of the State, Including Wetlands
• 3.9 acres of wetland impacts • 6.5 acres to impacts to wetland buffers • 42,286 linear feet of impacts to waterways

• Concurrent with the NEPA process, MDOT SHA has prepared a Joint Federal/State Permit Application for the Alteration of Any Floodplain, Waterway, Tidal or Non-Tidal Wetland (refer to **FEIS, Appendix P**)
Watersheds and Surface Water Quality
• Surface waters, surface water quality, and watershed characteristics within the Selected Alternative LOD are directly and indirectly impacted to intermittent and perennial stream channels and increases in impervious surface in their watersheds • The impacts to jurisdictional surface waters by USGS HUC8, Maryland 8-digit, and Maryland 12-digit watersheds are provided in *Appendix A* of the *Final Natural Resources Technical Report* (**FEIS, Appendix M**) and in **Table 5-29 to 5-33 in Chapter 5 of the FEIS**.
Groundwater Hydrology
• Selected Alternative may affect groundwater and hydrology, mainly due to highway runoff impacts from stormwater infiltration • Impacts to drinking water from groundwater resources are not anticipated
Floodplain
• 31.6 acres of impacts to FEMA 100-year floodplains • USACE determined that the Washington Aqueduct, the one Section 408 in the study limits, would not result in an adverse effect to this resource and further coordination is not needed • Detailed hydrologic and hydraulic (H&H) study will be prepared during final design to identify the existing storm discharge and floodplain extent • All construction occurring within the FEMA designated floodplains will comply with FEMA-approved local floodplain construction requirements
Vegetation and Terrestrial Habitat
• Removal and disturbance of vegetated areas, including forests, within the LOD due to clearing and grading of land needed for construction • 455 acres of forest canopy impacts o 11.1 acres of Forest Conservation Easements o 0.9 acres TMDL Reforestation Sites o 2.8 ICC Reforestation Sites • Approximately 1.0 acre of impacts to forest areas and seven specimen trees would be impacted by the off-site compensatory stormwater quality treatment sites
Terrestrial Wildlife
• No bald eagle nests have been identified by USFWS within the study corridor boundary • The Selected Alternative is not within the Critical Area • 11.2 acres of potential impacts to Forest Interior Dwelling Species (FIDS) habitat
Aquatic Biota
• May affect aquatic biota due to direct and indirect impacts to perennial and intermittent stream channels • Impacts to aquatic biota may include mortality of aquatic organisms during construction of culvert extensions and loss of natural habitat from the placement of culvert pipes and other in-stream structures, or from more gradual changes in stream conditions
Rare, Threatened and Endangered (RTE) Species
• Extensive surveys in the corridor study boundary did not detect any federally listed bat species of the Northern Long-eared Bat or the Indiana Bat. • 6 RTE plant species would be impacted near the Potomac River • No Virginia state-listed wood turtle were found during field surveys

Unique and Sensitive Areas
• No impacts to special protection areas or Virginia Natural Area Preserves and Conservation Sites • 163.1 acres of impacts to Unique and Sensitive Areas o 55.9 acres of impact to Targeted Ecological Areas o 23.8 acres of impacts to Green Infrastructure Hubs o 83.4 acres of impacts to Green Infrastructure Corridors
Environmental Justice
• The Selected Alternative will not cause disproportionately high and adverse effects on any minority and/or low-income populations in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23A.

D. Public Outreach and Opportunities for Comment

From the outset of the Study's NEPA process, FHWA and MDOT SHA developed a comprehensive public involvement and engagement strategy designed to obtain input from stakeholders around the entire study area. This strategy combined traditional opportunities for commenting on the DEIS and SDEIS in addition to wide-ranging outreach to community organizations (e.g., church groups, homeowners' associations, public interest groups, and governmental entities), with particular sensitivity and outreach to identified environmental justice (EJ) communities. The public involvement and engagement process, starting in early 2018 and continuing to the present, considered the vast diversity of community resources. The lead agencies strategy also changed over time to reflect the realities of conducting the NEPA process in part during the COVID-19 Pandemic. Prior to and after pandemic restrictions were eased, there were both in person and virtual public and community meetings, presentations at community events and in public spaces. The efforts during the Study to engage with the public in a safe manner during the pandemic became nationally recognized based on its strategy of ensuring safety while still providing similar opportunities for meaningful participation by the public in the NEPA process. MDOT SHA and FHWA were able to make the DEIS available and accessible both in person and virtually and by holding public hearings in recognition of evolving social gathering and public health restrictions. The public involvement conducted throughout the Study has gone above and beyond and has been documented in the following reports: **DEIS, Chapter 7 and Appendix P; SDEIS, Chapter 7;** and **FEIS Chapter 8 and Appendix R**.

The Study's public involvement efforts began immediately after the publication of the Notice of Intent (NOI) in the *Federal Register* on March 16, 2018, to announce the initiation of the Study. Following the NOI, public involvement efforts were organized by subsequent engagement stages: Scoping, Preliminary Alternatives, and Alternatives Retained for Detailed Study (ARDS). Since publication of the NOI, 16 Public Workshops with over 2,100 attendees were held along the study corridors in Montgomery and Prince George's Counties.

The DEIS was published on July 10, 2020 and was made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/deis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's Counties, Maryland; Fairfax County, Virginia; and Washington, DC. Following publication of the DEIS, FHWA and MDOT SHA provided a 90-day comment period, which is twice the minimum time required by the CEQ regulations. Based on input from the general public, community partners, stakeholders, and local and federal officials, however, MDOT SHA supported extending the DEIS comment period and made a formal request to FHWA, which has authority to grant any extension. FHWA approved this request and granted a 30-day extension of the public comment period

for the DEIS. All in all, the DEIS was made available for comment and review from July 10, 2020, through and including November 9, 2020, a total of four months. During this extended comment period, the agencies received close to 3,000 comments.

The SDEIS published on October 1, 2021, was prepared to consider new information relative to the Preferred Alternative, Alternative 9 - Phase 1 South. Building off the analysis in the existing DEIS, the SDEIS disclosed new information relevant to the Preferred Alternative while referencing the DEIS for information that remained valid. The SDEIS also described the background and context in which the Preferred Alternative, Alternative 9 – Phase 1 South was identified. The SDEIS was available for the public to review and comment on the Preferred Alternative during a 45-day comment period, which was later extended an additional 15 days in response to public comments and requests. The SDEIS was also made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/sdeis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's counties; Maryland, Fairfax County, Virginia; and Washington, D.C.

The FEIS was published on June 17, 2022 and was made available for a 30-day review on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/feis/), on the US EPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's Counties, Maryland; Fairfax County, Virginia; and Washington, DC.

Involvement by the public has been a critical part of a NEPA study. To-date, 16 public workshops and 7 public hearings were held, with distinct public comment periods. Additionally, over 200 individual stakeholder, community, elected official and business meetings were held to present Study information and hear concerns and feedback on a variety of topics.

The public participation elements of the NEPA process were an opportunity to promote equity and EJ concerns by ensuring minority and low-income communities (EJ populations) have access to and receive information concerning the proposed action and the potential impacts on those communities. With even more concentrated outreach, project efforts effectively identified community concerns and informed agency decision-makers regarding project elements and potential enhancements specifically geared to protected communities. In this regard, MDOT SHA implemented a robust plan to meet and exceed federal policies and best practices for outreach to and engagement with EJ populations within and adjacent to the study area.

In addition, in the Fall of 2021, MDOT SHA developed an online survey to seek additional feedback from EJ populations on existing community concerns and strategies that could be implemented to address those concerns. The survey was distributed in a variety of ways including through multiple community "pop-up" events hosted by MDOT SHA at local specialty markets in areas noted as having high percentages of low-income and/or minority populations. These events allowed MDOT SHA to answer Study-related questions and to engage face-to-face to hear community concerns and potential solutions. The results of this survey helped identify priorities of these communities for improved sidewalks and bicycle facilities, better lighting, and traffic calming measures. These elements have been incorporated into the Selected Alternative or as mitigation for potential impacts and commitments; refer to **Appendix A** of this document for the comprehensive list of mitigation and commitments.

E. Consideration of Agency and Public Comments

From the outset of the NEPA review, the project proponent, MDOT SHA, and FHWA committed to a transparent process that would inform all aspects of the agencies' decision-making. As described in detail in this ROD, the Project reflects substantial engineering modifications (refer to **FEIS, Chapter 3, Section 3.1**) that directly responded to over 5,000 comments from a wide spectrum of stakeholders, community groups, and governmental entities. MDOT SHA and FHWA have modified analysis methodologies, conducted revised analyses, studied new or modified existing alternatives, refined design to avoid and minimize environmental and community impacts, and identified meaningful mitigation to address unavoidable impacts.

MDOT SHA incorporated public input into every phase of the NEPA process, including development of the Study's Purpose and Need. Community input obtained during the scoping phase reflected a concern that any proposed highway improvements should complement the region's broader mobility and transportation objectives. As a result, the agencies amended its Purpose and Need to include enhancements to multi-modal mobility connectivity and transit accessibility (refer to DEIS, Chapter 1 and FEIS, Chapter 1). The agencies also expanded the range of alternatives considered during the NEPA analysis to include suggestions received from Cooperating and Participating agencies and the public (refer to DEIS Chapter 2, and DEIS Appendix B, Alternatives Technical Report). These additional alternatives assisted with the public's ability to compare potential Project impacts and transportation benefits.

Most importantly, following publication of the DEIS, MDOT SHA and FHWA considered concerns raised from a variety of stakeholders that the originally proposed Preferred Alternative, that recommended improvements across almost the entire span of the Capital Beltway in Maryland, would have resulted in a numerous adverse environmental and community impacts. Public and agency comments focused in particular on the number of potential residential and/or business displacements, the use of public parkland (owned by local, state, and federal agencies), water resources impacts, and community impacts, including environmental justice issues.

In response to this input, and traffic operational concerns across the ALB and southern section of I-270, MDOT SHA and FHWA published a SDEIS which announced changes to the Preferred Alternative that substantially reduced Project impacts, while also providing relief from existing and future traffic issues along some of the most congested sections of the Beltway and I-270 and reconstructing of one of the region's most severe bottlenecks, the ALB. Among other highlights, this revised Preferred Alternative eliminated all residential and business displacements, reduced permanent parkland impacts by almost 70 percent, avoided all impacts to the boundary of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery, significantly reduced impacts to sensitive lands around the ALB, and substantially reduced the amount of potential water and stream impacts.

The process by which the agencies sought and obtained public input was also extraordinary in its scope and intensity. The mandatory official public comment periods were extended to more than a total of six months. As the NEPA process was conducted during the COVID Pandemic, the agencies employed numerous public participation methods to ensure the broadest opportunities to provide input, and to do so in a safe environment. MDOT SHA conducted 16 public workshops and 7 public hearings, all with separate public comment periods. For a summary of the individual stakeholder, community, elected official and business meetings held during the course of the Study refer to FEIS, Chapter 8.

MDOT SHA also engaged in rigorous coordination with local, state, and federal agency Cooperating and Participating agencies. For instance, the agencies created an "American Legion Bridge Strike Team" aimed specifically at reducing impacts to federally-owned parkland adjacent to the existing and proposed reconstructed bridge. The engineering changes as a result of those efforts resulted in modifications to the constructability plan for the ALB by removing construction vehicle access in three of the four quadrants to avoid and minimize impacts to sensitive NPS property. Another example of additional public outreach was formation of the EJ Working Group and EJ Outreach and Engagement Plan implementation in the Fall of 2021 to provide opportunities for meaningful engagement with underserved communities directly or indirectly affected (refer to **FEIS, Chapter 8, Section 8.2.3** for additional details).

Demonstrating the agencies' commitment to all aspects of the Study's Purpose and Need, the Selected Alternative described in this ROD includes a wide range of non-highway elements reflective of the public's recommendations. These include the ability for bus transit and car/vanpools to use the new managed lanes free of charge, the construction of new or improved bicycle and pedestrian paths, and enhancements to public transit facilities that will provide improved access to Washington Metropolitan Area Transit Authority (WMATA) bus and rail service. Other projects commitments that are part of MDOT SHA's agreement with the Public-Private Partnership (P3) Developer ("Developer"), further expand the commitment to multi-modal transportation investments in the study area. These commitments are documented in the **FEIS, Chapter 7, Section 7.3**. The MDOT SHA P3 Agreement is available on the program website here: https://oplanesmd.com/p3-information/phase-1-agreement/.

Among the many other highlights of how the agencies' incorporated community and agency concerns into the Selected Alternative include:

- Aligning the Selected Alternative and environmental permitting process with the phased project delivery/construction approach focusing on addressing the severe congestion at the ALB as priority.
- Committing to constructing a shared use path on the east side of the ALB to support regional pedestrian and bicycle connectivity.
- Identifying appropriate on-site and off-site SWM to meet regulatory requirements and removed or relocated SWM facilities from sensitive resources including parks, where feasible, and NPS property.
- Monitoring and analyzing traffic impacts associated with the COVID-19 Pandemic to understand any impacts on existing and future travel and to the Study.
- Including toll-free travel under the Selected Alternative for high-occupancy vehicles (HOV) with three (3) or more occupants, transit buses, carpool/vanpool and motorcyclists to reduce the reliance on single occupancy vehicles and provide equitable travel options.
- Avoiding and minimizing environmental and property impacts by eliminating the concrete barrier separation and repurposing the pavement on I-270 between the Collector-Distributor system and the general purpose lanes to provide a new lane and largely stay within the existing roadway footprint on I-270.

- Modifying direct access ramps to the managed lanes in consideration of local land use and the potential for community, property, and environmental impacts. For example, the preliminary direct access interchange at Montrose Road was relocated to Wootton Parkway to minimize stream, park and property impacts.

- Establishing a Transit Work Group to further explore opportunities for new or expanded transit service on managed lanes.

- Establishing an Economic Work Group to determine the economic impacts of the project to the National Capital Region.

- Establishing an Environmental Justice (EJ) Working Group to support the EJ analysis and engagement efforts.

- Incorporating closed roadway sections with retaining walls where feasible to avoid and minimize environmental and property impacts.

- Including underground SWM vaults to avoid and minimize environmental and property impacts.

- Eliminating all ramps crossing over the general purpose lanes of I-495 at the MD 190/River Road interchange by adjusting the location of the high-occupancy toll (HOT) lane direct access ramps between I-495 and MD 190. All HOT lanes direct access ramps within this interchange are now proposed to connect at a new intersection on the MD 190 bridge over I-495 without the use of ramps crossing over the general purpose lanes of I-495.

In sum, Selected Alternative in this ROD reflects the wide breadth of changes made to the Preferred Alternative and the no action or improvements on a portion of the proposed action contemplated at the beginning of the NEPA process, as well as the range of permitting mitigation and other related P3 commitments. The details presented as part of the Selected Alternative represent the culmination of over four years of coordination with the public, stakeholders, and government agencies.

VII. Determination of Findings Regarding Other Laws

A. Air Quality Conformity

The Study is currently included in the National Capital Region Transportation Planning Board (TPB) Fiscal Year (FY) 2019 – 2024 Transportation Improvement Program (TIP) [TIP ID 6432 and Agency ID AW0731 (planning activities)] and the TPB Visualize 2045 Long Range Plan (CEID 1182, CEID 3281, and Appendix B page 56). This Study is included in the Air Quality Conformity Determination that accompanies the Visualize 2045 Plan. The Visualize2045 Air Quality Analysis is based upon the latest planning assumptions available for the Washington region. The analysis used MOVES2014a, the latest emission factor model specified by USEPA for use in preparation of state implementation plans and conformity assessments at the time of analysis.

As part of the conformity requirements, consultation with affected agencies such as the USEPA, FHWA, Federal Transit Administration (FTA), and the Metropolitan Washington Air Quality Committee (MWAQC), as well as with the public was completed. 23 CFR 450.324(c) requires that the Metropolitan Planning Organization (MPO) review and update the transportation plan at least every four years in air quality

nonattainment and maintenance areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. The TPB approved an update to Visualize 2045 on June 15, 2022. The design concept and scope for the Preferred Alternative is included in the Air Quality Conformity analysis accompanying the update to Visualize 2045. As the Study is included in the conforming long-range plan, it is not anticipated that the Selected Alternative, which is included in the updated Air Quality Conformity analysis, would cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS.

The Air Quality Analysis study area (i.e., Montgomery County and Fairfax County) is in an attainment area for $PM_{2.5}$, therefore, transportation conformity requirements pertaining to $PM_{2.5}$ do not apply for this Project and no further analysis of $PM_{2.5}$ was required. The Maryland counties were redesignated from a nonattainment area to attainment and entered a 20-year maintenance period for CO in March 1996. The area was considered a maintenance area for the 20 years following until March 2016 when the counties completed the maintenance period. Since the Maryland counties have completed the maintenance period, transportation conformity no longer applies for CO. Similarly, Fairfax County is designated attainment for CO, and is also considered attainment for the 1997 $PM_{2.5}$ NAAQS per the USEPA 2016 ruling.

B. Section 4(f) Determination

Section 4(f) of the US Department of Transportation Act of 1966 as amended (49 U.S.C. 303(c) and 23 U.S.C. 138) is a federal law that protects properties defined in 23 CFR 774.17 as "publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance." Section 4(f) applies to all transportation projects that require funding or other approvals by the USDOT. As a USDOT agency, FHWA must comply with Section 4(f) and its implementing regulations at 23 CFR 774.

Regulations at 23 CFR 774.11(c) state Section 4(f) applies to a park, recreation area, or wildlife and waterfowl refuge determined to be significant. For properties where no determination exists, "the Section 4(f) property will be presumed to be significant." 23 CFR 774.17 further defines "Historic site" to include any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

FHWA will not approve a transportation project that uses any Section 4(f) property, unless:

- FHWA determines that there is no feasible and prudent avoidance alternative to the use of land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 774.3(a)); or
- FHWA determines that the use of Section 4(f) property, including any measures to minimize harm (such as avoidance, minimization, mitigation, or enhancements measures) committed to by the applicant, will have a de minimis impact on the property (23 CFR 774.3(b)).

An impact to a public park, recreation area, or wildlife and waterfowl refuge may be determined to be *de minimis* if the transportation use of the Section 4(f) property, including incorporation of any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures), does not

adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f) (23 CFR 774.17). For historic sites, a *de minimis* impact means that FHWA has determined (in accordance with 36 CFR 800) that either no historic property is affected by the project or that the project will have "no adverse effect" on the historic property. A *de minimis* impact determination does not require analysis to determine if avoidance alternatives are feasible and prudent, but consideration of avoidance, minimization, mitigation or enhancement measures should occur.

The Selected Alternative considered significant coordination with and listening to agencies and stakeholders, including the OWJs for Section 4(f) properties. The Selected Alternative would avoid the use of 40 Section 4(f) properties with a net reduction of approximately 113.6 acres of Section 4(f) properties, including both parks and historic resources, compared to the DEIS Alternative 9. The Selected Alternative would require use of a total of 33.2 acres from 20 Section 4(f) properties (including temporary and permanent use), compared to a total of 146.8 acres for the DEIS Alternative 9. Refer to **Table 6** for a summary of the Use of Section 4(f) Property from the Selected Alternative.

A *de minimis* impact finding has been made on 13 of the 20 impacted properties listed in **Table 6**. The public was afforded the opportunity to comment on the *de minimis* impact finding during the SDEIS comment period as well as a separate notice on the Project website and the respective OWJ websites. Written concurrence from the OWJs and FHWA is included in the appendices in the FEIS. For letters from M-NCPPC, City of Gaithersburg and City of Rockville, refer to **FEIS, Appendix S**. For the concurrence from the Maryland Historical Trust (MHT) refer to **FEIS, Appendix I**. A full description and analysis of the 13 Section 4(f) properties that would experience a *de minimis* impact is found in **FEIS, Appendix G, Section 2.**

In addition to OWJs, the Section 4(f) Evaluation must be made available to the US Department of the Interior (USDOI) and as needed, to the US Department of Agriculture (USDA) and the Department of Housing and Urban Development (HUD) (23 CFR §774.5). In accordance with 23 CFR §774.5, USDOI has been provided an opportunity to review and comment on the Draft Section 4(f) and Updated Section 4(f), and Final Section 4(f) Evaluation in coordination with the FEIS. In a letter dated July 12, 2022, USDOI responded with no further comments on the FEIS and agreed that there is no feasible and prudent use of Section 4(f) properties in the study area, the proposed action includes all possible planning to minimize harm to resources and that the Preferred Alternative is the alternative with the lease overall harm. (Refer to Appendix B of this ROD for a copy of this letter.) The Selected Alternative would not affect resources requiring coordination with USDA and HUD and, therefore, consultation with these agencies is not necessary.

The DEIS, SDEIS, and FEIS presented measures that had been identified to ensure all possible planning to minimize harm and mitigate for adverse impacts and effects. These measures are presented in **Section 4 of the Draft Section 4(f) Evaluation** (**DEIS, Appendix F**), **Chapter 5 of the SDEIS, Chapter 6 of the FEIS, and Section 4 of FEIS, Appendix G**.

Pursuant to Section 106, MDOT SHA has prepared a Programmatic Agreement to resolve adverse effects to historic properties (**FEIS, Appendix J and Appendix C of the ROD**). In general, mitigation measures agreed upon as part of the Section 106 process satisfy the requirement to include all possible planning to minimize harm for historic properties under Section 4(f) (refer to **Appendix A** of this document).

With regard to public parks, all possible planning involves the minimization activities described herein as well as mitigation coordinated with the OWJs over public parks and recreation areas, as described in **Chapters 6 and 7** of the FEIS, and **FEIS, Appendix G.** All possible planning to minimize harm will additionally involve an agreement document that outlines the process to continue coordination with the OWJs over Section 4(f) properties through the design phase of the Project.

Based on the information presented in the Draft Section 4(f) Evaluation, Updated Draft Section 4(f) Evaluation, and the Final Section 4(f) Evaluation, FHWA has concluded that there is no feasible and prudent alternative to the use of land from the Section 4(f) properties identified in **Table 6**, and the proposed action includes all possible planning to minimize harm, and the Selected Alternative is the alternative with the least overall harm.

Table 6: Use of Section 4(f) Property for the Selected Alternative

Section 4(f) Property	Official(s) with Jurisdiction[1]	Property Type	Section 4(f) Approval	Permanent (acres)[2]	Temporary (acres)[2]	Total (acres)[2]
George Washington Memorial Parkway	Advisory Council on Historic Preservation (ACHP), NPS, Virginia Department of Historic Resources (VDHR)	Public Park and Historic Property	Individual Evaluation	0.6	3.8	**4.4**
Chesapeake and Ohio Canal National Historical Park[3]	ACHP, MHT, NPS	Public Park and Historic Property	Individual Evaluation	1.0	9.1	**10.1**
Clara Barton Parkway[3]	ACHP, MHT, NPS	Public Park and Historic Property	Individual Evaluation	1.1	0.6	**1.7**
Washington Biologists' Field Club on Plummers Island	MHT, NPS	Historic Property	Individual Evaluation	<0.1	0.27	**0.28**
Carderock Springs Historic District	MHT	Historic Property	*De minimis*	< 0.1	< 0.1	**< 0.1**
Gibson Grove AME Church	MHT	Historic Property	Individual Evaluation	0.6	0.0	**0.6**
Cabin John Stream Valley Park Unit 2	Maryland-National Capital Park and Planning Commission (M-NCPPC) Montgomery County	Public Park	*De minimis*	0.6	< 0.1	**0.6**
Burning Tree Club	MHT	Historic Property	*De minimis*	1.3	0.0	**1.3**
Academy Woods	MHT	Historic Property	*De minimis*	0.2	0.0	**0.2**
Cabin John Regional Park	M-NCPPC Montgomery County	Public Park	Individual Evaluation	5.7	0.6	**6.3**
Tilden Woods Stream Valley Park	M-NCPPC Montgomery County	Public Park	*De minimis*	0.3	0.1	**0.4**
Old Farm Neighborhood Conservation Area	M-NCPPC Montgomery County	Public Park	*De minimis*	0.1	0.0	**0.1**
Cabin John Stream Valley Park Unit 6	M-NCPPC Montgomery County	Public Park	*De minimis*	0.8	<0.1	**0.8**
Bullards Park and Rose Hill Stream Valley Park	City of Rockville Department of Recreation and Parks	Public Park	Individual Evaluation	3.3	0.0	**3.3**
Rockmead Park	City of Rockville Department of Recreation and Parks	Public Park	*De minimis*	0.2	0.1	**0.3**
Woottons Mill Park	City of Rockville Department of Recreation and Parks	Public Park	*De minimis*	0.7	0.0	**0.7**

Section 4(f) Property	Official(s) with Jurisdiction[1]	Property Type	Section 4(f) Approval	Permanent (acres)[2]	Temporary (acres)[2]	Total (acres)[2]
Woodley Gardens	MHT	Historic Property	*De minimis*	1.2	0.1	**1.3**
Rockville Senior Center and Park	City of Rockville Department of Recreation and Parks, MHT	Public Park and Historic Property	*De minimis*	1.0	0.1	**1.1**
Ward Building	MHT	Historic Property	*De minimis*	0.2	0.0	**0.2**
Malcolm King Park	City of Gaithersburg Department of Parks, Recreation and Culture	Public Park	*De minimis*	0.4	<0.1	**0.5**

Note: 1. Virginia Department of Historic Resources (VDHR) serves as the Virginia State Historic Preservation Office; Maryland Historical Trust (MHT) serves as the Maryland State Historic Preservation Office.

2. All impacts quantities rounded to the tenths of an acre. For purposes of determining Section 4(f) use, temporary impacts are considered short-term, construction related activities that do not require permanent incorporation of a Section 4(f) resource into a transportation facility. Short-term, construction related work includes but is not limited to construction staging, material and equipment storage, construction access easements, and other areas needed to support the construction, but not part of the long-term improvement.

3. Section 4(f) impacts to Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway as currently noted in Chapter 5 exclude the area that currently has an existing transportation use. The area within NPS property defined as transportation use includes existing I-495 at-grade roadway sections to the toe of slope, Clara Barton Parkway Interchange ramp sections to the toe of slope, existing pier locations for the structure over the Chesapeake and Ohio Canal and eastbound Clara Barton Parkway, and existing pier locations for the ALB.

C. Section 106 Determination

Due to the complexity and wide scope of the Study, the Section 106 process has concluded through a Programmatic Agreement (PA), as described at 36 CFR Part 800.14[b]. (Refer to **Appendix C**.) FHWA notified the Advisory Council on Historic Preservation (ACHP) of this anticipated PA in March 2018, and ACHP notified MDOT SHA and FHWA in May 2018 of their participation in consultation for this undertaking (36 CFR Part 800.6[a][1][iii]). The PA provides protocols for additional consultation, historic properties identification, effects assessment, and adverse effects resolution as design advances. MDOT SHA will oversee implementation of the PA as the Project continues following the ROD.

Subsequent to the SDEIS, MDOT SHA completed its review of consulting parties' comments on the first draft of the PA and provided a second draft to consulting parties on December 6, 2021. MDOT SHA received consulting parties' comments on the second draft on January 3, 2022. MDOT SHA provided a third draft to consulting parties for comment on March 31, 2022 and received consulting parties' comment on the third draft to consulting parties for comment on April 14, 2022. MDOT SHA provided a final PA to consulting parties for signature on May 17, 2022. The PA has been signed and was executed prior to the issuance of the ROD. (Refer to **Appendix C** of this document.)

D. Environmental Justice

All federal agencies have certain obligations under EO 12898: Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations (EJ Order). EO 12898 states that "…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

The Study completed an EJ analysis as part of the NEPA process and has been documented in the following reports: **DEIS, Chapter 4 and Appendix E; SDEIS, Chapter 4;** and **FEIS Chapter 5 and Appendix F**. As a result of this analysis, the Selected Alternative will not cause disproportionately high and adverse effects on any minority and/or low-income populations in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23A.

During the outreach and engagement efforts, community priorities were identified for improved sidewalks and bicycle facilities, better lighting, and traffic calming measures. MDOT SHA commits to working with the City of Rockville, the City of Gaithersburg, and Montgomery County to:

- Identify locations where safer pedestrian crossings on major state roadways are needed.
- Identify locations where additional pedestrian improvements including adding or upgrading sidewalk, restriping for bicycle lanes, adding or upgrading ADA ramps are needed.
- Identify locations along state roads with existing pedestrian facilities where more or improved lighting is needed.

MDOT SHA has also committed to certain improvements within the historically African American community of Gibson Grove either as mitigation for direct impacts or as commitments for further enhancement. MDOT SHA will construct or fund a new parking lot for the Gibson Grove Church in coordination with their restoration plans, provide stormwater improvements to the property, and provide

a new sidewalk along the west side of Seven Locks Road under I-495 to reestablish the historic connection between Gibson Grove Church and Morningstar Tabernacle No. 88 Moses Hall and Cemetery. Refer to **Chapter 5, Section 5.7** and **FEIS, Appendix J** for details. MDOT SHA has also committed to convey a portion of existing MDOT SHA owned right-of-way located adjacent to the boundary of Morningstar Tabernacle No. 88 Moses Hall and Cemetery with an identified potential for unmarked graves to the Trustees of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery.

Additionally, the Developer is committed to community and transit enhancements as referenced in the **FEIS, Chapter 7, Section 7.3**.

E. Wetlands and Waterways Finding

The Selected Alternative impacts wetlands and waterways located entirely within the Middle Potomac-Catoctin HUC-8 watershed. Impacts were analyzed and quantified within the LOD for each regulatory jurisdiction and were documented in **Chapter 5 of the FEIS, and FEIS Appendices M, N, O and P**. In Maryland, MDE impacts include 152,934 square feet (3.51 acres) of permanent wetland impacts and 28,594 linear feet of non-culverted stream impacts; and USACE impacts include 148,598 square feet (3.41 acres) of permanent wetland impacts and 29,769 linear feet of non-culverted stream impacts. In Virginia, VDEQ and USACE impacts include 944 linear feet of non-culverted streams.

Based on the direct and indirect impacts of the Selected Alternative, the nontidal wetlands and waterways mitigation requirement estimate in Maryland includes 4.38 acres of wetland mitigation credits and 7,511 functional feet (FF) of stream credits. No mitigation bank credits within an appropriate service area, or in-lieu fee programs were identified in Maryland; therefore, MDOT SHA committed to meeting the USACE and MDE nontidal wetlands and waterways mitigation requirement through the permittee-responsible mitigation. Off-site compensatory nontidal wetlands and waterways mitigation in Maryland consists of two permittee-provided mitigation sites, including a total of 4.61 acres of potential wetland mitigation credits and 6,304 FF of potential stream mitigation credits. The remaining required stream mitigation credits will be provided by purchasing credits from a mitigation bank that will have an initial credit release in the fall of 2022. Further details on the Selected Alternative impacts, mitigation requirements, proposed mitigation sites, and Phase II Mitigation Plans is included in the *Final Compensatory Wetlands and Waterways Mitigation Plan (CMP)* (**FEIS, Appendix O**).

In Virginia, wetland mitigation requirements were determined based on replacement ratios in the Virginia Administrative Code (9VAC25-680-70), and stream mitigation requirements were developed based on the USACE's Unified Stream Methodology for use in Virginia, January 2007. MDOT SHA commits to meeting Virginia stream mitigation requirements through purchase of privately-owned mitigation bank credits. These credits will fulfill the current mitigation requirement estimate of 472 riverine mitigation credits in the Fairfax County Middle Potomac-Catoctin watershed. MDOT SHA has identified specific mitigation bankers and confirmed credit availability in the Final CMP (**FEIS, Appendix O**).

Concurrent with the NEPA process, MDOT SHA has prepared a Joint Federal/State Permit Application for the Alteration of Any Floodplain, Waterway, Tidal or Non-Tidal Wetland (refer to **FEIS, Appendix P**). The USACE plans to issue a Clean Water Act, Section 404 and Section 10 Permit. The MDE and VDEQ plan to issue Section 401 Water Quality Certifications, and MDE will also issue a Maryland Nontidal Wetlands and Waterways Permit.

F. Floodplain Finding

The Selected Alternative will result in 31.6 acres of impacts to FEMA 100-Year Floodplain, which represent the estimated footprint of fill areas associated with construction of the Selected Alternative. Actual analysis of potential study related changes to hydraulic function and elevation of floodplains would be determined using hydraulic and hydrologic (H&H) floodplain modeling as part of the engineering process for each structure in final design. Roadway expansion and augmented culverts associated with the Selected Alternative may increase the size of existing floodplain encroachments but would not result in new significant encroachments into the floodplain as defined in CFR §650.105(q). The proposed expansion of the roadway would increase the size of existing floodplain encroachments but would not result in new significant floodplain encroachments.

If H&H studies find that the flood elevation would change, mitigation or other actions will be required in accordance with floodplain regulations. MDOT SHA will submit project plans to MDE for approval of structural evaluations, fill volumes, proposed grading evaluations, structural flood-proofing, and flood protection measures in compliance with FEMA requirements, US Department of Transportation (USDOT) Order 5650.2, *Floodplain Management and Protection*, and EO 11988. Improvements at existing culverts are required to maintain existing 100-year flood high water elevations. Culvert improvements and new culvert design will ensure that flood risk to adjacent properties is not increased, a requirement of COMAR 26.17.04.11. 23 CFR § 650.115(a) will be consulted when determining design standards for flood control measures. In addition, per FHWA memorandum HIBT-20 every effort will be made during final design to avoid classification of the roadway embankment as a flood control structure. The requirement set forth in 23 CFR § 650.111 to complete location hydraulic studies for floodplain encroachment areas will be complied with at later stages of design.

G. Section 7 of the Endangered Species Act

Section 7 of the Endangered Species Act (ESA) of 1973 (16 U.S.C. Sections 1531-1544) requires all federal agencies to use their authorities to conserve endangered and threatened species in consultation with the USFWS and/or National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). Section 7(a)(2) (16 U.S.C. § 1536) establishes substantive requirements for federal agencies to insure, in consultation with the USFWS, any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify designated critical habitat. The Section 7 implementing regulations (50 CFR Part 402) specify how federal agencies must fulfill their Section 7(a)(2) consultation requirements. Section 9 of the ESA (16 U.S.C. § 1538) prohibits any action that causes a “take” of species listed as endangered or threatened. “Take” is further defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt any of these.

The USFWS administers the ESA for all terrestrial and nontidal freshwater species, while the NMFS administers the ESA for marine and anadromous species or critical habitat. While there are no tidal areas within the limits of the Selected Alternative, the NMFS also regulates effects to other trust resources such as anadromous fish species, estuaries, and EFH. A response was received on August 9, 2018, from NMFS, included in *Appendix N* of the *Final Natural Resources Technical Report* (**FEIS, Appendix M**), stating the corridor study boundary lies outside the limits of potential direct or indirect effects to federally-listed or proposed threatened or endangered species under the jurisdiction of NMFS.

The USFWS also indicated that the Project is covered by the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the NLEB and Activities Excepted from Take Prohibitions since the area where forest clearing would occur does not have known maternity roost trees or hibernacula. In their letter, the USFWS stated that the Project was "not likely to adversely affect" the NLEB. MDOT SHA coordinated closely with USFWS and MDNR regarding NLEB and Indiana bat, and ESA Section 7 consultation has concluded.

VIII. Mitigation and Commitments

The Selected Alternative, with build improvements only within the limits of Phase 1 South, avoids over 100 acres of parkland and hundreds of wetland and stream features. The Selected Alternative was developed as a resource avoidance and minimization alternative based in part on extensive coordination with and input from agencies and stakeholders, including the OWJs for Section 4(f) properties. Comments received on the DEIS and Draft Section 4(f) Evaluation from agencies and stakeholders specifically requested avoidance of significant parkland and historic resources within the study area. The Selected Alternative is responsive to comments received and aligns the Study to be consistent with the previously determined phased delivery and permitting approach by limiting the build improvements to the area of Phase 1 South only. The final decision results in complete avoidance of significant stream valley parks, including Rock Creek, Northwest Branch, Sligo Creek, Southwest Branch, and Henson Creek Stream Valley Parks, as well as historic parks of national significance including the Baltimore-Washington Parkway, Greenbelt Park and Suitland Parkway.

Mitigation developed for this Study was identified to reduce and offset resource impacts resulting from the Selected Alternative. In planning for mitigation, MDOT SHA has strived to provide meaningful benefits to resources and improve their values, services, attributes, and functions that may be compromised. The lead agencies have worked in good faith to plan worthwhile mitigation based on identified priorities that would, at a minimum, result in no net loss with a goal of a net benefit. The detailed comprehensive mitigation package is included in **Appendix A** of this document.

A comprehensive mitigation package was developed in close coordination with local, state and federal agency partners for the Study and includes:

- Acquisition of parkland replacement property totaling approximately 94.50 acres
- Parkland amenities, such as improved access to parks
- Stream restoration totaling approximately 6,300 functional feet
- Wetland creation/restoration totaling approximately 6.10 acres
- Forest and terrestrial vegetation restoration
- Rare, threatened and endangered species restoration
- Cultural landscape report; historic resource condition assessments and restoration; and Phase III data recovery
- Noise barriers

Beyond mitigation for unavoidable impacts identified in the EIS documents, additional transit, bicycle and pedestrian and/or environmental priorities have been committed to by MDOT SHA. These priorities,

identified through stakeholder coordination, have been included as part of the Selected Alternative and are summarized in **Appendix A, Table 1**.

Additional commitments have been made by the Developer (Accelerate Maryland Partners) or MDOT SHA if the project is delivered as a P3 with a Section Developer controlled by AMP using private funding. These commitments are captured separately throughout the FEIS including in **Appendix A, Table 2** of this ROD. These commitments are included to disclose the efforts the Developer and MDOT SHA have made to advance the project in an environmentally responsible manner taking into account input received from the public, stakeholders and local governments related to transit, community enhancements, water quality, and equity. These commitments are not mitigation for direct environmental impacts, are in addition to the NEPA-related commitments captured in **Appendix A, Table 1**, and are tied to project delivery under a P3 contractual agreement.

Commitments listed in **Appendix A, Table 2** are the responsibility of MDOT SHA and the P3 Developer to implement as part of the Phase 1 South Section P3 Agreement, which will be the contractual agreement outlining the terms and conditions for final design, construction, financing, operations, and maintenance and/or Memoranda of Understanding with applicable third parties such as local governments. MDOT SHA will provide quarterly status update reports for items listed in **Appendix A, Table 1** to FHWA following issuing a notice to proceed for final design and construction.

IX. Permits, Approvals and Next Steps

In addition to NEPA compliance, several permits and approvals are being coordinated concurrently with the NEPA Process. **Table 7** summarizes the federal, state, and local permits, authorizations and approvals that are required for the Selected Alternative based on the current Study design assumptions and associated impacts.

Table 7: Permits and Approvals

Permit/ Approval	Responsible/Permitting Agency	Anticipated Timeframe
Interstate Access Point Approval	Federal Highway Administration	Fall 2022
Mandatory Referral	Maryland-National Capital Park and Planning Commission	Fall 2022/Early 2023
Record of Decision	National Park Service	Fall 2022
Archaeological Resource Protection Act (ARPA) permit for Maryland and Virginia resources	National Park Service	Early 2023
Least Environmentally Damaging and Practicable Alternative (LEDPA)	US Army Corps of Engineers	Spring 2023
Clean Water Act Section 404 and Section 10	US Army Corps of Engineers	Spring 2023
Maryland/Virginia State Waters (Section 401)	Maryland Department of Environment / Virginia Department of Environmental Quality	Spring 2023
Maryland Nontidal Wetlands and Waterways Permit	Maryland Department of Environment	Spring 2023

Permit/ Approval	Responsible/Permitting Agency	Anticipated Timeframe
Virginia Wetland Protection Permit	Virginia Department of Environmental Quality	Spring 2023
Special Use Permit - Construction in Maryland	National Park Service	Early 2023
Special Use Permit - Construction in Virginia	National Park Service	Early 2023
Highway Deed Easement in Maryland	National Park Service/FHWA	Spring 2023
Park Construction Permit	Maryland-National Capital Park and Planning Commission	Early 2023
Maryland Reforestation Law Approval	Maryland Department of Natural Resources	Early 2023
State and County Forest Conservation Easement Revision Approvals	Maryland Department of Natural Resources / Maryland-National Capital Park and Planning Commission	Summer 2023
General Permit for Stormwater Associated with Construction Activity - Maryland	US Environmental Protection Agency / Maryland Department of the Environment	Spring 2023
General Permit for Stormwater Associated with Construction Activity - Virginia	US Environmental Protection Agency / Virginia Department of Environmental Quality	Late 2023
Stormwater Management/Erosion and Sediment Control	Maryland Department of Transportation - State Highway Administration Plan Review Division / Maryland Department of the Environment	Late 2023
Stormwater Management/Erosion and Sediment Control	US Environmental Protection Agency / Maryland Department of the Environment / Virginia Department of Environmental Quality	Late 2023
Clean Water Act Section 402 (MS4)	Maryland Department of the Environment	Spring 2023
Water Appropriation and Use Permit	Maryland Department of the Environment	Spring 2023

Following the ROD, MDOT SHA anticipates proceeding with the remaining steps of project development using the Progressive P3 approach. The Developer is working collaboratively with MDOT SHA, MDTA, and the stakeholders on predevelopment work for Phase 1 South. This effort focuses on advancing the preliminary design and due-diligence activities by involving all stakeholders – including Montgomery County, VDOT, municipalities, property owners, utility owners, and citizens.

As part of the predevelopment work, the Developer has advanced a procurement process to select the Design-Build contractors that will subcontract with them to perform final design and construction of Phase 1 South. The Developer will be responsible to MDOT SHA for the final design, construction, financing, operations, and maintenance of Phase 1 South.

The Developer will continue to further avoid and minimize impacts throughout the remainder of the design process to the greatest extent practicable. Monetary incentives have been added to the Developer's Technical Provisions to encourage further avoidance and minimization of impacts to wetlands, waterways, forest, and parkland. MDOT SHA and the Developer will develop an Environmental Management Plan and an Environmental Compliance Plan to track the mitigation and commitment documented in the FEIS and ROD, as included in **Appendix A** of this document. MDOT SHA and the Developer will coordinate closely on any future design changes and will consult with FHWA to consider if

such changes trigger the need to reevaluate the NEPA analysis and to determine if the NEPA decision remains valid. Any additional environmental studies beyond a reevaluation would be coordinated with the appropriate stakeholders and agencies.

X. Comments on FEIS

A. Overview

As described in Section VII, the FEIS was available for a 30-day review through the Project website (https://oplanesmd.com/feis/), the USEPA EIS Database and at 17 public libraries along the study corridors including in Montgomery and Prince George's Counties, Maryland, Washington DC and Fairfax County, Virginia. During the FEIS availability period, from June 17, 2022 through July 18, 2022, a total of 33 comments were received via email or letter transmitted via email. The breakdown of comments received by commenting entity is:

- Cooperating Agencies: 3
- Other Agencies/ Stakeholders: 3
- Elected Officials: 2
- Community Organizations: 9
- Businesses: 0
- Individuals: 16

In addition to the 33 comments, form letter comments were also received via email from 514 individuals; in many cases an individual submitted multiple entries of the same email/letter to different government officials, but they were only counted once. Form letter comments are comments that were submitted by individuals containing mostly the same language or content. There were two form letter comments received on the FEIS. However, all of the form letter comments submitted included a request to extend the FEIS comment period.

As with comments received on the DEIS and SDEIS, the FEIS comments were reviewed, considered, and uploaded into a database used as a repository for all comments received. MDOT SHA and FHWA reviewed and considered each comment and substantive comments requiring a technical review were assigned to the appropriate technical staff.

All substantive comments received during the FEIS availability period have been responded to in **Appendix D** of the ROD. Comments received, before or after the availability period, were considered in the decision-making process and reflected in the project record but are not included in this Appendix. The responses to substantive comments in **ROD, Appendix D** include responses to:

- Montgomery County Department of Transportation
- Maryland Transit Opportunities Coalition
- Peter James (2 comments)
- Friends of Moses Hall
- Office of the County Executive, Montgomery County
- Sierra Club (2 comments)
- The Maryland General Assembly
- National Capital Region Transportation Planning Board

B. Common Themes

A few common themes emerged during review of the comments received. Request for an extension of the FEIS availability period and request for a formal FEIS comment period were noted as a top common theme mainly through the form comment letters. Other common themes included opposition to the program or project and concerns over environmental impact including environmental justice and analysis of greenhouse gas emissions. There were also several comments questioning the results and validity of the final traffic analysis and the need to consider teleworking. Responses to these common themes follow.

1. Extend FEIS Availability Period and Formal FEIS Comment Period

FEIS comments questioned whether a 30-day availability period was adequate to meaningfully review and comment on the material in the FEIS including supporting appendices. Based on the Council on Environmental Quality (CEQ) regulations, no formal comment period on a FEIS is required and no final decision can be made sooner than 30 days after the FEIS is published in the Federal Register. An extension of the FEIS availability period was not granted by FHWA as there has been extensive opportunity for the public to review and comment on the Project documents including the DEIS and SDEIS over a four-year period. The FEIS was prepared in support of the normal progress of a NEPA Study. That is, after reviewing and considering the many comments received on the DEIS and SDEIS the agencies took another hard look at its prior analyses, evaluated accumulated data, refined design to further address operational considerations and most notably to further efforts to avoid and minimize impacts. The FEIS outlined the changes made since the SDEIS to aid in review of new or updated information. Supporting technical reports appended to the FEIS were analyses presented with the DEIS, updated with the SDEIS and finalized for the FEIS.

From the outset of the Study's NEPA process, the FHWA and MDOT SHA, developed a comprehensive public involvement and engagement strategy designed to obtain input from stakeholders around the entire MLS study area. The public involvement and engagement process, starting in early 2018 and continuing for over four years, considered the vast diversity of community resources. The MDOT SHA's public involvement strategy ensured the safety of the public during the pandemic, while still providing the same opportunities for meaningful participation by the public in the NEPA process and even expanding opportunities using new technologies and alternative methods.

In addition to a combined six-month public comment review period for the DEIS and SDEIS, MDOT SHA held 16 large public workshops, 7 public hearings including virtual and in-person, and over 200 citizen, elected official, community, stakeholder, and business owner meetings. Refer to **DEIS, Chapter 7 and Appendix P; SDEIS, Chapter 7; FEIS Chapter 8; and FEIS, Appendix R** for detailed information on public involvement.

As a result of this continued public involvement and engagement effort, and with input from federal, state, and local agencies, the lead agencies refined and presented the following in the FEIS: the Preferred Alternative, potential impacts of the Preferred Alternative, and responses to more than 5,000 comments received on the DEIS and SDEIS. Importantly, this Preferred Alternative reflected project refinements that address many comments, including design modifications and adjustments, finalizing technical analyses,

continued application of avoidance and minimization efforts, and finalizing mitigation for unavoidable impacts. This is precisely what the NEPA process envisions. Refer to **FEIS, Executive Summary** for more detailed explanation.

The FEIS was made available for a 30-day Notice of Availability through various and widely accessible means. Public involvement and engagement will continue as the Project advances to final design and construction. The MDOT SHA will be responsible for implementing strategies, such as public meetings and community events, with the goal of maintaining an open dialogue with stakeholders. For the more detailed response to comments related to the request to extend the FEIS availability period, refer to Montgomery County Executive, Marc Erich and Sierra Club comment letters and response in **ROD, Appendix D**.

2. Environmental Justice (EJ) Analysis

FEIS comments stated that the EJ analysis had not been previously released to the public for review and comment. This is not accurate. The DEIS, SDEIS, and FEIS all documented the EJ analysis completed for the Project; refer to **DEIS, Chapter 4, Section 4.21; DEIS Appendix E; SDEIS, Chapter 4, Section 4.21; FEIS, Chapter 5, Section 5.21; and FEIS, Appendix F**. The EJ analysis and methodology is discussed in **DEIS, Chapter 4, Section 4.21.2** and **FEIS, Chapter 5, Section 5.21.2**.

As stated in the DEIS, SDEIS, and FEIS, the strategies developed under EO 12898, USDOT Order 5610.2C, FHWA Order 6640.23A, and FHWA memorandum Guidance on Environmental Justice and NEPA (2011) set forth the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal transportation projects on minority and low-income populations. Based on these strategies, the first four steps, below, were documented in the DEIS EJ analysis, updated in the SDEIS EJ analysis and updated and enhanced where necessary for the FEIS EJ analysis:

1. The identification of minority race and ethnicity populations and low-income populations (EJ populations) along the 48-mile study corridor for the **DEIS, Chapter 4, Sections 4.21.2.A-B** and then an update on the identification of EJ populations for the Preferred Alternative, Alternative 9 - Phase 1 South limits in the **SDEIS**, **Chapter 4, Section 4.21.2.B**;

2. The review of demographic data to determine the existing environmental and community conditions of the EJ populations, documented in the **DEIS, Chapter 4, Section 4.21.3** and enhanced in the **SDEIS**, **Chapter 4, Section 4.21.2.C**;

3. The documentation of public outreach as planned, conducted and refined throughout the study in consideration of the demographic and community data to ensure meaningful involvement in EJ populations, documented in the **DEIS, Chapter 4, 4.Section 21.4** and updated in the **SDEIS**, **Chapter 4, Section 4.21.2.D**; and

4. The identification of potential beneficial and/or adverse impacts to EJ populations under the No Build and Screened Alternatives in the **DEIS, Chapter 4, Section 4.21.5**, and the identification of potential beneficial and/or adverse impacts to EJ populations under the No Build and Preferred Alternative, Alternative 9 - Phase 1 South updated in the **SDEIS**, **Chapter 4, Section 4.21.3.**

Steps #2, 3, and 4 are updated and Steps #5 through #8, below, are documented in this FEIS EJ Analysis in consideration of the Preferred Alternative[19]:

5. The consideration of mitigation or community enhancement measures if unavoidable adverse effects are expected to occur under the Preferred Alternative **(throughout FEIS, Section 5.21.5)**;
6. A comparison of adverse effects to all EJ populations under the Preferred Alternative versus adverse effects to a non-EJ population reference community **(FEIS, Chapter 5, Table 5-51)**;
7. A determination of whether disproportionately high and adverse impacts would occur to EJ populations under the Preferred Alternative **(FEIS, Chapter 5, Table 5-51)**; and
8. A final conclusion of whether disproportionately high and adverse effects would occur to EJ populations, based on unmitigated adverse effects and whether public feedback has been addressed **(FEIS, Chapter 5, Section 5.21.7)**.

The public had sufficient opportunity to review and comment on the EJ analysis conducted for the Project. As previously described in **Section VIII.D** of this document, MDOT SHA also implemented additional EJ outreach efforts before the FEIS to engage meaningfully and directly with underserved communities to identify improvements needed in their communities. These commitments are described in **Section VII.D** and documented in the **ROD, Appendix A, Table 1, numbers 114-117.**

3. Greenhouse Gas Analysis

FEIS comments stated that the greenhouse gas (GHG) analysis was not previously released to the public for review and comment. This is not accurate. The DEIS, SDEIS, and FEIS all documented the GHG analysis as part of the air quality analysis for the Project; refer to **DEIS, Chapter 4, Section 4.8; DEIS Appendix I; SDEIS, Chapter 4, Section 4.8; FEIS, Chapter 5, Section 5.8.B; and FEIS, Appendix K**.

As documented in the FEIS, to date, no national standards for GHG emissions have been established by the USEPA under the Clean Air Act and there is no regulatory requirement that has been established to analyze these emissions at a project level for transportation projects. Consistent with the 2016 CEQ Final GHG NEPA guidance,[20] a quantitative GHG analysis was conducted on the six Build Alternatives and the Preferred Alternatives as documented in the DEIS and FEIS, respectively. Since there is no approved methodology for conducting a project-level quantitative GHG emissions analysis, there are numerous parameters that could be applied to conduct such a review. Consistent with FHWA guidance on developing an affected network to analyze project-related pollutants, such as MSATs, MDOT SHA analyzed GHG emissions using the same affected network as the MSAT analysis. Refer to **FEIS, Appendix K, Section 3.4.1** for the GHG results. While no significant increase in GHG emissions from the Preferred Alternative was noted, MDOT SHA has committed to implementing a Greenhouse Gas Reduction Program to reduce emissions during construction. Refer to **ROD, Appendix A, Table 1, number 130**.

4. Consideration of Teleworking

FEIS comments noted that more workers are teleworking or telecommuting than pre-pandemic times. The Project considered the effects to the COVID-19 pandemic and the impacts on teleworking or remote

[19]Steps #4 and 5 plus Steps #6 and 7 are combined in this FEIS EJ Analysis.

[20] https://www.federalregister.gov/documents/2016/08/05/2016-18620/final-guidance-for-federal-departments-and-agencies-on-consideration-of-greenhouse-gas-emissions-and

working on the region. Refer to **FEIS, Chapter 4, Section 4.5** and **FEIS, Appendix C** for the COVID-19 Travel Analysis and Monitoring Plan.

As documented in the FEIS, the traffic results show statewide traffic volumes are back to pre-pandemic levels, while transit ridership has remained down. In addition, the sensitivity analysis of the Preferred Alternative in the FEIS concluded that: "the results of the MWCOG and VISSIM sensitivity analyses confirm that the capacity improvements proposed under the Preferred Alternative would be needed and effective even if future demand changes from the pre-pandemic forecasts based on potential long-term impacts to teleworking, e-commerce, and transit use that are not formally accounted for in the current regional forecasting models", **FEIS, page 4-25**. MDOT SHA also responded to teleworking comments in the **FEIS, Chapter 9, pages 9-7 and 9-8**.

5. Traffic Forecasts and Modeling Results

FEIS comments questioned the Study's final traffic forecasts and modeling results. These comments are not based in fact and appear to be based on a misunderstanding of how data was updated and refined between publication of the SDEIS and publication of the FEIS and its supporting documents. FHWA and MDOT followed accepted practice and processes for considering how or if project design refinements or other relevant new information would impact traffic forecasts. As explained below, the analysis reflected in the FEIS is sound. Any changes to the traffic forecast results in the FEIS properly reflect appropriate and relatively minor updates to modeling inputs based on information available to MDOT SHA following completion of the SDEIS.

The FEIS document acknowledges several changes that were made to the traffic forecasts and analysis between the time the SDEIS and FEIS were published. Refer to **FEIS, Chapter 4, Section 4.1** and **4.2** and **FEIS Appendix A, Section 2**. The changes that were made are typical of the standard process of updating the information presented in a draft environmental document (DEIS and SDEIS) in response to comments received following public review of the document, and also to reflect refinements to the design that occurred after the SDEIS was published. This is a typical process which occurs as the lead agencies meet with affected agencies and stakeholders throughout the NEPA process and make refinements to the design, as needed, to avoid or minimize impacts and/or costs. For the more detailed response to comments related to the results of the traffic analysis, refer to the Maryland Transit Opportunities Coalition comment and response in **ROD, Appendix D**.

6. Traffic Results in General Purpose Lanes

FEIS comments stated that the general purpose lanes in the future build conditions would be worse than the No Build condition. As noted earlier in the ROD, on page 6, the Selected Alternative provides benefits to the existing lanes by improving average speeds in the general purpose lanes by four mph on average throughout the study corridors during peak periods compared to the No Build condition. However, the results in the FEIS do show that the travel times for some inner loop trips are "longer" in the Build general purpose lanes than No Build (for example, the trip from River Road to I-370 takes 26.6 minutes under Build conditions versus 17.0 minutes in the No Build). The reason is that the backups would be so bad in Virginia under the No Build condition that fewer vehicles would actually get across the ALB during the peak hour. This makes some trips in Maryland under the No Build look better than they are. A similar analogy is that the No Build condition is like having an incident on the ALB every day. The Build condition

serves much more throughput during the peak hour and there is naturally some increase in travel time during the peak when looking at that segment. While this affects some trip pairs, 76% of the trip pairs show a benefit from traveling in the general purpose lanes under Build versus No Build, and the average PM travel time change between No Build and Build is 8 minutes of savings.

XI. Statute of Limitations

Pursuant to 23 USC Section 139(l), FHWA will publish a statute of limitation (SOL) notice in the Federal Register upon issuance of this ROD. A claim arising under federal law seeking judicial review of the Federal agency actions on the I-495 and I-270 Managed Lanes Study will be barred unless the claim is filed within 150 days of publication of the SOL notice in the Federal Register.

XII. Conclusion

FHWA has considered all of the alternatives, information, analyses, and objections submitted by federal, state, tribal, and local governments and public commenters for consideration by the lead and cooperating agencies in developing this ROD. Having considered this information, FHWA has determined that:

1. Adequate opportunity was afforded for the presentation of views by all parties with a substantive economic, social, and or environmental interest;

2. Fair consideration has been given to the preservation and enhancement of the environment and to the interests of the communities in which the Selected Alternative is located; and

3. All practicable measures to avoid or minimize environmental harm have been incorporated into this decision, and where adverse effects remain, there exists no reasonable alternative to avoid and further mitigate such effects.

Based on a balanced consideration of the need for safe and efficient transportation, the social, economic and environmental effects of the proposed transportation improvements, and national, state, and local environmental protection goals, as well as the FEIS and comments submitted by the public and agencies, FHWA has determined in accordance with 23 CFR 771 that:

- The requirements of 23 CFR 771 have been met;
- Consistent with social, economic and other essential consideration, to the maximum extent practicable, adverse environmental effects revealed in the environmental impact statement process will be minimized or avoided;
- Consistent with social, economic, or other essential considerations, from among reasonable alternatives, thereto, the action to be directly undertaken by MDOT SHA, is an alternative that minimizes or avoids adverse environmental effects to the maximum extent practicable, including the effects disclosed in the environmental impact statement;
- The action to the fullest extent practicable, incorporates the environmental investigations, reviews, and consultations in a single coordinated process;

- Compliance with all applicable environmental requirements is reflected in the environmental document required under NEPA; and
- Public involvement and a systematic interdisciplinary approach were essential parts of the development process for the action.

Approved:

Gregory Murrill
Division Administrator
Maryland Division
Federal Highway Administration

8/25/2022
Date

Appendix A: Mitigation and Commitments by MDOT SHA and P3 Developer

The advancement of conceptual mitigation for unavoidable direct impacts to environmental resources throughout the NEPA process for the Study continued and has been documented in the DEIS, SDEIS and FEIS. Mitigation developed for this Study was identified to reduce and offset environmental impacts resulting from the Selected Alternative. In planning for mitigation, MDOT SHA has strived to provide meaningful benefits to resources and improve their values, services, attributes, and functions that may be compromised. Lastly, the lead agencies have worked in good faith to plan worthwhile mitigation based on identified priorities that would, at a minimum, result in no net loss with a goal of a net benefit.

Beyond mitigation for unavoidable impacts, additional commitments, such as those for transit, priority bicycle and pedestrian improvements, and environmental enhancements have been identified through extensive coordination with agencies and stakeholders. These commitments have been identified in consideration of comments received over the course of the Study and to further support elements of the Study's Purpose and Need. **Table 1** presents these commitments that have been made beyond mitigation for direct impacts. MDOT SHA is responsible for implementing all commitments and mitigation listed in Table 1. FHWA, through its stewardship and oversight responsibility will ensure that MDOT SHA implements all commitments and mitigations listed in Table 1. MDOT SHA will provide quarterly status update reports to FHWA following issuing a notice to proceed for final design and construction.

Table 1: MDOT SHA Mitigation and Commitments

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
WETLANDS/WATERWAYS			
1.	Stream restoration (721 functional feet) along unnamed tributary to Great Seneca Creek south of Bradbury Drive in Quince Orchard Valley Neighborhood Park (Site CA-5).	M	Final Design & Construction
2.	Stream restoration (5,583 functional feet) and wetland creation/restoration (4.61 acres of credit) along Cabin Branch east and west of Montgomery Village Avenue at Montgomery Village Golf Club (Site RFP-2).	M	Final Design & Construction
3.	Purchase of 1,207 functional feet of riverine mitigation credit from approved Maryland mitigation banks.	M	Final Design & Construction
4.	Purchase of 506 linear feet of riverine mitigation credit from approved Virginia mitigation banks.	M	Final Design & Construction
5.	Design of stream stabilization and restoration to provide ecological uplift, where practicable, when relocating streams within the Preferred Alternative limits of disturbance (LOD).	C	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	FOREST		
6.	Mitigate for unavoidable impacts to forests in Maryland (414.7 acres) on an acre-for-acre basis in accordance with the mitigation hierarchy described in the Maryland Reforestation Law (MD Natural Resources Code § 5-103) including: • Onsite mitigation (within the project LOD). • Off-site mitigation [at 68 sites identified in the Maryland Reforestation Law Mitigation Site Search Report prepared for the MLS, refer to Appendix T of the Natural Resources Technical Report, (**FEIS, Appendix M**). • Purchase of forest mitigation bank credits from approved forest mitigation banks in affected county and/or watershed. • Any remaining mitigation required may be fulfilled through payment into the Reforestation Fund, as approved by MDNR. • Final forest mitigation plan will be developed and implemented by the Developer in conjunction with MDOT SHA and the affected jurisdictions and landowners, including M-NCPPC and NPS, during the final design phase of the project. The Developer will track changes to the impacts and mitigation credits.	M	Final Design
7.	Commit to planting of any approved reforestation sites on MDNR property within five years of the initial Maryland Reforestation Law approval for the project. MDOT SHA has committed to providing a minimum of five years of maintenance and monitoring at reforestation mitigation plantings. All reforestation sites will need approval/concurrence from DNR, and may include up to 210.54 acres on MDNR property at the sites identified in the Maryland Reforestation Law Mitigation Site Search Report prepared for the MLS. (Refer to Appendix T of the Natural Resources Technical Report, **FEIS, Appendix M**). Coordination and determination of final mitigation sites will be conducted by the Developer in conjunction with MDOT SHA and MDNR.	M	Final Design, Construction & Post-construction
8.	Forest impacts in Virginia that require mitigation are within NPS property. Therefore, forest mitigation will follow the comprehensive ecological restoration plan outlined in #9 below. Although tree impacts occur in Virginia outside of NPS property, there is no statewide forest regulation that requires mitigation off county or state parkland. No tree impacts occur on county or state parkland in Virginia.	M	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
PARKLAND			
NATIONAL PARK SERVICE			
9.	Develop and implement a Comprehensive Ecological Restoration Plan and Cost Estimate for Restoring Limits of Disturbance to Preexisting Conditions for the impacted area. The plan shall include the following components: • *Forest and terrestrial vegetation restoration including:* o Avoiding and minimizing impacts to trees within and surrounding the LOD through a robust tree protection plan. o Survey impacted vegetation community prior to construction to determine existing community composition and develop replanting plan based on survey results. o Replanting forest (including shrub and herbaceous layers) inch-for-inch within LOD in temporary impact areas and providing non-native invasive (NNI) species control and maintenance and monitoring for 5 years within reforestation area. o 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. o Providing monetary compensation for remaining tree impacts, based on inch for inch replacement of DBH impacted. • *Rare, Threatened and Endangered plant species restoration including:* o Conducting a final pre-construction of rare, threatened or endangered (RTE) plant inspection. o Collecting seeds and/or individual RTE plant species from impact area prior to construction. o Cultivating plants and storing seeds/propagating plants from seed in an off-site nursery. o Reestablishing RTE species from stored seed and cultivated and propagated plants following construction and topsoil restoration.	M	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	• *Topsoil salvage and restoration including:* o Salvaging topsoil from impact area and storing in nearest possible stockpile location. o Restoring subsoils and reduce compaction via ripping, discing, plowing or double-digging following construction. o Placing salvaged topsoil in impact area following construction. • *Herpetofauna translocation including:* o Conducting Herpetofauna relocation effort immediately prior to construction activities ▪ Conducting a sweep through a portion of the impact area with approximately 10 biologists searching for and capturing reptiles and amphibians and logging all captures. ▪ Relocating captured individuals safely away from the impact area. ▪ Conducting a second sweep through the same portion of impact area, logging all captures and relocating captured individuals. ▪ Conducting a third sweep and relocate effort, if the number of captured individuals is not dramatically reduced and continue sweeping the portion of the work area until the number of captured individuals is minimal. ▪ Continuing the multiple sweep process until the entire work area is cleared. • *Downed woody debris salvage and restoration including:* o Moving all downed woody debris from the impact area to the edge of the impact area just outside of the E&S measures as part of the clearing operation. o Restoring downed woody debris, if appropriate, to the impact area following construction and topsoil restoration.		
10.	Create/restore 1.53 acres of wetland northwest of American Legion Bridge (Site ID CHOH-13) per the Wetland Statement of Findings.	M	Construction
11.	Install new white legend and border on brown background guide signs along I-495 for the George Washington Memorial Parkway exit.	M	Construction
12.	Shift bridge piers north of Lock 13 to the maximum extent possible while maintaining adequate vertical clearance of 12 feet, 6 inches between towpath and bottom of bridge steel to accommodate NPS equipment. Design new ALB to capture all drainage outfall using downspouts. The downspouts will be located so the water does not drop onto areas with frequent pedestrian use.	C	Final Design
13.	Complete a pre-construction condition assessment of locks, masonry walls, towpath, and canal prism throughout entire LOD and develop and implement a plan for repairs identified during condition assessment subject to NPS approval.	M	Final Design

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
14.	Develop Interpretive product on archeological sites; Create web-based Story Map, waysides, and/or brochures.	M	Final Design & Construction
15.	Complete a pre-construction condition assessment of Potomac Heritage Trail within the LOD and develop and implement a plan to restore and improve the trail within the LOD, in consultation and agreement with NPS.	M	Final Design
16.	Prepare Visitor and Ecological Impact Study.	C	Completed
17.	Acquire James Audia property (two parcels totaling 1.4 acres) as replacement parkland for impacts to George Washington Memorial Parkway. If unavailable, acquire or convey property for replacement parkland of similar size and/or function in coordination with NPS.	M	Final Design
18.	Convey a portion of the MDOT SHA owned former Ridenour property (38.7 acres) to NPS as replacement parkland for impacts to Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway.	M	Final Design
19.	Provide monetary compensation up to $60,000 to NPS to update and refine the George Washington Memorial Parkway Climate Action Plan.	M	Final Design & Construction
20.	The Preferred Alternative will result in temporary closure of the Potomac Heritage National Scenic Trail within the LOD during construction. A detour route, if determined to be necessary, will continue to be developed by MDOT SHA and the Developer in coordination with NPS, Fairfax County, and VDOT. The segment of the trail within the LOD would be restored on a new alignment after construction is completed.	M	Final Design, Construction & Post-construction
21.	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, within the LOD.	C	Final Design
22.	Design and construct, in coordination with NPS and the Washington Biologists' Field Club, slope armoring along the upstream side of Plummers Island within the LOD to mitigate for future slope erosion as a result of tree clearing with the LOD. The slope armoring could include, but is not limited to, a rip-rap slope, live staking, and brush layering or any combination of armoring that will provide a blended natural aesthetic with the topography and historic nature of the island.	C	Final Design & Construction
23.	Develop and evaluate additional options for the American Legion Bridge during final design that would further minimize or avoid physical impact to Plummers Island, in consultation with the National Park Service.	C	Final Design

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
MARYLAND-NATIONAL CAPITAL PARK & PLANNING COMMISSION			
General			
24.	Acquire the 24.14-acre Bardon, Inc. property (Acct. no. 00402385) and convey to M-NCPPC. If unavailable, acquire or convey property as replacement parkland of similar size and/or function in coordination with M-NCPPC.	M	Final Design
25.	Acquire the 0.57-acre Bardon, Inc. property (Acct. no. 02620882) and convey to M-NCPPC. If unavailable, acquire or convey property as replacement parkland of similar size and/or function in coordination with M-NCPPC.	M	Final Design
26.	Evaluate the ability to re-convey unused property, previously owned by M-NCPPC, back to that agency post construction.	C	Post-construction
27.	Convey the MDOT SHA owned 3.15-acre right-of-way located at MD 97 and 16th Street.	M	Final Design
28.	Convey two MDOT SHA owned 15.35-acre parcels (Acct. no. 161300980570 and 161300980626) located between Northwood High School and Northwest Stream Valley Park.	M	Final Design
Cabin John Stream Valley Park Unit 2			
29.	Plan, design, and construct improvements to formalize the Cabin John Trail trailhead parking area along Seven Locks Road including: • Reconstruct the existing driveway per MD Standard No. 630.02 or applicable County standard. • Pave the existing gravel lot with full depth asphalt. Paved area measures approximately 60’ x 100’. Assume open section lot. • Optimize parking lot design to provide maximum number of spaces, including Americans with Disabilities Act (ADA)-compliant spaces (with signage) per the ADA Guidelines. Stripe new parking spaces. • Provide drainage and stormwater management (SWM) facilities as required to treat impervious area per County requirements. • Install signage prohibiting littering/dumping, replace existing trash can, and remove existing illicitly dumped material. • Relocate existing sign kiosk. Location to be determined in consultation with M-NCPPC. • Construct bicycle repair stand, with tools and pump at Cabin John Trail trailhead, in consultation with M-NCPPC.	M	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
30.	Stream stabilization (~1,000 linear feet) along Cabin John Creek including: • Remove all concrete structures within stream along both along existing banks and failed pieces in the stream. • Rebuild banks with rock and vegetative stabilization techniques that promote environmental functions. • Replant riparian buffer with native seed, herbaceous plugs, and native shrubs and trees. • Install instream grade control structures (such as rock sill, crossvane, riffles, etc.) to transition stream into, through, and out of the underpass area in a stable and ecologically sound way. • Protect sewer manhole and restore I-495 on-ramp outfall to Cabin John Creek with environmentally sensitive channel techniques.	M	Final Design & Construction
31.	Plan, design, and implement forest and terrestrial vegetation mitigation including: • NNI control for 7 years within 50' buffer of LOD. • Infill plantings, on park property, consisting of shrubs, understory/canopy trees and herbaceous seeding within NNI control areas (50 ft buffer from LOD).	M	Final Design & Construction
32.	Plan and design wildlife passage area under I-495 overpass of Cabin John Creek and Cabin John Parkway by lengthening new bridge structures. This will allow wildlife passage on the west side bank of Cabin John Creek while minimizing wildlife-vehicular conflicts along Cabin John Parkway by constructing wildlife exclusion fencing along the east side of the creek next to the Parkway, in coordination with M-NCPPC.	M	Final Design & Construction
Cabin John Regional Park			
33.	Plan, design, and construct a fiberglass pedestrian bridge over the outfall/tributary to Cabin John Creek at STA 3640+00 for the natural surface connector trail including: • Performing hydraulic study and determining feasibility of new crossing. • Constructing fiberglass bridge per M-NCPPC-provided Fiberglass Bridge specification or per equal to or better alternative approved by M-NCPPC.	M	Final Design & Construction
34.	Plan, design, and construct improvements for pedestrian and cycling access to the Robert C. McDonell campground access road by: • Reconstruction of existing bridge over Old Farm Creek in same location per M-NCPPC-provided specifications for Prefabricated Steel Truss Bridge (Section 401) and Helical Piles (Section 403) (hydraulically in-kind replacement). • Provide temporary crossing for pedestrians and cyclists during bridge reconstruction. • Provide stream stabilization work immediately upstream, underneath, and immediately downstream of the bridge. • Limit time of year of bridge reconstruction to window when campground access is closed.	M	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	• Bridge design shall provide for ADA compliance, pedestrian access, and passage of cyclists without dismounting while incorporating a gate to prevent unauthorized access by vehicles.		
35.	Plan, design, and construct improvements to the existing parking area on Tuckerman Lane near the Robert C. McDonell Campground access road including: • Resurface the existing paved lot. (Paved area measures approximately 2500 SF. (25' x 100')). • Optimize parking lot design to provide maximum number of spaces. Stripe new parking spaces. Incorporating ADA parking, as applicable. • Provide additional landscaping in vicinity of lot, in consultation with M-NCPPC.	M	Final Design & Construction
36.	Plan, design, and construct a fiberglass pedestrian bridge over Cabin John Creek to connect the Cabin John Trail to the Kidney Bean Loop Trail, in the vicinity of Goya Drive including: • Constructing fiberglass bridge per provided Fiberglass Bridge specification or per equal to or better alternative approved by M-NCPPC. • Design and construct in-stream grade control and bank protection structures to stabilize stream in the vicinity of the new bridge.	M	Final Design & Construction
37.	Plan, design, and construct improvements for the stabilization of the Gainsborough Road stormwater outfall to Cabin John Creek *(approximately 255 linear feet)* with environmentally sensitive channel techniques. • Include a planting plan to compensate for forest impacts related to this work. • Provide treatment of invasive bamboo surrounding the channel. • Construct pedestrian trail bridge replacement over Gainsborough outfall channel.	M	Final Design & Construction
38.	Plan, design, and implement forest and terrestrial vegetation mitigation including: • Conducting forest stand delineation within 100 ft buffer of LOD and develop a 7-year non-native invasive control management plan within M-NCPPC property. • Implementing a 7-year non-native invasive control management plan within 100 feet of the LOD, on park property and within in the biodiversity area. Specific target areas and species to be determined by M-NCPPC Montgomery Parks. • Infill plantings consisting of shrubs, understory/canopy trees and herbaceous seeding within NNI control areas (100 ft buffer from LOD on park property).	M	Final Design & Construction
Tilden Woods Stream Valley Park, Old Farm Neighborhood Conservation Area, and Cabin John Stream Valley Park Unit 6			
39.	Plan, design, and construct improvements for the stabilization of the Greentree Road stormwater outfall from the pipe to a natural surface trail just south of Cabin John Creek *(approximately 310 linear feet)* with environmentally sensitive channel techniques. Include a planting plan to compensate for forest impacts related to this work.	M	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
40.	Plan, design, and implement forest and terrestrial vegetation mitigation including: • NNI control for 7 years within 50' buffer of LOD on park property. • Infill plantings consisting of shrubs, understory/canopy trees and herbaceous seeding within NNI control areas (50 ft buffer from LOD) on park property.	M	Final Design & Construction
41.	Plan, design, and construct a single bridge structure with a clear span of Tuckerman Lane (including the associated pedestrian and bicycle facilities) and a clear span over Old Farm Creek (including the restored floodplain and a wildlife passage): • Provide wildlife passage area on northern bank per M-NCPPC specifications • Provide fish passage under Old Farm Creek overpass by restoring the stream to a natural channel and tie into the existing stream restoration immediately upstream • Stream span must maximize floodplain cross-sectional area	M	Final Design & Construction
CITY OF GAITHERSBURG			
42.	Convey the 4.03-acre MDOT SHA-owned, property (Acct. no. 09-02213932) to City of Gaithersburg.	M	Final Design
CITY OF ROCKVILLE			
43.	Convey the 1.25-acre MDOT SHA-owned Millennium Garden Park (former Vernie Smith properties (Acct. nos. 16-0400205281 and 16-0400205270)) to City of Rockville.	M	Final Design
44.	Acquire the 1.32-acre Betty B. Casey Property (on Fleet Street) (Acct. no 160400144125) and convey to the City of Rockville	M	Final Design
45.	Acquire the 0.42-acre Lodging Partners LLC Property (41 Maryland Avenue) (Acct. no. 160403198603) and convey to the City of Rockville	M	Final Design
46.	Acquire the 4.23-acre Cynthia Robertson Property (Potomac Woods) (Acct. no. 160401523951) and convey to the City of Rockville	M	Final Design
47.	Continue to consult on context sensitive solutions, during the design phase, to the four existing parks (Bullards Park and Rose Hill Stream valley Park, Rockmead, Woottons Mill, and Rockville Senior Center). The consultation will be constrained to context sensitive solutions that are both compensatory to the impacts to Section 4(f) resources and a justifiable expenditure of public funds. For example, plantings and context sensitive stormwater management facility design.	C	Final Design
48.	Design the improvements along Gude Drive to accommodate the proposed new entrance to the Rockville Senior Center at Piccard Drive proposed by the City of Rockville. Coordination will occur with the City of Rockville in final design to ensure compatibility with the City's planned improvements.	C	Final Design

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
CULTURAL RESOURCES (SECTION 106)			
49.	Provide monetary compensation not to exceed $250,000 for a Cultural Landscape Report for Clara Barton Parkway (historical narrative; updated existing conditions, analysis, and evaluation; and treatment guidelines for management of character defining features).	M	Final Design
50.	Prepare National Register Nomination for Dead Run Ridges Archaeological District in coordination with NPS and submit to Virginia SHPO.	M	Final Design
51.	Complete Phase III Archaeological Data Recovery at 44FX0374, 44FX0379 and 44FX0389 (George Washington Memorial Parkway) and develop associated public interpretation materials.	M	Final Design
52.	Complete Phase III Archaeological Data Recovery at 18MO749 and 18MO751 (Chesapeake and Ohio Canal) and develop associated public interpretation materials.	M	Final Design
53.	Prepare a draft National Register Nomination for the Washington Biologists' Field Club on Plummers Island to NPS and WBFC for their review and comment prior to formal submission of the nomination to MD SHPO.	M	Final Design
54.	Place temporary fencing along the LOD within Plummers Island to delimit construction activities.	C	Construction
55.	Fund or implement a photographic survey documenting conditions before, during and post-construction on Plummers Island within the area of potential effects (APE) boundary and provide the results to Washington Biologists' Field Club and NPS.	M	Post-construction
56.	Fund or develop Graphic Information System maps to document known current and historical study locations and key natural resource features within the APE on Plummers Island to assist in documenting change over time and provide these files to Washington Biologists' Field Club and NPS.	M	Final Design
57.	Procure a sub-meter accurate GPS unit for Washington Biologists' Field Club to use in long-term monitoring of plant locations, collection sites, and other historical research features on Plummers Island.	M	Final Design
58.	Provide for digitization and cataloging of historical records, subject to any availability or rights restrictions, related to Plummers Island and the Washington Biologists' Field Club that are housed at the Smithsonian Institution that are not currently available in electronic format, and provide the files to Washington Biologists' Field Club and NPS.	M	Final Design
59.	Provide Washington Biologists' Field Club historical content related to Plummers Island as part of the above digitization effort to incorporate into their website.	M	Final Design
60.	Complete additional archaeological investigations of LOD surrounding Morningstar Tabernacle No. 88 Moses Hall and Cemetery and monitor for potential archaeological findings during construction.	C	Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
61.	Design context-sensitive treatment of noise barrier facing the Morningstar Tabernacle No. 88 Moses Hall and Cemetery which may include decorative elements appropriate to the historic property and/or such elements as memorial plaques or signage. MDOT SHA will provide consulting parties and MD SHPO comment opportunity for project elements, specifically noise barrier, within the APE adjacent to the cemetery at a draft level of design and a second opportunity prior to finalization of design; for each review there will be a minimum 30-day review period.	C	Final Design & Construction
62.	Complete additional archaeological investigations of the LOD in the general vicinity of the Montgomery County Poor Farm adjacent to I-270 near Wootton Parkway.	C	Final Design
63.	Improve the stormwater drainage on the First Agape African Methodist Episcopal (AME) Zion Church (Gibson Grove Church) by routing drainage into a new underground culvert to be installed as part of the project. MDOT SHA will ensure a parking lot identified as part of the church's restoration plan, is constructed on church property following installation of the culvert drainage design. MDOT SHA will work with the church on schedule and timing of the culvert and parking lot work to be compatible with ongoing church restoration efforts to the maximum extent practicable.	M	Final Design
NOISE[1]			
64.	Extended noise barrier (Barrier System VA-1/2) from STA 86+29 to STA 98+85 LT.	M	Final Design & Construction
65.	Construct new noise barrier (Barrier System MD-1) from STA 131+13 to STA 145+18 LT.	M	Final Design & Construction
66.	Construct new noise barrier (Barrier System MD-2) from STA 130+62 to STA 198+51 RT.	M	Final Design & Construction
67.	Relocate and extend existing noise barrier (Barrier System MD-3) from STA 158+10 to STA 211+97 LT.	M	Final Design & Construction
68.	Construct new noise barrier (Barrier System MD-4) from STA 198+13 to STA 221+68 RT.	M	Final Design & Construction
69.	Relocate and extend existing noise barrier (Barrier System MD-5) from STA 227+21 to STA 293+76 LT.	M	Final Design & Construction
70.	Relocate and extend existing noise barrier (Barrier System MD-6/6A/7) from STA 221+56to STA 293+24 RT.	M	Final Design & Construction
71.	Relocate existing noise barrier (Barrier System MD-8) from STA 294+12 to STA 319+61 RT.	M	Final Design & Construction
72.	Relocate existing noise barrier (Barrier System MD-10) from STA 337+75 to STA 355+06 LT.	M	Final Design & Construction

[1] A preliminary determination of the location and horizontal and vertical alignment for the noise barriers was made based on the latest design concept (FEIS Table 5-20); however, final determination of noise barrier feasibility, reasonableness, dimensions and locations will be made in final design.

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
73.	Relocate and extend existing noise barrier (Barrier System MD-11) from STA 320+42 to STA 354+78 RT.	M	Final Design & Construction
74.	Partially relocate and extend existing noise barrier (Barrier System 270-05) from STA 3432+67 to STA 3490+25 LT.	M	Final Design & Construction
75.	Construct new noise barrier (Barrier System 270-06) from STA 3493+65 to STA 3538+71 LT.	M	Final Design & Construction
76.	Relocate existing noise barrier (Barrier System 270-07A) from STA 3685+15 to STA 4710+91 LT.	M	Final Design & Construction
77.	Partially relocate existing noise barrier (Barrier System 270-07B) from STA 4710+91 to STA 4748+02 LT.	M	Final Design & Construction
78.	Construct new noise barrier (Barrier System 270-08) from STA 4750+11 to STA 4804+26 LT.	M	Final Design & Construction
79.	Extended existing noise barrier (Barrier System 270-09) from STA 4751+67 to STA 4801+90 RT.	M	Final Design & Construction
80.	Extended existing noise barrier (Barrier System 270-11 (270 west spur portion)) from STA 3743+50 to STA 3778+34 LT.	M	Final Design & Construction
81.	Partially relocate and extend existing noise barrier (Barrier System 270-12) from STA 3749+46 RT to STA 294+47 LT.	M	Final Design & Construction
82.	Partially relocate and extend existing noise barrier (Barrier System 270-14) from STA 3492+05 to STA 3540+07 RT.	M	Final Design & Construction
83.	Relocate and extend existing noise barrier (Barrier System 270-15) from STA 3624+55 to STA 3684+02 LT.	M	Final Design & Construction
84.	Construct new noise barrier (Barrier System 270-18) from STA 3722+12 to STA 3727+46 RT.	M	Final Design & Construction
85.	These noise abatement commitments will not be removed from the Project as a result of value engineering and/or similar studies/activities. Any changes to these commitments will be subject to re-evaluation under NEPA and must be approved by MDOT SHA and FHWA.	C	Final Design
AQUATIC AND TERRESTRIAL MITIGATION COMMITMENTS			
86.	Implement additional water quality protection measures to prevent soil erosion and subsequent sediment influx into nearby waterways. Construction contractors are designated as co-permittees on the National Pollutant Discharge Elimination System permit to ensure compliance. This permit is issued under Maryland's General Permit for construction activities and is implemented with a regular inspection program for construction site sediment control devices that includes penalties for inadequate maintenance. To ensure compliance, onsite evaluations by a certified erosion and sediment control (E&S) inspector would occur throughout the duration of construction.	C	Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
87.	Potential water quality impacts from construction would be minimized through strict adherence to mandated E&S and SWM requirements. In particularly sensitive areas, other impact minimization activities may be considered and could include: more specialized SWM options; redundant E&S measures; monitoring of aquatic biota above and below sensitive stream crossings before and after construction to quantify any inadvertent impacts that occur at the crossing; fish relocation from dewatered work areas during construction to reduce fish mortality; and use of a qualified environmental monitor on-site to enhance E&S compliance.	C	Construction
88.	Continue coordination with MDNR and the Scenic and Wild River Advisory Board in final design.	C	Final Design
89.	Account for post-construction SWM and compliance with total maximum daily loads in the stormwater design and water quality monitoring to comply with required permits.	C	Post-Construction
90.	Develop environmental site design SWM features to maintain current infiltration rates to the greatest extent practicable.	C	Final Design
91.	Design all hydraulic structures to accommodate flood flows without causing substantial impact.	C	Final Design
92.	Design culverts and bridges to limit the increase of the regulatory flood elevation to protect structures from flooding risks and use standard hydraulic design techniques for all waterway openings where feasible to maintain current flow regimes and limit adjacent flood risk (COMAR 26.17.04).	C	Final Design
93.	Remove the existing peregrine falcon nest box on the ALB just prior to the nesting season when construction is scheduled to begin to minimize potential impacts to the currently nesting peregrine falcons as recommended by the US Fish and Wildlife Service (USFWS). Disruption for one or more nesting seasons due to long-term construction activities is anticipated. Once construction activities are nearly complete near the former nest site, USFWS recommends that the nest box be reinstalled. MDOT SHA will follow the USFWS recommended protection measures for the peregrine falcon nesting on the ALB.	C	Construction
94.	Adopt and implement construction best management practices (BMPs) to minimize incidental take of migratory birds. MDOT SHA commits to consulting with the USFWS immediately prior to construction to determine the presence/absence of bald eagle nests in the vicinity of the Preferred Alternative LOD.	C	Construction
95.	Use of bridges and depressed culverts wherever possible to maintain natural stream substrate in areas where new or replaced culverts are necessary. Channel morphology would be evaluated, and culvert extensions designed to maintain aquatic life passage by avoiding downstream scour and channel degradation. Preliminary designs do not include culvert replacements but do include	C	Final Design

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	augmentations resulting from installing new pipes adjacent to existing culverts to provide additional area for flow.		
96.	Comply with the stream closure period for the designated use class of the stream for all in-stream work in Maryland, including that for culvert extensions, and any potential waiver requests would require agency approval(s). In-stream work is prohibited in Use I streams from March 1 through June 15.	C	Construction
97.	Conduct a mussel survey in the Potomac River surrounding the ALB, 10-meters upstream and 25-meters downstream of the temporary project LOD, for all Maryland State-listed mussel species that are short-term and long-term brooders prior to construction and relocation of Maryland State-listed and rare species, if necessary.	C	Final Design
98.	Design causeways and trestles proposed adjacent to the existing ALB to avoid impacting fish passage by maintaining river velocities below approximately 3 feet per second at commonly observed discharges (e.g., below 90 percentile) during the period in which anadromous fish are spawning (February 15 – June 15). Trestles or other non-fill accessways will be used in areas of deeper water (e.g., extending from the southern bank) to the extent practicable to minimize fill and associated flow restrictions.	C	Final Design
99.	Maintain access to Plummers Island for construction purposes by bridging over the oxbow of the Potomac River without placing any materials or fill within the stream channel.	C	Construction
100.	Voluntarily commit to a time of year restriction for tree clearing from May 1 through July 31 of any year within a 3-mile buffer around each of the three positive Northern Long-Eared Bat (NLEB) detection locations within the study corridors to go above and beyond what is required to protect this bat species. Note, the Study was determined to have “no effect” on the Indiana Bat and “not likely to adversely affect” the NLEB.	C	Construction
101.	Commit to a time of year restriction for tree clearing within the Virginia portion of the Preferred Alternative LOD from April 1 – October 31 of any year to avoid impact to tri-colored bat roost trees during roosting season.	C	Construction
102.	Continue coordinating with NPS and MDNR to determine a mitigation plan for RTE plant species prior to construction. This will include the use of matting along access roads to minimize soil compaction during construction, replanting of appropriate RTE plants within temporarily disturbed areas following construction, and monitoring of replanted RTE plant populations to ensure successful reestablishment.	M	Construction & Post-Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
103.	Commit to avoidance and minimization measures for the wood turtle as recommended by the Virginia Department of Wildlife Resources (VDWR): • Prior to the commencement of work all contractors associated with work at this site must be made aware of the possibility of encountering wood turtles on site and become familiar with their appearance, status and life history. • If any wood turtles are encountered and are in jeopardy during the development or construction of this project, remove them from immediate harm and call VDWR. Any relocations should be reported to VDWR, and the wood turtle observation form should be completed and faxed to VDWR. • Minimize potential wildlife entanglements, resulting from use of synthetic/plastic E&S matting, by use matting made from natural/organic materials such as coir fiber, jute, and/or burlap.	C	Construction
104.	Continue coordination with National Marine Fisheries Service to determine appropriate mitigation for potential impacts to anadromous fish during construction.	C	Final Design
105.	Maintain existing or improved aquatic life passage in the culverts conveying Watts Branch and Old Farm Creek under I-270.	C	Final Design & Construction
106.	Consult 23 CFR § 650.115(a) when determining design standards for flood control measures.	C	Final Design
107.	Comply with the requirement set forth in 23 CFR § 650.111 to complete location hydraulic studies for floodplain encroachment areas during later stages of design.	C	Final Design
108.	Avoid and minimize impact to aquatic species by: • Maintaining existing or improving aquatic life passage in the primary (not overflow) culverts that are being replaced or extended and continuing to coordinate with MDNR, USFWS, the National Marine Fisheries Service (NMFS), and the Maryland Department of the Environment (MDE) regarding aquatic life passage. • Designing completely replaced culverts designated as “major stream crossing” to meet the passage criteria described by USFWS (USFWS, 2019b). • Evaluating areas where culverts are being extended or augmented for the feasibility of a natural or nature-like stream bottom, in design. • Implementing BMPs during the replacement of the ALB crossing the Potomac River such as extensive in-stream work and using coffer dams and temporary construction trestles to avoid and minimize impacts to the river and its aquatic biota.	C	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
109.	Consult with NMFS and MDNR when construction plans are developed for roadway crossings of the Potomac River and Cabin John Creek, the two known anadromous fish use areas, to ensure that impacts due to construction and permanent fill are minimized to the extent practicable.	C	Construction
110.	Comply with COMAR 26.17.04.11 by ensuring culvert improvements and new culvert design will not increase flood risk to adjacent properties.	C	Final Design
111.	Submit final plans to MDE for approval of structural evaluations, fill volumes, proposed grading evaluations, structural flood-proofing, and flood protection measures in compliance with FEMA requirements, US Department of Transportation Order 5650.2, Floodplain Management and Protection, and Executive Order 11988.	C	Final Design
112.	Employ BMPs within the 100-year floodplain as required by MDE permits.	C	Final Design & Construction
113.	Ensure water quantity treatment be met onsite or through waiver requests in specific areas. Every effort to meet water quality treatment requirements onsite, where practicable will be made. Where not practicable, water quality requirements would be met offsite in accordance with MDE regulations.	C	Final Design
ENVIRONMENTAL JUSTICE/EQUITY			
114.	MDOT SHA and the Developer will continue coordination with local and regional advisory groups to determine additional methods for engaging with underserved communities. This will be an ongoing effort that continues post-NEPA, through final design and construction. Local and regional advisory groups may include but are not limited to the Montgomery County Advisory Groups, City of Rockville and City of Gaithersburg.	C	Final Design & Construction
115.	Construct a new sidewalk along the west side of Seven Locks Road under I-495 to re-establish a connection between Morningstar Tabernacle No. 88 Moses Hall and Cemetery and First Agape AME Zion Church (Gibson Grove Church) in the historically African American community of Gibson Grove, see commitment ID No. 125.	C	Construction
116.	Convey a portion of existing MDOT SHA owned right-of-way located adjacent to the boundary of Morningstar Tabernacle No. 88 Moses Hall and Cemetery with an identified potential for unmarked graves to the Trustees of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery.	C	Post-Construction
117.	Continue coordination with the City of Rockville, City of Gaithersburg, and Montgomery County to advance the identified priorities that were noted during EJ engagement efforts including more or improved sidewalks and bicycle facilities; better lighting on streets and sidewalks; and traffic calming	C	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	measures to make streets safer. Through this continued coordination, MDOT SHA with the Developer will: Identify locations where safer pedestrian crossings on major state roadways are needed. • Identify locations where additional pedestrian improvements including adding or upgrading sidewalk, restriping for bicycle lanes, adding or upgrading ADA ramps are needed. • Identify locations along state roads with existing pedestrian facilities where more or better lighting is needed.		
TOLLING			
118.	The toll rate ranges will only apply to the high-occupancy toll (HOT) lanes; the existing free general-purpose lanes will not be tolled. In addition, the proposal will include discounts for qualifying vehicles—including HOV 3+ (including carpools and vanpools), buses and motorcycles.	C	Operations
TRANSIT			
119.	Enhance transit mobility and connectivity within the Preferred Alternative including the following elements: • Free bus transit usage of the HOT managed lanes to provide an increase in speed of travel, assurance of a reliable trip, and connection to local bus service/systems on arterials that directly connect to activity and economic centers. • Direct and indirect connections from the proposed HOT managed lanes to existing transit stations and planned Transit Oriented Development at the Shady Grove Metro (I-370), Twinbrook Metro and Rockville Metro (Wootton Parkway), and Westfield Montgomery Mall Transit Center (Westlake Terrace).	C	Operations
120.	Construct new bus bays at Washington Metropolitan Area Transit Authority's Shady Grove Metrorail Station.	C	Final Design and Construction
121.	Increase parking capacity at the Westfield Montgomery Mall Transit Center.	C	Final Design and Construction
122.	Design and construct the ALB such that a future capital improvement project will have one or more feasible options to achieve the full design and implementation of a transit line across the ALB. These options will be enabled by designing the northbound and southbound structures to not preclude a possible future transit line including the addition of foundation and substructure elements.	C	Final Design and Construction
PEDESTRIAN AND BICYCLE FACILITIES			

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
123.	Replace in kind or upgrade to meet the current master plan recommended facilities for existing pedestrian and bicycle facilities impacted by the Preferred Alternative, through coordination with the local agencies having jurisdiction over and/or maintenance responsibility for these facilities.	C	Final Design & Construction
124.	Replace, upgrade, or provide new pedestrian/bicycle facilities consistent with the current master plan, where adjacent connections on either side of the bridge currently exist for facilities along crossroads where the crossroad bridge would be reconstructed. Where the I-495 and I-270 mainline or ramps cross over a roadway or pedestrian/bicycle facility and the bridge would be replaced, the mainline and ramp bridges would be lengthened to accommodate the footprint for the master plan facility under the structure.	C	Final Design & Construction
125.	Reconstruct the ALB with a new pedestrian and bicycle shared use path to provide multimodal connectivity across the Potomac River, to be located along the east side of the ALB. A direct connection of the shared use path from the ALB 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. MDOT SHA and the Developer will continue to coordinate with NPS to review the condition of the existing connection(s) to the east and west of the American Legion Bridge between the Chesapeake and Ohio Canal towpath and the MacArthur Boulevard sidepath outside of the study area to ensure the existing connection(s) can handle any increased usage from the new shared use path connection to the Chesapeake and Ohio Canal towpath.	C	Final Design & Construction
126.	Widen the existing variable-width sidepath along the east side of Seven Locks Road under I-495 (Cabin John Trail), consistent with the county master plan.	C	Final Design & Construction
127.	Construct a new sidewalk along the west side of Seven Locks Road under I-495 to reestablish the historic connection between First Agape AME Zion Church (Gibson Grove Church) and Morningstar Tabernacle No. 88 Moses Hall and Cemetery.	C	Final Design & Construction
	AIR QUALITY		
128.	Implement a Diesel Emissions Reduction Program that exceeds pertinent Federal and state regulations to minimize air pollution including MSAT emissions during construction consisting of initiatives such as: • Ensuring diesel powered construction equipment to meet minimum emissions reduction requirements by engine manufacturer, or by being properly retrofitted with emissions control devices, or that clean fuels be used if necessary to meet the emissions reduction requirements. • Retrofitting equipment that is used to be on the EPA Verified Retrofit Technology List.	C	Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	• Requiring the use of ultra-low sulfur diesel fuel in construction equipment. • Implementing a Driver Training program to provide incremental savings by more efficiently operating mobile and stationary machinery.		
129.	Implement a Truck Staging Area Plan for all construction vehicles waiting to load or unload material where emissions will have the least impact on sensitive areas and the public. These include but not limited to hospitals, schools, residences, motels, hotels, daycare facilities, elderly housing and convalescent facilities. All sources of emissions shall be located as far away as possible from fresh air intakes, air conditioners and windows.	C	Construction
130.	Implement a Greenhouse Gas Reduction Program to reduce emissions during construction including initiatives such as: • Use of alternative fuels and vehicle hybridization of construction vehicles, to the maximum extent practicable. • Maintaining existing vegetation, where possible. • Use of recycled and reclaimed materials, including use of recycled asphalt, use of industrial byproducts as cement substitutes, and recycled concrete, to the maximum extent practicable.	C	Construction
131.	Implement an Anti-Idling Policy to avoid unnecessary idling of construction equipment in order to reduce engine emissions and to provide air quality benefits to those who live and work in or adjacent to the construction sites. The plan may include, but is not limited to, limiting idling of all mobile construction equipment, including delivery trucks, to three minutes, except under certain conditions.	C	Construction
132.	Manage fugitive dust emissions during construction, by use some or all of the following dust control measures, to minimize and mitigate, to the greatest extent practicable, impacts to air quality: • Minimize land disturbance • Cover trucks when hauling soil, stone, and debris (MDE Law) • Use water trucks to minimize dust • Use dust suppressants if environmentally acceptable • Stabilize or cover stockpiles • Construct stabilized construction entrances per construction standard specifications • Regularly sweep all paved areas including public roads • Stabilize onsite haul roads using stone	M	Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	• Temporarily stabilize disturbed areas per MDE erosion and sediment standards and approved plans		
VISUAL			
133.	Install new white legend and border on brown background guide signs along I-495 for the George Washington Memorial Parkways exit.	M	Construction
134.	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 Developer will be responsible for establishing the aesthetic and landscaping guidelines.	C	Final Design

Additional commitments have been made by the Developer (Accelerate Maryland Partners) or MDOT SHA if the project is delivered as a P3 with a Section Developer controlled by AMP using private funding. These commitments are captured separately throughout the FEIS including in **Table 2** below. These commitments are included to disclose the efforts the Developer and MDOT SHA have made to advance the project in an environmentally responsible manner taking into account input received from the public, stakeholders and local governments related to transit, community enhancements, water quality, and equity. These commitments are not mitigation for direct environmental impacts, are in addition to the NEPA-related commitments captured in **Table 1** and are tied to project delivery under a P3 contractual agreement.

Commitments listed in **Table 2** are the responsibility of MDOT SHA and the P3 Developer to implement as part of the Phase 1 South Section P3 Agreement, which will be the contractual agreement outlining the terms and conditions for the final design, construction, financing, operations, and maintenance and/or Memoranda of Understanding with applicable third parties such as local governments. MDOT SHA will provide quarterly status update reports to FHWA following financial close of a Section P3 Agreement with the Section Developer controlled by AMP.

Table 2: P3 Developer Agreement Commitments

ID No.	Commitments	Timeframe
1.	Continue to further avoid and minimize impacts to the greatest extent practicable after the NEPA Process throughout the remainder of the design process. Utilize the monetary incentives that have been added to the Developer's Technical Provisions to encourage further avoidance and minimization of impacts to wetlands, waterways, forest, and parkland.	Final Design
2.	Develop and implement an Environmental Management Plan in coordination with MDOT SHA.	Final Design
3.	Develop and implement an Environmental Compliance Plan in coordination with MDOT SHA.	Final Design
4.	Develop and implement a Sustainability Plan for the project to support community, environmental, and sustainability goals. The Sustainability Plan will include actions related to the following: • The quality of life surrounding the infrastructure asset; • Stakeholder and community engagement; • Natural resource management; • Ecosystems and biodiversity health; • Climate resilience and carbon emissions.	Final Design
5.	Make good faith efforts to achieve a Platinum Award rating or, at minimum, a Gold Award rating as recognized by the Envision™ Sustainable Infrastructure Rating System of the Institute for Sustainable Infrastructure.	Final Design
6.	Exceed the stormwater quality protection enhancements for the project by providing additional stormwater quality mitigation beyond the regulatory requirements.	Final Design
7.	Construct and equip the Metropolitan Grove Operations and Maintenance Facility including the necessary bus fleet.	Final Design through Operations
8.	After financial close of the Phase 1 South Section P3 Agreement, fund not less than $60 million from the Development Rights Fee for design and permitting of high priority transit investments in Montgomery County.	Final Design through Operations
9.	Provide not less than $300 million of additional transit investment funding inclusive of the phase developer's proposed transit investment to implement high priority transit projects in Montgomery County over the operating term of Phase 1 South.	Final Design through Operations
10.	Work with Montgomery, Frederick, & Prince George's Counties to expand transit fare subsidies for eligible low-income riders.	Final Design
11.	Fund priority bicycle and pedestrian connections to remove barriers and provide connectivity for bicyclists and pedestrians as part of the commitment to support Vision Zero, and beyond commitments identified in **Table 1** by: • Defining a neighborhood walk and cycle connectivity zone to enhance multi-model connectivity. • Facilitating the development of a facility improvement program for the installation or replacement of sidewalks, crossings, or signal modifications and formalizing trail development that has pedestrian demand, then rank projects according to safety significance (considering predictive safety analyses completed by M-NCPPC), readiness, and landowner consensus, as part of its commitment to support Vision Zero. Determine the exact investments as part of the Section P3 Agreement for Phase 1 South.	Construction through Operations

United States Department of the Interior

Office of the Secretary
Washington, D.C. 20240

July 12, 2022

IN REPLY REFER TO: 4111
ER 21/0425

Via Electronic Mail Only

Ms. Caryn J. G. Brookman
Environmental Program Manager
707 North Calvert Street, P-601
Baltimore, MD 21202

RE: I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation

Dear Ms. Brookman:

The U.S. Department of the Interior (Department) has reviewed the Federal Highway Administration's (FHWA) and Maryland Department of Transportation State Highway Administration's (MDOT SHA) I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation. The Department submits the following comments on behalf of the National Park Service (NPS).

The Department submitted formal comments during the public scoping period on May 1, 2018, on the Draft Environmental Impact Statement/Section 4(f) Evaluation on November 9, 2020, and on the Supplemental Draft Environmental Impact Statement/Section 4(f) Evaluation on November 10, 2021. In addition to monthly Cooperating Agency meetings, the NPS has extensively coordinated with MDOT SHA separately to further minimize any impacts to NPS parklands and resources. The Department understands that the FHWA and MDOT SHA have worked closely with the NPS in preparing both the Supplemental Draft Environmental Impact Statement as well as the FEIS and final Section 4(f) Evaluation. Resulting from this coordination, impacts to national park land have been reduced from approximately 99 acres to 16.48 acres (2.8 acres permanent, 13.77 acres temporary) for the proposed replacement of the American Legion Bridge and the installation of infrastructure for a shared use pedestrian path to the C&O Canal towpath. Most of these impacts will be mitigated through measures implemented as part of the Section 106 Programmatic Agreement, the Wetlands Statement of Findings, and the Mitigation Agreement that the NPS and MDOT SHA are developing, which will include the measures listed on pages 6-18 through 6-21 of the FEIS. The FEIS was developed in coordination with the NPS and meets NPS requirements; therefore, the Department has no further comments on the FEIS but would like to note that the NPS and MDOT SHA will need to coordinate on design development and construction methodology to continue effort to reduce impacts.

SECTION 4(f) EVALUATION

Upon review of the Final Section 4(f) Evaluation, the Department agrees that there is no feasible and prudent alternative to use of Section 4(f) properties in the project study area, the proposed action includes all possible planning to minimize harm to lands and resources, and that the Preferred Alternative, Alternative 9, Phase 1 South, is the alternative with least overall harm.

The Department notes that continued coordination between the NPS and MDOT SHA is required as the study moves into developing designs and prepares construction methodology to further minimize and avoid impacts to NPS resources. In particular, the NPS has specific concerns regarding the sensitive resources found on Plummers Island, located beneath the American Legion Bridge, and requests input in the continuing refinement of the designs and construction methodology in order to ensure impacts are kept at a minimum, or to avoid impacts to the island all together. In addition, as referenced in the Section 4(f) Evaluation, the MDOT SHA and the developer will continue to coordinate with the NPS to review the condition of the existing connection between the C&O towpath and MacArthur Boulevard side path outside this project study area.

Thank you for the opportunity to provide comments and for your consideration of our important resources. We also appreciate the close coordination that the FHWA and MDOT SHA have had with the NPS on this project, and we look forward to future continued collaboration in these planning efforts. Any further coordination should be handled through Tammy Stidham, Deputy Associate Regional Director, Lands and Planning, National Capital Region, National Park Service, 1100 Ohio Drive SW, Washington, D.C. 20242, (202) 619-7474 or tammy_stidham@nps.gov.

Sincerely,

Stephen G. Tryon
Director, Office of Environmental
Policy and Compliance

cbrookman@mdot.maryland.gov

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
NATIONAL PARK SERVICE,
MARYLAND STATE HISTORIC PRESERVATION OFFICER,
VIRGINIA STATE HISTORIC PRESERVATION OFFICER
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION

Implementing Section 106 of the National Historic Preservation Act for the I-495 and I-270 Managed Lanes Study
Anne Arundel, Frederick, Montgomery and Prince George's Counties, Maryland, and Fairfax County, Virginia

WHEREAS, the U.S. Department of Transportation, Federal Highway Administration (FHWA), plans to approve the I-495 and I-270 Managed Lanes Study (MLS), a proposed Public-Private Partnership (P3) administered by the Maryland Department of Transportation State Highway Administration (MDOT SHA); and

WHEREAS, the MLS Preferred Alternative, "Alternative 9 Phase I South" (Project) consists of construction of Priced Managed Lanes along Interstates 495 and 270, beginning in Fairfax County, Virginia, and extending north to approximately Interstate 370, and east along the separated portions of I-495 ("spurs") to approximately Maryland Route 187, as described in detail via documentation linked in Attachment 4; and

WHEREAS, FHWA has determined that the Project is an undertaking, as defined in 36 C.F.R. §800.16(y), and thus is subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, and its implementing regulations, 36 C.F.R. Part 800 as amended; and

WHEREAS, MDOT SHA, with the approval of FHWA, intends to deliver the Project as a P3 using the services of a private sector developer or multiple developers who will advance the Project and be responsible for design, construction, operation and maintenance, subject to approvals by MDOT SHA and/or FHWA; and

WHEREAS, the Project may be implemented in construction phases, yet to be fully defined, and although this Programmatic Agreement (PA) reflects evaluation of the entire defined Project, certain commitments may require phased implementation; and

WHEREAS, FHWA is the lead agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004); and

WHEREAS, MDOT SHA, on behalf of FHWA, has established and updated the Area of Potential Effects (APE) for the project in consultation with the Maryland State Historic Preservation Office (MD SHPO) and Virginia State Historic Preservation Office (VA SHPO), encompassing the corridor project limits as described above, including areas of direct limits of disturbance, inclusive of all project elements with the potential to affect historic properties, such as identified natural resource and park mitigation sites, and a sufficient buffer for audible and visual effects where they may be likely to occur; a link to the detailed map of the APE is provided in Attachment 4; and

WHEREAS, the National Park Service (NPS) agrees FHWA is the lead federal agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004) and has agreed to participate in this PA as an Invited Signatory; and

WHEREAS, federal agencies which, at FHWA's invitation, designate FHWA as the lead federal agency for the Project may use this PA to fulfill their obligations under Section 106 of the NHPA according to 36 C.F.R. 800.2(a)(2), without the need for amendment of this PA, provided that FHWA follows the requirements of this PA; and

WHEREAS, NPS would authorize permanent use of the affected federal park property for the Project through coordination with FHWA for a Highway Deed Easement and would issue a permit for temporary use of land under its administration for construction-related activities. NPS intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14; and

WHEREAS, the Project will involve the use of lands managed by the NPS within the Chesapeake and Ohio Canal National Historical Park, a unit of the National Park System, and the George Washington Memorial Parkway (GWMP), a unit of the National Park System, that includes the Clara Barton Parkway; and

WHEREAS, NPS is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 U.S.C. § 100101(a) to "conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations"; and

WHEREAS, the GWMP, a unit of the National Park System, with portions located in Montgomery County, Maryland; and Fairfax and Arlington Counties and the City of Alexandria in Virginia, was established following the authorization of the parkway pursuant to what is known as the Capper-Cramton Act, Public Law 71-284, 46 Statute 482 (1930), and came to be administered by NPS pursuant to Executive Order 6166 of June 10, 1933. The GWMP is on the National Register of Historic Places (NRHP) for its association with twentieth century parkway design, engineering, landscape architecture, park planning and conservation, commemoration, and an association with George Washington; and

WHEREAS, the Clara Barton Parkway is the portion of the GWMP that runs along the Maryland side of the Potomac River and which also became part of the National Park System through the

Capper-Cramton Act (originally as the Maryland portion of the GWMP). The Clara Barton Parkway, as a portion of the GWMP, is also on the NRHP; and

WHEREAS, the Chesapeake and Ohio Canal National Historical Park, a unit of the National Park System, stretches along the Potomac River from Rock Creek at Georgetown in Washington, D.C., to Cumberland, Maryland, for 184.5 miles, was established as a national monument in 1961 and was then established as a national historical park by Congress in 1971, through Public Law 91-664 for the purpose of preserving and interpreting the 19th century transportation canal and its associated scenic, natural, and cultural resources; and providing opportunities for education and appropriate outdoor recreation. The Chesapeake and Ohio Canal National Historical Park is listed on the NRHP and contains more than 1,300 historic structures, including one of the largest collections of 19th century canal features and buildings in the national park system. The towpath and canal cross underneath I-495 at the American Legion Bridge, in Bethesda, Maryland; and

WHEREAS, FHWA has elected to phase the identification, evaluation, and effects assessment of certain portions of the APE and historic properties where unavailability of access or design information precluded such identification, evaluation and assessment, as provided in 36 C.F.R. 800.4(b)(2), and 36 C.F.R. 800.5(a)(3); and

WHEREAS, FHWA will ensure additional identification, evaluation, and assessment is completed in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to avoid, minimize, or mitigate for any potential adverse effects to historic properties; and

WHEREAS, FHWA has initiated consultation pursuant to 36 C.F.R. 800.3(c) with the MD SHPO by letter on April 12, 2018 and the VA SHPO by letter on May 14, 2019, and the term "SHPO" is used to refer to both state offices when one is not specified; MDOT SHA on behalf of FHWA will continue to consult with the appropriate SHPO and consulting parties under the terms of this PA in order to identify historic properties, assess the effects of the Project on historic properties, and, if necessary, resolve adverse effects to historic properties; and

WHEREAS, FHWA, pursuant to 36 C.F.R. 800.6(a)(1)(i)(C), on March 26, 2018, initiated Section 106 consultation with the Advisory Council on Historic Preservation (ACHP), and the ACHP has chosen to participate in the consultation pursuant to 36 C.F.R. 800.6(a)(1)(iii); and

WHEREAS, FHWA, pursuant to 36 C.F.R. § 800.10(c), invited the Secretary of the Interior (Secretary) to participate in consultation by letter dated March 16, 2020, as the Project includes National Historic Landmarks (NHL) within the APE, and the National Park Service, National Capital Area NHL Program (NPS-NHL) has represented the Secretary concerning the NHLs within the Project throughout consultation and will continue to participate in future consultations involving the NHLs, and

WHEREAS, FHWA, ACHP, MDOT SHA, and the MD SHPO, under the *Amended Programmatic Agreement Among the Federal Highway Administration, the Maryland Department of Transportation State Highway Administration, the Advisory Council on Historic Preservation, the Maryland State Historic Preservation Officer, Implementing Section 106 of the National*

Historic Preservation Act for the Federal-aid Highway Program in Maryland ("Statewide PA", linked in Attachment 4), have agreed to delegate certain authorities relating to Section 106 of the NHPA to MDOT SHA for Federal-aid Highway Projects in Maryland; and

WHEREAS, MDOT SHA, pursuant to the Statewide PA, employs professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history who will oversee implementation of stipulations in this PA; and

WHEREAS, MDOT SHA, on behalf of FHWA, pursuant to 36 C.F.R. 800.4(a)(1), has established and updated the APE for the Project in consultation with the MD and VA SHPO, has identified historic properties within the APE, and has identified adversely affected properties, as described in the *Draft Section 106 Technical Report* of January 2020 and subsequent documentation (linked in Attachment 4); and

WHEREAS, MDOT SHA and FHWA, pursuant to 36 C.F.R 800.2(d) have sought and considered the views of the public regarding the Project's effects on historic properties by providing notice and information in following its public involvement procedures under the National Environmental Policy Act (NEPA); and

WHEREAS, MDOT SHA, during the course of consultation, has invited the parties listed in Attachment 2 to participate in consultation on the Project; and

WHEREAS, the parties listed in Attachment 3, based on their relationship to specific actions as specified in this PA, or interest in historic properties affected by the project, have been invited to be consulting parties and concur by signing this PA; and

WHEREAS, MDOT SHA and FHWA have initiated consultation with Federally recognized Native American tribal nations (Tribes) listed in Attachment 2 and provided the Tribes with information about the Project. MDOT SHA, on behalf of FHWA, has invited the same Tribes to be consulting parties, as shown in Attachment 3, and concur by signing this PA; and

WHEREAS, FHWA has invited MDOT SHA and NPS to be invited Signatories to this PA, based on their responsibilities for implementation of its terms, and all Signatories, required and invited, are referred to as "Signatories" to this document; and.

WHEREAS, FHWA has determined that the Project will have an adverse effect on NRHP-listed or eligible properties ("historic properties") including the George Washington Memorial Parkway (Clara Barton Parkway), the Chesapeake and Ohio Canal National Historical Park, the Washington Biologists' Field Club on Plummers Island, Gibson Grove African Methodist Episcopal Zion Church, archaeological sites 44FX3922 (Dead Run Ridges Archaeological District), 44FX0374, 44FX0379, 44FX0389, 18MO749 and 18MO751; that additional effects may not be completely known; and that FHWA intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14 and to govern the implementation of the Project and the resolution of adverse effects.

NOW, THEREFORE, FHWA, NPS, ACHP, MDOT SHA, MD SHPO, and VA SHPO, (hereinafter "Signatories") agree that the Project will be implemented in accordance with the following Stipulations in order to take into account the effect of the Project on historic properties and that these Stipulations will govern compliance of the Project with Section 106 of the NHPA until this PA expires or is terminated.

Stipulations

I. Roles and Responsibilities

A. **FHWA** is the lead federal agency and is responsible for ensuring the terms of this PA are carried out.

B. **MDOT SHA** is delegated authority by FHWA under this PA and the Statewide PA to continue defined aspects of consultation, Project compliance review, and mitigation implementation. MDOT SHA will be primarily responsible for implementation of this PA excepting where otherwise specified. Additionally:

1. MDOT SHA will enter into agreements with one or more developers to design, build, and operate the Project. MDOT SHA will ensure the work of the developer or developers conforms to the requirements of this PA and may task the developer(s) with assistance with certain commitments (such as context-sensitive design); however, MDOT SHA may not delegate consultation obligations or other responsibilities specified in this PA to the developer(s).
2. MDOT SHA will require the developer(s) to retain professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history for the duration of design and construction to assist with design commitments, liaise with MDOT SHA cultural resources staff and facilitate compliance with this PA.
3. MDOT SHA, on behalf of FHWA, will consult with the relevant SHPO(s) for actions under this PA and 36 C.F.R. 800.

C. **NPS** is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 U.S.C. § 100101(a).

D. **SHPO**: The Maryland Historical Trust (MD SHPO) has jurisdiction as established in the NHPA for historic properties in Maryland. The Virginia Department of Historic Resources (VA SHPO) has jurisdiction as established in the NHPA for historic properties in Virginia. The SHPOs will:

1. Respond to requests from MDOT SHA for concurrence on eligibility determinations, effect determinations, and technical documents within a 30-day review period unless otherwise specified in this PA, or MDOT SHA specifically

provides for an extended review period at the time of submittal. MDOT SHA and FHWA may assume concurrence or no objection to determinations and submittals if no response is received within 30 days, if no extended timeline is specifically established in the review request or if no timeline is specified in 36 C.F.R. 800. All durations referenced in this PA refer to calendar days.

2. Provide written comments, share general technical assistance/guidance, and make available to MDOT SHA or its designates survey records or other documents necessary to fulfill the requirements of this PA.

E. ACHP will provide policy guidance, provide comment on issues that may arise as requested by parties to this PA, and participate in dispute resolution as specified in Stipulation XIII.

F. Consulting Parties/Public

1. MDOT SHA has consulted with or provided the opportunity to consult to the parties listed in Attachment 2 prior to finalizing this PA. Because the Preferred Alternative no longer affects numerous historic properties identified in earlier alternatives considered, several parties listed in Attachment 2 no longer have a demonstrable interest in historic properties affected by the Project. Parties listed in Attachment 3 continue to have a defined relationship to the Project and have been invited to concur in this PA.

2. MDOT SHA will provide all consulting parties in Attachment 3, regardless of concurring status, with opportunities to consult on Project changes or new elements with the potential to affect historic properties. MDOT SHA will offer other appropriate consulting parties the opportunity to rejoin or newly join consultation in the event of new or revised Project elements. Consulting parties may sign this PA as concurring parties at any time after execution of the PA with the invitation of MDOT SHA or FHWA. Additional consulting parties may be included in Attachment 3 without the need to amend this PA.

3. Concurrence with the PA by a party does not necessarily indicate that the party supports the Project, the Preferred Alternative, or endorses all stipulations of this PA, but rather indicates the desire of such parties to acknowledge consultation and/or remain involved in implementation of specific terms of this PA.

4. MDOT SHA will provide for notification of the public for substantial changes to the Project that would result in an expanded APE or new effects to historic properties consistent with 36 CFR 800.8(c)(1)(iv) and procedures under NEPA to ensure ongoing opportunities for public input. As appropriate, this process may identify new consulting or concurring parties who may wish to join the PA at a later time in response to Project refinement.

II. Professional Standards

A. Guidelines, standards and regulations relevant to this PA and its purposes are listed below, and links to these documents are found in Attachment 4. Additionally, it is the intention of the Signatories to interpret this PA to incorporate any subsequent standards, revisions of standards, or applicable guidance issued by the Secretary, ACHP, or MD SHPO or VA SHPO as then in force during this PA.

1. 36 C.F.R. Part 800: Protection of Historic Properties, as amended (2004);
2. *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983);
3. Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983)
4. *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994), including *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018);
5. *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (Maryland Historical Trust, Revised 2019);
6. *Guidelines for Conducting Historic Resources Survey in Virginia* (Virginia Department of Historic Resources, revised September 2017)
7. 36 C.F.R Part 79: Curation of Federally-Owned and Administered Archaeological Collections
8. *NPS Museum Handbook*, National Park Service, revised 2019
9. Program Comment for Actions Affecting Post-1945 Concrete Steel Bridges (77 FR 68790);
10. *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
11. *Section 106 Archaeology Guidance* (ACHP, 2009)
12. Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects (ACHP February 2007);
13. National Register of Historic Places Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service revised 1997), National Register of Historic Places Bulletin 16A, *How to Complete the National Register Registration Form* (National Park Service revised 1997), and other National Register Bulletins as applicable
14. NPS Management Policies – Section 5, Cultural Resource Management (2006)

15. Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017); and accompanying guidelines for Treatment of Historic Properties (1995, Revised 2017) and Cultural Landscapes (1996)

III. General Project Section 106 Commitments

A. MDOT SHA will implement mitigation concurrent with construction phasing where impacts will occur; in the event that the Project is modified or certain elements causing adverse effects are not constructed, MDOT SHA will notify Signatories and consulting parties of the change at such time as a final decision is made to remove such elements and amend the PA as necessary.

B. MDOT SHA cultural resources staff who meet Secretary of the Interior's Professional Qualifications Standards will oversee implementation of all mitigation commitments and other terms of this PA.

C. Consultation on Reforestation and other Mitigation Sites

1. MDOT SHA is obligated to provide reforestation mitigation for the Project pursuant to the Maryland Reforestation Law (MD Nat Res Code § 5-103). Reforestation must occur within 2 years or 3 growing seasons of completion of construction. MDOT SHA is also coordinating with the NPS to identify reforestation sites to account for impacted NPS-managed lands. The locations to be used for reforestation are not yet fully identified. Reforestation activities may take the form of conservation easements or other noninvasive activities which would not affect historic properties. MDOT SHA will not consult on easements or conservation actions where no ground disturbance is involved. If areas outside the APE are identified for reforestation where new plantings or other activities with the potential to affect historic properties are identified, MDOT SHA will consult in accordance with Stipulation IV to add such areas to the APE, identify historic properties, and evaluate effects to historic properties. MDOT SHA will avoid adverse effects to historic properties to the maximum extent practicable in selecting reforestation planting sites. If adverse effects are unavoidable, MDOT SHA will amend this PA in accordance with Stipulation XII to resolve any such adverse effects.

2. As Project development proceeds, additional and revised mitigation or enhancement locations for impacts to resources other than historic properties may be identified. These resources include, but are not limited to wetlands, stormwater, and parks. To account for effects to historic properties at these locations, when actions are proposed at such locations that may affect historic properties, MDOT SHA will amend the APE and follow the procedure described in Stipulation IV below.

IV. Consultation Regarding Project Development

A. Further consultation requirements regarding specific historic properties affected by the Project are described in Stipulation V. As project design advances or ancillary activities not currently known are identified, MDOT SHA will initiate consultation with SHPOs and other consulting parties (as described below) using the following process.

1. MDOT SHA cultural resources staff will review proposed changes that affect project location, design, methods of construction, materials, or limits of disturbance (LOD), for potential new effects to historic properties. Should these changes necessitate an expansion of the APE, or if the changes would affect known or potential historic properties differently than described in this PA, MDOT SHA will consult on behalf of FHWA as described in Stipulation IV.B below.
2. If MDOT SHA, working with the developer(s), finds design or construction solutions that avoid or further minimize adverse effects to historic properties, MDOT SHA will consult in accordance with the procedures in Stipulation IV.B to seek concurrence with any updated determinations of effect, and amend this PA in accordance with Stipulation XII.
3. MDOT SHA, on behalf of FHWA, will consult upon changes to the LOD within the existing APE where additional archaeological investigation is recommended in the Cultural Resources Technical Report or where such recommendations are identified in subsequent consultation documentation, including the treatment plans described in Stipulations VI and VII.
4. MDOT SHA, on behalf of FHWA, will consult as specified elsewhere in this PA regarding specific stipulations, including Monitoring of Performance (Stipulation VIII).

B. MDOT SHA, on behalf of FHWA, consistent with the principles described in 36 C.F.R. §§ 800.3 – 6, will consult with the appropriate SHPO(s), Signatories, concurring parties to this PA, Tribes who may ascribe religious and cultural significance to properties pursuant to 36 C.F.R. § 800.3(f)(2), local public agencies with jurisdiction and other consulting parties identified for this undertaking as appropriate on:

1. Amendments to the APE, consistent with 36 C.F.R. § 800.16(d), including identification and documentation of any new historic properties within the amended APE consistent with 36 C.F.R § 800.4(a) and (b).
2. New or revised determinations of eligibility for historic properties within the APE as described above, consistent with 36 C.F.R § 800.4(c).
3. New or revised assessment of effects to historic properties within the APE as described above, consistent with 36 C.F.R § 800.5.

4. If MDOT SHA determines there are any new adverse effects to historic properties, it will notify FHWA. MDOT SHA and FHWA will consult with the SHPO and identified consulting parties to resolve the adverse effects consistent with 36 C.F.R § 800.6, including alternatives to avoid, minimize or mitigate such adverse effects; MDOT SHA and FHWA will follow the procedures in Appendix 3 and/or amend this PA as necessary to document such resolution of any new adverse effects.

C. MDOT SHA will consult with the relevant SHPO(s), Signatories, Tribes, and appropriate consulting parties on archaeology inventory, archaeological evaluations for NRHP eligibility, and effect determinations for archaeological historic properties.

D. MDOT SHA will provide consultation materials in written or electronic form, and follow timelines for comment opportunity as specified in Stipulation I. D.

V. Property-Specific Commitments

MDOT SHA will be responsible for ensuring the following mitigation and commitments are carried out, under the oversight of FHWA. MDOT SHA will either complete mitigation itself or enter into legally binding agreements with partner agencies to ensure the following stipulations are fulfilled, subject to the requirements of each stipulation below. Mitigation and commitments will be implemented by authorized construction phase, unless there is opportunity to provide advanced mitigation that is mutually agreeable to all parties, is feasible to advance, and is identified by MDOT SHA as a priority. All commitments regarding design-review with consulting parties will be conducted in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to influence design to avoid impacts or ensure compatibility to the extent practicable with historic properties. Preliminary engineering activities to support design of future phases, such as geotechnical studies or other similar, minimally invasive activities with limited potential to affect historic properties may proceed within the APE prior to construction authorization and will not require consultation or advance mitigation.

A. George Washington Memorial Parkway (including Clara Barton Parkway)

1. MDOT SHA will continue property-specific Design-Review consultation with NPS and SHPOs to ensure a context-sensitive design for new facilities, and, through the ongoing design process, minimize, to the extent practicable, impacts to character-defining features and resources that contribute to the George Washington Memorial Parkway/Clara Barton Parkway as a historic property. Key elements for NPS review include the bridge design, trail connections, retaining walls, ramp improvements, signage plans and barrier. MDOT SHA will provide NPS and SHPOs a comment opportunity on plans at a draft level of design and a second opportunity prior to finalization of design for elements on

NPS property or within the APE adjacent to NPS property; for each review there will be minimum 30-day review period. In the event of objections relating to the final design from NPS or SHPOs that cannot be resolved, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will provide NPS funding in an amount not to exceed $250,000 for a Cultural Landscape Report (CLR) for Clara Barton Parkway. The CLR will include historical narrative, updated existing conditions and analysis and evaluation, and treatment guidelines for management of character-defining features. NPS will complete the CLR within five (5) years of receipt of funds from MDOT SHA and provide a copy of the completed CLR, along with a summary of implementation of any treatment measures in a timely manner following their implementation, to MD SHPO and MDOT SHA.

B. Dead Run Ridges Archaeological District (44FX3922) and individual sites 44FX0374, 44FX0379 and 44FX0389

1. In consultation with VA SHPO, NPS, and other appropriate consulting parties including consulting Tribes, MDOT SHA will develop and implement Phase III data recovery on sites 44FX0374, 44FX0379, 44FX0389 and the Dead Run Ridges Archaeological District (44FX3922) as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

2. MDOT SHA will prepare a NRHP nomination form for the Dead Run Ridges Archaeological District, no later than 12 months following finalization of the report documenting the Phase III data recovery in Stipulation V. B. 1 above, basing the nomination on the report findings. MDOT SHA will provide a copy of the draft nomination to NPS staff for review and comment prior to formal submission of the draft nomination to VA SHPO. MDOT SHA will work with VA SHPO's Register Program to develop a final draft nomination for the Dead Run Ridges Archaeological District, and VA SHPO's Register Program will process the final draft for listing in the NRHP pursuant to its established policies and procedures. The Department of Historic Resources State Review Board is under no obligation to approve the nomination for listing in the NRHP. Should the nomination be unsuccessful, or additional information be requested beyond the scope of the completed data recovery efforts, MDOT SHA will not be required to complete further fieldwork or analysis beyond what is agreed to in the treatment plan specified in Stipulation VI, or otherwise pursue nomination of the district.

C. Chesapeake and Ohio Canal National Historical Park

1. MDOT SHA will continue property-specific Design-Review consultation with NPS to ensure a context-sensitive design for new facilities constructed as

part of the Project, and, through the ongoing design process, minimize to the extent practicable impacts to character-defining features and resources that contribute to the Chesapeake and Ohio Canal National Historical Park as a historic property. MDOT SHA will provide NPS and MD SHPO a comment opportunity on design plans at a draft level of design, and a second opportunity prior to finalization of design for elements within the APE on or adjacent to NPS property; for each review there will be a minimum 30-day review period. In the event of objections from NPS or MD SHPO that cannot be resolved relating to the final design, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will locate new bridge piers away from Lock 13 as part of the new Clara Barton Parkway Bridge and will avoid placing piers for the new structure closer to Lock 13 than the current bridge piers, as shown in the Preferred Alternative.

3. MDOT SHA will protect Lock 13 in place during construction, by limiting LOD around the lock structure and providing an appropriate buffer to prevent damage. MDOT SHA will rehabilitate or restore the structure if needed following construction, with treatment determined by or in consultation with NPS and MD SHPO as described below in Stipulation V.C.4 and VC.5. As part of the Archaeological Treatment Plan in Stipulation VI, MDOT SHA will include archaeological monitoring or other treatment approaches during construction in the area around Lock 13.

4. MDOT SHA will conduct a condition assessment of lock structures, the Canal and the Towpath within the Project LOD prior to construction and provide copies of the assessment to MD SHPO and NPS. MDOT SHA will provide for rehabilitation of lock structures, the Canal, and Towpath within the Project LOD following completion of substantial construction within the affected area. MDOT SHA will provide NPS and MD SHPO with a draft rehabilitation plan for review and comment prior to implementing the plan

5. MDOT SHA will provide for vibration damage monitoring of other susceptible historic structures at Chesapeake and Ohio Canal National Historical Park within the APE during construction, specifically, Lock 12 and Lock 14. Additional vulnerable structures or features (such as masonry walls) to be monitored may be identified in consultation with NPS during the preparation and review of the condition assessment identified in Stipulation V.C.4.

a. Should notable acute or incremental damage directly resulting from construction means or methods be identified as a result of the vibration monitoring, MDOT SHA will follow Section A of the Inadvertent Discovery Plan (Attachment 1).

b. General wear or degradation of the historic fabric during construction that is not attributable to specific construction practices or incidents will be remediated by the rehabilitation plan in Stipulation V.C.4.

D. 18MO749 Archaeological Site (C&O Canal)

In consultation with MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

E. 18MO751 Archaeological Site (C&O Canal)

In consultation with MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

F. Washington Biologists' Field Club on Plummers Island

1. MDOT SHA will prepare a NRHP nomination for the Washington Biologists' Field Club on Plummers Island. MDOT SHA will provide a copy of the draft nomination to NPS staff and the Washington Biologists' Field Club (WBFC) for review prior to submittal to MD SHPO and address any comments prior to formal submission of the nomination. Should the nomination be unsuccessful, MDOT SHA will not be required to resubmit the nomination or otherwise complete additional studies or research after addressing comments by NPS staff.
2. MDOT SHA will place temporary fencing along the LOD within Plummers Island to delimit construction activities.
3. MDOT SHA will fund or implement a photographic survey documenting conditions before, during and after construction is completed adjoining Plummers Island, within the APE boundary, and provide the results to WBFC and NPS.
4. MDOT SHA will fund or develop GIS maps to document known current and historical study locations and key natural resource features within the APE to assist in documenting change over time and provide these files to WBFC and NPS.
5. MDOT SHA will procure a sub-meter accurate GPS unit for WBFC to use in long-term monitoring of plant locations, collection sites, and other historical research features.

6. MDOT SHA, subject to any availability or rights restrictions, will provide for digitization and cataloging of historical records related to the WBFC that are under the control of WBFC but housed at the Smithsonian Museum of Natural History, specifically the collection, “SIA RU102005, Smithsonian Institution, Washington Biologists' Field Club, circa 1900-1966 Records” that are not currently available in electronic format, and provide the files to WBFC and NPS.

7. MDOT SHA will provide WBFC historical content, such as a synthesis of the digitized materials in Stipulation V.F.6, to incorporate into their website.

8. MDOT SHA will complete stipulations V.F.1-7., other than those requiring longer timeframes (such as photographic survey after construction), unless continued consultation should necessitate a longer timeframe, within two (2) years of commencement of construction activities on Plummers Island.

G. Morningstar Tabernacle No. 88 Moses Hall and Cemetery

1. As part of context-sensitive design, MDOT SHA will consult with the Trustees of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery, Friends of Moses Hall, First Agape A.M.E. Zion Church, Cabin John Citizens Association, and other consulting parties with a demonstrated interest in the cemetery on context-sensitive treatment of noise barrier facing the cemetery; MDOT will work with the above-listed consulting parties on a context-sensitive treatment of noise barrier facing the cemetery, which may include decorative elements appropriate to the historic property and/or such elements as memorial plaques or signage. MDOT SHA will provide these consulting parties and MD SHPO comment opportunity for Project elements, specifically noise barrier, within the APE adjacent to the cemetery at a draft level of design and a second opportunity prior to finalization of design; for each review there will be a minimum 30-day review period. In the event MD SHPO does not agree with the final design, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will conduct further studies prior to final design and construction adjacent to the cemetery as part of the treatment plan specified in Stipulation VII. Following completion of the studies in the treatment plan, MDOT SHA and FHWA will provide the results of the studies to MD SHPO and relevant consulting parties and determine project effects to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery in consideration of the results of the studies and the views of the MD SHPO and relevant consulting parties. Should interments be identified outside the identified boundary of the cemetery, and no additional project avoidance options are practicable, MDOT SHA and FHWA will consult on the likely adverse effect, identify mitigation options, and amend this PA as necessary following the procedures in Stipulations IV and XIII of this PA.

H. Gibson Grove A.M.E. Zion Church

1. MDOT SHA will provide First Agape A.M.E. Zion Church at Gibson Grove and MD SHPO a comment opportunity at a draft level of design and a second opportunity prior to finalization of design for Project elements on church property or within the APE adjacent to the church property, with a minimum 30-day review period.

2. MDOT SHA will improve the stormwater drainage on the church property by routing drainage into a new underground culvert to be installed as part of the Project.

3. MDOT SHA will ensure that a parking lot identified in the church's restoration plan is constructed on church property following installation of the culvert drainage design. MDOT SHA will work with First Agape A.M.E. Zion Church on schedule and timing of the culvert and parking lot work to be compatible with ongoing church restoration efforts to the extent practicable.

4. MDOT SHA will ensure Project noise- or vibration- causing construction activities are restricted adjacent to the church during scheduled worship services or key events.

5. MDOT SHA, in coordination with Montgomery County, will install sidewalk on the west side of Seven Locks Road to more accessibly connect Gibson Grove A.M.E. Zion Church and Morningstar Tabernacle No. 88 Moses Hall and Cemetery.

VI. Archaeological Treatment Plan (ATP)

MDOT SHA's goal is to have a comprehensive but flexible ATP that addresses the LOD but can be revised and updated in response to Project design advancement. Prior to construction within affected areas, MDOT SHA will develop an ATP in consultation with SHPOs and appropriate consulting parties. MDOT SHA will provide for a minimum 30-day review of the initial draft of the ATP. MDOT SHA will be responsible for implementing the provisions of the ATP. The ATP will include:

A. Archaeological monitoring requirements during construction.

B. Phase I Survey in areas where property access could not be obtained (as identified in the 2019 Technical Report, Volume 4, Chapter 5): RS-1; RS-2; S-4, SWM S-4, S-5, SWM S-5, S-6, SWM S-6; S-27; SWM S-27, S-8; S-10; S-53, and the vicinity of S-28.

C. Phase I Survey in the vicinity of two sites, 18MO457 and18MO190, to define site boundaries and evaluate NRHP eligibility and potential impacts.

D. Phase II Evaluation of Sites 18MO191 and 18MO752.

E. Phase III Data Recovery investigations at 18MO749 and 18MO751 within the Chesapeake and Ohio Canal National Historical Park and the Dead Run Ridges Archaeological District within the GWMP (44FX3922), and individually eligible sites

within the district 44FX0374, 44FX0379 and 44FX0389. MDOT SHA will prepare a draft NRHP Nomination form for the Dead Run Ridges archaeological district based on the results of Phase III Data Recovery investigation as described in Stipulation V. B. MDOT SHA, in consultation with other parties, will ensure the results of the data recovery are documented in technical reporting consistent with the requirements of Stipulation II, and will define and produce products or other efforts interpreting the data recovery reports to the general public.

F. Provisions in the treatment plan required for work on NPS federal property, including cataloging and curation to NPS standards of artifacts and associated records, permitting under the Archaeological Resources Protection Act and compliance with the Native American Graves Protection and Repatriation Act (NAGPRA).

G. If sites or areas proposed for archaeological treatment in the ATP are avoided by revising the Project LOD or other actions, MDOT SHA will document the revision, including updating effect determinations and seeking SHPO concurrence where required. MDOT SHA will provide such information to appropriate consulting parties and will thereby not need to complete treatment or investigation at such locations.

H. MDOT SHA will ensure required consultation with the appropriate SHPO and appropriate consulting parties occurs on eligibility, effects, and treatment for any newly identified archaeological historic properties prior to final design and construction in areas identified for further archaeological treatment. Reports or similar deliverables will be provided to Signatories and appropriate consulting parties with a minimum 30-day review opportunity.

I. MDOT SHA will consult with SHPO and appropriate consulting parties on the ATP and any revisions or modifications to the ATP. If SHPO concurs with the ATP or future revisions, no amendment of this PA is needed to implement or update the ATP. If SHPO does not agree with the ATP or future proposed changes to the ATP, MDOT SHA will seek to resolve the disagreement or follow the provisions of Stipulation XIII.

VII. Cemeteries and Human Remains Treatment Plan

A. MDOT SHA acknowledges there is some potential for human remains associated with historic properties to be present in at least two areas of the LOD (adjacent to Morningstar Tabernacle No. 88 Moses Hall and Cemetery and in the general location of the Montgomery County Poor Farm) which are not currently accessible for the types of thorough archaeological investigation necessary to definitively identify interments. MDOT SHA will work with the developer(s) to minimize LOD to the maximum extent practicable in these areas

B. The treatment plan will include proposed investigations to identify and evaluate potential graves or human remains in specified sensitive areas to the maximum extent practicable to ensure avoidance or treatment prior to final design and construction.

C. MDOT SHA will consult with SHPO and, where identified, descendants, descendant communities and other appropriate consulting parties to fully identify, recover, and respectfully treat any human remains identified within LOD that cannot be avoided.

D. MDOT SHA will consult with SHPO and, where identified, descendants, descendant communities and other appropriate consulting parties on archaeological monitoring requirements for locations within LOD where potential for human remains is likely during construction, including unverified but reported locations of the Ball Family Cemetery.

E. MDOT SHA will seek input from affected consulting parties and concurrence from SHPO on the treatment plan prior to its implementation. MDOT SHA will be responsible for implementing the treatment plan. If SHPO does not agree with the treatment plan, MDOT SHA will seek to resolve the disagreement or follow the provisions of Stipulation XIII.

F. Activities on Federal Lands, including NPS-managed property, require adherence to NAGPRA. The treatment plan will include provisions for NAGPRA compliance in the event of human remains or funerary objects discovery.

G. MDOT SHA will ensure that at all times human remains are treated with dignity and respect in a manner consistent with ACHP's policy statement on the Treatment of Human Remains, Burial Sites and Funerary Objects.

H. MDOT SHA will ensure no photographs of human remains or associated funerary objects are released to the press or general public.

I. MDOT SHA will be responsible for all expenses for any removal, treatment and relocation/disposition of any human remains or funerary objects impacted by the Project.

J. MDOT SHA will fully implement all relevant provisions of the treatment plan prior to final design and any construction impacts within specified cemetery investigation locations.

VIII. Monitoring of Performance

A. Specific points for continued consultation are defined in Stipulations IV and V.

B. MDOT SHA will, for the duration of the Project, provide Signatories and consulting parties listed in Attachment 3 with a written progress report twice per calendar year describing status of implementation of this PA.

C. MDOT SHA will provide for a meeting opportunity for Signatories and consulting parties listed in Attachment 3 following issuance of each progress report.

D. MDOT SHA will convene additional consulting party meetings as necessary or when requested by any Signatory;

E. MDOT SHA may cancel individual meetings if there are no significant issues for discussion and no Signatory objects to the cancellation.

IX. Post-Review Discovery of Human Remains

MDOT SHA will develop human remains treatment provisions as part of the archaeological and cemetery and human remains treatment plans in Stipulations VI and VII. MDOT SHA will follow the attached Inadvertent Discovery Plan (Attachment 1) should human remains be identified in any areas or situations not covered by the archaeological or cemetery and human remains treatment plans**.**

X. Other Post-Review Discoveries

MDOT SHA will follow the procedures in Attachment 1 of this PA for any inadvertent archaeological discoveries or inadvertent effects to historic properties during construction. MDOT SHA will provide training for the developer(s) in the Inadvertent Discovery Plan requirements.

XI. Confidentiality

The Signatories agree to provide by the provisions of Section 304 of the NHPA, and other applicable requirements, to withhold information concerning the location, character, or ownership of resources where release of such information may endanger the integrity of the resource.

XII. Amendment

Any Signatory to this PA may request that it be amended, whereupon the Signatories will consult in accordance with 36 C.F.R. § 800.14 to consider such an amendment. Amendments will be effective upon the date of the last signature from the Signatories.

XIII. Dispute Resolution

A. Should any Signatory or consulting party object at any time to the manner in which the terms of this PA are implemented, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will take the following steps:

1. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to ACHP. ACHP shall provide FHWA with its comment on the resolution of the objection within 30 days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall

prepare a written response that takes into account any timely advice or comments regarding the dispute from ACHP, Signatories and consulting parties and provide them with a copy of this written response. FHWA will then proceed according to its final decision.

2. If ACHP does not provide its advice regarding the dispute within the 30-day period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and consulting parties to the PA and provide them and ACHP with a copy of such written response.

3. In the case of objections related to NRHP eligibility, any Signatory may object in writing within 30 days to an MDOT SHA or FHWA determination of eligibility. If MDOT SHA and FHWA are unwilling to revise the determination in response to the objection or other relevant information, FHWA (or MDOT SHA on its behalf) will submit the determination to the Keeper of the National Register of Historic Places for a determination pursuant to 36 C.F.R. Part 63.

B. Objections from the Public: Should a member of the public object to an action taken under this PA, or compliance with the PA, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA will ensure that MDOT SHA consults with the objecting party to respond to the objection in coordination with FHWA where relevant, provided the objection is made in writing to the FHWA or MDOT SHA contacts identified in Attachment 5 or any subsequent updates to Attachment 5. MDOT SHA and FHWA will inform other Signatories of the objection and proposed resolution. Should a Signatory disagree with the proposed resolution, the Signatories will follow Stipulation XIII.A.

C. FHWA's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

XIV. Termination

A. Any Signatory to this PA may terminate it by providing 30 days' notice in writing to the other Signatories, provided that the Signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

B. If any Signatory to this PA determines that a term will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation XII, above. If within 30 days (or another time period

agreed to by all Signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other Signatories.

C. In the event of termination, FHWA will comply with 36 C.F.R. § 800 for all remaining actions, or until a new agreement is reached fulfilling such requirements.

This PA will continue in full force and effect until 20 years from the date of execution of the PA, or such time of final acceptance of the Project and when all terms of this PA have been met, should the terms be met prior to the 20-year expiration. The PA will be invalid if the Project is terminated or authorization for the Project is rescinded. At any time in the six-month period prior to its expiration, the Signatories will consult to consider an extension or amendment of the PA. At such time, the Signatories may consider an amendment to extend the PA unmodified for an additional specified duration or consult to amend the PA in accordance with Stipulation XII. No extension or amendment will be effective until all Signatories have signed the amendment or amendment to extend.

In witness thereof, the Signatories to this PA, through their duly authorized representatives, have executed this PA on the days and dates set out on the following pages and certify that they have read, understood, and agreed to the terms and conditions of this PA as set forth herein.

The effective date of this PA is the date of the last signatory page.

This PA may be executed in counterparts, each of which shall constitute an original, and all of which shall constitute one and the same agreement.

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

FEDERAL HIGHWAY ADMINISTRATION

Date 6/06/2022

Gregory Murrill
Division Administrator
FHWA Maryland Division

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

ADVISORY COUNCIL ON HISTORIC PRESERVATION

Date 6.14.2022

Reid J. Nelson
Executive Director (Acting)

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

MARYLAND STATE HISTORIC PRESERVATION OFFICER

Date May 19, 2022

Elizabeth Hughes
Director
Maryland Historical Trust

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

Julie Langan Date 5/19/2022

Julie Langan
Director
Virginia Department of Historic Resources

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

NATIONAL PARK SERVICE

TINA CAPPETTA Digitally signed by TINA CAPPETTA Date: 2022.06.06 12:40:09 -04'00'

Date 6/6/2022

Tina Capetta
Superintendent
Chesapeake and Ohio National Historical Park

Charles Cuvelier Date: 2022.06.06 12:35:53 -04'00'

Date 6/6/2022

Charles J. Cuvelier
Superintendent
George Washington Memorial Parkway

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

MARYLAND STATE HIGHWAY ADMINISTRATION

Tim Smith Date 05/27/2022

Tim Smith, P.E.
Administrator

Attachments

1. Inadvertent Discovery Plan
2. All Parties Invited to Consult on the Project
3. Consulting Parties invited to Concur
4. Links to Documentation Referenced
5. Contact Information for FHWA and MDOT SHA staff responsible for PA implementation (to be updated as necessary)

Attachment 1
Inadvertent Discovery Plan

A. Unanticipated Impacts to Architectural Historic Properties: if the Project causes unanticipated impacts to any National Register of Historic Places (NRHP) eligible, listed, or contributing buildings, sites, structures, or objects of the built environment, the contractor must notify the engineer and immediately cease any activity causing ongoing damage until consultation occurs. MDOT SHA shall, in consultation with the appropriate SHPO (VA or MD), determine if adverse effects have occurred to the property/properties and develop a plan for the protection of the historic property, and minimization or mitigation of impacts. If mitigation is identified, FHWA, MDOT SHA, SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. MDOT SHA may hold the developer(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

B. Unanticipated Damage to Known Archaeological Resources: if unauthorized excavation occurs outside the approved limits of disturbance (LOD) or other approved boundaries designed to protect archaeological resources or cemeteries and thereby causes impacts to known, NRHP-eligible properties, MDOT SHA will ensure any activity causing ongoing damage is stopped until consultation occurs. MDOT SHA will conduct a damage assessment consistent with the model used for such assessments under the Archaeological Resources Protection Act (https://www.nps.gov/archeology/pubs/techbr/tchBrf20.pdf). MDOT SHA will use the results of the assessment in consultation with the relevant SHPO to determine if the resource has been adversely affected and determine appropriate mitigation. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from MDOT SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource is affiliated with other known descendant groups or consulting parties, MDOT SHA will consult with such parties as well. Should damage occur on NPS land, MDOT SHA will consult with the NPS staff and regional archaeologist regarding the damage assessment report and any identified mitigation. If mitigation is identified, FHWA, MDOT SHA, SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. MDOT SHA may hold the developer(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

C. Unanticipated Discovery of Human Remains: Should any burials, interments, or human remains (hereafter, "remains") be encountered during construction, MDOT SHA will ensure all applicable construction work in the vicinity of the remains is immediately stopped to prevent damage to the remains, or to any additional remains that might be present in the vicinity. A minimum 100-foot buffer around identified remains will be established by MDOT SHA free of disturbance, to be adjusted as appropriate for the site conditions. Construction may occur outside the buffer unless evidence of additional remains is found. If remains are suspected to be human but not confirmed, MDOT SHA will ensure that such confirmation is made by a qualified professional. Human remains will at all times be treated respectfully and access and visibility limited to the site of discovery to authorized personnel only. Within Maryland, pursuant to State of Maryland Criminal Code § 10-402, the State's Attorney must authorize movement or removal of any remains until determined to be archaeological. If the remains are determined to be archaeological, MDOT SHA and the relevant SHPO will consult to determine treatment of the remains and any other necessary treatment such as work needed to define extent of remains in the most expeditious manner feasible. Within Virginia, human remains and associated funerary objects encountered during the course of actions taken as a result of this PA shall be treated in a manner consistent with the Virginia Antiquities Act (Code of Virginia 10.1-2305) and its implementing regulation (17VAC5-20), adopted by the Virginia Board of Historic Resources and published in the Virginia Register on July 15, 1991.

If the remains are determined archaeological and suspected to be of Native American origin, MDOT SHA, in coordination with FHWA, shall provide notification to tribal governments in accordance with any expressed tribal consultation preferences within 24 hours or as soon as practicable. MDOT SHA and/or FHWA will consult with affected federally recognized Indian Tribes, the Maryland Commission on Indian Affairs and appropriate Maryland Indian groups as appropriate regarding treatment of the remains. MDOT SHA will accommodate tribal cultural preferences to the extent practicable during such an event. If remains can be associated with other known descendant communities or organizations, including the cemetery-affiliated consulting or concurring parties to this PA, such parties shall also be consulted.

If the human remains are likely to be of Native American origin and are located on lands controlled or owned by the U.S. Government, including National Park Service Property within the APE, the Federal land managing agency will assume responsibility for compliance with the Native American Graves Protection and Repatriation Act (NAGPRA; 25 USC 3001), with MDOT SHA assistance.

In consultation with the relevant SHPO, Federally Recognized Indian Tribes, and FHWA as appropriate, and other identified descendant/affiliated consulting parties, the MDOT SHA shall develop a plan for the treatment or disposition of the remains or follow provisions of an existing treatment plan developed per this PA. MDOT SHA shall implement the provisions of the agreed treatment plan.

Should the remains be associated with, or constitute an intact archaeological resource, provision **D** below is also applicable.

D. Unanticipated Discovery of Archaeological Resources**:** If previously unidentified archaeological features, artifacts, or other materials (hereafter, "resource") are discovered during construction, all ground-disturbing work in the vicinity of the resource shall be temporarily suspended or modified to prevent further damage to the resource, and MDOT SHA will provide a reasonable buffer where ground disturbance is prohibited to cover the extent of the resource that may not be exposed.

The MDOT SHA archaeologist shall perform a preliminary inspection to identify the resource and evaluate its likelihood of NRHP eligibility. Following this inspection, construction may resume in the vicinity of but outside the boundary of the archaeological resource as defined by the MDOT SHA archaeologist. If the resource is potentially eligible for the NRHP, MDOT SHA will consult with the relevant SHPO on an eligibility determination and, if determined eligible for the NRHP, every effort shall be made to minimize impacts through redesign or modification of construction methods. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from MDOT SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource can be reasonably identified with other descendant or affiliated communities, MDOT SHA shall also attempt to consult with such parties.

In consultation with the relevant SHPO, MDOT SHA shall develop a plan for the treatment of any resource determined eligible. MDOT SHA shall describe actions proposed to avoid, minimize, or mitigate adverse effects, and request SHPO, tribal, and any other consulting party comments within 5 working days, unless there is a life or safety hazard requiring immediate interim action. MDOT SHA will disclose any interim action affecting the eligible resource taken in the event of a life or safety hazard. MDOT SHA, at its discretion, may establish a longer comment period if practicable in consideration of potential safety, cost, public travel disruption, and other factors. MDOT SHA shall then implement the provisions of the agreed-upon plan and/or amend this PA to document the resolution, should the resource be determined eligible and should the Project adversely affect the resource.

Attachment 2
All Parties Invited to Consult on the Project

Federally Recognized Tribal Nations

- **Absentee-Shawnee Tribe of Oklahoma**
- **Delaware Nation**
- **Delaware Tribe of Indians**
- **Chickahominy Indian Tribe**
- **Chickahominy Indians Eastern Division**
- **Eastern Shawnee Tribe of Oklahoma**
- **Monacan Indian Nation**
- **Nansemond Indian Tribe**
- **Oneida Indian Nation**
- **Onondaga Nation**
- **Pamunkey Indian Tribe**
- **Rappahannock Tribe, Inc.**
- **Saint Regis Mohawk Tribe**
- **Seneca-Cayuga Nation**
- **Shawnee Tribe**
- **Tuscarora Nation**
- **Upper Mattaponi Indian Tribe**

State Recognized and Other Tribes

- **Piscataway Conoy Tribe of Maryland (PCT)**
- **PCT - Cedarville Band of Piscataway**
- **PCT - Choptico Band of Piscataway**
- **Piscataway Indian Nation**

Federal Agencies

- **Department of Defense**
- **General Services Administration**
- **Federal Railroad Administration**
- **Federal Transit Administration**
- **National Capital Planning Commission**
- **National Institute of Standards and Technology**
- **National Park Service**
- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture**
- **U.S. Postal Service**

State Agencies and Organizations

- **Maryland Commission on Indian Affairs**
- **MDOT Maryland Transit Administration**

- **MDOT Maryland Transportation Authority**
- **Maryland Historical Trust**
- **Preservation Maryland**
- **Virginia Department of Historic Resources**
- **Virginia Department of Transportation**
- **Washington Metropolitan Area Transit Authority**

County Agencies and Organizations

- **Charles County Department of Planning**
- **Frederick County**
- **Frederick County Preservation Trust**
- **Maryland Milestones/Anacostia Trails Heritage Area, Inc.**
- **Montgomery County Department of Correction and Rehabilitation**
- **Montgomery County Department of General Services**
- **Montgomery County Department of Transportation**
- **Montgomery County Heritage Area, Heritage Tourism Alliance of Montgomery County**
- **Maryland Milestones**
- **Maryland-National Capital Parks and Planning Commission – Montgomery County Planning – Historic Preservation**
- **Maryland-National Capital Parks and Planning Commission – Montgomery Parks**
- **Maryland-National Capital Parks and Planning Commission – Prince George's County Planning – Historic Preservation**
- **Maryland-National Capital Parks and Planning Commission – Prince George's County Department of Parks and Recreation**
- **Montgomery Preservation, Inc.**
- **Prince George's County Historic Preservation Commission**
- **Prince George's County Historical and Cultural Trust**
- **Prince George's Heritage, Inc.**

Municipal and Other Organizations

- **Cabin John Citizens Association**
- **Canoe Cruisers Association**
- **C&O Canal Association**
- **C&O Canal Trust**
- **Carderock Springs Citizens' Association**
- **City of Gaithersburg**
- **City of College Park**
- **City of Glenarden**
- **City of Greenbelt**
- **City of Rockville**
- **First Agape A.M.E. Zion Church at Gibson Grove**

- **Frederick County Landmarks Foundation**
- **Heart of the Civil War Heritage Area**
- **Indian Spring Community Association**
- **National Park Seminary Master Association**
- **National Trust for Historic Preservation**
- **Peerless Rockville**
- **Rock Creek Conservancy**
- **Save Our Seminary at Forest Glen**
- **Sierra Club Maryland Chapter**
- **Silver Spring YMCA**
- **Trustees of Morningstar Tabernacle No. 88, Inc. (Friends of Moses Hall)**
- **Washington Biologists' Field Club**
- **Village of North Chevy Chase**

Attachment 3
Consulting Parties Invited to Concur

Federally Recognized Tribes

- **Absentee-Shawnee Tribe of Oklahoma**
- **Delaware Nation**
- **Delaware Tribe of Indians**
- **Chickahominy Indian Tribe**
- **Chickahominy Indians Eastern Division**
- **Eastern Shawnee Tribe of Oklahoma**
- **Monacan Indian Nation**
- **Nansemond Indian Tribe**
- **Oneida Indian Nation**
- **Onondaga Nation**
- **Pamunkey Indian Tribe**
- **Rappahannock Tribe, Inc.**
- **Saint Regis Mohawk Tribe**
- **Seneca-Cayuga Nation**
- **Shawnee Tribe**
- **Tuscarora Nation**
- **Upper Mattaponi Indian Tribe**

State Recognized and Other Tribes

- **Piscataway Conoy Tribe of Maryland (PCT)**
- **PCT - Cedarville Band of Piscataway**
- **PCT - Choptico Band of Piscataway**
- **Piscataway Indian Nation**

Federal Agencies

- **Department of Defense**
- **Federal Railroad Administration**
- **Federal Transit Administration**
- **National Capital Planning Commission**
- **National Institute of Standards and Technology**
- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture**

State Agencies

- **Maryland Commission on Indian Affairs**
- **Maryland Department of Transportation – Maryland Transit Administration**
- **Maryland Transportation Authority**
- **Virginia Department of Transportation**

Local and Other Agencies and Groups

- **Cabin John Citizens Association**
- **Canoe Cruisers Association**
- **Carderock Springs Citizens Association**
- **City of Gaithersburg**
- **City of Rockville**
- **C&O Canal Association**
- **C&O Canal Trust**
- **First Agape A.M.E. Zion Church at Gibson Grove**
- **Maryland Milestones**
- **Maryland-National Capital Park and Planning Commission**
- **Montgomery County Heritage Area**
- **Montgomery Preservation, Inc.**
- **National Institute for Standards and Technology**
- **National Trust for Historic Preservation**
- **Peerless Rockville**
- **Preservation Maryland**
- **Trustees of Morningstar Tabernacle No. 88, Incorporated (Friends of Moses Hall)**
- **Virginia Department of Transportation**
- **Washington Biologists' Field Club**

Attachment 4
Links to Documentation Referenced In the I-495 & I-270 Managed Lanes Study PA

Federal Codes and Regulations

16 U.S.C. 470aa-470mm
Archaeological Resources Protection Act (ARPA)
https://uscode.house.gov/view.xhtml?path=/prelim@title16/chapter1B&edition=prelim

25 U.S.C. Ch. 32 § 3001
Native American Graves Protection and Repatriation Act (NAGPRA)
https://uscode.house.gov/view.xhtml?path=/prelim@title25/chapter32&edition=prelim

36 C.F.R. Part 14 and 54 U.S.C. § 100902
Rights-of-Way
https://www.ecfr.gov/current/title-36/chapter-I/part-14
https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100902&num=0&edition=prelim

36 C.F.R. Part 63
Dispute Resolution of Determinations of Eligibility for Inclusion in the NRHP
https://www.ecfr.gov/current/title-36/chapter-I/part-63

36 C.F.R. Part 79
Curation of Federally Owned and Administered Archaeological Collections
https://www.ecfr.gov/current/title-36/chapter-I/part-79

36 C.F.R. Part 800
Implementing Regulations of Section 106 of the National Historic Preservation Act
https://www.ecfr.gov/current/title-36/chapter-VIII/part-800?toc=1

40 C.F.R. 1506.6(a)
Public involvement – National Environmental Policy Act
https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1506#1506.6

54 U.S.C.

- National Park Service and Related Programs
  - § 100101(a) Promotion and Regulation of the National Park Service (NPS Organic Act)
    - https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100101&num=0&edition=prelim
- National Historic Preservation Act
  - § 306108 Effect of Undertaking on Historic Property

- https://uscode.house.gov/view.xhtml?req=(title:54%20section:306108%20edition:prelim)

§ 307103 Access to Information (Section 304)

- https://www.achp.gov/digital-library-section-106-landing/frequently-asked-questions-protecting-sensitive-information

Public Law 71-284, 46 Statute 482 (1930); Executive Order 6166 of June 10, 1933
Capper-Cramton Act and Administration by the National Park Service
https://www.ncpc.gov/about/authorities/cca/
https://www.nps.gov/parkhistory/online_books/anps/anps_3b.htm

State Codes and Regulations

Maryland Criminal Code § 0-402
Courts and Judicial Proceedings
https://law.justia.com/codes/maryland/2013/article-gcr/section-10-402

Maryland Natural Resources Code § 5-103
Reforestation
https://roads.maryland.gov/mdotsha/pages/index.aspx?PageId=158

Virginia Antiquities Act § 10.1-2305
Human Remains
https://law.lis.virginia.gov/vacode/title10.1/chapter23/section10.1-2305/
Implementation - Virginia Administrative Code 17VAC5-20
https://law.lis.virginia.gov/admincode/title17/agency5/chapter20/

Guidelines and Standards

Advisory Council on Historic Preservation

- *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
  https://www.achp.gov/sites/default/files/exemptions/2017-01/final_interstate_exemption_notice.pdf

- *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (ACHP February 2007)
  https://www.achp.gov/sites/default/files/policies/2018-06/ACHPPolicyStatementRegardingTreatmentofBurialSitesHumanRemainsandFuneraryObjects0207.pdf

- *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* (77 FR 68790)
  https://www.federalregister.gov/documents/2012/11/16/2012-27866/program-comment-issued-for-streamlining-section-106-review-for-actions-affecting-post-1945-concrete

- *Section 106 Archaeology Guidance* (ACHP, 2009)
  https://www.achp.gov/sites/default/files/guidance/2017-02/ACHP%20ARCHAEOLOGY%20GUIDANCE.pdf

The Maryland Historical Trust

- Standards and Guidelines for Archaeological Investigations in Maryland (Shaffer and Cole 1994)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_investigations.pdf

- *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_curation.pdf

- Standards and Guidelines for Architectural and Historical Investigations in Maryland (Maryland Historical Trust, Revised 2019)
  https://mht.maryland.gov/documents/PDF/research/Survey_standards_architecture_web.pdf

The National Park Service

- Management Policies – Section 5, Cultural Resource Management (2006)
  https://www.nps.gov/subjects/policy/upload/MP_2006.pdf

- NPS Museum Handbook, National Park Service, revised 2019
  https://www.nps.gov/museum/publications/handbook.html

- NRHP Bulletin 15 – How to Apply the National Register Criteria for Evaluation (National Park Service revised 1997)
  https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf

- Other NRHP Bulletins
  https://www.nps.gov/subjects/nationalregister/publications.htm#:~:text=national%20register%20of%20historic%20places%20bulletins

- The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (1996)
  https://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/index.htm

- The Secretary of the Interior's Guidelines for the Treatment of Historic Properties (1995, Revised 2017)
  https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf

- The Secretary of the Interior's Professional Qualifications Standards
  https://www.nps.gov/articles/sec-standards-prof-quals.htm
  OR see 48 FR 44738
  https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (1983)
  https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017)
  https://www.nps.gov/tps/standards/four-treatments.htm
  OR https://www.ecfr.gov/current/title-36/chapter-I/part-68

The Virginia Department of Historic Resources

- Guidelines for Conducting Historic Resources Survey in Virginia (Virginia Department of Historic Resources, revised September 2017)
  https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual_2017.pdf

Other Referenced Information

- Area of Potential Effects, May 2022 https://oplanesmd.com/wp-content/uploads/2022/05/MLS_APE_Mapping.pdf

- Alternative 9 Phase 1 South project description (currently available here: https://oplanesmd.com/environmental/alternatives/pa/)

- First Agape A.M.E. Zion Church at Gibson Grove parking lot restoration plan (https://oplanesmd.com/wp-content/uploads/2022/04/P3-Gibson-Grove-Church-Parking-Layout.pdf)

- I-495 and I-270 Managed Lanes Study Draft Section 106 Technical Report: https://oplanesmd.com/deis/#:~:text=4(f)%20Evaluation-,appendix%20g,-Cultural%20Resources%20Technical

- MDOT SHA Statewide PA: https://www.roads.maryland.gov/OPPEN/2021_PA_Amendment.pdf

Attachment 5

FHWA and MDOT SHA Staff Contact Information:

For FHWA:

Ms. Jeanette Mar
Environmental Program Manager
FHWA - Maryland Division
George H. Fallon Federal Building
31 Hopkins Plaza, Suite 1520
Baltimore, MD 21201
phone (410) 779-7152
fax (410) 962-4054
jeanette.mar@dot.gov

For MDOT SHA:

Mr. Steve Archer
Cultural Resources Team Leader
Maryland Department of Transportation State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202
phone (410) 545-8508
sarcher@mdot.maryland.gov

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION – CHRISTOPHER CONKLIN

Marc Elrich
County Executive

Christopher R. Conklin
Director

DEPARTMENT OF TRANSPORTATION

June 30, 2022

Hon Peter Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington D.C. 20590

RE: MDOT Opportunity Lanes FEIS/Phase 1 South Transit Commitments

Dear Secretary Buttigieg:

The United States Department of Transportation (USDOT), through its Federal Highway Administration (FHWA) is conducting a National Environmental Policy Act (NEPA) review of the Opportunity Lanes (OpLanes) project being advanced by the Maryland Department of Transportation (MDOT). A Final Environmental Impact Statement (FEIS) for the project was made available on June 17, 2022, with a Record of Decision (ROD) potentially being issued soon. Our review of the FEIS has uncovered errors and omissions regarding the transit commitments for Phase 1 South of the project. Commitments for future phases are not detailed in the FEIS.

The transit commitments for Phase 1 South of the project were made by MDOT through public correspondence and confirmed by official action (Resolution R2-2022) of the Transportation Planning Board (TPB), which is the Metropolitan Planning Organization for the Washington, D.C. region. MDOT was a party to the actions by TBP firmly establishing the transit mitigation commitments for this project, was directly involved in the drafting of the commitments, and voted in support of the language describing the commitments in July 2021. MDOT also confirmed its intention to provide transit investments itself, without contingency on additional concessionaire participation, in correspondence to the Montgomery County Council President in January 2022.

MDOT reaffirmed its commitment to providing these transit elements in the June 2022 meeting of the TPB when it voted to approve an update to the Long-Range Transportation Plan (LRTP), known as Visualize 2045 (Resolution R15-2022). The two relevant TPB resolutions and correspondence with the Montgomery County Council President are attached to this letter for your reference.

Office of the Director

101 Monroe Street, 10th Floor, Rockville, MD 20850 · 240-777-7170 · 240-777-7178 Fax
www.montgomerycountymd.gov/mcdot

montgomerycountymd.gov/311 301-251-4850 TTY

Response:

As your letter correctly notes, MDOT has made financial commitments to certain transit improvements or investments as part of Phase 1 of the P3 Program. MDOT stands firm on its commitment to advance certain transit improvements as part of Phase 1 of the P3 Program to further address the significant congestion on the study corridors and to enhance multimodal connectivity and mobility within the study area. Each of the listed transit improvements or investments were identified as priorities in consultation and coordination with local jurisdictions, including Montgomery County.

Additionally, these commitments are related to part of the National Capital Region Transportation Planning Board's (TPB) regional planning efforts and were captured in the TPB Resolution R2-2022. The construction of the New American Legion Bridge I-270 to I-70 Traffic Relief Plan (Project) was restored to the air quality conformity analysis as part of this resolution. As noted in the "**WHEREAS**" or the basic facts and reasons for the resolution:

- TPB's action on June 21, 2021 to exclude the Project removed the private sector revenues that supported the Project thus disrupting the fiscal constraint of the projects submitted by MDOT and, as a result, additional projects (transit and/or highway) would have needed to be removed to reestablish the fiscal constraint;
- Many TPB member jurisdictions in Maryland and Virginia expressed an interest to amend the project input list by restoring the Project and the private sector revenues associated with the Project; and
- It was noted and understood that MDOT was proposing to deliver the Project fully with private funding through a public-private partnership (P3).

While MDOT committed to the improvements at the Shady Grove Metrorail Station and the Westfield Montgomery Mall Transit Center as part of the Preferred Alternative for the MLS, the other transit commitments in Resolution R2-2022 were clearly based on an understanding that the Project would be delivered with private funding and as a P3. Characterization of these other transit commitments as public funding would be contrary to TPB Resolution R2-2022 and disrupt the fiscal constraint of the projects in the approved plan.

Through correspondence with the Montgomery County Council President on January 10, 2022 and with TPB on June 8, 2022, MDOT clearly articulated that these transit commitments were part of a P3 delivery and all funding and future agreements for these transit commitments were contingent upon the financial close of a P3 agreement with the Developer.

A Record of Decision (ROD) issued by the Federal Highway Administration (FHWA) does not mandate a particular project delivery method or form of project financing. Rather, an FHWA ROD ensures that the mitigation and commitments related to regulatory actions and permit decisions for the project, not its financing or delivery method, are captured in the project approval. Because MDOT has been clear that it intends to deliver Phase 1 South as a P3 fully with private funding, it would not be appropriate to include the other transit commitments from TPB Resolution R2-2022 as MDOT SHA commitments for the MLS in the ROD.

Hon Peter Buttigieg, Secretary
June 30, 2022
Page 2

Requested Corrective Action in the ROD

I respectfully request that the ROD for this project correctly reflect the transit commitments for Phase 1 South of the project. For your convenience, we have provided proposed corrections to Section 7.2 of the FEIS, items 122 and 123, and ask that these corrections be carried through to all other instances where these commitments are described in the FEIS through appropriate language in the ROD.

Table 1
Transit Commitment Corrections for FEIS Section 7.2

Item	Requested Action	FEIS Description	Corrected Description
Combine 122 & 123 and revise	Combine items 122 and 123 and replace the FEIS phrasing with the phrasing from the TPB Resolution R2-2022 Item 1.d. See also the January 10, 2022 letter Page 1, Paragraph 3. This correction will reinstate MDOT's commitment to provide a bus maintenance facility equipment and fleet, and will reflect the agreed upon timing of the investments and the usage of the facilities.	122. Increase the number of bus bays at Washington Metropolitan Area Transit Authority's Shady Grove Metrorail Station. 123. Increase parking capacity at the Westfield Montgomery Mall Transit Center	**REVISED 122.** MDOT will construct new bus bays at Shady Grove Station; increase parking capacity at the Westfield Montgomery Park and Ride; provide the necessary bus fleet; and construct and equip the Metropolitan Grove Bus Operations and Maintenance Facility. These resources should be provided for use early in the construction period to support expanded local transit operations for the long term.
Replace 123.	Incorporate MDOT commitment to provide financial support to high priority transit projects to Montgomery County from TPB Resolution R2-2022 Items 1.b. and 1.c. See also the January 10, 2022 letter Page 2, Paragraph 1. These commitments are missing from FEIS Section 7.2 and inappropriately characterized elsewhere	N/A	**REVISED 123.** After financial close of the Phase 1 South Section P3 Agreement, MDOT will commit to fund not less than $60 million from the Development Rights Fee for design and permitting of high priority transit investments in Montgomery County. As Part of Phase 1 South, MDOT will commit to provide not less than $300 million of additional transit investment funding inclusive of the phase developer's proposed transit investment to implement high priority transit projects in Montgomery County.

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Justification for the Corrections

The highway capacity provided by this project is demonstrated to lead to increased traffic (FEIS Table 4-2, 4-9, 4-10), increased greenhouse gas emissions (FEIS Appendix K, Table 3-4) and is likely to reduce Non Auto Driver Mode Share (NADMS), which is contrary to local transportation policies. MDOT has made transit commitments that are essential mitigation actions required to partially offset the negative transportation and environmental consequences of the project. Further, as noted in the FEIS, the transit commitments are a component of the project's attempt to address equity. Unfortunately, the transit mitigation commitments contain omissions and are inaccurately and insufficiently described in various sections of the FEIS (Sections 3.2.1, 7.2 and 7.3).

The bifurcated description of the transit mitigation commitments in the FEIS between project actions and uncertain concessionaire actions is inconsistent with the principles of impact mitigation. Additionally, it does not comport with MDOT's representations to Montgomery County in its correspondence and does not satisfy the stipulations within the TPB resolution for this project. Furthermore, a commitment intended to mitigate an adverse impact cannot be conditioned on a third-party's willingness to honor it.

Before the TPB and in correspondence to the County, MDOT has committed to provide these transit mitigation elements, should the project proceed, without additional contingency related to the level of third-party financial participation. While it is possible that the concessionaire participation may offset MDOT's obligations, which is acknowledged in the reference documents, the commitments are those of MDOT, the public agency advancing this project. Montgomery County is not party to any agreements between MDOT and its potential concessionaire for the OpLanes project and it is the duty of the MDOT to ensure that the project's mitigation is provided. The Record of Decision (ROD) for this project must clearly state that fulfillment of these commitments is unambiguously the responsibility of the project sponsor, MDOT, independent of possible actions by other parties and how MDOT chooses to contract with third parties to fulfill them.

To highlight the discrepancy, compare the statement from page 2 of the January 2022 MDOT letter to the Montgomery County Council President regarding a portion of the transit commitments, which states (emphasis added),

> "***MDOT will commit*** *$300 million of transit service investment inclusive of the Phase Developer's transit commitment. The total transit investment* ***by MDOT*** *for Phase 1 South is estimated between $560 and $610 million, not including any additional funding committed by MDOT or VDOT for interstate transit in the American Legion Bridge Corridor*"

with the language in the FEIS Section 7.3 on page 7-22, which states,

The attachments included with this FEIS comment letter are included on the following pages.

> "*As part of its proposal, the Developer has proposed an estimated $300 million over the operating term for Phase 1 South. The exact investments would be determined as part of the Section P3 Agreement for Phase 1 South.*"

The FEIS clearly falls short of MDOT's commitments by using non-specific and non-committal language that is inconsistent with the clear and committal statements MDOT made in July 2021, January 2022 and reaffirmed in June 2022, just days before the FEIS was released for public review.

Further, the transit commitments are an issue of significant public interest covered in extensive correspondence throughout the NEPA review. It is inappropriate to change the characterization of the commitments in the FEIS and then refer final resolution of the mitigation to private negotiation that is not subject to public scrutiny and is opaque to the affected communities.

We respectfully request that the ROD accurately and completely reflect the full scope of MDOT's transit commitments. We thank you very much for your consideration of this issue and for your action to correct these errors. We believe that appropriate characterization of the transit mitigation commitments in the ROD is essential to serve the public interest in this matter as the presentation in the FEIS is erroneous and misleading. Should you wish to talk about this matter further, please feel free to contact me by phone at 240-777-7777 or by email at christopher.conklin@montgomerycountymd.gov.

Sincerely,

Christopher Conklin, P.E., Director
Montgomery County Department of Transportation

Enclosures

A. Resolution R2-2022 (Air Quality Inputs Table Omitted)
B. Resolution R15-2022
C. January 10, 2022 Letter from MDOT to Montgomery County

cc: Stephanie Pollak, FHWA
Gregory Murrill, FHWA
Jitesh Parikh, FHWA
Jim Ports, MDOT
Tim Smith, Administrator MDOT/SHA
Jeffrey Folden, MDOT/SHA
Kanti Srikanth, MWCOG
Hon. Jamie Raskin, US House of Representatives, Maryland 8th District

TPB R2-2022
July 21, 2021

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION ON INCLUSION OF PROJECT SUBMISSIONS IN THE AIR QUALITY CONFORMITY ANALYSIS FOR THE CONSTRAINED ELEMENT FOR THE MARYLAND PORTION OF THE UPDATE TO VISUALIZE 2045 AND THE FY 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

WHEREAS, the National Capital Region Transportation Planning Board (TPB), as the federally designated metropolitan planning organization (MPO) for the Washington metropolitan area, has the responsibility under the provisions of Fixing America's Surface Transportation (FAST) Act for developing and carrying out a continuing, cooperative and comprehensive transportation planning process for the metropolitan area; and

WHEREAS, the federal metropolitan planning regulations (23 CFR.450) assign TPB the responsibility to cooperatively develop the long-range metropolitan transportation plan (LRTP) and transportation improvement program (TIP) specified in Sections 450.324 and 450.326; and

WHEREAS, the TIP is required by the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) as a basis and condition for all federal funding assistance to state, local and regional agencies for transportation improvements within the metropolitan Washington, D.C. planning area; and

WHEREAS, the Statewide and Metropolitan Transportation Planning rule as published in the May 27, 2016 Federal Register by the FTA and FHWA requires that the LRTP and the TIP be reviewed and updated at least every four years; and

WHEREAS, federal conformity regulations, originally published by the Environmental Protection Agency in the November 24, 1993 Federal Register and with latest amendments published in April 2012, based on the federal Clean Air Act (CAA Section 176(c)), require that the metropolitan transportation plan, program and projects in metropolitan areas not in attainment of national ambient air quality standards, demonstrate conformity to the area's state implementation plan; and

WHEREAS, federal conformity regulations require that the conformity analysis of the plan, program and projects be reviewed and updated at least every four years; and

WHEREAS, on October 17, 2018, the TPB adopted resolution R4-2019 determining that the Visualize 2045 Plan and FY 2019-2024 TIP conform with the requirements of the Clean Air Act Amendments of 1990, resolution R5-2019 approving the Visualize 2045 Plan, and resolution R6-2019 approving the FY 2019-2024 TIP, and the Visualize 2045 Plan and FY 2019-2024 TIP were approved by the FTA and FHWA on December 13, 2018; and

reduction of greenhouse gas emissions, and will be based on the concept of 'zero-based budgeting' where all projects, including those currently included in the Plan, must be resubmitted for consideration in such Plan, provided that projects currently under construction or currently funded with federal, state, regional, local or private funds shall be exempt from such requirement; and

WHEREAS, the project submissions approved on June 16, 2021 by the TPB excluded the Maryland I-270/I-495 HOT Lanes project while approving the remaining Maryland transit and highway projects listed in Attachment A; and

WHEREAS, on June 21, 2021, the Maryland Department of Transportation (MDOT) notified the TPB that the package of projects submitted was supported by a financial plan, and the TPB's June 16, 2021 action to exclude the I-270/I-495 HOT Lanes project removed the private revenues that supported that project, thus disrupting the fiscal constraint for the projects MDOT has submitted and as a result, MDOT would need to remove additional projects (transit and/or highway) projects to reestablish the fiscal constraint for its project submission; and

WHEREAS, since the June 21, 2021 MDOT notification of the unintended consequences of the June 16, 2021 action to exclude the I-270/I-495 HOT Lanes project from conformity inputs, which also affected other projects that MDOT was funding on account of the receipt of private funding, many TPB member jurisdictions form Maryland have expressed an interest to amend the Maryland project input list by restoring the I-270/I-495 HOT Lanes project and the private sector revenues associated with the project; and

WHEREAS, since the June 16, 2021 TPB action to exclude the I-270/I-495 HOT Lanes project from the conformity inputs, a number TPB member jurisdictions from Virginia have articulated the significant adverse impact this action will have on the performance outcomes from Virginia projects and the mobility/accessibility improvements it anticipated from the I-270/I-495 HOT lanes project, and have expressed an interest to amend the Maryland project input list by restoring the I-270/I-495 HOT Lanes project and the private sector revenues associated with the project; and

WHEREAS, MDOT notes that it substantially changed the scope of the I-270/I-495 HOT Lanes project as part of this round of conformity analysis by downgrading the proposed construction of HOT lanes on I-495 from the I-270 Spur to Woodrow Wilson Bridge so as to better coordinate this proposal with the local jurisdictions and notes that MDOT remains committed to work with all TPB member jurisdictions to better understand and address any outstanding concerns they may have with the current recommended preferred alternative (Phase 1 North and South); and

WHEREAS, MDOT is proposing to deliver Phase 1 of the I-270/I-495 HOT Lanes project fully with private funding through a public-private partnership (P3); and

WHEREAS, MDOT and Montgomery County are committed to deliver transit improvements through establishing and maintaining a collaborative, coordinated effort for developing the transit improvements during the predevelopment work of the Phase 1 P3 Agreement.

reduction of greenhouse gas emissions, and will be based on the concept of 'zero-based budgeting' where all projects, including those currently included in the Plan, must be resubmitted for consideration in such Plan, provided that projects currently under construction or currently funded with federal, state, regional, local or private funds shall be exempt from such requirement; and

WHEREAS, the project submissions approved on June 16, 2021 by the TPB excluded the Maryland I-270/I-495 HOT Lanes project while approving the remaining Maryland transit and highway projects listed in Attachment A; and

WHEREAS, on June 21, 2021, the Maryland Department of Transportation (MDOT) notified the TPB that the package of projects submitted was supported by a financial plan, and the TPB's June 16, 2021 action to exclude the I-270/I-495 HOT Lanes project removed the private revenues that supported that project, thus disrupting the fiscal constraint for the projects MDOT has submitted and as a result, MDOT would need to remove additional projects (transit and/or highway) projects to reestablish the fiscal constraint for its project submission; and

WHEREAS, since the June 21, 2021 MDOT notification of the unintended consequences of the June 16, 2021 action to exclude the I-270/I-495 HOT Lanes project from conformity inputs, which also affected other projects that MDOT was funding on account of the receipt of private funding, many TPB member jurisdictions form Maryland have expressed an interest to amend the Maryland project input list by restoring the I-270/I-495 HOT Lanes project and the private sector revenues associated with the project; and

WHEREAS, since the June 16, 2021 TPB action to exclude the I-270/I-495 HOT Lanes project from the conformity inputs, a number TPB member jurisdictions from Virginia have articulated the significant adverse impact this action will have on the performance outcomes from Virginia projects and the mobility/accessibility improvements it anticipated from the I-270/I-495 HOT lanes project, and have expressed an interest to amend the Maryland project input list by restoring the I-270/I-495 HOT Lanes project and the private sector revenues associated with the project; and

WHEREAS, MDOT notes that it substantially changed the scope of the I-270/I-495 HOT Lanes project as part of this round of conformity analysis by downgrading the proposed construction of HOT lanes on I-495 from the I-270 Spur to Woodrow Wilson Bridge so as to better coordinate this proposal with the local jurisdictions and notes that MDOT remains committed to work with all TPB member jurisdictions to better understand and address any outstanding concerns they may have with the current recommended preferred alternative (Phase 1 North and South); and

WHEREAS, MDOT is proposing to deliver Phase 1 of the I-270/I-495 HOT Lanes project fully with private funding through a public-private partnership (P3); and

WHEREAS, MDOT and Montgomery County are committed to deliver transit improvements through establishing and maintaining a collaborative, coordinated effort for developing the transit improvements during the predevelopment work of the Phase 1 P3 Agreement.

NOW, THEREFORE, BE IT RESOLVED THAT: the National Capital Region Transportation Planning Board amends the projects to be included in the air quality conformity analysis for the proposed 2022 Update to Visualize 2045 by adding Maryland's construction of the American Legion Bridge I-270 To I-70 Relief Plan - Phase 1 of the Traffic Relief Plan:

- Phase 1 South, starting in the vicinity of the George Washington Parkway in Virginia including the American Legion Bridge, provides two HOT lanes in each direction from I-495 to I-270 and then I-270 from I-495 to I-370, with an anticipated completion by 2025;

- Phase 1 North, a related part of the project that is in Pre-NEPA, constructs two HOT Lanes in each direction on I-270 from I-370 to I-70, with an anticipated completion by 2030; and

NOW, THEREFORE, BE IT FURTHER RESOLVED THAT:

1. MDOT, in accordance with commitments made at the Maryland Board of Public Works (BPW), will:

    a. Identify additional transit investments that will be fully developed through ongoing coordination with the affected counties;

    b. After financial close of the Phase 1 South Section P3 Agreement, MDOT will commit to fund not less than $60 million from the Development Rights Fee for design and permitting of high priority transit investments in the Montgomery County, such as Phase I of the Corridor Cities Transitway, Bus Rapid Transit in the MD 355 Corridor, or other high priority projects. MDOT will work collaboratively with Montgomery County to develop plans for construction, final delivery, and operation, funded through ongoing toll revenue;

    c. As Part of Phase 1 South, MDOT will commit to provide not less than $300 million of additional transit investment funding inclusive of the phase developer's proposed transit investment to implement high priority transit projects in Montgomery County. The funds will be provided over the operating term of Phase 1 South within a schedule developed through collaboration on a plan for the construction, final delivery, and operations of the project(s) in conjunction with the managed lane development and financing;

    d. Additionally, as mitigation and as part of Phase 1 South highway improvements, MDOT will construct new bus bays at Shady Grove Station; increase parking capacity at the Westfield Montgomery Park and Ride; provide the necessary bus fleet; and construct and equip the Metropolitan Grove Bus Operations and Maintenance Facility. These resources should be provided for use early in the construction period to support expanded local transit operations for the long term. MDOT will brief the TPB on these plans prior to TPB adoption of the updated Visualize 2045 Plan in 2022; and

e. Additional and appropriately scaled transit investments will be made by MDOT for Phase 1 North to fulfill its commitment to complete major transit improvements concurrent with all sections of Phase 1. MDOT shall seek concurrence with the affected counties on these transit investments and will report to and brief TPB on these investments prior to TBP adoption of the inputs for the next Long Range Transportation Plan and air quality conformity analysis update expected in 2024.

2. Only after this collaboration and completion of a Final Environmental Impact Statement and Record of Decision for a build alternative, would MDOT seek BPW approval of the Section Agreement for Phase 1 South or Phase 1 North.

As revised and adopted by the Transportation Planning Board at its regular meeting on July 21, 2021

TPB R15-2022
June 15, 2022

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION APPROVING THE 2022 UPDATE TO THE VISUALIZE 2045 LONG-RANGE TRANSPORTATION PLAN FOR THE NATIONAL CAPITAL REGION AND THE FY 2023–2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

WHEREAS, the National Capital Region Transportation Planning Board (TPB), as the federally designated metropolitan planning organization (MPO) for the Washington region, has the responsibility under the provisions of the Fixing America's Surface Transportation (FAST) Act, reauthorized November 15, 2021 when the Infrastructure Investment and Jobs Act (IIJA) was signed into law, for developing and carrying out a continuing, cooperative and comprehensive transportation planning process for the metropolitan area; and

WHEREAS, the Federal Planning Regulations of the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) implementing the FAST Act, which became effective June 27, 2016, specify the development and content of the long-range transportation plan and of the transportation improvement program and require that it be reviewed and updated at least every four years; and

WHEREAS, on October 17, 2018, the TPB approved a new long-range transportation plan, called "Visualize 2045," that meets federal planning requirements, addresses the federal planning factors and goals in the TPB Vision and the Regional Transportation Priorities Plan, and included a new "Aspirational Element" as specified by TPB Resolution R8-2018; and

WHEREAS, the TIP is required by FHWA and FTA as a basis and condition for all federal funding assistance to state, local and regional agencies for transportation improvements within the Washington planning area and the TPB approved the FY 2021-2024 Transportation Improvement Program (TIP) on March 20, 2020, which was developed as specified in the Federal Planning Regulations; and

WHEREAS, on December 16, 2020, TPB staff issued a Technical Inputs Solicitation Submission Guide, which is a formal call for area transportation implementing agencies to submit technical details, including information necessary to perform the required air quality analysis of the 2022 Update to the Visualize 2045 long-range transportation plan, and for projects and programs to be included in the FY 2023-2026 TIP that will meet federal planning requirements, and will address the federal planning factors and goals in the TPB Vision and the Regional Transportation Priorities Plan; and

WHEREAS, the transportation implementing agencies in the region provided project submissions for the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP, and the TPB Technical Committee and the TPB reviewed the project submissions at meetings in April, May, June and July 2021 meetings; and

WHEREAS, at its June and July 2021 meetings, the TPB approved the projects submitted for inclusion in the Air Quality Conformity Analysis of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP; and

WHEREAS, MDOT made certain transit commitments associated with the I-270/I-495 Traffic Relief Plan in Resolution R2-2022 and is required to brief the TPB on the transit commitments related to Phase 1 South of the I-270/I-495 Traffic Relief Plan; and the TPB will provide a formal statement for inclusion in the public docket of the FEIS for the I-270/I-495 Traffic Relief Plan referencing TPB's requirement that the transit commitments be met; and MDOT will report to TPB on the status of the transit commitments to Montgomery County bimonthly until a transit commitments agreement is reached with Montgomery County for Phase 1 South of the project; and

WHEREAS, on June 15, 2022, upon adopting on-road greenhouse gas reduction goals and strategies, to be appended to the 2022 Update to Visualize 2045; and

WHEREAS, on April 1, 2022, the draft FY 2023–2026 TIP was released for a 30-day public comment and inter-agency review period along with the draft 2022 Update to Visualize 2045, and the Air Quality Conformity Analysis; and

WHEREAS, the FY 2023-2026 TIP has been developed to meet the financial requirements in the Federal Planning Regulations; and

WHEREAS, during the development of the 2022 Update to Visualize 2045, the FY 2023-2026 TIP, and the Air Quality Conformity Analysis, the TPB Participation Plan was followed, and several opportunities were provided for public comment: (1) a 30-day public comment period on project submissions for the air quality conformity analysis of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP and the air quality conformity analysis scope of work was provided from April 2 to May 3, 2021; (2) the TPB Community Advisory Committee (CAC) was briefed on the project submissions at its April 15, 2021 meeting, (3) an opportunity for public comment on these submissions was provided at the beginning of the April, May, June and July 2021 TPB meetings; (4) on April 1, 2022 the draft 2022 Update to Visualize 2045, the FY 2023-2026 TIP, and the draft Air Quality Conformity Analysis were released for a 30-day public comment period which closed on May 1, 2022; (5) on April 6 and 7, 2022, a virtual open house was held where staff shared results of the plan analysis and provided an opportunity for questions and answers; (6) on April 14, 2022, a Public Forum was held on the development of the FY 2023-2026 TIP; (7) an opportunity for public comment on these documents was provided on the TPB website and on the Visualize 2045 website, and at the beginning of the April, May and June 2022 TPB meetings; and (8) the documentation of the 2022 Update to Visualize 2045, the FY 2023-2026 TIP, the Air Quality Conformity Analysis includes summaries of all comments and responses; and

WHEREAS, the TPB Technical Committee has recommended favorable action on the 2022 Update to Visualize 2045, the FY 2023-2026 TIP, and the Air Quality Conformity Analysis by the Board; and

WHEREAS, on June 15, 2022, the TPB passed Resolution R16-2022, determining that the 2022 Update to Visualize 2045, the FY 2023-2026 TIP conform with the requirements of the Clean Air Act Amendments of 1990; and

WHEREAS, the FY 2023-2026 TIP projects are consistent with the 2022 Update to Visualize 2045, and are selected in accordance with the Federal Planning Regulations; and

NOW, THEREFORE, BE IT RESOLVED THAT the National Capital Region Transportation Planning Board approves the 2022 Update to Visualize 2045 and the FY 2023-2026 Transportation Improvement Program.

Adopted by the Transportation Planning Board at its regular meeting on June 15, 2022

MARYLAND DEPARTMENT OF TRANSPORTATION

Office of the Secretary

Larry Hogan
Governor
Boyd K. Rutherford
Lt. Governor
Gregory Slater
Secretary

January 10, 2022

The Honorable Gabriel Albornoz
Council President
Montgomery County Council
100 Maryland Avenue
Rockville MD 20850

Dear President Gabriel Albornoz:

Thank you for your letter regarding the priority transit project related to the New American Legion Bridge I-270 to I-70 Traffic Relief Plan and moving forward with identification of the transit project. I appreciate the opportunity to respond.

The Maryland Department of Transportation (MDOT) is committed to advancing this project in collaboration with Montgomery County, ensuring the solutions are multi-modal and advancing transit systems as part of it that help achieve the regional land use goals. As part of the project and the public-private partnership (P3) delivery model, MDOT has committed to provide significant transit improvements and investment as part of the Phase 1 South of the project from vicinity of the George Washington Memorial Parkway in Virginia to I-370. The project itself will include a high-occupancy toll (HOT) lane network for the corridor that will provide new opportunities for reliable transit travel in the corridor that does not currently exist. Connections will be provided between the HOT lanes and roads South of I-370 near transit centers and local activity centers such as I-370, Wootton Parkway, and Westlake Terrace to improve access to transit and jobs.

In just the early project development, MDOT has committed to provide capital improvements for transit by providing new bus bays at the Shady Grove Metrorail Station, expanding parking capacity at the Westfield Montgomery Mall Transit Center, and constructing and equipping the Metropolitan Grove Bus Operation and Maintenance Facility including providing the necessary bus fleet. While these capital improvements need to be further developed with Montgomery County and other stakeholders, our current estimate for these improvements is $200 to $250 million. Additionally, we are currently working with the Virginia Department of Transportation (VDOT) on additional transit funding commitments for the American Legion Bridge corridor to support interstate transit operations.

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As part of the P3 delivery, MDOT is also committed to funding not less than $60 million from the upfront payment for Phase 1 South to support the design and permitting of Montgomery County's high priority transit projects, such as the Corridor Cities Transitway, bus rapid transit in the MD 355 corridor, or other high priority projects. The MDOT is also committed to continuing to work collaboratively with Montgomery County and other stakeholders to develop plans for construction, operation, and final delivery of this transit project in conjunction with the managed lane development and financing. During the operating term of Phase 1 South, MDOT will commit $300 million of transit service investment inclusive of the Phase Developer's transit commitment. The total transit investment by MDOT for Phase 1 South is estimated between $560 and $610 million, not including any additional funding committed by MDOT and VDOT for interstate transit in the American Legion Bridge corridor.

We agree it is important that we have collaboration between MDOT, Montgomery County, the City of Rockville, and the City of Gaithersburg. The MDOT will move forward with establishing a work group with these parties. We will reach to each stakeholder to identify its representative and request that you provide the Montgomery County Council's designee for this work group. Additionally, an investment to support these coordination activities will be included in MDOT's Final Fiscal Year 2022 to 2027 Consolidated Transportation Program (CTP) to be released later this month.

Thank you again for contacting me. We look forward to partnering with Montgomery County to advance new travel options and opportunities for our citizens. If you have any additional questions or concerns, please feel free to contact Jeffrey T. Folden, P.E., DBIA, MDOT State Highway Administration (MDOT SHA) I-495 and I-270 P3 Office Deputy Director, at 410-637-3321 or jfolden1@mdot.maryland.gov. Mr. Folden will be happy to assist you.

Sincerely,

Gregory Slater
Secretary

cc: The Honorable Jud Ashman, Mayor, City of Gaithersburg
The Honorable Marc Elrich, County Executive, Montgomery County
Montgomery County Councilmembers
The Honorable Bridget Donnell Newton, Mayor,l City of Rockville
Ms. Holly Arnold, Administrator and CEO, MDOT Maryland Transit Administration (MDOT MTA)
Jeffrey T. Folden, P.E., DBIA, Director, I-495 and I-270 P3 Office, MDOT SHA
Tim Smith, P.E., Administrator, MDOT SHA Ms. Kate Sylvester, Acting Deputy Administrator and Chief Planning, Programming, and Engineering Officer, MDOT MTA

MARYLAND TRANSIT OPPORTUNITIES COALITION (BENJAMIN ROSS)

July 11, 2022

Ms. Polly Trottenberg, Deputy Secretary
U.S. Dept. of Transportation
1200 New Jersey Ave. SW
Washington, DC 20590

Subject: I-495 & I-270 Managed Lanes Study
Evidence of scientific fraud in FEIS traffic model

Dear Ms. Trottenberg:

As you know, on June 17 FHWA and the Maryland DOT issued a Final Environmental Impact Statement for the I-495 & I-270 Managed Lanes Study. This project now awaits a Record of Decision.

Last October 18, we wrote to FHWA Administrator Pollack pointing out errors in the traffic model presented in the SDEIS. The FEIS acknowledges that our criticisms "have merit," and in response the FEIS presents new traffic forecasts that are substantially different.

However, the FEIS offers no explanation of what was wrong with the SDEIS model or how the errors were corrected. Moreover, when input and output data and documentation were requested from MDOT, the agency replied that the inquiry would be treated as a Public Information Act request (Maryland's version of FOIA) and no data would be provided in time to review the FEIS.

Examination of the FEIS traffic modeling technical appendix raises even greater concerns. Anomalies in the FEIS traffic forecasts create serious doubt whether the new traffic forecasts could have been generated by correcting previous errors and suggest possible falsification of model outputs.

The clearest evidence we have found of possible scientific fraud is in the modeling of the 2045 No-Build alternative. Changes occur from the SDEIS to the FEIS in patterns that are inconsistent with correction of errors in model inputs, coding, or numerical methods, but would be consistent with arbitrary adjustment of intermediate or final outputs.

Response:

The concerns and claims raised in your letter regarding MLS final traffic forecasts and modeling results are not based in fact and appear to be based on a misunderstanding of how data was updated and refined between publication of the Supplemental Draft Environmental Impact Statement (SDEIS) and publication of the FEIS and its supporting documents. The Federal Highway Administration (FHWA) and the Maryland Department of Transportation State Highway Administration (MDOT SHA) followed accepted practices and processes for considering how project design refinements or other relevant new information would impact traffic forecasts. FHWA and independent experts from the USDOT Volpe Center have reviewed the traffic analyses and indicated the modifications between the SDEIS and the FEIS meet a professional standard of care and did not find scientific integrity fraud. FHWA's concluding memorandum, the Volpe Center's Information Memorandum, and MDOT SHA's response memo to questions in the Volpe Information Memorandum are attached at the end of this response.

As explained below, the analysis reflected in the FEIS is sound. The FEIS discloses the changes that were made to the traffic forecasts and analysis between the time the SDEIS and FEIS were published. Refer to FEIS, Chapter 4, and FEIS Appendix A. The differences highlighted in your letter focus on the detailed support materials included in the FEIS appendices. The changes that caused some of the detailed results to differ between the SDEIS and FEIS are the consequence of several different factors, which are generally performed in the ordinary course of NEPA reviews by technical traffic forecasting professionals between the availability of a draft and final document. These factors include: (1) responding to public comments/questions; (2) updating modeling based on refinements to the alternatives analysis and/or identification of the preferred alternative; (3) reviewing or "validating" previous modeling results prior to publication of an FEIS.

MDOT SHA team carefully reviewed comments from the public and stakeholders and we appreciated the input provided. Some comments requested MDOT SHA review the data from the SDEIS to ensure its reliability and others requested refinements to the Preferred Alternative. It is best practice to review and double-check data outputs based on those changes and to refine modeling to reflect the most recent facts available to the agency. As described below, MDOT SHA determined that certain details within the overall results needed to be refined as a result of the refinements to the Preferred Alternative.

Finally, routine reviews and checking of the modeling results was performed following publication of the SDEIS. That process is designed to further validate modeling results and to resolve any perceived anomalies in traffic forecasting data. As described below, MDOT SHA pinpointed some very narrow concerns and modified a small number of data inputs to be as accurate as possible.

As described, MDOT SHA updated its analysis as a result of these factors. It would have been inconsistent with best practice if traffic modeling results from the SDEIS did NOT change in some ways. Ultimately, the issues identified and then resolved by MDOT SHA in the FEIS did not fundamentally alter the results within the six key metrics or the overall conclusions of the study related to the performance of the Preferred Alternative.

For example, the predicted evening rush-hour travel time from Connecticut Avenue to I-95 on the Beltway Inner Loop is 15 minutes faster in the FEIS than in the SDEIS. The travel time from Rock Spring Park to I-95 is half an hour faster. Yet, in the two reports, the number of vehicles exiting the Inner Loop onto I-95 is *exactly identical* in each of the four pm peak hours, 3:00 to 4:00, 4:00 to 5:00, 5:00 to 6:00, and 6:00 to 7:00.

A basic principle of traffic modeling is that drivers tend to choose the fastest route from trip origin to destination. In a model, as in real life, large changes in travel times from southwestern Montgomery County's two major job centers would induce some drivers to change their travel routes. Traffic volumes on the ramp from the Inner Loop to I-95 cannot stay the same, yet that is what the FEIS says.

We have found numerous other anomalies of similar nature. These are described in the attachment to this letter.

President Biden's January 27, 2021 Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking states that:

> It is the policy of my Administration to make evidence-based decisions guided by the best available science and data..... Scientific findings should never be distorted or influenced by political considerations.

The memorandum instructs agencies to "prevent the suppression or distortion of scientific or technological findings, data, information, conclusions, or technical results."

In accordance with this policy, USDOT should take steps to ensure that the Record of Decision for the I-495/I-270 Managed Lane Study is not based on data manipulated to achieve a pre-determined outcome. We request an independent examination to ensure the veracity of the traffic modeling data that undergird this major policy decision. At a minimum, the modeling report should receive an independent peer review.

The Task Force established to implement the President's Memorandum, in its January 2022 report, called for "Increasing Transparency to Support Scientific Integrity." It explained that transparency can "help deter violations of scientific integrity policies and detect them when they occur by making sure relevant information is readily available to all who can use it."

We thus request the release of the data files and documentation of the FEIS model so that outside experts can examine them and comment prior to issuance of the ROD. We also request that MDOT identify the errors in the SDEIS and explain how the model was altered to correct them in the FEIS.

Traffic Metrics:

The major findings reported in Chapter 4 of the FEIS related to the six key traffic metrics identified at the beginning of the NEPA process, with input from stakeholders and the public. These metrics were used in evaluating the alternatives and they did not change throughout the Study:

1. Average Speed in General Purpose Lanes
2. Average Delay per Vehicle (System-wide)
3. Travel Time Index (TTI)
4. Level of Service (LOS)
5. Throughput
6. Local Network Delay

The table below shows a comparison of the results for each of these six key metrics for the Preferred (Selected) Alternative presented in the SDEIS and the FEIS.

Key Traffic Metric		Results Presented in SDEIS	Results Presented in FEIS
Average Speed (GP Lanes)	No Build	24 mph	24 mph
	Build	29 mph	28 mph
Average Delay Savings	AM Peak	18%	13%
	PM Peak	32%	38%
TTI (GP Lanes Average)	No Build	2.36	2.0
	Build	2.01	1.8
Percent of Segments Failing (LOS F)	No Build	41%	40%
	Build	29%	28%
Throughput (veh/hr)	No Build	15,600	15,700
	Build	17,600	17,700
Local Network Delay	Build Savings	3.5%	3.5%

As shown in the table, the results presented in the FEIS for all key metrics were **either the same as reported in the SDEIS or very similar.** In all cases, the Preferred Alternative performed better than the No Build Alternative in the SDEIS and FEIS with a similar magnitude of benefits. This demonstrates that the changes made between the SDEIS and FEIS did not fundamentally alter the overall findings of the traffic study.

Ms. Polly Trottenberg, July 11, 2022 Page 3

Key aspects of the environmental analysis – among them whether the Preferred Alternative satisfies the Purpose and Need, air and noise pollution, and whether the project will help or harm Environmental Justice populations – are dependent on the traffic model. An independent inquiry into the scientific integrity of that model is needed before a Record of Decision is issued.

Sincerely,

Benjamin Ross, Chair
Maryland Transit Opportunities Coalition

cc: Stephanie Pollack, FHWA Acting Administrator
Dr. Faris Ibrahim, USDOT member of Scientific Integrity Fast-Track Committee
Senator Ben Cardin
Senator Chris Van Hollen
Rep. Jamie Raskin
Rep. Anthony Brown
Peter Shapiro, Chair, Prince George's County Planning Board
Casey Anderson, Chair, Montgomery County Planning Board

The following addresses your specific concerns:

Travel Forecasting Response:

The traffic volume forecast was refined between the SDEIS and FEIS based on a review of the post-processed model forecasts to confirm that the no build and build travel trends were in alignment with the Metropolitan Washington Council of Governments (MWCOG) model trends, identified post-pandemic and post-SDEIS. The following bullets explain the refinements:

- Some roadway design changes were made to the Preferred Alternative between the SDEIS and FEIS that were incorporated into the MWCOG model. These changes included the addition of at-grade exchange ramps for ingress and egress between the high-occupancy toll (HOT) lanes and general purpose lanes in both directions along the I-270 west spur and consolidation of the exchange ramps along I-495 between Virginia and Maryland in the vicinity of the George Washington Memorial Parkway, as noted on page 3-7 of the FEIS.

Trend-check spreadsheets were developed, which are a series of comparisons between MWCOG model volumes and the post-processed/balanced forecasted volumes for the daily and peak hour scenarios. The trend reviews/comparisons included the following: (1) growth rates between existing versus future year scenarios and no build versus build scenarios for all mainline and arterial roadway segments within the study area, and (2) comparing the proportions of average daily traffic that occurs during the peak periods. The trend-checks spreadsheets were also used to help identify locations that were showing growth rates that are either higher or lower than typical levels of growth, so that those locations could be reviewed to determine if the growth rates in the post-processed forecasted volumes were reasonable and explainable (e.g., development growth, diversions to parallel routes, shifts between general purpose versus managed lanes, etc.). The forecasting process incorporated assumptions and volume projections from prior studies as noted in FEIS Appendix A (e.g., Greenbelt Metro station), which were further refined in the FEIS forecasts, as discussed in the next bullet.

- In the SDEIS model, the traffic volumes in the Greenbelt area were showing significantly higher growth between existing and future compared to the MWCOG model trends. This increase was likely due to the process which was based on MWCOG trip tables being assigned to the VISUM model network, with additional trips from the Greenbelt Metro Station added on top. While this is not an uncommon practice, it resulted in forecasted volumes that well exceeded the capacity of the roadway. Therefore, in the FEIS, both the no build and build forecasts in the Greenbelt Metro Station area were reduced to better align with MWCOG model trends along both the interstate and the crossroads.

  As part of post processing efforts, traffic adjustments related to the Greenbelt area were made based on the appropriate origins and destinations – and therefore only impacted certain ramps and movements. After post-processing, additional trend checks were used to ensure growth trends aligned with the regional travel demand model. After the forecasting adjustments were completed, and validated against MWCOG model trends for the FEIS, the VISSIM model was updated and rerun. MDOT SHA did not add traffic on specific ramps in the forecast without rerunning the model to obtain updated results. The adjustments impacted the AM and PM forecasts on the I-495 Inner Loop, including through movements from Virginia and major ramp volumes.

Evidence of Possible Scientific Fraud in Toll Lane Traffic Model

On October 18, 2021, MTOC, CABE, and DontWiden270 wrote to FHWA Administrator Stephanie Pollack regarding errors in Maryland DOT's traffic model for the I-270/I-495 toll lane project. This letter was also submitted as a formal comment on the SDEIS.

The FEIS, issued June 17, concedes (buried on page 828 of Appendix T) that the letter's criticisms of the model "have merit" and that changes were made in response:

> Finally, comments questioning certain throughput figures presented in the SDEIS, Appendix A were determined to have merit. While that Appendix presents over 1,500 figures (in Attachment G), these comments identified minor anomalies in that data that the agency re-evaluated in the course of preparation of the FEIS and supporting technical reports. Updated throughput tables are presented in the FEIS (Appendix A, sub-appendix G) and have addressed the concerns identified. Overall, the throughput results summarized in Section 3.3.5 of the SDEIS which were used to evaluate the Preferred Alternative to the No Build Alternative follow expected trends, and the minor data corrections do not impact the overall conclusions presented.

However, the FEIS fails to identify the cause of the errors in the SDEIS model or describe the changes that were made. In addition, MDOT refuses to let expert outside reviewers see the input and output data files while the Record of Decision is pending. Consequently, there can be no confidence that the model has been fixed correctly, and the results in the FEIS continue to lack demonstrated validity.

Moreover, comparison of model results from the SDEIS and FEIS technical appendices reveal new anomalies. The changes in the reported results for the 2045 No-Build model are inconsistent with correction of errors in model inputs, coding, or numerical methods and consistent with arbitrary adjustments of intermediate or final outputs made to obtain a desired result.

A basic concept of traffic modeling is that drivers tend to choose the fastest route from the origin of each trip to its destination. In the models as in real life, if traffic on a highway moves faster, drivers will switch to it from other routes. The FEIS model results violate this principle.

Connecticut Avenue (Beltway exit 33) and Rockledge Drive (I-270 exit 1B) are the main access points to the Beltway for eastbound traffic from the two major employment centers in southwest Montgomery County, Bethesda/NIH/Walter Reed Medical Center and Rock Spring Park. Predicted evening rush-hour travel times from these interchanges to the

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Location Specific Response:

- As noted in the responses above, trend-checks were completed to confirm that the FEIS forecast trends matched the MWCOG model trends. The SDEIS Build forecasts were updated and refined at the noted 9 interchanges to better reflect the differences that were shown in the MWCOG model for the Build and No-Build scenarios. For example, at the noted US 29, MD 193, MD 650, I-95, US 1, MD 201, MD 295, and MD 450 interchanges MWCOG showed less than 1% difference between the No-Build and Build scenarios, and the MWCOG showed approximately 1.5% decrease at the US 50 interchange. The FEIS forecast was updated to reflect these trends.
- The travel time results are reflective of less congestion on the Inner Loop through the Greenbelt area, which no longer spilled back into the west side of the Beltway, as discussed above. The demand volume for the I-495 Inner Loop to Northbound I-95 ramp in the PM peak was not impacted by the Greenbelt Metro Station area reductions. As a result, the no build volumes did stay the same between the SDEIS and FEIS for this movement. However, the SDEIS to FEIS build ramp volumes increased to better reflect the MWCOG trends between the no build and build. Overall, mainline I-95 volumes decreased between the no build and build, which is a trend that is consistent with the MWCOG model results.
- The crossroad forecasts discussed starting on page 2 of your letter were refined to better align with MWCOG trends between the no build and build in response to SDEIS comments. The volume differences between the SDEIS and FEIS shown on page 3 of the letter are small – generally less than 100 vehicles per hour difference and will not have any significant impact on the overall results and conclusions. Generally, volumes were adjusted at spot locations to better reflect MWCOG trends in the FEIS forecasts. This was done to more closely align with existing to No-Build trends and No-Build to Preferred Alternative trends from the travel demand models. These adjustments were made outside of the travel demand model runs – this is considered post-processing, a common industry-wide practice used to develop traffic volume forecasts. As volume adjustments at one location may impact an upstream or downstream location in the system, additional forecast refinements were needed at select locations to result in a balanced system that still aligned with MWCOG model trends.

  For example, the FEIS forecasts were updated at the MD 295 interchange:

  - Traffic reductions for Ramp 5, Ramp 8, and MD 295 (Northbound outside the Beltway and Southbound inside the Beltway) were directly related to the Greenbelt area adjustments.
  - Traffic increases for Ramp 7 and MD 295 (Southbound outside the Beltway) were indirectly related to the Greenbelt area adjustments. This was necessary to maintain target trends between existing and future year scenarios based on MWCOG results.

The MD 295 SB volume changed from 4080 in the SDEIS to 4015 in the FEIS, a decrease of 65 vehicles, not 75 as shown on page 4 of the letter. Rather than the 15 vehicles stated on page 5, the discrepancy between this volume and the change at Ramp 8 is only 5 vehicles, which can be attributed to rounding. Volume imbalances were noted in the diagrams for the MD 201 interchange. Upon review, it was discovered that the Ramp 2 intersection volumes for the northbound through movement are shown incorrectly on the diagram due to a referencing error in the Excel spreadsheet. The 1275, 1415, 1515, and 1120 values should be 1195, 1340, 1440, and 1040. Note that the imbalance was a mistake/typo on the diagrams only and the imbalance does not exist in the actual model files or results.

Beltway junction with I-95 dropped drastically from SDEIS to FEIS – from 38 to 23 minutes from Connecticut Avenue and 67 minutes to 37 minutes, a full half-hour, from Rockledge Drive. Yet, as the first table shows, the traffic volume on the ramp from the eastbound Beltway to I-95 is *exactly identical* in each of the four evening peak hours.

With such large differences between the two models in predicted travel time, the algorithm *must* reassign some trips that took other routes in the SDEIS model to the eastbound Beltway (the Inner Loop) in the FEIS model. Some commuting trips will switch from the I-270-ICC route to the Beltway-I-95 route; some long-distance trips headed north from Virginia will switch between the east and west sides of the Beltway, etc. These reassignments may well be counteracted by other changes in the model, but it is next to impossible that the changes would exactly cancel out in each of four different hours.

Predicted No-Build pm traffic volumes exiting eastbound I-495 onto I-95

Time	SDEIS	FEIS
3:00-4:00	3655	3655
4:00-5:00	3605	3605
5:00-6:00	3600	3600
6:00-7:00	3865	3865

This is only one of many such anomalies that emerge when the SDEIS and FEIS are compared.

One clearly erroneous prediction by the SDEIS traffic model was a pattern of "widespread decline in traffic headed out of Washington toward the northeast during the evening rush hour... if the Preferred Alternative is built, compared to no-build." This was obviously wrong; widening I-270 and the American Legion Bridge will not reduce traffic toward Annapolis on US 50. The same error appeared on 7 other interchanges between US 50 and US 29.

SDEIS model-predicted change in outbound rush hour traffic

Highway	No. of Vehicles	Percentage Change
US 29	–340	–2.9%
MD 193	–190	–2.6%
MD 650	–395	–3.8%
I-95	+530	1.6%
US 1	–950	–12.8%
MD 201	–1,090	–15.9%
MD 295	–1,395	–9.9%
MD 450	–35	–0.3%
US 50	–1,230	–4.1%

The second table, copied from our October 18 letter, lists the SDEIS-model-predicted differences between the Build and No-Build alternatives in traffic headed outbound from the 9 interchanges in this sector. Traffic on each highway is measured on the segment immediately past the ramps on the outside of the Beltway.

In the FEIS model, the 8 interchanges that formerly showed a decrease in outbound traffic volume now show essentially unchanged traffic volumes (within 1%) between the Build and No-Build alternatives. (I-95 now shows a decline of 550 vehicles, or –1.7%, rather than an increase.)

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Traffic Analysis Simulation Model response:

The same base VISSIM simulation models from the SDEIS were used in the FEIS. The FEIS models had the same limits, used the same version of VISSIM software, evaluated the same time periods, and included the same driver behavior inputs as the models developed for the SDEIS. The results presented in the FEIS differ because of the following refinements made to the simulation models between the SDEIS and FEIS.

- The demand volumes were updated to match the refined forecasts described in the previous section. This applied to both the no build and build models. The forecast adjustments in the Greenbelt area impacted the travel time results reported in the FEIS because there was less congestion on the Inner Loop through the Greenbelt area, which no longer spilled back into the west side of the Beltway. Because this change was related to background development, it affected both the No Build results and the Build results. While both the No Build and Build travel times reduced in the FEIS, the net difference between No Build and Build remained approximately the same and therefore this change did not fundamentally alter the overall benefits of the Preferred Alternative reported originally in SDEIS Chapter 3 and updated in FEIS Chapter 4.
- The geometry of the Preferred Alternative was updated in the build model to reflect the latest roadway alternative designs summarized in Chapter 3 of the FEIS.
- Coding changes were made to address discrepancies in the results at a few locations identified during review of SDEIS public and agency comments. The following changes made were:
    - Fixing signal timing on MD 121 in the no build model,
    - Updating the vehicle routing through the collector-distributer roads within the Arena Drive interchange to be consistent between the no build and build models,
    - Updating the vehicle routing of HOVs using the Outer Loop in the PM no build model to provide a congestion pattern more consistent with the calibrated existing conditions model, and
    - Updating the vehicle routing through the express and local lanes within the I-295 interchange approaching the Woodrow Wilson Bridge to provide more consistent results between the no build and build for AM Inner Loop speeds between US 50 and MD 337.
- Travel times for the PM Outer Loop trip towards the American Legion Bridge (ALB) increases in the FEIS, compared to the SDEIS. This change is due to the correction of a coding error in the SDEIS No Build VISSIM PM peak model that was identified and corrected during development of the FEIS. The issue was related to the routing of HOVs traveling from the top side Outer Loop to I-270 northbound, which caused severe congestion on the Outer Loop approaching the east spur to I-270 by sending too many vehicles north towards I-270 and not enough along the Outer Loop towards the ALB. This change did not significantly alter the overall network-wide results for the No Build Alternative, but rather shifted some of the congestion from one area to another. Therefore, the coding issue was not initially apparent when reviewing the overall findings presented in the SDEIS. Upon closer review of the SDEIS models following the comment period, this issue was identified and corrected. This change affected the travel times in the No Build PM model in a couple of locations. Travel times on the top side Outer Loop approaching Connecticut Avenue decreased between the SDEIS and the FEIS, while travel times on the west side Outer Loop approaching the ALB increased between the SDEIS and the

Let us examine in more detail how the predicted outbound traffic changed in and around these 8 interchanges from the SDEIS No-Build model to the FEIS No-Build model.

On US 29, MD 193, MD 650, and US 1, the two reports predict exactly identical traffic volumes outside the Beltway for each of the four hours, while the traffic volumes on the same road inside the Beltway are smaller in the FEIS than in the SDEIS. (The difference is less than 1% on US 29, MD 193, and MD 650, and 2% to 3% on US 1.) On I-95, which only exists outside the Beltway, predicted traffic volumes are identical.

On MD 201, MD 295, MD 450, and US 50, this pattern is reversed. The two reports predict exactly identical traffic volumes inside the Beltway for each of the four hours, and the traffic volumes outside the Beltway are smaller in the FEIS than in the SDEIS. The decreases are 6% or 7% at MD 201 and much smaller at the other three interchanges. To illustrate these patterns, the SDEIS- and FEIS-predicted traffic volumes on US 1 and MD 201 for the four pm rush-hour intervals are shown in the adjoining table.

Predicted No-Build pm traffic volumes

	Inside Beltway		Outside Beltway	
Time	SDEIS	FEIS	SDEIS	FEIS
MD 201 - Northbound				
3:00-4:00	2160	2160	1700	1595
4:00-5:00	2410	2410	1755	1645
5:00-6:00	2490	2490	1905	1795
6:00-7:00	2185	2185	1515	1405
MD 201 - Southbound				
3:00-4:00	2330	2255	2065	2065
4:00-5:00	2660	2575	2370	2370
5:00-6:00	2620	2520	2640	2640
6:00-7:00	2325	2220	2330	2330
US 1 - Northbound				
3:00-4:00	1790	1760	1775	1775
4:00-5:00	1935	1895	1900	1900
5:00-6:00	2280	2235	2115	2115
6:00-7:00	1850	1795	1625	1625
US 1 - Southbound				
3:00-4:00	1845	1845	1645	1640
4:00-5:00	1805	1805	1690	1675
5:00-6:00	1890	1890	1870	1850
6:00-7:00	1795	1795	1755	1725

This is not how the model should behave. Under conditions of pervasive traffic congestion – a safe assumption near the Beltway during the pm rush hour – an increase in traffic volumes on any stretch of highway will cause additional delay. This, in turn, will cause some drivers to switch to alternative routes.

Thus, if the FEIS model run puts fewer drivers on northbound MD 201 north of the Beltway, it will predict that some drivers switch to MD 201 from other highways. In other words, removing northbound vehicles from MD 201 north of the Beltway will induce an increase in predicted northbound traffic on that road south of the Beltway. Changes elsewhere in the model might counteract that effect, but it is extremely unlikely that independently determined changes in traffic volume would add up exactly to zero in each of four hours. And essentially impossible for that to occur at each of eight interchanges.

This pattern could, however, arise from ad hoc alteration of model outputs for the purpose of generating a desired conclusion. For example, the Greenbelt Metro Interchange,

-3-

FEIS. But as noted above, the overall No Build travel times and delays were not significantly affected by the change. This coding change was applied to the No Build model only, and therefore did not affect the Build results.

The changes refined the analysis in response to public, stakeholder, and agency comments and did not fundamentally alter the overall findings of the MLS.

It should be noted that the No-Build MWCOG models were not changed – the only changes in the No-Build forecast were done in the post-processing steps for the Greenbelt interchange area (as discussed previously). In reference to comments made in the MTOC letter for MD 201 as an example, the demand volumes along MD 201 Northbound (outside the Beltway) were adjusted as part of the Greenbelt area reductions, which were done in the post-processing step. However, demand volumes along MD 201 Northbound (inside the Beltway) were not impacted by the Greenbelt area reductions. The movements directly impacted by the Greenbelt area reductions are movements with origins/destinations to the Greenbelt area, based on the trip tables within the MWCOG model.

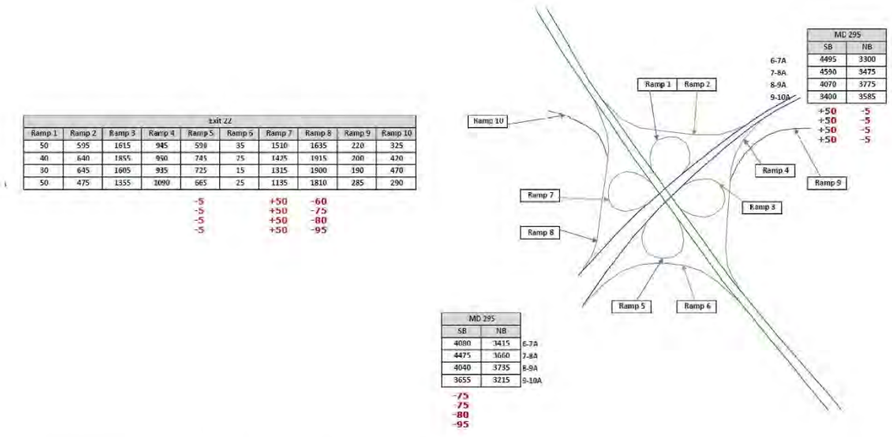
Your letter questions how the results for the no build and build could be different on the east side of I-495, including at the US 50 and Baltimore-Washington (B/W) Parkway interchanges, if no capacity improvements are proposed in this section as part of the Preferred Alternative. The following two bullets address the question:

- A review of the VISSIM simulation model results presented in the FEIS for the I-495 Outer Loop PM peak shows a slight improvement in operations between MD 5 and I-95 under build conditions. The reason for this improvement is due to the reduced traffic demand in this section (approximately 2 percent reduction) related to changes in regional traffic patterns that are affected by the Preferred Alternative.
- Under no build conditions, through traffic between Virginia and Maryland is more likely to use the east side of I-495, US 50, and B/W Parkway to avoid the severe congestion at the American Legion Bridge. Under build conditions, some of these regional trips would be expected to shift to the west side of I-495, as shown in the MWCOG model outputs and reflected in the FEIS forecasts.

mentioned briefly on page 4-1 of the FEIS, might have been incorporated into the FEIS No-Build alternative results by adding traffic on some but not all Beltway ramps, without rerunning the model. We have not identified any other reasonable explanation of this pattern of changes in predicted traffic volumes from SDEIS to FEIS, and MDOT certainly has not offered any.

Predicted vehicle movements within the interchanges exhibit anomalous patterns as well. Not only do the northhbound and southbound traffic volumes on each cross highway change between SDEIS and FEIS on only one side of the Beltway, but the hourly changes in traffic on the highway typically are equal to the changes on a single ramp. Traffic volumes on the other ramps of the interchange are mostly unchanged, with a few small changes of 5, 10, or at most 15 vehicles per hour.

The Baltimore-Washington Parkway (MD 295) interchange provides a clear example of this. The figure shows evening rush-hour traffic volumes from the SDEIS modeling[1] with changes from SDEIS to FEIS listed beneath in red. Where there are no red numbers, the SDEIS and FEIS numbers are identical.

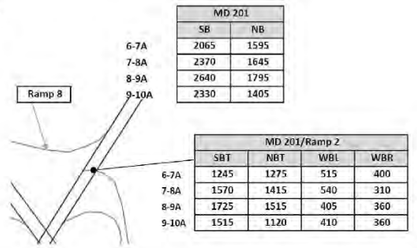


The change in traffic on northbound MD 295 outside the Beltway exactly matches the change in traffic entering from Ramp 3; there is no change in through traffic or on the other three connecting ramps. The change in southbound traffic approaching the Beltway exactly matches the change in traffic on ramp 7 onto the eastbound Beltway. The change

[1]The times of the four hourly intervals are incorrectly labeled as 6-7A, 7-8A, 8-9A, and 9-10A in numerous evening peak figures for the No-Build Alternative in both SDEIS and FEIS.

in southbound traffic beyond the interchange matches the change in traffic on Ramp 8 from the eastbound Beltway in 3 of 4 one-hour intervals; there is a 15-vehicle discrepancy in the 3:00-4:00 hour.

A column of erroneous numbers in the FEIS chart for the MD 201 interchange gives further support to the hypothesis that numbers were generated by ad-hoc adjustments. The northbound traffic volume exiting the interchange (the column labeled NB) should equal the traffic turning right off Ramp 2 (WBR) plus the northbound through traffic at the Ramp 2 intersection (NBT). The numbers do not add up because the numbers shown for the through traffic are incorrect.[2] The discrepancies for the four hours are 80, 80, 80, and 75. An error of this nature could easily be made by someone adjusting previously obtained results by hand, but would be unlikely to arise in the output of a regional traffic model.



These anomalies come on top of MDOT's failure to explain the changes made to correct admitted errors in the modeling and its resistance to release of input and output data files. It is impossible to rely on the FEIS traffic modeling report for any purpose, pending a thorough inquiry that rules out the possibility of scientific fraud, identifies the errors in the SDEIS model, and demonstrates that the modeling errors have been corrected.

[2]That the error is in the through traffic, and not the turning traffic or the sum, can be verified by adding up traffic volumes on the other legs of the interchange, which are shown in the FEIS figure from which this detail was taken.

MTOC Response Attachment 1: FHWA Memorandum

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **ACTION:** Maryland Transit Opportunities Coalition July 1, 2022 Evidence of Scientific Fraud in the FEIS Traffic Model Letter

Date: August 22, 2022

From: Gregory Murrill
Division Administrator
Baltimore, Maryland

In Reply Refer To:
HAD-MD

To: File

Consistent with the National Environmental Policy Act (NEPA) 40 CFR §1500 et seq., as implemented by Federal Highway Administration (FHWA) at 23 CFR §771 et seq., FHWA considered all substantive comments received between publication of the Final Environmental Impact Statement (FEIS) and Record of Decision (ROD). Thus, on July 11, 2022, Maryland Transit Opportunities Coalition (MTOC) transmitted a letter to the Department of Transportation (DOT) with an attachment entitled "Evidence of Possible Scientific Fraud in Toll Lane Traffic Model." As a result of MTOC's comments, FHWA, as the lead federal agency, engaged DOT/Volpe Center (Volpe) to conduct an independent review of the issues raised in MTOC's comments. Volpe is a resource providing world-renowned multidisciplinary, multimodal transportation expertise on behalf of DOT, other federal agencies, and external organizations. In completing the independent review, DOT/Volpe Center reviewed the Supplemental Draft Environmental Impact Statement Chapter 3 Traffic, (SDEIS), SDEIS Appendix A (Traffic Evaluation Memorandum: Alternative 9 - Phase 1 South), FEIS Chapter 4 Traffic and FEIS Appendix A Traffic Analysis Tech Report regarding traffic modeling. In addition, Volpe reviewed all the other comments in the letter from MTOC. Volpe did not find scientific integrity fraud in the Toll Lane Traffic Model. Volpe attributed most of the differences between the traffic modeling results for the project reported in the SDEIS and FEIS to minor changes in the analyses conducted for those two documents and inherent limitations of the modeling process used by Maryland Department of Transportation (MDOT) (the project sponsor) to analyze the project's impacts on traffic volumes and travel times. Attached are the results of the independent review conducted by Volpe.

FHWA provided the MDOT the opportunity to respond to the both the MTOC letter and the results of the independent review by Volpe. Also attached is additional information from the MDOT providing clarification of the information contained in the SDEIS and the FEIS.

MTOC Response Attachment 2: USDOT Volpe Center Memorandum

U.S. Department of Transportation Volpe Center

Memorandum

Subject: **INFORMATION: I-495 & I-270 Managed Lanes Study, review of MTOC comments and proposed response**

Date: August 15, 2022

From: Don Pickrell and Scott Smith

Reply to Attn. of: V-320

To: Gloria Shepherd
Associate Administrator for Planning, Environment and Realty, FHWA

Thru: Gregg Fleming
Director,
Policy, Planning, and Environment Technical Center

The following documents were reviewed:

1. Letter from Benjamin Ross, Chair, Maryland Transit Opportunities Coalition to Polly Trottenberg, July 11, 2022, including attachment entitled "Evidence of Possible Scientific Fraud in Toll Lane Traffic Model"
2. Proposed response to MTOC ("MTOC Letter Follow-Up," August 9, 2022)

Our focus was on differences between the traffic modeling results reported for 2045 under the No-Build and Preferred ("Build") alternatives in the SDEIS and FEIS. We do not have an opinion on the merits of the project.

As part of this review, we consulted the following publicly available documents:

1. Sections of the Supplemental Draft Environmental Impact Statement (SDEIS), dated October 2021 and downloaded on 11 August 2022
   a. Chapter 3, Traffic
   b. Appendix A, Traffic Evaluation Memo
2. Sections of the Final Environmental Impact Statement (FEIS), dated June 2022 and downloaded on 11 August 2022
   a. Chapter 4, Traffic
   b. Appendix A, Traffic Evaluation Memo

Findings:

1. Differences in projected traffic volumes and travel times on selected roadway segments between the SDEIS and FEIS appear to result from three main sources:
   a. Minor changes in the modeled representation of the road and highway network mostly outside the immediate area of the project, which affect the baseline VISSIM calibration of link-level traffic volumes under the No-Build alternative (see p. 6 of proposed response to MTOC)
   b. Minor changes in the representation of the Preferred or Build Alternative in the MWCOG[1] regional travel demand model network (pp. 4-5 of the proposed response to MTOC, referring to FEIS p. 3-7)

1 Metropolitan Washington Council of Governments

   i. Addition of at-grade ramps for ingress and egress between the high-occupancy toll (HOT) lanes and general-purpose lanes in both directions along the west spur of I-270
   ii. Consolidation of exchange ramps along I-495 between Virginia and Maryland in the vicinity of the George Washington Memorial Parkway
   c. Reconciliation process of forecast travel volumes from the MWCOG regional travel demand model with those used in localized VISSIM modeling of traffic volumes, particularly in area approaching the METRO Greenbelt Station. This process, which inherently entails manual adjustment of forecast volumes, presumably affects the traffic simulation results for both the no-Build and Build alternatives.
2. These adjustments to the modeled representation of the highway network and to forecast travel volumes produced different results in the traffic modeling conducted for the SDEIS and FEIS, as follows:
   a. Overall differences in average daily traffic volumes under the No-Build alternative reported in the SDEIS and FEIS, which are a proxy for regional travel demand patterns, are generally minor (see Differences in demand section, below)
   b. In some locations, overall trip volumes were identical in the SDEIS and FEIS, which could explain the identical volumes on many individual network links in the detailed traffic simulations conducted for the two documents
   c. Although differences in modeled overall travel demand and simulated link-level traffic volumes are generally minor, these could nevertheless lead to significant differences in modeled travel times on specific links, as the area is highly congested during peak travel periods and delay increases non-linearly as traffic volumes grow.
3. Detailed simulations of traffic volumes on individual network links are generally conducted using fixed traffic volumes produced as part of the traffic assignment stage of a larger-scale, less detailed regional travel demand model as inputs. Because these detailed simulations generally do not entail rerouting of trip flows assigned by the regional demand model, they can sometimes predict changes in delay without accompanying changes in traffic volumes. This is a limitation of detailed traffic simulation modeling that can be addressed by repeated "iterative" solution of a regional travel demand model and the traffic simulation models used for more detailed analysis of localized traffic patterns and travel times, but this process is time-consuming, resource-intensive, and it may be difficult to reconcile the differing temporal and spatial resolutions of the two models.
   a. Some traffic simulation results reported in the SDEIS showed extremely high localized delays on individual links near the project area, under both the No-Build and Build alternatives. While in practice some traffic would be expected to re-route around these areas to avoid encountering extreme delays, the traffic simulation model cannot by itself produce this expected result, and the modeled delays were not adjusted manually in an effort to replicate such "real world" behavior.
   b. In response to the changes described in item 1 above, traffic simulation reported in the FEIS show significantly lower delays on these same facilities. Conspicuously, the changes incorporated in the FEIS modeling reduce delays to seemingly more realistic levels under both the No-Build and Build alternatives (see Congestion results section, below), so avoiding the extreme delays evident in the SDEIS modeling is *not* claimed to result from implementing the Build alternative.
4. Major road improvement projects can often affect the performance of other area roads outside their immediate area. While these are often beneficial – for example, moving traffic from a congested arterial to a freeway where the project indirectly improves performance – adverse impacts are also possible, such as worsening bottlenecks on roads carrying additional traffic toward the freeway.

a. The SDEIS modeling apparently provided an example of worsening bottlenecks, where failing to adjust signal timing at intersections on a roadway carrying increased traffic to the major route the project would affect resulted in extreme queueing and delays.
b. To identify these impacts and understand their sources, it is often necessary to feed the traffic volumes and travel times estimated by the more detailed traffic simulation model back to a model that offers the capability to change trip routings in response to resulting changes in the travel times used as the basis for the initial route assignments, such as the VISUM routing model or the MWCOG model.
c. As indicated above,the process described in 4b is often a complex and time-consuming effort, given the differences in these models' temporal resolution of daily travel demand and in the detail with which they represent the road network. It appears that this feedback step was not part of the analysis conducted for the FEIS (See FEIS Appendix A, Figure 2-11: Modeling Methodology).
d. Both the SDEIS and the FEIS presented detailed traffic volume and delay modeling for the local network in the project area (see SDEIS Table 3-13 and FEIS Table 4-11), which consistently showed the preferred alternative leading to a reduction in delay on arterial streets in the surrounding area. While this result seems plausible, it is unclear how it was obtained – was it the product of feeding travel times initially estimated by the traffic simulation model into a routing-type model (or even into the larger MWCOG regional model) and using the adjusted routings it produced to revise the traffic simulation results, or of some other process? Furthermore, the reported changes in local network delays are identical in the SDEIS and FEIS, suggesting that whatever process generated this result in the SDEIS analysis was not revised as part of the more recent FEIS modeling.

5. We could not find a detailed explanation of the adjustments to projected future travel demands that were made between the SDEIS and FEIS (see 1.c. above), so we cannot assess their plausibility or validity.
6. MTOC makes two major points in its letter that MD SHA should probably address in detail as part of its response letter.
   a. Predicted evening rush-hour travel times on the Beltway from Connecticut Avenue (exit 33) and Rockledge Drive (exit 1B) eastbound to its junction with I-95 dropped by 15 and 30 minutes from the SDEIS to the FEIS, but traffic volumes on the ramp from the eastbound Beltway to I-95 during each of the four evening peak hours are identical in the SDEIS and FEIS. Some re-routing of both evening commute and through trips would have been expected to occur in response to such large changes in travel time, and while it's possible that such responses did occur, it's unlikely that they would have left travel volumes unaffected.
   b. Differences between the No-Build and Build alternative in outbound traffic volumes on some (4 out of 8) routes carrying traffic from DC toward the northeast during the evening rush hour changed from the SDEIS to the FEIS in ways that are difficult to reconcile with the changes in travel speeds the project is expected to produce. In addition, the Build vs. No-Build differences in traffic volumes on ramps connecting these routes with the Beltway changed between the SDEIS and FEIS in ways that seem inconsistent with the expected impact of the project on through and connecting traffic at those interchanges.

Differences in demand

Table 1 ADT: differences between the SDEIS (Table 3-2 and 3-3) and FEIS (Table 4-2)

Corridor	Segment	Average Daily Traffic (ADT)				
		Existing (2017)	SDEIS (2045 Projected)		FEIS (2045 Projected)	
			No-Build	Build	No-Build	Build
I-270	I-370 to MD 28	226,000	274,000	277,000	270,000	284,000
	MD 28 to I-270 Spur	259,000	308,000	311,000	299,000	320,000
I-495	American Legion Bridge	243,000	285,000	309,000	280,000	306,000
	MD 190 to I-270 Spur	253,000	289,000	317,000	283,000	318,000
	Between I-270 Spurs	119,000	129,000	135,000	126,000	136,000
	MD 355 to I-95	235,000	256,000	267,000	250,000	253,000
	I-95 to US 50	230,000	248,000	250,000	248,000	250,000
	US 50 to MD 214	235,000	256,000	258,000	256,000	258,000
	MD 214 to MD 4	221,000	249,000	251,000	249,000	251,000
	MD 4 to MD 5	198,000	223,000	224,000	223,000	224,000

The detailed no-build travel demands SDEIS (Appendix A, page 118) and FEIS (Appendix A, page 737) are similar, but not identical, consistent with the summarized comparison in Table 1.

Congestion results

There are some extremely high travel time indices (calculated as the ratio of peak-period to off-peak travel time) in the SDEIS, with significant differences in the PM Peak.

Table 2 Selected travel time indices, from SDEIS (Table 3-8) and FEIS (Table 4-5)

PM Peak Hour	SDEIS (2045 Projected)		FEIS (2045 Projected)	
Segment	No-Build	Build	No-Build	Build
Inner loop VA193 to I-270	6.6	6.9	3.8	4.0
Inner loop I-270 to I-95	4.8	3.0	2.8	2.4

Modeled travel times are contained in Table 2 (p 10) in SDEIS appendix A, and Table 5-2A in FEIS Appendix A.

MTOC Response Attachment 3: MDOT SHA Response to USDOT Volpe Center

MEMORANDUM

OP•LANES™ MARYLAND

Options & Opportunities for All

DATE: August 18, 2022

TO: FHWA

FROM: Jeffrey Folden
Director, I-495 & I-270 P3 Office
MDOT SHA

I understand you would like a response to "Findings" 6. a. and 6. b. from memorandum dated August 15, 2022, from the Volpe Center to the Federal Highway Administration with the subject "INFORMATION: I-495 & I-270 Managed Lanes Study, review of MTOC comments and proposed response":

Section 6a:

Memorandum Comment

Predicted evening rush-hour travel times on the Beltway from Connecticut Avenue (exit 33) and Rockledge Drive (exit 1B) eastbound to its junction with I-95 dropped by 15 and 30 minutes from the SDEIS to the FEIS, but traffic volumes on the ramp from the eastbound Beltway to I-95 during each of the four evening peak hours are identical in the SDEIS and FEIS. Some re-routing of both evening commute and through trips would have been expected to occur in response to such large changes in travel time, and while it's possible that such responses did occur, it's unlikely that they would have left travel volumes unaffected.

Response

The concern regarding predicted evening rush-hour travel times was addressed on page 7 of the MTOC Letter Follow-Up dated August 9, 2022, but additional detail/clarification is provided below:

The changes to the travel time results between the SDEIS and FEIS for evening rush hour travel times on the Beltway from Connecticut Avenue and Rockledge Drive eastbound to its junction with I-95 are the result of less congestion on the entire Inner Loop approaching the Greenbelt area during the evening rush hour in both the no build and build models in the FEIS. Upon review of the SDEIS models following the comment period, it was determined that the Greenbelt forecast projections were not consistent with the MWCOG model trends and therefore needed to be adjusted. The volumes serving the background development at the Greenbelt Metro Interchange were reduced accordingly for both the no build and build condition during development of the FEIS.

These changes did not affect the project traffic demand for vehicles traveling from the eastbound Beltway to I-95 because only trips with origins and destinations within the Greenbelt Metro Interchange (located approximately 2.5 mile east of the I-95 exit) were adjusted (see below graphic). However, it did affect the travel times for trips between Connecticut Avenue and Rockledge Drive eastbound to I-95 because congestion on the Inner Loop through the Greenbelt area no longer spilled back as far into the top side of the Beltway once the forecasting changes were applied for the FEIS. While both the No Build and Build travel times reduced in the FEIS, the net difference between

1

MEMORANDUM

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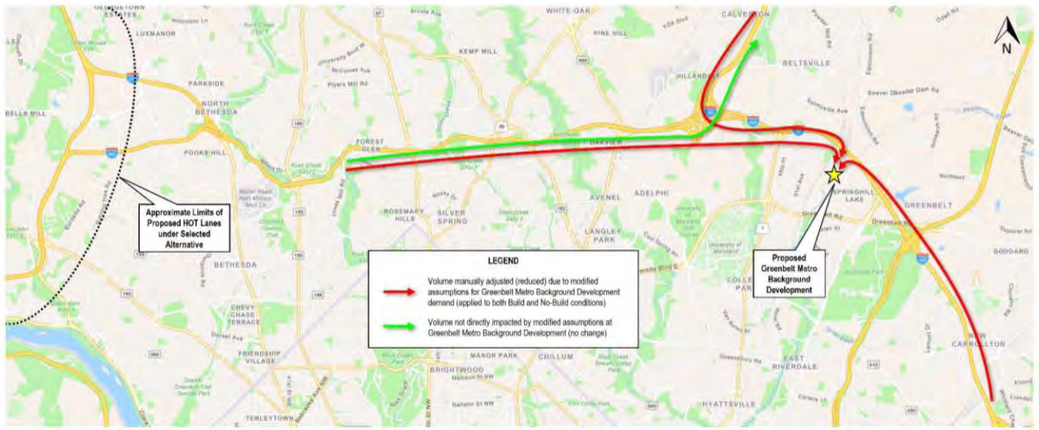
no build and build remained approximately the same and therefore this change did not fundamentally alter the overall benefits of the Preferred Alternative reported originally in SDEIS Chapter 3.



Section 6b:

Memorandum Comment

Differences between the No-Build and Build alternative in outbound traffic volumes on some (4 out of 8) routes carrying traffic from DC toward the northeast during the evening rush hour changed from the SDEIS to the FEIS in ways that are difficult to reconcile with the changes in travel speeds the project is expected to produce. In addition, the Build vs. No-Build differences in traffic volumes on ramps connecting these routes with the Beltway changed between the SDEIS and FEIS in ways that seem inconsistent with the expected impact of the project on through and connecting traffic at those interchanges.

Response

Trend-checks were completed to confirm that the FEIS forecast trends matched the MWCOG model trends. The Build forecasts were updated for the FEIS and reconciled to better reflect the differences that were shown in the MWCOG model for the Build and No-Build scenarios. However, the volume differences between Build and No Build are small – generally less than 100 vehicles per hour difference and will not have any significant impact on the overall results/conclusions. For example, at the noted US 29, MD 193, MD 650, I-95, US 1, MD 201, MD 295, and MD 450 interchanges, the MWCOG model showed less than 1% difference between the No-Build and Build scenarios, and the MWCOG model showed approximately 1.5% decrease at the US 50 interchange. The FEIS forecast was updated to reflect these trends. Related to changes in travel speeds, there was no feedback between the VISSIM traffic model speeds and the MWCOG model which generates the forecasted demand volumes inputted into the VISSIM model.

2

PETER JAMES

To whom do I make a formal request for a new supplimental EIS statement for the OP Lnaes project

Reply | Reply All | Forward | ...

Peter <peter@ccaway.net>
To SHA OPLANESP3

Tue 6/21/2022 1:19 AM

We removed extra line breaks from this message.

Op Lanes Project Manager,

To my knowledge MDOT has not studied personal rapid transit (PRT) as an alternative.

My request to meet with Secretary Potts to discuss this alternative was recently denied.

Peter James

301 916-5722

Response:

While a personal rapid transit (PRT) alternative, which uses automated vehicles on a network of fixed guideways, was not specifically considered, it is similar in concept to other standalone transit alternatives that were considered during the Study. These standalone transit alternatives which also included fixed guideways such as separated lanes or rail, were found to not meet the Study's Purpose and Need.

During the alternatives development process, several standalone transit alternatives were considered but were dismissed from further consideration based on a number of factors, the most significant of which was the inability of standalone transit to address long-term traffic growth along only I-495 and I-270. No standalone transit alternative would be able to attract and carry sufficient ridership to address the severe congestion on I-495 and I-270, and would not accommodate Homeland Security. It would be anticipated that a PRT alternative with limited capacity of three to six passengers per automated pod, would also be unable to carry sufficient ridership to address long-term traffic needs. A PRT alternative would likely have very limited ability to improve the movement of goods and services as movement of freight or services that require vehicular movement (i.e., truck freight carriers, mechanical, electrical, services, etc.) would not be addressed with a PRT alternative.

Although standalone transit alternatives were found to not meet the Study's Purpose and Need, multiple transit elements have been incorporated into the Study to address the multimodal and connectivity needs in the study area as a complement to the congestion relief offered by the proposed highway improvements. These include allowing toll-free bus transit use of the high-occupancy toll managed lanes to provide an increase in speed of travel, assurance of a reliable trip, and connection to local bus service/systems on arterials that directly connect to urban and suburban activity centers. For a discussion of the standalone transit alternatives considered in the Study refer to DEIS, Appendix B, as well as FEIS, Chapter 7, Section 9.3.2.B.

A PRT vehicle is also similar to a connected and automated vehicle, which was considered in the traffic analysis for the Study. MDOT SHA participates in a statewide CAV working group (https://mva.maryland.gov/safety/Pages/MarylandCAV.aspx) to stay up to date on the latest research and industry projections. The analysis found that at this time, there are too many unknowns regarding how CAVs could affect demand and capacity to include CAVs directly in the traffic forecasts. Capacity will likely increase as vehicle spacing decreases, but the magnitude of the capacity increase is difficult to quantify based on the current research. Also, the benefits of more vehicles per lane may be offset by a potential increase in demand on the transportation network for some types of auto trips, including "mobility as a service" trips (people that could call an autonomous vehicle for a solo trip, rather than owning their own car) and "deadhead" trips (trips where the autonomous vehicle is empty, traveling to a parking lot or to the next pickup point). For a discussion on connected and automated vehicles refer to FEIS, Chapter 4, 4.1.3.G and FEIS, Appendix A.

Regarding the Section 4(f) Evaluation, due to the presence of linear, mostly north-south oriented, Section 4(f) properties adjacent toI-495 and I-270 it is unlikely that the implementation of a PRT alternative would avoid all Section 4(f) property impacts, as the PRT alternative would still require physical space for a fixed guideway. In consideration of a feasible and prudent alternative, as stated on page 149 of the Draft Section 4(f) Evaluation, DEIS Appendix F: A *feasible and prudent avoidance alternative* is one that avoids using any Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) property (23 CFR 774.17). In assessing the importance of protecting Section 4(f) properties, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute. The preservation purpose of Section 4(f) is described in 49 U.S.C. § 303(a), which states: "It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

An alternative is not *feasible* if it cannot be built as a matter of sound engineering judgement.

An alternative is not *prudent* if:

July 16, 2022

Mr. Jeff Folden, I-495 & I-270 P3 Program Deputy Director
I-495 & I-270 P3 Office
707 North Calvert Street, Mail Stop P-60
Baltimore Maryland, 21202
MLS-NEPA-P3@mdot.maryland.gov

Mr. Jitesh Parikh
Federal Highway Administration
George H. Fallon Building
31 Hopkins Plaza, Suite 1520
Baltimore, Maryland 21201
jitesh.parikh@dot.gov

Re: Request for new supplemental environmental impact study and Comments on I-495 & I-270 Managed Lane Study Final Environmental Impact Statement and Updated Draft Section 4(f) Evaluation

On June 17, 2022, the Federal Highway Administration and the Maryland Department of Transportation State Highway Administration (the "Agencies") issued a final environmental impact statement ("DEIS") for the I-495 and I-270 Expansion Project ("Project").

Section 4(f), now codified at 23 U.S.C. § 138 and 49 U.S.C. § 303, prohibit FWHA from approving the use of any parkland and other lands if a feasible and prudent avoidance alternative is available.

Dynamic Personal Rapid Transit, also known as Personal Rapid Transit(PRT) is such a feasible and prudent avoidance alternative.

Per U.S.C. § 771.130 Supplemental environmental impact statements.

"(a) A draft EIS, final EIS, or supplemental EIS may be supplemented at any time. An EIS must be supplemented whenever the Administration determines that:

(1) Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or

(2) **New information or circumstances relevant to environmental concerns and bearing on the proposed action** or its impacts would result in significant environmental impacts not evaluated in the EIS."

In 2021, The California cities of Pittsburg, Brentwood, Oakley, and Antioch, along with East Contra Costa Transit Authority (ECCTA), Contra Costa Transportation Authority (CCTA), and Contra Costa County approved the "**East Contra Costa Dynamic Personal Micro Transit Feasibility study report**".

It compromises the project to a degree that is unreasonable to proceed with the project in light of its stated Purpose and Need;

It results in unacceptable safety or operational problems;

It causes severe social, economic, or environmental impacts even after reasonable mitigation; severe disruption to established communities; severe disproportionate impacts to minority or low income populations; or severe impacts to environmental resources protected under other Federal statutes;

It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;

It causes other unique problems or unusual factors; or

It involves multiple factors above that while individually minor, cumulatively cause unique problems; or impacts of extraordinary magnitude.

As a PRT alternative would likely not meet the Study's Purpose and Need, mainly addressing existing and long-term traffic growth, it would not be considered a feasible and prudent alternative for the Managed Lanes Study.

Because some portion of PRT guideway vehicles can also been driven on surface roads, PRTs support both the travel demand most automobile occupants while supplying the best benefits of transit.

It is assumed that MCDOT and FHWA have concluded that:

- no "feasible and prudent avoidance alternative exists as the mode of conventional transit alternatives to do not provide adequate access to the travelers in the study area.
- The 2045 project traffic flow was significantly improved by the preferred alternative virus the no build alternative(see comment).

I found no evidence that personal rapid transit was included in any the the previous studies.

Elevated autonomous PRT guideways would use 1% of the land area of the preferred alternative.

A PRT alternative would not only eliminate the 82.8 acrea right of way requirement but could so reduce traffic on the existing lanes, two to four lanes could be removed and reclaimed for park or recreation and other public uses.

As PRTs use electric vehicles and can be powered by solar roofs, air qualify and impacts on Forest Canopy are eliminated.

These factors substantiate that PRTs are a "feasible and prudent avoidance alternative" and that therefore FHWA is prohibited from providing a Record f Decision without first conducting a supplimental

Comments:

The FEIS claims the prefered alternative will support 2000 more vehicles per hour than the no-build alternative in 2045.

This projection ignores the impact of emerge autonomous vehicles. San Francisco and Pheonix have approve fully autonmus taxi service in their cities. It is more likely than not that, autonomous vehicles will be fully deployed by 2045.

With 23 years of improvements like quantum computing, self driving vehicles provide optimal a near mix of shared and private use and traffic flow.

The advance of "de-materialzation" and the fact that cars no longer crash will reduce the weight and size of passenger vehicles from several thousand pounds to a few hundred pounds.

Together with the reduced vehicle footprints and headways, passenger throughout can be 15 times that current traffic on the same 12 foot highway lane.

Previous a stated goal of the Managed Lanes project was to enhance public saftey by providing fast mass evacuation in the case of public emergence. With a potential of 15 times the capacity on the existing I-270 footprint, large scale evacuation become possible.

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One of the first PRTs built in 1975 in Morgantown, WV has nt had a single crash in 47 years.

Maryland has a Vision Zero law professing to design its highways to eliminate deaths and serious injuries by 2030 on its higheays. PRTs are the nly proven transportation mode that has achieved this goal.

Respectfully submitted,

Peter James

19204 Gatlin Dr

Gaithersburg, MD 20879

301 916-5722

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FRIENDS OF MOSES HALL

Friends of Moses Hall
7550 Seven Locks Road
Cabin John, Maryland 20818
morningstarmosescj@gmail.com
www.friendsofmoseshall.org

July 15, 2022

Mr. Jeffrey T. Folden, P.E., DBIA
Maryland Department of Transportation
State Highway Administration, I-495 & I-270 P3 Office
707 North Calvert Street, Mail Stop P-601
Baltimore, MD 21202

Mr. Jitesh Parikh
Federal Highway Administration
George H. Fallon Building
31 Hopkins Plaza, Suite 1520
Baltimore, MD 21201

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Re: Final Environmental Impact Statement and
Final Section 4(f) Evaluation for the I-495 & I-270 Managed Lanes Study
Morningstar Moses No. 88 Cemetery and Hall Site, Cabin John, Montgomery County, Maryland

Dear Messrs. Folden and Parikh:

Friends of Moses Hall has reviewed the I-495 & I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS) and Final Section 4(f) Evaluation that was released June 17, 2022. We understand that there is no formal public comment period following release of the FEIS; however, during our June 13 consulting party meeting with the Federal Highway Administration (FHWA) and Maryland Department of Transportation State Highway Administration (MDOT SHA), we were told that comments on the FEIS would be accepted and considered. This letter is to share our ongoing concerns that the FEIS fails to meet the requirements of the National Environmental Policy Act (NEPA).

As emphasized in our previous letters to Secretary Buttigieg and to the Advisory Council on Historic Preservation (provided as attachments), MDOT SHA's failure to look for burials in the project's Limits of Disturbance (LOD) before issuing the FEIS and the upcoming Record of Decision (ROD) is an egregious and potentially very harmful violation of the agency's Section 106 and 4(f) obligations.

We state for the record that we are not in agreement with MDOT SHA's or the Maryland Historical Trust's deferral of the determination of effects to Morningstar Moses Cemetery and Hall site. We also state our non-concurrence with the Final Programmatic Agreement (PA), a governing document that greatly impacts the descendants of those buried at the Morningstar Moses Cemetery and other community stakeholders. Further, we have no idea at this point whether our comments and proposed revisions to the Cemetery Treatment Plan, a document required by the PA and of utmost importance to Morningstar Moses' descendant family members, will be adequately addressed.

Response:

In accordance with the National Environmental Policy Act (NEPA), the Federal Highway Administration (FHWA) as the lead federal agency and the Maryland Department of Transportation State Highway Administration (MDOT SHA) as the co-lead agency, prepared the updated analyses in the FEIS after considering input from many stakeholders. The Preferred Alternative was identified after reviewing all comments on the Draft Environmental Impact Statement (DEIS) and further refined after publication of the Supplemental DEIS (SDEIS) and review of additional stakeholder input, including input from the Friends of Moses Hall and those with interest in this community and its resources. The analyses presented in the FEIS, including those addressing environmental justice and visual impacts, were *final* evaluations and determinations that were made in consideration of the comments received on the *draft* analyses presented in both the DEIS and SDEIS. Your comments in the July 15, 2022 letter were carefully considered prior to issuance of the Record of Decision (ROD).

Concurrently, FHWA and MDOT SHA, along with the Maryland Historical Trust and Advisory Council on Historic Preservation, finalized the Programmatic Agreement (PA) in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, for which the Friends of Moses Hall was a consulting party. Development and finalization of the DEIS, SDEIS, FEIS and the Section 106 PA were done in close coordination and consultation with numerous stakeholders, the public, and multiple local, state, and federal agencies over a four-year period. During that time, FHWA and MDOT SHA provided extensive opportunity for public and stakeholder review and input into all aspects of the National Environmental Policy Act (NEPA) and Section 106 processes. This input led to identification of the Preferred Alternative that significantly minimized and avoided impacts to sensitive resources, including the Morningstar Tabernacle No. 88 Moses Hall and Cemetery. Based on additional investigations and consultation with the Friends of Moses Hall, agencies, and other stakeholders, MDOT SHA was able to avoid all direct impacts to the current historic Morningstar Tabernacle No. 88 Moses Hall and Cemetery boundary, including all known or suspected burials as identified through field investigation. We remain committed to the additional investigation and evaluation of the cemetery as described in the PA.

To date, MDOT SHA has conducted a reasonable and good faith effort to identify interments using noninvasive methods of surface survey and ground penetrating radar (GPR) within the known cemetery as well as adjacent right-of-way. Regarding your request for additional GPR, in the final report for the Morningstar property attached to the FEIS, Dr. Tim Horsley determined the remaining areas along the current highway and adjacent to the cemetery have significant impediments for conducting further meaningful GPR work and have a limited potential for identifying further possible burials **(FEIS Cultural Resources Technical Report Vol. 9, Appendix G, p 15-16).** Nonetheless, in the draft treatment plan shared with the Friends of Moses Hall, MDOT SHA has committed to attempt additional GPR work in this area and share the results with appropriate consulting parties including the Friends of Moses Hall, before using any invasive methods to identify potential burials in these low-probability areas adjacent to, but outside the known cemetery boundary. As affirmed by the Advisory Council on Historic Preservation per their letter rejecting your request for a pre-decisional referral to the Council on Environmental Quality (CEQ) and consistent with 36 CFR 800.14(b), the PA provides an ongoing, legally binding mechanism to continue consultation, continue evaluating effects to historic properties as additional evaluation and design information is developed, as well as provides a mechanism to resolve adverse effects and disputes.

The principal legal flaw in the FEIS as it relates to our concerns is the treatment of cumulative impacts in a way that is contrary to regulation or reason. Moreover, the behavior of MDOT SHA in relation to mitigation at the Morningstar Moses site belies an arbitrary and capricious approach to engaging with the policy issues that we present.

MDOT SHA and FHWA's stated intention is to maintain its unprecedented argument that the consideration of cumulative impacts does not include adverse impacts prior to 1970 or 1966, regardless of whether those earlier adverse impacts were caused by the same agency and the same infrastructure.[1] As we have previously indicated, NEPA requires consideration of cumulative impacts where repeated actions, over time, have accreted to impacts for resources. MDOT SHA's lack of familiarity with the fact that there is no pre-1970 cut-off and that cumulative impacts relate to both past and present action indicates a severely flawed analysis.

The record on the issue of cumulative impacts is clear. MDOT SHA's predecessor agency, in a time of racial discrimination and mass eviction for the benefit of urban renewal and highway construction, improperly incorporated a Black burial site into its highway project. In 1992, it widened the highway without appropriate consideration of the impacts to this site, which NEPA would have required.

We note that the potential for impacts to burials from the Preferred Alternative has not been ruled out due to insufficient ground penetrating radar (GPR) survey thus far conducted. We submitted comments to MDOT SHA's proposed Cemetery Treatment Plan on May 2, 2022. Since we have not yet received a response to these comments, we wish to share for the record our Cemetery Treatment Plan comment letter attached hereto.

We once again emphasize that the area of the current MDOT SHA right-of-way where graves are indicated has already been subjected to significant ground disturbance from construction and earth-moving when I-495 was original constructed and again when the highway was widened in the 1990s. Additionally, decades of stormwater runoff, as well as highway use and maintenance, have further impacted burials. The new potential impact to burials is a very serious additional cumulative impact, which is on top of the other cumulative impacts including visual effects, noise, air pollution, stormwater runoff, and the environmental injustice of the original Beltway construction through this community resulting in decades of subsequent harm.

MDOT SHA and FHWA have formally acknowledged in the FEIS that the original construction of I-495 negatively impacted the historic African American community of Gibson Grove in Cabin John; however, our stakeholder community takes issue with the agencies' lack of transparency and inadequate community engagement as to equitable mitigation of cumulative effects. The mitigation commitments to the First Agape AME Zion Church appear to have been made before either Morningstar Moses descendants or the Cabin John community was included in Section 106 stakeholder discussions, and we are confused by the agencies' last-minute attempt in the FEIS to put duct tape on cumulative effects considerations and environmental justice by suggesting, in their responses to Draft Environmental Impact Statement (DEIS) and Supplemental Draft Environmental Impact Statement (SDEIS) comments, that the Section 106 mitigation commitments to the First Agape AME Zion Church property adequately address cumulative impacts to the Morningstar Moses site or the historic Gibson Grove community. This is the first time that Friends of Moses Hall or the community of Cabin John is hearing that mitigation of direct impacts to the church property is how MDOT SHA intends to mitigate cumulative impacts to the Morningstar Moses Cemetery site and is inappropriate given that these are two separate resources that are not co-located. And none of the proposed commitments address the Moses Hall site itself, but only features around it.

MDOT SHA and FHWA's arbitrary and capricious approach to impacts has been a common theme through this process. As we have previously noted, MDOT SHA has taken a different public and private face in relation to appropriate mitigations. On September 9, 2021, *The Washington Post* ran a story covering MDOT SHA's efforts

[1] MDOT SHA expressed this position in a January 4, 2022 presentation on Section 106 effects and in the May 2022 Draft #3 Section 106 comment responses.

The MDOT SHA and FHWA properly evaluated the Preferred Alternative's potential for cumulative effects, including at the Morningstar Cemetery. In conducting this analysis, MDOT SHA has acknowledged that the early 1960s construction of I-495 and other aspects of the Eisenhower Interstate System caused disruption to the Gibson Grove community and other communities, particularly communities of color. Indeed, these types of community impacts formed the historical context and impetus for passage of NEPA and NHPA. The MDOT SHA, during years of extensive research (discussed in more detail below), has not identified any evidence that I-495 construction in the 1960s impacted burials at Morningstar Cemetery. That research assisted MDOT SHA in determining whether the MLS proposed action would contribute to cumulative effects to the Morningstar properties and related resources in the context of past, present, and reasonably foreseeable actions as required by the NEPA CEQ regulations.

To provide further detail supporting the FEIS conclusions, MDOT SHA confirmed that in 1992, construction work was performed on I-495. This work was done within the median of I-495 near this area and avoided impact to the cemetery property. As documented in the SDEIS and FEIS, and as concluded in the ROD, the Selected Alternative avoids impacts to the cemetery property as well as to the area of the MDOT SHA owned right-of-way adjacent to the cemetery property where there could be the potential for unmarked graves. Lastly, our review did not identify any reasonably foreseeable future projects in the vicinity of the cemetery. We also note that based on commitments included in the ROD and PA, established in part based on coordination with stakeholders with interest in the Morningstar resource, the Selected Alternative will provide several benefits to the property by reducing stormwater and noise effects over existing conditions.

The MDOT SHA and FHWA also evaluated the potential for indirect effects including visual, noise, and vibration. This information was presented to and discussed with Friends of Moses Hall in January 2022. A noise barrier is proposed along the cemetery boundary that will reduce the current noise level by half. The MDOT SHA has also committed to designing the barrier in a context sensitive manner with options including vegetation screening, artistic form liner panels, and/or memorial plaques commemorating the names of known and unmarked interments. No aspects of the property were determined to be at risk from vibration.

Regarding drainage concerns on the cemetery, MDOT SHA has completed drainage investigations and various assessments of other complaints regarding current damage or disrepair to the cemetery. It was determined that these concerns were not caused by MDOT SHA's current highway operations.

At this time, MDOT SHA and FHWA have taken significant measures to avoid all known impacts to the property for the MLS and have not identified impacts that require mitigation. The MDOT SHA and FHWA are committed to developing and implementing the cemetery treatment plan identified in the Section 106 PA and implementing additional investigations, out of an abundance of caution, to identify any human remains and archaeological potential near the cemetery within the ROD limits of disturbance. The MDOT SHA will continue to offer the Friends of Moses Hall opportunities to consult and accommodate reasonable requests as the treatment plan is developed and implemented. Under the terms of the PA, if the results of the investigations provide additional information suggesting impacts are possible, then MDOT SHA will continue efforts to avoid such impacts and mitigate if impacts are unavoidable.

to avoid impacts/effects to the Morningstar site.[2] In that story, Julie M. Schablitsky, chief archaeologist for the Maryland Department of Transportation, stated, "'We own the faults of the Maryland Roads Commission impacting the community 60 years ago…It's our responsibility now to repair the damage and come in and do the right thing.'" Yet on January 4, 2022, MDOT SHA concluded that it did not have to consider cumulative effects to the site because "impacts to the Gibson Grove community occurred with original I-495 construction, prior to the passage of NEPA and NHPA (Section 106)."[3] We note our strong concern that a press event was developed, without Friends of Moses Hall's (FMH) involvement, that may have misled stakeholders about the true level of commitment of MDOT SHA to address potential impacts to the site.

We also note that two additional issues raised by FMH were not appropriately resolved through the NEPA process. In both the DEIS and the SDEIS, MDOT SHA and FHWA failed to appropriately evaluate environmental justice and visual impact issues. Regarding environmental justice, MDOT SHA did not complete a disproportionate impact analysis in either draft document. The disproportionate impact analysis is the fundamental heart of an Environmental Justice analysis. To not provide it is to not adequately evaluate Environmental Justice under EO 12898. Providing this analysis only in the FEIS is to have deprived the public of the ability to evaluate the Environmental Justice impacts of the project and is therefore contrary to NEPA. Similarly, the visual impacts analysis was deferred to the FEIS. The visual impact analysis is fundamental to an understanding of actual visual impacts. To only provide in the FEIS is again to deprive the public of the ability to evaluate one form of impacts of the project. Again, doing so was also contrary to NEPA.

We also take issue with unequivocal statements in the FEIS that "all direct and indirect impacts to Moses Hall Cemetery completely [*sic*] avoided" while simultaneously deferring an effects determination. We take offense to MDOT SHA's statement that the agency is "*gifting* [emphasis ours] land owned by MDOT SHA with potential graves back to Trustees of Moses Hall Cemetery." We maintain that the land where there are currently identified "probable" – not just "potential" – graves should never have been taken for the I-495 highway right-of-way in the first place. Returning them to their descendants is not a "gift" but an obligation.

The approach to the Morningstar site through the NEPA/Section 106 process is contrary to NEPA and its implementing regulations and has deprived the site from receiving appropriate and reasonable mitigation that it deserves after decades of mistreatment from Maryland's highway agencies. We remind FHWA of Secretary Buttigieg's insightful remark – that "there is racism physically built into some of our highways." That is certainly true of I-495. The FEIS (Chapter 5, page 5-136) acknowledges this explicitly: I-495 through the former Gibson Grove community in Cabin John was "routed through low-income, majority-minority neighborhoods, disproportionately displacing black and African American residents in particular, further concentrating poverty and exposing remaining residents to the environmental and public health effects associated with traffic proximity."[4] We lament that FHWA has not followed the Secretary's direction to address such past wrongs more affirmatively and that has resulted in an environmental process that is procedurally, and morally, flawed.

The undersigned descendants and their families feel strongly that this process has not taken into consideration the humanistic, emotional damage and heartache suffered by the African American descendant community as a direct result of past and future highway impacts to this site. Morningstar Tabernacle No. 88 Moses Cemetery and Hall is hallowed and sacred ground and requires the utmost respect by all individuals.

We appreciate your consideration of these comments.

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[2] Katherine Shaver, "African American gravesites detected near Capital Beltway will be spared in road-widening plans." *The Washington Post* September 9, 2021.
[3] MDOT. "Morningstar/Moses Hall Cemetery Update." January 4, 2022.
[4] FEIS Chapter 5 on pages 5-135 to 5-136: "Today's racially and economically segregated conditions in urban and metropolitan areas can be traced directly to decades of neighborhood destruction and residential displacements caused by highway projects plus housing policy and other racially marginalizing actions undertaken by local, state, and the federal government throughout the 20th century…Highways, such as the Southeast-Southwest Freeway (I-695) in D.C. and I-495 through the former Gibson Grove community in Cabin John, were frequently routed through low-income, majority-minority neighborhoods, disproportionately displacing black and African American residents in particular, further concentrating poverty and exposing remaining residents to the environmental and public health effects associated with traffic proximity."

It was also noted that MDOT SHA has committed to "gifting" certain land to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery. The term "gifting" is used to indicate that the MDOT SHA will convey this land without seeking anything in return.

Regarding your comments on the environmental justice (EJ) analysis, we note that the initial analysis of potential EJ impacts were included in the DEIS. At this stage of the study, the analysis focused on the entire study area, reflecting a broad geographic area surrounding the 48-mile study limits for the Build Alternatives assessed in the DEIS. The DEIS study area included I-495 from south of the George Washington Memorial Parkway in Fairfax County, Virginia, including the American Legion Bridge (ALB) across the Potomac River, to west of MD 5 in Prince George's County, Maryland; and I-270 from I-495 to I-370 in Montgomery County, including the east and west I-270 spurs north of I-495.

As a result of comments on the potential impacts, especially to those disclosed in the DEIS to EJ populations, MDOT SHA and FHWA took a fresh look at the alternatives and presented a revised alternative in the SDEIS, Alternative 9 – Phase 1 South, which substantially reduced the number and location of potentially impacted EJ populations. The Selected Alternative Phase 1 South has identified No Action for some 34 miles and with build improvements now 14 miles long focusing on the west side of I-495, including the ALB and I-270 from I-495 to I-370.

The SDEIS disclosed impacts to the EJ populations in comparison to non-EJ populations. The FEIS summarized the final technical analyses on impacts to both EJ and non-EJ populations and considered mitigation and community enhancements. Both beneficial and/or adverse impacts to EJ populations were considered in the EJ analysis. Based on the reasoning documented in the SDEIS and FEIS, FHWA and MDOT SHA have determined that no disproportionately high and adverse impacts to EJ populations would occur as a result of the I-495 and I-270 Managed Lanes Study Preferred Alternative. As intended by NEPA/Section 106 and Executive Order on EJ, a review of the entire record shows that impacts to EJ populations were presented, identified by the public as a result of the public outreach process, and were not only considered but resulted in a change to the Selected Alternative.

Sincerely,

The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated and Friends of Moses Hall

Diane E. Baxter
President, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Descendant

Dr. Charles W. Harris
Vice President, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Descendant

Eileen McGuckian
Secretary, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Historian and President, Montgomery Preservation, Inc.

Montgomery Crawford
Treasurer, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Descendant

Alexandra Jones, PhD, RPA
Trustee, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Executive Director and Founder, Archaeology in the Community

Austin E. White
Trustee, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Descendant

Charlotte Troup Leighton
Chair, Friends of Moses Hall Committee
Trustee, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Vice President of Advocacy, Cabin John Citizens Association

L. Paige Whitley
Trustee and Chair, Research Committee, The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Independent Researcher

Sondra Raspberry
Descendant

Shannon S. Steward
Descendant

Christopher Waynes
Descendant

Austin White II
Descendant

Nathan White II
Descendant

Pandora White
Descendant

The attachments included with this FEIS comment letter are included on the following pages.

FRIENDS OF MOSES HALL
MORNINGSTAR TABERNACLE NUMBER 88
ANCIENT UNITED ORDER OF SONS AND DAUGHTERS, BROTHERS AND SISTERS OF MOSES
7550 Seven Locks Road
Cabin John, MD 20818
morningstarmosescj@gmail.com
https://www.friendsofmoseshall.org/

May 2, 2022

By Email to: sarcher@mdot.maryland.gov

Mr. Steve Archer
Cultural Resources Team Leader
Maryland Department of Transportation
State Highway Administration
Environmental Planning Division
707 North Calvert Street
Baltimore, MD 21202

Re: I-495 and I-270 MLS Section 106 Materials, PA Third Draft - Archaeological Treatment Plan (Attachment 5) and Cultural Resources Treatment Plan (Attachment 4)

Dear Mr. Archer:

Thank you for the opportunity to review the additional Section 106 materials released on March 31, 2022. Our comments below are intended to supplement our comments that we submitted on April 14, 2022, but will specifically focus on the Cultural Resources Treatment Plan ("Cemetery Treatment Plan" - Attachment 4) and the Archaeological Treatment Plan (Attachment 5). Our comments to these documents are limited to their pertinence to Morningstar Tabernacle No. 88 Moses Hall and Cemetery (M: 35-212 - hereafter "Morningstar Moses").

To put our comments and concerns into visual perspective, we have included a graphic map (*See Attachment 1*) based on the Report of Geophysical Survey (GPR) conducted July, 2021 by esteemed archaeologist Dr. Tim Horsley. As previously stated, Dr. Horsley's GPR survey covered only a portion of the Morningstar Moses property and a limited area of the state's I-495 Right-of-Way. Dr. Horsley's Report Summary stated that the total of 377 probable and possible burials "is likely lower than the actual total number of graves present." Dr. Horsley went on to state:

> "Importantly, these results reveal that subsurface anomalies interpreted as graves continue into the Maryland Department of Transportation State Highway Administration Right-of-Way (MDOT SHA ROW) to the north of the enclosed cemetery. While the exact number is difficult to define from these data, some 14 probable unmarked burials are indicated in this area. As many as 34 burials are suggested in total; however, most of the anomalies suggesting these likely have alternative, natural explanations."

The area of the MDOT SHA ROW where graves are indicated has already been subjected to significant ground

This letter was included as an attachment with the FEIS Comment Letter and therefore the copy of the letter is included here. However, MDOT SHA acknowledges receipt of this letter is related to the Section 106 process and has addressed the comments raised through the Section 106 Consulting Parties process.

disturbance from construction and earth-moving when I-495 was originally constructed and again when the highway was widened in the 1990s. Additionally, decades of stormwater runoff, as well as highway use and maintenance, have further impacted burials.

It is therefore reasonable to conclude that human remains have been disturbed and dislocated, and that it is likely that human remains **will** be discovered within the LOD area adjacent to Morningstar Moses. Any treatment plan and mitigation commitment must require the reinterment of human remains on the Morningstar Moses site. Prior to any such reinterment, a thorough archaeological survey of the Morningstar Moses property would be required to identify locations for reinterment. We emphasize that Order of Moses Tabernacle No. 88 members paid to bury their family members at Morningstar Moses and it is vital that this community of dead remain together.

We restate our rejection of SHA's convenient definition of the boundary of the cemetery. SHA is, in fact, now basing the cemetery boundary on a 1957 aerial map that was shared in consulting party meetings. The 1957 aerial was used as a graphic underlay during a Consulting Party meeting with SHA on January 4, 2022, for the depiction of grave shafts revealed in the limited area where GPR was conducted. We reject SHA's assumptions and interpretation of the 1957 aerial as sufficient to evaluate the extent of the boundaries of the Morningstar Moses Cemetery. Historical research and the absence of burial records for most of the 377 GPR-indicated probable and possible graves in the limited survey areas point to the distinct possibility that the cemetery is older and larger than originally thought. The historical evidence suggests that this could be a Reconstruction-era cemetery. Most graves were marked by stones and not inscribed markers, and it is likely that landowners and descendants present in 1957 would not have been able to identify the specific boundaries of the cemetery.

Archaeological and Cultural Monitoring

We reiterate our previous requirement that the monitoring of ground-disturbing and archaeological activities at the Morningstar Moses site, including areas of the adjacent LOD, must be carried out by an appropriate, qualified professional. Morningstar Moses' cultural and historic importance requires that a professional supervising ground-disturbing and archaeological investigations at the site have extensive experience in African American cemetery archaeology. The Archaeological and Cemetery Treatment Plans should include the following provision:

> The archaeological studies of Morningstar Moses cemetery required under the terms of the PA shall be carried out by a cultural resources management (CRM) firm with extensive experience in African American archaeology, community archaeology, and oral history selected by The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated (MT88) and Friends of Moses Hall (FMH), and under the direct supervision of a qualified professional approved by MT88 and FMH. The cultural monitor approved by MT88 and FMH is required to be on site at the Morningstar Moses project location at all times to monitor archaeological project activity. MDOT SHA shall cover the cost of the archaeologist and cultural monitor.

<u>Archaeological Treatment Plan</u>

The Morningstar Moses site is NRHP eligible under Criteria A and C, but the Maryland Historical Trust (MHT) has recommended that this site also be considered eligible under Criterion D. As previously stated, we concur with MHT that this site be deemed eligible under Criteria A, C and D. Accordingly, the Archaeological Treatment Plan should be updated to include the Morningstar Moses site.

The Cemetery Treatment Plan limits archaeological investigations to the presence of human remains and funerary objects, and does not consider that there is a potential for significant archaeological remains at the edge of the LOD and the northern cemetery boundary, including areas of the cemetery within the existing I-495 Right-of-Way, and along the access footpath that have not been subject to archaeological investigations.

Additionally, the Morningstar Moses site holds the only remaining extant foundation of a once thriving Order of Moses Hall building in Montgomery County. The close proximity of the Hall to the LOD and the history of significant past disturbance of the Morningstar Moses site from the original I-495 construction and subsequent widening — and highway traffic impacts in general — further supports that the site should be included in the Archaeological Treatment Plan.

Turning our attention to the Archaeological Treatment Plan document, we have the following preliminary comments, but reserve the right to review and comment further on this document once the Morningstar Moses site is included.

Human Remains Protocols During Archaeological Investigations (Appendix 1)

We take issue with the following language:

> "Within Maryland, pursuant to State of Maryland Criminal Code § 10-402, the State's Attorney must authorize movement or removal of any remains until determined to be archaeological."

It is our understanding of the statute that unless the removal is temporary, the authorization of the State's Attorney is required for the removal of any remains for any reason, regardless of whether they are considered archaeological or for any other consideration. The section also requires publication of "a notice of the proposed relocation in a newspaper of general circulation in the county where the burial site is located." There is no exception to this requirement for archaeology. The statute does allow for remains to be reinterred in the presence of "a trained anthropologist or archaeologist" rather than a "a mortician, professional cemeterian, or other individual qualified in the interment of human remains" or "a minister, priest, or other religious leader." This language should be corrected to accurately reflect State of Maryland Criminal Code § 10-402.

<u>Cemetery Treatment Plan</u>

Site Treatment Plan Research Methods - Previously Conducted Research

MDOT SHA appears to have carefully crafted its language in this section to support its assumptions and/or downplay findings — in some cases deceptively so. For example, we point to the mischaracterization of Dr. Tim Horsley's GPR survey findings at the top of Page 5:

> "The study identified 14 subsurface anomalies interpreted as possible graves within the MDOT SHA ROW to the north of the enclosed cemetery; an additional 20 anomalies in this area were thought more likely to be related to natural soil variations (Falchetta et al. 2021). Although the GPR reflections in this area are weaker than other parts of the survey area, as a result of this study, the area of possible burials features within the MDOT SHA ROW has been included within the NRHP eligible boundary of the property."

We repeat for emphasis the precise language from Dr. Tim Horsley's Report Summary:

> "Importantly, these results reveal that subsurface anomalies **interpreted as graves** continue into the Maryland Department of Transportation State Highway Administration Right-of-Way (MDOT SHA ROW) to the north of the enclosed cemetery. While the exact number is difficult to define from these data, **some 14 probable unmarked burials are indicated in this area**. As many as 34 burials are suggested in total; however, most of the anomalies suggesting these likely have alternative, natural explanations."

MDOT SHA's characterizations in this document and elsewhere appear aimed to convince consulting parties and the public to trust its version of a "revised cemetery boundary" and that "MDOT SHA developed an alternative design and LOD configuration that eliminates all Project impacts within the revised property boundary and avoids associated potential burial features within the MDOT SHA ROW adjacent to the cemetery boundary". We reject and take offense to MDOT SHA's characterizations and attempts to downplay

impacts to the Morningstar Moses site.

With reference to Page 5, Paragraph 2, we have twice submitted corrections to the MHT Determination of Eligibility (DOE) form submitted by MDOT SHA and again state that errors and omissions still exist. We also reemphasize that this site should be deemed eligible under Criteria A, C and D.

Site Treatment Plan Research Methods - Defining Areas that Require Archaeological Investigation

We believe that MDOT SHA again mischaracterizes Dr. Tim Horsley's GPR Report in stating that "Given the weak nature of feature signals identified on the nearby high ground, it may be impossible to confidently identify potential graves in this area." We also object to MDOT SHA's use of the word "potential graves" as misleading in certain places in the document. We look to Dr. Tim Horsley's GPR report for his interpretations of "probable" and "possible" burials as follows:

> "For ease of interpretation, burials are divided into *"probable burials"* and *"possible burials"* depending on the confidence that such an interpretation can be made. This distinction is based on several characteristics of the geophysical anomaly (i.e., strength, dimensions, depth, and orientation), as well as its associated grave marker or other similar anomalies. In the case of possible burials, other explanations are possible and cannot be ruled out, although it is more likely that the anomaly is burial related."

We again point to Dr. Horsley's GPR report for his findings related to burials within the MDOT SHA ROW and, more specifically, to the cause of "weak signals" in this area:

> "**While the absolute number of burials within the ROW is impossible to determine with confidence, there is strong evidence that graves continue into this area**. 14 probable burials are identified in Figure 21, with an additional 13 possible burials highlighted. A further 7 other features/ disturbance are shown, either fully or partially within this area. Together, this suggests as many as 27-34 unmarked graves with the ROW; however, this may be an over-estimate. In general, the GPR reflections in this area are weaker than other parts of the survey area; given the sensitivity of the ROW, great care has been taken to identify all potentially significant anomalies. It is quite possible that many of the possible burials are caused by other subsurface disturbances or natural soil variations, as well as the other feature/disturbance anomalies; however, it is impossible to rule out the presence of an unmarked burial in each case.
>
> The difficulty in confidently identifying burials in this area might in part be related to a change in soil type. As described in Section and 1.5 and Figure 2, Brinklow-Blocktown channery silt loams are present in this corner of the cemetery (although it should be cautioned that the soil maps may not be accurate at the scale shown). Channery soils produce increased noise levels due to the greater concentration of stony material; however, the GPR data from this area are not discernibly noisier than the rest of the cemetery. The weaker reflections here indicate a lower physical contrast (primarily conductivity) between the causative features and the surrounding soil. Several factors could cause such a reduction in contrast, including (i) a change in soil type; (ii) variations in soil moisture (that can be related to soil type and/or topography); (iii) the nature of the burial (i.e., casket vs. shroud); and (iv) the state of preservation of the inhumation. While identifying which factors are the most significant is not usually possible solely based on the geophysical data in this instance it is likely a combination of at least (i), (ii) and (iv). **As Falchetta et al. note, the top of the hill may have been the site of the earliest burials, and consequently their associated anomalies would be expected to be weaker due to more advanced decomposition.**
>
> The GPR reflections suggesting probable and possible burials in this area begin at a depth of around 1' (0.3m) and extend to at least 4-5' (1.2-1.5m). While the remains of any inhumations are likely below at least 3', distinct soil variations associated with the grave shafts can be expected at a depth of 1' (0.3m)."

Environmental Context - Land Use History and Current Conditions

We wish to clarify the following sentence: "The central portion of the path runs along a gully and was constructed on top of fill piles; railroad tie steps placed along that portion of the path by Boy Scouts working on an Eagle Scout project in 2008 were still in place." The source of the "fill piles" (shown as "Artificial Berm" on the map in *Attachment 1*) is undetermined, but the presence of large chunks of thick concrete indicate that this fill may have been associated with highway construction. We wish to clarify that the Boy Scouts did not create the fill piles, but simply created steps in the artificial berm to allow pedestrian access to the cemetery. It should be noted that MDOT SHA's perpetual stormwater easement is also located in this area and the fill piles could have been associated with construction of the stormwater drain. MDOT SHA's lack of maintenance of their stormwater easement on the property has contributed to soil erosion and physical degradation of the site.

Treatment Goals - Additional Remote Sensing Survey/Archaeological Fieldwork

The document states that "No further ground disturbing investigations will be conducted within the identified cemetery boundary at this time. A series of further steps, including additional GPR and examination of the LOD to identify burials outside the understood boundary of the cemetery will be conducted to evaluate avoidance of impacts to the Morningstar Cemetery as a result of MLS Project activities."

We point out that only non-invasive field investigations have been conducted at the site so far. GPR was conducted on a portion of the Morningstar Moses cemetery property and a portion of the MDOT SHA ROW. The areas where the GPR survey was conducted are shown on *Attachment 1.* In the likely event that human remains are present in the LOD, they must be reinterred within the Morningstar Moses cemetery. Prior to any such reinterment, a proper archaeological survey of the Morningstar Moses property, at the sole cost and expense of MDOT SHA, would be required to identify locations for reinterment.

MDOT SHA further states that, "The primary goal of the archaeological investigations in the MDOT SHA right-of-way is to confirm that no interments are located within the MLS Project LOD that would be impacted by the proposed construction in this area."

MDOT SHA's proposed areas within the LOD for additional GPR study seem to presume the end results of the investigations before they are carried out and do not demonstrate to us that the MDOT SHA is proactively seeking to avoid impacting all Morningstar Moses burials. MDOT SHA seems committed to their arbitrary definition of the boundary of the cemetery and does not consider that graves and artifacts could be present along the entire length of the LOD adjacent to the Morningstar Moses site.

Machine and Hand Stripping of the LOD (P-10)

This paragraph should be revised to read:

> Following the GPR effort, LOD will have been reduced to the maximum extent feasible while still accomplishing the purpose and need of the Project if the GPR has indicated a potential for additional burials within the LOD. At this time, substantial remaining vegetation will have been removed from the LOD in the vicinity of the Morningstar Cemetery as depicted in Figure 2.3 with an **appropriate,** qualified archaeologist **and cultural monitor present** for all ground disturbance. The area to be cleared encompasses the area between the roadway and the staked LOD. The mechanical removal of the topsoil in these areas will be accomplished with a Gradall, trackhoe, or similar vehicle with a bucket fitted with a smooth (not toothed) blade, and the soil removal will proceed, directed by the archaeologist **and cultural monitor, in a slow and careful manner removing only a few inches at a time** — as noted in the GPR study, "distinct soil variations associated with the grave shafts can be expected at a depth of 1 ft." The topsoil **will be sampled by screening for artifacts** and will be removed under the direction of the archaeologist **and cultural monitor,** and the interface between

the topsoil and subsoil will be cleaned by shovel, trowel, or a combination thereof to evaluate any features or artifacts indicative of interments **and/or archaeological remains.**

Summary of Expected Steps of Coordination and Fieldwork

As the document states, "The community has expressed a preference for re-interment of remains within Morningstar Cemetery, and the MDOT SHA will accommodate this to the extent practicable and permissible by law." We repeat that any treatment plan and mitigation commitment must require the reinterment of human remains on the Morningstar Moses site, in order to keep the community together. We restate that prior to any such reinterment, a thorough archaeological survey of the Morningstar Moses property, at the sole cost and expense of MDOT SHA, would be required to identify locations available within the Morningstar Moses site for reinterment.

Respectful Treatment of Human Remains

The following paragraph should be revised to read:

> The MDOT SHA archaeologists and archaeological consultants will treat any human remains encountered during the Project in a manner guided by the relevant federal and state laws and guidelines. In addition, human remains will be treated with the utmost dignity and respect at all times. Human remains and/or associated artifacts (including grave markers, casket/coffin materials, or funerary objects) will be left in place where possible and not disturbed unless necessary, and no personal or media photographs **or filming** will be allowed of human remains other than what is needed for technical documentation, and consultant Project and MDOT SHA personnel will be restricted from posting or disclosing information, **videos,** or photographs on social media or other venues. The MDOT SHA and FHWA will be the only authorized sources to disseminate information to consulting parties or media. **However, in no event shall photographs or video of skeletal remains or funerary objects be released to the media or press without the express written consent of The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated.** No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place. All personnel involved with the discovery will maintain confidentiality concerning the remains, and any press contacts will be referred to the MDOT SHA.

We appreciate your consideration of these comments.

Sincerely,

Friends of Moses Hall and
The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated

Diane E. Baxter
President, Morningstar Tabernacle Number 88, Incorporated
Descendant

Dr. Charles W. Harris
Vice President, Morningstar Tabernacle Number 88, Incorporated
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Austin White II
Descendant

Nathan White II
Descendant

Pandora White
Descendant

ATTACHMENT 1
Morningstar Tabernacle No. 88 Moses Hall and Cemetery
Cabin John, Montgomery County, Maryland

cc: Governor Lawrence J. Hogan – governor.mail@maryland.gov
Comptroller Peter V.R. Franchot – pfranchot@comp.state.md.us
Treasurer Derek E. Davis – treasurer@treasurer.state.md.us
Jeffrey T. Folden, MDOT SHA – mls-nepa-P3@mdot.maryland.gov
Kendra Parzen, National Trust for Historic Preservation - KParzen@savingplaces.org
Elizabeth S. Merritt, National Trust for Historic Preservation - emerritt@savingplaces.org
Elizabeth Hughes, Maryland Historical Trust – elizabeth.hughes@maryland.gov
Julie Langan, Virginia DHR - julie.langan@dhr.virginia.gov
Steve Archer, MDOT SHA – sarcher@mdot.maryland.gov
Julie Schablitsky, MDOT SHA – jschablitsky@mdot.maryland.gov
Richard Ervin, MDOT SHA – rervin@mdot.maryland.gov
David Clarke, USDOT - david.clarke@dot.gov
April Marchese, USDOT – april.marchese@dot.gov
Colleen Vaughn, USDOT – colleen.vaughn@dot.gov
Brenda Mallory, Chair, White House Council on Environmental Quality – brenda_mallory@ceq.eop.gov
Vivian Lee, National Capital Planning Commission – vivian.lee@ncpc.gov
Samantha Beers, US EPA - beers.samantha@epa.gov
Emily Biondi, Federal Highway Administration – emily.biondi@dot.gov
James Gavin, Federal Highway Administration – james.gavin@dot.gov
Jitesh Parikh, Federal Highway Administration – jitesh.parikh@dot.gov
Jeanette Mar, FHWA Maryland Division - jeanette.mar@dot.gov
Reid Nelson, ACHP – rnelson@achp.gov
Mandy Ranslow, ACHP - mranslow@achp.gov
Jaime Loichinger, ACHP - jloichinger@achp.gov
Beth Cole, Maryland Historical Trust - beth.cole@maryland.gov
Tim Tamburrino, Maryland Historical Trust - tim.tamburrino@maryland.gov
Marc Holma, Virginia DHR - marc.holma@dhr.virginia.gov
John Simkins, FHWA Virginia Division - john.simkins@dot.gov
Rebeccah Ballo, Montgomery County Planning Department – rebecccah.ballo@montgomeryplanning.org
Debra Borden, M-NCPPC – debra.borden@mncppc.org
Brian Crane, Montgomery County Planning Department – brian.crane@montgomeryplanning.org
Susan Shipp, Cabin John Citizens Association - jsjshipp3@verizon.net
Jack Orrick, Carderock Springs Citizens Association – jack.orrick@offitkurman.com
Eddie Bankhead, First Agape AME Zion Church - esbj@pobox.com
Rev. Edgar Bankhead, First Agape AME Zion Church - ebankjs@verizon.net
Susan Lee, Maryland State Senator – susan.lee@senate.state.md.us
Marc Korman, Maryland State Delegate – marc.korman@house.state.md.us
Sara Love, Maryland State Delegate – sara.love@house.state.md.us
Ariana Kelly, Maryland State Delegate – ariana.kelly@house.state.md.us
Casey Anderson, Chair, Montgomery County Planning Board - MCP-Chair@mncppc-mc.org
Carol Rubin, Commissioner, Montgomery County Planning Board - MCP-Chair@mncppc-mc.org
Partap Verma, Commissioner, Montgomery County Planning Board - MCP-Chair@mncppc-mc.org
Tina Patterson, Commissioner, Montgomery County Planning Board - MCP-Chair@mncppc-mc.org
Gerald Cichy, Commissioner, Montgomery County Planning Board -MCP-Chair@mncppc-mc.org
Marc Elrich, Montgomery County Executive - marc.elrich@montgomerycountymd.gov
Gabe Albornoz, Montgomery County Councilmember-councilmember.albornoz@montgomerycountymd.gov
Andrew Friedson, Montgomery County Councilmember- councilmember.friedson@montgomerycountymd.gov
Evan Glass, Montgomery County Councilmember - councilmember.glass@montgomerycountymd.gov
Tom Hucker, Montgomery County Councilmember - councilmember.hucker@montgomerycountymd.gov
Will Jawando, Montgomery County Councilmember - councilmember.jawando@montgomerycountymd.gov
Sidney Katz, Montgomery County Councilmember - councilmember.katz@montgomerycountymd.gov
Nancy Navarro, Montgomery County Councilmember - councilmember.navarro@montgomerycountymd.gov
Craig Rice, Montgomery County Councilmember - councilmember.rice@montgomerycountymd.gov
Hans Riemer, Montgomery County Councilmember - councilmember.riemer@montgomerycountymd.gov

Friends of Moses Hall
7550 Seven Locks Road
Cabin John, Maryland 20818
morningstarmosescj@gmail.com
www.friendsofmoseshall.org

June 15, 2022

Ms. Jaime Loichinger
Assistant Director
Advisory Council on Historic Preservation
400 F Street, NW, Suite 308
Washington, DC 20001

By email to: jloichinger@achp.gov

Re: **Maryland I-495/I-270 Managed Lanes Study – Request for Pre-Decisional Referral to CEQ**
Morningstar Tabernacle No. 88 Moses Hall and Cemetery (MIHP: 35-212)

Dear Ms. Loichinger:

Thank you for participating in Monday's consulting party meeting led by the Federal Highway Administration (FHWA) in response to our June 8 letter to Transportation Secretary Buttigieg (attached for reference). We especially appreciated your acknowledgement that federal agencies have an obligation to consider cumulative impacts and environmental justice.

During the meeting you indicated that the Programmatic Agreement (PA) was already in your office for execution. We learned yesterday that the ACHP has since executed the PA. This is unfortunate in our view, because it undermines FHWA's repeated assurances on Monday that there would still be a comment opportunity on both the PA and the Final Environmental Impact Statement (FEIS).

We continue to have great concerns that the I-495/I-270 Managed Lanes Study FEIS will soon be released by the FHWA and Maryland Department of Transportation (MDOT SHA) as a deeply flawed environmental review document that fails to meet the requirements of the National Environmental Policy Act. Further, as emphasized in our letter to Secretary Buttigieg, MDOT SHA's failure to look for burials in the LOD before the FEIS is an egregious and potentially very harmful violation of the agency's Section 106 and 4(f) obligations.

One of the primary legal flaws in the FEIS is an issue that has significant implications for the Section 106 regulations as well – the FHWA's stated intention to maintain its unprecedented argument that the consideration of cumulative impacts does not include adverse impacts prior to 1970 or 1966, regardless of whether those earlier adverse impacts were caused by the same agency and the same infrastructure. **The purpose of this letter is to urge the Advisory Council on Historic Preservation (ACHP) to initiate a**

A letter dated July 13, 2022 from ACHP was sent to the Friends of Moses Hall in response to this comment.

pre-decisional referral to the Council on Environmental Quality (CEQ), pursuant to 40 C.F.R. Part 1504, to address the FHWA's attempt to revise the definition of cumulative effects in a manner inconsistent with prior precedent. Since the Section 106 regulations themselves rely on the consideration of cumulative effects, 36 C.F.R. § 800.5(a)(1), this issue has enormous importance for the ACHP. Unless the FHWA changes its position, this issue is expected to be one of the central challenges raised in litigation opposing the project. We urge the federal agencies to involve CEQ in reviewing this issue *before* it goes to the courts.

The ACHP's execution of the PA (although disappointing, and inconsistent with FHWA's assurances) does not preclude the ACHP from initiating this pre-decisional referral. The PA essentially kicks the can down the road, and *defers* any determination regarding adverse effects -- cumulative or otherwise. Therefore, resolving the inconsistent definitions of cumulative effects will be helpful, if not essential, to successful implementation of the PA.

In our view, the transportation agencies' refusal to consider the cumulative impacts of building the highway back in the 1960s is one of the most egregious compliance deficiencies and has dangerous implications for both Section 106 and NEPA as a matter of precedent. **Therefore, we urge the ACHP to refer the matter to CEQ. The window for submitting a CEQ referral is a mere 25 days after the FEIS has been issued. If the FEIS is released as scheduled on June 17, the deadline for CEQ referral would be July 12. It is critical for the FEIS (or a Supplemental EIS) to reopen the consideration of cumulative impacts, so that a meaningful evaluation and resolution of those impacts can be achieved, without the artificial wall being imposed by the FHWA.**

Thank you for considering our comments and our plea for your support and intervention.

Sincerely,
Friends of Moses Hall
and **The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated**

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Pandora White
Descendant

Enclosure :
Friends of Moses Hall letter to Secretary Buttigieg, June 8, 2022

cc: David Clarke, Federal Preservation Officer, FHWA
Reid Nelson, Mandy Ranslow, Javier Marques, and Kelly Fanizzo, ACHP
Elizabeth S. Merritt, Deputy General Counsel, National Trust for Historic Preservation
Brenda Mallory, Chair, White House Council on Environmental Quality
Stephan Nevshehirlian, NEPA Program Manager, Region 3, US-EPA
Samantha Beers, Director, NEPA-Region 3, Office of Communities, Tribes, and Environmental Assessment, US-EPA

Friends of Moses Hall
7550 Seven Locks Road
Cabin John, Maryland 20818
morningstarmosescj@gmail.com
www.friendsofmoseshall.org

June 8, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Ave. SE
Washington, DC 20590

Re: Maryland I-495/I-270 Managed Lanes Study
Morningstar Tabernacle No. 88 Moses Hall and Cemetery (MIHP: 35-212)

Dear Mr. Secretary:

We write to you with great concern that the I-495/I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS) will soon be released by the Maryland Department of Transportation (MDOT SHA) as a deeply flawed environmental review document that fails to meet the requirements of the National Environmental Policy Act, and most notably, the policies and priorities placed by the Biden administration on protecting and remediating historic wrongs to disadvantaged communities.

Failure to Assess Cumulative Effects or to Substantively Address Racial Equity and Environmental Justice

Friends of Moses Hall (FMH) has copied your office on our detailed comment letters related to this project and we encourage you to consider these communications carefully. Most pressingly, we believe that MDOT SHA and the Federal Highway Administration (FHWA) have erred in concluding that there are no clear cumulative effects at the historic Morningstar Moses site. The history of this site shows that MDOT SHA (formerly the Maryland State Roads Commission) has repeatedly engaged in activities that have both cumulatively and negatively affected conditions at this historic African American cemetery.

The FHWA and MDOT SHA have taken a position in this case that is absolutely unprecedented: When evaluating the cumulative impacts of the beltway widening project on this historic African American community, they argue that they do not have to consider the cumulative impacts of originally bulldozing the beltway through this site in the first place, because the Beltway was built prior to the enactment of the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). There is absolutely no legal basis for excluding the original construction of I-495 from the analysis of cumulative impacts to this site — especially since the original highway construction was funded and carried out by the same agencies as those proposing the current project.

For a response to the cumulative effects comments raised in this letter refer to the response to the July 15 FEIS comment, on pages 27-29 above.

In addition, there has been a dramatic contradiction between the unlawfully restricted scope of the agencies' environmental review and some of the agencies' public statements. For example, on September 9, 2021, *The Washington Post* ran a story covering SHA's efforts to avoid impacts to the Morningstar site.[1] In that story, Julie M. Schablitsky, chief archaeologist for the Maryland Department of Transportation, stated, "We own the faults of the Maryland Roads Commission impacting the community 60 years ago… It's our responsibility now to repair the damage and come in and do the right thing." Of course, we were encouraged to hear this important statement. By contrast, however, on January 4, 2022, SHA concluded that it did not have to consider cumulative effects to the site because "Impacts to the Gibson Grove community occurred with original I-495 construction, prior to the passage of NEPA and NHPA (Section 106)."[2]

FMH stresses that the original I-495 construction had significant and lasting economic, physical, and social impacts on this historic community through land takings and the splitting of this once vibrant African American community in Cabin John. Evidencing the cumulative effects of racial inequity inherent in the original land takings, FMH drafted a report of findings following our examination of Maryland State Roads Commission (MD SRC) records pertaining to the construction of I-495 from the late 1950s through the early 1960s. This document can be found on our website: https://www.friendsofmoseshall.org/press-releases.

Additionally, MDOT has admitted, based on an incomplete site investigation, that there may be burials in the project's Limits of Disturbance (LOD). Evidence of up to 34 burials has been found by ground penetrating radar (GPR) in the current I-495 right-of-way and it should be noted that only a small portion of the adjacent state right-of-way was surveyed prior to the FEIS. While MDOT has committed to additional GPR investigation of the project's adjacent LOD, the agency has refused to conduct these investigations prior to the FEIS and has instead elected to do so just prior to construction, when design changes may not be possible. MDOT has disregarded our reasonable concern regarding the location of the project's LOD in relation to the known burial sites, which raises substantial questions about physical avoidance. The updated LOD still appears to be immediately adjacent to graves.

FMH greatly appreciates the Biden administration's promise —and your personal commitment — to usher in a new era of racial equity in transportation projects. While FMH has not taken a position on the viability of the I-495/I-270 Managed Lanes project as a whole, we are committed to advocating for this historic African American resource, which was named one of ***America's 11 Most Endangered Historic Places*** in 2021 by the National Trust for Historic Preservation.

This site is important to descendants and others who consider it a sacred place and one whose role matters in an accurate history of the area. FMH hopes that someday the site will not only be a place of interment and reflection honoring those who passed on but will also be a site used to educate students and citizens of the role African American benevolent societies placed during a period of legal and social segregation in Maryland.

---

[1] Katherine Shaver, "African American gravesites detected near Capital Beltway will be spared in road-widening plans." *The Washington Post* September 9, 2021.

[2] MDOT. "Morningstar/Moses Hall Cemetery Update." January 4, 2022. (Addressed to Maryland SHPO and Virginia SHPO). Link to full document: https://drive.google.com/file/d/14StbqDBrn3mKs_A9jUFPniGNA2f6K1lL/view?usp=sharing

We note that the federal permitting dashboard calls for the Final EIS for this project to be issued on June 17, 2022, and for the Record of Decision to be issued seven weeks later on August 5. We assume you know that a number of environmental and conservation advocacy groups are deeply troubled by FHWA and MDOT's inadequate review of the project's significant harms. In our view, the agencies' refusal to consider the cumulative impacts of building the highway back in the 1960s is one of the most egregious compliance deficiencies and leaves the project highly vulnerable to potential legal challenge. **Therefore, we urge you to suspend the timeline for issuing a final decision to allow time for MDOT to fully investigate the LOD adjacent the site to determine if burials would be disturbed, and to reopen the consideration of cumulative impacts, under both NEPA and Section 106 of the NHPA, so that a meaningful evaluation and resolution of those impacts can be achieved.**

Thank you for considering our comments and our plea for your support and intervention.

Sincerely,
Friends of Moses Hall
and **The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated**

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Descendant

Nathan White II
Descendant

Pandora White
Descendant

cc: Stephanie Pollack, FHWA Administrator
Colleen Vaughn, Federal Preservation Officer, US-DOT
David Clarke, Federal Preservation Officer, FHWA
Mandy Ranslow, Jaime Loichinger, Javier Marques, and Kelly Fanizzo, ACHP
Elizabeth S. Merritt, Deputy General Counsel, National Trust for Historic Preservation

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OFFICE OF THE COUNTY EXECUTIVE, MONTGOMERY COUNTY

OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

July 18, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
US Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

DOTExecSec@dot.gov

Via email

Dear Secretary Buttigieg,

As County Executive for Montgomery County, the most populous jurisdiction in Maryland and home to much of I-495 and I-270, I am writing in regard to the I-495 & I-270 Managed Lanes Final Environmental Impact Statement (FEIS). I ask that you delay the issuance of a Record of Decision for at least an additional 60 days to allow the public to review the document and identify issues that require resolution. I also ask that you require the Maryland Department of Transportation to respond to all substantive issues in a meaningful and constructive way before finalizing the National Environmental Policy Act process for this project.

The FEIS and appendices total 26,500 pages in 74 separate files, and it was released on June 17 for 30-day review. This is an enormous amount of information to review in a short time period. These same concerns about the timeline have been raised by many members of our legislative State delegation, the Maryland chapter of the Sierra Club, and other organizations. As noted in the letter from our state legislators, the extension is needed at least partly because the Maryland Department of Transportation (MDOT) did not release the federally mandated analyses and other missing information until issuance of the FEIS. This has meant that the public and reviewing agencies could only now review the environmental justice and greenhouse gas emissions analyses, mitigations plans, the recently changed traffic model, and MDOT's response to the 5,000 comments it received during the public comment periods for the Draft Environmental Impact Statement (DEIS) and Supplemental DEIS.

101 Monroe Street • Rockville, Maryland 20850
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www.montgomerycountymd.gov

OST-S10-220718-008

Response:

On June 17, 2022, the FEIS was published in the federal register and made available for a 30-day period on the US Environmental Protection Agency's (USEPA) EIS Database website, on the Op Lanes Maryland webpage and at 17 public library locations in Maryland, Virginia and Washington D.C. The FEIS was prepared to present the final analyses completed for the Preferred Alternative, design refinements to address public comments, operational considerations and to further avoid and minimize impacts, and to respond over 5,000 comments received on the DEIS and SDEIS.

From the outset of the Study's NEPA process, the Federal Highway Administration (FHWA) as the lead federal agency, and the Maryland Department of Transportation (MDOT SHA) as the co-lead agency, developed a comprehensive public involvement and engagement strategy designed to obtain input from stakeholders around the entire MLS study area. This strategy combined traditional opportunities for commenting on the Draft Environmental Impact Statement (DEIS) and Supplemental DEIS (SDEIS) in addition to wide-ranging outreach to community organizations (e.g., church groups, homeowners' associations, public interest groups, and governmental entities), with particular sensitivity and outreach to identified Environmental Justice communities. Refer to FEIS, Chapter 8. The public involvement and engagement process, starting in early 2018 and continuing for over four years, considered the vast diversity of community resources. Despite a global pandemic, MDOT SHA's public involvement strategy ensured the safety of the public while still providing the same opportunities for meaningful participation by the public in the NEPA process.

The DEIS was published on July 10, 2020 and was made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/deis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's counties, Maryland, Fairfax County, Virginia and Washington DC. Following publication of the DEIS, FHWA and MDOT SHA provided a 90-day comment period, which is twice the minimum time required by the CEQ regulations. Based on input from the general public, community partners, stakeholders, and local and federal officials, however, MDOT SHA supported extending the DEIS comment period and made a formal request to FHWA, which has authority to grant any extension. FHWA approved this request and granted a 30-day extension of the public comment period for the DEIS. All in all, the DEIS was made available for comment and review from July 10, 2020 through and including November 9, 2020, a total of four months. During this extended comment period, the agencies received close to 3,000 comments.

The SDEIS published on October 1, 2021 was prepared to consider new information relative to the Preferred Alternative, Alternative 9 - Phase 1 South. Building off the analysis in the existing DEIS, the SDEIS disclosed new information relevant to the Preferred Alternative while referencing the DEIS for information that remained valid. The SDEIS also described the background and context in which the Preferred Alternative, Alternative 9 - Phase 1 South was identified. The SDEIS was available for the public to review and comment on the Preferred Alternative during a 45-day comment period, which was later extended an addition 15 days. The SDEIS was also made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/sdeis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's Counties, Maryland, Fairfax County, Virginia and Washington DC.

The Honorable Pete Buttigieg
July 18, 2022
Page 2 of 2

For your information, I have attached the memo I sent in March to the Federal Highway Administration outlining many of our concerns with this enormous project.

I sincerely appreciate your consideration of this request.

Enclosure

cc: The Honorable Polly E. Trottenberg, Deputy Secretary, USDOT
The Honorable Stephanie Pollack, Acting Administrator, FHWA
Gregory Murrill, Division Administrator, FHWA
Adam Ortiz, Regional Administrator, EPA
The Honorable Gabe Albornoz, President, Montgomery County Council

Sincerely,

Marc Elrich
Montgomery County Executive

OST-S10-220718-008

In addition to a combined six-month EIS public comment review period, MDOT SHA has held 16 large public workshops, 7 public hearings including virtual and in-person, and over 200 individual, elected official, community, stakeholder, and business owner meetings. Refer to DEIS, Chapter 7 and Appendix P; SDEIS, Chapter 7; and FEIS Chapter 8 and Appendix R for detailed information on public involvement.

As a result of this continued public involvement and engagement effort, the Preferred Alternative, as described in the FEIS, reflected changes made since the SDEIS. Consistent with the NEPA process, a FEIS should include responses to substantive comments that can take place in the form of changes from what was presented in the DEIS such as factual corrections and/or new or modified analyses or alternatives. This is precisely what was done and clearly reflected in the FEIS. Refer to FEIS, Executive Summary. The MLS FEIS includes responses to more than 5,000 comments received on the DEIS and SDEIS and the Preferred Alternative reflects changes to address many of the comments including design modifications and adjustments, finalizing technical analyses, continued application of avoidance and minimization efforts and finalizing mitigation for unavoidable impacts.

As mentioned above, the FEIS was made available for a 30-day Notice of Availability through various and widely accessible means before the Record of Decision (ROD) was approved. Public involvement and engagement will continue as the project advances to final design and construction. As a requirement in the P3 Agreement, the Developer must provide a public outreach and engagement plan. The Developer will coordinate with MDOT SHA to facilitate an early and ongoing collaborative dialogue to engage stakeholders, local communities, and property owners though final design and construction. MDOT SHA, jointly with the Developer, would be responsible for implementing strategies, such as public meetings and community events, with the goal of maintaining an open dialogue with stakeholders.

The attachment included with the FEIS comment letter is included on the following pages.

OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

MEMORANDUM

March 10, 2022

TO: Gregory Murrill, Division Administrator
Federal Highway Administration, Maryland Division

James F. Ports, Jr., Secretary of Transportation
Maryland Department of Transportation

FROM: Marc Elrich, County Executive

SUBJECT: I-495 and I-270 Opportunity Lanes / Managed Lanes Study Supplemental Draft Environmental Impact Statement (SDEIS)

This communication is in follow-up to Montgomery County's November 29, 2021, comments to the Maryland Department of Transportation (MDOT) on the SDEIS for the I-495 and I-270 Opportunity Lanes / Managed Lanes Study ("the Project") prepared by MDOT.

I continue to have substantial concerns with the process that the Project appears to be following, particularly regarding traffic and environmental impacts, and I urge that these concerns be addressed through the issuance of an additional SDEIS prior to the Final Environmental Impact Statement (FEIS). To achieve its intended purpose, this additional SDEIS should have, at minimum, a 90-day public review period.

The comments provided last November are consistent with input we have provided throughout the development of the Project since its initiation in early 2018, including comments dated November 9, 2020, in response to the initial Draft Environmental Impact Statement (DEIS). Below is a list of Montgomery County's most pressing ongoing and unaddressed concerns:

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Local Road Impacts

The SDEIS should, but does not, carefully consider traffic conditions at interchange ramps, cross-streets, nor along local roadways. The analysis of local roadways groups all roadways together, which averages those that may benefit (such as MD 355 outside the Beltway) with those that may worsen (such as the radial arterials within the Beltway). The analysis also uses daily values, which overlooks issues associated with peak hours and peak directions. Averages and generalities hide potentially important information with potential to have meaningful impact on the public.

Delays, speeds, and travel time information for the local network is extremely important information that needs to be known at this stage of the SDEIS. Delaying availability of and consideration of this specific level of information until the FEIS does not allow the public the opportunity to review and comment on this fundamental information that could have substantial impacts on these other roadways.

Transportation Analysis Inconsistencies

Based on the State's analysis, multiple core components of the Purpose and Need do not appear to be achieved by the proposed project. The Purpose and Need references efficiently moving "*goods, services, and people*" but the SDEIS does not appear to address freight movement and the State has expressly refused to evaluate person throughput.

There are multiple segments where the General Purpose Lanes worsen significantly, particularly due to the shifting of bottlenecks on segments of I-270 and I-495 beyond the Project limits. Legal precedents have been established that the National Environmental Policy Act (NEPA) requires mitigation measures to be considered for these adverse impacts. The SDEIS appendices contain numerous examples of significant traffic impacts that are not mentioned in the main document, which means that these impacts are unlikely to be noticed or understood by the public in a review of the SDEIS.

Several performance metrics combine the General Purpose Lanes and Opportunity Lanes together or are missing metrics for the Opportunity Lanes entirely, again limiting the capabilities of public review. A review of Appendix A revealed multiple other apparent errors and inconsistencies that were detailed in the County's November 2021 comments.

Transportation Alternatives

The absence of an analysis of Project alternatives in the SDEIS fails to meet the requirements of NEPA and prevents consideration of alternatives that could better reduce congestion and greenhouse gas emissions. The Project prematurely eliminated transit alternatives and alternatives focused on Transportation System Management and Travel Demand Management. The County has consistently contested that these alternatives were

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eliminated based on flawed reasoning, as noted also in our November 2020 comments on the DEIS.

A 2017 report by the National Capital Region Transportation Planning Board found that the most effective measure to reduce congestion would be traffic demand management, including substantial telework. While the SDEIS reported on levels of traffic during the pandemic, it did not explore how public policies encouraging telework could be an alternative to constructing toll lanes. The Project did not give any consideration of the federal government's decision to permanently increase telework and flexible work schedules. As the largest single employer in the metropolitan region, this policy change could have significant effects on the region. Employer incentives and other policies that encourage telework in the private sector could also reduce congestion and should be considered more seriously in the consideration of potential alternatives.

Environmental Justice; Equity

This corridor has a highly diverse population, with 23% of census tracts (9 of 39 tracts) immediately adjacent to the corridor designated as Equity Emphasis Areas or Equity Focus Areas by the Metropolitan Washington Council of Governments and the Montgomery County Planning Department. Many additional Equity Emphasis/Focus Areas are located a short distance away from the corridor.

Department of Transportation Order 5610.2(a) states that environmental justice principles shall be fully considered throughout the planning and decision-making processes. Guidance issued by FHWA in December 2021 as well as Executive Order 13985 both similarly reiterate the importance of environmental justice analysis and considerations of equity impacts. The worsened General Purpose lanes as well as the physical impacts of the Project's construction prompt environmental justice considerations that do not appear to be considered in the SDEIS. Deferring these analyses to the FEIS does not comply with Federal requirements as it deprives the public the opportunity to review and provide feedback on these impacts or any proposed mitigation measures. An environmental justice analysis needs to be included in the SDEIS.

Environmental Impacts

The consideration of many other environmental impacts and associated mitigation resulting from the construction and operation of the Project are similarly deferred until the FEIS. The analysis is therefore missing substantial information on emissions and other air & water quality metrics, despite the policy under Executive Order 13990 to "reduce greenhouse gas emissions" and a requirement to achieve the Order's policies by including " *input from the public and stakeholders, including State local, Tribal, and territorial officials, scientists, labor unions, environmental advocates, and environmental justice organizations*." This requirement was reiterated by the Council on Environmental Quality (CEQ) when it published in the February 19, 2021, *Federal Register* its notice of

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actions taken to follow-up on Executive Order 13990, stating that "*[NEPA] requires Federal agencies to consider the environmental effects of its proposed actions and involve the public in its decision-making processes. ... Federal courts consistently have held that NEPA requires agencies to disclose and consider climate impacts in their reviews.*"

Environmental metrics will be affected by other elements that have not been considered and reviewed by the public, including the aforementioned impacts to local roadways, increases in Vehicle-Miles Traveled, increased congestion in multiple segments, and how this Project will affect mode share targets included in our County Code and area master plans.

Withholding this information until the FEIS prevents an assessment of the project's consistency with the County's Climate Action Plan, as required by NEPA under 40 CFR § 1502.16(a)(5) and 1506.2(d)(2020). Greenhouse gas emissions are a key concern of the County, and the Climate Action Plan sets a goal of cutting greenhouse gas emissions 80% by 2027 and 100% by 2035. Reducing travel by automobiles and increasing the use of transit and greater use of transportation demand management to achieve trip reductions are key strategies of the County's plan for achieving our ambitious goals.

The Project also appears to treat environmental impacts included in the DEIS and proposed by the SDEIS to be shifted to future phases of work as Project savings and benefits. Deferring this analysis until the FEIS prevents the County from understanding the project's full impacts for its residents and providing meaningful comments about the project, including design and mitigation measures. However, these negative impacts still exist in the long term and should be associated with the Project. This approach of using future negative impacts in a way to advantage today's project is a highly concerning contorting of the intent and spirit of the NEPA process that does not reflect any actual environmental benefits.

Financial Analysis

The SDEIS fails to include financial information, including an estimate of public subsidies, that could be necessary to support this project. Our concern has been heightened by a lawsuit challenging the award of the predevelopment work to Accelerate Maryland Partners (AMP) This lawsuit generated by another bidder, Capital Express Mobility Partners (CEMP) has been allowed to move forward by the Montgomery County Circuit Court. CEMP argues that AMP assumed unrealistic construction costs in its bid. If CEMP is correct, Montgomery County residents could be forced to fund substantial subsidies for the selected concessionaire.

Higher costs could lead the State to reduce funding for future County transportation priorities. We have also continued to express concern, including in our comments on the DEIS, with the risk of potentially competing projects being given lower funding priority

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I-495 and I-270 Opportunity Lanes / Managed Lanes Study
Supplemental Draft Environmental Impact Statement (SDEIS)
March 10, 2022
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from the State. Projects that are high priority for the County and risk negative funding impacts may include improving transit services within the Opportunity Lanes, constructing our master planned Bus Rapid Transit network, or operational improvements to the General Purpose lanes.

Ultimately, based on the lack of appropriate analysis as well as other remaining inconsistencies and shortcomings detailed in our November 2020 and November 2021 comments, the County feels that the information in the DEIS and SDEIS does not comply with NEPA. The lack of opportunity for public input and agency consideration of the FEIS warrants requiring an additional SDEIS. The SDEIS we are requesting should address these substantive issues relating to local road impacts and other issues with the transportation analyses, environmental justice and equity impacts, other environmental impacts including those relating to air and water quality, and financial and contracting considerations.

Should you have any questions regarding these comments and requests, please feel free to contact me or Mr. Chris Conklin, P.E., Director of Transportation, at christopher.conklin@montgomerycountymd.gov.

cc: Stephanie Pollack, Acting Administrator, Federal Highway Administration
Jeanette Mar, Environmental Program Manager, Federal Highway Administration
Jeffrey T. Folden, Director, I-495 and I-270 Project Office, Maryland Department of Transportation
Meredith Wellington, Land Use Planning Policy Analyst, Office of County Executive
Chris Conklin, Director, Maryland Department of Transportation
Glenn Orlin, Senior Analyst, Montgomery County Council
Debra Borden, Principal Counsel, Legal Department, Maryland-National Capital Park and Planning Commission

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SIERRA CLUB MARYLAND CHAPTER (JUNE 30, 2022)

SIERRA CLUB
MARYLAND CHAPTER

Sierra Club Maryland Chapter
P.O. Box 278
Riverdale, MD 20738
(301) 277-7111

June 30, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg,

On Friday June 17, the Maryland Department of Transportation (MDOT) and the Federal Highway Administration (FHWA) released with a 30-day availability period the I-495 & I-270 Managed Lanes Final Environmental Impact Statement (FEIS) and appendices, totaling 26,500 pages in 74 separate files.[1] The undersigned organizations request an additional formal 60-day review period be provided, up to and including September 17, 2022, to allow the public and commenting agencies a meaningful opportunity to review this new document – which most notably includes a revised traffic model that was used to evaluate key alternatives and estimate various impacts – that have not previously been released to the public.

The FEIS, when added to the over 19,000-page draft environmental impact statement (DEIS) and over 8,000-page supplemental draft environmental impact statement (SDEIS) that it incorporates by reference, represents 53,500 pages, which is roughly equal to almost four full 2022 sets of the *World Book Encyclopedia*. It is simply not possible to meaningfully review much less comment on four encyclopedia sets worth of information over 18 work days in a 30-day availability period. We therefore ask that you reconsider the early decision by the FHWA division office not to provide a longer review period. More time is necessary to carry out NEPA's core goal of ensuring meaningful public participation.

[1] After years-long review process, final report on I-495/I-270 widening project is released Nearly 500-page 'environmental impact statement' has more than 26,000 pages of appendices, Louis Peck, June 18, 2022, https://bethesdamagazine.com/bethesda-beat/transportation/after-years-long-review-process-final-report-on-i-495-i-270-widening-project-is-released/

1

Response:

On June 17, 2022, the FEIS was published in the federal register and made available for a 30-day period on the US Environmental Protection Agency's (USEPA) EIS Database website, on the Op Lanes Maryland website, and at 17 public library locations in Maryland, Virginia and Washington D.C. The FEIS was prepared in support of the normal progress of a National Environmental Policy Act (NEPA) Study. After reviewing and considering the many comments received on the Draft Environmental Impact Statement (DEIS) and Supplemental DEIS (SDEIS), the agencies took another hard look at its prior analyses, evaluated accumulated data, refined design to further address operational considerations and, most notably, to further efforts to avoid and minimize impacts.

From the outset of the Study's NEPA process, the Federal Highway Administration (FHWA) as the lead federal agency, and the Maryland Department of Transportation State Highway Administration (MDOT SHA) as the co-lead agency, developed a comprehensive public involvement and engagement strategy designed to obtain input from stakeholders around the entire MLS study area. This strategy combined traditional opportunities for commenting on the DEIS and SDEIS in addition to wide-ranging outreach to community organizations (e.g., church groups, homeowners' associations, public interest groups, and governmental entities), with particular sensitivity and outreach to identified Environmental Justice communities. Refer to FEIS, Chapter 8. The public involvement and engagement process, starting in early 2018 and continuing for over four years, considered the vast diversity of community resources. The MDOT SHA's public involvement strategy ensured the safety of the public during the pandemic while still providing the same opportunities for meaningful participation by the public in the NEPA process and even expanding opportunities using new technologies available.

The DEIS was published on July 10, 2020, and was made available on the I-495 and I-270 Public-Private Partnership (P3) Program webpage (https://oplanesmd.com/deis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's counties, Maryland, Fairfax County, Virginia and Washington D.C. Following publication of the DEIS, FHWA and MDOT SHA provided a 90-day comment period, which is twice the minimum time required by the Council on Environmental Quality (CEQ) regulations. Based on input from the public, community partners, stakeholders, and local and federal officials, MDOT SHA supported extending the DEIS comment period and made a formal request to FHWA, which has authority to grant any extension. The FHWA approved this request and granted a 30-day extension of the public comment period for the DEIS. In summary, the DEIS was made available for comment and review from July 10, 2020 through and including November 9, 2020, a total of four months. During this extended comment period, the agencies received close to 3,000 comments.

Based primarily upon consideration of the large body of comments on the DEIS, the Preferred Alternative was revised to identify Alternative 9 - Phase 1 South. Building off the analysis in the existing DEIS, the SDEIS, published on October 1, 2021, disclosed new information relevant to the Alternative 9 - Phase 1 South as well as additional information accumulated since the DEIS. The majority of the information and analysis in the DEIS remained valid and was referenced accordingly.

According to MDOT's own FEIS press release, it has "modified analysis methodologies, conducted new analyses, studied new or modified existing alternatives, refined design ... , and identified ... mitigation ... [and] unavoidable impacts." The FEIS also includes a new environmental justice analysis never before released to the public. This is not the subject matter of a final EIS but of a supplemental DEIS, which must have a meaningful and proportional public comment period. Finally, with 5,000 comments submitted on the project and MDOT's responses to those comments of varying length and complexity, it is a substantial effort to review those responses for sufficiency and technical accuracy and merit.

With those kinds of significant changes entailing voluminous new material, with new questions about Maryland constructing toll lanes in Virginia,[2] and with a contentious two-state project that will open up Maryland to 70+ miles of privatization of public transportation infrastructure, it is imperative that the FHWA exercise its oversight role to require that this document receive no less than an additional 60-day review period as was provided for the SDEIS.

As is underscored by the MDOT press release, federally required analyses were not presented to the public with a formal comment period.[3] Some key analyses previously presented were incorrect,[4] and the current versions presented as correct do not explain how the previous errors occurred or how they were fixed. So, the public has no basis on which to verify their accuracy.

The National Environmental Policy Act (NEPA) and relevant DOT and FHWA Orders require accurate environmental analyses and meaningful public participation throughout the NEPA process. These requirements can only be met if

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[2] MDOT's Plan to Build Toll Lanes in Fairfax is an Unwelcome Surprise to Some Virginians, Bruce DePuyt, June 16, 2022, https://www.marylandmatters.org/2022/06/16/mdots-plan-to-build-toll-lanes-in-fairfax-is-an-unwelcome-surprise-to-some-virginians/

[3] In a notice of actions following the issuance of President Biden's Executive Order 13990 on January 20, 2021, the Council on Environmental Quality made clear that decisions must consider environmental effects of proposed actions, including greenhouse gas emissions, and must involve the public in the decision-making process. The SDEIS for this project did not include a GHG emissions analysis, deferring it to the FEIS, seven months after the close of the formal public comment process.

[4] The significant critiques of flawed traffic modeling were admitted to "have merit" in the 69th file of the FEIS. T.2.B, Volume 2_SDEIS Community Organization Comments and Responses at CO-828, https://oplanesmd.com/wp-content/uploads/2022/06/68_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.B_Volume-2_June-2022p.pdf

The SDEIS was available for the public to review and comment during a 45-day comment period, which was later extended an additional 15 days, for a total of 60 days. During this period, all comments received on the totality of information available were accepted and considered. The SDEIS was officially made available on the I-495 and I-270 P3 Program webpage (https://oplanesmd.com/sdeis/), on the USEPA EIS Database webpage, and at multiple public locations in hard copy in Montgomery and Prince George's Counties, Maryland, Fairfax County, Virginia, and Washington DC.

In addition to a combined six-month public comment review period for the DEIS and SDEIS, MDOT SHA has held 16 large public workshops, 7 public hearings including virtual and in-person, and over 200 citizen, elected official, community, stakeholder, and business owner meetings. Refer to DEIS, Chapter 7 and Appendix P; SDEIS, Chapter 7; and FEIS Chapter 8 and Appendix R for detailed information on public involvement.

As a result of this continued public involvement and engagement effort, in addition to input from federal, state, and local agencies, the lead agencies refined and presented the Preferred Alternative and potential impacts of the Preferred Alternative. The MLS FEIS included responses to more than 5,000 comments received on the DEIS and SDEIS. The Preferred Alternative reflects changes to address many of the comments including design modifications and adjustments, finalizing technical analyses, continued application of avoidance and minimization efforts, and finalizing mitigation for unavoidable impacts. This is precisely what the NEPA process envisions. Refer to FEIS, Executive Summary for more detailed explanation.

As mentioned above, the FEIS was made available for a 30-day Notice of Availability through various and widely accessible means before the Record of Decision (ROD) was approved. Public involvement and engagement will continue as the project advances to final design and construction. The MDOT SHA will be responsible for implementing strategies, such as public meetings and community events, with the goal of maintaining an open dialogue with stakeholders.

the document issued on June 17 is re-designated to be an interim rather than final document and allotted a meaningful and proportional comment period. As noted before, an FEIS for this project should also have a public comment period of at least 60-90 days.[5] Adequate formal public review periods are needed for both an interim document and for an FEIS to ensure that the public has adequate time for meaningful review of the project's impacts.

The undersigned urge you to uphold federal regulations and provide a meaningful review period that will afford the public an adequate opportunity to review and comment on the new information prior to the issuance of a Record of Decision. This issue has been flagged for FHWA and MDOT repeatedly since January 2022 in letters from Sierra Club Maryland Chapter,[6] the Mayor and Council of Rockville,[7] 82 legislators in the Maryland General Assembly,[8] 10 Prince George's County mayors,[9] the Montgomery County Executive,[10] 32 civic and environmental groups,[11] multiple members of Congress,[12] and now dozens more groups.

We look forward to your prompt action on this critical, time-sensitive issue.

Sincerely,

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[5] Sixty and 75-day FEIS review periods have been provided for other recent highway projects, such as the I-26 Connector in Asheville, NC and the I-45 in Houston, TX.

[6] Sierra Club Maryland Chapter letter to FHWA and MDOT, January 4, 2022, https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/maryland-chapter/SC-Letter-495270MLS-SDEIS-FEISReviewPd-2022Jan4.pdf

[7] Mayor and Council of Rockville letter to FHWA and MDOT, January 26, 2022, https://static1.squarespace.com/static/5b72c6a8da02bc640472bf8c/t/61fee871b03f6828336629d3/1644095602555/FHA+Letter+FINAL+012622%281%29.pdf

[8] Maryland General Assembly letter to FHWA and MDOT, February 22, 2022, https://mcusercontent.com/6cdc39da7c0238a0521e24885/files/932d6527-1fc6-5b38-81ac-cba0cf957ae1/FWHA_Letter.pdf

[9] 10 Prince George's County mayors letter to FHWA and MDOT, February 26, 2022, https://9cb12f8b-0595-4233-98ce-142d43d80a5c.usrfiles.com/ugd/9cb12f_feceda725e324136bb9f7cd6f54b9f33.pdf

[10] Montgomery County Executive letter to FHWA and MDOT, March 10, 2022, https://9cb12f8b-0595-4233-98ce-142d43d80a5c.usrfiles.com/ugd/9cb12f_5ea4194f64224e46b8a0a4706f543f59.pdf

[11] 32 civic and environmental groups letter to Secretary Buttigieg, June 3, 2022, https://www.cabe495.com/_files/ugd/9cb12f_3ea64a8478ba48438955d198aefc629f.pdf

[12] Letter addressed to Secretary Buttigieg.

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Sierra Club Maryland Chapter
Anacostia Watershed Community Advisory Committee
Audubon Mid-Atlantic
Audubon Naturalist Society
Beaverdam Creek Watershed Watch Group
Biodiversity for a Livable Climate
Brandywine TB Southern Region Neighborhood Coalition
Cabin John Citizens Association
Canoe Cruisers Association
Carderock Springs Citizens Association
Cedar Lane Ecosystems Study Group
Central Maryland Transportation Alliance
Chesapeake Climate Action Network
Citizens Against Beltway Expansion
Clean Water Action
Climate Xchange
Coalition for Smarter Growth
Defensores de la Cuenca
Delegate Lorig Charkoudian, Maryland General Assembly
DontWiden270.org
DoTheMostGood
Downtown Residents Advocacy Network (Baltimore)
Environmental Justice Ministry Cedar Lane Unitarian Universalist Church
Friends of Moses Hall and The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated
Friends of Sligo Creek
Greenbelt Climate Action Network
Glen Echo Heights Mobilization

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Greater Farmland Civic Association
HoCo Climate Action
Indivisible Howard County
ISCA - Do Not Expand 495
Maryland Coalition for Responsible Transit
Maryland Conservation Council
Maryland League of Conservation Voters
Maryland Legislative Coalition
Maryland Native Plant Society
Maui Wowi
Mayor Bridget Donnell Newton, City of Rockville
Mayor Patrick Wojahn, City of College Park
National Parks Conservation Association
Neighbors of the Northwest Branch
North Hills of Sligo Creek Civic Association
Our Revolution Maryland
Prince George's County Peace and Justice Coalition
Promenade Towers Mutual Housing Corporation
Rock Creek Conservancy
Rock Creek Hills Citizens' Association
Rogue Tulips LLC
Save BARC
Strong Future Maryland
Takoma Park Mobilization Environment Committee
The Climate Mobilization, Montgomery County Chapter
The Ocean Foundation
Transform Maryland Transportation Coalition

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Transit Choices
Union of Concerned Scientists
Unitarian Universalist Legislative Ministry of Maryland
Urban Breezes
Washington Area Bicyclist Association
Washington Biologists' Field Club
Well Mind Association of Greater Washington
Woodside Forest Civic Association

Cc:
Ms. Polly Trottenberg, Deputy Secretary, U.S. Department of Transportation
Ms. Stephanie Pollack, Acting Administrator, Federal Highway Administration
Mr. Gregory Murrill, Division Administrator, Federal Highway Administration
Mr. James Ports, Maryland Secretary of Transportation
Mr. Adam Ortiz, Division Administrator, U.S. Environmental Protection Agency
Ms. Tammy Stidham, Deputy Associate Area Director – Lands and Planning, National Park Service
U.S. Congressman Anthony Brown
U.S. Congressman Jamie Raskin
U.S. Senator Ben Cardin
U.S. Senator Chris Van Hollen

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SIERRA CLUB MARYLAND CHAPTER (JULY 18, 2022)

July 18, 2022

Ms. Jeanette Mar and Mr. Jitesh Parikh
Environmental Program Manager
Federal Highway Administration, Maryland Division
George H. Fallon Federal Building
31 Hopkins Plaza, Suite 1520
Baltimore, MD 21201
jitesh.parikh@dot.gov
jeanette.mar@dot.gov

Mr. Jeffrey Folden, P.E., DBIA
Maryland Department of Transportation State Highway Administration
I-495 & I-270 P3 Program Deputy Director
707 North Calvert Street, Mail Stop P-601
Baltimore, MD 21202
MLS-NEPA-P3@mdot.maryland.gov
oplanesMLS@mdot.maryland.gov

Re: Comments on I-495 & I-270 Managed Lane Study Final Environmental Impact Statement and Final Section 4(f) Evaluation

The National Environmental Policy Act ("NEPA") mandates environmental impact statements for projects of the type and scale of the I-495 & I-270 Managed Lanes Study ("Project"). In an environmental impact statement, NEPA requires that the relevant agencies disclose significant impacts and that the public have a meaningful opportunity to review and comment on those impacts before major decisions are made. On June 17, 2022, the Federal Highway Administration ("FHWA") and the Maryland Department of Transportation State Highway Administration (the "Agencies") issued a final environmental impact statement ("FEIS") for the Project and opened a 30-day review period for the FEIS.

The FEIS describes the Agencies' preferred alternative and appears to formally conclude the NEPA and Transportation Act 4(f) portions of the Agencies' environmental review process. Despite its length, and despite two rounds of public comments identifying flaws in the prior drafts, the FEIS and its appendices present incomplete and inadequate analyses of environmental impacts and fail to achieve the fundamental objectives of NEPA. The undersigned Organizations oppose the preferred alternative put forth in the FEIS and support the no build alternative.

We provide the comments below to address issues raised by the FEIS. Where new information has become available since the supplemental draft environmental impact statement ("SDEIS"), it has been included and discussed. The comments provided below refer specifically to the FEIS and supplement the comments on the draft environmental impact statement ("DEIS") and SDEIS that were provided to the Agencies on November 9, 2020, and November 30, 2021, respectively, by the Maryland Chapter of the Sierra Club and other organizations. Unfortunately, the FEIS largely disregards the technical and procedural issues raised in the previous comments. Collectively, our comments present failures of the Agencies' environmental review process that, if not addressed, constitute violations of NEPA and other governing statutes that will render any record of decision invalid.

The comments identify the Organizations' key concerns regarding the FEIS, including the FEIS's failure to:

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Response:

The following is a response to the Sierra Club, et al. (hereafter "Sierra Club") comments on the I-495 & I-270 Managed Lanes Study (Study) Final Environmental Impact Statement (FEIS), dated July 18, 2022. The cover letter and executive summary portion of the comment letter summarizes specific comments offered in the rest of the comment. Because all topics summarized in the introductory statement are covered separately below, as well as in responses to common themes raised by other parties, this portion of the comment letter does not require a specific response. The Federal Highway Administration (FHWA) and Maryland Department of Transportation State Highway Administration (MDOT SHA), co-lead agencies for this Study, have also reviewed Exhibits A-M that were included with the comment letter, but are addressed in the topics below and do not require a specific response either.

Throughout these comments, the Sierra Club cites to and/or summarizes various statutes, regulations, federal agency guidance, and case law regarding the National Environmental Policy Act (NEPA) process or other substantive areas of law. These comments generally reflect commenters' interpretations and legal conclusions. The Lead agencies have considered these commented but this response does not require the Lead agencies to specifically address the commenters' interpretation of the law and its application. The following responses focus on the contents of the environmental data and analysis reflected in the FEIS. It follows the table of contents and main issues listed in the comment letter.

Responses to the Sierra Club's comments on the Draft Environmental Impact Statement (DEIS) can be found in **FEIS, Appendix T, Section T.2.A, Volume 3** and responses to the Supplemental DEIS (SDEIS) comments can be found in **FEIS, Appendix T, Section T.2.B, Volume 2.**

I. The Sierra Club's letter stated that the Agencies' Environmental Review Process Fails to Satisfy Public Participation Requirements

FHWA and MDOT SHA responded to the Sierra Club's letter dated June 30, 2022; refer to **page 39** of this **ROD, Appendix D**. The June 30th letter raised the same issues as the July 18, 2022 Sierra Club letter. These comments questioned whether a 30-day availability period was adequate to meaningfully review and comment on the material in the FEIS including supporting appendices. Based on the Council on Environmental Quality (CEQ) regulations, no formal comment period on a FEIS is required and no final decision can be made sooner than 30 days after the FEIS is published in the Federal Register. An extension of the FEIS availability period was not granted by FHWA as there has been extensive opportunity for the public to review and comment on the Project documents including the DEIS and SDEIS over a four-year period. The FEIS was prepared in support of the normal progress of a NEPA Study. That is, after reviewing and considering the many comments received on DEIS and SDEIS the agencies took another hard look at its prior analyses, evaluated accumulated data, refined the Preferred Alternative design to further address operational considerations and most notably to further minimize impacts. The FEIS outlined the changes made since the SDEIS to aid in review of new or updated information. Supporting technical reports appended to the FEIS were analyses presented in the DEIS, updated in the SDEIS, and finalized for the FEIS. For the more detailed response to comments related to the request to extend the FEIS availability period, refer to the FHWA and MDOT's response to the June 30, 2022 Sierra Club comment in **page 39** of this **ROD, Appendix D**.

- Allow meaningful public comment throughout the NEPA review process, in part by failing to provide key documents and analyses that underpin the FEIS
- Address previous flaws and new, serious flaws in the traffic analysis
- Adequately assess impacts to public health from the construction and operation of the Project
- Adequately address significant adverse effects on sensitive historic and cultural resources
- Take the required hard look at environmental justice issues.

As we have consistently noted in our comments, the environmental review process for the Project seemed designed to reach a pre-determined result, namely, to expand I-495 and I-270 with toll lanes, without meaningfully involving the public, considering viable alternatives, or considering the preferred alternative's environmental impacts.

The Agencies must not move forward with the preferred alternative or any of the fundamentally flawed build alternatives without full and proper consideration of additional, less harmful and costly alternatives that address the real needs for transportation improvements in the region and providing the public with a new environmental review document that addresses the failures identified and accords the public a meaningful opportunity to review and comment.

Sincerely,

Sierra Club Maryland Chapter[1]

Aloha Enterprises, Inc.

ArchPlan Inc.

Audubon Naturalist Society

Bikemore

Carderock Springs Citizens Association

Central Maryland Transportation Alliance

Chesapeake Climate Action Network

Citizens Against Beltway Expansion

[1] The Organizations would like to acknowledge Jill Grant & Associates, LLC, Norm Marshall (Smart Mobility, Inc.), John Zamurs, PhD (ZAMURS AND ASSOCIATES, LLC), Ronald Bialek, MPP, Byron Bloch, Roselie Bright, Sc.D., Shannon Browne, PhD, Arthur Katz, and Dr. Benjamin Ross, for assisting the groups in drafting these comments. We would also like to thank the many organizations and volunteers who dedicated their time and expertise to these comments, including: David Cottingham; Barbara Coufal, Co-Chair, Citizens Against Beltway Expansion; Andrea Ferster; Andrew Gallant, Janet Gallant, Co-coordinator, DontWiden270.org; National Parks Conservation Association; Paula Posas; Robert Soreng, PhD, President of the Washington Biologists' Field Club; Sally Stolz, Co-coordinator, DontWiden270.org; Peter Yarrington, Audubon Naturalist Society Volunteer.

The July 18, 2022 letter also claims the Agencies ignored opposing viewpoints, declined to tally the number of comments opposing the project in the FEIS, responded to public comments after the public could formally reply, and responded to similar comments in an inconsistent manor. In total, over 5,000 comments were received during the study comment periods for the DEIS and SDEIS. These comments were organized into relevant comment themes and summarized in respective reports. To be fully transparent and to ensure all comments were able to reach other citizens, the comment summary reports, including the individual submissions, were made publicly available on the Program website. The **FEIS, Appendix T** includes a response to every comment received on the DEIS and SDEIS. There is no requirement to tabulate the comments because every comment and response is available. **FEIS, Appendix T** includes a table of contents and an index to aid readers in finding both a response to their DEIS and SDEIS comments as well as the copy of their comments received. The index is organized first by the commenting entity (i.e. community organization, business, etc.) or individual, then alphabetical by the commenter's last name or organization. The DEIS Comment and Response Index can be found on **Page 2 of Appendix T, Index** and the SDEIS Comment and Response Index on **Page 67 of Appendix T, Index**.

Refer to **Appendix T, Section T.1** for agency comment responses, **T.2** for community organization comment responses, **T.3** for elected official comment responses, **T.4** for business comment responses, **T.5** for form letter comment responses, and **T.6** for individual comment responses. For thematic comment responses, refer to **Chapter 9** of the FEIS.

All Study documents posted on the website are compliant with Section 508 of the Rehabilitation Act of 1973 and follow federal and state accessibility requirements. The files can be read by a computer program to someone who is visually impaired. As included in Exhibit C, MDOT SHA sent a response to Mr. Gallant regarding the protection of files on the website. The files can be printed, they are accessible to the visual impaired in a manner which fully complies with 508 but content is produced in pdf format in an effort to maintain the integrity of the content.

II. The Sierra Club's letter states that Traffic Models Used in the FEIS Are Deeply Flawed

FEIS comments questioned the Study's final traffic forecasts and modeling results. These comments are not based in fact and appear to be based on a misunderstanding of how data was updated and refined between publication of the SDEIS and publication of the FEIS and its supporting documents. FHWA and MDOT followed accepted practice and processes for considering how or if the Preferred Alternative design refinements or other relevant new information would impact traffic forecasts. Any changes to the traffic forecast results in the FEIS properly reflect appropriate and relatively minor updates to modeling inputs based on information available to MDOT SHA following completion of the SDEIS.

The Sierra Club has indicated that the FEIS's traffic model appears to be inconsistent with the traffic model used to predict revenue. Both modeling efforts are based on the Metropolitan Washington Council of Governments (MWCOG) regional travel demand model. However, updates and enhancements to the MWCOG models vary by use and purpose associated with the particular modeling exercise. Per AASHTO's Practitioners' Handbook, Managing the NEPA Process for Toll Lanes and Toll Roads (August 2016): "The NEPA traffic forecasts are intended to provide the basis for an informed Federal decision about the project. For projects involving a PPP or bond financing, it also will be necessary at some point to prepare investment-grade traffic and revenue (T&R) forecasts. The T&R forecasts serve a different purpose from the NEPA forecasts: they provide assurances to investors that traffic levels will be sufficient to support the toll revenues

City of Rockville

Climate Reality Montgomery County

Coalition for Smarter Growth

Conservation Montgomery

DontWiden270.org

Downtown Residents Advocacy Network (Baltimore)

Elders Climate Action Maryland Chapter

Environmental Justice Ministry, Cedar Lane Unitarian Universalist Church

Friends of Moses Hall/The Board of Trustees of Morningstar Tabernacle Number 88, Incorporated

Friends of Sligo Creek

Howard County Climate Action

Indivisible Howard County Maryland

Job Opportunities Task Force

Maryland Conservation Council

Maryland League of Conservation Voters

Maryland Legislative Coalition

Maryland Nonprofits

MLC Climate Justice Wing

National Parks Conservation Association

Neighbors of the Northwest Branch

North Hills of Sligo Creek Civic Association

Northern Virginia Citizens Association

Our Revolution Maryland

Policy Foundation of Maryland

anticipated for the project. These two sets of traffic forecasts generally are conducted separately and involve different methodologies. In many cases investment-grade T&R forecasts are prepared after the NEPA process is completed."

In general, Toll and Revenue modeling is performed for financial planning. It is used in part to generate traffic forecasts that can help identify and evaluate any potential financial risks or uncertainties associated with the project over time. CDM Smith is a company that performs Toll and Revenue studies using proprietary algorithms, data, and analysis, which they performed for the financial planning efforts for this project and to support toll setting. As noted in their report, their work included refinements to the MWCOG model – including adjustments to the population and employment projections, among other things. In addition, the Developer, as MDOT's P3 partner, will perform their own independent Traffic and Revenue studies to support their project financing. Neither Toll and Revenue models are used to evaluate the traffic operations of freeway segments, ramp segments, and intersections within the study area and they do not provide traffic performance measures needed to support NEPA and IAPA evaluations and documentation. When using information from the Toll and Revenue studies, it is also important to keep in mind that, "CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results," as stated in the Final Toll Rate Setting Report.

The traffic modeling and analysis used to support traffic analysis for NEPA and IAPA, as well as engineering design, is also based on traffic forecasts developed from use of the MWCOG travel demand model, but the refinements and post-processing assumptions and methodologies differ from those used in Toll and Revenue model. Based on the MWCOG model and refinements completed as part of the NEPA process, the traffic forecast can then be used to develop VISSIM microsimulation models, the results of which are evaluated to identify the project's traffic impacts and potential areas for design refinements. More specifically, the traffic forecasts in the FEIS were not used to determine when the soft cap would potentially be exceeded; that information would come from the Toll and Revenue studies. Rather, as part of the forecasting assumptions for the NEPA efforts, it was assumed that the maximum throughput in the managed lanes would be capped (by use of toll rates) in order to maintain the minimum operating speed requirement. As stated in FEIS Appendix A, "It should be noted that toll rates are unknown at this point, but they will be dynamic to manage traffic demand in the HOT lanes. For the purposes of this analysis, volumes in the managed lanes were assigned to provide the maximum throughput while maintaining speeds of at least 45 mph in the managed lanes (the federal requirement). This threshold occurs at 1,600 to 1,700 vehicles per hour per lane in the highest demand segment, which equates to a maximum of 3,200 to 3,400 vehicles per hour in the two-lane managed lane network."

The description above helps explain why specific numbers from the Toll and Revenue studies should not be compared to specific numbers from the FEIS forecasts. Nonetheless, it should be noted that despite the differences in modeling purposes, assumptions and methodologies, MDOT's traffic modeling team did coordinate with the ongoing CDM Smith and P3 Developer modeling efforts to compare traffic volume forecasts to confirm relative consistency.

Rogue Tulips LLC

Strong Future MD

Takoma Park Mobilization Environment Committee

The Climate Mobilization, Montgomery County Chapter

Transform Maryland Transportation Coalition

Transit Choices

Voices Maryland

Washington Area Bicyclist Association

Washington Biologists' Field Club

Waterkeepers Chesapeake

Woodside Forest Civic Association

In addition, the FEIS comment questioned the number of traffic model runs used in the analysis reported in the NEPA documentation. As part of MDOT SHA's Draft Application for Interstate Access Point Approval (IAPA), the IAPA Framework Document notes that "Five (5) runs will be performed for each model scenario," (page 24). This approach was approved by FHWA and is consistent with MDOT SHA Guidelines. Refer to **FEIS, Appendix B** for additional details on MDOT SHA's Draft Application for IAPA Approval.

The FEIS comment highlights specific travel time values, noting differences between the SDEIS and FEIS in a series of tables starting on page 18. The concerns are similar to those raised by the Maryland Transit Opportunities Coalition (MTOC) in a letter to FHWA dated July 11, 2022. MDOT's response to the MTOC comments is included in **ROD, Appendix D**. That response includes a list of specific forecasting and coding changes that were made by MDOT between the SDEIS and FEIS in light of the new recommended Preferred Alternative, and as part of the normal course of action for a NEPA study. The changes refined the analysis in response to public, stakeholder, and agency comments concerning the scope of the proposed action, as well as other issues. The updated analysis did not fundamentally alter the overall findings of the MLS. The following explains in greater detail how these refined analyses affected the specific travel time numbers cited by the Sierra Club.

Table 1 on page 18 shows travel time results for three northbound trips on the west side of the study area. The table correctly notes that the travel time results for all three of these trips decreased between the SDEIS and FEIS in both the No Build condition and in the Build condition. The reason that these travel times decreased is due to residual impacts from forecasting changes that were made in the Greenbelt area on the northeast side of the study area related to planned background development at the Greenbelt Metro interchange. The forecasts used in the SDEIS were overly conservative and projected peak period volumes that far exceeded the capacity along the Inner Loop and the ramps serving the Greenbelt Metro interchange. In the 2045 SDEIS models, severe congestion formed on the Inner Loop during the PM peak period approaching Greenbelt. The congestion was so severe that it backed up through the top side of the Beltway and into the west side of the Beltway, which increased travel times for northbound trips, including those shown in Table 1.

Upon review of the SDEIS models following the comment period, it was determined that the Greenbelt forecast projections were not consistent with the MWCOG model trends and therefore needed to be adjusted. The volumes serving the background development were reduced accordingly during development of the FEIS. This change impacted the travel time results reported in the FEIS because there was less congestion on the Inner Loop through the Greenbelt area, which no longer spilled back into the west side of the Beltway. Therefore, travel times improved in the FEIS for the northbound trips listed in Table 1. Because this change was related to background development, it affected both the No Build results and the Build results. While both the No Build and Build travel times reduced in the FEIS, the net difference between No Build and Build remained approximately the same and therefore this change did not fundamentally alter the overall benefits of the Preferred Alternative reported originally in SDEIS Chapter 3 and updated in FEIS Chapter 4, and the general conclusions are the same.

Table 2 reprints some of the values from Table 1, while Tables 3 and 4 highlight the travel time results for some additional trips on the west side of the study area. The explanation for why the travel times decreased between the SDEIS and the FEIS is the same as described above. The letter also highlights these specific

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trips because they are examples of trip pairs in which the projected travel time in the general purpose lanes under Build conditions is higher than for the same trip under No Build conditions. This topic has been brought up before and is addressed in **Section XI.B.6** of the **ROD**. The FEIS shows that the travel times for some Inner Loop trips are "longer" in the Build general purpose lanes than No Build. The reason is that the backups would be so bad in Virginia under the No Build condition that fewer vehicles would actually get across the American Legion Bridge (ALB) during the peak hour. This makes some trips in Maryland under the No Build look better than they are. The Build condition serves much more throughput during the peak hour and there is naturally some increase in travel time during the peak when looking at certain segments. While this affects some trip pairs, including the ones highlighted in the Sierra Club letter, most (76%) of the trip pairs show a benefit from traveling in the general purpose lanes under Build versus No Build, and the average PM travel time change between No Build and Build is a net improvement of 8 minutes of savings when looking at the entire system.

Table 5 and Table 6 show the travel time results for two trips that start on the top side of I-495 and follow the Outer Loop towards the ALB during the PM peak period. The tables highlight a large change in projected travel times for these trips between the SDEIS and FEIS in the No Build model. These travel time increases detailed in the FEIS resulted from correction of a coding error in the SDEIS No Build VISSIM PM peak model that was identified and corrected during development of the FEIS. The issue was related to the routing of HOVs traveling from the top side Outer Loop to I-270 northbound, which caused severe congestion on the Outer Loop approaching the east spur to I-270 by sending too many vehicles north towards I-270 and not enough along the Outer Loop towards the ALB. This change did not significantly alter the overall network-wide results for the No Build Alternative, but rather shifted some of the congestion from one area to another. Therefore, the coding issue was not initially apparent when reviewing the overall findings presented in the SDEIS. Upon closer review of the SDEIS models following the comment period, this issue was identified and corrected. This change affected the travel times in the No Build PM model in a couple of locations. Travel times on the top side Outer Loop approaching Connecticut Avenue decreased between the SDEIS and the FEIS, while travel times on the west side Outer Loop approaching the ALB (such as those highlighted in Table 5 and Table 6) increased between the SDEIS and the FEIS. But as noted above, the overall No Build travel times and delays were not significantly affected by the change. This coding change was applied to the No Build model only, and therefore did not affect the Build results for these trips.

As shown in Table 5, the Build travel times are similar between the SDEIS and the FEIS. However, Table 5 and Table 6 show the incorrect values for the general purpose lane travel times for the Build condition. The values for the SDEIS and FEIS appear to be transposed in the Sierra Club letter – for the trip from Connecticut to GWP (Table 5), the reported travel time in the SDEIS is 9.8 minutes (not 10.1 minutes), while the reported travel time in the FEIS is 10.1 minutes (not 9.8 minutes). A similar error was made in the Sierra Club letter in Table 6 for the trip from Connecticut to River Road. The reported travel time in the SDEIS is 6.6 minutes (not 7 minutes) and the reported travel time in the FEIS is 7 minutes (not 6.6 minutes). This error is carried over into the "Difference" row, and therefore the "Increase Time" values shown in the yellow box in Table 5 and Table 6 are incorrect. If the proper values were used, the calculated increase time would be 440% (not 470%) in Table 5 and 586% (not 656%) in Table 6. As with the other changes described above, the coding change made by MDOT between the SDEIS and FEIS did not fundamentally alter the overall benefits of the Preferred Alternative reported originally in SDEIS Chapter 3 and updated in FEIS Chapter 4, and the general conclusions are the same.

The July 18, 2022 comment letter also suggested that MDOT SHA should be using empirical data from other projects in Virginia and Maryland. MDOT SHA did look at similar projects in Virginia, Maryland, and around the country, and that those projects showed system wide benefits to constructing managed lane facilities. FHWA has been promoting the use the managed lanes for many years, as noted in the example from 2004: https://highways.dot.gov/public-roads/novemberdecember-2004/managed-lanes.

For additional information refer to the following documents: **FEIS Chapter 4; FEIS, Appendix A, Final Traffic Analysis Technical Report; FEIS Appendix B, and MDOT SHA's Draft Application for Interstate Access Point Approval.** Responses to the Sierra Club's comments on the DEIS can be found in **FEIS, Appendix T, Section T.2.A, Volume 3, page CO-535** and responses to the SDEIS comments can be found in **FEIS, Appendix T, Section T.2.B, Volume 2, page CO-826.**

III. The Sierra Club's letter states the FEIS Fails To Address Impacts to Public Health

The FEIS comment claims that public health was not addressed and ties it to a need for air quality and traffic safety analyses. This is not accurate as these analyses have been conducted for the Study. Specifically, the FEIS addresses comments received on public health in a response found on **page 9-56 of the FEIS, Chapter 9**. In addition, air quality and traffic safety analyses have been completed and documented.

While safety was not identified as a need for the Study, a safety analysis was conducted as part of MDOT SHA's Draft Application for IAPA Approval; refer to **FEIS, Appendix B** for additional details. That safety evaluation included a thorough review of existing crash data; an evaluation of crash rates and the identification of high crash locations; a qualitative assessment of how key design elements would be expected to influence safety; and a quantitative analysis that provides relative comparison results of predictive crash analysis for the No Build and Preferred Alternative. The safety results demonstrate that the Preferred Alternative should not have a significant adverse impact on the safety of the study corridors.

The air quality analysis is thoroughly documented in the DEIS, SDEIS, and FEIS; refer to **DEIS, Chapter 4, Section 4.8; DEIS Appendix I; SDEIS, Chapter 4, Section 4.8; FEIS, Chapter 5, Section 5.8; FEIS, Appendix K, and FEIS, Chapter 9, Section 9.3.4.F**. As stated in the FEIS, the Study is located in an attainment area, as defined by US Environmental Protection Agency (USEPA), for carbon dioxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$); therefore, transportation conformity requirements pertaining to these criteria pollutants do not apply to this project and no further emissions analysis were evaluated. Montgomery County, Maryland and Fairfax County, Virginia are listed by USEPA as non-attainment for the 2015 8-hour ozone standard. However, the National Capital Region Transportation Planning Board updated the Visualize 2045 plan in 2022 and the design concept and scope for the Selected Alternative is included in the Air Quality Conformity analysis accompanying the update. As the Study is included in the conforming long-range plan and the Air Quality Conformity analysis, the Selected Alternative would not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards including ozone.

EXECUTIVE SUMMARY

Despite its length, and despite two rounds of public comments identifying serious flaws in the prior drafts, the FEIS and its appendices present incomplete and inadequate analyses of environmental impacts and fail to achieve the fundamental objectives of NEPA. The signatory Organizations to this comment oppose the preferred alternative put forth in the FEIS and support the no build alternative.

Viewed through the lens of NEPA's twin goals—disclosure of significant impacts and public participation—the Project's environmental review process has been operationally and legally insufficient. The FHWA- and MDOT-approved NEPA-documents have failed in numerous required areas to disclose significant impacts. The NEPA process led by these two agencies failed to allow for meaningful public participation by assigning inadequate comment periods for voluminous documents and by failing to respond to comments provided by the public and elected officials until after the public comment process closed, precluding a productive back-and-forth discussion between the public, their elected officials, and the agencies.

These comments identify the Organizations' key concerns regarding the FEIS, including but not limited to the following:

- The FEIS process itself was flawed. Public comment periods were too short to allow meaningful comments on the voluminous documents and attachments that comprised the FEIS, SDEIS, and DEIS. The Agencies provided only an availability period rather than a public comment period on the FEIS and did not even provide an email address for submission of comments. The FEIS, like the DEIS and SDEIS, relies on documents and data that the Agencies have unlawfully withheld from the public. The FEIS also fails to meaningfully respond to public comments.

- There are serious flaws in the traffic analysis. Based on changes between the model outputs in the FEIS and SDEIS, it appears that manipulation of the models may have occurred. Like others, we call on the U.S. DOT to review the traffic model in the FEIS to ensure that the ROD is based on valid and credible traffic modeling. Moreover, the information presented in the FEIS shows that the preferred alternative will create new and larger traffic problems at key interchanges and merge areas by creating bottlenecks. The limited benefits of the toll lanes, available when most needed only to those who can afford them, cannot justify the magnitude of harm they will cause.

- The FEIS ignores the negative impacts of the preferred alternative on safety on the toll lanes, general purpose lanes, and arterial roads. These human health impacts must be evaluated and presented for public review and comment. The preferred alternative will increase vehicle miles traveled and those extra miles will lead to more (preventable) deaths on the highway. In addition, the air pollution and, specifically, the extra particulate matter pollution caused by those extra miles will cause innumerable health impacts to the people living along the highway.

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As documented in the FEIS and in accordance with the latest mobile source air toxics (MSAT) guidance, the Study is best characterized as one with "higher potential MSAT effects" since the projected Design Year traffic is expected to reach the 140,000 to 150,000 average annual daily traffic (AADT) criteria.[1] Therefore, a quantitative MSAT emissions analysis was conducted. The results of the MSAT analysis show that all of the MSAT pollutant emissions are expected to increase slightly for the Preferred Alternative when compared to the No Build condition for 2025 and 2045. All MSAT pollutant emissions are expected to significantly decline in the Opening (2025) and Design years (2045) when compared to existing conditions (2016). These long-term reductions occur despite projected increase in vehicle miles traveled (VMT) from 2016 to the 2025 and 2045 Build scenarios. Refer to **FEIS, Chapter 5, Section 5.8** and **FEIS, Appendix K, Section 3.3.3** for additional detail on the MSAT results.

As documented in the FEIS, to date, no national standards for greenhouse gas (GHG) emissions have been established by the USEPA under the Clean Air Act and there is no regulatory requirement that has been established to analyze these emissions at a project level for transportation projects. Consistent with the 2016 CEQ Final GHG NEPA guidance,[2] a quantitative GHG analysis was conducted on the six Build Alternatives and the Preferred Alternatives as documented in the DEIS and FEIS, respectively. Since there is no approved methodology for conducting a project-level quantitative GHG emissions analysis, there are numerous parameters that could be applied to conduct such a review. Consistent with FHWA guidance on developing an affected network to analyze project-related pollutants, such as MSATs, MDOT SHA analyzed GHG emissions using the same affected network as the MSAT analysis. Refer to **FEIS, Appendix K, Section 3.4.1** for the GHG results.

Air quality considerations during construction are documented in **FEIS, Chapter 5, Section 5.23.3** and **FEIS, Appendix K**. The results of the analysis of operational emissions of GHGs during construction using FHWA's Instructure Carbon Estimator can be found in **Appendix B of the Final Air Quality Technical Report (FEIS, Appendix K)**.

While no significant increase in GHG emissions from the Preferred Alternative was noted, MDOT SHA has committed to implementing a Greenhouse Gas Reduction Program to reduce emissions during construction. Refer to **ROD, Appendix A, Table 1**.

IV. The FEIS's Discussion and Evaluation of Plummers Island, Certain NPS Lands, the Potomac River, and Impacts to the Northern Long-Eared Bats and Other Bats Is Incomplete and Contrary to Applicable Legal Requirements

The FEIS comments stated that the FEIS failed to acknowledge the full scope of impacts to Plummers Island, including the long-term research plots and sensitive research sites that will be destroyed by the project. This is not accurate. **FEIS Appendix T, Section T.2.A Volume 2, page CO-347** includes MDOT SHA's responses to comments from the Washington Biologist Field Club (WBFC) including specific responses that address these impacts to Plummers Island and the research plots. In addition, Plummers Island is discussed in the **FEIS, Chapter 5, Sections 5.4, 5.7, 5.12, 5.17, and 5.19; FEIS, Appendix G, Final Section 4(f) Evaluation; FEIS, Appendix M, Natural Resources Technical Report;** and **FEIS, Appendix N Final Avoidance, Minimization and Impacts Report.**

[1] Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. October 18, 2016. https://www.fhwa.dot.gov/environMent/air_quality/air_toxics/policy_and_guidance/msat/page03.cfm

[2] https://www.federalregister.gov/documents/2016/08/05/2016-18620/final-guidance-for-federal-departments-and-agencies-on-consideration-of-greenhouse-gas-emissions-and

- The FEIS still does not adequately analyze air emissions, including the increase the Project will cause in harmful particulate matter and greenhouse gas emissions. Like the air quality analyses presented in the DEIS and SDEIS, the limited and error-filled air quality analysis presented in the FEIS does not support the general statements in that document downplaying air quality impacts, and in fact shows the Project will impair the health of communities around the Project, including environmental justice communities. Shockingly, the FEIS fails to meaningfully acknowledge or propose to mitigate the harmful air quality impacts and other pollution caused by construction of the preferred alternative, including from silica dust, a carcinogenic air pollutant generated by highway construction.

- The FEIS fails to adequately acknowledge or address the Project's adverse effects on historic and cultural resources, including the Morningstar Tabernacle No. 88 Hall and Cemetery in the historic Black community of Gibson Grove in Cabin John, Maryland, and Plummers Island, a globally unique biodiversity hotspot and site of over 120 years of long-term research in the D.C.-metro area. The Agencies have also failed to comply with their duties under the Section 4(f) of the Department of Transportation Act (Section 4(f)) with respect to these resources in numerous ways. Throughout the process, the Agencies rejected reasonable, prudent, and feasible alternatives that would minimize harm or avoid the use and destruction of significant features and attributes of these important historic resources and, ultimately, made arbitrary determinations about the adverse effects from the Project by failing to consider many important cumulative impacts from highway construction and operation. In the case of Morningstar Tabernacle No. 88 Hall and Cemetery, FHWA came to its conclusion of no adverse effects by wrongly ignoring the historic injustices caused by the highway construction in the 1960s.

- The FEIS fails to take the required hard look at environmental justice issues. The FEIS overlooks many of the harms that EJ communities will suffer during construction and operation of the preferred alternative, including localized air quality impacts from newly created bottlenecks and impacts from the loss of an otherwise free lane on I-270. In its belated analysis of adverse impacts to EJ communities, the Agencies use a flawed methodology and fail to grapple with historic inequities facing those communities from the initial construction of the highway system and the greater susceptibility of EJ populations to the impacts of environmental pollution.

- The FEIS does not adequately analyze impacts on federally threatened or endangered species and state rare, threatened, or endangered species.

As we have consistently noted in our comments, the environmental review process for the Project seemed designed to reach a pre-determined result, namely, to expand I-495 and I-270 with costly toll lanes, without meaningfully involving the public, considering viable alternatives, or

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The FEIS comments stated that MDOT SHA failed to respect WBFC's role on Plummers Island throughout the planning process and provide appropriate advanced notice for disturbances to the island. FHWA and MDOT SHA have met with the WBFC representatives directly 3 times during the NEPA process for the Study. For access to Plummers Island, MDOT SHA secured permits with the National Park Service (NPS), the property owner, for all work done on NPS land and coordinated as agreed upon with NPS for all access to the properties. In addition, NPS has coordinated directly with WBFC several times.

Plummers Island is part of the Chesapeake and Ohio Canal National Historical Park and is owned by the NPS. As part of the Section 106 coordination for the Study, MDOT SHA completed the National Register of Historic Places (NRHP) determination of eligibility (DOE) form, included in **FEIS, Appendix I** and as Exhibit J in the Sierra Club FEIS comment letter. Plummers Island is a recognized ecologically sensitive and an NRHP-eligible historic property in addition to being part of the larger Chesapeake and Ohio Canal National Historical Park. The WBFC is a Section 106 Consulting Party for the Study and in this role they have had opportunities to comment on the project, the adverse effects and mitigation for impacts to Plummers Island. The specific comments from the WBFC on the Programmatic Agreement (PA), which were included as Exhibit M in your comment letter, were responded to by MDOT SHA. All of the consulting party comments on drafts of the PA were responded to and distributed to the consulting parties.

The FEIS comments state that the FEIS does not sufficiently explain why the west shift option for the American Legion Bridge (ALB) was rejected. This is not accurate. The FEIS includes this explanation in **FEIS Appendix N**, **pages 6 through 10 and 17**.

The FEIS comments states that mitigation for impacts to Plummers Island should have been evaluated in the NEPA process from the beginning and not just the Section 106 Process that will conclude after the comment period is over and the ROD is signed. The DEIS, SDEIS and FEIS document the mitigation that has evolved through the NEPA process in consultation with the regulatory agencies and with feedback from stakeholders and public comments. The public had an opportunity to review the final mitigation and commitments during the FEIS availability period. **FEIS, Chapter 7** and **Appendix A** of the ROD, document the mitigation and commitments developed during the NEPA process. Specifically, there is a commitment with the NPS to evaluate additional options for the ALB during final design that would further minimize or avoid physical impacts to Plummers Island.

The FEIS comments stated that the natural resource mapping is inaccurate. MDOT SHA does not agree with this assertion and believe the mapping to be complete. **FEIS Appendix T DEIS and SDEIS Comments and Responses Section T.2A Volume 2, page CO-351** includes comment responses that describe what is included in the project mapping.

The FEIS comments stated that the FEIS fails to accurately describe the likely impacts of the Preferred Alternative due to risks of catastrophic flooding to Plummers Island, and further states that the flooding issues from the planned caisson and pier emplacements of the ALB and leveling or trimming of the Plummers Island rock ridge were not fully addressed in the FEIS. This is not accurate. **FEIS Appendix T, DEIS & SDEIS Comments and Responses, Section T.2.B, Volume 1, page CO-717** addresses these concerns and indicate that full

considering the full range of the preferred alternative's environmental impacts. The Agencies should have aimed to provide a model process here that not only met but exceeded the legal baseline for proper review in recognition that there is a wider scope of impacts—including societal impacts relating to loss of governmental control and accountability—that need to be discussed for projects proceeding under a public-private partnership. The I-495 & I-270 Managed Lanes Study project and future projects being attempted as public-private partnerships have different long-term impacts than projects using a conventional design-build procurement process, which has been the norm since the interstate system developed over a half century ago.

I. The Agencies' Environmental Review Process Fails to Satisfy Public Participation Requirements.

An EIS has "twin functions": preparation of the EIS is designed to require agencies to take a hard look at the consequences of their proposed actions, and distribution of the EIS is designed to provide important information about the proposed action to the public for notice and comment. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, 356 (1989). The NEPA process relies on public scrutiny. *See* 40 C.F.R. § 1500.1(b) (2019). Public scrutiny is meaningful only if the agencies involved provide the public with sufficient information and time to craft their comments.

Here the Agencies have instead thwarted public participation by limiting comment periods, declining to provide *any* public comment period on the FEIS, let alone one of sufficient length, and issuing their responses to comments in unwieldy PDFs that are hard to open and navigate and inaccessible to people with certain disabilities. For these reasons, as well as those detailed further below, the Agencies have failed to satisfy their public participation requirements.

A. The 30-day Availability Period on the FEIS Is Insufficient and Must Be Extended.

The 26,500-page FEIS includes new studies, a revised traffic model, and a new environmental justice analysis that the public has not had any opportunity to review. A 30-day availability period without even an email address listed for submitting comments[2] does not provide meaningful opportunity to review and comment on this FEIS. According to MDOT's own press release, the FEIS contains "modified analysis methodologies, conducted new analyses, studied new or modified existing alternatives, refined design ... , and identified ... mitigation ... [and] unavoidable impacts." We therefore reiterate our letter-request to Secretary Pete Buttigieg, of June 30, 2022, for a comment period of at least 60 days.[3]

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[2] Op Lanes Maryland, Environmental I-495 & I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS), last accessed on July 9, 2022 at https://web.archive.org/web/20220709150006/https:/oplanesmd.com/feis/.

[3] Letter from the Sierra Club Maryland Chapter, et al. to Secretary Buttigieg (June 30, 2022), *available at* https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/maryland-chapter/62groups_495-270FEIS_letter_SecButtigieg_30Jun2022.pdf and attached as Exhibit A. We will be providing other materials referenced in these comments under separate cover.

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hydrologic and hydraulic analysis (H&H) will be completed during final design to ensure that adverse flooding impacts due to the ALB construction are reduced to the maximum extent practicable. The rock ridge will not be trimmed or leveled as part of the project. The issue of potential flooding impacts were minimized to the extent possible during preliminary design of the Preferred Alternative.

In addition, the FEIS comments stated that the data being used to evaluate construction impacts from 100-year floods is outdated and understates the risks to Plummers Island. The current regulatory requirement for flood consideration is to use the rainfall intensity associated with a 100-year flood event. **FEIS Appendix T, DEIS & SDEIS Comments and Responses, Section T.2.B, Volume 1, page CO-717** discusses the 100-year storm and how the project will address flooding. Should the 100-year event volumes be updated during final design, the project will use the revised regulatory volumes for H&H analysis.

MDOT SHA has made a commitment to maintain access to Plummers Island for construction purposes by bridging over the oxbow of the Potomac River without placing any materials or fill within the stream channel. An additional commitment to implement best management practices during the replacement of the ALB crossing the Potomac River such as extensive in-stream work and using coffer dams and temporary construction trestles to avoid and minimize impacts to the river and its aquatic biota. Refer to **FEIS, Chapter 7** and **ROD, Appendix A, Table 1**.

FEIS comments stated that that the Potomac River and the drinking water drawn from the Potomac River would be negatively impacted by runoff from the ALB. The primary drinking water intake in the Potomac River is located above Great Falls and outside the project. The water intake at Little Falls Dam is only used intermittently. The NRTR does acknowledge the potential to increase contaminants to the raw water drawn from the Potomac River prior to being treated and distributed as drinking water.

The FEIS comment states there is no stormwater management planned for the ALB, and claims this may run afoul of Clean Water Act requirements. As explained in **FEIS, Chapter 3, Section 3.1.6**, direct discharge at the ALB qualifies for a waiver from quantity management because the runoff from a bridge will enter the major waterway significantly before the peak in the waterway elevation and therefore will not affect downstream flooding. Additionally, the NPS has jurisdiction over the land on both sides of the river and has determined that no SWM will be permitted in the circumstances presented.

The FEIS comments stated that the level of tree impacts on NPS lands is unacceptable and that there is no mitigation proposed. This is inaccurate. MDOT SHA has worked closely with NPS to avoid and minimize impacts to forests and trees on NPS property to the greatest extent practicable. FHWA and MDOT SHA have coordinated closely to develop acceptable levels of mitigation for impacts to NPS property and resources on their property. Separately, the Department of Interior and NPS have concurred with the FEIS and its proposed level of impacts and mitigation. **FEIS, Chapter 5, Section 5.16.4 page 5-110** summarizes the forest and terrestrial vegetation components of the comprehensive ecological restoration plan for mitigation of impacts to NPS property.

Our request for an adequate comment period is not new. In the SDEIS, the Agencies announced that they would defer critical analyses until the FEIS. We reiterate our SDEIS comments that this delay of critical analyses contravenes the NEPA process. SDEIS Comments at iii, 2-3, 74, 98, 100-03, 110-12, 122-23, 128, 136-37, 151, 154, 171, 173.[4] Given this improper delay, since January 2022, we and others have explained to FHWA and MDOT the need for an extended comment period on the FEIS. We hereby incorporate by reference the letters from the Sierra Club Maryland Chapter,[5] the Mayor and Council of Rockville,[6] 82 legislators in the Maryland General Assembly,[7] ten Prince George's County mayors,[8] the Montgomery County Executive,[9] 31 civic and environmental groups, and multiple members of Congress.[10] As many Maryland legislators explained in their request, without providing a meaningful opportunity for public comment on the FEIS that includes the ability to comment on "critical analyses needed for the public and policymakers to provide input" the public is unable to "shape final decisions about the I-495/I-270 toll lanes," as required by law.

After the FEIS was released, letter-requests to FHWA for a 60-day review and comment period were made by 62 local and national groups, several Maryland jurisdiction representatives,[11]

[4] Sierra Club, et al., Comments on I-495 & I-270 Managed Lane Study Supplemental Draft Environmental Impact Statement and Updated Draft Section 4(f) Evaluation (Nov. 30, 2021) (hereinafter "SDEIS Comments"), *available at*, https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/maryland-chapter/2021-12-27%20-%20Sierra%20Club%20et%20al.%20SDEIS%20comments.pdf.

[5] Letter from Josh Tulkin to Jeanette Mar et al. (Jan. 4, 2022), attached as Exhibit A, *available at* https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/maryland-chapter/SC-Letter-495270MLS-SDEIS-FEISReviewPd-2022Jan4.pdf.

[6] Letter from Bridget Donnell Newton, Mayor, et al. to Jeanette Mar et al. (Jan. 26, 2022), attached as Exhibit A, *available at* https://static1.squarespace.com/static/5b72c6a8da02bc640472bf8c/t/61fee871b03f6828336629d3/1644095602555/FHA+Letter+FINAL+012622%281%29.pdf.

[7] Letter from Senator Pamela Beidle et al. to Gregory Murrill, Div. Admin., FHWA, Maryland Division (Feb. 22, 2022), attached as Exhibit A, *available at* https://mcusercontent.com/6cdc39da7c0238a0521e24885/files/932d6527-1fc6-5b38-81ac-cba0cf957ae1/FWHA_Letter.pdf.

[8] Letter from Mayor Sadara Barrow, et al,. to Gregory Murrill, et al. (Feb. 26, 2022), attached as Exhibit A, *available at* https://9cb12f8b-0595-4233-98ce-142d43d80a5c.usrfiles.com/ugd/9cb12f_feceda725e324136bb9f7cd6f54b9f33.pdf.

[9] Letter from Marc Elrich, Montgomery County Executive Gregory Murrill, et al. (Mar. 10, 2022), attached as Exhibit A, *available at* https://9cb12f8b-0595-4233-98ce-142d43d80a5c.usrfiles.com/ugd/9cb12f_5ea4194f64224e46b8a0a4706f543f59.pdf.

[10] Letter from Rep. Anthony Brown & Rep. Raskin to Secretary Buttigieg (June 13, 2022), attached as Exhibit A.

[11] Letter from 62 local and national civic and environmental groups and several Maryland jurisdiction representatives to Secretary Pete Buttigieg (June 30, 2022) attached as Exhibit A, *available at* https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/maryland-chapter/62groups_495-270FEIS_letter_SecButtigieg_30Jun2022.pdf

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The FEIS comment states further investigation and justification required into whether it is legal without Congress's review and approval to de-federalize Capper-Crampton lands and transfer to states for transportation use. FHWA and MDOT SHA have coordinated with the NPS and National Capital Planning Commission throughout the NEPA process on potential impacts to park property acquired with Capper-Cramton funding. This coordination and impacts are described on **page 5-29 and 5-30** of the **FEIS, Chapter 5**. As stated, after the conclusion of the NEPA process and if NPS agrees to the use of the impacted lands, FHWA would officially request the land for the highway purposes via execution of a highway deed easement, which does not require Congressional review.

The FEIS comment claims information on recreational use of the Potomac River during construction was not addressed and that the Canoe Cruisers Association comments were dismissed. A response to the Canoe Cruisers Association SDEIS Comment letter can be found in **FEIS, Appendix T, Section T.2.B, Volume 1,** which includes a response on river access during construction.

Furthermore, the Sierra Club letter states, the EIS lacks identification and Section 4(f) analysis on impacts to Potomac River. This a false statement. The Potomac River is a natural feature, rivers are not subject to Section 4(f) requirements, and it is not a district, site, structure, building, or object and not considered a historic property under Section 106 of NHPA. While the river was not evaluated under Section 4(f) or Section 106, it was considered as a drainage basin, watershed and for surface water quality in **FEIS, Section 5.13** and **FEIS, Appendix M**. In addition, MDOT SHA has committed to consult with NMFS and MDNR when construction plans are developed for roadway crossings of the Potomac River and Cabin John Creek, the two known anadromous fish use areas, to ensure that impacts due to construction and permanent fill are minimized to the extent practicable. Refer to **FEIS, Chapter 7** and **ROD, Appendix A, Table 1**.

FEIS comments state that the project failed to properly survey for rare, threatened, and endangered bat species and that the methodology used was not sufficient. Refer to the **FEIS, Chapter 5, Section 5.19.2.A** for a summary of the survey information conducted for the Study on the Northern Long-eared Bat (NLEB); additional details are documented in **FEIS, Appendix M**. The bat survey methodology used for the Managed Lanes Study is in keeping with the US Fish and Wildlife Service (USFWS) survey protocol, *Range-wide Indiana Bat Summer Survey Guidelines, 2020*. USFWS requested that MDOT SHA not conduct mist netting due to the risk of listed bats contracting COVID. The Study's bat survey plan was approved by USFWS prior to the commencement of the acoustic survey. Acoustic surveys were conducted in the vicinity of the ALB on both sides of the Potomac River. The results of bridge surveys for the presence of roosting bats and evening emergence surveys for bats potentially roosting on the ALB and Northwest Branch Bridge in 2019 were also provided in **Appendix P** of the **Final Natural Resources Technical Report (FEIS, Appendix M)** and the Bridge Survey Report for the Northern Long-eared Bat (Myotis septentrionalis) and Indiana Bat (Myotis sodalis), of the **Final Natural Resources Technical Report** (**Appendix P** of **FEIS, Appendix M**).

The FEIS comments indicated that the FEIS should have considered and addressed the effects of the U.S. District Court for the District of Columbia determination that the designation of the NLEB as threatened, rather than endangered, was arbitrary and capricious and the project should not have relied upon the 4(d) Rule to determine adequate species protection. FHWA and MDOT SHA have coordinated closely with the

24 members of the Montgomery County Delegation of the Maryland General Assembly,[12] and, recently, from the Rockville City Council.[13]

> The letter from the Maryland Delegates and Senators stated:
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> [T[he public, its representatives, and reviewing agencies can only now begin examining long-requested environmental justice and greenhouse gas emissions analyses, mitigation plans, the project's recently changed traffic model, and MDOT's responses to the 5,000 comments it received during the public comment periods for the Draft EIS and Supplemental Draft EIS. … In a February 22, 2022, letter to the FHWA and MDOT, over 80 members of the Maryland General Assembly called for a redo of the project's Supplemental Draft EIS to include the key missing analyses.

In spite of that February 22, 2022, letter, the Agencies did not redo the SDEIS and instead proceeded to release the 26,500 page FEIS. The FEIS includes many new analyses, but the public was provided no formal public comment period to meaningfully review and address the flaws in these late-breaking analyses. Like those legislators, we call on you to open a formal public comment period of sufficient time to meet your statutory obligations under NEPA.

In addition, as noted above, the FEIS incorporates new traffic data and analysis, and these inputs were not released as part of the FEIS—contrary to NEPA's requirements that the underlying data requested must be disclosed publicly with the FEIS. 40 C.F.R. § 1500.1(b) (2019) ("NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA"); *id.* § 1502.21 (2019) (underlying data may be incorporated by reference only if "it is reasonably available for inspection by potentially interested persons within the time allowed for comment"); *WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 925 (9th Cir. 2015) ("To fulfill NEPA's public disclosure requirements, the agency must provide to the public 'the underlying environmental data' from which the [agency] develops its opinions and arrives at its decisions."). The Agencies' failure to provide this data before *and after* releasing the FEIS violates NEPA.

On June 29, 2022, MD Sierra Club requested the underlying data for the revised traffic model.[14] Rather than comply with NEPA's mandates and release these traffic data and analyses, we had to request them from MDOT and, as of the submission of these comments, MDOT has not yet released them. MDOT stated that it is processing our request not under NEPA but, rather, as a Maryland Public Information Act request and could not commit to providing the data in time for us to analyze and address them in these comments. MDOT's information officer explained:

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[12] Letter from 24 Delegates and Senators in the Montgomery County Delegation of the Maryland General Assembly to Gregory Murrill, et al. (July 8, 2022), attached as Exhibit A.

[13] Robert Dyer, Rockville Mayor & Council Ask for More Time To Study New I-495/I-270 Managed Lanes Material, Rockville Nights (July 12, 2022), *available at* http://www.rockvillenights.com/2022/07/rockville-mayor-council-ask-for-more.html?m=1.

[14] *See* Smart Mobility, Inc. Report, attached as Exhibit B, App'x A.

USFWS throughout the NEPA process regarding the NLEB. MDOT SHA went above and beyond federal requirements and agreed to a voluntary time of year restriction for tree clearing from May 1 to July 31 of any year within a 3-mile buffer of the positive acoustic detection of the NLEB to protect the NLEB. USFWS provided a SDEIS comment indicating that the project would need to reinitiate Section 7 consultation if the NLEB listing status changes. Until the NLEB status is changed by USFWS, the current Section 7 coordination stands and is complete.

The FEIS comments stated that the proposed construction in Fairfax County, Virginia associated with the Preferred Alternative was not presented to the public until the FEIS was released in June 2022. This is not accurate. Throughout the NEPA process, MDOT SHA has coordinated closely with Virginia Department of Transportation (VDOT) and Fairfax County. Public outreach to Fairfax County residents has included direct meetings as well as multiple indirect notifications, including newspaper advertisement, radio spots, and email blasts. The DEIS, SDEIS and FEIS have been publicly available online and in a Fairfax County Public Library. All alternatives considered throughout the NEPA process have included proposed construction in Fairfax County, Virginia.

The FEIS comments stated that the public did not learn about the potential impact to Virginia state-endangered Little Brown Bat and Tri-colored Bat until the FEIS was released in June 2022. MDOT SHA requested a list of potentially affected species from Virginia Department of Wildlife Resources (DWR) prior to the DEIS publication. DWR provided a response after the DEIS was published that these two bat species could potentially occur within the Virginia portion of the study corridor. MDOT SHA completed bat survey data analysis and included its results in the FEIS. Presence of the tri-colored bat was confirmed, but no Little Brown Bats were identified. Virginia DWR agreed to the time of year restriction for tree clearing within the Virginia portion of the Preferred Alternative from April 1 – October 31 of any year to avoid impact to tri-colored bat roost trees during roosting season.

V. The Sierra Club's letter states the FEIS Fails to Meet the Agencies' Environmental Justice Obligations Despite Numerous Commenters' Efforts in Identifying Deficiencies in the Agencies' Analysis

The comments stated that the environmental justice (EJ) analysis had not been previously released to the public for review and comment. This is not accurate. The DEIS, SDEIS, and FEIS all documented the EJ analysis completed for the Project; refer to **DEIS, Chapter 4, Section 4.21; DEIS Appendix E; SDEIS, Chapter 4, Section 4.21; FEIS, Chapter 5, Section 5.21; and FEIS, Appendix F**. The EJ analysis and methodology is discussed in **DEIS, Chapter 4, Section 4.21.2** and **FEIS, Chapter 5, Section 5.21.2**.

As stated in the DEIS, SDEIS, and FEIS, the strategies developed under EO 12898, USDOT Order 5610.2C, FHWA Order 6640.23A, and FHWA memorandum Guidance on Environmental Justice and NEPA (2011) set forth the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal transportation projects on minority and low-income populations. Based on these strategies, the first four steps, below, were documented in the DEIS EJ analysis, updated in the SDEIS EJ analysis and updated and enhanced where necessary for the FEIS EJ analysis:

As this is a request for records, this falls under the Maryland Public Information Act (PIA) and is being handled accordingly. We are in the initial stages of this request and are preparing the legally required 10-day letter which is due July 14, 2022. We are advising you that we do not anticipate providing these records to you within the first 10 business days.[15]

As the attached statement by Norm Marshall, our traffic expert, makes clear, his ability to meaningfully comment on the traffic model is therefore limited because "I do not have access to this underlying data." Given these delays and for all the foregoing reasons, our request for a 60-day review period is not only reasonable, it is essential to carrying out NEPA's core purpose of providing a "springboard for public comment." *Robertson*, 490 U.S. at 351–352. The review period for other recent, large highway projects has been 60 or 75 days and the Maryland (and Virginia) public deserves a similar review period.[16] The FEIS, when added to the over 19,000-page draft EIS and over 8,000-page supplemental DEIS that it incorporates by reference, consists of 53,500 pages. Adequate formal public review periods are needed to ensure that the public has sufficient time for meaningful review of the Project's impacts. For these reasons and those expressed in our June 2022 letter and in letters from many others, the Agencies must provide a comment period of at least 60 days to comply with NEPA's public disclosure obligations.

B. The Agencies Have Not Tabulated the Public Comments on the FEIS, Contrary to Their Prior Practice, Thereby Dismissing and Erasing the Public's Voice[17]

As part of the public comment process, NEPA requires agencies to respond to all substantive comments, including those with opposing viewpoints. *See* 40 C.F.R. § 1503.4 (the final EIS "shall consider substantive comments timely submitted during the public comment."); *id.* § 1502.9(c) ("At appropriate points in the final statement, the agency shall discuss any responsible opposing view that was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised."). This mandate requires agencies to disclose opposing viewpoints so that the agencies can "internalize opposing viewpoints into the final decisionmaking process." *See Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1167–68 (9th Cir. 2003) ("The [Forest] Service's failure to disclose and analyze these opposing

[15] Email from MDOT to Jill Grant & Associates (July 1, 2022), attached as Exhibit B, App'x B.
[16] Sixty and 75-day FEIS review periods have been provided for other recent highway projects, such as the I-26 Connector in Asheville, N.C. and the I-45 in Houston, TX, respectively. *See* John Boyle, *I-26 Connector Environmental Impact Statement released, major hurdle for project passed*, Asheville Citizen Times (Feb. 5, 2020), *available at* https://www.citizen-times.com/story/news/local/2020/02/05/asheville-i-26-connector-environmental-impact-statement-released-nc-dot/4664937002/ (describing 60-day comment period); Texas DOT, Notice Final Environmental Impact Statement Available for Public Review - North Houston Highway Improvement Project, *available at* https://www.txdot.gov/inside-txdot/get-involved/about/hearings-meetings/houston/092520.html (explaining that the comment period on the FEIS was extended by 30 days, for a total of 75 days).
[17] This section incorporates by reference DEIS and SDEIS comments describing how the Agencies' systematically downplayed and miscounted public comments opposing the Project.

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1. The identification of minority race and ethnicity populations and low-income populations (EJ populations) along the 48-mile study corridor for the **DEIS, Chapter 4, Sections 4.21.2.A-B** and then an update on the identification of EJ populations for the Preferred Alternative, Alternative 9 - Phase 1 South limits in the **SDEIS**, **Chapter 4, Section 4.21.2.B**;

2. The review of demographic data to determine the existing environmental and community conditions of the EJ populations, documented in the **DEIS, Chapter 4, Section 4.21.3** and enhanced in the **SDEIS**, **Chapter 4, Section 4.21.2.C**;

3. The documentation of public outreach as planned, conducted and refined throughout the study in consideration of the demographic and community data to ensure meaningful involvement in EJ populations, documented in the **DEIS, Chapter 4, Section 4.21.4** and updated in the **SDEIS**, **Chapter 4, Section 4.21.2.D**; and

4. The identification of potential beneficial and/or adverse impacts to EJ populations under the No Build and Screened Alternatives in the **DEIS, Chapter 4, Section 4.21.5**, and the identification of potential beneficial and/or adverse impacts to EJ populations under the No Build and Preferred Alternative, Alternative 9 - Phase 1 South updated in the **SDEIS**, **Chapter 4, Section 4.21.3.**

Steps #2, 3, and 4 are updated and Steps #5 through #8, below, are documented in this FEIS EJ Analysis in consideration of the Preferred Alternative[3]:

5. The consideration of mitigation or community enhancement measures if unavoidable adverse effects are expected to occur under the Preferred Alternative **(throughout FEIS, Section 5.21.5)**;

6. A comparison of adverse effects to all EJ populations under the Preferred Alternative versus adverse effects to a non-EJ population reference community **(FEIS, Chapter 5, Table 5-51)**;

7. A determination of whether disproportionately high and adverse impacts would occur to EJ populations under the Preferred Alternative **(FEIS, Chapter 5, Table 5-51)**; and

8. A final conclusion of whether disproportionately high and adverse effects would occur to EJ populations, based on unmitigated adverse effects and whether public feedback has been addressed **(FEIS, Chapter 5, Section 5.21.7)**.

The public had sufficient opportunity to review and comment on the EJ analysis conducted for the Project. The public participation elements of the NEPA process were an opportunity to promote equity and EJ concerns by ensuring minority and low-income communities (EJ populations) have access to and receive information concerning the proposed action and the potential impacts on those communities. With even more concentrated outreach, project efforts effectively identified community concerns and informed

[3]Steps #4 and 5 plus Steps #6 and 7 are combined in this FEIS EJ Analysis.

viewpoints violates NEPA and 40 C.F.R. § 1502.9(b) of the implementing regulations.") (citing *Cal. v. Block*, 690 F.2d 753, 770–71 (9th Cir. 1982)) (stating that NEPA's requirement that responsible opposing viewpoints are included in the final impact statement "reflects the paramount Congressional desire to internalize opposing viewpoints into the decisionmaking process to ensure that an agency is cognizant of all the environmental trade-offs that are implicit in a decision")).

Instead of following these legal requirements, the Agencies ignored opposing viewpoints; declined to tally the number of comments opposing the Project in the FEIS, contrary to their prior practice; responded to all public comments after the public could formally reply; and, in several cases, responded to similar comments in an inconsistent manner.

1. The Agencies Have Failed To Provide Any Analysis or Tabulation of the Contents of the 5,000+ DEIS and SDEIS Comments, Hindering the Ability of Decisionmakers To Determine the Level and Nature of Public Opinion and Opposition to the Plan or To Take the Comments into Account.

In the FEIS, the Agencies do more than downplay and miscount public comments opposing the Project, as they did in the DEIS. In the FEIS, the Agencies fail to provide *any* analysis or tabulation of the contents of the comments, making it virtually impossible, due to the sheer number of comments, for decisionmakers to determine the level and nature of public opinion and opposition to the Project.

The only way reviewing agencies, elected officials, decision-makers at all levels, and the public can determine public sentiment as expressed in the comments is to read and tally the contents of 5,000+ raw comments reprinted in the FEIS, Appendix T.

This is an impossibly burdensome task for reviewers and the public.

The Agencies make even limited comment review onerous in light of the laborious processes the public must go through to access the comments and associated replies and references. Among the barriers to accessing and reading the FEIS Appendix T's 13 files and 5,732 pages containing the public comments: some of the text cannot be searched; the text cannot be copied and pasted from the pdf files; printouts are difficult to read, even for those with unimpaired vision; and three screens must be open at once in order to see an original comment, its associated response page, and the referenced material.

The protected PDF format that does not allow for copying of text presents extreme difficulties for the visually impaired and renders it virtually impossible to read the FEIS responses to comments. The printouts are too small to read even assuming ready access to a printer. The visually impaired need to copy the text and enlarge it to read it. The audio text reading function is not possible or practical for many people who have visual impairments (much less who speak a language other than English and need to have text copied to translate it) and is highly inefficient for meaningful review.

A frustrated FEIS reviewer submitted this comment to the Hogan Administration: "I cannot even copy/paste text from MLS FEIS PDF files. The MLS FEIS .pdf files are password protected.

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agency decision-makers regarding project elements and potential enhancements specifically geared to protected communities. In this regard, MDOT SHA implemented a robust plan to meet and exceed federal policies and best practices for outreach to and engagement with EJ populations within and adjacent to the study area to engage meaningfully and directly with underserved communities to identify improvements needed in their communities. These commitments are documented in the **ROD, Appendix A, Table 1**.

The FEIS comment states the FEIS fails to quantify impacts to the Gaithersburg EJ Area. This statement is false. Census block groups in the Gaithersburg area were identified and included in the EJ analysis for the study and documented in the **DEIS, SDEIS, FEIS, DEIS, Appendix E** and **FEIS, Appendix F**. As noted in **Chapter 5, Section 5.21.4, Table 5-49**, eight block groups met the EJ population criteria of minority race/ethnicity and/or low income. In addition, MDOT SHA had targeted outreach to underserved communities in the Gaithersburg area in the Fall of 2021. The consideration of air quality impacts from the Preferred Alternative on EJ Populations in the study area is documented on **page 5-155** of the **FEIS, Chapter 5** and in **FEIS, Appendix F**.

The FEIS comments claim that cumulative impacts to Morningstar Moses Hall and Cemetery site have been disregarded and dismissed, unlawfully preventing an "adverse effects" determination for a nationally-recognized 4(f) protected resource. The MDOT SHA and FHWA properly evaluated the Preferred Alternative's potential for cumulative effects, including at the Morningstar Cemetery. In conducting this analysis, MDOT SHA has acknowledged that the early 1960s construction of I-495 and other aspects of the Eisenhower Interstate System caused disruption to the Gibson Grove community and other communities, particularly communities of color. Indeed, these types of community impacts formed the historical context and impetus for passage of NEPA and NHPA. The MDOT SHA, during years of extensive research (discussed in more detail below), has not identified any evidence that I-495 construction in the 1960s impacted burials at Morningstar Cemetery. That research assisted MDOT SHA in determining whether the MLS proposed action would contribute to cumulative effects to the Morningstar properties and related resources in the context of past, present, and reasonably foreseeable actions as required by the NEPA CEQ regulations.

To provide further detail supporting the FEIS conclusions, MDOT SHA confirmed that in 1992, construction work was performed on I-495. This work was done within the median of I-495 near this area and avoided impact to the cemetery property. As documented in the SDEIS and FEIS, and as concluded in the ROD, the Selected Alternative also avoids impacts to the cemetery property as well as to the area of the MDOT SHA owned right-of-way adjacent to the cemetery property where there could be the potential for unmarked graves. Lastly, our review did not identify any reasonably foreseeable future projects in the vicinity of the cemetery. In addition, based on commitments included in the ROD and Programmatic Agreement, established in part based on coordination with stakeholders with interest in the Morningstar resource, the Selected Alternative will improve existing stormwater and noise effects over the existing conditions. Refer to **FEIS, Chapter 7** and **ROD, Appendix A** for the commitments and mitigation details.

A formal response to the Friends of Moses Hall FEIS comment letter was prepared and included on **page 20** of this **ROD, Appendix D**. Refer to this response for additional details.

I can't even copy text to paste into an email. What am I able to do? Nothing but look and don't touch? This is terrible customer service. <Survey Comments>." The July 13, 2022, reply on behalf of the Hogan Administration from Jeffrey T. Folden, Director of the I-495 & I-270 P3 Office included this sentence:

> Each document was released as a secured PDF to ensure the document would not be manipulated. The customer-friendly PDF format also offers graphic integrity and preserves intended content and layout regardless of the operating system, device, or software application it is viewed on. All content in the FEIS can be read, printed, referenced, and shared."

See Exhibit C. This response confirms that the document text is not copy-and-pasteable and that this limitation was intentional. The inability to copy text presents an enormous barrier to providing meaningful comments on the FEIS (as was the case for the DEIS and SDEIS), as well as excludes people with visual limitations from the opportunity for meaningful review in the short review periods afforded. The use of a protected PDF format with uncopiable text in NEPA documents should be seriously reexamined—and ideally discontinued—at the federal and state agency level as a barrier to meaningful public participation and as a discrimination issue for people with visual impairments.[18]

None of these burdens and barriers was necessary. MDOT created a DEIS/SDEIS comments database that MDOT could have used (or shared) for comment tabulation and analysis. "As comments were received, they were reviewed, considered, and uploaded to a database used as a repository for comments received" (FEIS Appendix T Introduction, p. 3). Of note, in all 26,500+ pages of the FEIS, this is the only mention of the comments database.

2. The Agencies' Extended Delay in Responding to 5,047 Comments and Providing a Response Outside of Any Formal Comment Opportunity Prevented the Public and Their Elected Officials from Having Meaningful Interaction with the Agencies During the Decisionmaking Process.

According to the FEIS, MDOT SHA received 2,909 public comments by the DEIS deadline of November 9, 2020, and 2,138 public comments by the SDEIS deadline of November 30, 2021 (FEIS 9-2).

The public, including officials from 22 cooperating agencies and "other agencies," FEIS App'x T Introduction at 4, who submitted comments by the DEIS deadline, waited *1 year and 7 months, or 585 days*, to have access to the comments and receive some sort of response (in many cases, just a list of cross references) from the Agencies via the FEIS. Commenters to the SDEIS waited *6.5 months, or 199 days*.

[18] In the public hearings held in 2021, the hearing officer showed a slide entitled "Title VI of the Civil Rights Act of 1964" that states: "MDOT SHA prohibits discrimination on grounds of … disability." Source: I-495 & I-270 MLS Virtual Public Hearing, November 1, 2021 at minute 10:20, https://youtu.be/4g0L9qk-L60.

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VI. The Sierra Club's letter state the FEIS Fails To Disclose the Socioeconomic and Societal Impacts of Private Concessionaire Contracts and Their Influence on Future Land Use Policies

Comments and concerns raised on the State's plans to develop the Project through a public-private partnership (P3) have been addressed in **FEIS, Chapter 9, Section 9.5.3**. As stated, MDOT has determined it is financially infeasible to construct improvements of the magnitude associated with the Selected Alternative. Additionally, MDOT does not have enough bonding capacity to take out loans to pay for the improvements, even with the promise of tolls to pay them back. Therefore, MDOT elected to use a P3 approach to fund the project. MDOT SHA has adequately evaluated its funding and delivery method.

These massive delays even in responding to elected officials and the public prevented them from having needed information, meaningful constituent-elected interactions about issues, opportunities for advocacy, and input into the decisionmaking process.

3. In the FEIS, the Agencies Erase the Public Voice by Failing to Make Any Analysis of the 5,000+ Public Comments.

As noted above, nowhere in the FEIS documents covering 74 files and 26,500 pages is there an attempt at analysis, tabulation, or quantifying of the contents of the 5,000+ public comments.

The lack of tabulation and analysis is a marked change from the Agencies' treatment of public comments for the first three public comment periods[19] (see details of previous comment treatment, as described in our DEIS comments at 173-178[20] and DontWiden270.org's DEIS comments, FEIS App. T.2.A at 75-82).

The Agencies, for the Project's first three comment periods, differentiated between the number of discrete submissions and the number of separate points made within the submissions. The cumulative totals for the three periods: 3,937 individual submissions containing 16,129 points. The FEIS, in contrast, tallies only the number of submissions, with no numerical indication of the scope or complexity of their contents.

In the DEIS, the Agencies published a tally (albeit based on flawed label assignments and other biases) of the numbers of comments reflecting support or opposition to the Project during the previous comment periods. After observing the Agencies' biased processes for tallying comments, advocacy organizations developed a compensatory strategy. We suggested that commenters make their opposition clear by beginning each DEIS and SDEIS comment submission with a version of, "I oppose the toll lane plan and support the no-build option."

Given such clear, consistent messages, the Agencies could easily have published an FEIS tally of submissions expressing opposition. Instead, the Agencies got around our "fix" by tallying *none* of the opinions expressed in the submissions. This effectively removed public opinion from the FEIS except on a submission-by-submission basis, repeated 5,000+ times.

[19] The "first three comment periods" referenced and incorporated in MDOT's DEIS and SDEIS were originally detailed in MDOT's Scoping Report (June 2018); the Alternatives Public Workshops Summary (January 2019); and the Summary of Public and Stakeholder Engagement for the Recommended Alternatives Retained for Detailed Study (September 2019).

[20] Sierra Club, et al., Comments on I-495 and I-270 Managed Lanes Study Draft Environmental Impact Statement/Draft Section 4(f) Evaluation and Joint Federal/State Application (JPA) (Nov. 6, 2020) (hereinafter "DEIS comments"), *available at* https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u18365/2020-11-09-Comments%20on%20DEIS%2C%204%28f%29%2C%20and%20JPA%20%281%29%20%281%29.pdf.

In reply to comments that started with, "I oppose the toll lane plan and support the no-build option," the Agencies ignored the opinion and "replied" with an unasked-for explanation of what the no-build option is. *See, e.g.*, FEIS App'x. T.2.A Vol. 1 at CO-76.

4. The Agencies Give Nonsensical, False, and Inconsistent Responses to Nearly Identical Comments from the Sierra Club and DontWiden270.org Regarding the Agencies' Previous, Biased Treatment of Public Comments.

The FEIS gives nonsensical, false, and inconsistent responses to nearly identical comments from the Sierra Club and DontWiden270.org regarding the Agencies' previous, biased treatment of public comments.[21]

From the Agencies' response to the Sierra Club:

> The letter states incorrectly that the lead agencies improperly summarized or 'miscounted' the public input on these preliminary NEPA documents. The lead agencies reviewed all comments received and properly summarized the content of those comments during the preliminary scoping stages of the NEPA review in order to inform production of the DEIS."

FEIS App'x T.2.A. Vol. 3 at CO-538. The Agencies provide no evidence or documentation to support their response.

In contrast, the Agencies' response to DontWiden270.org does *not* dispute or respond to evidence of MDOT's previous biased treatment of opposition comments, simply accepting, for instance, this documented example: MDOT established a policy to label a comment as being in opposition to the Project only if the submitter used exactly the right words. No comparable policy was established for pro-Project comments. *See* Sierra Club DEIS Comments at 166.

The Agencies' response to the Sierra Club, but not to DontWiden270.org, says, "Once the EIS documents were made available for formal comment periods, MDOT SHA reprinted and made available all comments on the DEIS and SDEIS and responded to all substantive comments in the FEIS." FEIS App'x T.2.A. Vol. 3 at CO-538.

If this were true, the publication of those DEIS and SDEIS comments would have happened *before* issuance of the FEIS, since the FEIS does not allow for a "formal comment period." Where, when, and to whom were those reprints made available?

[21] For references to the points in this section, see responses to Dontwiden270.org's DEIS submission, FEIS App'x. T.2.A Vol. 1 at CO-76-82, *available at* https://oplanesmd.com/wp-content/uploads/2022/06/64_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.A_Volume-1_June-2022p-9.pdf and the responses to Sierra Club's DEIS submission. FEIS App'x. T.2.A Vol. 3 at C0-538, *available at* https://oplanesmd.com/wp-content/uploads/2022/06/MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.A_Volume-3_June-2022p.pdf.

The Agencies' response to the Sierra Club's comments says: "Support for or opposition to the project and/or the Preferred Alternative as stated in all public comment is accurately reflected in the NEPA record and available for review." *Id.*

Since the FEIS does not tabulate support or opposition, how and where are "support for or opposition to the project and/or the Preferred Alternative" accurately reflected in the NEPA record? Does the Agencies' reply assume the reviewing federal agencies are creating their own tabulations from the raw public comments?

The Agencies' response to DontWiden270.org's comment makes a different point about support and opposition: "…a comment stating support or opposition is not a yes/no vote for the project."[22]

Yet the Agencies' treatment of comments from the first three public comment periods indicates the opposite: the Agencies clearly tabulated support and opposition to the Project, albeit in a biased and misleading manner.

II. The Traffic Models Used in the FEIS Are Deeply Flawed.

A. The Traffic Modeling in the FEIS Fails to Address Critical Errors Identified by Commenters and Introduces New Errors.

In our comments on the SDEIS, we explained that the traffic modeling supporting the SDEIS had serious errors. The SDEIS's traffic model presents a simplistic traffic story that, if the preferred alternative is not constructed, corridor traffic volumes will grow significantly and delays will grow exponentially. Based on this model, the SDEIS claims that the preferred alternative will reduce congestion on the general-purpose lanes and alleviate congestion on other roads relative to traffic conditions today. But that simple story relied on flawed modeling. *See* SDEIS Comments at 18-38; *see generally id.* at 39-96.

As described more fully in the attached expert report by Norman Marshall, President of Smart Mobility, Inc., (July 2022) (hereinafter "Marshall Report"),[23] the revised traffic modeling used in the FEIS does not remedy the acknowledged errors with the previous traffic model used in the SDEIS. To the contrary, the new model results are, instead, rife with evidence that the Agencies "have failed to comply with their own Agency guidance concerning traffic modeling" such that "the output is seriously compromised as a result of these modeling errors." *See* Marshall Report at 2.

Mr. Marshall's ability to thoroughly critique the traffic model was hampered because MDOT has refused to release the underlying data and model files, in violation of NEPA's public disclosure requirements. *See* Marshall Report at 4-5; *id.* App'x A-B; *see also* Section I.A of these comments. Even so, Mr. Marshall and others identified serious deficiencies in the FEIS traffic models. The Marshall Report details several categories of errors, some of which persist from the

[22] FEIS App'x T.2.A Vol. 1, p. CO-80, https://oplanesmd.com/wp-content/uploads/2022/06/64_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.A_Volume-1_June-2022p-9.pdf.

[23] The Smart Mobility, Inc., Report is attached as Exhibit B.

flawed modeling from the SDEIS and some of which are new. These errors undermine the simplistic story the Agencies continue to tell that the preferred alternative is necessary to address traffic congestion and reduce travel times. Instead, the models "appear to overstate travel time savings and inadequately capture congestion, gridlock conditions, and bottlenecks," Marshall Report at 23, based on the following errors:

- Given dramatic changes in predicted speed/travel time and vehicle throughput[24] between the SDEIS and FEIS, it appears that the modelers made parameter changes after they validated the traffic model, even though "it is only possible to have confidence in traffic microsimulation model outputs if the model is well calibrated to real-world base year data and [] these validated parameters are maintained in all alternatives analyses." As explained further in the Marshall Report, changing model parameters can have dramatic impacts on speed/travel time and throughput metrics. Marshall Report at 5-8.

- There are unexplained differences between the traffic "count" data in the FEIS and DEIS. The better model fit in the FEIS "appears to be achieved by changing the data rather than by changing the simulated volumes." But, changing the data inputs "at this point in the process after the calibration step [needs] to be disclosed and justified." That justification is not provided in the FEIS. It is possible that the FEIS modelers may be "fitting one model to another model rather than to actual data," which MDOT guidance strongly cautions against doing. *Id.* at 8-10.

- Even though input demand and the highway networks are described as "almost identical" in the SDEIS and FEIS, the FEIS shows much higher throughput under the 2045 no build alternative and also unexplained improvements in performance of the preferred alternative over the no build alternative. The only plausible explanations is that the model parameters have been changed since the model validation. If that is correct "the [p]referred alternative modeling is invalid." *Id.* at 10-15.

- To achieve reliable results from a traffic model, a modeler must reach convergence by running multiple simulations to receive comparable results. The FEIS states that only five simulations were run, the minimum required by MDOT. But, "[i]n heavily congested simulations, it generally is necessary to average more than 5 simulations. The report does not demonstrate that 5 simulations is sufficient for convergence." Again, without the underlying traffic files it is impossible to verify if the model was run enough times to achieve convergence. *Id.* at 15-16.

[24] Throughput is defined as "the number of vehicles that pass by a given point in the roadway network in a set amount of time." SDEIS at 3-13.

- As in the SDEIS, the FEIS traffic modeling invalidly shows future throughput to be much lower than existing throughput. This error was not addressed in the FEIS responses to comments. *Id.* at 17-18.

- As in the SDEIS, the FEIS continues to falsely insist that there is some increasing "demand" that exists independently from actual traffic volumes. Inputting unrealistic "demand" into the traffic model causes gridlock in the model and produces unrealistically low throughput. *Id.* at 18-20.

- Unlike the SDEIS, the FEIS adds a third model to its sequenced modeling approach, but this newly introduced model suffers from the same inherent problems as the other models. *Id.* at 20-22.

As we explained in our SDEIS comments, *see* SDEIS Comments at 19-20, rather than relying on flawed models, the Agencies should examine empirical data from Virginia and Maryland to understand the reasonably foreseeable impacts of constructing managed lanes on I-495 and I-270, which include the following:

1) Expanding I-495 and I-270 will shift traffic from the shoulder hours into the peak hours and create and/or exacerbate bottlenecks. As bottlenecks are most likely at the terminus of the managed lanes, phasing is critically important as well as the final extent of the Project.

2) An improvement in general-purpose lane speed is unlikely because constructing the managed lanes will shift traffic from the shoulder hours into the peak hours, and the general-purpose lanes will be just as congested during the peak hours as they would have been otherwise. The foundational premise of this Project is that extreme congestion in the general-purpose lanes is needed to justify the high tolls that will be required to fund the preferred alternative.

3) Constructing the I-495 and I-270 managed lanes is likely to make arterial congestion worse. No trip begins or ends on a limited access highway, and traffic does not magically switch between limited access highways and arterials despite what is presented in the SDEIS. Any shifts between these roadway classes causes traffic increases on some arterials and traffic decreases on others. As managed lanes concentrate traffic in the peak hour, arterial roads at I-495 and I-270 interchanges will be severely impacted, and these impacts are likely to outweigh the congestion benefits of traffic diversion from other arterials. The SDEIS models are incapable of calculating these tradeoffs.

4) If the managed lanes are constructed, it is likely that there will be significant traffic growth (induced travel) and induced land use impacts.

5) Managed lane proponents stress "choice." In fact, the choice is between two bad options: extreme congestion vs. extremely high tolls. Only about 1/6 of the daily traffic is carried by the Virginia I-495 Express Lanes despite the Express Lanes having 1/3 of the roadway capacity. This is an inefficient use of infrastructure. The other 5/6 of traffic is carried by the general-purpose lanes. The toll lanes are "chosen" primarily by high-income travelers and/or travelers who are having the tolls reimbursed. This elite group will remain small because increases in demand by other users will prompt the tolls to increase further, becoming even less affordable.

6) The managed lanes will benefit only the few who are able to outbid the majority of travelers. There will be no benefits for non-users of the toll lanes. Non-users of the toll lanes (most travelers) will face continued high congestion in the general-purpose lanes and increased congestion on arterial roadways accessing I-495 and I-270 interchanges. Nevertheless, a portion of their taxes likely will go toward subsidizing the private toll lanes as has occurred in Virginia.

7) The MDTA toll-setting exercise was theater to mollify a skeptical public. The rates are set so high that the private operator will be able to maximize revenue through algorithms that cynically have been labeled "jam and harvest." These algorithms intentionally increase congestion in the general-purpose lanes prior to traffic peaking to justify charging higher tolls during the traffic peak. It's the public that gets "jammed" as their money gets "harvested."

The flawed traffic models used in the FEIS, like those in the SDEIS, continue to overestimate future congestion to justify the preferred alternative. The proposed managed lanes in Maryland will make congestion worse for most peak period drivers and push drivers to choose between extreme congestion and extremely high tolls that are set to make the lanes profitable.

As a result of these flawed models, the evaluation of numerous impacts that rely on traffic modeling, including air quality and environmental justice, is likewise flawed, and the consideration of reasonable, prudent, and feasible alternatives under NEPA and Section 4(f) is tainted. As one court observed, "In the area of the need for the subject [highway] segment, . . . predictions of traffic volumes in various target years of the several alternative transportation systems studied *are crucial*. Errors in traffic volume projections most likely would result in errors in conclusions based on traffic volume projections." *Movement Against Destruction v. Trainor*, 400 F. Supp. 533, 548 (D. Md. 1975) (emphasis added). *See also* 40 C.F.R. § 1500.1(b) ("Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."). Accordingly, a new draft NEPA document must be issued based on a revised and corrected traffic model.

B. The U.S. DOT Must Re-Examine the Traffic Modeling in the FEIS To Ensure Its Integrity and the Agencies Must Address Possible Inconsistencies Between the FEIS's Traffic Model and the Traffic Modelling Used to Support Revenue Models for the Project.

1. MTOC Has Identified Inconsistencies in the Traffic Model that Warrant an Investigation into the Integrity of the Model.

After the FEIS was released, Dr. Benjamin Ross, President of Maryland Transit Opportunities Coalition ("MTOC"), asked U.S. DOT Deputy Secretary Polly Trottenberg

to examine evidence of possible scientific fraud in the FEIS traffic model. We incorporate by reference MTOC's letter to U.S. DOT[25] and additional information revealed in the subsequent articles.[26]

Dr. Ross found that "[t]he numbers [from the traffic model] simply do not look like what a computer model would produce."[27] Further, the FEIS modeling for the 2045 no build alternative appears inconsistent "with correction of errors in model inputs, coding, or numerical methods, but would be consistent with arbitrary adjustment of intermediate or final outputs."[28]

In MTOC's letter, Ross explains that the FEIS's traffic model predicted that certain evening rush-hour travel times for the 2045 no build alternative would be less than predicted by the SDEIS models, even though the traffic counts in many spots are the same in both models. For example:

> the predicted evening rush-hour travel time from Connecticut Avenue to I-95 on the Beltway Inner Loop is 15 minutes faster in the FEIS than in the SDEIS. The travel time from Rock Spring Park to I-95 is half an hour faster. Yet, in the two reports, the number of vehicles exiting the Inner Loop onto I-95 is exactly identical in each of the four pm peak hours, 3:00 to 4:00, 4:00 to 5:00, 5:00 to 6:00, and 6:00 to 7:00.[29]

Based on these predicted results, the FEIS model outputs do not appear to be consistent with traffic modeling principles that, as commuting times decrease on a particular route, vehicles will switch from other routes to save time:

[25] Letter from MTOC to Deputy Sec'y Polly Trottenberg, USDOT (July 11, 2022) (hereinafter "MTOC Letter"), *available at* https://transitformaryland.org/sites/default/files/scientificintegrityletter.pdf, and attached as Exhibit D.
[26] Bruce DePuyt, Toll Lanes Critic Accuses MDOT of "Scientific Fraud" in Key Report, Maryland Matters (July 12, 2022), *available at* https://www.marylandmatters.org/2022/07/12/toll-lanes-critic-accuses-mdot-of-scientific-fraud-in-key-report/; Katherine Shaver, Maryland Toll Lane Critics Cite 'Possible Scientific Fraud' in Traffic Study, Washington Post (July 12, 2022), *available at* https://www.washingtonpost.com/transportation/2022/07/12/maryland-toll-lanes-traffic-study/; Andrew Gelman, Don't Go Back to Rockville: Possible Scientific Fraud in the Traffic Model for a Highway Project?, Statistical Modeling, Causal Inference, and Social Science Blog (July 12, 2022), *available at* https://statmodeling.stat.columbia.edu/2022/07/12/dont-go-back-to-rockville-possible-scientific-fraud-in-the-traffic-model-for-a-highway-project/; Alex Daugherty, Weekly Transportation post, Politico (July 12, 2022).
[27] Shaver, Maryland Toll Lane Critics Cite 'Possible Scientific Fraud' in Traffic Study, Washington Post.
[28] *See* MTOC Letter.
[29] Letter from MTOC to Deputy Sec'y Polly Trottenberg, at 2.

> With such large differences between the two models in predicted travel time, the [model] algorithm must assign some trips that took other routes in the SDEIS model to the eastbound Beltway [] in the FEIS model… and it is next to impossible that the changes would exactly cancel out in each of the four hours [so that the traffic volumes between the FEIS and SEIS are exactly identical].[30]

In his letter, Dr. Ross identifies FEIS traffic model outputs that appear inconsistent with traffic model runs but "could … arise from ad hoc alteration of model outputs for the purposes of generating a desired conclusion."[31]

Based on these potential issues with the FEIS's traffic model, Dr. Ross asks U.S. DOT to complete an independent examination of the Record of Decision for the I-495/I-270 Managed Lane Study to ensure the veracity of the traffic modeling data or, at a minimum, conduct a peer review of the modeling report.

After the new traffic model was released as part of the FEIS, Maryland Sierra Club requested that MDOT provide the underlying data files associated with the traffic model. As explained in the comments of Norm Marshall, these underlying data files were necessary in order to fully assess the accuracy of this model. Not only did MDOT refuse to supply these underlying data files in response to Sierra Club's timely request, MDOT subsequently asserts that these files may be provided only upon payment of over $21,000, and may not be provided even then, thus ensuring that the accuracy of this traffic model will not be questioned. MDOT's refusal to disclose this underlying data, in clear violation of NEPA, strongly suggests that MDOT is trying to hide something and that Mr. Ross's concerns about fraud are well-founded. We join this request for U.S. DOT to conduct a thorough examination of the traffic model. Failure to do so violates NEPA, which requires that the conclusions reached in environmental documents be supported by accurate data. *See* 40 C.F.R. § 1500.1(b) ("Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.").

2. The FEIS Traffic Model Appears to be Inconsistent with the Traffic Model Used To Predict Revenue.

The FEIS used different traffic models to predict environmental impacts and to predict toll revenue. According to the FEIS, FEIS at 10-2, the environmental impact traffic model was done by RK&K. The March 12, 2021, Preliminary Toll Rate Due Diligence Report, submitted to the Maryland Transportation Authority ("MDTA") by CDM Smith, states on page 3 that the model used for traffic and revenue estimates "was originally based on the Metropolitan Washington Council of Governments (MWCOG) regional travel demand model but with updates and enhancements incorporated by CDM Smith." It also states on page 2 that "[t]he developer [MDOT's partner in the Public-Private Partnership] will perform their own T&R [Traffic and Revenue] studies to support project financing." Because the Project may be funded using

[30] *Id.* Ex. 1 at 2.
[31] *Id.* Ex. 1 at 3.

Transportation Infrastructure Finance and Innovation Act funding, this model, like the FEIS model, will be submitted to U.S. DOT.

The FEIS fails to acknowledge or discuss an apparent inconsistency between its traffic model and the traffic models used to predict revenue. Using one traffic model to predict environmental impacts and an inconsistent traffic model to predict revenue is unacceptable. It is as dishonest as keeping two sets of financial records and showing numbers to lenders that are inconsistent with the numbers shown to tax collectors. Both the environmental impact traffic model and MDTA's revenue traffic model were used to project 2045 traffic conditions for the preferred alternative. However, the Preliminary Toll Rate Due Diligence Report that was made public by MDTA includes only 2025 numbers, and only a very limited number of those. Thus, we are not able to directly compare results of the two models. No results whatsoever of the developer's traffic model have been publicly released, so the public is unable to comment on any possible inconsistencies between that model and the FEIS model.

Nonetheless, the very sparse information in the Preliminary Toll Rate Due Diligence Report suggests a possible inconsistency between its model and the FEIS model. Table 7 of the toll rate report predicts that in 2025, average traffic in the two-lane tollway reaches the soft cap threshold (variously given in MDOT documents as 3200 or 3300 cars per hour) only in one roadway segment: northbound immediately north of River Road (MD 190). That segment forks between I-270 and the Beltway; the threshold is exceeded on the I-270 fork from 4:00 to 7:00 pm and on the Beltway fork between 6:00 and 7:00 pm. In the northbound segment immediately south of Montrose Road, it predicts that the soft cap will be hit frequently despite falling short of it under average conditions.

The FEIS forecast for 2045, twenty years later, shows the toll lane traffic volume exceeding 3300 cars per hour only in the northbound segment between River Road and the I-270 fork, between 3:00 and 6:00 pm. It predicts toll lane traffic volumes between 3200 and 3300 cars per hour only in one other segment, the segment immediately south of Montrose Road.

The forecasts in the Preliminary Toll Rate Due Diligence Report assume a steadily increasing demand for automobile travel due to population and job growth, and a more rapidly growing demand for toll lane travel due to increasing income levels. The growth in travel demand should be reflected in rising traffic volumes and increasing toll rates. Thus, one would expect the report to predict tolls reaching the soft cap more frequently in 2045 than in 2025. However, the FEIS traffic model does not predict traffic volumes sufficient to activate the soft cap. The FEIS failed to grapple with this issue and explain or correct the inconsistencies between the two models.

The reliance on inaccurate data—even in the face of explicit warnings about its inaccuracies—tainted the required consideration of alternatives and therefore violates NEPA.

C. There Are Serious Problems with the Current FEIS that Indicate the Traffic Models and How They Are Applied Should Be Reviewed Independently Before Final Decisions Are Made.

Table 1 shows a comparison of the SDEIS and FEIS PM trip travel times. The difference between the no build ("NB") and general purpose ("GP") travel times both increase and decrease, but all GP and NB travel times in the FEIS are reduced. GP lanes are the non-toll lane part of the toll road.

Table 1. Comparison of FEIS to SDEIS Numbers

PM Trips	SDEIS			FEIS		
	NB	GP	Difference	NB	GP	Difference
GW Parkway to I-370	42	52.1	10.1	27.9	36.8	8.9
Clara Barton to I-370	37.3	48.6	11.3	25.1	35.8	10.7
River Road to I-370	24.4	30.8	6.4	17	26.6	9.6

Table 2 shows the difference projected between the FEIS and the SDEIS projected travel times for identical GP trips. The trips are the PM trips from the George Washington (GW) Parkway, Clara Barton Parkway, and River Road to the end of the toll lanes on I-270 at I-370.

Table 2. Travel Time Different Between SDEIS and FEIS for GP Lanes - PM

	SDEIS	FEIS	Difference	% Reduction
GW Parkway to I-370	52.1	36.8	15.3	30
Clara Barton to I-370	48.6	35.8	12.8	26
River Road to I-370	30.8	26.6	4.2	15

What Table 2 shows is that there is a substantial reduction of travel times for the FEIS compared to the SDEIS. We are talking about a 30 to 15% reduction from 15 to 4 minutes. The result of these changes is to provide MDOT with the ability to claim higher average speeds for the general purpose (GP) part of the toll lanes in the newest analysis, despite the fact that the MDOT's own analysis projects on average a 10-minute advantage (faster trips) from the GW, Clara Barton, and River Road PM trips to I-370 for the no build alternative.

In fact, when you examine the key trips from River Road along the Beltway to Old Georgetown Road exit or to the Democracy exit on the I-270 West Spur, the comparative slowdown between trips in the GP lanes vs. the No Build has grown enormously – 137% (Table 3) for the Beltway trip and 33% (Table 4) for the I-270 West Spur trip.

Table 3. Trip times from River Road to Old Georgetown Road – PM

SDEIS		FEIS		% Difference
NB	GP	NB	GP	

37.3	41.9	18.3	29	
Difference GP-NB	4.6		10.9	137%

Table 4. Trip times from River Road to Democracy - PM

SDEIS		FEIS		% Difference
NB	GP	NB	GP	
10.4	16.7	4.9	13.3	
Difference GP-NB	6.3		8.4	33%

While there a clear advantage for the no build in the PM trips, reducing the travel times of the GP portion of the toll road minimizes the devastating effects of the PM Beltway Chokepoint by giving the appearance that the speeds will be acceptable.

Figure 1. Map of project area with labeled interchanges and chokepoint

Maryland Department of Transportation State Highway Administration I-495 & I-270 P3 Office map.

Interchanges and chokepoint labeled by author.

Table 5 and 6 illustrate another inexplicable change between the SDEIS and FEIS. For trips from Connecticut Ave to the GW Parkway (Table 5) and Connecticut to River Road (Table 6) there is a 470% and 656% increase in the projected travel time advantage for the FEIS versus

the SDEIS for GP lanes over the no build lanes in the PM travel time. The Connecticut to GW Parkway and Connecticut to River Road No Build travel time changes between the SDEIS and the FEIS are 240% and 295%. It is puzzling that such a mismatch could occur and not explained.

Table 5. Trip from Connecticut to GWP - PM Minutes

SDEIS		FEIS		Increase Time
NB	GP	NB	GP	
16.4	10.1	39.4	9.8	
Difference GP-NB	6.3		29.6	470%

Table 5a. % Change Between SDEIS and FEIS for Connecticut to GWP - PM Minutes

NB-SDEIS	NB -FEIS		% Difference	
16.4	39.3		240%	

Table 6. Trip from Connecticut to River Road - PM minutes

SDEIS		FEIS		Increase Time
NB	GP	NB	GP	
10.9	7	32.2	6.6	
Difference GP-NB	3.9		25.6	656%

6a. % Change Between SDEIS and FEIS from Connecticut to River Road - PM minutes

NB-SDEIS	NB-FEIS		% Difference	
10.9	32.2		295%	

As explained more fully in the attached report, taken together these types of changes that clearly favor the Agencies' desired outcome require detailed and independent analysis that cannot be produced in 30 days for 26,000 pages with limited resources of outside groups.[32] Changes of this magnitude should not happen after two rounds of analysis before the FEIS, and they certainly should not completely favor MDOT's desired outcome.

III. The FEIS Fails To Address Impacts to Public Health.

The FEIS fails to disclosure serious public health risks and impacts and suffers from deficiencies in its analysis of the public health impacts of the evaluated alternatives. Throughout the NEPA process for this Project, we have requested that the Agencies conduct a full analysis of

[32] *See* Katz Report, attached as Exhibit H.

public health impacts, including, for example, an analysis of localized air quality impacts or health impacts from traffic safety issues. The Agencies have declined to do so.

Based on their close review of the FEIS and its appendices, several health experts—including a public health expert, air quality expert, traffic safety and crash analysis expert, and an epidemiologist—have provided letters and reports explaining where the FEIS has failed to disclose or analyze serious public health impacts of the Project..

Roselie Bright, Sc.D., and Ronald Bialek, MPP, explain that the FEIS suffers from a deficient analysis of impacts including a failure to address traffic-related injuries and deaths from an increase in vehicle miles traveled, adverse health impacts and deaths from increased mobile source air toxics and other sources of air pollution, and adverse health impacts from construction- and traffic-related noise. As Bright notes, the FEIS fails to acknowledge or discuss the links between, for example, increased air pollution from traffic and high rates of asthma or heart disease.[33] As Bialek highlights, these health impacts are likely to be disproportionately higher in EJ populations, given historic inequities.[34]

The report by ZAMURS AND ASSOCIATES, LLC, explains that the FEIS's air quality discussion lacks a discussion of the preferred alternative's impacts on criteria pollutants and other pollutant emissions and also fails to address air quality concerns in environmental justice communities, despite previous comments identifying these missing analyses.[35] Further, the FEIS fails to fully evaluate the effects of bottlenecks that will be created under the preferred alternative and, importantly, the air quality impacts from the bottlenecks that may concentrate around the end points of the preferred alternative, in areas where EJ populations live. *See* ZAMURS AND ASSOCIATES Report at 5-6.

Further, as discussed below, Byron Bloch, a longtime expert in traffic safety, discusses failures to address the public health impacts of traffic safety issues from the preferred alternative and from respirable silica dust caused by highway construction.[36]

Impacts to public health are an important part of any "hard look" analysis required by NEPA. Many of the proposed actions under the preferred alternative will cause significant, adverse public health impacts, whether directly, indirectly, or cumulatively. For all the reasons explained in the experts' letters and reports as well as those explained in our prior comments, this FEIS fails to take that hard look. As a result, the preferred alternative is likely to cause significant, adverse health impacts, unexamined in the FEIS.

[33] *See* Letter of Roselie Bright to Sierra Club, attached as Exhibit E.
[34] *See* Letter from Ronald Bialek to Sierra Club, attached as Exhibit F.
[35] *See* ZAMURS AND ASSOCIATES, LLC Report, attached as Exhibit G.
[36] *See* Bloch Report, attached as Exhibit I.

A. Respirable Crystalline Silica Construction Dust Remains a Major Unaddressed Public Health Hazard of this Project that the Agencies Are Ignoring.

MDOT and FHWA have failed to disclose or address critical health risks raised by safety experts regarding large volumes of toxic crystalline silica dust that will be released as the Project carries out demolitions of soundwalls, bridges, and highways to reconstruct and enlarge them for this Project. Their disregard and dismissal of this health risk flies in the face of recent, more stringent U.S. Occupational Safety and Health Administration ("OSHA") regulations for silica dust and known risks explored in articles with titles like, "Highway Repair: A New Silicosis Threat."[37]

OSHA explains that "[r]espirable crystalline silica . . . is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar."

Research has shown silica dust to be a known carcinogen and one of the most harmful components of particulate matter, which is a mixture of small airborne particles of organic chemicals, metals, minerals and soil.

The Agencies do not address any of the construction-related risks of silica dust. The FEIS instead minimizes all construction-related air pollution: "Because the project's construction duration is not anticipated to exceed six years in any single location, most air emissions associated with construction are considered temporary in nature."[38]

That statement raises even more profound questions and concerns. Construction is not anticipated to exceed six years in any single location. Therefore, they consider it temporary. Six years in a single location is the entire elementary school education of a student at Carderock Springs Elementary School, which is already badly affected by its proximity to I-495. Six years is one less year than all of middle and high school, and surely will not provide comfort to the staff, students, and parents of students at Julius West Middle School, already adversely impacted by proximity to I-270. It is doubtful that another vulnerable population, the seniors at Rockville Senior Center, feel that six years is temporary.

The issue with air pollution from highway construction cannot be swept under the rug by a generic reference to "most emissions." A major issue facing all populations living, working, and going to school along the proposed construction route is the respirable crystalline silica dust. As one website correctly observes, "There are no regulations for bystanders or enforced protections for surrounding civilians. Unfortunately, the nature of respirable dust particles can put bystanders at risk of inhalation exposure far beyond the confines of the construction site."[39]

[37] David J. Valiante, et al, Highway Repair: A New Silicosis Threat, Am. J. Public Health 94(5): 876-880 (May 2004), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448352/.
[38] FEIS at 9-50.
[39] How Far Can Respirable Dust Actually Travel? Sep 24, 2019, available at https://www.nosilicadust.com/how-far-can-respirable-dust-actually-travel/.

Toxic crystalline silica dust is a known carcinogen, it is very light and can drift hundreds of feet and even miles, and it causes multiple lung and breathing ailments and even death. Bryon Bloch, a longtime expert in traffic safety, states that the Project's FEIS is "evasive and fraught with omissions on such critical areas as: The generation of toxic silica construction dust that will assuredly cause asthma, silicosis, and lung cancer to many residents."[40]

He continues:

> It is outrageous that this FEIS does NOT adequately address concerns for the toxic and carcinogenic crystalline silica construction dust that will be generated daily during at least the six years of road demolition and re- construction... including the multiple bridges and soundwalls. The FEIS ignores any concerns that thousands of our children through seniors will be sickened with asthma, silicosis, COPD, and lung cancer. In their response, MDOT simply refers to "fugitive dust" and then mentions that they "may" use some measures to minimize or mitigate.[41]
>
> Contrast this evasive smoke-and-mirrors response with the evidence presented by the National Cancer Institute about silica construction dust being toxic and carcinogenic, and by the American Public Health Association about road re-construction projects causing silicosis. Yes, there are OSHA requirements to help protect the on-site workers from breathing respirable silica dust, but what about the nearby citizens and neighborhoods and schools? One of the MDOT measures is that they *"may use"* water trucks... but that means a fleet of daily tanker trucks and spraying huge amounts of water to hopefully capture enough of the silica dust, etc., and then how and where is it safely dispersed (without adversely affecting our public water supply ala Flint, Michigan)? Mitigation techniques are only mentioned in broad brush terms, and that they *"may"* be used... and that these measures are only partially effective at best.

For these reasons and those Mr. Bloch presents more fully in his report, the Agencies' failure to disclose and meaningfully grapple with the impacts of silica dust in their FEIS denies the public and decisionmakers the needed understanding of this Project's health impacts for populations living, working, and going to school near the highways.

B. The FEIS Fails To Address the Health Impacts of Traffic Safety Issues from the Preferred Alternative.

The FEIS fails to address how the preferred alternative road design will lead to more vehicle crashes, including the lethal truck-vs.-car crashes. It also fails to address the safety impacts

[40] *See* Bloch Report, attached as Exhibit I.
[41] Full quote in FEIS at 5-181 "To manage fugitive dust emissions during construction, the contractor may use some or all of the following dust control measures, to minimize and mitigate, to the greatest extent practicable, impacts to air quality:"

of the severe bottleneck the Project creates where seven lanes will funnel down to two north of Gaithersburg.

Traffic collisions on the widened highways are likely to increase under the preferred alternative. The FEIS does not, however, fully evaluate these impacts. As the FEIS explains, "safety was not one of the specific elements identified in the Study's Purpose and Need." FEIS at 60.

If the preferred alternative is built, there will be seven northbound and seven southbound lanes on I-270, with two central toll lanes. This proposed road design is likely to create multiple safety problem. Vehicles will be required to shift to and from the central toll lanes to the outer lanes to exit. According to Bryon Bloch, a longtime expert in traffic safety, this configuration "will lead to many severe collisions."[42]

Further, the road configuration proposed under the preferred alternative will cause more frequent truck versus car crashes. For example, the proposed design does not address the need for safety shoulder or break-down lanes. FHWA recommends at least 12-foot shoulders adjacent to the outer travel lanes on roads, like I-270, with heavy truck traffic. Instead, the road designs for the preferred alternative:

> look like an artist's concept, and [do] not include any technical details to describe such necessary features as entry and exit ramps, how the traffic will enter and exit the toll lanes, how the traffic on the central toll lanes will transition to the exits, and other details.[43]

Shoulders less than 12 feet adjacent to outer travel lanes carry safety risks. The FEIS talks about "typical sections" of highway but is not clear about where and how frequently a 12-foot shoulder for the general purpose lanes will be maintained. For example, it was disclosed in the final 4(f) evaluation that next to the Morningstar Moses Cemetery:

> The width of the right shoulder is 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. The total length of the narrow right shoulder excluding the tapers is approximately 235 feet.[44]

This FEIS does not disclose how the risk is managed between toll lanes and general purpose lanes and whether when the general purpose lane shoulder is less than 12 feet, the toll lane shoulder is also proportionally narrower or if the general purpose lanes bear the entirety of the safety risks associated with a narrower shoulder adjacent to the outer lane.

In addition, Mr. Bloch opines, the preferred alternative will exacerbate the traffic backup bottlenecks as the seven lanes heading north on I-270 will funnel to two lanes just north of

[42] *See* Report of Byron Bloch at 1, attached as Exhibit I.
[43] *Id.* at 4.
[44] FEIS App'x G Final 4(f) Evaluation at 65, *available at* https://oplanesmd.com/wp-content/uploads/2022/06/11_MLS_FEIS_AppG_Final-Section-4f-Evaluation_-June-2022p.pdf

Gaithersburg. There are already bottlenecks in the Gaithersburg area from a less severe funneling from five lanes to two. As addressed more fully elsewhere in this Section, bottlenecks cause localized air pollution. Gaithersburg hosts several EJ populations who should not be asked to bear this additional environmental burden.

Based on his review of the FEIS, Mr. Bloch concludes:

> The FEIS fails to address how the Alternative 9 road design will lead to more vehicle crashes, including the lethal truck-vs.-car crashes (which I have analyzed for many years as a national auto safety expert analyzing many such actual collision accidents). The lane shifting and cross-overs to and from the toll lanes to entry and exit locations will exacerbate such collisions with severe to fatal consequences for the occupants of passenger vehicles.

The FEIS should have, but did not, thoroughly evaluate these safety issues and corresponding impacts to public health while analyzing the effects of the alternatives. Instead, it includes a proposed alternative that is likely to cause significant health impacts from unsafe road conditions.

IV. The FEIS's Discussion and Evaluation of Plummers Island, Certain NPS Lands, the Potomac River, and Impacts to the Northern Lon-Eared Bats and Other Bats Is Incomplete and Contrary to Applicable Legal Requirements.

A. Throughout the Environmental Review Processes, the Agencies Have Failed to Consider the Full Scope of Impacts to Plummers Island.

Plummers Island is a unique natural research area that hosts many rare plant species while at the same time being close to a heavily populated urban area. It is the site of important, long-term scientific studies conducted by the Washington Biologists' Field Club ("WBFC" or "Club"), a non-profit organization comprised of influential and accomplished scientists and charged by the National Park Service with the care and maintenance of the Island. The Island also serves as the meeting place for the Club's members. WBFC has documented the rich ecosystems and biodiversity on Plummers Island through over 120 years of research. Plummers Island is entitled to protection under Section 4(f), both as part of the C & O Canal Historical Park and as a significant historic resource that is individually eligible for listing in the National Register of Historic Places as the Washington Biologists' Field Club on Plummers Island.

In the preferred alternative, the Agencies plan to take part of Plummers Island, place piers for the highway on the Island, undertake construction of the Project from the Island, destroy important research plots of rare plant species and habitat, and overshadow the Island and its significant research areas by as much as 30 feet with noisy new bridge lanes. All of these impacts constitute a use of Plummers Island that must be evaluated under Section 4(f).

WBFC was a consulting party in the Agencies' Section 106 process, but in spite of WBFC's attempts to protect the Island through its consulting role, the Agencies have failed to do so. Nonetheless, the Agencies appropriately recognized the Island's historic significant and have

agreed to nominate Plummers Island to the National Register of Historic Places. Yet, the Agencies have failed to protect the whole of the property, including the riparian areas outside the ordinary high water mark, or evaluate feasible and prudent alternatives that would avoid or minimize harm to the protected features of Plummers Island.

Under the binding 1959 agreement between WBFC and the National Park Service,[45] the parties memorialized their intent to "preserve this natural wild area as a sanctuary and scientific research preserve," and WBFC gave the Island to the federal government, who agreed to ensure that any improvements on the island "shall not be inconsistent with the uses to which the island has been dedicated by the [WBFC]" in exchange for WBFC's continued maintenance and research on the Island as a wild natural area, so long as WBFC existed and complied with certain obligations. WBFC's extensive studies of the Island make it a rare and precious part of the cultural and scientific natural heritage of the National Park system.

As we now discuss, the failure to acknowledge the full scope of the impact of the Project on Plummers Island, including the long-term research and sensitive research sites that will be destroyed by the Project, and the failure to evaluate feasible and prudent alternatives that would avoid or minimize harm to the protected features of Plummers Island, violates Section 4(f).

1. The Agencies Violated Section 4(f) of the Transportation Act by Failing To Mitigate all Proposed Impacts to the Island.

The Agencies' failures to avoid or minimize impacts to Plummers Island violate Section 4(f) of the Department of Transportation Act. The Act bars the FHWA from approving any transportation project that "requires the use of . . . any land from an historic site of national, State, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such . . . historic site resulting from such use." 23 U.S.C. § 138(a); 49 U.S.C. § 303(c). *See* SDEIS Comments at 136. FHWA determinations under Section 4(f) must be made in the ROD and cannot lawfully be deferred. 23 C.F.R. § 774.7(e)(3). *See generally* Sierra Club, Section 106 Comment Letter (Apr. 12, 2021).

The Agencies have now missed their opportunity to adopt an alternative to using Plummers Island as part of the Project or to adopt mitigation in compliance with Section 4(f). Understanding that the Agencies were unlikely to select an alternative that avoided the Island entirely, WBFC proposed mitigation efforts on many different topics in the Section 106 process. *See supra.* The Agencies rejected some of those proposals. They also failed to treat effects to wetlands and waterways as Section 4(f) issues. Now the FHWA has run out of time to formally agree to any meaningful mitigation to comply with its Section 4(f) responsibilities in the ROD because they deferred a final determination on Section 106 mitigation until the execution of the programmatic agreement after the NEPA process. The FEIS does not propose to include reasonable alternatives

[45] *See* WBFC, Section 106 Comments on the MLS Programmatic Agreement, App'x A (Feb. 3, 2022) (attaching 1959 Agreement between WBFC and NPS).

that would avoid or mitigate harm to the Island in the preferred alternative, suggesting that it is very unlikely that the full mitigation required by Section 4(f) will be approved in the ROD.

The preferred alternative will cause irreparable harm to Plummers Island. Environmental damage to Plummers Island cannot be fixed by any form of post-hoc mitigation, as is apparently contemplated by the programmatic agreement. Plummers Island is a research site that hosts a multigenerational study of long-term ecological processes. Destruction of, or serious damage to, the habitat stops the ecological processes whose progress WBFC has been studying for over a century and ends the long-term study. The Agencies' proposed "comprehensive ecological restoration plan" on NPS land to address impacts from the preferred alternative, FEIS at 5-110, is not a solution.[46] Instead, it disrupts long-term research begun in 1901 and forces the WBFC to start a new study from scratch. The deferral of consideration of these long-term impacts violates Section 4(f). *See Corridor H Alternatives, Inc. v. Slater*, 166 F.3d 368, 371 (D.C. Cir. 1999) (because the historic properties protected by Section 106 and Section 4(f) are similarly defined, "it follows that the [Federal Highway Administration] must complete its Section 106 determinations before it can comply with section 4(f)").

2. Areas Within the Riparian Zones of the Island Must be Considered When Evaluating Impacts to the Island.

In the FEIS and the Section 106 process, the Agencies improperly ignored impacts to Plummers Island beyond the Island's ordinary high water mark. For over 120 years, as part of its overall research, WBFC has studied the wider, riparian margins of Plummers Island. This ecosystem-wide approach to the Island is part of the legacy of WBFC on Plummers Island. However, MDOT continues to say the Island ends at the ordinary high water mark because it failed to recognize the character-defining features of the historic property that justify a different boundary. The Agencies also arbitrarily declined to treat Plummers Island as a separate historic site of national significance worthy of special protections within the larger Chesapeake & Ohio Canal National Historical Park, despite the clear determination of eligibility for the WBFC at Plummers Island made by the Maryland Historical Trust during the course of the Section 106 process.[47]

The FHWA's failure to recognize this use of WBFC at Plummer's Island for purposes of Section 4(f) is contrary to the historic record and inconsistent with the purpose of the proposed designation of Plummers Island on the National Register of Historic Places. Because of the legacy of the WBFC and its research, the federal government determined Plummers Island to be eligible for the Maryland Historical Trust and the National Register of Historical Places, and historic designation requires protecting the Island as a whole.

[46] At a minimum, however, as required by the Section 106 process, MDOT and NPS should consult with WBFC before and during any proceeding "restorations."
[47] *See* Maryland Historical Trust, Determination of Eligibility Form for Washington Biologists' Field Club on Plummers Island (Aug. 20, 2021), attached as Exhibit J.

3. WBFC Was not Properly Included in the Planning Process and the Agencies Improperly Rejected its Recommendations To Minimize Impacts to Plummers Island.

WBFC, despite its historic relationship with Plummers Island, was not originally included in the National Historic Preservation Act Section 106 process. Once WBFC was included as a consulting party to the Section 106 process, the Agencies met with WBFC and agreed to a five-year study of impacts from the Project with photographic documentation. Despite the fact that WBFC at Plummers Island will be used and its research sites will be irreparably damaged the by the Project, the Agencies have not agreed to WBFC's mitigation requests, including proposals for long-term monitoring of invasive species and the effects of the shadow from the bridge or WBFC's request for NPS funding for research using NPS standard plots emplaced and followed for 20 years to capture impacts more fully.[48] WBFC's suggestions were either ignored or dispensed with on engineering and cost grounds. For example, under the preferred alternative, the Agencies plan to build a shared use path on the bridge in a manner that would overhang Plummers Island, despite WBFC's objections and suggestions of where else to place it.

Moreover, WBFC was not given notice of MDOT's field visits to Plummers Island so that WBFC could oversee the work to avoid damage to certain plots and rare species. MDOT's contracted crews have already hacked down seven fringe trees (NPS was notified and fined the company, but that doesn't change the fact that the trees had already been cut down). MDOT has failed to respect WBFC's role on the Island throughout the planning process and provide appropriate advance notice for disturbances to Plummers Island.

WBFC should have been included in the Section 106 process from the beginning, and its reasonable mitigation requests should have been honored. Instead, the Agencies have pushed forward with a plan that will contravene WBFC's goals and permanently damage this important resource. More importantly, in doing so, the FHWA has violated its responsibilities under Section 4(f) to avoid or minimize harm to WBFC at Plummers Island as a stand-alone Section 4(f)-protected historic site.

4. Mitigation for Impacts to Plummers Island Should Have Been Evaluated in the NEPA Process from the Beginning Instead of Being Channeled into a Section 106 Process that Will Conclude after the Comment Period Is over and the ROD Is Signed.

The Agencies' failures to fully consider impacts to Plummers Island as part of the NEPA and Section 4(f) reviews is an artifact of their decision to address impacts to the Island in a Section

[48] Proposed mitigation included the following: Nomination of WBFC on Plummers Island to the National Register of Historical Places; bike & pedestrian lane emplacement; flooding potential; pier and caisson emplacements; ALB construction platforms; channel impacts from construction and vegetation removal; researching disturbance; invasive species; abatement of toxic runoff; abatement of noise pollution; vistas; expanded online content; financial support for inventories of understudied groups on the island; access during construction; and long-term research. *See* WBFC, Section 106 Comments on the MLS Programmatic Agreement at 14-18 (Feb. 3, 2022).

106 programmatic agreement that will not be executed until after the NEPA and Section 4(f) processes have concluded. The decision to rely on a programmatic agreement for Plummers Island was in error. Section 106 regulations provide that a programmatic agreement is appropriate in certain limited situations, including "[w]hen effects on historic properties cannot be fully determined prior to approval of an undertaking." 36 C.F.R. §800.14(b)(1)(iii). Here, however, there was no reason to defer all identification of historic properties within the area of potential effects or the assessment of adverse effects and any measures to avoid and mitigate. WFBC and other commenters provided fulsome comments about possible adverse effects to the Island and numerous suggestions for proposed mitigation.

Because of the decision to proceed with a programmatic agreement, the Agencies claimed that they could not fully consider impacts to Plummers Island in the NEPA and Section 4(f) processes and declined to consider reasonable alternatives to avoid impacts (such as project scope, number of new lanes, and road alignment). But delaying consideration of the impacts to the site during alternative selection under NEPA and Section 4(f) undermined discussion of potential mitigation measures for any adverse effects. *See* Sierra Club Section 106 Comments of October 8, 2021.[49]

For example, in the FEIS, the Agencies essentially state that disrupting the continuity of WBFC's research is unavoidable, by ignoring reasonable alternatives that avoid impacts to Plummers Island. The no build option was dismissed without sufficient consideration. In addition, the ALB Strike Team considered a construction approach with a "west shift" of the LOD to entirely avoid impacts to Plummers Island, FEIS at 5-28, and determined it a viable option. The FEIS does not sufficiently explain why this west shift was rejected, particularly because "[a]n additional goal of the ALB Strike Team was to develop and evaluate alternatives for the avoidance and minimization of [impacts to] Plummers Island as it is a recognized ecologically sensitive and an NRHP-eligible historic property in addition to being part of the larger Chesapeake and Ohio Canal National Historical Park." FEIS at 5-28.

Damage to the Island was not inevitable. Allowing construction of the Project to impact the Island demonstrates the Agencies' error in failing to explore reasonable, prudent, and feasible alternatives under NEPA and directly violates the FHWA's substantive obligations under Section 4(f)

5. The Agencies Violated NEPA by Failing To Fully Account for Toxic Runoff, Water Quality Impacts, and Other Likely Impacts to the Island.

Despite WBFC's and other comments explaining the likely impacts of the Project on Plummers Island, the FEIS does not provide NEPA's required "hard look" with respect to the Island.

[49] Sierra Club Maryland Chapter Section 106 Comments on the I-495 & I-270 MLS (Oct. 8, 2021), *available at* https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u18365/MDSierraClub-Section106Comments-10-08-2021.pdf.

First, by limiting their consideration to areas landward of the ordinary high water mark on the Island, the Agencies claim that the preferred alternative will impact less of the Island than would have been indicated if those areas had been properly included.[50] The area that was considered is partly under the expanded ALB and the extended shadow will shade it out. Additional rare communities within the area of potential effects and bordering on the LOD include the Potomac River Bedrock Terrace Hardpan Forest; Floodplain Terrace Forest (with wetland bedrock pools); and the Central Appalachian / Piedmont Basic Mesic Forest with many sensitive species that are restricted to these habitats on the Island, including several that are rare. Plants cannot move out of the way and natural habitat is already being lost throughout the region. The rocky headland of the Island preserves a bit of the Potomac Gorge Riverside Outcrop Barren plant community (globally and state rare) and possibly the easternmost extent of this vegetation unit in the Gorge.[51]

Second, the FEIS includes incomplete maps of the Island, which adds to the Agencies' failure to consider the full extent of the impacts from the preferred alternative. In previous MDOT slides, the positions of piers from the post-construction ALB appears to be wider and overhang Plummers Island more than illustrated in the FEIS. The Agencies have not explained this discrepancy between MDOT's slides and information in the FEIS. WBFC remains concerned that the FEIS understates anticipated impacts to Plummers Island. Further, the destruction and disturbance of Chesapeake & Ohio Canal National Historical Parklands and riparian and pond wetlands is not likely to be contained within the LOD. In addition, in the maps of Plummers Island, the FEIS fails to completely catalogue the Island's water resources. For example, the Agencies did not fully map the frog water pools in the area of potential effects. There is a pool northwest of the mapped pools not drawn on the map. And there is further pooling northeast of the mapped pools that should be mapped as wetlands. The Agencies cannot fully evaluate impacts to the Island if they cannot even accurately describe its current state.

Third, the FEIS fails to consider toxic runoff onto the Island or reasonable mitigation to address it. Most bridges studied for toxic runoff rise up from the surrounding lead-in roads (convex). The ALB is concave, draining as much as a half mile in either direction from Maryland and Virginia lead-in highways. The low point in the curve is between the bend in Plummers Channel and the adjacent mainland. Currently drainage runs onto the NPS mainland, the channel, and the land edge under the bridge on both sides. The expanded I-495 and ALB would substantially increase surface runoff from the ALB, including toxic pollutants onto NPS land and into Plummers Channel. In addition, the lowest point on the ALB drains through scuppers and culverts onto NPS land, cutting an erosional gully and then draining into Plummers channel. *See* WBFC Comments on Section 106 at 16.T (Feb. 3, 2022). The Potomac River water may show little increase in pollutants due to its disproportionately large volumes. In contrast, Plummers Channel does not flow much of the time, and runoff accumulates in the water there until the surface flow threshold

[50] WBFC emphasized this point in its virtual and written SDEIS comments in 2021. WBFC's prior comments on the Section 106 process and comments on the DEIS and SDEIS are available at https://wbfc.science/plummers-island-threatened/.

[51] *See* WBFC, Section 106 Comments on the MLS Programmatic Agreement, App'x C map B (Feb. 3, 2022), attached as Exhibit M.

significantly breaches the channel head (level at or above 4.3 ft at Littlefalls Gauging Station). Between 3.4 and 4.2 ft Plummers Channel currently back fills from the bottom. Below 3.5 ft it is mostly stagnant.[52] Yet, the FEIS fails to discuss drainage directly onto Plummers Island or into Plummers Channel.[53] The Agencies plan to address ALB storm water management by relying on compensatory sites. FEIS at 3-20. Sierra Club criticized this approach in its SDEIS comments, *see* SDEIS Comments at 97-101, and continues to object to it. By relying on compensatory stormwater management, the FEIS seems to say that nothing can be done about contaminated runoff.[54] The Agencies also state that meeting stormwater quantity management goals on the shorelines adjacent to the ALB is infeasible. *See* FEIS at 3-18. The FEIS demonstrates that the Agencies are still planning an unlawful game of "wait-and-see" when it comes to how stormwater will affect this precious resource.

Fourth, the Agencies have failed to properly survey and analyze the occurrences of rare, threatened, and endangered species on Plummers Island and in the vicinity. As Dr. Browne explains more fully in her attached letter, the Agencies failed to properly survey for certain rare species on the Island and in the vicinity, including bats.[55] For example, they only performed bat surveys for two nights per site, even though bats frequently change roosts in the summer, so surveys should be performed for multiple nights to address presence or absence. Without mist netting and acoustic monitoring, more surveying is needed to determine the presence of threatened and endangered species on Plummers Island and in the vicinity of the American Legion Bridge on both sides of the Potomac River.

Fifth, the FEIS asserts that certain permanent impacts to Plummers Island will be temporary. The FEIS states that impacts to Plummers Island will be "permanent use for three, discrete, approximately 10-foot diameter pier foundations and temporary, construction activities," affecting "approximately 0.28 acres of impacts to the island, of which less than 0.1 acres would be permanent impact and 0.27 acres would be temporary impact." FEIS at 5-29. The FEIS notes, "[t]emporary construction activities may include efforts such as excavation, access for demolition of existing bridge foundation and piers adjacent to the island, and slope protection. Access to the existing and proposed piers is required for these activities." *Id.* These "temporary" construction activities have permanent effects. Armoring embankments, cutting down trees, destroying vegetation in the LOD, and creating a dead zone under the bridge and an extended shadow over the Island will irreparably damage the Island.

[52] The measures above are based on WBFC member Robert J. Soreng's estimates from having crossed to the Island many times. Dr. Soreng notes that even with the recent big rains the river level has been well below 4.3 ft.
[53] Plummers Channel is identified in the DEIS and SDEIS as "Rock Run Culvert," although it is neither Rock Run nor a culvert, and in the FEIS as a Potomac River "oxbow," although it is now officially named Plummers Channel by the USGS Board of Geographic Names.
[54] MDOT did not respond to comments about runoff from spills onto the Island from accidents. Several recent accidents have caused spills.
[55] *See* Letter from Shannon P. Brown, PhD to Sierra Club Maryland Chapter (July 18, 2022), attached as Exhibit K.

Even the FEIS recognizes that the "temporary" construction impacts may cause permanent damage to certain important plant species that are being studied on Plummers Island:[56]

> Some impacts to RTE [or rare, threatened, and endangered] plants will occur on Plummers Island, though most will occur in areas that will be temporarily disturbed during construction of the new ALB. RTE plants potentially affected within the areas of temporary disturbance on Plummers Island include thousands of horse-tail crown grass plants, about a dozen pale dock plants, 30-50 halberd-leaf rose-mallow plants, and 10-50 Rand's goldenrod plants. All of these plants occur either along the Plummers Island shoreline of the oxbow of the Potomac River or along the Plummers Island shoreline of the Potomac River. As noted above, because of the duration of construction of the new ALB and potential shading effects from the expanded ALB, the plant impacts are likely more permanent than temporary, even though they occur outside of the permanent footprint of the bridge. The RTE plant impacts resulting from the bridge pier footprint on Plummers Island would be to a few dozen horse-tail crown grass plants along the edge of the oxbow of the Potomac River.

FEIS at 5-127. The FEIS does not, however, acknowledge that many other "temporary" impacts are permanent disruptions to the integrity of the Island. Plummers Island is currently managed for scientific research to study long-term trends with no disturbance. The preferred alternative is antithetical to that purpose and the FEIS fails to acknowledge the full impacts to Plummers Island and to WBFC's mission. These acknowledged impacts also increase the severity of the use of Plummers Island under Section 4(f), and the FHWA's violation of its substantive obligation under Section 4(f) to consider prudent and feasible alternatives that would avoid or minimize harm to the important research sites that will be destroyed by the Project.

6. The Agencies also Do Not Address Concerns to Plummers Island from Flooding.

The FEIS fails to accurately describe the likely impacts of the preferred alternative due to the risks of catastrophic flooding to the Island. As noted above, the Agencies improperly limited consideration of impacts to Plummers Island to those that occur within the Island's ordinary high-water mark.

The FEIS's evaluation of construction and long-term impacts to the Island from flooding is also inadequate. In the FEIS, the Agencies state that hydrologic analysis will not be completed until final design, but without full hydrologic analysis the FEIS is incomplete. *See* FEIS 5-84 (explaining that a general assessment of hydrologic effects for the Project will be completed "once final limits of cut and fill are determined the final phase of engineering design"). Flow in the

[56] The FEIS explains "the proposed construction activities at the western edge of Plummers Island will alter the natural landscape of the Island, a character-defining feature of the WFBC, resulting in diminishment of property's integrity of setting." FEIS at 9-33. It does not, however, fully describe the impacts from the Project or attempt to avoid or fully mitigate them, as discussed *supra*.

channel will be affected simply by removing the old piers at the river's edge, let alone by flooding adding to this impact, but the FEIS does not address these impacts.

The flooding issues from planned caisson and pier emplacements (creating perfect conditions for logjams) and leveling or trimming the rock ridge that constrains the channel overflow from flooding the island are major and reasonably foreseeable adverse issues that require prompt attention and avoidance, minimization, or mitigation and were not fully addressed in the FEIS.

Similarly, the Agencies indicate that the construction process will be designed to address 100-year floods, but those floods now come more frequently than historic 100-year floods. The FEIS must acknowledge that the data it is using to evaluate construction impacts is outdated and understates the risks to the Island. Given the increasing frequency of more extreme rains, there is a potential for catastrophic flooding at the ALB in Mather Gorge narrows.

In sum, throughout this process, the Agencies have continued to undervalue both Plummers Island and WBFC's important role in protecting it. As a result, they have recommended an alternative that will, among other things, permanently impact RTE plants, destroy WBFC long-term research, denude, overshadow, and armor the upper end of the Island, and increase the risk that stormwater runoff or catastrophic flooding will cause large-scale damage to the Island. The Agencies still lack smart-growth-forward thinking to address climate change, and instead of coming up with smart-growth solutions they plan to permanently damage the irreplaceable natural resource that Plummers Island represents.

B. The FEIS Fails to Address Several Outstanding Issues Pertaining to National Park Service Land Around the American Legion Bridge, Including on Both the Maryland and Virginia Sides of the Potomac River.

1. There Is No Stormwater Management Planned for the American Legion Bridge, Which May Run Afoul of Clean Water Act Requirements.

With no plan for stormwater treatment on the ALB, water will drain directly from the Bridge into the Potomac River. While original plans included stormwater management on National Park Service ("NPS") properties to address runoff from the Bridge, this control measure has been eliminated because, the Agencies claim, the NPS will not allow stormwater management facilities on their properties except in narrow circumstances not applicable here. *See* FEIS at 3-18.[57]

However, according to the FEIS at ES-10, Maryland Water Quality Standards, and likely Virginia Water Quality Standards as well, require onsite treatment of all new impervious areas and

[57] The Agencies must clearly explain why stormwater management to address Bridge runoff is not appropriate on Plummers Island because it is not clear that restriction applies given that Plummers Island is NPS-owned land.

for stormwater to leave a site in equal or better condition that it arrived. That requirement applies to most if not all of the ALB, yet nothing is being done to comply with it.

Observers of the Project involved in the Section 106 process have suggested that several of the scuppers on the American Legion Bridge will drain directly onto Plummers Island (National Park Service property), which would seem counter to the Agency's interpretation of NPS's policy regarding stormwater management on their property. This proposed stormwater drainage exacerbates the harm to this Section 4(f)-protected property discussed above.

Even beyond the legal requirements, it is highly concerning that no stormwater management is planned for an area that is concave and receives stormwater from large amounts of impervious surface in both Maryland and Virginia. Moreover, that stormwater flows directly into the Potomac River, a source of drinking water for 6 million people.

The Potomac River Keeper Network states:

> The Potomac River provides clean, safe drinking water to almost 6 million people within the river basin. Close to 100 million gallons of water are taken from the river and transported to homes, schools, restaurants, hospitals, and dozens of other businesses and amenities daily. This water is used for drinking, cooking, cleaning, showering, and removing waste.[58]

According to the Potomac River Basin Drinking Water Source Protection Partnership,[59] pollution in the Potomac River from de-icing materials, hazardous spills, and stormwater are challenges to providing a reliable and safe supply of drinking water. Those challenges will significantly increase if the Agencies proceed with the preferred alternative of widen I-495 and the ALB by adding toll lanes without addressing increased stormwater runoff or spills into the Potomac. The FEIS should have addressed these stormwater issues given their extensive health and safety ramifications. No project should be cleared to move forward with such poor planning.

2. Over 1,000 Trees Will Be Removed from National Park Service Land, Which Remains an Unacceptable Number from the Perspectives of the National Park Conservation Association, National Capital Planning Commission, and Most Likely the National Park Service As Well.

According to the FEIS, in July 2021, the National Park Service objected to the removal of 858 trees on NPS property, including along the C&O Canal. FEIS App'x S at 14. Under the preferred alternative, 815 trees will be removed from the C&O Canal, 270 removed along the Clara

[58] Potomac River Keeper Network, https://www.potomacriverkeepernetwork.org/imagine-a-day-without-water-october-21st/#:~:text=The%20Potomac%20River%20provides%20clean,people%20within%20the%20river%20basin.

[59] Potomac River Basin Drinking Water Source Protection Partnership, *available at* https://www.potomacdwspp.org/about-us/.

Barton Parkway, and 76 from the George Washington Memorial Parkway, resulting in a total of 1,161 trees to be removed on NPS property. *Id.* at Tbl. 5-9. This is an unacceptable level of impact for which no apparent mitigation has been proposed. Given that these resources are protected under Section 4(f), the FHWA is obligated to consider whether there are prudent and feasible alternatives that would avoid or minimize the harm resulting from the destruction of so many trees.

3. Further Investigation Is Required into Whether it Is Legal Without Congress's Review and Approval to De-Federalize Capper Crampton Lands and Transfer Them to the States for Transportation Use.

A November 19, 2021, letter from the National Capital Planning Commission to MDOT SHA[60] stated:

> Regarding the two federal parkway lands, NPS has advised NCPC of its intent to "transfer" project-related George Washington Memorial Parkway land to the State of Virginia and project-related Clara Barton Parkway and Chesapeake & Ohio National Historic Park land to the State of Maryland. These resulting changes would negate NCPC's Capper-Crampton jurisdiction over Clara Barton Parkway land and our Planning Act jurisdiction over George Washington Memorial Parkway and C&O Canal National Historic Park lands. Given these facts, NCPC has no formal review authority over any aspect of the Alternative 9 - Phase I South Alternative; however, please note that NCPC would still be legally obligated to comply with the CCA requirements and 1941 and 1951 Agreements until such as time the land transfers are complete. This includes ensuring that M-NCPPC consents to the transfers and obtains compensation for its contribution to the land purchase.

Yet, two years earlier, there were concerns about the legality and optics of taking this course of action. Meeting notes obtained by FOIA state:

> There was a discussion on de-federalizing CC lands. NCPC was not sure if that is allowed but were concerned with optics and risks associated with it even if it [sic] allowed. NCPC talked about [sic] 1963 perpetual easement agreement between the State and M-NCPPC due to the widening and construction of the Capital Beltway."[61]

[60] November 19, 2021, Letter to MDOT SHA's Jeffrey T. Folden from Marcel Acosta, Executive Director of National Capital Planning Commission, Re: I-495/270 Managed Lanes Study Draft Supplemental Environmental Impact Statement Comments.
[61] Meeting notes from Federal Highway Administration (FHWA) and National Capital Planning Commission (NCPC) Meeting, Location: NCPC Headquarters, November 1, 2019, attached as Exhibit L.

In another bullet, the meeting notes stated: "NCPC informed FHWA that NPS reached out to them to let them know about the 1941 agreement on George Washington (GW) Parkway which stipulates NCPC's role."

The Agencies must justify these proposed land transfers, including identifying the "risks" noted by NCPC, explaining the decision-making process, and describing why the transfers are consistent with the applicable law, including all relevant agreements.

C. The FEIS Does Not Adequately Identify and Analyze Impacts to the Potomac River.

1. Information Is Lacking and Still Needed Regarding Recreational Use of the Potomac River During Construction.

The Potomac River flows under the American Legion Bridge (ALB), which will be replaced under the preferred alternative. Recreational users of the Potomac River are deeply concerned about the impact of construction of the new bridge on the River. .

The Canoe Cruisers Association, one of these concerned groups, submitted comments on the EIS documents, FEIS App'x T.2.B. Vol. 1 at CO-566 – CO-569, and summarized their concerns in an opinion piece in Maryland's *Bay Journal*:

> It is anticipated that the construction of the [American Legion] bridge will take five years and double the size of the current one. This will inevitably harm natural and recreational experiences and the river itself. Increased noise, restriction of the channel with barges, riprap and heavy equipment are certainties, and intermittent closures of the river to recreational boating are very likely. . . . The Potomac River is nationally recognized as an important historic, scenic and recreational waterway . . . . Two of the 11 nationally designated scenic land and water trails in the U.S. run under the American Legion Bridge: The Park Service's Potomac Heritage National Scenic Trail [and the] Captain John Smith Chesapeake National Historic Trail. . . . MDOT's environmental documentation fails to even mention the impact of bridge construction on these monumental historic and recreational sites. . . . .The department must describe how it can and will avoid adverse impacts. [62]

In their comments and article, the Canoe Cruisers Association raised concerns about boating access, safety, and environmental impacts to the Potomac River during construction of the new ALB. Unfortunately, the boating concerns raised by Canoe Cruisers Association have been generally dismissed.

[62] David Cottingham, Maryland Silent on Recreational Impacts of Potomac Bridge Project, Bay Journal (Apr. 13, 2022), *available at* https://www.bayjournal.com/opinion/forum/maryland-silent-on-recreational-impacts-of-potomac-bridge-project/article_40e00ae8-af71-11ec-9558-b35466700206.html.

For example, the Maryland Historic Preservation Office concluded that the Potomac River under the ALB is not an historic resource covered by the National Historic Preservation Act. Even though the National Park Service has designated the Potomac beneath the ALB as part of the Potomac Heritage Trail and the Captain John Smith Chesapeake Bay National Historic Trail, NPS did not echo the Canoe Cruisers Association's concern about adverse impacts to those waterway trails in its comments during the EIS or historic preservation reviews.

In their response to comments on the FEIS, the Agencies stated that, during construction, no dikes or large stones will be placed in the Potomac except around the new piers supporting the ALB. Further, they expect to construct the new bridge using "trestles" for the heavy equipment:

> During construction, it is anticipated that causeways, trestles and barges will be utilized to access the ALB corridor for demolition and construction. It is not anticipated that rocks will be placed across the Potomac due to it's [sic] depth and that off the banks, the contractor will utilize steel trestles supported on temporary pilings that will be removed at the completion of construction as well as barges to obtain access. During the heavy construction operations, it is anticipated that *water users will have temporary disembarkment and rentry [sic] requirements to detour around the construction* (emphasis added). These are anticipated to be intermittent during construction. Permanent riprap for scour protection is anticipated to be placed around the pier footings but not across the entire channel between piers.

FEIS App'x T.2.B.Vol.1 at CO-567. Construction is expected to take up to 5 years and the proposed construction zone across the Potomac is about 600 feet long. The Agencies provide no information about where the "disembarkment and re-entry" points will be and no details on how frequently these "intermittent" disruptions will occur.

The Agencies further conclude that, "[w]hile the Potomac River has a recreational use, it is not a park as defined under Section 4(f) or the US Department of Transportation (USDOT) Act of 1996 as amended. Construction of the new ALB should *not prohibit the navigability* of the main channel of the Potomac River and construction will be limited to the shorelines." FEIS App'x T.2.A.Vol.1 at CO-568 (emphasis added).

Construction will certainly *interfere with or impede the navigability* of the Potomac for several years, even though it may not "prohibit" it, except intermittently.

More still needs to be disclosed to the recreational users of the Potomac and the public about how the Potomac will be impacted by the proposed demolition of the current American Legion Bridge and by its rebuilding and approximate doubling in size.

2. The Agencies Should Have Considered Whether the Potomac River Is a Section 4(f) Resource Due to its Inclusion Within the C & O Canal Historical Park.

The Agencies should have considered whether the Potomac River is a Section 4(f) recreational resource due to its location within the C & O Canal National Historical Park, the fact that it is part of the Potomac Heritage Trail and the Captain John Smith Chesapeake Bay National Historic Trail, and possibly due to its designation as a state wild and scenic river.

FHWA's Section 4(f) policy paper states:

> Those portions of publicly owned rivers, which are designated as recreational trails are subject to the requirements of Section 4(f). Of course, Section 4(f) would also apply to lakes and rivers, or portions thereof, which are contained within the boundaries of a park, recreation area, refuge, or historic site to which Section 4(f) otherwise applies.[63]

Based on these criteria, the Potomac River should qualify as a Section 4(f) recreational resource. The River passes through the 4(f)-protected C & O Canal National Historical Park, passes around the 4(f)-protected resource Plummers Island within the C & O National Historical Park, and is part of the Potomac River Heritage Trail and the Captain John Smith Chesapeake Bay National Historic Trail, both of which are recreational resources.

Additionally, the Potomac River is designated by the state of Maryland as a "scenic waterway" under the state Department of Natural Resources' Scenic and Wild Rivers System, which underscores its importance as a recreational resource within Maryland. Given this designation, the FHWA should have consulted the state's Wild Rivers Advisory Council as it weighed whether the state's management plan designates the river as a "significant park, recreation area, or wildlife and waterfowl refuge" and is therefore protected under Section 4(f).

D. The FEIS's Analysis of Impacts to the Northern Long-Eared Bat and Other Bats Is Inadequate and Even More Outdated than Before, Given Recent Regulatory Developments and New Revelations About the Scope of Construction.

Throughout the NEPA process, we have emphasized that the Agencies' analysis of potential impacts to the Northern Long-Eared Bat relies on an outdated, 2016 Endangered Species Act ("ESA") Section 4(d) Rule, *see, e.g.*, SDEIS Comments at 118, and fails to sufficiently analyze the threat to bats, *see* DEIS comments at 74. We incorporate by reference the points we made in those comments in their entirety and note that the Agencies never responded to them in the FEIS.

The Agencies' assessment is now even more outdated in light of the U.S. Fish and Wildlife Service's proposed classification of the Northern Long-Eared Bat as endangered and the fact that, with construction extending into Virginia, even more bats, and potentially more bat species, will be impacted. These impacts were not properly evaluated by the Agencies' bat surveys.

[63] Section 4(f) Policy Paper, Question 21A, *available at* https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.aspx#addex21.

1. The FEIS Fails To Consider a Court Decision Invalidating the Fish and Wildlife Service's Listing for the Northern Long-Eared Bat as Threatened and the Agency's New Proposal To List it as Endangered.

As we noted in our SDEIS comments, the U.S. District Court for the District of Columbia held that the designation of the Northern Long-Eared Bat as threatened, rather than endangered, was arbitrary and capricious. That opinion was issued before the DEIS was released for comment, *Center for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020), giving the Agencies ample time to consider and address its effects. The FEIS does not, however, even acknowledge this decision. Instead, like the SDEIS and DEIS, the FEIS states—without caveat—that the Project is "covered" by the Programmatic Biological Opinion on the 4(d) Rule for the bat. FEIS at 5-126; FEIS App'x M, Sub-App'x N at 176-77; see also FEIS at 9-53; FEIS App'x M at 134 (explaining that the ESA consultation process has been "completed"); see also FEIS App'x M, Sub-App'x N at 84-85.

Correspondence from the Fish and Wildlife Service indicates that the decision to rely on the 4(d) Rule was made in 2019, before the D.C. District Court determined that the reasoning for the threatened status was arbitrary and capricious. FEIS App'x M, Sub-App'x N at 37. This letter also indicates that, in 2019, the Fish and Wildlife Service understood that a change in the Northern Long-Eared Bat's status would limit the Project's flexibility and even indicated a willingness to consider exemptions from the ESA's prohibition on "taking" endangered species, including potentially "exempt[ing] taking associated with tree removal during the active season, but outside of the pup season, in known occupied habitat." FEIS App'x M, Sub-App'x N at 37. MDOT SHA and FHWA were also aware of the impacts of a change in the ESA listing status: in a letter to MDOT, the Fish and Wildlife Service wrote that, because the Indiana Bat, a species found near the corridor study boundary, was endangered, there was "not as much flexibility" as there was when constructing around the Northern Long-Eared Bat's habitat when that bat species was listed as only threatened. FEIS App'x M, Sub-App'x P at 35. Further, the Agencies knew early on that forest clearing "may affect" the Northern Long-Eared Bat. FEIS App'x M, Sub-App'x P at 33. Despite that knowledge, the Agencies have not changed or even discussed possible changes to the Project in response to the changing status of the Northern Long-Eared Bat.

Importantly, the FEIS does not consider the Fish and Wildlife Service's recent proposal to list the Northern Long-Eared Bat as an endangered species under the ESA which, if finalized, will nullify the 2016 4(d) Rule. U.S. Fish and Wildlife Service, Proposed Listing, 87 Fed. Reg. 16442 (Mar. 23, 2022). None of the Agencies' correspondence even acknowledges this proposal or its implications and the Agencies have failed to undertake any conferencing procedures to address how the Project will be modified if the bat is ultimately listed as endangered.[64]

[64] On July 5, a federal district court in California vacated several ESA rules issued in 2019, returning the ESA consultation process to the regulatory regime that governed before 2019. The Agencies should ensure that its consultation is consistent with that applicable law and acknowledge that any consultation conducted under the now-vacated rules is invalid.

The Agencies must conduct a proper ESA Section 7 consultation and NEPA process that addresses the Northern Long-Eared Bat's likely change in status.

2. Because of Newly Disclosed Construction in Virginia, There Are More Species that Will Be Affected and Impacts to These Species Should Have Been Assessed Throughout the Process, Rather than Included Only in the FEIS.

Under the proposed alternative, construction will take place in Fairfax County, Virginia. Virginia constituents were not informed of this proposed construction until the FEIS was released in June 2022.[65] Among other things, in the FEIS, the public learned that the Virginia Department of Wildlife Resources specifically identified Virginia's state-endangered Little Brown Bat and state-endangered Tri-colored Bat as species that could be impacted. FEIS App'x M, Sub-App'x N at 131. The Agencies have determined that there are 14.4 acres of suitable bat habitat and 18.2 acres of somewhat suitable bat habitat, FEIS App'x M at 118, and that there is a "high likelihood" that construction will impact these species. FEIS at 5-126. These impacts should have been discussed in the DEIS and SDEIS rather than sprung on Virginians in the FEIS, especially since Virginia's state government flagged these species as among those that could be impacted before the SDEIS was issued, FEIS App'x M, Sub-App'x N at 131, yet these additional species impacts were not discussed in the SDEIS, leaving the public without a sufficient opportunity to comment on them.

3. Surveys of Northern Long-Eared Bat Habitat Continue To Be Inadequate, and the FEIS Fails To Address this Inadequacy.

To determine the impacts of the Project on the Northern Long-Eared Bat, the Agencies conducted surveys and sought to identify "known" maternity roost trees and hibernacula. These surveys were incomplete, however, for reasons outlined in our SDEIS comments, see SDEIS Comments at 118, meaning that the EIS process did not consider the full range of the bats' potential habitat.[66]

The Agencies have acknowledged possible impacts to Northern Long-Eared Bat and the potential of the preferred alternative to cause adverse impacts to bat habitat. SDEIS Comment at

[65] Bruce DePuyt, *MDOT's Plan to Build Toll Lanes in Fairfax is an Unwelcome Surprise to Some Virginians*, Maryland Matters (Jun. 16, 2022), https://www.marylandmatters.org/2022/06/16/mdots-plan-to-build-toll-lanes-in-fairfax-is-an-unwelcome-surprise-to-some-virginians/.

[66] The Fish and Wildlife Service recently recognized that its determination of a species' habitat must not be artificially constrained. It therefore rescinded a 2020 regulatory definition of "habitat," in the definition of "critical habitat," as too restrictive because it did not include areas that "'currently or periodically' contain something deemed a necessary 'resource of condition'" or which could serve in that manner "after restoration activities or other changes occur." U.S. Fish & Wildlife Service, Endangered and Threatened Wildlife and Plants; Regulations for Listing Endangered and Threatened Species and Designating Critical Habitat, 87 Fed. Reg. 37757, 37758 (June 24, 2022).

118. For bridges in particular, the Agencies have now determined that the project area has several areas that "support or could support roosting bats," including the Northern Long-Eared Bat: the American Legion Bridge, Clara Barton Parkway Eastbound bridge (which was *not surveyed*), the McArthur Boulevard/Clara Barton Parkway Westbound bridge, and Seven Locks Road Bridge. FEIS App'x M at 117.

Yet, nowhere does the 26,500-page FEIS respond to our concerns with the incomplete bat surveys. FEIS App'x T at 826-31 (FEIS response to comments). Because the habitat surveys were inadequate, the FEIS's assertion that there are no Northern Long-Eared Bats within the LOD, FEIS App'x M at 118, is inadequate for the same reasons that assertion fell short in the SDEIS. *See* SDEIS Comments at 118-19.

The Agencies' failure to consider and address new information, in this case regarding the likely endangered status of the Northern Long-Eared Bat; failure to consider impacts to Virginia bats; and reliance on incomplete habitat studies all resulted in a deficient analysis, in violation of NEPA and the ESA. 40 C.F.R. §§ 1500.1(b); 1502.1. The FEIS also should have analyzed reasonably foreseeable future actions like the likely listing of the Northern Long-Eared Bat as endangered, but it did not, in violation of NEPA regulations. 40 C.F.R. §§ 1508.7, 1508.25.

V. The FEIS Fails to Meet the Agencies' Environmental Justice Obligations Despite Numerous Commenters' Efforts in Identifying Deficiencies in the Agencies' Analysis.

A. Delaying the EJ Analysis Until the FEIS Precluded Meaningful Public Review Including, Most Importantly, Review and Comment by EJ Populations.

As we explained in our previous comments, by delaying an analysis of EJ impacts until the FEIS, the Agencies prevented full and fair participation by all potentially affected communities. *See* SDEIS Comments at 122-23. These procedural missteps violate NEPA, Title VI, Executive Order 12,898, USDOT Order 5610.2(a), and FHWA Order 6640.23A, among others. USDOT Order 5610.2(a) in particular requires the Department of Transportation to "fully consider[] environmental justice principles throughout planning and decision-making processes." Waiting until the FEIS to disclose key analyses violates this order and fundamental environmental justice principles. As the Maryland-National Capital Park and Planning Commission wrote, waiting to analyze certain EJ issues in the FEIS:

> is far from a best practice since it obstructs public comment and community input. Waiting until after the selection of a preferred alternative to evaluate impacts to minority communities means that disproportionate impacts will not be considered in the formulation of the preferred alternative and thus do not receive the attention NEPA and Title VI of the Civil Rights Act of 1964 [] demand from the Lead Agencies.

M-NCPPC Comments on the SDEIS at 7 (Nov. 30, 2021). Similarly, by waiting until the FEIS to disclose these impacts and present the proposed mitigation for the preferred alternative, the Agencies impair the ability of the public—and EJ populations—to have meaningful input into ways to reduce impacts to EJ communities from the preferred alternative.

B. Cumulative Impacts to the African American Morningstar Moses Hall and Cemetery Site Have Been Disregarded and Dismissed by the Agencies, Unlawfully Preventing an "Adverse Effects" Determination for a Nationally-Recognized 4(f) Protected Resource.

Friends of Moses Hall, the National Trust for Historic Preservation, Cabin John Citizens Association, Maryland-National Capital Park and Planning Commission, and Sierra Club Maryland Chapter have long raised the issue of cumulative effects and environmental injustice from the Project in relation to the cemetery and hall site of the Morningstar Tabernacle No. 88 of the Ancient United Order of Sons & Daughters, Brothers & Sisters of Moses in Cabin John, Maryland. These organizations, Section 106 consulting parties or signatories, have offered comments about Morningstar Moses Cemetery and Hall on the NEPA documents and in comment letters to MDOT SHA, FHWA, and other agencies as part of the Section 106 process. Their NEPA and Section 106 comments and all Section 106 agency communications are incorporated by reference in these comments.

The Morningstar Tabernacle No. 88 site abuts Interstate 495 in Cabin John, Maryland, because, as the FEIS recognizes:

> Highways, such as the Southeast-Southwest Freeway (I-695) in D.C. and I-495 through the former Gibson Grove community in Cabin John, were frequently routed through low- income, majority-minority neighborhoods, disproportionately displacing black and African American residents in particular, further concentrating poverty and exposing remaining residents to the environmental and public health effects associated with traffic proximity.
> The historic Gibson Grove A.M.E. Zion Church was physically split from the Morningstar Tabernacle No. 88 Moses Hall and Cemetery by construction of I-495 in Cabin John in the 1960s. Gibson Grove was a settlement founded and developed by formerly enslaved families, and the Church, Hall, and Cemetery are important features of this historic settlement. (See https://www.friendsofmoseshall.org/history.)

FEIS at 5-135-5-136. The Morningstar Tabernacle No. 88 is a National Register-eligible historic site located in what was a thriving African American community before it was split apart by the construction of the Beltway, which caused the decline of the community. Descendants of this once thriving community still live down the road and in the area. They, with community members and advocates, visit multiple times a year to provide upkeep for the cemetery site they regard as sacred and hallowed. Right next to this cemetery, I-495 was built in the 1960s, widened in the 1990s for increased traffic, and a subdivision was also built around the edges of the cemetery. Now the highway will be widened with four more lanes. Despite this, the Agencies maintain that cumulative impacts to the site do not have to be considered because the harms of the original highway construction occurred prior to the enactment of the National Environmental Policy Act (1970) and the National Historic Preservation Act (1966).

According to 32 C.F.R. § 651.16 (cumulative impacts), "(a) NEPA analyses must assess cumulative effects, which are the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions."

All aspects of this definition apply to the Morningstar site. The past impacts are listed above, the current impact is four proposed new lanes of highway to be added right next to it, and the future impacts are the rest of the phases of this toll lane project, which will result in the highway becoming saturated with more and more car and tractor trailer traffic and resulting noise, dust, and air pollution with each new toll lane expansion in the overall plan. MDOT SHA's March 31, 2022, Section 106 letter explains the future impacts:

> The [I-495 & I-270 Managed Lanes Study] is the first element of the broader Op Lanes Maryland program which considers improvements along the entire length of I-495 (Capital Beltway) in Maryland, connecting into Virginia's portion of I-495, as well as the entire length of I-270 (Dwight D. Eisenhower Memorial Highway) up to I-70 in Frederick County, Maryland.[67]

The cumulative impacts to this site are clearly an adverse effect to Moses Hall that should have been acknowledged for this important Section 4(f)-protected historic resource. Morningstar Tabernacle No. 88 Moses Cemetery and Hall was named by the National Trust for Historic Preservation as one of America's "11 Most Endangered Historic Places" in 2021. Failure to acknowledge this adverse effect has deprived Moses Hall of the protections that it is entitled to under Section 4(f) that would have allowed it to have a say in determining the mitigation measures for the adverse, cumulative impacts still accumulating to it from this highway expansion and reasonably foreseeable future actions.

The cumulative impacts on Moses Hall from past actions are undeniable and have been fully acknowledged by the Agencies. In a *Washington Post* article entitled "Maryland will avoid Moses Morningstar Cemetery when widening Beltway," Julie Schablitsky, the Chief, Cultural Resources Section and Chief Archaeologist at MDOT, is quoted as follows:

> "We own the faults of the Maryland Roads Commission impacting this community 60 years ago," Schablitsky said during a recent visit to the cemetery. "It's our responsibility now to repair that damage and come in and do the right thing."[68]

[67] Section 106 Letter from Steve Archer to Elizabeth Hughes and Julie Langan, March 31, 2022 at 1. Notably, the FEIS itself never mentions this fact, that this is just one small part of a larger plan for putting toll lanes along the entire Beltway and beyond. Similarly, the FEIS does not consider cumulative impacts of the clearly reasonably foreseeable much larger overall toll lane expansion plan.

[68] Katherine Shaver, African American Gravesites Detected Near the Capital Beltway Will Be Spared in Road-Widening Plans, The Washington Post (Sept. 9, 2021). https://www.washingtonpost.com/transportation/2021/09/09/maryland-beltway-moses-morningstar-cemetery/.

MDOT's public position took a sharp turn on January 4, 2022, when the Agencies asserted, "[b]ecause the 1960s impacts [of the original Beltway construction) occurred prior to laws that required consideration of effects, ... there is not an adverse effect to the historic property based on 'cumulative' impacts."[69]

This conclusion is wrong as a matter of law. There is absolutely no support in the Section 106 regulations for this arbitrary cut-off date for consideration of cumulative impacts. On the contrary, they unconditionally state that: "[a]dverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative." 36 C.F.R. § 800.5(a)(1). Nor is there any authority for this arbitrary cut-off date in the Council on Environmental Quality's cumulative impact regulations or in related regulatory guidance on cumulative impact analyses.

Furthermore, not only were those past cumulative impacts significant, they had a significant disproportionate impact on an environmental justice community and its most central community feature, the benevolent society hall and cemetery that bonded the community. As even the Agencies appear to acknowledge, a grave injustice was done when the Beltway was constructed. The imperative to consider past wrongs to environmental justice communities is confirmed by Executive Order 13990 (Jan. 20, 2021),[70] which applies to projects such as this one, that would utilize federal funding. The Executive Order cites the nation's commitment to "conserve our national treasures and monuments, places that secure our national memory. *Where the Federal Government has failed to meet that commitment in the past, it must advance environmental justice.*" (emphasis added). The Agencies' acknowledgement of this past wrong but refusal to consider these past impacts in the FEIS clearly violates NEPA and has the effect of depriving these historic resources of the protections to which they are entitled under Section 4(f). In other words, rather than remediate these past wrongs, the Agencies have doubled-down on them and compounded the harm.

While the FEIS acknowledges the past harm resulting from the Beltway's original construction, MDOT's January 4, 2022, letter asserted, without any substantiation, that no impacts to the cemetery occurred from the 1992 Beltway widening. That position is not credible. Basic math indicates that when a highway is widened, it increases throughput (which translates to more noise, dust, and pollution) and impervious surface, causing greater stormwater runoff, to which this site is particularly vulnerable by the state's own admission.

[69] MDOT SHA Section 106 letter from Julie M. Schablitsky to Elizabeth Hughes and Julie Langan dated Jan. 4, 2022 at 3.

[70] Exec. Order 13990, 86 C.F.R 7037 (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/

The response from consulting parties to the Agencies' flawed argument that they could apply a cutoff date to their analysis of cumulative effects was swift and scathing. The National Trust for Historic Preservation, Friends of Moses Hall, Sierra Club and other consulting parties raised legal objections to the Agencies' arbitrary and incorrect argument that no cumulative effects prior to 1966 and 1970 could be considered.

Still set on avoiding an adverse effects determination, the Agencies deflected and reframed the argument to focus on direct impacts to burials, claiming that an adverse effects determination depends on whether there are direct impacts to burials. And instead of taking a closer look to determine if there were grave shafts beyond the area surveyed, they asked for the determination of effect to be deferred until after the Project's Record of Decision.

The reframing went thus:

> In [Maryland Historical Trust's ("MHT")] letter of February 4, 2022, the rationale for not concurring with the specific effect finding for Morningstar Cemetery was due to potential for additional burials outside the defined boundaries of the property that may exist or be impacted.
>
> MDOT SHA and FHWA note that based on the specific issues raised by MHT, in the absence of other project changes not anticipated at this time, the potential for adverse effects is narrowly limited to the issue of the possibility of extant, unverified burials outside the defined boundary of the property that cannot be further avoided. FHWA finds that the issues related to atmospheric, audible, visual, and cumulative effects to the property, have been addressed. No diminishment of location, design, setting, materials, workmanship, feeling or association has been found in these areas, and there has been no specific disagreement expressed by MHT on these assessments.[71]

In this statement, not only do they deny any adverse effects, they misrepresent the comment of MHT[72] to justify their commitment to a position of "no adverse effect."

Despite the Agencies firmly maintained commitment to that unsupported legal argument, the Agencies themselves provide information within the FEIS that undercuts the argument. MDOT acknowledges cumulative adverse effects to the property. Examples include (emphasis added):

[71] Section 106 Letter from Steve Archer to Elizabeth Hughes and Julie Langan, March 31, 2022.
[72] The MHT February 4, 2022 letter states regarding the Morningstar site that:
"Given the sensitivity of the resource, the potential for the presence of additional burials that may be impacted, and the overwhelming expression of concern for this resource expressed by multiple consulting parties, it is our opinion that the finding of adverse effect remains valid for this historic property."

> "*Understanding that the Beltway was constructed adjacent to these sensitive resources*, MDOT SHA has committed to construct the following pedestrian connections between the Gibson Grove A.M.E. Zion Church and the Morningtar[sic] Tabernalce[sic] No. 88 Moses Hall Cemetery to restore the historic connection along Sevel[sic] Locks Road: . . ."[73]
>
> Commitment to "Constructing a new sidewalk along the west side of Seven Lock Road under I-495 to *reestablish the historic connection* between Gibson Grove Church and the Moses Hall Cemetery."[74]
>
> Commitment to "*Gifting land owned by MDOT SHA with potential graves* back to Trustees of Moses Hall Cemetery."[75]
>
> EJ mapping data provided by USEPA and University of Maryland (UMD) indicates that the concentration of communities with the greatest levels of EJ concern are *located along the study corridors*. Today's concentration of *communities with the greatest levels of EJ concern along the highway is directly related to the history of highway construction* before national environmental policy.
>
> Today's *racially and economically segregated conditions* in urban and metropolitan areas can be *traced directly to decades of neighborhood destruction and residential displacements caused by highway projects plus housing policy and other racially marginalizing actions* undertaken by local, state, and the federal government *throughout the 20th century*.[76]

But then, remarkably, the FEIS fails to acknowledge that these impacts will be adverse. The FEIS sums up the Agencies' position:

> Based on the current historic boundary, the Preferred Alternative will avoid direct impacts to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery. Additionally, no atmospheric, audible, or visual effects to the property have been identified from the Preferred Alternative. No diminishment of location,

[73] FEIS App'x T.2.A.Vol.1 at CO-119 *available at* https://oplanesmd.com/wp-content/uploads/2022/06/64_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.A_Volume-1_June-2022p-9.pdf.
[74] FEIS App'x T.2.A.Vol.1 at CO-119 *available at* https://oplanesmd.com/wp-content/uploads/2022/06/64_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.A_Volume-1_June-2022p-9.pdf.
[75] This statement provides an acknowledgment of having taken cemetery land in 1962. That taking causes cumulative impacts to the community in the present day. FEIS App'x T.2.A.Vol.1 at CO-119 *available at* https://oplanesmd.com/wp-content/uploads/2022/06/64_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.A_Volume-1_June-2022p-9.pdf.
[76] FEIS at 5-135.

design, setting, materials, workmanship, feeling or association has been found in these areas.[77]

Cumulative impacts from past Beltway construction are indisputably adverse; this site has been subject to longstanding, historic race-based discrimination in transportation planning in the state. The conclusion that there will be no use of Moses Hall for purposes of Section 4(f) is premature given that the serious legal issues regarding cumulative effects have been ignored.

The Agencies' wrongful dismissal and disregard of cumulative effects and other adverse effects to this site, as described above, is exacerbated by their deferral of the determination of impacts for the site through their decision to proceed with a Section 106 Programmatic Agreement.[78]

After walking back their initial determination of adverse effects and then making a contested determination of no adverse effect, the Agencies are postponing effects determination for the Morningstar Tabernacle No. 88 Hall and Cemetery in the historic Black community of Gibson Grove in Cabin John, Maryland. This approach violates FHWA's obligations to avoid and minimize harm to these historic resources under Section 4(f). *See Corridor H Alternatives, Inc. v. Slater*, 166 F.3d 368, 371 (D.C. Cir. 1999) (Because the historic properties protected by Section 106 and Section 4(f) are similarly defined, "it follows that the [Federal Highway Administration] must complete its Section 106 determinations before it can comply with section 4(f)").

The contentious issue surrounding the adverse effect determination for Morningstar Tabernacle No. 88 site cannot be deferred. In a letter to Dr. Julie M. Schablitsky of MDOT, the MHT clearly stated on February 4, 2022, that: "it is our opinion that the finding of adverse effect remains valid for this historic property."

Sierra Club objects to MDOT's deferral of the adverse effect determination for several additional specific reasons:

1. MDOT's new proposed plan to defer a determination of adverse effect for Morningstar Tabernacle No. 88 site until after issuance of the Record of Decision will foreclose major options for alternatives and mitigation.

2. Adverse effects can be determined now since, *inter alia*, there are over two dozen probable or possible grave shafts in the right-of-way abutting the land where the highway will be widened and heavy construction equipment will be used. The probable and possible grave shafts conform to the same patterns observed in the rest of the cemetery.

[77] Appendix T.2.B. Vol. 2 at CO-831.
[78] See more detail on this in Sierra Club's April 14, 2022 Section 106 comment letter, available at: https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u25361/MDSierraClub-Section106Comments-14April2022final.pdf.

3. These effects, when added to the noise, vibration, and other proximity impacts of the Project and the cumulative impacts from past Beltway construction, are indisputably adverse and will substantially interfere with the use and enjoyment of this site; hence, even assuming some degree of post-ROD mitigation, there is no basis for arguing that there will be no adverse cumulative effects to this important historical site, which has been subject to longstanding, historic race-based discrimination in transportation planning in this state.

4. The FHWA's obligations to avoid or minimize harm to this site under Section 4(f) is clear, and the FHWA's failure to recognize the full scope of the significant use and harm to the site violates Section 4(f).

In summary, while the full extent of the adverse effect can be addressed as part of the programmatic agreement, the adverse effect determination must be made now. The Agencies' failure to consider the cumulative impacts associated with discriminatory and destructive past actions perpetuates and exacerbates a gross injustice, and violates both NEPA and Section 4(f).

2. Possible and Probable Burials in the State Right of Way Adjoining the Morningstar Cemetery and Hall Site Are at Risk from the Project and Have Not Been Sufficiently Investigated to Instill Confidence in the Cemetery Boundaries Determined by the Agencies.

Next to what is known as the "current historic boundary" of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery are potential burials extending into the state highway right of way. No ground-penetrating radar was done around the currently known area of graves to determine how much further they extend. MDOT SHA and FHWA were unable to gain concurrence from Maryland Historical Trust for a "no adverse effects determination" in large part due to these potential graves, and thus the Agencies requested that the effects determination be deferred, depriving the Friends of Moses Hall and other descendants and supporters from a Section 4(f) adverse effects determination during the decision-making window that would have allowed the site to have further avoidance and mitigation measures.

MDOT SHA owns land from the original Beltway construction with potential graves. The graves in a parcel of MDOT right of way are not just potential but, based on ground-penetrating radar, are "possible" and "probable" and number several dozen. This indicates that the "current historic boundary" that MDOT SHA uses today is inaccurate and smaller than the true historic boundary of the cemetery.

State Rds Comm vs. Andrew Mickens and Jones' heirs

The Agencies have claimed that there is no adverse effect to the Morningstar cemetery based on their "current historic boundary," even in the face of evidence that this boundary is likely not the site's accurate historic boundary. Of interest in this regard, a Maryland Public Information Act request for documents from the time of the original construction of the Beltway revealed a state payout to a McGuire Funeral Services, Inc. for a burial site located in the true historic boundary (but outside of MDOT's "current historic boundary").[79] *See* figure at right. The most likely reason for this payout was for reburials from the cemetery due to Beltway construction.

Further reinforcing the issues with the boundary of the cemetery are the ground-penetrating radar data reported on by the Washington Post. Says the article: "The outer edges of the construction site will be about five feet from the closest area where radar found a possible burial, a project spokesman said. Previous plans had showed the Beltway expanding into the grassy area and about one-fifth of the 1.5-acre cemetery."[80]

In the same article, Illinois archaeologist Tim Horsley, who undertook the ground penetrating radar, expressed that "most of the anomalies appeared in adjacent rows. The total of 377 probable or possible burials in the cemetery is probably artificially low, he wrote, because his equipment couldn't reach the entire cemetery."[81]

Given this likely location of burials, a five-foot buffer from the edge of where graves were found in a ground-penetrating radar study that failed to reach the entire cemetery is insufficient to ensure that additional graves will not be disturbed.
The FEIS states:

- Through additional investigation and survey including ground penetrating radar (GPR), MDOT SHA identified potential unmarked graves within state-owned right-of-way adjacent to I-495.[82]

- MDOT SHA acknowledges there is some potential for human remains associated with historic properties to be present adjacent to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery . . . , which are not currently accessible for the types of thorough archaeological investigation necessary to definitively identify interments.[83]

Yet the Agencies still maintain:

1. Based on the current historic boundary, the preferred alternative will avoid direct impacts to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery. Additionally, no atmospheric, audible, or visual effects to the property have been identified from the preferred alternative. No diminishment of location,

[79] See scan of original receipt in Report of Findings from Historical I-495 Right-of-Way Records Research prepared by Friends of Moses Hall, February 2022, at Attachment 1 *available at* https://static1.squarespace.com/static/600c2298f983552f0a55148b/t/61fe8ed7e0e2b44d94c5861c/1644072672567/FMH+-+ROW+RESEARCH+REPORT+-+FINAL.pdf.

[80] Katherine Shaver, African American Gravesites Detected Near the Capital Beltway Will Be Spared in Road-Widening Plans, The Washington Post (Sept. 9, 2021), *available at* https://www.washingtonpost.com/transportation/2021/09/09/maryland-beltway-moses-morningstar-cemetery/.
[81] *Id.*
[82] FEIS T.2.A. Vol. 2 -at CO-326.
[83] *Id.* at CO-244.

design, setting, materials, workmanship, feeling or association has been found in these areas.[84]

2. The Project will be governed by a programmatic agreement, including a treatment plan that specifies the methods, limits and consultation procedures for further investigation of areas with the potential for additional burials outside of the current historic boundary, no specific determination of effects to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery will be made at this time, and will be made following completion of the additional investigations specified in the programmatic agreement and treatment plan.[85]

Given the implicit acknowledgement that subsequent studies under the programmatic agreement may reveal adverse effects on Moses Hall and Cemetery, the following conclusions in the FEIS are both unsubstantiated and premature:

> "[T]here are no indirect or cumulative adverse effects to historic properties specifically caused by the undertaking."[86]
>
> "The Preferred Alternative avoids ground disturbance of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery."[87]
>
> "MDOT SHA has completed extensive . . . archaeological research that thoroughly documents the Morningstar Tabernacle No. 88 Moses Hall Cemetery and its significant features . . ."[88]
>
> "[T]he lead agencies have far exceeded the obligation to consider and address potential project EJ concerns."[89]

For further information in support of these points, please see relevant additional information and arguments in Sierra Club Section 106 comments dated February 3, 2022, and

[84] Appendix T.2.B. Vol. 2 at CO-831, *available at* https://oplanesmd.com/wp-content/uploads/2022/06/68_MLS_FEIS_App-T-DEIS-SDEIS-CR_T.2.B_Volume-2_June-2022p.pdf.
[85] *Id.*
[86] FEIS App'x I: CRTR Volume 1: Cultural Resources Tech Report at 21 *available at* https://oplanesmd.com/wp-content/uploads/2022/06/13_MLS_FEIS_App-I_CR_Vol-1_Cover-Report_June-2022_REDACTED.pdf
[87] FEIS T.2.A.vol2 -at CO-244.
[88] FEIS T.2.A.vol2 -at CO-245.
[89] FEIS App'x T.2.B.Vol.2 at CO-829.

April 14, 2022.[90] We incorporate by reference the FEIS comment letter of Friends of Moses Hall dated July 15, 2022.[91]

C. In Violation of Title VI, the Agencies Failed to Provide Meaningful Opportunities for Review and Comment on Agency Plans by Non-English Speaking Populations by Directing Limited English Proficiency Commenters to an Inaccurate SDEIS Executive Summary.

As we explained in our comments on the SDEIS, for weeks, the executive summary of the SDEIS incorrectly downplayed some of the environmental impacts of the preferred alternative. *See* SDEIS Comments at 17-18. The Agencies belatedly corrected these errors in the English version on November 20, 2021, less than three weeks before comment deadline (although many commenters had downloaded the SDEIS already, had already completed their review, and even had already submitted their comments). But the Agencies did not change the SDEIS Executive Summaries in Amharic, Chinese, French, Korean, and Spanish, leaving non-English speakers with inaccurate environmental impacts to review and comment on until November 17, 2021, fewer than 13 days before the comment period closed, when they revised those summaries without public notice.[92] This omission violated Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d, and Executive Order 13166, "Improving Access to Services with Persons with Limited English Proficiency," 65 Fed. Reg. 50,121 (Aug. 16, 2000), which require that project sponsors be certain that Limited English Proficiency populations have meaningful access to review and comment on agency plans.

In the FEIS, the Agencies summarized their outreach to communities with limited English proficiency and explained that "translated versions of the SDEIS Executive Summary were posted to the project website," SDEIS at 5-149, without noting the errors in that summary. In their response to comments in the FEIS, the Agencies downplay the SDEIS errors as "minor" and do not mention the delay in addressing errors in the non-English versions:

[90] Available at the following links respectively: https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/maryland-chapter/MDSierraClub-Section106Comments-3Feb2022.pdf; https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u25361/MDSierraClub-Section106Comments-14April2022final.pdf.
[91] *See* FEIS comment letter of Friends of Moses Hall (July 15, 2022).
[92] Some time on or after November 17, 2021, fewer than 13 days from the public comment deadline, MDOT and/or FHWA silently posted new Amharic, Chinese, French, Korean, and Spanish Executive Summaries that corrected the inaccuracies. Members of the public who relied on those translated versions and somehow became aware of the corrections therefore had a very limited time in which to comment. *Compare* https://web.archive.org/web/20211117153534/https://oplanesmd.com/sdeis (capture of SDEIS website from 3:35 PM on November 17 with links to old and incorrect Executive Summaries), *with* https://oplanesmd.com/sdeis/ (current SDEIS website with links to new Executive Summaries that include "FINAL_UPDATED-11_16_2021" in file name titles).

> MDOT SHA promptly corrected a minor error in the environmental impacts summary chart, Table ES-1 of the SDEIS, upon notification by the Sierra Club Maryland Chapter. The document was updated on the project website and a replacement chart was provided at all locations where the document was publicly accessible. … The minor error in the summary chart, Table ES-1 of the SDEIS does not require withdrawal and republication of the SDEIS.

Further, the Agencies undermined their own outreach efforts to populations with limited English proficiency populations because the flyers distributed at groceries and notices in newspapers targeting non-English populations, *see* FEIS at 5-147-5-149, unfortunately directed people to the online versions of the SDEIS at OpLanesMD.com/SDEIS, and the SDEIS had errors for most of the comment period. This failure to correct the website for weeks more for non-English speakers violates the Agencies' Title VI obligations.

D. The Agencies' EJ Analysis Suffers from Serious Deficiencies by Failing to Analyze Cumulative Impacts to EJ Populations.

In the FEIS, the Agencies have finally produced a determination of whether the preferred alternative has disproportionately high and adverse effects to environmental justice populations. The conclusion that the preferred alternative will not have disproportionate adverse effects on EJ populations is wrong and the analysis suffers from serious deficiencies.

For example, the Agencies do not apply the appropriate definition of "adverse effects" as that term is used in the relevant USDOT EJ orders. "Adverse effects" is defined in USDOT Order 5610.2(a) as requiring a cumulative analysis of a list of possible effects on EJ populations:

> the totality of significant *individual or cumulative* human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of DOT programs, policies, or activities.

USDOT Order 5610.2(a), App'x. A.

This Order requires the Agencies to analyze the "totality of individual or cumulative" effects. NEPA also requires a cumulative analysis of impacts to EJ populations. Rather than evaluating the effects cumulatively, however, in the FEIS, the Agencies evaluate each environmental stressor to EJ populations (i.e., noise, displacement, air quality, etc.) in isolation and conclude that, because the impacts from individual environmental stressors do not disproportionately impact EJ populations compared to non-EJ populations, there is no overall

disproportionate impact. *See* FEIS at 5-155-5-160. For example, as to hazardous materials sites of concern, the FEIS tallies the number of affected communities with hazardous materials sites for EJ versus non-EJ populations:

> EJ populations contain 27 low, 4 moderate, and 2 high risk sites of hazardous materials sites of concern, while non-EJ populations contain 37 low, 56 moderate, and 9 high risk sites of hazardous materials sites of concern. … As such hazardous material concerns would not be higher or more adverse to EJ populations under the Preferred Alternative.

FEIS at 5-157. The analysis does not address cumulative adverse effects to EJ populations by *aggregating* all impacts to each EJ population, *i.e.*, it does not examine whether each EJ and non-EJ population is affected by additional noise, hazardous waste impacts, and water pollution from the preferred alternative. The Agencies thus failed to evaluate whether, once cumulative impacts are considered, EJ populations are disproportionately affected as compared to non-EJ populations.

As EPA stated in its comments on the DEIS, a proper EJ analysis requires looking at multiple impacts at the same time:

> In a preliminary review, the [EJSCREEN, EJ mapping-and-screening] tool demonstrates that the MLS alternative peripheries may now face various disproportionate environmental challenges in the context of EJ, including concerns with air toxics and hazardous waste (involving treatment storage disposal facilities and large quantity generators).

EPA, Technical Comments on I-495 & I-270 MLS, DEIS (Nov. 9, 2020), FEIS App'x T.1.A Vol 1 at AG-39.

In addition, the Agencies' analysis in the FEIS does not thoroughly evaluate the historical and existing environmental burdens borne by EJ populations together with the predicted impacts from the preferred alternative. EJ populations have already experienced high levels of air pollution as well as other harmful environmental stressors and a proper analysis must account for EJ populations' resulting increased susceptibility to environmental impacts. The EPA highlighted this point when reviewing the EJ analysis in the SDEIS:

> Table 4-45 indicates that block groups which the project characterizes as EJ and Non-EJ may face similar environmental consequences from certain hazards (e.g. air pollution). EPA notes that certain populations (e.g., low-income and/or people of color populations) may face elevated susceptibility of impacts that may affect other populations less severely. Thus the EPA encourages the project to address the potential for adverse impacts in areas of potential EJ concern even if less vulnerable areas may face similar conditions.

EPA, Technical Comments on I-495 & I-270 MLS, SDEIS (Nov. 30, 2021).

Most importantly, the FEIS completely ignores the egregious cumulative impacts resulting from past actions by MDOT, namely the original construction of the beltway in the 1960s that intentionally targeted and discriminated against EJ populations. *See* discussion above. As this

Page 55 was blank in the comment letter

and has failed to address dozens of studies and journal articles finding causal links between, for example, increased air pollution from traffic and high rates of asthma or heart disease. As Bialek highlights, these health impacts are likely to be disproportionately higher in EJ populations, given historic inequities.

Likewise, the FEIS fails to fully evaluate the effects of bottlenecks that will be created under the preferred alternative and, importantly, the air quality impacts from the bottlenecks that may concentrate around the end points of the preferred alternative, in areas where EJ populations live. *See* ZAMURS AND ASSOCIATES Report at 5-6; *see also* SDEIS Comments at 124-25. As also noted in the attached report by Norm Marshall, the serious flaws in the traffic model affect the assessment of air qualify impacts in general, and therefore the evaluation of air quality impacts on EJ populations is also flawed. As discussed below, these air quality impacts result in significant public health impacts across the board that were also ignored in the FEIS, and these public health impacts will disproportionately affect EJ populations, particularly children.

In short, the Agencies have failed to appropriately describe and, as a consequence, mitigate the disproportionate air quality impacts on minority and low-income communities, despite their obligation to do so—and to make the information available to the public for review and comment—under NEPA, USDOT Order 5610.2(a), and USDOT order 6640.23A, before moving forward with the preferred alternative.

F. The FEIS Fails to Quantify Impacts to the Gaithersburg EJ Area.

In the FEIS, the Agencies finally recognize that several census blocks in the Gaithersburg area have EJ populations and impacts to those areas should be fully evaluated. However, even with the Agencies' new analysis, they have failed to acknowledge real air quality and other health impacts from the preferred alternative, impacts that will disproportionately affect EJ populations, including those in the Gaithersburg area.

In our comments on the SDEIS, we listed different health assessments and air quality and other environmental impact analyses that the Agencies should have performed to accurately and quantitatively describe the potential impacts of the Project on the environmental concerns most negatively affecting the Gaithersburg community, as shown by EPA's EJSCREEN tool. SDEIS Comments at 113-14. These analyses and health risk assessments were not performed. In their expert report, ZAMURS AND ASSOCIATES, LLC explain that the "the pollutants that cause the greater health impacts, $PM_{2.5}$, PM_{10} and NO_2 remain unexamined and unconsidered, despite the legal obligation to assess these pollutants under NEPA." ZAMURS AND ASSOCIATES Report at 3. Thus, the true impacts to the EJ populations in the Gaithersburg community remain unquantified in the FEIS.

G. The EJ Analysis Ignores Impacts to EJ Populations East of the I-270 Spur.

In our SDEIS comments, we explained that the Agencies were improperly segmenting the Project by limiting their environmental review to exclude the significant environmental impacts anticipated from later phases of the Project to expand I-495 east of the I-270 spur and the northern portions of I-270. *See* SDEIS Comments at 12 (comparing proposed environmental impacts).

Based on public statements by Project proponents, the Agencies will ultimately seek approval for lane widening and toll lanes on I-495 from the American Legion Bridge to the Woodrow Wilson Bridge in Virginia and the northern portions of I-270, exactly as originally proposed. *See* SDEIS Comments at 8-17.

This improper segmentation of the Project also affects the Agencies' EJ analysis. The Agencies cannot avoid their obligations to evaluate impacts to EJ populations throughout the area, including in majority-minority Prince Georges County, that will be impacted by the later phases of the Project. A proper EJ analysis requires an evaluation from the American Legion Bridge to the Woodrow Wilson Bridge in Virginia—the scope of the Project initially proposed.

By deferring a full EJ analysis until after the first phase of the Project is approved, the Agencies are attempting to bias approval of the Project by making the highway expansion east of the I-270 spur seem inevitable and essentially "shoving under the rug" the likely significant impacts to EJ populations anticipated in later phases of the Project. We remain concerned that the Agencies will also attempt to streamline the environmental review process for that next phase by relying on the (inadequate) analyses performed for the first phase of the Project and even further curtailing the public comment process, thus reducing opportunities for the community to engage in review of the Project.

H. The FEIS Fails to Fully Assess Construction and Post-Construction Impacts to the Julius West Middle School and Other Sensitive Sites Next to the Highway.

As described in Section IV of these comments and in the attached expert comment letter by Rosalie Bright, the generation of silica dust during road construction is a significant health hazard that the FEIS fails to adequately discuss. As the 1-270 and I-495 road and bridge construction takes place, there will be continuous generation of harmful silica dust, and precautions (i.e., staying indoors, keeping all windows closed, and wearing facemasks to go outside) may be needed to protect sensitive populations at schools (Julius West Middle School, Farmland Elementary, Carderock Springs Elementary, and Walter Johnson High) and other sites close to the highways.

In general, the FEIS fails to adequately identify, describe, and quantify the health impacts to these sensitive populations that will be impacted by silica dust under the preferred alternative.

I. The FEIS Fails to Consider Impacts to Environmental Justice Communities from New Bottlenecks and Increased Traffic Created by the Preferred Alternative

As explained in our previous comments, the SDEIS recognizes that the preferred alternative would create bottlenecks outside the preferred alternative limits, SDEIS at ES-12, 2-6, but the SDEIS does not accurately analyze these bottlenecks nor the arterial congestion that the preferred alternative would cause at the terminus of the managed lanes. These bottlenecks and additional congestion will create additional air quality impacts in the areas where they occur and cause travel delays for EJ populations living beyond the ends of Project development and, as noted

below, for EJ populations who must continue to use the general purpose lanes due to the unaffordability of tolls in the managed lanes.

Travel delays cause disproportionate impacts to EJ populations who face long commutes and inflexible work environments where late arrivals can mean dismissal. By failing to acknowledge these real impacts of bottlenecks, the FEIS fails to sufficiently evaluate impacts to EJ populations.

J. The FEIS Does Not Adequately Address the Environmental Justice Impacts of Adding Toll Lanes

The SDEIS did not provide a full picture of the costs of toll lanes on EJ communities. As we noted in our SDEIS comments, an analysis of the dynamic toll pricing revealed that driving in toll lanes could cost up to $50 per passenger car in 2021 dollars, for certain routes. *See* SDEIS Comments at 86-87; 126-27. These high tolls are exclusive, inequitable, and discriminatory. Toll lanes will not be accessible to working families. Lower income environmental justice populations who cannot afford the toll lanes will disproportionately rely on the free general-purpose lanes. In addition, as discussed above, the Agencies' traffic models are still flawed and still fail to acknowledge the new and worsened bottlenecks around the end points of the toll lanes that will disproportionately harm EJ populations living beyond the limits of the proposed new toll lanes.

Yet, the FEIS retains misguided statements from the SDEIS that fail to address the regressive impacts of predicted high tolls and overstate the purported benefits of eliminating peak-commuting-time HOV lines in favor of HOV 3+ lanes. *See* SDEIS Comments at 126-128. The FEIS even echoes the claim from the SDEIS that "populations in both EJ block groups and non-EJ block groups would have the opportunity to experience the[] operational benefits," from the toll lanes and HOV3+ lanes in the preferred alternative. SDEIS at 4-102 & 4-104; *see, e.g.*, FEIS at 5-162 (describing the HOV 3+ lanes as part of "affordable multimodal travel options").

These statements mischaracterize the likely impacts of the preferred alternative on EJ populations. As we have explained, the predicted benefits of the preferred alternative in reducing traffic times overall are overstated. Further, the aforementioned "benefits" will not reach EJ populations, who will be will be priced out of the toll lanes and required to rely on limited general purpose travel lanes. As the M-NCPPC explained, "[t]o simply conclude that everyone is benefiting with travel time savings when the project design does not provide equitable access to the managed lanes creates another layer of inequity." M-NCPPC Briefing and Discussion for July 15, 2020, Full Commission Meeting I-495 & I-270 Managed Lanes Study – DEIS Comments at 8 (June 8, 2020).

Further, the general purpose lanes as configured after building toll lanes will become less safe relative to today due to: additional traffic and congestion; new and worsened bottlenecks with end merge-point congestion; loss of the inside shoulder lane; a higher concentration of 18-wheelers that are kept off the toll lanes by unaffordable tolls and whose numbers are increasing following the COVID-19 pandemic; removal of an existing non-tolled lane in each direction of I-270, squeezing more traffic into fewer general purpose lanes; inferior maintenance of the free lanes compared to the toll lanes and poorer safety during emergencies and slower access to emergency

response owing to space constraints and loss of the inside shoulder lane. *See* SDEIS Comments at 71-85; *see also supra* Section II.

Although the Agencies have now proposed mitigation related to the toll lanes, the mitigation is not focused on making toll lanes more affordable for low income and EJ populations or making the general-purpose lanes safer, but rather focused on transit fare subsidies and toll-free buses, FEIS at 5-163-164, actions that do not remove the inequity of the two-tier system that would be created by the toll lanes.

That the preferred alternative is inequitable is not surprising. Transurban is on record saying its goal in our region is to "maximize the tolls" and admitted that: "[a]n increase in the number or improvement in quality of alternative roads, public transportation or mass transit options, . . . and their relative convenience, affordability and efficiency, could reduce traffic volumes on our toll roads and therefore reduce our earnings."[93]

That the Agencies have failed to grapple with the inequities of the preferred alternative in their FEIS is, however, disappointing and, more importantly, violates NEPA and Title VI.

VI. The FEIS Fails To Disclose the Socioeconomic and Societal Impacts of Private Concessionaire Contracts and Their Influence on Future Land Use Policies.

Legal expert Ellen Dannin (2011) describes how infrastructure privatization of the type being proposed for the I-495 and I-270 project impacts socioeconomics and society,[94] even impacting future legislation and land use policies.

> Provisions commonly found in infrastructure privatization contracts make the public the guarantor of private contractors' expected revenues. Indeed, were it not for provisions that protect contractors from diminution of their expected returns, the contracts would be far shorter and much less complex. An effect of those contract provisions is to give private contractors a quasi-governmental status with power over new laws, judicial decisions, propositions voted on by the public, and other government actions that a contractor claims will affect toll roads and revenues. Giving private contractors such a role may well violate the non-delegation doctrine that bars private entities from exercising power that is inherently governmental.[95]

[93] Transurban Prospectus at 13 (Sept. 16, 2020), https://links.sgx.com/FileOpen/Transurban%20Finance%20Company%20Pty%20Ltd_Secured%20Euro%20MTN% 20Programme%20OC.ashx?App=Prospectus&FileID=46449.

[94] See more on societal impacts in "5 questions for Donald Cohen of In the Public Interest," The New Common Sense newsletter from the Hewlett Foundation's Economy and Society Initiative (April 7, 2022), *available* at https://hewlett.org/5-questions-for-donald-cohen-of-in-the-public-interest/.

[95] Dannin, 2011, Crumbling Infrastructure, Crumbling Democracy: Infrastructure Privatization Contracts and Their Effects on State and Local Governance

These impacts result from provisions commonly found in infrastructure contracts, including compensation events, noncompetition provisions, and the contractor's right to object to and receive compensation for legislative, administrative, and judicial decisions.

> "The operation of these provisions gives private contractors power over decisions that affect the public interest and are normally made by public officials and subject to oversight, disclosure, and accountability—none of which apply to private contractors."[96]

Such provisions are fundamental to the I-495 and I-270 project and written into the term sheet.[97] The project's 20 compensation events wherein the state monetarily compensates the developer include: "Discriminatory Change in Law," and "construction or expansion of a Competing Facility." These funds come from taxpayers. This has all been described in earlier comments.[98]

The P3 process ensures and protects that the developer's private interest in avoiding any competing facilities near its toll lanes, regardless of what would serve the public interest . As a September 2020 Transurban prospectus explains,

> An increase in the number or improvement in quality of alternative roads, public transportation or mass transit options, ... and their relative convenience, affordability and efficiency, could reduce traffic volumes on our toll roads and therefore reduce our earnings.[99]

Greater mobility and transportation options that are good for Marylanders and for addressing the climate crisis are not in the developer or their shareholder's interest.

Maryland taxpayer funds are even required to compensate the developer for "physical damage to the Work caused by other MDOT capital works projects [or VDOT capital works projects] in the immediate vicinity of the Section (excluding work undertaken by a Section Developer Related Entity)." So Maryland taxpayers pay the developer Transurban if VDOT capital works projects damage the toll lanes.

The term sheet clarifies in relation to compensation and relief events:

[96] Ellen Dannin, *Crumbling Infrastructure, Crumbling Democracy: Infrastructure Privatization Contracts and Their Effects on State and Local Governance*, 6 *Nw. J. L. & Soc. Pol'y* 47 (2011)., https://elibrary.law.psu.edu/fac_works/10/

[97] Term sheet. Compensation Events. Relief Events at 13-17. https://www.oplanesmd.com/wp-content/uploads/2021/06/Phase-1-P3-Agreement-Exhibit-8-%E2%80%93-Section-P3-Agreement-Term-Sheet.pdf

[98] See Sierra Club et al. SDEIS comments.

[99] Transurban Prospectus, September 16, 2020, page 13, publicly available on the website of the Singapore Stock Exchange.

To the extent a Compensation Event or a Relief Event directly causes an adverse cost or schedule impact on the Section Developer, the Section Developer may claim an extension to applicable deadlines for performance or relief from compliance with its obligations. Notice of such claim must be provided within 30 days after the date the Section Developer first became aware (or should reasonably have become aware) that the relevant Compensation Event or Relief Event had occurred.

If such adverse impact is caused by a Compensation Event, the Section Developer may also claim compensation which places the Section Developer in a "no better/no worse" position, as compared to immediately prior to the occurrence of the Compensation Event.

The developer is protected from risks, it is the state that is taking the risk from 30 compensation and relief events.

The Dannin article says that study of a proposed toll highway made clear that "the 'free' money comes at the very high cost of eliminated highway capacity, increased congestion and degradation of highway safety."

> [D]egraded roadway conditions and increased traffic congestion are] an essential part of the JPPHA's plan. Without these failing conditions, little traffic would be induced to use the expensive Jefferson Parkway. . . . By starving SH 93 and Arvada roadways of needed improvements, JPPHA would ensure congestion and push some traffic to its road. However, what is good for a road is not good for drivers. The goal of state highway access should be to promote mobility, not to impair mobility to promote the ability to toll a road. . . . (Dannin, 2011)

In this case, degraded roadway conditions will occur from the majority of the heavy truck traffic concentrated in the general-purpose lanes degrading the infrastructure more quickly. Roadway conditions will also worsen due to removal of the left lane shoulder from the general-purpose lanes and likely more accidents. Increased congestion will occur during rush hour due to developer toll algorithms, because of new bottlenecks created at the ends of the toll lanes, and because of I-270 having two of its existing lanes converted to toll lanes (reducing publicly available road and squeezing more traffic into fewer general-purpose lanes).

To avoid being taken advantage of and protect the public interest in an infrastructure privatization deal, six principles[100] are recommended, none of which appear to have been prioritized for this project.

1. protecting the public welfare;
2. ensuring value for money;
3. taking all contingencies into account
4. establishing principles to justify the inclusion of each contract term;
5. demonstrating the superiority of privatization over public provision; and

[100] Dannin, 2011, p. 82.

6. establishing a process that ensures all relevant information is presented and properly evaluated.[101]

Egregiously, alternatives other than toll lanes were not seriously considered and no value for money analysis was done.

Negative financial and societal impacts have not been adequately reflected in discussions and debate for at least two reasons. First, the state treasurer was not able to have the necessary – support to review the Phase P3 agreement contract[102] to understand its costs and risks. Second, the far-reaching negative impacts are inconvenient and not a desired part of the state or developer's narrative that toll roads will happen "at no net cost"[103] to the taxpayer. Far from no-net-cost, the private toll roads will subordinate the interests of taxpayers and the public to the private toll operator's interest in maximizing toll revenue. By failing to disclose the foreseeable negative impacts of an intended largescale privatization of state infrastructure, the FEIS tainted the consideration of alternatives for not only this project but future projects.[104]

VII. Conclusion

Despite a review process where thousands of public commenters, elected officials, and state and federal agencies have tried to steer the Agencies onto the path of equity, justice, climate resilience, and smart growth, the preferred alternative as proposed in the FEIS will have significant, irreversible negative impacts on Maryland, its air, water, land, climate, residents and communities, historic resources, ecosystems, flora, and fauna.

As in the SDEIS and DEIS, these impacts are either ignored or underestimated in the FEIS, contrary to the Agencies' legal requirements. The limited benefits of the preferred alternative, meanwhile, are routinely overstated in the FEIS, and in some cases, like the traffic models, appear to be the result of improper manipulation rather than data and science.

When considering the cost of widening the American Legion Bridge and both the Maryland and Virginia I-495 projects, there is virtually no benefit provided to the traveling public except for

[101] Dannin, 2011.
[102] John Tulkin and Klaus Philipsen, August 9, 2021, available at https://www.baltimoresun.com/opinion/op-ed/bs-ed-op-0810-hogan-toll-lanes-20210809-qtety5ezcncdrkt4ewaqpuaz4q-story.html
[103] Katherine Shaver, Washington Post, July 1 2022.
[104] More on these issues can be read here: "Meta-monopoly," MacroBusiness, June 9, 2022, *available at* https://web.archive.org/web/20220611204818/https:/www.macrobusiness.com.au/2022/06/meta-monopoly-transurban-gouges-subsidies-from-taxpayers/; Gary Hodge, Opinion: Plans to Privatize Maryland's Highways with Toll Lanes are Not in the Public Interest - Maryland Matters, July 14, 2022, available at https://www.marylandmatters.org/2022/07/14/opinion-plans-to-privatize-marylands-highways-with-toll-lanes-are-not-in-the-public-interest/; Transurban, APA Group 'ripe for takeout' in shrinking public market

marginal benefits for toll payers that evaporate when they too will be faced with heavy traffic congestion at the termini of the toll lanes. Virginia's toll lanes, now constructed, demonstrate the likely impacts of the Project on traffic patterns and congestion. As we have noted throughout this process, the tradeoffs and harms to the environment, climate, taxpayers, Section 4(f)-protected properties, and communities at large far outweigh the Project's benefits.

This $3-to-$7 billion-dollar first phase of a Project that will not relieve congestion and will worsen bottlenecks does not fulfill its purpose and need. If the Project is to go forward, it should be rethought entirely, constructed as a public project with public money, and scaled to the needs and constraints of the affected region of Maryland. It must avoid impacts to irreplaceable resources like Plummers Island and Morningstar Tabernacle No. 88 Hall and Cemetery in the historic Black community of Gibson Grove in Cabin John, Maryland, rather than cut a path with rippling impacts that signals disrespect to the communities that cherish them.

The Agencies must pause this process by withdrawing the FEIS and analyzing less costly multimodal options to improve mobility in the region that do not cause such significant harm to human health and the environment. The Agencies must also provide the public with a meaningful opportunity to review and comment on these options prior to undertaking a new FEIS.

At a minimum, the Agencies must not move forward with the preferred alternative or any of the fundamentally flawed build alternatives without considering additional new alternatives, the many analyses that have been ignored or improperly deferred, and a new review process that addresses the failures identified in these comments and prior comments.

EXHIBIT LIST

Exhibit A	Compiled Letters Regarding Extension of Comment Period
Exhibit B	Smart Mobility, Inc., Review of Maryland I-495 & I-270 Managed Lanes Final Environmental Impact Statement and Final Section 4(f) Evaluation, July 2022
Exhibit C	Andrew Gallant Comment and Jeffrey T. Folden Response, July 2022
Exhibit D	Benjamin Ross, Maryland Transit Opportunities Coalition, July 11, 2022 Letter to Deputy Sec. Polly Trottenberg Mentioned on pg. 12 of Master Copy
Exhibit E	Roselie Ann Bright, Comments on FEIS Regarding Lack of Analysis of Health Impacts, July 14, 2022
Exhibit F	Ron Bialek, Letter to MD Sierra Club Reviewing and Commenting on I-495 & I-270 MS FEIS, July 16, 2022
Exhibit G	ZAMURS AND ASSOCIATES, LLC, Review and Comment I-495 and I-270 Managed Lanes Study Final Environmental Impact Study and Final Section 4(f) Evaluation, June 2022
Exhibit H	Arthur Katz Comments on FEIS Traffic Concerns, July 2022
Exhibit I	Byron Bloch Comments on FEIS Safety Concerns, July 2022
Exhibit J	WBFC Determination of Eligibility, August 20, 2021
Exhibit K	Shannon Browne Letter to MD Sierra Club on FEIS, July 18, 2022
Exhibit L	Federal Highway Administration (FHWA) and National Capital Planning Commission (NCPC) Meeting Notes, November 1, 2019
Exhibit M	Washington Biologists' Field Club (WBFC) Comments on MLS-106, February 3, 2022

These exhibits generally reflect commenters' interpretations and legal conclusions. The Lead agencies have considered these exhibits but this response does not require the Lead agencies to specifically address the commenters' interpretation of the law and its application.	***This page is intentionally left blank.***

THE MARYLAND GENERAL ASSEMBLY

SENATOR BENJAMIN T. KRAMER
SENATE DELEGATION CHAIR

SENATOR SUSAN C. LEE
SENATE DELEGATION VICE CHAIR

301-858-3131 · 410-841-3131
800-492-7122 *Ext.* 3131

DELEGATE MARC KORMAN
HOUSE DELEGATION CHAIR

DELEGATE ALFRED C. CARR, JR.
HOUSE DELEGATION VICE CHAIR

301-858-3010 · 410-841-3010
800-492-7122 *Ext.* 3010

THE MARYLAND GENERAL ASSEMBLY
ANNAPOLIS, MARYLAND 21401
MONTGOMERY COUNTY DELEGATION

July 8, 2022

Mr. Gregory Murrill
Division Administrator
Federal Highway Administration
U.S. Department of Transportation
31 Hopkins Plaza, Suite 1520
Baltimore, Maryland 21201

Dear Mr. Murrill:

As members of the Montgomery County Delegation to the Maryland General Assembly, we write to express our grave concerns over limitations imposed on the public by the June 17, 2022, release of the I-495 & I-270 Managed Lanes Final Environmental Impact Statement (FEIS). Montgomery County, the most populous jurisdiction in the state, contains the entire Maryland geographic footprint of the Preferred Alternative.

The FEIS and its appendices total 26,500 pages in 74 files. Much of the material is new and all of it is important, given the enormity of the 50-year project, its multi-billion-dollar cost, major environmental and human impacts, and controversial nature. Yet the public is permitted only 30 days to review and understand this massive documentation – an impossible task – with no formal opportunity permitted for comment.

We ask that the Federal Highway Administration (FHWA) require the Maryland Department of Transportation (MDOT) to add an additional review and public comment period of 60 days, up to and including September 17, 2022.

The need for extended review and formal comment is essential because of certain decisions made by MDOT. The Department chose to defer the release of federally mandated analyses and other missing information until issuance of the FEIS. As a result, the public, its representatives, and reviewing agencies can only now begin examining long-requested environmental justice and greenhouse gas emissions analyses, mitigation plans, the project's recently changed traffic model, and MDOT's responses to the 5,000 comments it received during the public comment periods for the Draft EIS and Supplemental Draft EIS.

In a February 22, 2022, letter to the FHWA and MDOT, over 80 members of the Maryland General Assembly called for a redo of the project's Supplemental Draft EIS to include the key

Response:

On June 17, 2022, the FEIS was published in the federal register and made available for a 30-day period on the US Environmental Protection Agency's (USEPA) EIS Database website, on the Op Lanes Maryland webpage and at 17 public library locations in Maryland, Virginia and Washington D.C. The FEIS was prepared to present the final analyses completed for the Preferred Alternative, design refinements to address public comments, operational considerations and to further avoid and minimize impacts, and to respond over 5,000 comments received on the DEIS and SDEIS.

From the outset of the Study's NEPA process, the Federal Highway Administration (FHWA) as the lead federal agency, and the Maryland Department of Transportation (MDOT SHA) as the co-lead agency, developed a comprehensive public involvement and engagement strategy designed to obtain input from stakeholders around the entire MLS study area. This strategy combined traditional opportunities for commenting on the Draft Environmental Impact Statement (DEIS) and Supplemental DEIS (SDEIS) in addition to wide-ranging outreach to community organizations (e.g., church groups, homeowners' associations, public interest groups, and governmental entities), with particular sensitivity and outreach to identified Environmental Justice communities. Refer to FEIS, Chapter 8. The public involvement and engagement process, starting in early 2018 and continuing for over four years, considered the vast diversity of community resources. Despite a global pandemic, MDOT SHA's public involvement strategy ensured the safety of the public while still providing the same opportunities for meaningful participation by the public in the NEPA process.

The DEIS was published on July 10, 2020 and was made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/deis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's counties, Maryland, Fairfax County, Virginia and Washington DC. Following publication of the DEIS, FHWA and MDOT SHA provided a 90-day comment period, which is twice the minimum time required by the CEQ regulations. Based on input from the general public, community partners, stakeholders, and local and federal officials, however, MDOT SHA supported extending the DEIS comment period and made a formal request to FHWA, which has authority to grant any extension. FHWA approved this request and granted a 30-day extension of the public comment period for the DEIS. All in all, the DEIS was made available for comment and review from July 10, 2020 through and including November 9, 2020, a total of four months. During this extended comment period, the agencies received close to 3,000 comments.

The SDEIS published on October 1, 2021 was prepared to consider new information relative to the Preferred Alternative, Alternative 9 - Phase 1 South. Building off the analysis in the existing DEIS, the SDEIS disclosed new information relevant to the Preferred Alternative while referencing the DEIS for information that remained valid. The SDEIS also described the background and context in which the Preferred Alternative, Alternative 9 - Phase 1 South was identified. The SDEIS was available for the public to review and comment on the Preferred Alternative during a 45-day comment period, which was later extended an addition 15 days. The SDEIS was also made available on the I-495 & I-270 P3 Program webpage (https://oplanesmd.com/sdeis/), on the USEPA EIS Database webpage and at multiple public locations in hard copy in Montgomery and Prince George's Counties, Maryland, Fairfax County, Virginia and Washington DC.

In addition to a combined six-month EIS public comment review period, MDOT SHA has held 16 large public workshops, 7 public hearings including virtual and in-person, and over 200 individual, elected official, community, stakeholder, and business owner meetings. Refer to DEIS, Chapter 7 and Appendix P; SDEIS, Chapter 7; and FEIS Chapter 8 and Appendix R for detailed information on public involvement.

As a result of this continued public involvement and engagement effort, the Preferred Alternative, as described in the FEIS, reflected changes made since the SDEIS. Consistent with the NEPA process, a FEIS should include responses to substantive comments that can take place in the form of changes from what was presented in the DEIS such as factual corrections and/or new or modified analyses or alternatives. This is precisely what was done and clearly reflected in the FEIS. Refer to FEIS, Executive Summary. The MLS FEIS includes responses to more than 5,000 comments received on the DEIS and SDEIS and the Preferred Alternative reflects changes to address many of the comments including design

missing analyses. Now that the analyses seem to have been included in the FEIS, we ask that you allow the public sufficient time to meaningfully review and evaluate what has been provided, and the opportunity to react to the material through formal public comments.

Sincerely,

Delegate Marc Korman
Chair, Montgomery County
House Delegation

Delegate Kumar Barve
Chair, Environment & Transportation
Committee

Delegate Al Carr

Delegate Lorig Charkoudian

Delegate Bonnie Cullison

Delegate Linda Foley

Delegate Anne Kaiser

Delegate Ariana Kelly

Delegate Lesley Lopez

Delegate Sara Love

Delegate Eric Luedtke

Delegate David Moon

Delegate Julie Palakovich Carr

Delegate Kirill Reznik

Delegate Emily Shetty

Delegate Jared Solomon

Delegate Vaughn Stewart

Delegate Jheanelle Wilkins

Senator Ben Kramer
Chair, Montgomery County
Senate Delegation

Senator Brian Feldman

Senator Cheryl Kagan

Senator Susan Lee

Senator Will Smith

Senator Jeff Waldstreicher

modifications and adjustments, finalizing technical analyses, continued application of avoidance and minimization efforts and finalizing mitigation for unavoidable impacts.

As mentioned above, the FEIS was made available for a 30-day Notice of Availability through various and widely accessible means before the Record of Decision (ROD) was approved. Public involvement and engagement will continue as the project advances to final design and construction. As a requirement in the P3 Agreement, the Developer must provide a public outreach and engagement plan. The Developer will coordinate with MDOT SHA to facilitate an early and ongoing collaborative dialogue to engage stakeholders, local communities, and property owners though final design and construction. MDOT SHA, jointly with the Developer, would be responsible for implementing strategies, such as public meetings and community events, with the goal of maintaining an open dialogue with stakeholders.

cc: Mr. Pete Buttigieg, Secretary, U.S. Department of Transportation
Ms. Polly Trottenberg, Deputy Secretary, U.S. Department of Transportation
Ms. Stephanie Pollack, Acting Administrator, Federal Highway Administration
Mr. Adam Ortiz, Division Administrator, U.S. Environmental Protection Agency

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NATIONAL CAPITAL REGION, TRANSPORTATION PLANNING BOARD

National Capital Region
Transportation Planning Board

July 5, 2022

Mr. Gregory Murrill,
Division Administrator, FHWA
George H. Fallon Federal Building
Federal Highway Administration
31 Hopkins Plaza, Suite 1520
Baltimore, Maryland 21201

Re: Information Related to the Final Environmental Impact Statement (FEIS) and Final Section 4(f) Evaluation for the I-495 & I-270 Managed Lanes Study (MLS)

Dear Mr. Murrill:

On behalf of the National Capital Region Transportation Planning Board (TPB), I am writing to provide you with information related to the Maryland Department of Transportation State Highway Administration (MDOT SHA) and Federal Highway Administration (FHWA) published Final Environmental Impact Statement (FEIS) and Final Section 4(f) Evaluation for the I-495 & I-270 Managed Lanes Study. The TPB is the federally designated metropolitan planning organization (MPO) for the National Capital Region and the proposed Managed Lanes project is entirely within the TPB's planning area.

The TPB understands that the FEIS for the proposed project was published on June 17, 2022, and the document will remain available to the public for review through July 18, 2022. The TPB also understands that during this availability period, the FHWA is anticipated to issue a Record of Decision (ROD), particularly on the Study's Selected Alternative - MLS Preferred Alternative – Alternative 9 – Phase 1 South. MDOT SHA has noted that the FEIS reflects responses to comments received on the Draft Environmental Impact Statement (DEIS) and the Supplemental Draft Environmental Impact Statement (SDEIS).

Consistent with the National Environmental Policy Act (NEPA) requirements for EISs, the TPB, as the MPO for the project area, was requested by MDOT to include the study project in its long-range transportation plan (LRTP). I am writing to inform you that the TPB adopted the update to its LRTP, called Visualize 2045, on June 15, 2022, upon demonstrating that the LRTP met the federal fiscal constraint requirements and demonstrated conformity to regional air quality plans and the federally approved motor vehicle emissions budget (for Ozone). The TPB's resolutions adopting the LRTP and approving the regional air quality conformity analysis for this plan are attached (Attachments 1 and 2 respectively). The TPB has formally submitted the documents to the Federal Highway Administration and Federal Transit Administration for their review and approval.

The TPB's most recently adopted LRTP does include MDOT SHA's I-495 & I-270 Managed Lanes project. The project as included TPB's Visualize 2045 has three distinct segments, with varying actions and schedules for each and is described below:

1. Phase 1 Southern segment: Construct two managed lanes, in each direction, of I-495 from the vicinity of George Washington Memorial Parkway (VA 193) in Virginia, goes across the

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS
777 NORTH CAPITOL STREET NE, SUITE 300, WASHINGTON, DC 20002 MWCOG.ORG/TPB (202) 962-3200

Response:
Thank you for your letter regarding the Transportation Planning Board's action to update Visualize 2045. Refer to **ROD Section VI, Air Conformity**, to see reference to TPB's approval.

Mr. Gregory Murrill, Division Administrator, FHWA
July 5, 2022

American Legion Bridge, along I-270 all the way up to Maryland I-370. This segment is listed for construction with an anticipated open to traffic date of 2025.

2. Phase 1 Northern segment: Construct two managed lanes, in each direction, of I-270 from I-370 to I-70 in Frederick. That segment is listed for construction with an anticipated open to traffic date of 2030.
3. Phase 2 Eastern segment: This is a study of building managed lanes on I-495 in Maryland, starting at the I-270 spur to the east and up to the vicinity of the Woodrow Wilson Bridge. This study segment is not included in the plan for construction.

The financial plan submitted by MDOT for all its transportation projects included in Visualize 2045 and its air quality conformity analysis indicates that funding is reasonably expected to be available for the above three activities. The TPB's regional air quality conformity analysis includes both Phase 1 segments of the project, above, with the Phase 2 segment excluded since no changes to the transportation system capacity has been proposed at this time.

Lastly, as part of the TPB's acceptance of the above project MDOT identified a complementary set of other transportation projects that MDOT intends to fund. These projects and the commitment to implement them are outlined in a letter received by the TPB from MDOT in June of 2022 and is included as Attachment 3.

I trust your office will find the above information and the attachments documents relevant and informs your review of the FEIS.

Should you have any questions on the TPB activities in this regard, please do not hesitate to contact me at KSrikanth@mwcog.org or 202-962-3257. Thank you for your consideration.

Sincerely,

Kanathur N. Srikanth
Director, Transportation Planning Board

cc:
Mr. Jitesh Parikh, P3/MLS Director, FHWA
Mr. R Earl Lewis, Jr., Deputy Secretary for Policy, Planning, & Enterprise Services
Mr. Tim Smith, Administrator, MDOT-State Highway Administration
Mr. Jeffrey T. Folden, I-495 & I-270 P3 Office Director, MDOT

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ATTACHMENT 1

TPB R15-2022
June 15, 2022

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION APPROVING THE 2022 UPDATE TO THE VISUALIZE 2045 LONG-RANGE TRANSPORTATION PLAN FOR THE NATIONAL CAPITAL REGION AND THE FY 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

WHEREAS, the National Capital Region Transportation Planning Board (TPB), as the federally designated metropolitan planning organization (MPO) for the Washington region, has the responsibility under the provisions of the Fixing America's Surface Transportation (FAST) Act, reauthorized November 15, 2021 when the Infrastructure Investment and Jobs Act (IIJA) was signed into law, for developing and carrying out a continuing, cooperative and comprehensive transportation planning process for the metropolitan area; and

WHEREAS, the Federal Planning Regulations of the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) implementing the FAST Act, which became effective June 27, 2016, specify the development and content of the long-range transportation plan and of the transportation improvement program and require that it be reviewed and updated at least every four years; and

WHEREAS, on October 17, 2018, the TPB approved a new long-range transportation plan, called "Visualize 2045," that meets federal planning requirements, addresses the federal planning factors and goals in the TPB Vision and the Regional Transportation Priorities Plan, and included a new "Aspirational Element" as specified by TPB Resolution R8-2018; and

WHEREAS, the TIP is required by FHWA and FTA as a basis and condition for all federal funding assistance to state, local and regional agencies for transportation improvements within the Washington planning area and the TPB approved the FY 2021-2024 Transportation Improvement Program (TIP) on March 20, 2020, which was developed as specified in the Federal Planning Regulations; and

WHEREAS, on December 16, 2020, TPB staff issued a Technical Inputs Solicitation Submission Guide, which is a formal call for area transportation implementing agencies to submit technical details, including information necessary to perform the required air quality analysis of the 2022 Update to the Visualize 2045 long-range transportation plan, and for projects and programs to be included in the FY 2023-2026 TIP that will meet federal planning requirements, and will address the federal planning factors and goals in the TPB Vision and the Regional Transportation Priorities Plan; and

WHEREAS, the transportation implementing agencies in the region provided project submissions for the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP, and the TPB Technical Committee and the TPB reviewed the project submissions at meetings in April, May, June and July 2021 meetings; and

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WHEREAS, at its June and July 2021 meetings, the TPB approved the projects submitted for inclusion in the Air Quality Conformity Analysis of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP; and

WHEREAS, MDOT made certain transit commitments associated with the I-270/I-495 Traffic Relief Plan in Resolution R2-2022 and is required to brief the TPB on the transit commitments related to Phase 1 South of the I-270/I-495 Traffic Relief Plan; and the TPB will provide a formal statement for inclusion in the public docket of the FEIS for the I-270/I-495 Traffic Relief Plan referencing TPB's requirement that the transit commitments be met; and MDOT will report to TPB on the status of the transit commitments to Montgomery County bimonthly until a transit commitments agreement is reached with Montgomery County for Phase 1 South of the project; and

WHEREAS, on June 15, 2022, upon adopting on-road greenhouse gas reduction goals and strategies, to be appended to the 2022 Update to Visualize 2045; and

WHEREAS, on April 1, 2022, the draft FY 2023–2026 TIP was released for a 30-day public comment and inter-agency review period along with the draft 2022 Update to Visualize 2045, and the Air Quality Conformity Analysis; and

WHEREAS, the FY 2023-2026 TIP has been developed to meet the financial requirements in the Federal Planning Regulations; and

WHEREAS, during the development of the 2022 Update to Visualize 2045, the FY 2023-2026 TIP, and the Air Quality Conformity Analysis, the TPB Participation Plan was followed, and several opportunities were provided for public comment: (1) a 30-day public comment period on project submissions for the air quality conformity analysis of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP and the air quality conformity analysis scope of work was provided from April 2 to May 3, 2021; (2) the TPB Community Advisory Committee (CAC) was briefed on the project submissions at its April 15, 2021 meeting, (3) an opportunity for public comment on these submissions was provided at the beginning of the April, May, June and July 2021 TPB meetings; (4) on April 1, 2022 the draft 2022 Update to Visualize 2045, the FY 2023-2026 TIP, and the draft Air Quality Conformity Analysis were released for a 30-day public comment period which closed on May 1, 2022; (5) on April 6 and 7, 2022, a virtual open house was held where staff shared results of the plan analysis and provided an opportunity for questions and answers; (6) on April 14, 2022, a Public Forum was held on the development of the FY 2023-2026 TIP; (7) an opportunity for public comment on these documents was provided on the TPB website and on the Visualize 2045 website, and at the beginning of the April, May and June 2022 TPB meetings; and (8) the documentation of the 2022 Update to Visualize 2045, the FY 2023-2026 TIP, the Air Quality Conformity Analysis includes summaries of all comments and responses; and

WHEREAS, the TPB Technical Committee has recommended favorable action on the 2022 Update to Visualize 2045, the FY 2023-2026 TIP, and the Air Quality Conformity Analysis by the Board; and

WHEREAS, on June 15, 2022, the TPB passed Resolution R16-2022, determining that the 2022 Update to Visualize 2045, the FY 2023-2026 TIP conform with the requirements of the Clean Air Act Amendments of 1990; and

WHEREAS, the FY 2023-2026 TIP projects are consistent with the 2022 Update to Visualize 2045, and are selected in accordance with the Federal Planning Regulations; and

NOW, THEREFORE, BE IT RESOLVED THAT the National Capital Region Transportation Planning Board approves the 2022 Update to Visualize 2045 and the FY 2023-2026 Transportation Improvement Program.

Adopted by the Transportation Planning Board at its regular meeting on June 15, 2022

ATTACHMENT 2

TPB R16 -2022
June 15, 2022

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION FINDING THAT THE 2022 UPDATE TO THE VISUALIZE 2045 LONG-RANGE TRANSPORTATION PLAN AND THE FY 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM CONFORM WITH THE REQUIREMENTS OF THE CLEAN AIR ACT AMENDMENTS OF 1990

WHEREAS, the National Capital Region Transportation Planning Board (TPB) has been designated by the Governors of Maryland and Virginia and the Mayor of the District of Columbia as the Metropolitan Planning Organization (MPO) for the Washington Metropolitan Area; and

WHEREAS, the U.S. Environmental Protection Agency (EPA), in conjunction with the U.S. Department of Transportation (DOT), under the Clean Air Act Amendments of 1990 (CAAA), issued on November 24, 1993 "Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," and, over the years, subsequently amended these regulations and provided additional guidance, which taken together provide the specific criteria for the TPB to make a determination of conformity of its financially constrained long-range transportation plan and Transportation Improvement Program (TIP) with the State Implementation Plan (SIP) for air quality maintenance within the Metropolitan Washington non-attainment area; and

WHEREAS, on December 16, 2020, the TPB staff released the Technical Inputs Solicitation Submission Guide and asked for inputs to the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP; and

WHEREAS, a scope of work was developed to address all procedures and requirements, including public and interagency consultation, and the scope was released for public comment on April 2, 2021, and approved by the TPB at its June 16, 2021 meeting; and

WHEREAS, highway and transit project inputs submitted for inclusion in the air quality conformity analysis of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP were released for public comment on April 2, 2021, and approved by the TPB at its June and July 2021 meetings; and

WHEREAS, on April 1, 2022, the draft results of the air quality conformity analysis of the 2022 Update to the Visualize 2045 transportation plan and FY 2023-2026 TIP were released for a 30-day public comment period with inter-agency consultation; and

WHEREAS, the analysis reported in the Summary Report: Air Quality Conformity Analysis of the 2022 Update to Visualize 2045, dated June 15, 2022, demonstrates adherence to all mobile source emissions budgets for ground level ozone precursors Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx), and meets all regulatory, planning and interagency consultation requirements, and therefore provides the basis for a finding of conformity of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP with the requirements of the CAAA; and

WHEREAS, as part of the TPB's interagency consultation process, the Metropolitan Washington Air Quality Committee (MWAQC) concurs with the regional air quality conformity determination of the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP, and provided other comments relating to the region's air quality;

NOW, THEREFORE, BE IT RESOLVED THAT the National Capital Region Transportation Planning Board determines that the 2022 Update to Visualize 2045 and the FY 2023-2026 Transportation Improvement Program conform to all requirements of the Clean Air Act Amendments of 1990.

Adopted by the Transportation Planning Board at its regular meeting on June 15, 2022

ATTACHMENT 3

MARYLAND DEPARTMENT OF TRANSPORTATION

Larry Hogan
Governor
Boyd K. Rutherford
Lt. Governor
James F. Ports, Jr.
Secretary

June 8, 2022

The Honorable Pamela Sebesky
Chair
Mr. Kanathur Srikanth
Deputy Executive Director, Metropolitan Planning
National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capital Street, N.E., Suite 300
Washington DC 20002

Dear Chair Sebesky and Mr. Srikanth:

I am writing to provide an update to the National Capital Region Transportation Planning Board (TPB) on transit improvements being developed as part of Phase 1 South of Op Lanes Maryland. This update was requested as part of resolution TPB R2-2022.

As part of Phase 1 South, the Maryland Department of Transportation (MDOT) is committed to encouraging carpooling and providing regional transit benefits consistent with the Aspirational Initiatives incorporated in Visualize 2045. Vehicles with three or more occupants and buses will be able to use the proposed high-occupancy toll (HOT) lanes for free. This will provide new options for carpools and new opportunities for free-flow transit crossing the new American Legion Bridge, connecting people and jobs in Maryland and Virginia. A bicycle and pedestrian path will also be provided across the new American Legion Bridge connecting trails in Maryland and Virginia and providing the option of interstate bicycle travel.

In addition to the above carpooling and transit benefits, MDOT committed to provide mitigation as part of the Phase 1 South highway improvements including increasing the number of bus bays at the Shady Grove Metrorail Station, increasing parking capacity at the Westfield Montgomery Mall Transit Center, and delivering the Metropolitan Grove Operations and Maintenance Facility including the necessary bus fleet. Since the TPB resolution, MDOT has further defined the scope and developed conceptual design for each of these transit improvements in collaboration with Montgomery County and other stakeholders. We remain committed to furthering the development of these transit benefits with stakeholders and delivering these mitigation resources as part of Phase 1 South to support expanded transit operations for the long term.

The MDOT also remains committed to funding not less than $60 million for designing and permitting high priority transit investments in Montgomery County. The specific projects were recently identified by Montgomery County and MDOT has allocated funding in fiscal years 2023 and 2024 to facilitate coordination with stakeholders and develop plans for final delivery and operation. An estimated $300 million in transit investment from toll revenues is currently proposed by the Developer over the operating term of Phase 1 South.

7201 Corporate Center Drive, Hanover, Maryland 21076 | 410.865.1000 | Maryland Relay TTY 410.859.7227 | mdot.maryland.gov

These transit commitments will be included in the Final Environmental Impact Statement for the I-495 and I-270 Managed Lanes Study (MLS), which is expected to be published on June 17, 2022. A Record of Decision (ROD) for the MLS is expected later this summer. All funding and future agreements are contingent upon a ROD and the financial close of a future public-private partnership (P3) agreement with the Developer. As this project advances, MDOT remains committed to updating the TPB at future milestones and approval stages of the project.

By connecting Phase 1 South to the Virginia Department of Transportation's 495 Express Lanes Northern Extension and complimenting these managed lanes network with transit investments, MDOT has implemented policies that align with several Aspirational Initiatives to address the region's toughest challenges. From providing opportunities for commuter bus routes that connect people and jobs, expanding the congestion-free managed lanes network to encourage carpooling, and removing barriers for walkers and bicyclists, Phase 1 South will dramatically improve people's lives over the next 20 plus years.

We look forward to working with the TPB and our partners to advance new travel options and opportunities for our citizens, and we will continue to update you as we move forward with this program. If you need further assistance, please contact Jeffrey T. Folden, P.E., DBIA, MDOT State Highway Administration (MDOT SHA) I-495 and I-270 P3 Office Director, at 410-637-3321 or jfolden1@mdot.maryland.gov. Mr. Folden will be happy to assist you.

Sincerely,

R. Earl Lewis, Jr.
Deputy Secretary

cc: Mr. Jeffrey Folden, Director, Office of Public Private Partnership, MDOT SHA
Mr. Jeff Hirsch, Assistant Secretary for Policy Analysis and Planning, MDOT
Ms. Heather Murphy, Director, Office of Planning and Capital Programming, MDOT
Ms. Kari Snyder, Regional Planner, Office of Planning and Capital Programming, MDOT

Attachment B

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
NATIONAL PARK SERVICE,
MARYLAND STATE HISTORIC PRESERVATION OFFICER,
VIRGINIA STATE HISTORIC PRESERVATION OFFICER
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION

Implementing Section 106 of the National Historic Preservation Act for the I-495 and I-270 Managed Lanes Study
Anne Arundel, Frederick, Montgomery and Prince George's Counties, Maryland, and Fairfax County, Virginia

WHEREAS, the U.S. Department of Transportation, Federal Highway Administration (FHWA), plans to approve the I-495 and I-270 Managed Lanes Study (MLS), a proposed Public-Private Partnership (P3) administered by the Maryland Department of Transportation State Highway Administration (MDOT SHA); and

WHEREAS, the MLS Preferred Alternative, "Alternative 9 Phase I South" (Project) consists of construction of Priced Managed Lanes along Interstates 495 and 270, beginning in Fairfax County, Virginia, and extending north to approximately Interstate 370, and east along the separated portions of I-495 ("spurs") to approximately Maryland Route 187, as described in detail via documentation linked in Attachment 4; and

WHEREAS, FHWA has determined that the Project is an undertaking, as defined in 36 C.F.R. §800.16(y), and thus is subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, and its implementing regulations, 36 C.F.R. Part 800 as amended; and

WHEREAS, MDOT SHA, with the approval of FHWA, intends to deliver the Project as a P3 using the services of a private sector developer or multiple developers who will advance the Project and be responsible for design, construction, operation and maintenance, subject to approvals by MDOT SHA and/or FHWA; and

WHEREAS, the Project may be implemented in construction phases, yet to be fully defined, and although this Programmatic Agreement (PA) reflects evaluation of the entire defined Project, certain commitments may require phased implementation; and

WHEREAS, FHWA is the lead agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004); and

WHEREAS, MDOT SHA, on behalf of FHWA, has established and updated the Area of Potential Effects (APE) for the project in consultation with the Maryland State Historic Preservation Office (MD SHPO) and Virginia State Historic Preservation Office (VA SHPO), encompassing the corridor project limits as described above, including areas of direct limits of disturbance, inclusive of all project elements with the potential to affect historic properties, such as identified natural resource and park mitigation sites, and a sufficient buffer for audible and visual effects where they may be likely to occur; a link to the detailed map of the APE is provided in Attachment 4; and

WHEREAS, the National Park Service (NPS) agrees FHWA is the lead federal agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004) and has agreed to participate in this PA as an Invited Signatory; and

WHEREAS, federal agencies which, at FHWA's invitation, designate FHWA as the lead federal agency for the Project may use this PA to fulfill their obligations under Section 106 of the NHPA according to 36 C.F.R. 800.2(a)(2), without the need for amendment of this PA, provided that FHWA follows the requirements of this PA; and

WHEREAS, NPS would authorize permanent use of the affected federal park property for the Project through coordination with FHWA for a Highway Deed Easement and would issue a permit for temporary use of land under its administration for construction-related activities. NPS intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14; and

WHEREAS, the Project will involve the use of lands managed by the NPS within the Chesapeake and Ohio Canal National Historical Park, a unit of the National Park System, and the George Washington Memorial Parkway (GWMP), a unit of the National Park System, that includes the Clara Barton Parkway; and

WHEREAS, NPS is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 U.S.C. § 100101(a) to "conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations"; and

WHEREAS, the GWMP, a unit of the National Park System, with portions located in Montgomery County, Maryland; and Fairfax and Arlington Counties and the City of Alexandria in Virginia, was established following the authorization of the parkway pursuant to what is known as the Capper-Cramton Act, Public Law 71-284, 46 Statute 482 (1930), and came to be administered by NPS pursuant to Executive Order 6166 of June 10, 1933. The GWMP is on the National Register of Historic Places (NRHP) for its association with twentieth century parkway design, engineering, landscape architecture, park planning and conservation, commemoration, and an association with George Washington; and

WHEREAS, the Clara Barton Parkway is the portion of the GWMP that runs along the Maryland side of the Potomac River and which also became part of the National Park System through the

Capper-Cramton Act (originally as the Maryland portion of the GWMP). The Clara Barton Parkway, as a portion of the GWMP, is also on the NRHP; and

WHEREAS, the Chesapeake and Ohio Canal National Historical Park, a unit of the National Park System, stretches along the Potomac River from Rock Creek at Georgetown in Washington, D.C., to Cumberland, Maryland, for 184.5 miles, was established as a national monument in 1961 and was then established as a national historical park by Congress in 1971, through Public Law 91-664 for the purpose of preserving and interpreting the 19th century transportation canal and its associated scenic, natural, and cultural resources; and providing opportunities for education and appropriate outdoor recreation. The Chesapeake and Ohio Canal National Historical Park is listed on the NRHP and contains more than 1,300 historic structures, including one of the largest collections of 19th century canal features and buildings in the national park system. The towpath and canal cross underneath I-495 at the American Legion Bridge, in Bethesda, Maryland; and

WHEREAS, FHWA has elected to phase the identification, evaluation, and effects assessment of certain portions of the APE and historic properties where unavailability of access or design information precluded such identification, evaluation and assessment, as provided in 36 C.F.R. 800.4(b)(2), and 36 C.F.R. 800.5(a)(3); and

WHEREAS, FHWA will ensure additional identification, evaluation, and assessment is completed in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to avoid, minimize, or mitigate for any potential adverse effects to historic properties; and

WHEREAS, FHWA has initiated consultation pursuant to 36 C.F.R. 800.3(c) with the MD SHPO by letter on April 12, 2018 and the VA SHPO by letter on May 14, 2019, and the term "SHPO" is used to refer to both state offices when one is not specified; MDOT SHA on behalf of FHWA will continue to consult with the appropriate SHPO and consulting parties under the terms of this PA in order to identify historic properties, assess the effects of the Project on historic properties, and, if necessary, resolve adverse effects to historic properties; and

WHEREAS, FHWA, pursuant to 36 C.F.R. 800.6(a)(1)(i)(C), on March 26, 2018, initiated Section 106 consultation with the Advisory Council on Historic Preservation (ACHP), and the ACHP has chosen to participate in the consultation pursuant to 36 C.F.R. 800.6(a)(1)(iii); and

WHEREAS, FHWA, pursuant to 36 C.F.R. § 800.10(c), invited the Secretary of the Interior (Secretary) to participate in consultation by letter dated March 16, 2020, as the Project includes National Historic Landmarks (NHL) within the APE, and the National Park Service, National Capital Area NHL Program (NPS-NHL) has represented the Secretary concerning the NHLs within the Project throughout consultation and will continue to participate in future consultations involving the NHLs, and

WHEREAS, FHWA, ACHP, MDOT SHA, and the MD SHPO, under the *Amended Programmatic Agreement Among the Federal Highway Administration, the Maryland Department of Transportation State Highway Administration, the Advisory Council on Historic Preservation, the Maryland State Historic Preservation Officer, Implementing Section 106 of the National*

Historic Preservation Act for the Federal-aid Highway Program in Maryland ("Statewide PA", linked in Attachment 4), have agreed to delegate certain authorities relating to Section 106 of the NHPA to MDOT SHA for Federal-aid Highway Projects in Maryland; and

WHEREAS, MDOT SHA, pursuant to the Statewide PA, employs professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history who will oversee implementation of stipulations in this PA; and

WHEREAS, MDOT SHA, on behalf of FHWA, pursuant to 36 C.F.R. 800.4(a)(1), has established and updated the APE for the Project in consultation with the MD and VA SHPO, has identified historic properties within the APE, and has identified adversely affected properties, as described in the *Draft Section 106 Technical Report* of January 2020 and subsequent documentation (linked in Attachment 4); and

WHEREAS, MDOT SHA and FHWA, pursuant to 36 C.F.R 800.2(d) have sought and considered the views of the public regarding the Project's effects on historic properties by providing notice and information in following its public involvement procedures under the National Environmental Policy Act (NEPA); and

WHEREAS, MDOT SHA, during the course of consultation, has invited the parties listed in Attachment 2 to participate in consultation on the Project; and

WHEREAS, the parties listed in Attachment 3, based on their relationship to specific actions as specified in this PA, or interest in historic properties affected by the project, have been invited to be consulting parties and concur by signing this PA; and

WHEREAS, MDOT SHA and FHWA have initiated consultation with Federally recognized Native American tribal nations (Tribes) listed in Attachment 2 and provided the Tribes with information about the Project. MDOT SHA, on behalf of FHWA, has invited the same Tribes to be consulting parties, as shown in Attachment 3, and concur by signing this PA; and

WHEREAS, FHWA has invited MDOT SHA and NPS to be invited Signatories to this PA, based on their responsibilities for implementation of its terms, and all Signatories, required and invited, are referred to as "Signatories" to this document; and.

WHEREAS, FHWA has determined that the Project will have an adverse effect on NRHP-listed or eligible properties ("historic properties") including the George Washington Memorial Parkway (Clara Barton Parkway), the Chesapeake and Ohio Canal National Historical Park, the Washington Biologists' Field Club on Plummers Island, Gibson Grove African Methodist Episcopal Zion Church, archaeological sites 44FX3922 (Dead Run Ridges Archaeological District), 44FX0374, 44FX0379, 44FX0389, 18MO749 and 18MO751; that additional effects may not be completely known; and that FHWA intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14 and to govern the implementation of the Project and the resolution of adverse effects.

NOW, THEREFORE, FHWA, NPS, ACHP, MDOT SHA, MD SHPO, and VA SHPO, (hereinafter "Signatories") agree that the Project will be implemented in accordance with the following Stipulations in order to take into account the effect of the Project on historic properties and that these Stipulations will govern compliance of the Project with Section 106 of the NHPA until this PA expires or is terminated.

Stipulations

I. Roles and Responsibilities

A. **FHWA** is the lead federal agency and is responsible for ensuring the terms of this PA are carried out.

B. **MDOT SHA** is delegated authority by FHWA under this PA and the Statewide PA to continue defined aspects of consultation, Project compliance review, and mitigation implementation. MDOT SHA will be primarily responsible for implementation of this PA excepting where otherwise specified. Additionally:

1. MDOT SHA will enter into agreements with one or more developers to design, build, and operate the Project. MDOT SHA will ensure the work of the developer or developers conforms to the requirements of this PA and may task the developer(s) with assistance with certain commitments (such as context-sensitive design); however, MDOT SHA may not delegate consultation obligations or other responsibilities specified in this PA to the developer(s).
2. MDOT SHA will require the developer(s) to retain professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history for the duration of design and construction to assist with design commitments, liaise with MDOT SHA cultural resources staff and facilitate compliance with this PA.
3. MDOT SHA, on behalf of FHWA, will consult with the relevant SHPO(s) for actions under this PA and 36 C.F.R. 800.

C. **NPS** is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 U.S.C. § 100101(a).

D. **SHPO**: The Maryland Historical Trust (MD SHPO) has jurisdiction as established in the NHPA for historic properties in Maryland. The Virginia Department of Historic Resources (VA SHPO) has jurisdiction as established in the NHPA for historic properties in Virginia. The SHPOs will:

1. Respond to requests from MDOT SHA for concurrence on eligibility determinations, effect determinations, and technical documents within a 30-day review period unless otherwise specified in this PA, or MDOT SHA specifically

provides for an extended review period at the time of submittal. MDOT SHA and FHWA may assume concurrence or no objection to determinations and submittals if no response is received within 30 days, if no extended timeline is specifically established in the review request or if no timeline is specified in 36 C.F.R. 800. All durations referenced in this PA refer to calendar days.

2. Provide written comments, share general technical assistance/guidance, and make available to MDOT SHA or its designates survey records or other documents necessary to fulfill the requirements of this PA.

E. ACHP will provide policy guidance, provide comment on issues that may arise as requested by parties to this PA, and participate in dispute resolution as specified in Stipulation XIII.

F. Consulting Parties/Public

1. MDOT SHA has consulted with or provided the opportunity to consult to the parties listed in Attachment 2 prior to finalizing this PA. Because the Preferred Alternative no longer affects numerous historic properties identified in earlier alternatives considered, several parties listed in Attachment 2 no longer have a demonstrable interest in historic properties affected by the Project. Parties listed in Attachment 3 continue to have a defined relationship to the Project and have been invited to concur in this PA.

2. MDOT SHA will provide all consulting parties in Attachment 3, regardless of concurring status, with opportunities to consult on Project changes or new elements with the potential to affect historic properties. MDOT SHA will offer other appropriate consulting parties the opportunity to rejoin or newly join consultation in the event of new or revised Project elements. Consulting parties may sign this PA as concurring parties at any time after execution of the PA with the invitation of MDOT SHA or FHWA. Additional consulting parties may be included in Attachment 3 without the need to amend this PA.

3. Concurrence with the PA by a party does not necessarily indicate that the party supports the Project, the Preferred Alternative, or endorses all stipulations of this PA, but rather indicates the desire of such parties to acknowledge consultation and/or remain involved in implementation of specific terms of this PA.

4. MDOT SHA will provide for notification of the public for substantial changes to the Project that would result in an expanded APE or new effects to historic properties consistent with 36 CFR 800.8(c)(1)(iv) and procedures under NEPA to ensure ongoing opportunities for public input. As appropriate, this process may identify new consulting or concurring parties who may wish to join the PA at a later time in response to Project refinement.

II. Professional Standards

A. Guidelines, standards and regulations relevant to this PA and its purposes are listed below, and links to these documents are found in Attachment 4. Additionally, it is the intention of the Signatories to interpret this PA to incorporate any subsequent standards, revisions of standards, or applicable guidance issued by the Secretary, ACHP, or MD SHPO or VA SHPO as then in force during this PA.

1. 36 C.F.R. Part 800: Protection of Historic Properties, as amended (2004);
2. *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983);
3. Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983)
4. *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994), including *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018);
5. *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (Maryland Historical Trust, Revised 2019);
6. *Guidelines for Conducting Historic Resources Survey in Virginia* (Virginia Department of Historic Resources, revised September 2017)
7. 36 C.F.R Part 79: Curation of Federally-Owned and Administered Archaeological Collections
8. *NPS Museum Handbook*, National Park Service, revised 2019
9. Program Comment for Actions Affecting Post-1945 Concrete Steel Bridges (77 FR 68790);
10. *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
11. *Section 106 Archaeology Guidance* (ACHP, 2009)
12. Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects (ACHP February 2007);
13. National Register of Historic Places Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service revised 1997), National Register of Historic Places Bulletin 16A, *How to Complete the National Register Registration Form* (National Park Service revised 1997), and other National Register Bulletins as applicable
14. NPS Management Policies – Section 5, Cultural Resource Management (2006)

15. Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017); and accompanying guidelines for Treatment of Historic Properties (1995, Revised 2017) and Cultural Landscapes (1996)

III. General Project Section 106 Commitments

A. MDOT SHA will implement mitigation concurrent with construction phasing where impacts will occur; in the event that the Project is modified or certain elements causing adverse effects are not constructed, MDOT SHA will notify Signatories and consulting parties of the change at such time as a final decision is made to remove such elements and amend the PA as necessary.

B. MDOT SHA cultural resources staff who meet Secretary of the Interior's Professional Qualifications Standards will oversee implementation of all mitigation commitments and other terms of this PA.

C. Consultation on Reforestation and other Mitigation Sites

1. MDOT SHA is obligated to provide reforestation mitigation for the Project pursuant to the Maryland Reforestation Law (MD Nat Res Code § 5-103). Reforestation must occur within 2 years or 3 growing seasons of completion of construction. MDOT SHA is also coordinating with the NPS to identify reforestation sites to account for impacted NPS-managed lands. The locations to be used for reforestation are not yet fully identified. Reforestation activities may take the form of conservation easements or other noninvasive activities which would not affect historic properties. MDOT SHA will not consult on easements or conservation actions where no ground disturbance is involved. If areas outside the APE are identified for reforestation where new plantings or other activities with the potential to affect historic properties are identified, MDOT SHA will consult in accordance with Stipulation IV to add such areas to the APE, identify historic properties, and evaluate effects to historic properties. MDOT SHA will avoid adverse effects to historic properties to the maximum extent practicable in selecting reforestation planting sites. If adverse effects are unavoidable, MDOT SHA will amend this PA in accordance with Stipulation XII to resolve any such adverse effects.

2. As Project development proceeds, additional and revised mitigation or enhancement locations for impacts to resources other than historic properties may be identified. These resources include, but are not limited to wetlands, stormwater, and parks. To account for effects to historic properties at these locations, when actions are proposed at such locations that may affect historic properties, MDOT SHA will amend the APE and follow the procedure described in Stipulation IV below.

IV. Consultation Regarding Project Development

A. Further consultation requirements regarding specific historic properties affected by the Project are described in Stipulation V. As project design advances or ancillary activities not currently known are identified, MDOT SHA will initiate consultation with SHPOs and other consulting parties (as described below) using the following process.

1. MDOT SHA cultural resources staff will review proposed changes that affect project location, design, methods of construction, materials, or limits of disturbance (LOD), for potential new effects to historic properties. Should these changes necessitate an expansion of the APE, or if the changes would affect known or potential historic properties differently than described in this PA, MDOT SHA will consult on behalf of FHWA as described in Stipulation IV.B below.
2. If MDOT SHA, working with the developer(s), finds design or construction solutions that avoid or further minimize adverse effects to historic properties, MDOT SHA will consult in accordance with the procedures in Stipulation IV.B to seek concurrence with any updated determinations of effect, and amend this PA in accordance with Stipulation XII.
3. MDOT SHA, on behalf of FHWA, will consult upon changes to the LOD within the existing APE where additional archaeological investigation is recommended in the Cultural Resources Technical Report or where such recommendations are identified in subsequent consultation documentation, including the treatment plans described in Stipulations VI and VII.
4. MDOT SHA, on behalf of FHWA, will consult as specified elsewhere in this PA regarding specific stipulations, including Monitoring of Performance (Stipulation VIII).

B. MDOT SHA, on behalf of FHWA, consistent with the principles described in 36 C.F.R. §§ 800.3 – 6, will consult with the appropriate SHPO(s), Signatories, concurring parties to this PA, Tribes who may ascribe religious and cultural significance to properties pursuant to 36 C.F.R. § 800.3(f)(2), local public agencies with jurisdiction and other consulting parties identified for this undertaking as appropriate on:

1. Amendments to the APE, consistent with 36 C.F.R. § 800.16(d), including identification and documentation of any new historic properties within the amended APE consistent with 36 C.F.R § 800.4(a) and (b).
2. New or revised determinations of eligibility for historic properties within the APE as described above, consistent with 36 C.F.R § 800.4(c).
3. New or revised assessment of effects to historic properties within the APE as described above, consistent with 36 C.F.R § 800.5.

4. If MDOT SHA determines there are any new adverse effects to historic properties, it will notify FHWA. MDOT SHA and FHWA will consult with the SHPO and identified consulting parties to resolve the adverse effects consistent with 36 C.F.R § 800.6, including alternatives to avoid, minimize or mitigate such adverse effects; MDOT SHA and FHWA will follow the procedures in Appendix 3 and/or amend this PA as necessary to document such resolution of any new adverse effects.

C. MDOT SHA will consult with the relevant SHPO(s), Signatories, Tribes, and appropriate consulting parties on archaeology inventory, archaeological evaluations for NRHP eligibility, and effect determinations for archaeological historic properties.

D. MDOT SHA will provide consultation materials in written or electronic form, and follow timelines for comment opportunity as specified in Stipulation I. D.

V. Property-Specific Commitments

MDOT SHA will be responsible for ensuring the following mitigation and commitments are carried out, under the oversight of FHWA. MDOT SHA will either complete mitigation itself or enter into legally binding agreements with partner agencies to ensure the following stipulations are fulfilled, subject to the requirements of each stipulation below. Mitigation and commitments will be implemented by authorized construction phase, unless there is opportunity to provide advanced mitigation that is mutually agreeable to all parties, is feasible to advance, and is identified by MDOT SHA as a priority. All commitments regarding design-review with consulting parties will be conducted in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to influence design to avoid impacts or ensure compatibility to the extent practicable with historic properties. Preliminary engineering activities to support design of future phases, such as geotechnical studies or other similar, minimally invasive activities with limited potential to affect historic properties may proceed within the APE prior to construction authorization and will not require consultation or advance mitigation.

A. George Washington Memorial Parkway (including Clara Barton Parkway)

1. MDOT SHA will continue property-specific Design-Review consultation with NPS and SHPOs to ensure a context-sensitive design for new facilities, and, through the ongoing design process, minimize, to the extent practicable, impacts to character-defining features and resources that contribute to the George Washington Memorial Parkway/Clara Barton Parkway as a historic property. Key elements for NPS review include the bridge design, trail connections, retaining walls, ramp improvements, signage plans and barrier. MDOT SHA will provide NPS and SHPOs a comment opportunity on plans at a draft level of design and a second opportunity prior to finalization of design for elements on

NPS property or within the APE adjacent to NPS property; for each review there will be minimum 30-day review period. In the event of objections relating to the final design from NPS or SHPOs that cannot be resolved, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will provide NPS funding in an amount not to exceed $250,000 for a Cultural Landscape Report (CLR) for Clara Barton Parkway. The CLR will include historical narrative, updated existing conditions and analysis and evaluation, and treatment guidelines for management of character-defining features. NPS will complete the CLR within five (5) years of receipt of funds from MDOT SHA and provide a copy of the completed CLR, along with a summary of implementation of any treatment measures in a timely manner following their implementation, to MD SHPO and MDOT SHA.

B. Dead Run Ridges Archaeological District (44FX3922) and individual sites 44FX0374, 44FX0379 and 44FX0389

1. In consultation with VA SHPO, NPS, and other appropriate consulting parties including consulting Tribes, MDOT SHA will develop and implement Phase III data recovery on sites 44FX0374, 44FX0379, 44FX0389 and the Dead Run Ridges Archaeological District (44FX3922) as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

2. MDOT SHA will prepare a NRHP nomination form for the Dead Run Ridges Archaeological District, no later than 12 months following finalization of the report documenting the Phase III data recovery in Stipulation V. B. 1 above, basing the nomination on the report findings. MDOT SHA will provide a copy of the draft nomination to NPS staff for review and comment prior to formal submission of the draft nomination to VA SHPO. MDOT SHA will work with VA SHPO's Register Program to develop a final draft nomination for the Dead Run Ridges Archaeological District, and VA SHPO's Register Program will process the final draft for listing in the NRHP pursuant to its established policies and procedures. The Department of Historic Resources State Review Board is under no obligation to approve the nomination for listing in the NRHP. Should the nomination be unsuccessful, or additional information be requested beyond the scope of the completed data recovery efforts, MDOT SHA will not be required to complete further fieldwork or analysis beyond what is agreed to in the treatment plan specified in Stipulation VI, or otherwise pursue nomination of the district.

C. Chesapeake and Ohio Canal National Historical Park

1. MDOT SHA will continue property-specific Design-Review consultation with NPS to ensure a context-sensitive design for new facilities constructed as

part of the Project, and, through the ongoing design process, minimize to the extent practicable impacts to character-defining features and resources that contribute to the Chesapeake and Ohio Canal National Historical Park as a historic property. MDOT SHA will provide NPS and MD SHPO a comment opportunity on design plans at a draft level of design, and a second opportunity prior to finalization of design for elements within the APE on or adjacent to NPS property; for each review there will be a minimum 30-day review period. In the event of objections from NPS or MD SHPO that cannot be resolved relating to the final design, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will locate new bridge piers away from Lock 13 as part of the new Clara Barton Parkway Bridge and will avoid placing piers for the new structure closer to Lock 13 than the current bridge piers, as shown in the Preferred Alternative.

3. MDOT SHA will protect Lock 13 in place during construction, by limiting LOD around the lock structure and providing an appropriate buffer to prevent damage. MDOT SHA will rehabilitate or restore the structure if needed following construction, with treatment determined by or in consultation with NPS and MD SHPO as described below in Stipulation V.C.4 and VC.5. As part of the Archaeological Treatment Plan in Stipulation VI, MDOT SHA will include archaeological monitoring or other treatment approaches during construction in the area around Lock 13.

4. MDOT SHA will conduct a condition assessment of lock structures, the Canal and the Towpath within the Project LOD prior to construction and provide copies of the assessment to MD SHPO and NPS. MDOT SHA will provide for rehabilitation of lock structures, the Canal, and Towpath within the Project LOD following completion of substantial construction within the affected area. MDOT SHA will provide NPS and MD SHPO with a draft rehabilitation plan for review and comment prior to implementing the plan

5. MDOT SHA will provide for vibration damage monitoring of other susceptible historic structures at Chesapeake and Ohio Canal National Historical Park within the APE during construction, specifically, Lock 12 and Lock 14. Additional vulnerable structures or features (such as masonry walls) to be monitored may be identified in consultation with NPS during the preparation and review of the condition assessment identified in Stipulation V.C.4.

a. Should notable acute or incremental damage directly resulting from construction means or methods be identified as a result of the vibration monitoring, MDOT SHA will follow Section A of the Inadvertent Discovery Plan (Attachment 1).

b. General wear or degradation of the historic fabric during construction that is not attributable to specific construction practices or incidents will be remediated by the rehabilitation plan in Stipulation V.C.4.

D. 18MO749 Archaeological Site (C&O Canal)

In consultation with MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

E. 18MO751 Archaeological Site (C&O Canal)

In consultation with MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

F. Washington Biologists' Field Club on Plummers Island

1. MDOT SHA will prepare a NRHP nomination for the Washington Biologists' Field Club on Plummers Island. MDOT SHA will provide a copy of the draft nomination to NPS staff and the Washington Biologists' Field Club (WBFC) for review prior to submittal to MD SHPO and address any comments prior to formal submission of the nomination. Should the nomination be unsuccessful, MDOT SHA will not be required to resubmit the nomination or otherwise complete additional studies or research after addressing comments by NPS staff.
2. MDOT SHA will place temporary fencing along the LOD within Plummers Island to delimit construction activities.
3. MDOT SHA will fund or implement a photographic survey documenting conditions before, during and after construction is completed adjoining Plummers Island, within the APE boundary, and provide the results to WBFC and NPS.
4. MDOT SHA will fund or develop GIS maps to document known current and historical study locations and key natural resource features within the APE to assist in documenting change over time and provide these files to WBFC and NPS.
5. MDOT SHA will procure a sub-meter accurate GPS unit for WBFC to use in long-term monitoring of plant locations, collection sites, and other historical research features.

6. MDOT SHA, subject to any availability or rights restrictions, will provide for digitization and cataloging of historical records related to the WBFC that are under the control of WBFC but housed at the Smithsonian Museum of Natural History, specifically the collection, “SIA RU102005, Smithsonian Institution, Washington Biologists' Field Club, circa 1900-1966 Records” that are not currently available in electronic format, and provide the files to WBFC and NPS.

7. MDOT SHA will provide WBFC historical content, such as a synthesis of the digitized materials in Stipulation V.F.6, to incorporate into their website.

8. MDOT SHA will complete stipulations V.F.1-7., other than those requiring longer timeframes (such as photographic survey after construction), unless continued consultation should necessitate a longer timeframe, within two (2) years of commencement of construction activities on Plummers Island.

G. Morningstar Tabernacle No. 88 Moses Hall and Cemetery

1. As part of context-sensitive design, MDOT SHA will consult with the Trustees of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery, Friends of Moses Hall, First Agape A.M.E. Zion Church, Cabin John Citizens Association, and other consulting parties with a demonstrated interest in the cemetery on context-sensitive treatment of noise barrier facing the cemetery; MDOT will work with the above-listed consulting parties on a context-sensitive treatment of noise barrier facing the cemetery, which may include decorative elements appropriate to the historic property and/or such elements as memorial plaques or signage. MDOT SHA will provide these consulting parties and MD SHPO comment opportunity for Project elements, specifically noise barrier, within the APE adjacent to the cemetery at a draft level of design and a second opportunity prior to finalization of design; for each review there will be a minimum 30-day review period. In the event MD SHPO does not agree with the final design, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will conduct further studies prior to final design and construction adjacent to the cemetery as part of the treatment plan specified in Stipulation VII. Following completion of the studies in the treatment plan, MDOT SHA and FHWA will provide the results of the studies to MD SHPO and relevant consulting parties and determine project effects to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery in consideration of the results of the studies and the views of the MD SHPO and relevant consulting parties. Should interments be identified outside the identified boundary of the cemetery, and no additional project avoidance options are practicable, MDOT SHA and FHWA will consult on the likely adverse effect, identify mitigation options, and amend this PA as necessary following the procedures in Stipulations IV and XIII of this PA.

H. Gibson Grove A.M.E. Zion Church

1. MDOT SHA will provide First Agape A.M.E. Zion Church at Gibson Grove and MD SHPO a comment opportunity at a draft level of design and a second opportunity prior to finalization of design for Project elements on church property or within the APE adjacent to the church property, with a minimum 30-day review period.

2. MDOT SHA will improve the stormwater drainage on the church property by routing drainage into a new underground culvert to be installed as part of the Project.

3. MDOT SHA will ensure that a parking lot identified in the church's restoration plan is constructed on church property following installation of the culvert drainage design. MDOT SHA will work with First Agape A.M.E. Zion Church on schedule and timing of the culvert and parking lot work to be compatible with ongoing church restoration efforts to the extent practicable.

4. MDOT SHA will ensure Project noise- or vibration- causing construction activities are restricted adjacent to the church during scheduled worship services or key events.

5. MDOT SHA, in coordination with Montgomery County, will install sidewalk on the west side of Seven Locks Road to more accessibly connect Gibson Grove A.M.E. Zion Church and Morningstar Tabernacle No. 88 Moses Hall and Cemetery.

VI. Archaeological Treatment Plan (ATP)

MDOT SHA's goal is to have a comprehensive but flexible ATP that addresses the LOD but can be revised and updated in response to Project design advancement. Prior to construction within affected areas, MDOT SHA will develop an ATP in consultation with SHPOs and appropriate consulting parties. MDOT SHA will provide for a minimum 30-day review of the initial draft of the ATP. MDOT SHA will be responsible for implementing the provisions of the ATP. The ATP will include:

A. Archaeological monitoring requirements during construction.

B. Phase I Survey in areas where property access could not be obtained (as identified in the 2019 Technical Report, Volume 4, Chapter 5): RS-1; RS-2; S-4, SWM S-4, S-5, SWM S-5, S-6, SWM S-6; S-27; SWM S-27, S-8; S-10; S-53, and the vicinity of S-28.

C. Phase I Survey in the vicinity of two sites, 18MO457 and18MO190, to define site boundaries and evaluate NRHP eligibility and potential impacts.

D. Phase II Evaluation of Sites 18MO191 and 18MO752.

E. Phase III Data Recovery investigations at 18MO749 and 18MO751 within the Chesapeake and Ohio Canal National Historical Park and the Dead Run Ridges Archaeological District within the GWMP (44FX3922), and individually eligible sites

within the district 44FX0374, 44FX0379 and 44FX0389. MDOT SHA will prepare a draft NRHP Nomination form for the Dead Run Ridges archaeological district based on the results of Phase III Data Recovery investigation as described in Stipulation V. B. MDOT SHA, in consultation with other parties, will ensure the results of the data recovery are documented in technical reporting consistent with the requirements of Stipulation II, and will define and produce products or other efforts interpreting the data recovery reports to the general public.

F. Provisions in the treatment plan required for work on NPS federal property, including cataloging and curation to NPS standards of artifacts and associated records, permitting under the Archaeological Resources Protection Act and compliance with the Native American Graves Protection and Repatriation Act (NAGPRA).

G. If sites or areas proposed for archaeological treatment in the ATP are avoided by revising the Project LOD or other actions, MDOT SHA will document the revision, including updating effect determinations and seeking SHPO concurrence where required. MDOT SHA will provide such information to appropriate consulting parties and will thereby not need to complete treatment or investigation at such locations.

H. MDOT SHA will ensure required consultation with the appropriate SHPO and appropriate consulting parties occurs on eligibility, effects, and treatment for any newly identified archaeological historic properties prior to final design and construction in areas identified for further archaeological treatment. Reports or similar deliverables will be provided to Signatories and appropriate consulting parties with a minimum 30-day review opportunity.

I. MDOT SHA will consult with SHPO and appropriate consulting parties on the ATP and any revisions or modifications to the ATP. If SHPO concurs with the ATP or future revisions, no amendment of this PA is needed to implement or update the ATP. If SHPO does not agree with the ATP or future proposed changes to the ATP, MDOT SHA will seek to resolve the disagreement or follow the provisions of Stipulation XIII.

VII. Cemeteries and Human Remains Treatment Plan

A. MDOT SHA acknowledges there is some potential for human remains associated with historic properties to be present in at least two areas of the LOD (adjacent to Morningstar Tabernacle No. 88 Moses Hall and Cemetery and in the general location of the Montgomery County Poor Farm) which are not currently accessible for the types of thorough archaeological investigation necessary to definitively identify interments. MDOT SHA will work with the developer(s) to minimize LOD to the maximum extent practicable in these areas

B. The treatment plan will include proposed investigations to identify and evaluate potential graves or human remains in specified sensitive areas to the maximum extent practicable to ensure avoidance or treatment prior to final design and construction.

C. MDOT SHA will consult with SHPO and, where identified, descendants, descendant communities and other appropriate consulting parties to fully identify, recover, and respectfully treat any human remains identified within LOD that cannot be avoided.

D. MDOT SHA will consult with SHPO and, where identified, descendants, descendant communities and other appropriate consulting parties on archaeological monitoring requirements for locations within LOD where potential for human remains is likely during construction, including unverified but reported locations of the Ball Family Cemetery.

E. MDOT SHA will seek input from affected consulting parties and concurrence from SHPO on the treatment plan prior to its implementation. MDOT SHA will be responsible for implementing the treatment plan. If SHPO does not agree with the treatment plan, MDOT SHA will seek to resolve the disagreement or follow the provisions of Stipulation XIII.

F. Activities on Federal Lands, including NPS-managed property, require adherence to NAGPRA. The treatment plan will include provisions for NAGPRA compliance in the event of human remains or funerary objects discovery.

G. MDOT SHA will ensure that at all times human remains are treated with dignity and respect in a manner consistent with ACHP's policy statement on the Treatment of Human Remains, Burial Sites and Funerary Objects.

H. MDOT SHA will ensure no photographs of human remains or associated funerary objects are released to the press or general public.

I. MDOT SHA will be responsible for all expenses for any removal, treatment and relocation/disposition of any human remains or funerary objects impacted by the Project.

J. MDOT SHA will fully implement all relevant provisions of the treatment plan prior to final design and any construction impacts within specified cemetery investigation locations.

VIII. Monitoring of Performance

A. Specific points for continued consultation are defined in Stipulations IV and V.

B. MDOT SHA will, for the duration of the Project, provide Signatories and consulting parties listed in Attachment 3 with a written progress report twice per calendar year describing status of implementation of this PA.

C. MDOT SHA will provide for a meeting opportunity for Signatories and consulting parties listed in Attachment 3 following issuance of each progress report.

D. MDOT SHA will convene additional consulting party meetings as necessary or when requested by any Signatory;

E. MDOT SHA may cancel individual meetings if there are no significant issues for discussion and no Signatory objects to the cancellation.

IX. Post-Review Discovery of Human Remains

MDOT SHA will develop human remains treatment provisions as part of the archaeological and cemetery and human remains treatment plans in Stipulations VI and VII. MDOT SHA will follow the attached Inadvertent Discovery Plan (Attachment 1) should human remains be identified in any areas or situations not covered by the archaeological or cemetery and human remains treatment plans**.**

X. Other Post-Review Discoveries

MDOT SHA will follow the procedures in Attachment 1 of this PA for any inadvertent archaeological discoveries or inadvertent effects to historic properties during construction. MDOT SHA will provide training for the developer(s) in the Inadvertent Discovery Plan requirements.

XI. Confidentiality

The Signatories agree to provide by the provisions of Section 304 of the NHPA, and other applicable requirements, to withhold information concerning the location, character, or ownership of resources where release of such information may endanger the integrity of the resource.

XII. Amendment

Any Signatory to this PA may request that it be amended, whereupon the Signatories will consult in accordance with 36 C.F.R. § 800.14 to consider such an amendment. Amendments will be effective upon the date of the last signature from the Signatories.

XIII. Dispute Resolution

A. Should any Signatory or consulting party object at any time to the manner in which the terms of this PA are implemented, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will take the following steps:

1. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to ACHP. ACHP shall provide FHWA with its comment on the resolution of the objection within 30 days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall

prepare a written response that takes into account any timely advice or comments regarding the dispute from ACHP, Signatories and consulting parties and provide them with a copy of this written response. FHWA will then proceed according to its final decision.

2. If ACHP does not provide its advice regarding the dispute within the 30-day period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and consulting parties to the PA and provide them and ACHP with a copy of such written response.

3. In the case of objections related to NRHP eligibility, any Signatory may object in writing within 30 days to an MDOT SHA or FHWA determination of eligibility. If MDOT SHA and FHWA are unwilling to revise the determination in response to the objection or other relevant information, FHWA (or MDOT SHA on its behalf) will submit the determination to the Keeper of the National Register of Historic Places for a determination pursuant to 36 C.F.R. Part 63.

B. Objections from the Public: Should a member of the public object to an action taken under this PA, or compliance with the PA, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA will ensure that MDOT SHA consults with the objecting party to respond to the objection in coordination with FHWA where relevant, provided the objection is made in writing to the FHWA or MDOT SHA contacts identified in Attachment 5 or any subsequent updates to Attachment 5. MDOT SHA and FHWA will inform other Signatories of the objection and proposed resolution. Should a Signatory disagree with the proposed resolution, the Signatories will follow Stipulation XIII.A.

C. FHWA's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

XIV. Termination

A. Any Signatory to this PA may terminate it by providing 30 days' notice in writing to the other Signatories, provided that the Signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

B. If any Signatory to this PA determines that a term will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation XII, above. If within 30 days (or another time period

agreed to by all Signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other Signatories.

C. In the event of termination, FHWA will comply with 36 C.F.R. § 800 for all remaining actions, or until a new agreement is reached fulfilling such requirements.

This PA will continue in full force and effect until 20 years from the date of execution of the PA, or such time of final acceptance of the Project and when all terms of this PA have been met, should the terms be met prior to the 20-year expiration. The PA will be invalid if the Project is terminated or authorization for the Project is rescinded. At any time in the six-month period prior to its expiration, the Signatories will consult to consider an extension or amendment of the PA. At such time, the Signatories may consider an amendment to extend the PA unmodified for an additional specified duration or consult to amend the PA in accordance with Stipulation XII. No extension or amendment will be effective until all Signatories have signed the amendment or amendment to extend.

In witness thereof, the Signatories to this PA, through their duly authorized representatives, have executed this PA on the days and dates set out on the following pages and certify that they have read, understood, and agreed to the terms and conditions of this PA as set forth herein.

The effective date of this PA is the date of the last signatory page.

This PA may be executed in counterparts, each of which shall constitute an original, and all of which shall constitute one and the same agreement.

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

FEDERAL HIGHWAY ADMINISTRATION

Date 6/06/2022

Gregory Murrill
Division Administrator
FHWA Maryland Division

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

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May 17, 2022

ADVISORY COUNCIL ON HISTORIC PRESERVATION

Date 6.14.2022

Reid J. Nelson
Executive Director (Acting)

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

MARYLAND STATE HISTORIC PRESERVATION OFFICER

Date May 19, 2022

Elizabeth Hughes
Director
Maryland Historical Trust

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

Julie Langan Date 5/19/2022

Julie Langan
Director
Virginia Department of Historic Resources

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

NATIONAL PARK SERVICE

TINA CAPPETTA Digitally signed by TINA CAPPETTA Date: 2022.06.06 12:40:09 -04'00'

Date 6/6/2022

Tina Capetta
Superintendent
Chesapeake and Ohio National Historical Park

Charles Cuvelier Date: 2022.06.06 12:35:53 -04'00'

Date 6/6/2022

Charles J. Cuvelier
Superintendent
George Washington Memorial Parkway

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

MARYLAND STATE HIGHWAY ADMINISTRATION

Tim Smith Date 05/27/2022

Tim Smith, P.E.
Administrator

Attachments

1. Inadvertent Discovery Plan
2. All Parties Invited to Consult on the Project
3. Consulting Parties invited to Concur
4. Links to Documentation Referenced
5. Contact Information for FHWA and MDOT SHA staff responsible for PA implementation (to be updated as necessary)

Attachment 1
Inadvertent Discovery Plan

A. Unanticipated Impacts to Architectural Historic Properties: if the Project causes unanticipated impacts to any National Register of Historic Places (NRHP) eligible, listed, or contributing buildings, sites, structures, or objects of the built environment, the contractor must notify the engineer and immediately cease any activity causing ongoing damage until consultation occurs. MDOT SHA shall, in consultation with the appropriate SHPO (VA or MD), determine if adverse effects have occurred to the property/properties and develop a plan for the protection of the historic property, and minimization or mitigation of impacts. If mitigation is identified, FHWA, MDOT SHA, SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. MDOT SHA may hold the developer(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

B. Unanticipated Damage to Known Archaeological Resources: if unauthorized excavation occurs outside the approved limits of disturbance (LOD) or other approved boundaries designed to protect archaeological resources or cemeteries and thereby causes impacts to known, NRHP-eligible properties, MDOT SHA will ensure any activity causing ongoing damage is stopped until consultation occurs. MDOT SHA will conduct a damage assessment consistent with the model used for such assessments under the Archaeological Resources Protection Act (https://www.nps.gov/archeology/pubs/techbr/tchBrf20.pdf). MDOT SHA will use the results of the assessment in consultation with the relevant SHPO to determine if the resource has been adversely affected and determine appropriate mitigation. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from MDOT SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource is affiliated with other known descendant groups or consulting parties, MDOT SHA will consult with such parties as well. Should damage occur on NPS land, MDOT SHA will consult with the NPS staff and regional archaeologist regarding the damage assessment report and any identified mitigation. If mitigation is identified, FHWA, MDOT SHA, SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. MDOT SHA may hold the developer(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

C. Unanticipated Discovery of Human Remains: Should any burials, interments, or human remains (hereafter, "remains") be encountered during construction, MDOT SHA will ensure all applicable construction work in the vicinity of the remains is immediately stopped to prevent damage to the remains, or to any additional remains that might be present in the vicinity. A minimum 100-foot buffer around identified remains will be established by MDOT SHA free of disturbance, to be adjusted as appropriate for the site conditions. Construction may occur outside the buffer unless evidence of additional remains is found. If remains are suspected to be human but not confirmed, MDOT SHA will ensure that such confirmation is made by a qualified professional. Human remains will at all times be treated respectfully and access and visibility limited to the site of discovery to authorized personnel only. Within Maryland, pursuant to State of Maryland Criminal Code § 10-402, the State's Attorney must authorize movement or removal of any remains until determined to be archaeological. If the remains are determined to be archaeological, MDOT SHA and the relevant SHPO will consult to determine treatment of the remains and any other necessary treatment such as work needed to define extent of remains in the most expeditious manner feasible. Within Virginia, human remains and associated funerary objects encountered during the course of actions taken as a result of this PA shall be treated in a manner consistent with the Virginia Antiquities Act (Code of Virginia 10.1-2305) and its implementing regulation (17VAC5-20), adopted by the Virginia Board of Historic Resources and published in the Virginia Register on July 15, 1991.

If the remains are determined archaeological and suspected to be of Native American origin, MDOT SHA, in coordination with FHWA, shall provide notification to tribal governments in accordance with any expressed tribal consultation preferences within 24 hours or as soon as practicable. MDOT SHA and/or FHWA will consult with affected federally recognized Indian Tribes, the Maryland Commission on Indian Affairs and appropriate Maryland Indian groups as appropriate regarding treatment of the remains. MDOT SHA will accommodate tribal cultural preferences to the extent practicable during such an event. If remains can be associated with other known descendant communities or organizations, including the cemetery-affiliated consulting or concurring parties to this PA, such parties shall also be consulted.

If the human remains are likely to be of Native American origin and are located on lands controlled or owned by the U.S. Government, including National Park Service Property within the APE, the Federal land managing agency will assume responsibility for compliance with the Native American Graves Protection and Repatriation Act (NAGPRA; 25 USC 3001), with MDOT SHA assistance.

In consultation with the relevant SHPO, Federally Recognized Indian Tribes, and FHWA as appropriate, and other identified descendant/affiliated consulting parties, the MDOT SHA shall develop a plan for the treatment or disposition of the remains or follow provisions of an existing treatment plan developed per this PA. MDOT SHA shall implement the provisions of the agreed treatment plan.

Should the remains be associated with, or constitute an intact archaeological resource, provision **D** below is also applicable.

D. Unanticipated Discovery of Archaeological Resources**:** If previously unidentified archaeological features, artifacts, or other materials (hereafter, "resource") are discovered during construction, all ground-disturbing work in the vicinity of the resource shall be temporarily suspended or modified to prevent further damage to the resource, and MDOT SHA will provide a reasonable buffer where ground disturbance is prohibited to cover the extent of the resource that may not be exposed.

The MDOT SHA archaeologist shall perform a preliminary inspection to identify the resource and evaluate its likelihood of NRHP eligibility. Following this inspection, construction may resume in the vicinity of but outside the boundary of the archaeological resource as defined by the MDOT SHA archaeologist. If the resource is potentially eligible for the NRHP, MDOT SHA will consult with the relevant SHPO on an eligibility determination and, if determined eligible for the NRHP, every effort shall be made to minimize impacts through redesign or modification of construction methods. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from MDOT SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource can be reasonably identified with other descendant or affiliated communities, MDOT SHA shall also attempt to consult with such parties.

In consultation with the relevant SHPO, MDOT SHA shall develop a plan for the treatment of any resource determined eligible. MDOT SHA shall describe actions proposed to avoid, minimize, or mitigate adverse effects, and request SHPO, tribal, and any other consulting party comments within 5 working days, unless there is a life or safety hazard requiring immediate interim action. MDOT SHA will disclose any interim action affecting the eligible resource taken in the event of a life or safety hazard. MDOT SHA, at its discretion, may establish a longer comment period if practicable in consideration of potential safety, cost, public travel disruption, and other factors. MDOT SHA shall then implement the provisions of the agreed-upon plan and/or amend this PA to document the resolution, should the resource be determined eligible and should the Project adversely affect the resource.

Attachment 2
All Parties Invited to Consult on the Project

Federally Recognized Tribal Nations

- **Absentee-Shawnee Tribe of Oklahoma**
- **Delaware Nation**
- **Delaware Tribe of Indians**
- **Chickahominy Indian Tribe**
- **Chickahominy Indians Eastern Division**
- **Eastern Shawnee Tribe of Oklahoma**
- **Monacan Indian Nation**
- **Nansemond Indian Tribe**
- **Oneida Indian Nation**
- **Onondaga Nation**
- **Pamunkey Indian Tribe**
- **Rappahannock Tribe, Inc.**
- **Saint Regis Mohawk Tribe**
- **Seneca-Cayuga Nation**
- **Shawnee Tribe**
- **Tuscarora Nation**
- **Upper Mattaponi Indian Tribe**

State Recognized and Other Tribes

- **Piscataway Conoy Tribe of Maryland (PCT)**
- **PCT - Cedarville Band of Piscataway**
- **PCT - Choptico Band of Piscataway**
- **Piscataway Indian Nation**

Federal Agencies

- **Department of Defense**
- **General Services Administration**
- **Federal Railroad Administration**
- **Federal Transit Administration**
- **National Capital Planning Commission**
- **National Institute of Standards and Technology**
- **National Park Service**
- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture**
- **U.S. Postal Service**

State Agencies and Organizations

- **Maryland Commission on Indian Affairs**
- **MDOT Maryland Transit Administration**

- **MDOT Maryland Transportation Authority**
- **Maryland Historical Trust**
- **Preservation Maryland**
- **Virginia Department of Historic Resources**
- **Virginia Department of Transportation**
- **Washington Metropolitan Area Transit Authority**

County Agencies and Organizations

- **Charles County Department of Planning**
- **Frederick County**
- **Frederick County Preservation Trust**
- **Maryland Milestones/Anacostia Trails Heritage Area, Inc.**
- **Montgomery County Department of Correction and Rehabilitation**
- **Montgomery County Department of General Services**
- **Montgomery County Department of Transportation**
- **Montgomery County Heritage Area, Heritage Tourism Alliance of Montgomery County**
- **Maryland Milestones**
- **Maryland-National Capital Parks and Planning Commission – Montgomery County Planning – Historic Preservation**
- **Maryland-National Capital Parks and Planning Commission – Montgomery Parks**
- **Maryland-National Capital Parks and Planning Commission – Prince George's County Planning – Historic Preservation**
- **Maryland-National Capital Parks and Planning Commission – Prince George's County Department of Parks and Recreation**
- **Montgomery Preservation, Inc.**
- **Prince George's County Historic Preservation Commission**
- **Prince George's County Historical and Cultural Trust**
- **Prince George's Heritage, Inc.**

Municipal and Other Organizations

- **Cabin John Citizens Association**
- **Canoe Cruisers Association**
- **C&O Canal Association**
- **C&O Canal Trust**
- **Carderock Springs Citizens' Association**
- **City of Gaithersburg**
- **City of College Park**
- **City of Glenarden**
- **City of Greenbelt**
- **City of Rockville**
- **First Agape A.M.E. Zion Church at Gibson Grove**

- **Frederick County Landmarks Foundation**
- **Heart of the Civil War Heritage Area**
- **Indian Spring Community Association**
- **National Park Seminary Master Association**
- **National Trust for Historic Preservation**
- **Peerless Rockville**
- **Rock Creek Conservancy**
- **Save Our Seminary at Forest Glen**
- **Sierra Club Maryland Chapter**
- **Silver Spring YMCA**
- **Trustees of Morningstar Tabernacle No. 88, Inc. (Friends of Moses Hall)**
- **Washington Biologists' Field Club**
- **Village of North Chevy Chase**

Attachment 3
Consulting Parties Invited to Concur

Federally Recognized Tribes

- **Absentee-Shawnee Tribe of Oklahoma**
- **Delaware Nation**
- **Delaware Tribe of Indians**
- **Chickahominy Indian Tribe**
- **Chickahominy Indians Eastern Division**
- **Eastern Shawnee Tribe of Oklahoma**
- **Monacan Indian Nation**
- **Nansemond Indian Tribe**
- **Oneida Indian Nation**
- **Onondaga Nation**
- **Pamunkey Indian Tribe**
- **Rappahannock Tribe, Inc.**
- **Saint Regis Mohawk Tribe**
- **Seneca-Cayuga Nation**
- **Shawnee Tribe**
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- **PCT - Cedarville Band of Piscataway**
- **PCT - Choptico Band of Piscataway**
- **Piscataway Indian Nation**

Federal Agencies

- **Department of Defense**
- **Federal Railroad Administration**
- **Federal Transit Administration**
- **National Capital Planning Commission**
- **National Institute of Standards and Technology**
- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture**

State Agencies

- **Maryland Commission on Indian Affairs**
- **Maryland Department of Transportation – Maryland Transit Administration**
- **Maryland Transportation Authority**
- **Virginia Department of Transportation**

Local and Other Agencies and Groups

- **Cabin John Citizens Association**
- **Canoe Cruisers Association**
- **Carderock Springs Citizens Association**
- **City of Gaithersburg**
- **City of Rockville**
- **C&O Canal Association**
- **C&O Canal Trust**
- **First Agape A.M.E. Zion Church at Gibson Grove**
- **Maryland Milestones**
- **Maryland-National Capital Park and Planning Commission**
- **Montgomery County Heritage Area**
- **Montgomery Preservation, Inc.**
- **National Institute for Standards and Technology**
- **National Trust for Historic Preservation**
- **Peerless Rockville**
- **Preservation Maryland**
- **Trustees of Morningstar Tabernacle No. 88, Incorporated (Friends of Moses Hall)**
- **Virginia Department of Transportation**
- **Washington Biologists' Field Club**

Attachment 4
Links to Documentation Referenced In the I-495 & I-270 Managed Lanes Study PA

Federal Codes and Regulations

16 U.S.C. 470aa-470mm
Archaeological Resources Protection Act (ARPA)
https://uscode.house.gov/view.xhtml?path=/prelim@title16/chapter1B&edition=prelim

25 U.S.C. Ch. 32 § 3001
Native American Graves Protection and Repatriation Act (NAGPRA)
https://uscode.house.gov/view.xhtml?path=/prelim@title25/chapter32&edition=prelim

36 C.F.R. Part 14 and 54 U.S.C. § 100902
Rights-of-Way
https://www.ecfr.gov/current/title-36/chapter-I/part-14
https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100902&num=0&edition=prelim

36 C.F.R. Part 63
Dispute Resolution of Determinations of Eligibility for Inclusion in the NRHP
https://www.ecfr.gov/current/title-36/chapter-I/part-63

36 C.F.R. Part 79
Curation of Federally Owned and Administered Archaeological Collections
https://www.ecfr.gov/current/title-36/chapter-I/part-79

36 C.F.R. Part 800
Implementing Regulations of Section 106 of the National Historic Preservation Act
https://www.ecfr.gov/current/title-36/chapter-VIII/part-800?toc=1

40 C.F.R. 1506.6(a)
Public involvement – National Environmental Policy Act
https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1506#1506.6

54 U.S.C.

- National Park Service and Related Programs
  - § 100101(a) Promotion and Regulation of the National Park Service (NPS Organic Act)
    - https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100101&num=0&edition=prelim
- National Historic Preservation Act
  - § 306108 Effect of Undertaking on Historic Property

- https://uscode.house.gov/view.xhtml?req=(title:54%20section:306108%20edition:prelim)

§ 307103 Access to Information (Section 304)

- https://www.achp.gov/digital-library-section-106-landing/frequently-asked-questions-protecting-sensitive-information

Public Law 71-284, 46 Statute 482 (1930); Executive Order 6166 of June 10, 1933
Capper-Cramton Act and Administration by the National Park Service
https://www.ncpc.gov/about/authorities/cca/
https://www.nps.gov/parkhistory/online_books/anps/anps_3b.htm

State Codes and Regulations

Maryland Criminal Code § 0-402
Courts and Judicial Proceedings
https://law.justia.com/codes/maryland/2013/article-gcr/section-10-402

Maryland Natural Resources Code § 5-103
Reforestation
https://roads.maryland.gov/mdotsha/pages/index.aspx?PageId=158

Virginia Antiquities Act § 10.1-2305
Human Remains
https://law.lis.virginia.gov/vacode/title10.1/chapter23/section10.1-2305/
Implementation - Virginia Administrative Code 17VAC5-20
https://law.lis.virginia.gov/admincode/title17/agency5/chapter20/

Guidelines and Standards

Advisory Council on Historic Preservation

- *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
  https://www.achp.gov/sites/default/files/exemptions/2017-01/final_interstate_exemption_notice.pdf

- *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (ACHP February 2007)
  https://www.achp.gov/sites/default/files/policies/2018-06/ACHPPolicyStatementRegardingTreatmentofBurialSitesHumanRemainsandFuneraryObjects0207.pdf

- *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* (77 FR 68790)
  https://www.federalregister.gov/documents/2012/11/16/2012-27866/program-comment-issued-for-streamlining-section-106-review-for-actions-affecting-post-1945-concrete

- *Section 106 Archaeology Guidance* (ACHP, 2009)
  https://www.achp.gov/sites/default/files/guidance/2017-02/ACHP%20ARCHAEOLOGY%20GUIDANCE.pdf

The Maryland Historical Trust

- Standards and Guidelines for Archaeological Investigations in Maryland (Shaffer and Cole 1994)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_investigations.pdf

- *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_curation.pdf

- Standards and Guidelines for Architectural and Historical Investigations in Maryland (Maryland Historical Trust, Revised 2019)
  https://mht.maryland.gov/documents/PDF/research/Survey_standards_architecture_web.pdf

The National Park Service

- Management Policies – Section 5, Cultural Resource Management (2006)
  https://www.nps.gov/subjects/policy/upload/MP_2006.pdf

- NPS Museum Handbook, National Park Service, revised 2019
  https://www.nps.gov/museum/publications/handbook.html

- NRHP Bulletin 15 – How to Apply the National Register Criteria for Evaluation (National Park Service revised 1997)
  https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf

- Other NRHP Bulletins
  https://www.nps.gov/subjects/nationalregister/publications.htm#:~:text=national%20register%20of%20historic%20places%20bulletins

- The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (1996)
  https://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/index.htm

- The Secretary of the Interior's Guidelines for the Treatment of Historic Properties (1995, Revised 2017)
  https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf

- The Secretary of the Interior's Professional Qualifications Standards
  https://www.nps.gov/articles/sec-standards-prof-quals.htm
  OR see 48 FR 44738
  https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (1983)
  https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017)
  https://www.nps.gov/tps/standards/four-treatments.htm
  OR https://www.ecfr.gov/current/title-36/chapter-I/part-68

The Virginia Department of Historic Resources

- Guidelines for Conducting Historic Resources Survey in Virginia (Virginia Department of Historic Resources, revised September 2017)
  https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual_2017.pdf

Other Referenced Information

- Area of Potential Effects, May 2022 https://oplanesmd.com/wp-content/uploads/2022/05/MLS_APE_Mapping.pdf

- Alternative 9 Phase 1 South project description (currently available here: https://oplanesmd.com/environmental/alternatives/pa/)

- First Agape A.M.E. Zion Church at Gibson Grove parking lot restoration plan (https://oplanesmd.com/wp-content/uploads/2022/04/P3-Gibson-Grove-Church-Parking-Layout.pdf)

- I-495 and I-270 Managed Lanes Study Draft Section 106 Technical Report: https://oplanesmd.com/deis/#:~:text=4(f)%20Evaluation-,appendix%20g,-Cultural%20Resources%20Technical

- MDOT SHA Statewide PA: https://www.roads.maryland.gov/OPPEN/2021_PA_Amendment.pdf

Attachment 5

FHWA and MDOT SHA Staff Contact Information:

For FHWA:

Ms. Jeanette Mar
Environmental Program Manager
FHWA - Maryland Division
George H. Fallon Federal Building
31 Hopkins Plaza, Suite 1520
Baltimore, MD 21201
phone (410) 779-7152
fax (410) 962-4054
jeanette.mar@dot.gov

For MDOT SHA:

Mr. Steve Archer
Cultural Resources Team Leader
Maryland Department of Transportation State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202
phone (410) 545-8508
sarcher@mdot.maryland.gov

Attachment C

OP·LANES™
MARYLAND

I-495 & I-270 Managed Lanes Study

FINAL WETLAND AND FLOODPLAIN STATEMENT OF FINDINGS

JUNE 2022

U.S. Department of Transportation

Federal Highway Administration

and

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

Wetland and Floodplain Statement of Findings

Replacement and Widening of the American Legion Bridge, Phase 1 South, I-495 & I-270

Recommended:

Charles Cuvelier Date: 2022.10.07 10:32:25 -04'00'

Charles Cuvelier
Superintendent, George Washington Memorial Parkway Date

JOHN NOEL Digitally signed by JOHN NOEL Date: 2022.09.16 09:02:09 -04'00'

John Noel for Tina Cappetta
Superintendent, C&O Canal National Historical Park Date

Certification of Technical Adequacy and Servicewide Consistency:

FORREST HARVEY Digitally signed by FORREST HARVEY Date: 2022.10.26 11:26:36 -06'00'

Forrest Harvey
Chief, Water Resources Division, Washington Office Date

Approved:

KIMBERLY HALL Digitally signed by KIMBERLY HALL Date: 2024.03.21 13:44:58 -04'00'

Kym A. Hall
Director, National Capital Region Date

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1 INTRODUCTION

This Wetlands and Floodplains Statement of Findings (SOF) describes the alignment alternatives that were evaluated for the replacement and widening of the American Legion Bridge (ALB) for Alternative 9 – Phase 1 South of the I-495 & I-270 Managed Lanes Study (MLS); characterizes the National Park Service (NPS) wetland and floodplain resources that may be adversely impacted within NPS managed lands as a result of implementing the Preferred Alternative (Alternative 9 – Phase 1 South); describes adverse impacts that the MLS would likely have on these resources; and documents the steps that would be taken to avoid, minimize, and offset these impacts. All figures discussed in this document are also included in **Attachment A**.

1.1 Wetlands

Executive Order 11990, "Protection of Wetlands," issued 24 May 1977, directs all federal agencies to avoid to the maximum extent possible the long- and short-term adverse impacts associated with the occupancy, destruction, or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. In the absence of such alternatives, NPS must modify actions to preserve and enhance wetland values and minimize degradation. According to the Procedural Manual #77-1: Wetland Protection (NPS 2016), wetlands are defined as all shallow water habitats including riverine wetlands (streams) and palustrine wetlands. In this report, riverine wetlands may be referred to as "streams," palustrine wetlands may be referred to as simply "wetlands," and together they may be referred to as "NPS wetlands."

To comply with Executive Order 11990 within the context of the agency's mission, the NPS has developed a set of policies and procedures found in Director's Order 77-1: Wetland Protection (NPS 2002a) and Procedural Manual #77-1: Wetland Protection (NPS 2016). This policy and related procedures emphasize: 1) exploring all practical alternatives to building on, or otherwise adversely affecting, wetlands; 2) reducing impacts to wetlands whenever possible; and 3) providing direct compensation for any unavoidable wetland impacts by restoring degraded or destroyed wetlands on other NPS properties. If a Preferred Alternative would have adverse impacts on wetlands, a SOF must be prepared that documents the above steps and presents the rationale for choosing an alternative that would have adverse impacts on wetlands. This SOF includes wetlands within NPS park boundaries that would be affected by the proposed project.

1.2 Floodplains

Executive Order 11988, "Floodplain Management," issued 24 May 1977, US Department of Transportation (USDOT) Order 5650.2, "Floodplain Management and Protection", and the National Flood Insurance Act of 1968 govern the construction and fill of floodplains to ensure proper consideration to the avoidance, minimization, and mitigation of floodplain development and associated adverse effects. In addition to enforcing floodplain regulations, the National Flood Insurance Act and its National Flood Insurance Program (NFIP) provide affordable flood insurance to property owners (FEMA, 2018).

Pursuant to Executive Order 11988 and the NPS *Procedural Manual 77-2: Floodplain Management* (NPS 2002b), the Maryland Department of Transportation State Highway Administration (MDOT SHA) has

evaluated flooding hazards related to the proposed project. This SOF describes the Preferred Alternative, project site, floodplain determination, use of floodplain, investigation of alternatives, flood risks, and mitigation for the continued use of facilities within the floodplain.

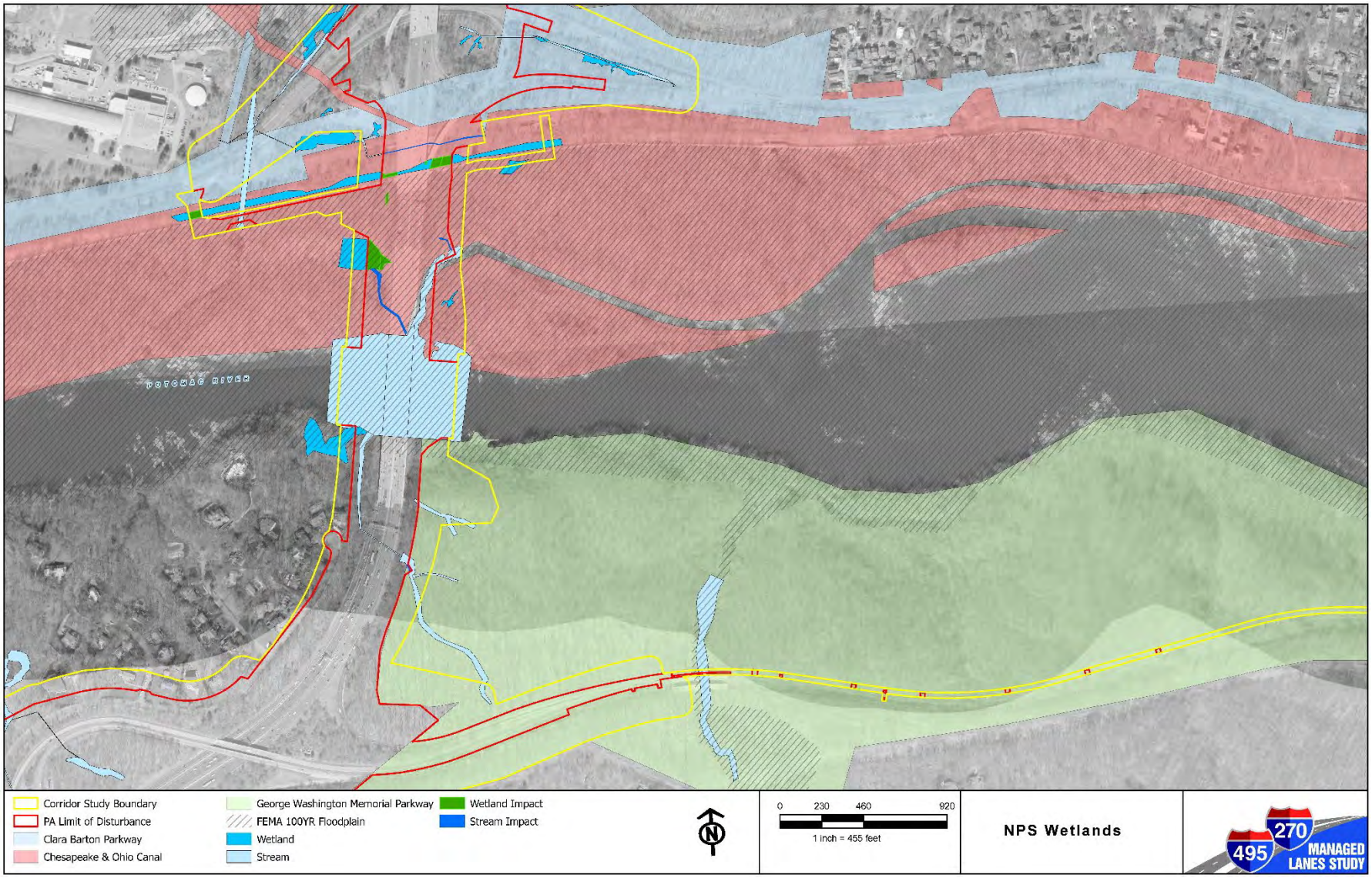
2 PROJECT SITE

I-495 and I-270 in Maryland are the two most heavily traveled freeways in the National Capital Region, each with an Average Annual Daily Traffic (AADT) volume of up to 260,000 vehicles per day in 2018. I-495 is the only circumferential route in the region that provides interregional connections to many radial routes, such as I-270, United States (US) 29 (Colesville Road), I-95, the Baltimore-Washington Parkway, US 50 (John Hanson Highway), and MD 5 (Branch Avenue). I-270 is the only freeway link between I-495 and the fast-growing northwest suburbs in northern Montgomery County and the suburban area in Frederick County. The purpose of the MLS is to develop a travel demand management solution(s) that addresses congestion and improves trip reliability on I-495 and I-270 within the MLS study limits and enhances existing and planned multimodal mobility and connectivity.

The Preferred Alternative crosses three units of the National Park System in Maryland and Virginia: George Washington Memorial Parkway, Clara Barton Parkway, and the Chesapeake and Ohio Canal National Historical Park (**Figure 1**) in the vicinity of the ALB, which connects I-495 in Virginia with I-495 in Maryland, over the Potomac River.

The NPS focuses on impacts to NPS wetlands and floodplain within NPS park land; therefore, the wetlands within the study area outside of park-managed lands are not discussed in this SOF.

Figure 1: NPS Park Unit Boundaries and NPS Wetlands



2.1 George Washington Memorial Parkway

George Washington Memorial Parkway (**Figure 2**) 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 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, and commemoration. Features within George Washington Memorial Parkway include the Potomac Heritage National Scenic Trail and Turkey Run Park conservation area. The park boundary of George Washington Memorial Parkway extends 38.3 miles and comprises approximately 7,300 acres.

2.2 Clara Barton Parkway

Clara Barton Parkway (**Figure 3**) is a scenic NPS parkway in Maryland that 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. Clara Barton Parkway was designed for recreational driving; to link sites that commemorate important episodes in American history; and to preserve habitat for local wildlife.

2.3 Chesapeake and Ohio Canal National Historic Park

The Chesapeake and Ohio Canal National Historical Park (**Figure 3**) is an NRHP-listed historic district and publicly owned park and recreation area encompassing 19,575 acres. The Chesapeake and Ohio Canal National Historical Park stretches 184.5 miles along the Potomac River from Rock Creek at Georgetown in Washington, DC, to Cumberland, Maryland. 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 national monument in 1961 and Chesapeake and Ohio Canal National Historical Park was established as a National Historical Park in 1971. The purpose of the Chesapeake and Ohio Canal National Historical Park 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. The Chesapeake and Ohio Canal National Historical Park is listed on the NRHP and contains more than 1,300 historic structures, including one of the largest collections of 19th century canal features and buildings in the National Park System.

Figure 2: George Washington Memorial Parkway and NPS Wetlands

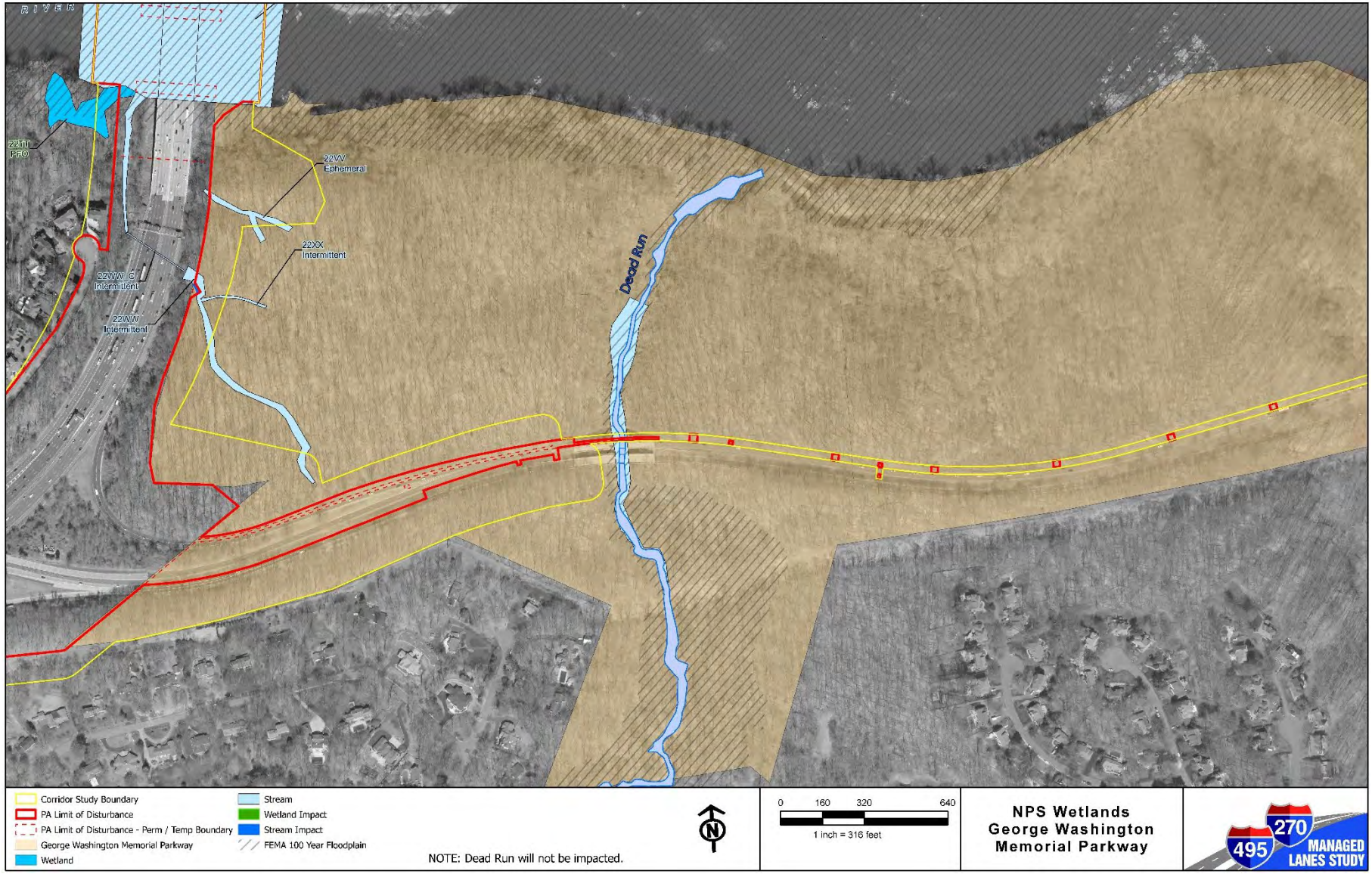
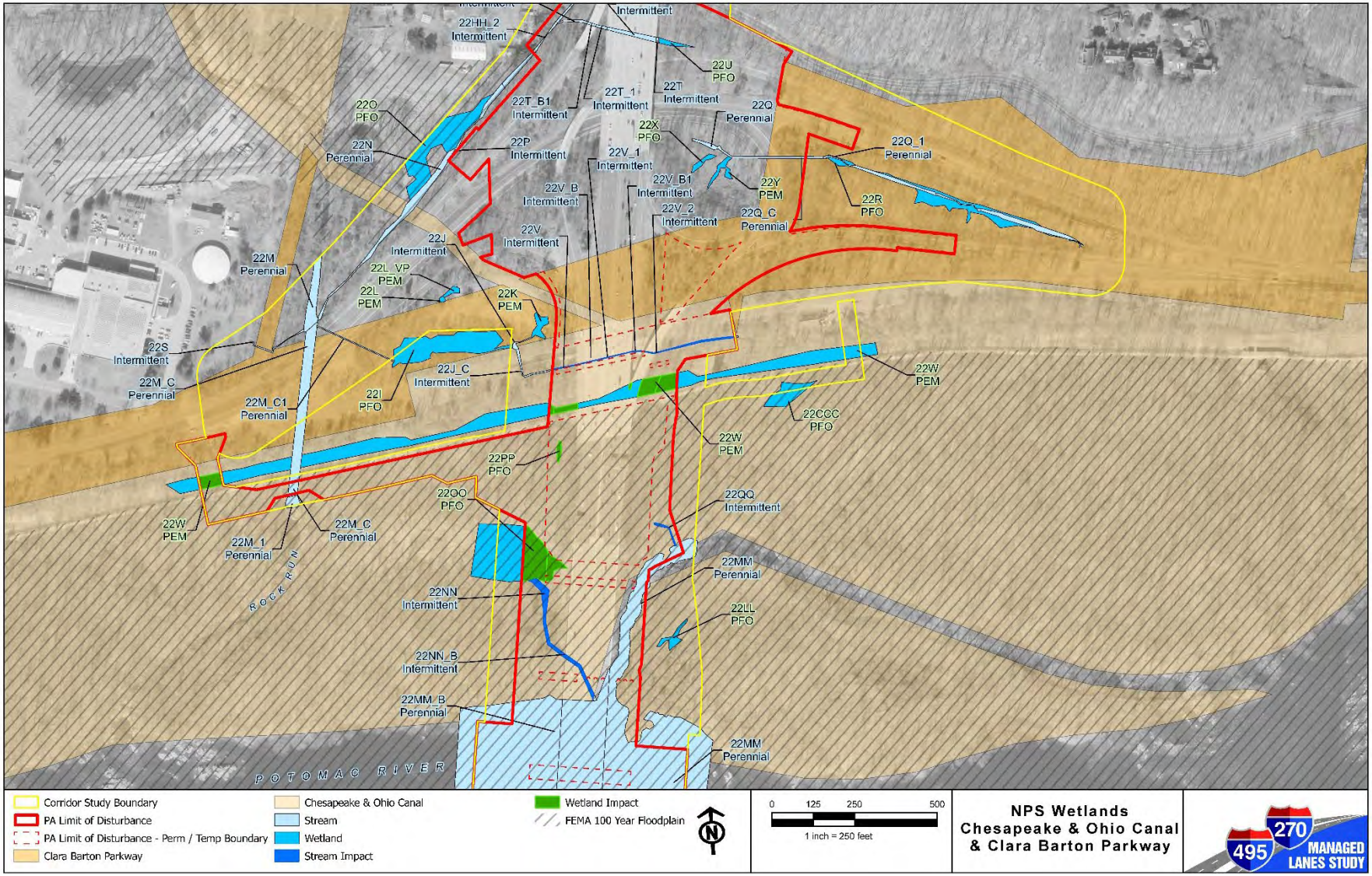


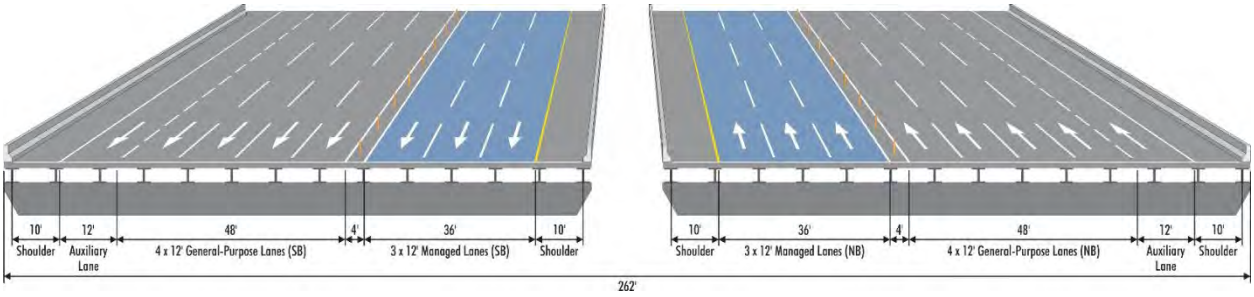
Figure 3: Clara Barton Parkway and Chesapeake and Ohio Canal National Park Boundaries and NPS Wetlands



3 ALTERNATIVES

The MLS Draft Environmental Impact Statement (DEIS) identified the No Build and seven Build Alternatives (8, 9, 9M, 10, 13B, and 13C). All DEIS Build Alternatives were identical in the vicinity of the ALB. The DEIS Build Alternatives proposed adding two managed lanes in each direction on I-495 from south of the George Washington Memorial Parkway to MD 5 and on I-270 from I-495 to I-370 and along the East and West I-270 Spurs and proposed adding two managed lanes plus a managed auxiliary lane in each direction on the ALB along with direct access ramps to/from the George Washington Memorial Parkway. Auxiliary lanes along the general purpose lanes would extend from George Washington Memorial Parkway to Clara Barton Parkway in both directions, but would not provide access to the managed lanes. The ALB design lane arrangement remained the same between the DEIS Build Alternatives and the Preferred Alternative, which is identified in the Supplemental DEIS (SDEIS) as Alternative 9 - Phase 1 South. The Preferred Alternative will add two managed lanes in each direction on I-495 and the I-270 East and West Spurs within Phase 1 South, which extends along I-495 from south of the George Washington Memorial Parkway to MD 187 and up I-270 to I-370 and along the East and West I-270 Spurs to MD 187.

Figure 4: Proposed ALB Typical Section



The existing ALB structures, linking the Virginia and Maryland portions of I-495 over the Potomac River, were constructed in the early 1960s and must be replaced by 2030 due to age and condition. Replacing these bridge structures as part of the MLS would eliminate the need for a follow-up bridge replacement project for which the state does not have funding allocated. MDOT SHA has carefully considered various potential roadway alignments as well as various types of bridge structures to inform the limits of disturbance (LOD) in this area to accommodate roadway widening and bridge replacement across the Potomac River while limiting impact to NPS property and resources.

The Preferred Alternative includes numerous LOD modifications since the DEIS, one of the most significant of which is in the vicinity of the ALB to address comments and concerns received from the NPS regarding impacts to NPS lands and resources.

3.1 Alignments

Multiple alignments were considered when determining the LOD for the replacement of the ALB. Off-alignment bridge options were considered but were not retained for further study in the DEIS, since they were not practicable. Tunnel and full-span suspension on-alignment alternatives were also considered but

were not retained for further study in the DEIS, because they would not allow for connection with the Clara Barton Parkway or George Washington Memorial Parkway and would be cost prohibitive. Alignment options that were investigated further include: an entirely offset alignment to either the east or west; a minimally offset alignment to either the east or west; and widening the structure on the existing alignment.

The ALB alignment determination required assessing impacts to wetlands, streams, forests, rare plant species, cultural resources, and adjacent properties such as the Naval Surface Warfare Center at Carderock in Maryland and a residential community along the Virginia shoreline of the Potomac River. Other factors considered when evaluating the proposed alignments included maintenance of traffic, constructability, construction access, and roadway engineering issues such as re-aligning the interchanges that lead to the ALB.

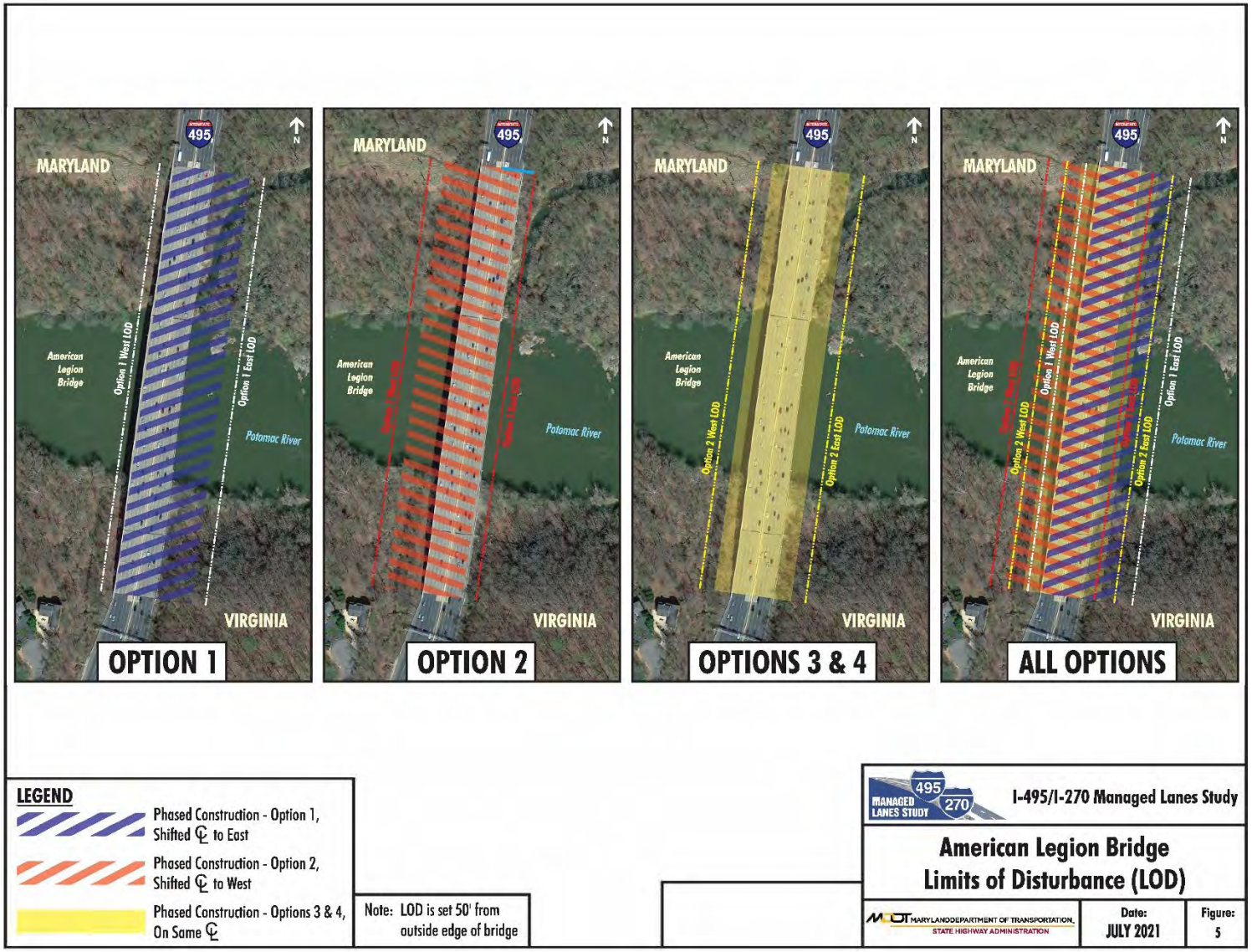
Building the replacement ALB on an entirely offset alignment to the east of the existing structure while traffic remains in its current configuration would result in unacceptable impacts to Plummers Island, an important biological and cultural resource within the Chesapeake and Ohio Canal National Historical Park, and impacts to the two other NPS parks in the vicinity of the ALB. This approach would not be feasible on the west side of the existing ALB either, due to unacceptable impacts to the Naval Surface Warfare Center Carderock Division property located on the north side of the Potomac River, to a residential community on the south side of the Potomac River and to two NPS parks (Clara Barton Parkway and Chesapeake and Ohio Canal National Historical Park).

A less impactful approach would be to construct a new structure on a minimally offset alignment, while placing traffic partly on the existing structure and partly on a new structure during construction. The minimally offset alignment to the east would still impact Plummers Island more than would be acceptable and this alignment is not feasible. The minimally offset alignment to the west would avoid impacts to Plummers Island, but would impact more NPS property and would require displacement of a residential property on the Virginia shoreline of the Potomac River. This “west shift” alignment was considered post-DEIS and is discussed further in **Section 3.1.1.D**.

Widening on the existing alignment would impact Plummers Island to some extent, but would avoid impacts to the residential property on the Virginia side of the ALB and would impact less NPS property than the “west shift” alignment option. This “on-center” widening alignment, or base option, was considered post-DEIS and is discussed further in **Section 3.1.1.D**.

See **Figure 5** for a visualization of the minimally offset alignment to the east and west, the fully offset alignment to the east and west, and the potential impacts resulting from on-center widening.

Figure 5: American Legion Bridge Limits of Disturbance Alignment Options



3.1.1 Alternative Bridge Design Options

Alternative bridge design options were considered to inform the LOD in the vicinity of the ALB, to determine the extent to which the LOD could be minimized to limit impacts to NPS land and natural and cultural resources, while still providing enough space to accommodate bridge construction and maintenance.

A. Avoidance

Long-span Bridge:

The only avoidance option identified was replacement of the ALB with a long-span bridge. In order to avoid natural resources at the bridge location, permanent piers would need to be constructed completely beyond the limits of the resources. This would require a pier north of the Washington Aqueduct on the Maryland side and at, or south, of the existing south abutment in Virginia. The resulting clear span is at least 3,250 feet. A suspension bridge is the only feasible bridge type to span this distance and a bridge this long would be the 35th longest suspension bridge in the world, or the 5th longest in the U.S. Additional back-span dimensions for anchorage would be at least another 800-feet on each end for a total bridge length between cable anchorages of 4,850 feet. This length does not include a likely need for approach spans on either end to transition from the highway on grade to the suspended roadway. The total bridge length needed would make the interchanges at Clara Barton Parkway and George Washington Memorial Parkway inaccessible. Replacing the ALB with a suspension bridge would not be practicable, since it would eliminate the interchanges with the parkways in Maryland and Virginia; would be cost-prohibitive; and would drastically alter the viewshed of the surrounding natural area.

B. Minimization

a. DEIS Minimization Options

Reconstruct Bridge without Widening:

One minimization option identified was reconstructing the ALB without widening. The existing bridge out-to-out width is approximately 138-feet and carries five lanes of traffic in each direction. To maintain 10 lanes of traffic during construction with minimal offsets to temporary barriers requires 119-feet of bridge width. Therefore, a maximum of 19-feet of the existing bridge is available for demolition and reconstruction in the first phase. This means that only one lane at a time could be reconstructed and shifted onto the new bridge. A minimum of nine phases of traffic control would be required to fully replace the bridge. This assumes that all the deck joints between phases are structurally feasible; the existing piers are stable in a partially loaded and/or demolished condition; and the new superstructure configuration could be made compatible with the temporary lane placement. The resulting superstructure would be inefficient, because uniform girder spacing would not be feasible while accommodating the required construction phasing. In addition, in the middle three phases of demolition and construction, work would have to occur between active lanes of traffic. In the same phases, traffic in the same direction would be divided with a construction zone in between the travel lanes. No work zone for construction vehicles and equipment would be available on the bridge, because all bridge deck that is in place, either existing or proposed, would be required to carry traffic. This approach to construction is very unsafe for motorists and construction staff. There would be no emergency pull off lanes for five lanes of traffic in each direction. Construction work would occur between and over open lanes of traffic. The duration of construction, number of traffic shifts, and inefficient structure configuration would result in a highly

undesirable and expensive approach to construction. This option is not practicable due to extreme safety issues, construction inefficiencies and challenges, and prohibitive cost and duration.

Double-Deck Existing Bridge:

A double-deck bridge was considered in hopes of reducing the extent of the construction footprint and minimizing impacts to NPS property and natural resources. The out-to-out superstructure width of one direction of travel in the proposed condition would be approximately 124-feet. Since this is less than existing superstructure width, constructing a second deck over the existing bridge superstructure would provide sufficient width for the proposed lane configuration. Previous analysis of the existing substructure units indicate that the piers are currently loaded to the point that there is no additional capacity. The additional dead load from the second deck and the live load from the vehicles could not be accommodated by the existing substructure. In order to support the second deck, new substructure units independent from the existing, would need to be constructed. These would consist of new pier caps spanning across the entire width of the existing bridge to newly constructed column elements supported on large, deep foundations located outside the existing bridge. To minimize the impact of the foundation elements, they would likely consist of large diameter drilled shafts. The associated pier cap would span a minimum of 155-feet, resulting in a significant concrete beam that would greatly increase the vertical profile of the top deck in order to provide sufficient vehicular under clearance to the lower deck. The approach roadway modifications necessary to transition from side-by-side to stacked roadways would extend well beyond the interchanges on each end of the bridge.

Proposed Double-Deck Bridge:

Building on the discussion above, it is clear that the out-to-out superstructure width of a completely new double-deck bridge would be 124-feet. To support both decks, the substructure would need to be wider than the superstructure. Again, assuming large, drilled shaft foundations and columns, the out-to-out of the entire bridge would be approximately 144-feet, which is wider than the existing bridge. Some minor additional impacts to the resources would be likely. To build an entirely new bridge, the construction phasing would ideally require the new bridge to be built off of the existing bridge alignment. This would allow conventional maintenance of traffic on the existing bridge while the new double-deck structure is completed. The approach roadway modifications required for the option to double-deck the existing bridge remain with this option. Construction of either double-deck bridge option is not practicable, since it would require a new substructure so far beyond the width of the existing structure that it would not reduce the construction footprint or minimize impacts to natural resources from a conventional construction method, but would be far more expensive than a conventionally constructed bridge.

Top-Down Construction:

Utilizing top-down construction techniques for the proposed bridge structure means that all construction equipment and access would be provided from the completed bridge deck. The contractor would begin construction at an abutment and the first pier working from the approach roadway behind the abutment. Next the superstructure would be constructed on the first span. All construction operations would then move onto the completed first span in order to construct the next pier and next span of superstructure. Construction would proceed in this manner along the entire length of the bridge until the full structure is complete. Two separate crews working from opposite ends of the bridge could each begin at opposite abutments and meet in the middle of the bridge. This technique would result in relatively short spans between pier locations due to limited equipment reach and capacity. The total footprint of pier elements

would be much larger than the footprint of a bridge with conventional span lengths. In addition, utilizing top-down construction does not address any of the issues with traffic phasing and work zones discussed in previous options. While this type of construction would still require a construction access road to remove materials and would be relatively more expensive to construct than the conventional method, it was determined to be a viable option.

b. Strike Team Minimization Options

MDOT SHA and Federal Highway Administration met with the NPS to discuss the LOD presented in the MLS DEIS on December 8, 2020. The NPS requested that MDOT SHA re-assess the LOD in the vicinity of the ALB to limit impacts to NPS land and its natural resources. MDOT SHA convened an 'ALB Strike Team' composed of national and local experts on bridge design, natural resources, and cultural resources who were charged with the following mission:

To develop and evaluate alternatives for the replacement of the ALB to avoid impacts, to the greatest extent practicable, and reduce overall acreage impacts to the Chesapeake and Ohio Canal National Historical Park and George Washington Memorial Parkway units of the NPS.

The ALB Strike Team conducted its intensive investigation in January 2021 to explore alternative design solutions, project phasing solutions, site access solutions, and the potential use of specialty construction techniques to limit the LOD. The ALB Strike Team presented its results to the NPS on February 8, 2021.

MDOT SHA established the Base LOD as the "Base Option," which includes a conventionally constructed bridge structure built in two phases on the existing bridge centerline with the assumption of temporary construction access over the Potomac River via trestles and causeways. This Base Option included minor LOD reductions from the DEIS LOD to minimize impacts to Plummers Island. The Base Option also started with construction access in all four quadrants and was minimized to remove the construction access in the southwest, southeast, and northeast quadrants, which significantly reduced impacts to NPS property.

The ALB Strike Team first reviewed the avoidance and minimization options developed by MDOT SHA to date, as described above, and the Strike Team agreed that these options were not practicable, except perhaps the top-down construction option, which they investigated in further detail. The Strike Team then reviewed the viability of the Base Option and confirmed that this on-center alignment with a conventional construction approach was a viable option. The ALB Strike Team also considered a "west shift" of the LOD to entirely avoid impacts to Plummers Island and determined that a conventional construction approach with a west shift was also a viable option.

The ALB Strike Team then considered other bridge construction approaches to determine if any of them could limit the LOD further than the Base Option could. The Strike Team conducted detailed investigation on a top-down segmental construction approach; a top-down cable stayed approach; and a slide-in place bridge construction approach.

<u>Top-Down Construction</u>

The first type of construction method assessed by the Strike Team was the top-down approach. The Strike Team investigated whether the existing bridge could be used as a work platform as part of the top-down construction method, but determined it could not, since the northbound and southbound lanes are at very different elevations, making it impossible to shift traffic across the bridge during construction. This

also means that the existing bridge cannot be used for construction and material deliveries, except during light traffic periods that would allow a lane closure. Top-down construction approaches investigated included: gantry, pre-cast segmental, cast-in-place segmental, and cable stayed. The Strike Team determined that the gantry method was not viable, because the ALB would require either spread footing foundations on rock or drilled piers, both of which would require ground access to the foundation locations for construction. Pre-cast segmental construction would also not be viable, because segments for the ALB would be too large and heavy to transport to the site.

Cast-In-Place Segmental

A cast-in-place segmental construction method was determined to be viable. A cast-in-place segmental bridge option would fit within the Base LOD, with impacts similar to the Base Option. The cost of this option is likely competitive with the Base Option and would likely be faster to construct.

Cable Stayed

The next top-down option reviewed by the Strike Team was the Cable Stayed Option, which would use a top-down cantilever method of construction. The primary advantage of this method is that it requires the fewest number of foundations of all options considered, minimizing the permanent ground displacement area. This option would also reduce the shade and shadow areas under the bridge, which is known to affect anadromous fish species. The cable stayed option would require a 200-foot tower and cables and would have a significant effect on the overall viewshed. This is the most expensive construction method considered.

Slide-In Place

A third type of bridge construction considered by the Strike Team for the ALB is the Slide-In Place Option. This option would construct the entire new superstructure on falsework situated west of the existing bridge and then slide it in place over a weekend. This option was found to be the most impactful strike team option and therefore not viable.

The Strike Team also reviewed constructability and construction access options and those are summarized in **Section 3.1.1.C** below. For more detail on the ALB Strike Team findings, please refer to the *American Legion Bridge Strike Team Report* (MDOT SHA 2021), completed on behalf of MDOT SHA's I-495 & I-270 Managed Lanes P3 Program.

C. Constructability Considerations

Construction equipment and personnel must be able to work below the bridge structures at river level to construct proposed piers and demolish the existing structure. Given the steep slopes on both shorelines of the Potomac River, limited access opportunities, and characteristics of the Potomac River channel, a site access plan is needed that requires additional LOD beyond the limits of the existing and proposed structures.

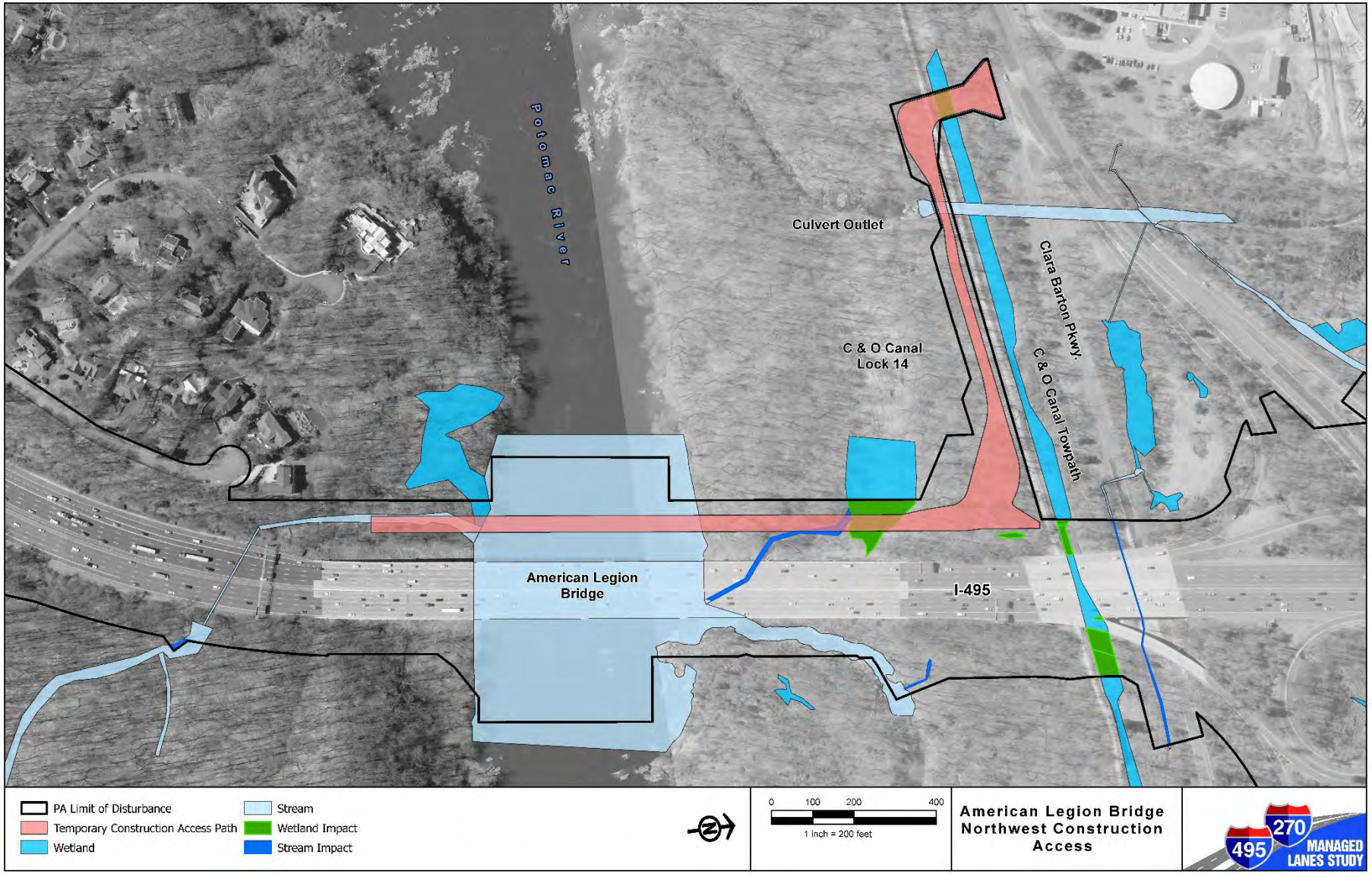
After field analysis and known information review, MDOT SHA and the ALB Strike Team determined that access to the site at river level can be consolidated to the north side of the river along Clara Barton Parkway, eliminating the construction access from the other three quadrants around the bridge and significantly reducing impacts to NPS land. This would be achieved by constructing a temporary construction access road entrance off of Clara Barton Parkway in the northwest quadrant and installing a

temporary bridge over the Chesapeake and Ohio Canal and a temporary haul road paralleling the towpath. Construction traffic could then turn south parallel to the existing structure and follow existing right-of-way to the area below the existing/proposed bridge. It is important to note that pedestrian traffic on the Chesapeake and Ohio Canal towpath must be maintained throughout construction. A barrier between the haul road and the towpath would need to be constructed to ensure public safety. The site access plan on the north side of the ALB would require an approximate travel way width of 40 feet beyond the extent of the proposed bridge to supply enough area for crane booms, pump trucks, man lifts, and other equipment needed to reach the proposed bridge deck from river level.

Access to the site at river level from the south side is more difficult. The existing residential neighborhood in the bridge's southwest quadrant constricts this area for site access. It is proposed that access to the south side of the river be via means of a temporary river causeway and temporary bridge, such as floating bridges and barges. River flooding would also need to be considered in the design of this temporary structure, which would require a contingency plan should water levels rise and would require the temporary structures and barges be built to withstand the 100-year flood or be removable prior to flood events.

The proposed construction access is shown in **Figure 6**. Storage of construction equipment, vehicles, and materials could be accommodated within the temporary LOD indicated in the Final EIS (FEIS).

Figure 6: Proposed Construction Access for American Legion Bridge



D. Avoided and Minimized LOD in the Vicinity of the American Legion Bridge

MDOT SHA determined the LOD options for the ALB based on the results of the ALB Strike Team investigations. The bridge construction types with the smallest LOD footprint were the Base Option and the Cast-In-Place Segmental Option, both with a similar LOD requirement. Both construction types could be built with an on-center alignment or a west-shift alignment. MDOT SHA compared the NPS land impacts and those of the natural and cultural resources surrounding the ALB and determined that the on-center alignment would impact the least amount of total NPS Land; would not require re-configuration of the Clara Barton Parkway interchange; and would not require residential displacement, as the west shift alignment would. For these reasons, the on-center alignment with the reduced LOD required by the Base Option or Cast-In-Place Segmental bridge types was incorporated into the Preferred Alternative LOD.

4 DESCRIPTION OF WETLANDS AND FLOODPLAINS WITHIN PROJECT AREA

4.1 NPS Wetlands

For the NPS, any area that is classified as a wetland according to the Federal Geographic Data Committee (FGDC) Wetlands Classification Standard (FGDC-STD-004-2013), a revision of the U.S. Fish and Wildlife Service's (USFWS) "Classification of Wetlands and Deepwater Habitats of the United States" (Report FWS/OBS-79/31) (FGDC 2013; Cowardin et al. 1979), is subject to NPS Director's Order 77-1: Wetland Protection (NPS 2002a). Deepwater habitats are not subject to Director's Order 77-1 since they are not considered wetlands under this definition. Under the Cowardin definition, a wetland must have one or more of the following three attributes:

- At least periodically, the land supports predominantly hydrophytes (wetland vegetation);
- The substrate is predominantly undrained hydric soil; or
- The substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

The Cowardin wetland definition encompasses more aquatic habitat types than the definition and delineation manual used by the Army Corps of Engineers for identifying wetlands subject to Section 404 of the Clean Water Act. The 1987 *Corps of Engineers Wetlands Delineation Manual* requires that *all three* of the parameters listed above (hydrophytic vegetation, hydric soil, wetland hydrology) be present in order for an area to be considered a wetland. The Cowardin wetland definition includes such wetlands, but also adds some areas that, though lacking vegetation and/or soils *due to natural physical or chemical factors* such as wave action or high salinity, are still saturated or shallow inundated environments that support aquatic life (e.g., unvegetated stream shallows, mudflats, rocky shores). The National Wetlands Inventory (NWI) produced by USFWS provides information on the characteristics, extent, and status of the nation's wetlands and deepwater habitats. The wetlands on the NWI maps are based upon the Cowardin wetland definition and classification system (Cowardin et al. 1979), so (subject to ground truthing) they are considered wetlands by the NPS.

The document will refer to all shallow water habitats subject to D.O. #77-1 according to definitions within the Procedural Manual for D.O. #77-1 and the FGDC Wetlands Classification Standard. Palustrine wetlands will generically be referred to as "wetlands" and riverine wetlands will generically be referred to as "streams." The term "NPS wetlands" will be used to generically refer to wetlands and streams on NPS land. Refer to **Figure 1** in **Section 1.1** for a depiction of NPS wetlands on NPS park land.

4.1.1 NPS Wetland Assessment Methodology

Field delineation and functional assessment of NPS wetlands within NPS park land within the MLS Corridor Study (CSB) Boundary was conducted from March 2018 through January 2021. All shallow water habitat features were delineated to satisfy both the 1987 USACE Manual and the FGDC Wetlands Classification Standard. Palustrine and riverine wetlands were identified within NPS park boundaries. Palustrine wetland boundaries were determined using the 1987 USACE Manual and Regional Supplements and riverine wetland boundaries were determined according to the FGDC Wetlands Classification Standard.

Environmental scientists completed data sheets for all shallow water habitat located on NPS land, including additional Cowardin classification information. All features were photographed and given a unique identifier containing the number of its associated field sub-segment. Data obtained from the field reconnaissance was collected with an iPad and boundary points were located using global positioning systems (GPS).

1.1.1 Evaluation of NPS Wetland Functions and Values

MDOT SHA conducted a qualitative functional assessment of palustrine NPS wetlands within NPS property and within the I-495 & I-270 MLS CSB in January 2021. The functions and values assessed include:

- Groundwater Recharge/Discharge,
- Floodflow Alteration,
- Fish and Shellfish Habitat,
- Sediment/Toxicant Retention,
- Nutrient Removal,
- Production Export,
- Sediment/Shoreline Stabilization,
- Wildlife Habitat,
- Recreation,
- Educational/Scientific value,
- Uniqueness/Heritage,
- Visual quality/Aesthetics, and
- Endangered Species Habitat

Functions:

- Ground water recharge/discharge—Recharge is the potential of a wetland to contribute water to an aquifer; discharge is the potential of a wetland to discharge groundwater to the surface. The wetland's ability to help maintain stream base flow has also been included in this variable.
- Flood alteration—The effectiveness of a wetland in reducing flood damage from prolonged periods of precipitation by storing and desynchronizing (i.e., gradually releasing at lower heights/velocities) floodwaters.
- Fish and shellfish habitat—The effectiveness of seasonal or permanent watercourses associated with a wetland to provide habitat and the essentials necessary for life for a diversity of types and abundance of populations of fish/shellfish and other aquatic organisms.
- Sediment/toxicant retention—The effectiveness of a wetland to reduce or prevent degradation of water quality by acting as a trap for sediments or toxic substances in runoff water that could adversely affect aquatic and terrestrial life.
- Nutrient removal—The effectiveness of a wetland to serve as a trap for nutrients carried by runoff from surrounding uplands or contiguous wetlands, and the wetland's ability to process these nutrients into other forms. The wetland also functions to prevent the adverse effects associated with excess nutrients entering aquifers or surface waters, including streams, rivers, lakes, ponds, or estuaries.
- Production export—The effectiveness of a wetland to produce food or other usable products for living organisms (including humans). Detrital export to downstream systems has been included in this variable.
- Sediment/shoreline stabilization—The effectiveness of a wetland to stabilize streambanks against shear stresses and/or protect shorelines against erosion by reducing forces caused from waves.

Other erosion and sediment control functions, such as reduction of water velocities and binding of the soil, have been included in this variable.

Values:

- Wildlife habitat—The effectiveness of a wetland to provide habitat and the essentials necessary for life for a diversity of types and abundance of populations of wildlife species typically associated with wetlands, their associated water bodies, and the wetland edge. This includes invertebrate species. Both resident and migratory species were considered.
- Recreation (consumptive/non-consumptive) and tourism—The suitability of a wetland and associated watercourses to provide active and/or passive recreational opportunities for both local and non-local populations. Consumptive use includes activities such as hunting and fishing that diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive use includes activities such as hiking, birding, boating and canoeing, that do not diminish the resources of the wetland.
- Education/scientific value—The suitability of a wetland to serve as an "outdoor classroom," as a "reference site" for scientific study or research on ecosystems, or for interpretation.
- Uniqueness/heritage—The effectiveness of a wetland or its associated water bodies to provide certain wetland attributes or special functions and values related to aspects of public health, recreation, and habitat diversity. This may include the wetlands overall health and appearance, its role in the overall ecology of the area, or its relative importance as a typical wetland class for the geographic location.
- Visual quality/aesthetics (NPS/NE Method)—The effectiveness of a wetland in contributing to the visual or aesthetic quality or pleasing nature of the surrounding landscape.
- Endangered species habitat—The suitability of a wetland to support and/or provide the habitat requirements specific to rare, threatened, or endangered species.

Physical parameters, including wetland type, location in the landscape, flow/drainage, observed hydrology, microtopography, dominant vegetation, overall size, and soil composition were recorded and summarized. The wetland soil profile, landscape position, and hydrology were also assessed to determine the potential for groundwater infiltration within each wetland system. A visual assessment of any standing water was completed to provide an assessment of water quality. Based on the available hydrology and physical parameters of each wetland, an assessment of potential macroinvertebrate habitat was completed. Any available habitat features, including but not limited to standing water, vegetation, leaf packs, woody debris, and roots were noted. Available habitat was sampled using a D-net and a list of any observed macroinvertebrate species was compiled. During this assessment, any spring-fed groundwater seeps were noted and assessed for potential amphipod habitat. These field observations were summarized for each wetland feature and are included in the narratives below. As applicable, the narratives also include a summary of any listed rare, threatened, and endangered (RTE) plant species identified within or adjacent to the wetland systems during surveys previously completed in April through September 2020.

During the January 2021 NPS functional assessment, previously completed Functions and Values datasheets were verified in the field. A full assessment of the suitable and principal functions was

completed, and additional notes were added, as needed, to describe and characterize each wetland within NPS property.

Environmental scientists assessed the same functional parameters within riverine wetlands occurring on NPS property. Physical parameters, including stream class, location, hydrologic connectivity, substrate, bank stability, and adjacent vegetation were recorded and summarized. A visual assessment of water within the channel was completed to provide an assessment of water quality. Potential pollutants, trash abundance, and disturbances were noted. Each reach was assessed for potential fish habitat and macroinvertebrate habitat features, including, but not limited to, riffles, vegetation, leaf packs, woody debris, pools, and roots. All habitat features and any observed fish species were recorded. Available macroinvertebrate habitat was sampled using a D-net and a list of observed species was compiled.

Additionally, data collected during prior MLS field assessments was reviewed to inform the riverine wetland functional assessment on NPS park land. In February 2021, stream functional assessments were conducted for all NPS streams on NPS land within the MLS CSB using the EPA's RBP for Habitat Assessment (EPA, 1999). High and low gradient assessments were completed for streams over two percent in grade and below two percent in grade, respectively. The functions assessed between the two forms included:

- Substrate/Available Cover
- Embeddedness
- Pool Substrate Characterization
- Velocity/Depth Regime
- Pool Variability
- Sediment Deposition
- Channel Flow Status
- Channel Alteration
- Frequency of Riffles (or Bends)
- Channel Sinuosity
- Bank Stability
- Vegetative Protection, and
- Riparian Vegetative Zone Width

Scores from these assessments are presented in the table included in Appendix B of **Attachment B Qualitative Functional Assessment**. All functional assessment scores and additional field observations described above are summarized in the narratives for each NPS wetland below.

It is important to note that some of the NPS wetlands discussed in this SOF are located partially within an existing ROW for all alternatives and therefore have been previously disturbed. Historical disturbance has occurred because of vegetation removal activities during the initial highway construction and installation as well as during vegetation maintenance activities.

2.1.1 Results and Qualitative Functional Assessment of NPS Wetlands Impacted by the Preferred Alternative

The wetland delineation on NPS Land included palustrine riverine wetlands within the three NPS park units within the MLS CSB, as summarized in **Table 1** below and displayed on **Figure 2** and **Figure 3**.

Table 1: NPS Wetlands Impacted within Three National Park Service Units

Park Unit and Feature Name	Cowardin Classification
George Washington Memorial Parkway	
22WW	R4SB4
Clara Barton Parkway	
No wetlands impacted.	
C&O Canal Historical Park	
22NN	R4SB4
22NN_B	R4SB4
22OO	PFO1B
22PP	PFO1A
22QQ	R4SB5
22V	R4SB3d
22V_1	R4SB3d
22V_2	R4SB3d
22V_B	R4SB3d
22V_B1	R4SB3d
22W	PEM1A/C

Each of the delineated and impacted NPS wetlands within the MLS CSB within George Washington Memorial Parkway, Clara Barton Parkway, and Chesapeake and Ohio Canal National Historical Park units were qualitatively assessed for wetland and stream function as described in the following sections. Note that impacts are not included for Feature 22MM, since the Potomac River and the Rock Run Culvert below the ordinary high-water mark are owned by the State of Maryland and are not under the jurisdiction of NPS. Features noted with "_C" in the name are culverts, are not considered NPS wetlands, and do not require mitigation.

A. George Washington Memorial Parkway

Stream 22WW: Stream 22WW is an unnamed tributary to the Potomac River. It is classified as an R4SB4 that flows southwest from George Washington Memorial Parkway and into a culvert on the east side of I-495. One small section of the stream within NPS property and near the existing culvert is within the CSB.

The stream is within a small valley likely receiving hydrology from both groundwater seeps and surface runoff. Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at 22WW is suboptimal, with about 60 percent available habitat within the portion of stream just upstream of the culvert and within the CSB. Overall, the benthic macroinvertebrate habitat consists of small riffles, minor amounts of woody debris, roots, and small leaf packs. For fish, habitat is lacking, with only intermittent flows and downstream blockages. Riffle habitat is stable with some variety and flow diversity and is relatively frequent throughout Stream 22WW.

Substrate of the riffles consists of cobble, gravel and bedrock and is roughly 25 percent embedded. Pools are mostly shallow with gravel substrate, but some root mat habitat is available. Leaf packs observed were transient and unlikely to be suitable habitat. Shallow-fast and shallow-slow were the only two depth regimes present at Stream 22WW. Roughly 5 percent of the bottom of the streambed is affected by

sediment deposition, with slight deposition in pools. Water filled 50 to 75 percent of the channel during the time of the survey, with 25 to 50 percent of the channel substrate exposed. No evidence of channel alteration is present at Stream 22WW within the CSB on NPS property, however, downstream the stream flows west through a culvert under I-495.

Both banks are stable to moderately stable, with roughly 5 percent of both banks eroded; however, less than 50 percent of the streambank surfaces are covered by vegetation. Most of the bank stabilization and protection is from the bedrock, as well as some roots. Stream 22WW is surrounded by a mature high-quality mixed deciduous forest, giving both banks a riparian zone width of at least 18 meters. Very minimal human activity is impacting the riparian zones and approximately 90 percent of the stream is shaded by vegetation. The water within the stream appears clear with no noticeable odor present. Trash was only observed downstream outside of the NPS property at the input of the culvert running under I-495.

During a qualitative assessment of the aquatic community at Stream 22WW, aquatic worms (Subclass Oligochaeta), net-spinning caddisflies (Family Hydropsychidae), stoneflies (Order Plecoptera) and aquatic sowbugs (Family Asellidae) were collected in the stream. Aquatic worms and aquatic sowbugs are considered pollution-tolerant groups of organisms; net-spinning caddisflies are moderately pollution-sensitive; and stoneflies are pollutant-sensitive organisms. As Stream 22WW is a small intermittent channel, it is unlikely to be providing fish habitat, and none were observed during the time of the survey.

B. Clara Barton Parkway

No wetlands or streams will be impacted by the Preferred Alternative LOD.

C. Chesapeake and Ohio Canal National Historic Park

Stream 22NN: "Stream 22NN" refers to features 22NN and 22NN_B. Stream 22NN is classified as an R4SB4 that flows southeast from Wetland 22OO on the west side of I-495 and flows into the Potomac River immediately under the North side of the ALB.

The stream is within a wide, eroded valley receiving hydrology from both the wetland upstream and surface runoff. As it flows under the bridge, the main channel begins to meander. Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at 22NN is poor, with less than 20 percent available habitat. Overall, the benthic macroinvertebrate habitat consists of a few rocks, leaf packs and woody debris. For fish, habitat is lacking, with only intermittent flows and a lack of pools. Riffles are lacking with embeddedness at 100 percent, however, in the portion of stream under the I-495 bridge, placed riprap is present providing some stabilization and possible habitat. The stream has little flow diversity, with shallow-slow as the only velocity/depth regime present.

In portions of the stream outside of the bridge cover substrate is dominated by fine sediment, sand, and small gravel, whereas the stream substrate in the portions under the bridge is dominated by mud with placed riprap present throughout. About 20 percent of the bottom of the streambed is affected by sediment deposition, with slightly more deposition in the portion of the stream flowing under the ALB. Very little water filled the channel during the time of the survey, with most of the channel substrate exposed, especially in the upstream portion that is not under the bridge. The portion of the stream

channel that flows under the bridge had pools of stagnant mud. Some channel alteration is present, especially in the portions of the stream under the ALB where riprap has been placed.

The natural flow and location of the channel was also likely altered when I-495 was built. Both banks in the upstream portion that is not under the bridge are moderately stable, with 30 percent showing signs of erosion. The left bank under the bridge is unstable with many raw areas, while the right bank is moderately stable with roughly 30 percent erosion present. Apart from the portion of stream under I-495, 50 to 70 percent of the streambank surfaces are covered by woody roots and vegetation. No vegetation is present under the bridge. Since the stream runs parallel to I-495 upstream before flowing under the bridge, a riparian zone of about 12 meters is present on the left bank, with the right bank consisting of a riparian zone greater than 18 meters. Under the bridge, the riparian zones on both banks are less than 6 meters wide, with only sparse trees present. The upstream portion is partially shaded by vegetation, whereas the bridge provides 100 percent shade for the portion flowing underneath. Stream 22NN receives sediment and pollutant runoff from the adjacent roadway. No odor was present at the time of the survey, however iron floc, turbid water, suspended sediments, and some trash were observed in the stream.

During a qualitative assessment of the aquatic community at Stream 22NN, no fish were observed, but many pouch snails (Family Physidae) and aquatic worms (Subclass Oligochaeta) were collected. Pouch snails and aquatic worms are both considered pollution-tolerant organisms.

Wetland 22OO: Wetland 22OO is a broad emergent and forested wetland swale situated on the second terrace above the Potomac River, just upstream of the ALB and extending west to Rock Run. It is classified as a palustrine forested wetland with broad-leaved deciduous vegetation and a saturated water regime (PFO1B). Trees are scattered throughout the wetland and large areas are dominated by emergent vegetation. The wetland swale slowly drains southeast to an intermittent stream that discharges into Rock Run Culvert, just above the confluence with the Potomac River.

The wetland is hydrologically supported by surface water runoff from the adjacent uplands and from seasonal groundwater seepage along the base of the upper terrace north of the wetland. Observed wetland hydrologic indicators included surface water ponding between one and two inches. Other primary hydrologic indicators included: a seasonally high groundwater table, soil saturation, iron staining, inundation observed on aerial imagery, and water-stained leaves. Secondary hydrologic indicators included: drainage patterns, geomorphic position, microtopographic relief, and FAC-neutral test.

Vegetation within the wetland included scattered ash-leaf maple and American sycamore in the canopy. The herbaceous layer was dominated by invasive reed canary grass (*Phalaris arundinacea*) with scattered false-spike false nettle, lizard's-tail (*Saururus cernuus*), Asiatic tearthumb (*Persicaria perfoliata*), and pinkweed (*P. pensylvanica*).

Soils within the wetland were not sampled during the initial wetland delineation because the project did not have invasive access from the NPS. During the assessment in January 2021, soil samples met the depleted matrix hydric soil indicator within the upper 12 inches. Soils had clayey textures within the upper 1.5 feet and were a sandy loam texture below that depth. Soil textures likely allow slow groundwater infiltration and recharge during drier portions of the year.

Using the methodology described above, three principal functions/values were identified, including: nutrient removal, production export, and wildlife habitat.

Water quality within the wetland did not appear high, as iron flocculent was present where standing water was observed.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrates, including isopods and amphipods (scuds), were found within a shallow swale through the wetland that retained several inches of water during the early January sampling effort. Emergent vegetation was the primary substrate for these macroinvertebrates.

No federal or state listed threatened or endangered species are known to occur within Wetland 22OO. However, the state endangered buttercup scorpion-weed was mapped just outside the limits of the wetland and within the 25-foot wetland buffer to the north and south. This plant has a limited distribution in Maryland, occurring primarily within this portion of the Potomac River Gorge on upland river terraces. Where it occurs in this area, plant abundance is extremely high, with some areas containing up to 10,000 plants, as documented during a targeted MLS RTE Plant Survey in the early spring of 2020.

Wetland 22PP: Wetland 22PP is a narrow, isolated forested wetland swale situated on a shallow depression on the upper terrace slope just upstream of the ALB and downslope of the Chesapeake and Ohio Canal Towpath. It is classified as a palustrine forested wetland with broad-leaved deciduous vegetation and a temporarily flooded water regime (PFO1A). The wetland swale slowly drains south but dissipates where the slope increases, and water quickly diffuses in sheet and channel flow downslope toward Wetland 22OO.

The wetland is hydrologically supported by surface water runoff from the adjacent uplands and from seasonal near-surface groundwater seepage along the slope of the upper terrace. Observed wetland hydrologic indicators included shallow surface water ponding in pockets to a quarter inch depth. Other primary hydrologic indicators included a seasonally high groundwater table and soil saturation. Secondary hydrologic indicators included drainage patterns, geomorphic position, and FAC-neutral test.

Vegetation within the wetland included scattered American elm in the canopy and amur honeysuckle in the shrub layer. The herbaceous layer was dominated by dotted smartweed with scattered creeping Japanese honeysuckle (*L. japonica*) vine, seedling green ash (*Fraxinus pennsylvanica*), and amur honeysuckle seedlings.

Soils within the wetland met the depleted matrix and redox dark surface hydric soil indicators. During the assessment in January 2021, soil samples had sandy loam to sandy clay loam textures within the upper 1.5 feet. Groundwater discharge occurs seasonally within the wetland and soil textures likely allow slow groundwater infiltration and recharge downslope of the wetland.

Using the methodology described above, two principal functions/values were identified, including groundwater recharge/discharge and production export.

Water quality within the wetland is low, as very little water is retained by the wetland and what is retained is typically sediment laden.

Based on the geomorphic position of this wetland and absence of standing water observed during the assessment, this wetland does not likely support a diverse fauna of macroinvertebrates. No

macroinvertebrate habitat exists within the wetland and no macroinvertebrates were observed during the January 2021 assessment.

No federal or state listed threatened or endangered species are known to occur within Wetland 22PP. However, the state endangered buttercup scorpion-weed was mapped just outside the limits of the wetland to the north and south. This plant has a limited distribution in Maryland, occurring primarily within this portion of the Potomac River Gorge on upland river terraces. Where it occurs in this area, plant abundance is extremely high, with some areas containing up to 10,000 plants, as documented during a targeted MLS RTE Plant Survey in the early spring of 2020.

Stream 22QQ: Stream 22QQ is classified as an R4SB5 that flows southeast into Rock Run Culvert, Stream 22MM. The stream originates from a culvert that flows east under I-495. The entirety of the delineated stream is within the CSB.

Stream 22QQ is within a small gully, likely receiving hydrology from surface runoff. Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at 22QQ is poor, with less than 10 percent available habitat. Overall, the benthic macroinvertebrate habitat consists of only some small areas of shallow, fast-moving water. For fish, habitat is lacking, with only intermittent flows. There are no well-defined riffles or pools providing habitat and there is very little flow diversity.

The stream bed substrate is lacking cobble/gravel, consisting mostly of fine sediment, and stream particles are over 75 percent embedded. Roughly 30 percent of the bottom of the streambed is affected by sediment deposition with slight deposition in pools. Very little water was present in the channel during the time of the survey, exposing most of the channel substrate. There is some channel alteration present, with riprap placed throughout the reach and with the upstream portion originating from a culvert.

The entire stream channel of 22QQ is incised with roughly 60 percent erosion on both banks, frequent areas of erosion, and head cutting. Less than 50 percent of the streambank surfaces are covered by native vegetation with many raw areas present. The riparian zone consists of a mature, high-quality forest, giving both banks a riparian zone at least 18 meters wide, with minimal to no human activity impacting the riparian zones. Approximately 90 percent of the stream is shaded and is bordered by a mixed-deciduous forest. Stream 22QQ receives sediment and pollution runoff from the adjacent roadway. Iron floc and trash are present within the stream channel, and oil sheen is present on the water's surface in areas of standing water.

During a qualitative assessment of the aquatic community at Stream 22QQ, no fish were observed, but aquatic worms (Subclass Oligochaeta) were collected. Aquatic worms are pollution-tolerant organisms.

Stream 22V: "Stream 22V" refers to all stream feature names that start with 22V, including: 22V, 22V_1, 22V_2, 22V_B, and 22V_B1. Stream 22V is classified as an R4SB3d that runs parallel to Clara Barton Parkway and flows east under I-495. The stream flows east through the CSB.

Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for low gradient streams, the epifaunal substrate/available cover at 22V is poor, with less than 10 percent available habitat. Overall, the benthic macroinvertebrate habitat is deficient. For fish, there is

no habitat present. Riffles are lacking with little variety and no flow diversity, while pools are mostly small-shallow with no root mat or submerged vegetation.

In portions of the stream outside of the bridge cover, substrate is dominated by gravel, sand, and silt, whereas the portions under the bridge are lined with riprap. Only about 30 percent of the bottom of the streambed is affected by sediment deposition, with slightly more deposition in the portion of the stream flowing under the I-495 bridge over Clara Barton Parkway. Very little water filled the channel during the time of the survey, with only pockets of standing water present. Some channel alteration is present, especially in the portions of the stream under the I-495 bridge where it is lined with riprap. The channel was also likely formed or re-shaped when Clara Barton Parkway was built more than 20 years ago, as it now acts as a roadside ditch. The channel of Stream 22V is very straight, likely having been channelized for many years.

Both banks are stable to moderately stable, with 5 percent or less of both banks showing signs of erosion. The portion of the stream west of I-495 does have minor amounts of erosion present on both banks, however, it is mostly healed over with some herbaceous vegetation present. The portion under the bridge has no bank instability as they are armored with riprap. Apart from the portion of stream under I-495, 50 to 70 percent of the streambank surfaces are covered by vegetation, with mowed grass present just west of the bridged portion and scattered trees and shrub hedge grove areas present in the remaining portions. No vegetation is present under the bridge. Since the stream runs parallel to a road on the left bank and is impacted by human activities associated with the Chesapeake and Ohio Canal on the right bank, both banks have riparian zones of less than 12 meters in width.

Vegetation is providing very little shade for the stream, as it is bordered by mowed grass and young regenerating woody species. The bridge provides 100 percent of shade for the portion flowing underneath. Stream 22V receives sediment and pollutant runoff from the adjacent roadways. No odor was present at the time of the survey, however cloudiness caused by fine sediments was present in the standing water and trash was observed along the banks.

During a qualitative assessment of the aquatic community at Stream 22V, no fish were observed, but many pouch snails (Family Physidae) and some aquatic sowbugs (Family Asellidae) were collected from the standing water. Pouch snails and aquatic sowbugs are both considered pollution-tolerant organisms.

Wetland 22W (Chesapeake and Ohio Canal): Wetland 22W is an emergent wetland delineated within the Chesapeake and Ohio Canal, spanning the entire width of the MLS CSB from east to west and beneath the I-495 bridge over Clara Barton Parkway. It was classified as an excavated palustrine emergent wetland with persistent vegetation and a temporarily to seasonally flooded water regime (PEM1A/C). This excavated depression lies on an upland terrace high above the adjacent Potomac River and has no surface water connection to downstream streams.

The wetland is hydrologically supported by surface water runoff that is retained by slowly drained clayey soils. Observed wetland hydrologic indicators included surface water ponding and a shallow water table perched over a dense clay. Other primary hydrologic indicators included sediment deposits, water marks, and water-stained leaves. Secondary hydrologic indicators included a positive FAC-Neutral test.

Vegetation within the wetland varied depending upon subtle differences in topography within the Chesapeake and Ohio Canal that leads to slight differences in the duration of surface water ponding or

soil saturation, and on the availability of sunlight. Where surface water ponding is of longer duration, vegetation was comprised of both broad-leaf cat-tail (*Typha latifolia*) and narrow-leaf cat-tail (*Typha angustifolia*), duck-potato (*Sagittaria latifolia*), sedges (*Carex* spp.), lamp rush (*Juncus effusus*), rice cut grass (*Leersia oryzoides*), invasive common reed (*Phragmites australis*), and two species of hibiscus (*Hibiscu*s spp.). Within drier areas, invasive Japanese stilt grass (*Microstegium vimineum*) predominated along with Japanese bristle grass (*Setaria faberi*) and varieties of goldenrod (*Solidago* spp.). Beneath the existing I-495 bridge over Clara Barton Parkway, little vegetation coverage existed because of shading effects.

Soils within the wetland were a silty clay texture and met the hydric soil criteria by exhibiting a depleted matrix (5Y4/1, 5Y3/1) throughout the 16-inch soil profile. These tight clay soils slowly infiltrate surface water, thus not providing ideal groundwater recharge potential.

Using the methodology described above, three principal functions/values were identified, including: floodflow alteration, wildlife habitat, and uniqueness/heritage. The wetland provides floodflow alteration because of its position within the upper terraces of the Potomac River. Surface water runoff is trapped within the wetland as it drains downslope toward the river, thus allowing the excess runoff to slowly infiltrate, evaporate, or respire through the emergent vegetation within the wetland. The wetland also provides some sediment/toxicant retention and nutrient removal functions, but the opportunity for the presence of sediments, toxicants, and excess nutrients in the watershed above the wetland is relatively low. The wetland does contain numerous flowering and seed producing plants that attract a diversity of wildlife, including valuable pollinators and smaller and larger consumers. The wetland has a high uniqueness/heritage value because of its association with the Chesapeake and Ohio Canal National Historical Park. Remnants of a wooden lock occur within the wetland. The wetland exists because of the historical excavation of the canal. After the canal was abandoned as the primary means of transporting goods to Western Maryland, it eventually silted-in, resulting in the vegetated wetland condition of the canal today.

Since the wetland does not contain an outlet, water that collects within the wetland remains until it infiltrates or evaporates/respires. Therefore, water quality is likely not high. During field investigations some sediment was observed in areas with standing water.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and limited habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of standing water within the lowest areas. Emergent vegetation would be the primary substrate for such macroinvertebrates. During qualitative macroinvertebrate sampling in January 2021, a hellgrammite (Family Corydalidae) was observed, which is a pollution-sensitive organism. An aquatic worm (Subclass Oligochaeta) was also observed, which is a tolerant organism, as well as numerous scuds (Order Amphipoda), which are moderately-sensitive organisms. Scuds are common invertebrates found in wetlands with surface water. There was no evidence of groundwater seeps or springs within the wetland that might contain rare subterranean amphipods.

No federal or state listed threatened or endangered species are known to occur within Wetland 22W. However, several halberd-leaf rose-mallow (*Hibiscus laevis*) plants were observed growing within a small area between Locks 11 and 12 during a targeted MLS Rare, Threatened and Endangered (RTE) Plant Survey

in the summer of 2020. Halberd-leaf rose-mallow is a watch list species in Maryland, which means that it is at moderate risk of extinction or extirpation because of a restricted range; relatively few populations or occurrences; or recent and widespread declines, threats, or other factors.

4.2 Floodplains

Executive Order 11988, US Department of Transportation (USDOT) Order 5650.2, and the National Flood Insurance Act of 1968 govern the construction and fill of floodplains to ensure proper consideration to the avoidance, minimization, and mitigation of floodplain development and associated adverse effects. In addition to enforcing floodplain regulations, the National Flood Insurance Act and its National Flood Insurance Program (NFIP) provide affordable flood insurance to property owners (FEMA, 2018). Work within floodplains on NPS lands must adhere to NPS Floodplain Management D.O. #77-2 unless exempted. Floodplain approvals will be obtained by the appropriate jurisdiction.

Floodplains within the CSB and within NPS park land were identified using Maryland iMap and the Federal Emergency Management Agency (FEMA) Effective Floodplain GIS layer. The CSB crosses the FEMA 100-year floodplains of the Potomac River and Rock Run in Maryland and Dead Run in Virginia. The CSB overlaps the FEMA 100-year floodplains of these stream systems to varying degrees. **Table 2** describes the locations of these floodplains on NPS land within the Preferred Alternative.

Table 2: Streams and Associated Floodplains that Cross NPS Land

Name of Associated Stream	Location Where Floodplain Crosses Corridor Study Boundary
Potomac River	At the Maryland/Virginia border. Floodplain extends onto Maryland and Virginia shorelines.
Rock Run	Northwest of I-495/Clara Barton Parkway interchange in Potomac, Maryland.
Dead Run	Crosses George Washington Memorial Parkway in Fairfax County, Virginia, east of I-495 and south of the Potomac River

5 PROPOSED IMPACTS TO WETLANDS, FLOODPLAIN, AND FLOOD RISK OF THE PROPOSED PROJECT AREA

5.1 Impacts to NPS Wetlands on NPS Land within the Preferred Alternative LOD

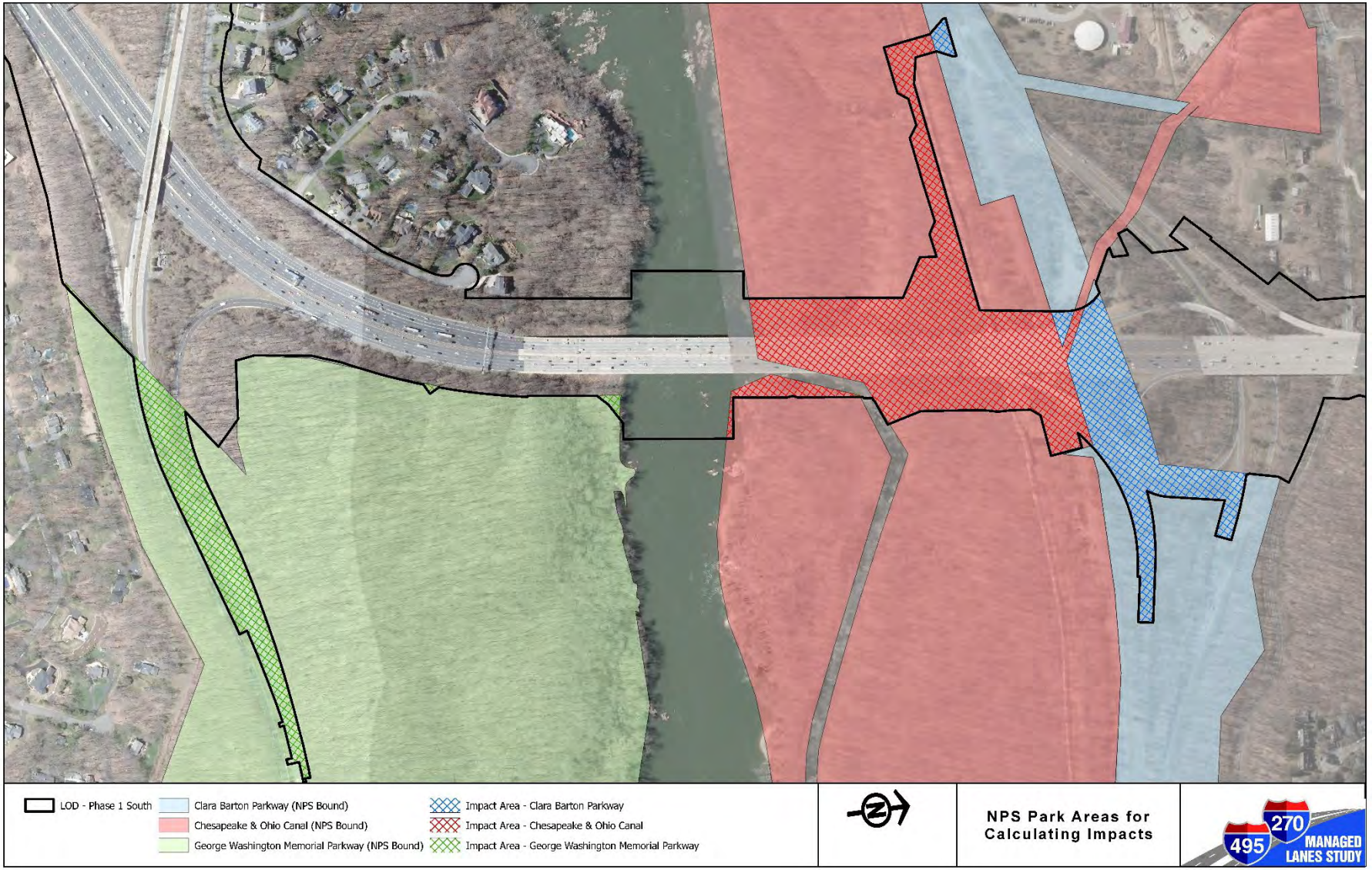
Impacts to shallow water habitat on NPS land were avoided and minimized to the greatest extent practicable and were an important factor in determining the ALB Preferred Alternative LOD. The impacts to NPS wetlands on NPS land that would result from the Preferred Alternative LOD are presented in **Table 3** below and depicted in **Figure 1**. The park area used to determine the limits of NPS lands for the purposes of impact calculation is depicted in **Figure 7**.

Table 3: Total Impacts to NPS Wetlands on NPS Park Land

Resource (unit)	MDOT SHA Preferred Alternative		
	Permanent	Temporary	Total
Natural Resources within Park Boundaries			
Riverine wetlands (square feet)	143	7,595	7,738
Riverine wetlands (linear feet)	16	1,136	1,152
Palustrine wetlands (acres)	0.17	0.35	0.52

.

Figure 7: NPS Park Areas for Calculating Impacts



Impacts to wetlands and streams by NPS park unit are presented in **Table 4** below and depicted in **Figure 2** and **Figure 3**:

Table 4: Impacts to NPS Wetlands on NPS Park Land by Park Unit

Park Unit and Resource (unit)	MDOT SHA Preferred Alternative		
	Permanent	Temporary	Total
George Washington Memorial Parkway			
Riverine wetlands (sq feet)	129	424	553
Riverine wetlands (linear feet)	5	42	47
Palustrine wetlands (acres)	-	-	-
Chesapeake and Ohio Canal Historical Park			
Riverine wetlands (sq feet)	14	7,171	7,185
Riverine wetlands (linear feet)	11	1,094	1,105
Palustrine wetlands (acres)	0.17	0.35	0.52
Clara Barton Parkway			
Riverine wetlands (sq feet)	0	0	0
Riverine wetlands (linear feet)	0	0	0
Palustrine wetlands (acres)	0.00	0.00	0.00

Impacts to individual wetlands and streams on NPS land within the Preferred Alternative LOD and their functional losses are presented in **Table 5** below and depicted in **Figure 2** and **Figure 3**.

Table 5: Impacts to NPS Wetlands on NPS Park Land by Park Unit and Feature

Park Unit and Feature Name	Cowardin Classification	Sq ft			Acres			Linear feet (Streams)			Functions and Values
		Perm	Temp	Total	Perm	Temp	Total	Perm	Temp	Total	
George Washington Memorial Parkway											
Riverine Wetlands											
22WW	R4SB4	129	424	553	0.01	0.01	0.01	5	42	47	Habitat; Flow Stability; Riparian Vegetation
Clara Barton Parkway											
No wetland impacts.											
Chesapeake and Ohio Canal National Historical Park											
Riverine Wetlands											
22NN	R4SB4	-	3,474	3,474	-	0.08	0.08	-	276	276	Minimal
22NN_B	R4SB4	10	1,466	1,476	<0.01	0.03	0.03	8	146	154	Minimal
22QQ	R4SB5	-	469	469	-	0.01	0.01	-	106	106	Minimal
22V	R4SB3d	-	190	190	-	<0.01	<0.01	-	76	76	Minimal
22V_1	R4SB3d	2	91	93	<0.01	<0.01	<0.01	1	40	41	Minimal
22V_2	R4SB3d	-	1,083	1,083	-	0.02	0.02	-	255	255	Minimal
22V_B	R4SB3d	-	331	331	-	0.01	0.01	-	168	168	Minimal
22V_B1	R4SB3d	2	67	69	<0.01	<0.01	<0.01	2	27	29	Minimal
Palustrine Wetlands											
22OO	PFO1B	2,471	9,666	12,137	0.06	0.22	0.28	NA	NA	NA	Nutrient Removal; Production Export; Habitat
22PP	PFO1A	643	-	643	0.02	-	0.02	NA	NA	NA	Groundwater Recharge; Production Export
22W	PEM1A/C	4,099	5,842	9,941	0.09	0.13	0.22	NA	NA	NA	Floodflow Alteration; Habitat; Uniqueness

5.2 Flood Risk within the Preferred Alternative

Avoidance and minimization of impacts to floodplains on NPS land within the MLS Preferred Alternative has been conducted to the maximum extent practicable, however there are unavoidable impacts to floodplains associated with this project. Floodplain impacts could not be avoided since alternatives that avoid all floodplain impacts do not meet the purpose and need. The 100-year floodplain impacts presented in **Table 6** represent the extent of the LOD associated with roadway widening and new ramps at the Clara Barton Parkway/I-495 interchange and impacts from construction access areas associated with construction of the ALB. Actual analysis of potential project related changes to hydraulic function and elevation of floodplains will be determined using hydraulic and hydrologic floodplain modeling as part of the engineering process for each structure in final phases of design. Design efforts will focus on not increasing flooding, however if flood levels are increased, the project will mitigate the effects and comply with NFIP requirements. All structures and facilities will be designed to meet the standards and criteria of the NFIP (44 CFR Part 60).

Table 6: Impacts to FEMA 100-Year Floodplains that Cross NPS Land in Acres

Park Unit and Resource (unit)	MDOT SHA Preferred Alternative		
	Permanent	Temporary	Total
George Washington Memorial Parkway			
FEMA 100-Year Floodplain (sq feet)	881	3,714	4,595
FEMA 100-Year Floodplain (acres)	0.02	0.09	0.11
Chesapeake and Ohio Canal Historical Park			
FEMA 100-Year Floodplain (sq feet)	33,230	293,190	326,420
FEMA 100-Year Floodplain (acres)	0.76	6.73	7.49
Clara Barton Parkway			
FEMA 100-Year Floodplain (sq feet)	-	-	-
FEMA 100-Year Floodplain (acres)	-	-	-

Note: 1. Note there is no impact to the floodplain of Dead Run since all proposed impacts are on existing roadway.

The Potomac River is the fourth largest river along the East Coast of the US and has the potential for severe flood events. This flood hazard potential is a concern for the replacement of the bridge, with potential danger to infrastructure, people, wildlife, and surrounding natural resources if bridge elements were to wash-out during a flood event. For this reason, the ALB and its temporary construction elements (e.g. causeways and barges) will be constructed to withstand the 100-year storm. The flood risk is estimated by reviewing NOAA flood data associated with the Little Fall Gauge on the Potomac, which indicates that water levels in this portion of the Potomac increase to potentially dangerous high-water conditions on a fairly regular basis.

Fifty-one of the one-hundred recorded historic Potomac River floods (over 9.4 ft at Little Falls Gauge, National Oceanic and Atmospheric Administration data) were recorded since the first ALB structure was built in 1962 and thirty-three since the midsection of the bridge was filled in 1992. 1996 included two of the top 7 floods and 2018 included 4 historic floods. In 2019, the Plummers Island floodplain was inundated on and off for much of winter and spring. Mather Gorge (Cohn 2004) is much narrower at the ALB and Plummers Island than at Little Falls Gauge, so the high-water marks listed in **Table 7** from the Little Falls Gauge substantially underestimate the peak flows at the ALB and head of Plummers Island, but

give an idea of the high water conditions associated with flood events in the Potomac River in the general vicinity.

Table 7: High-Water Conditions Associated with Flood Events at Little Falls Gauge on the Potomac River (NOAA data)

Rank	Height (feet)	Date
5	19.29	1/21/1996
7	17.84	9/8/1996
31	12.82	3/15/2010
36	12.38	6/5/2018
37	12.35	3/6/1993
46	11.7	5/18/2014
47	11.68	4/18/2011
50	11.56	12/17/2018
54	11.44	9/21/2003
58	11.3	5/20/2011
61	11.17	1/27/2010
65	11.01	9/29/2018
66	10.88	3/12/2011
67	10.87	12/12/2003
68	10.85	9/11/2018
70	10.79	3/22/1998
77	10.55	4/18/1993

As indicated above, flood risk associated with the construction of the ALB is considerable and will be mitigated through careful construction measures. It is imperative that construction of the ALB be done in such a way as to avoid blow-outs of the temporary construction platforms and that people are kept out of the construction area during flood events to ensure that no one is harmed by potential flood debris.

6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

Alternative 9 in Phase I South was identified as the Preferred Alternative for the I-495 & I-270 Managed Lanes Study in the SDEIS. MDOT SHA took into consideration the extensive comments of the cooperating agencies and the public when identifying a MLS Preferred Alternative, especially in the vicinity of the ALB. MDOT SHA coordinated closely with NPS to determine its concerns regarding the widening of I-495 and the replacement of the ALB within the Chesapeake and Ohio Canal Historical Park, Clara Barton Parkway, and George Washington Memorial Parkway park units. MDOT addressed these concerns as much as possible in determining an LOD in these areas of the Preferred Alternative.

MDOT SHA responded to NPS' concerns related to the ALB LOD by assembling an ALB Strike Team of bridge construction and natural and cultural resource specialists to minimize the LOD as much as possible, with the least impact to the surrounding National Park Service land and natural and cultural resources.

MDOT SHA determined that the on-center alignment would result in the least impact to NPS land and would be the most practicable option. Although this alignment would have more impacts to streams and to Plummers Island than the West-Shift Alignment, it would have fewer impacts to wetlands and to NPS

land in general. The on-center alignment would also not require the Clara Barton interchange to be re-configured and would not cause residential displacements. The extent of the Preferred Alternative LOD was determined by considering several potential bridge construction types and selecting the smallest constructable LOD surrounding the ALB that would account for the additional lanes associated with this widening project. The Preferred Alternative is the NPS least damaging practicable construction alternative with respect to the requirements of D.O. #77-1 and #77-2.

7 MITIGATION MEASURES

7.1 Wetland Mitigation

7.1.1 Preferred Alternative Wetland Impact Avoidance and Minimization Practices

Throughout the development of the Preferred Alternative, MDOT SHA avoided and minimized adverse impacts to park resources to the greatest extent practicable by:

- Convening an ALB Strike Team to investigate potential design options, structure types, construction methods, and construction access routes to reduce the ALB LOD and therefore reduce overall impact to NPS land and to wetlands, streams, and floodplains.
- Reducing the number of access roads, which were originally proposed in all four quadrants of the ALB and were limited to a single proposed access road in the northwest quadrant, thereby reducing impact to wetlands and streams.
- Selecting the on-center alignment, which has fewest wetland impacts and lowest impact to NPS land, while also eliminating the need to re-configure the Clara Barton Parkway interchange or cause residential displacement.

3.1.1 Wetland Compensatory Mitigation Requirements

As discussed above, efforts have been made throughout the MLS Phase I South planning process to avoid and minimize impacts to wetlands on NPS lands, while still achieving the goals of the project. Despite these efforts, impacts to NPS wetlands are unavoidable due to the extensive network of features that are located adjacent to and flow beneath the existing roadway. The project will result in unavoidable short and long-term impacts to NPS wetlands that are greater than 0.1 acres total and will therefore require wetland compensation in accordance with the policies and procedures of D.O. #77-1. The project will impact a total of 0.69 acres of NPS wetlands that will require mitigation, including 0.22 acres of palustrine emergent wetlands, 0.30 acres of palustrine forested wetlands, and 0.17 acres of streams. These unavoidable impacts are discussed in further detail in **Section 5.1** of this report.

Wetland compensation requirements were determined based on guidelines in Section 5.2.3 of the Procedural Manual #77-1: Wetland Protection (NPS 2016). The Procedural Manual states "*For the purpose of wetland compensation, wetland restoration proposals must, at a minimum provide one-for-one (1:1) wetland function replacement (i.e., focus on no net loss of wetland functions, not just wetland acreage).*" and that "*Final compensation ratios may need to be greater than 1:1 in cases where: (1) the functional values of the site being impacted are determined to be high and the restored wetlands will be of lower functional value; (2) it will take a number of years for the restored site to become fully functional (e.g., reestablishment of scrub-shrub or forested wetlands); or (3) the likelihood of full restoration success is unclear".*

Functional assessments were conducted for all NPS wetlands within the project study area and are discussed in further detail in **Section 4.1.2** of this report. These assessments, along with the proposed impact type, were used to determine the appropriate mitigation replacement ratios for the NPS wetland impacts. NPS wetland mitigation is not proposed for impacts to the Potomac River or the oxbow of the Potomac River, known as the Rock Run Culvert, (Feature 22MM) due to these impacts being located below the ordinary high-water mark of waters owned by the State of Maryland. The proposed impacts, functional loss, and mitigation replacement ratio for each NPS wetland are described below.

The Preferred Alternative will impact Stream 22WW located in Virginia, just south of the ALB. The stream flows southwest through NPS parkland and into a culvert on the east side of I-495. Most of the stream east of I-495 is relatively stable and provides sub-optimal instream habitat, however the segment within the project LOD consists of a scour pool that was created by past construction/maintenance of the roadway culvert. Access for the proposed culvert extension will require vegetation clearing that will have temporary impacts to the channel. Permanent impacts to the stream entail stabilizing the channel for the proposed culvert extension with a design-sensitive solution that will be developed with the National Park Service to improve bed and bank stability. The reach being impacted provides limited hydrologic, geomorphic and in-stream habitat functions due to impacts from past roadway construction. Following construction completion and seeding/planting the riparian area, the functions of the channel should fully recover and will likely improve over time. A mitigation replacement ratio of 1:1 was determined as necessary for temporary impacts to Stream 22WW considering the channel and riparian buffer should fully recover over time. A mitigation replacement ratio of 1.1:1 was determined appropriate for permanent impacts due to the previously disturbed conditions of the channel.

Stream 22NN will be impacted north-west of the ALB. The channel consists of a deeply incised erosional feature that appears to be draining the groundwater hydrology from a degraded PFO wetland (Wetland 22OO) to the north. The feature has moderately unstable banks and a streambed consisting of silts, sands, and exposed bedrock. Surface water in the channel consists of shallow pools and surface flows, with several sections of the channel that are dry. The channel provides very limited hydrologic and geomorphic functions due to its small size, shallow flows, and incised conditions. Access and construction of the ALB expansion will require vegetation clearing and shading that will have temporary impacts to most of the channel. Following construction completion, channel stability should improve, and functions should recover over time. A new bridge pier will be constructed in the channel that will have permanent impacts to hydrologic and geomorphic functions. A mitigation replacement ratio of 1:1 was determined as necessary for temporary impacts to Stream 22NN and 22NN_B due to the limited functions of the channel and proposed stabilization improvements. A replacement ratio of 1.1:1 was determined appropriate for permanent impacts due to the degraded conditions and limited functions of the channel. The mitigation replacement ratios for Stream 22NN are based on roadway impacts; however, the channel is also included as part of the proposed mitigation site for the project that is discussed in **Section 7.1.3**.

Stream 22QQ is located north-east of the ALB and will be temporarily impacted for access and expansion of I-495 North. The channel consists of a deeply incised erosional feature that originates at a culvert outfall and drains south-east into Rock Run Culvert (Stream 22MM). The feature is deeply incised with severely eroded banks and a streambed consisting of silts and muck. Surface water in the channel consists of shallow pools and surface flows. The channel provides very limited hydrologic and geomorphic functions due to its small size, unstable conditions, and shallow flows. Vegetation clearing for access will have

temporary impacts to these functions. Following construction completion and seeding/planting the riparian area, the functions of the channel should fully recover over time. A mitigation replacement ratio of 1:1 was determined as necessary for temporary impacts to Stream 22QQ due to the degraded conditions of the channel.

Stream 22V will be impacted just south of Clara Barton Parkway for expansion of the I-495 bridge and construction of a new off-ramp bridge to the east. The impacted reach consists of a man-made ditch in a forest that runs along the toe of the roadway embankment. The stream has moderately stable bed and banks, a streambed consisting of silts and sands, and shallow standing water throughout most of the reach. Due to the small size, lack of meanders, and intermittent nature of the channel, the feature provides limited hydrologic and geomorphic functions. Expansion of the existing bridge and construction of the new off-ramp bridge will require vegetation clearing along the channel that will have temporary impacts to these functions. Following construction completion and seeding/planting of the riparian area, the functions of the channel should recover over time. A new bridge pier will be constructed partially in the channel that will have minor permanent impacts to hydrologic and geomorphic functions. A mitigation replacement ratio of 1:1 was determined as necessary for temporary impacts to stream sections under existing bridges (22V_B and 22V_B1) considering the conditions of the channel will remain unchanged following construction. A 1:1 replacement ratio is also proposed for stream sections that are mostly outside existing and proposed bridges (22V_2) where the riparian buffer should fully recover over time. A mitigation replacement ratio of 1.1:1 was determined appropriate for stream segments under new or expanded bridges (22V and 22V_1) due to the limited functions and minor impacts (<0.01 acres) to the overall hydrologic and geomorphic functions. A replacement ratio of 1.5:1 was determined appropriate for permanent impacts (22V_1 and 22V_B1) due to the limited functions of the channel.

The Preferred Alternative will impact forested Wetland 22OO located north-west of the ALB. The wetland is situated on a terrace above the Potomac River and drains south-east through a deeply incised channel (Stream 22NN) that connects to the Potomac. Three principal functions/values were identified in the wetland including: nutrient removal, production export, and wildlife habitat. Temporary and permanent impacts to the wetland will be required to access and construct the ALB expansion. All of the impacts will take place on the eastern side of the wetland that is dominated by invasive reed canary grass (*Phalaris arundinacea*) and mostly devoid of trees. Proposed access for the bridge expansion will require vegetation clearing and soil compaction that will have temporary impacts to wildlife habitat, nutrient removal and production export. Most of this temporary impact area is located within the NPS wetland restoration site (CHOH-13) that is proposed for the project and will be fully restored to a PFO wetland following construction completion. Further details on the proposed mitigation site are discussed in **Section 7.1.3**. The proposed bridge expansion over the wetland will have permanent impacts to production export, wildlife habitat, and nutrient removal functions of the wetland. A mitigation replacement ratio of 1:1 was determined as necessary for temporary impacts to Wetland 22OO due to the low quality of the existing wetland and proposed restoration that will improve the functions and values of the overall wetland. A replacement ratio of 1.1:1 was determined appropriate for permanent impacts due to the low-quality existing conditions and minimal loss (<0.01 acres) of production export, wildlife habitat, and nutrient removal to the overall wetland.

Wetland 22PP will be impacted just west of I-495 southbound. The wetland is situated in an isolated swale that drains along the toe of the roadway embankment. Two principal functions/values were identified in

the wetland including: groundwater recharge/discharge and production export. Permanent impacts to the wetland will be required for expansion of I-495 to the west. Construction and access for the expansion will require filling-in the existing wetland and permanent impacts to groundwater recharge/discharge and production export functions. A mitigation replacement ratio of 2:1 was determined appropriate due to the removal of trees and permanent impacts to wetland functions.

The Preferred Alternative will impact emergent Wetland 22W located in the Chesapeake and Ohio Canal. This wetland spans the entire width of the canal and consists of an excavated depression that has no surface water connection to downstream waters. Three principal functions/values were identified in the wetland including: floodflow alteration, wildlife habitat, and uniqueness/heritage. The wetland contains a variety of native herbaceous plants that provide food and habitat for wildlife. Temporary impacts to the wetland will be required to access over the Chesapeake and Ohio Canal to the west of I-495, for the expansion of the I-495 bridge, and construction of a shifted off-ramp bridge to the east. Proposed access routes and temporary bridges will require vegetation clearing and shading that will have impacts to wildlife habitat. These areas are expected to fully recover following construction completion and removal of access routes and bridges. Permanent impacts to the wetland will be required for the proposed bridge expansion and new off-ramp that will increase shading and likely limit the growth of native herbaceous vegetation, resulting in impacts to wildlife habitat functions. A replacement ratio of 1.5:1 was determined appropriate for temporary impacts due to the high-quality conditions of the wetland, and a replacement ratio of 2:1 was determined necessary for the permanent impacts based on the losses to wildlife habitat functions due to bridge shading.

The Preferred Alternative will impact a total of 0.69 acres of NPS wetlands resulting in temporary functional impairments to wildlife habitat, nutrient removal, production export, hydrologic, geomorphic and in-stream habitat functions, and permanent functional impairments to wildlife habitat, nutrient removal, groundwater recharge, sediment/toxicant retention, production export, hydrologic and geomorphic functions. Replacement ratios for each NPS wetland were determined based on the impact type and functional loss of each feature. Temporary impact replacement ratios range from 1:1 to 1.5:1. An impact replacement ratio of 1:1 was determined appropriate for most temporary impacts, with the exception of Wetland 22W and Stream 22V/22V_1. Replacement ratios for temporary impacts to Wetland 22W (1.5:1) are greater due to tree and native herbaceous vegetation impacts. A 1.1:1 replacement ratio was determined appropriate for temporary impacts to Streams 22V and 22V_1 due to the proposed I-495 bridge expansion that will provide shade and likely prevent the growth of riparian vegetation. Permanent impact replacement ratios range from 1.1:1 to 2:1. A replacement ratio of 1.1:1 was determined necessary for permanent impacts to stream 22WW due to the minimal functions they provide. A 2:1 replacement ratio is proposed for permanent impacts to Wetlands 22PP and 22W based on proposed impacts to trees and native herbaceous vegetation. A 1.5:1 replacement ratio is proposed for permanent impacts to Stream 22V_1 due to the limited functions of the channel. A 1.1:1 replacement ratio is proposed for permanent impacts to Wetland 22OO based on the degraded conditions of the existing wetland and the proposed minor impacts.

Based on the impact replacement ratios, a total of 0.90 acres of wetland mitigation is required to compensate for unavoidable impacts of the Preferred Alternative. Impacts and mitigation requirements for each NPS wetland are displayed in **Table 8** on the following page. Abbreviations for each wetland function are defined in a list below the table.

Table 8: NPS Wetland Impacts & Mitigation Requirements

Wetland Feature Name	Cowardin Classification	Impact Type	Impact Area (SF/AC)	Functions	Type of Loss	Impact Ratio	Required Mitigation (SF/AC)
22WW	R4SB4	Temporary	424 / 0.01	H, G, IH	Temporal	1:1	424 / 0.01
		Permanent	129 / 0.01		Temporal, Reduced H, G	1.1:1	142 / 0.01
22NN	R4SB4	Temporary	3,474 / 0.08	H, G	Temporal	1:1	3,474 / 0.08
22NN_B	R4SB4	Temporary	1,466 / 0.03	H, G	Temporal	1:1	1,466 / 0.03
		Permanent	10 / <0.01		Temporal, Reduced H, G	1.1:1	11 / <0.01
22QQ	R4SB5	Temporary	469 / 0.01	H, G	Temporal	1:1	469 / 0.01
22V	R4SB3d	Temporary	190 / <0.01	H, G	Temporal	1.1:1	209 / <0.01
22V_1	R4SB3d	Temporary	91 / <0.01	H, G	Temporal	1.1:1	100 / <0.01
		Permanent	2 / <0.01	H, G	Temporal, Reduced H, G	1.5:1	3 / <0.01
22V_2	R4SB3d	Temporary	1,083 / 0.02	H, G	Temporal	1:1	1,083 / 0.02
22V_B	R4SB3d	Temporary	331 / 0.01	H, G	Temporal, Reduced H, G	1:1	331 / 0.01
22V_B1	R4SB3d	Temporary	67 / <0.01	H, G	Temporal	1:1	67 / <0.01
		Permanent	2 / <0.01		Temporal, Reduced H, G	1.1:1	2 / <0.01
22OO	PFO1B	Temporary	9,666 / 0.22	NR, PE, WH	Temporal	1:1	9,666 / 0.22
		Permanent	2,471 / 0.06		Temporal, Reduced NR, PE, WH	1.1:1	2,718 / 0.07
22PP	PFO1A	Permanent	643 / 0.02	GR, PE	Temporal, Reduced GR, PE	2:1	1,286 / 0.04
22W	PEM1A/C	Temporary	5,842 / 0.13	FA, WH, UH	Temporal	1.5:1	8,763 / 0.20
		Permanent	4,099 / 0.09		Temporal, Reduced WH	2:1	8,198 / 0.20
Total:			**30,459 / 0.69**				**38,412 / 0.90**

Function Abbreviations:

- G - Geomorphology
- H – Hydrology
- FA – Flood Flow Alteration
- GR – Groundwater Recharge
- IH – Instream Habitat
- NR – Nutrient Removal
- PE – Production Export
- SR – Sediment/Toxicant Retention
- UH – Uniqueness/Heritage
- WH – Wildlife Habitat

4.1.1 Proposed Wetland Compensatory Mitigation

MDOT SHA has identified the CHOH-13 site to meet the NPS wetland mitigation needs of the MLS Phase I South Project. The CHOH-13 site will provide approximately 1.49 acres of wetland mitigation that will meet the project wetland mitigation requirement of 0.90 acres. The site is included in the NPS *Environmental Assessment (EA) for the Wetland Restoration Action Plan (WRAP) for Catoctin Mountain Park, Chesapeake & Ohio Canal National Historical Park, Harpers Ferry National Historical Park, Monocacy National Battlefield, April 2017*. The WRAP provides a "*comprehensive approach to restoring, enhancing, and/or protecting wetlands, waterways, and riparian habitats (collectively referred to as 'wetlands') at four NCR parks when mitigation opportunities arise in the future.*" Section 5.2.3 of the *NPS Procedural Manual #77-1: Wetland Protection, Reissued June 21, 2016* states "*Wetland compensation sites must be on lands managed by the NPS, with the following recommended priority order: 1) within the same wetland system as the impacted wetland; 2) within the same watershed; or 3) in another watershed within the same NPS unit.*" The CHOH-13 site was selected due to its location on lands managed by the NPS and is considered the highest priority of all the potential NPS restoration sites due to its location within one of the NPS wetlands (Feature 22OO) being impacted by the project.

The CHOH-13 site is located in Montgomery County, Maryland within the Chesapeake and Ohio Canal National Historical Park, just north-west of the ALB. The site is situated on a terrace just north of the Potomac River that drains south-east through a deeply incised channel (Stream 22NN). The wetland is hydrologically supported by surface water runoff from upland forested slopes to the north and south, and from seasonal groundwater seepage along the base of the upper terrace north of the wetland. Most of the existing wetland is dominated by invasive reed canary grass (*Phalaris arundinacea*) with scattered American sycamore (*Platanus occidentalis*), boxelder (*Acer negundo*), and dead green ash (*Fraxinus pennsylvanica*) trees. Vegetation near the western perimeter of the wetland transitions from a reed canary grass monoculture into an area dominated by lizard tail (*Saururus cernuus*) with a mix of native and non-native species. A state-listed endangered sedge species (*Carex careyana*) was identified along an eroding bank of the deeply incised channel (Stream 22NN) in the south-eastern corner of the site. The channel appears to be tapping the wetland hydrology, resulting in a deeper groundwater table and drier soil conditions that promote the growth of invasive species. Old remnant drainage channels are evident within the wetland, indicating the site may have been historically drained. The soils within the site predominately consist of clay within the upper 2-3 feet of the soil profile that is underlain by sandy soils

and/or bedrock. The degraded conditions of the wetland along with its close proximity to the project impacts make the site an ideal candidate for wetland compensation.

A concept level design was developed for the CHOH-13 site that encompasses restoring approximately 1.49 acres of forested wetlands. The design entails restoring the terrace as a forested wetland by excavating a couple feet of the upper soil profile to restore the groundwater connection, promote hydric soil development, and remove the reed canary grass root zones from the upper soil profile. The concept includes filling the deeply incised intermittent channel that currently drains the wetland hydrology and installing a clay groundwater dam and micro-berm at the southeastern corner of the site to prevent future draining and restore groundwater hydrology throughout the site. Filling the channel will help prevent the state listed sedge species (*Carex careyana*) from being lost due to bank erosion and will also likely facilitate its growth within the filled channel over time. The limits-of-disturbance for future restoration design submittals will be set to avoid impacting the sedge during construction and an environmental monitor will be on-site to ensure direct or indirect impacts to the specimens are avoided. An outfall channel is proposed at the south-western end of the site to redirect surface and groundwater flows from the restored wetland to an existing sub-surface bedrock layer that drains west into Rock Run. Microtopography grading and woody debris placement from tree removals will be incorporated into the restored wetland to promote landscape diversity and create wildlife habitat. The site will be seeded with a native herbaceous seed mix and planted with native trees and shrubs to improve vegetation structure and diversity that will fully restore over time as a self-sustaining forested wetland system. As tree plantings mature, they will shade the wetland and help prevent reed canary grass from re-invading the site. Topsoil will be placed throughout the restored wetland to provide nutrients and organic materials necessary for plant growth. A concept plan for the CHOH-13 site is included in **Attachment C**.

Restoration of the CHOH-13 site will provide full replacement of NPS wetland functions and values that are lost due to the MLS Phase I South Project. Principal functions that will be replaced by the restoration site include production export, wildlife habitat, nutrient removal, sediment/toxicant retention, groundwater recharge, hydrologic, and geomorphic functions. Production export and wildlife habitat functions will be replaced by removing the reed canary grass, via excavation of the terrace, and replacing the monoculture with a diverse mix of native species. The restored wetland will be seeded and planted with native, endemic species including pollinator species, species that provide hard mast, berries and other wildlife food sources. The restored vegetation will provide food, shelter, and nesting for a wide variety of wildlife species. The diverse vegetation will also provide detritus for primary producers and consumers and improve soil conditions. Woody debris placement in the wetland will create structural habitat and help retain organic carbon sources (e.g., leaf litter, twigs, branches, logs) that will provide an abundant food source for microorganisms. Nutrient removal and sediment/toxicant retention functions will be provided by removing portions of the upper soil profile that consist of clay and reconnecting the terrace to the groundwater table to improve nutrient cycling. Improvements to the soil substrate through reconnection to the groundwater table and placement of topsoil will benefit necessary microbial communities, thus enhancing the ability for chemical and biological retention of toxicants and nutrients. Proposed planting and seeding will provide a dense vegetated root zone that will be highly connected to the groundwater table and further enhance microbial communities and food sources. The proposed wetland outlet channel will replace the minor loss of stream hydrologic and geomorphic functions by providing a shallow channel that is highly connected to the surrounding terrace. Hydrologic and geomorphic functions will be provided by seeding herbaceous vegetation and planting trees and shrubs

to promote dense vegetation growth in the riparian zone surrounding the channel. Flood flows will spread across the riparian zone where vegetative filtering, flood attenuation, and infiltration potential will be enhanced. Native streambed material and woody debris will be placed in the channel to provide instream habitat and grade control. Woody debris will help retain sources of organic carbon within the channel and provide instream habitat and food sources for macroinvertebrates.

Wetland restoration of the CHOH-13 site will provide one acre of mitigation credit for each acre restored. The proposed restoration will result in approximately 1.49 acres of wetland mitigation for the site, exceeding the project NPS wetland mitigation requirement of 0.90 acres.

A detailed wetland mitigation plan and appropriate state and federal permits will be required for the proposed wetland mitigation site. These documents will be prepared at a later date when design and survey efforts have been completed for the site. The funding source for the restoration project will be the applicant (MDOT SHA), which is consistent with the funding source restrictions listed in Procedural Manual #77-1 (NPS 2012a). Therefore, the NPS commitment for funding of the compensatory restoration will meet the requirements and restrictions of Section 5.2.3, paragraph 6 of Procedural Manual #77-1.

Long-term monitoring of the restored wetland will be required to ensure success of the mitigation site. Long-term monitoring plans (containing types of variables to be monitored, frequency and method of sampling, target conditions over time, performance bond values, and contingency actions based on what problems might occur in the particular restoration situation) will be created, implemented and funded by MDOT SHA. If it is determined that the design goals and performance standards of the project are not being met based on monitoring, an Adaptive Management Plan will be developed to assess the problem in further detail and develop remedial recommendations if necessary.

7.2 Floodplain Mitigation

Floodplain mitigation will not be required for the unavoidable impacts to floodplains on NPS land resulting from the Preferred Alternative. The I-495 & I-270 Managed Lanes Study will comply with the NIFP and will not increase flooding on NPS land.

8 SUMMARY

The I-495 & I-270 Managed Lanes Study is in compliance with NPS D.O. #77-1 and #77-2. The MLS has avoided and minimized impacts to wetlands and floodplains to the greatest extent practicable and has provided a Statement of Findings that presents the unavoidable impacts to wetlands and floodplains on NPS land resulting from the Preferred Alternative and a proposed compensatory mitigation plan that would result in No Net Loss of wetland functions and values on NPS Land.

9 REFERENCES

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List of Acronyms

AADT – Average Annual Daily Traffic

ALB – American Legion Bridge

CFR – Code of Federal Regulations

COMAR – Code of Maryland Regulations

DEIS – Draft Environmental Impact Statement

EIS – Environmental Impact Statement

EPA – Environmental Protection Agency

FEMA – Federal Emergency Management Agency

FGDC – Federal Geographic Data Committee

LOD – Limits of Disturbance

MDOT SHA – Maryland Department of Transportation State Highway Administration

MLS – Managed Lanes Study

NFIP – National Flood Insurance Program

NOAA – National Oceanic and Atmospheric Administration

NPS – National Park Service

NRHP – National Register of Historic Places

PEM – Palustrine Emergent

PFO – Palustrine Forested

RTE – Rare, Threatened, and Endangered

SDEIS – Supplemental Draft Environmental Impact Statement

SOF – Statement of Findings

US – United States

USACE – United States Army Corps of Engineers

USDOT – United States Department of Transportation

USFWS – United States Fish and Wildlife Service

ATTACHMENT A: FIGURES

Corridor Study Boundary
PA Limit of Disturbance
Clara Barton Parkway
Chesapeake & Ohio Canal
George Washington Memorial Parkway
FEMA 100YR Floodplain
Wetland
Stream
Wetland Impact
Stream Impact

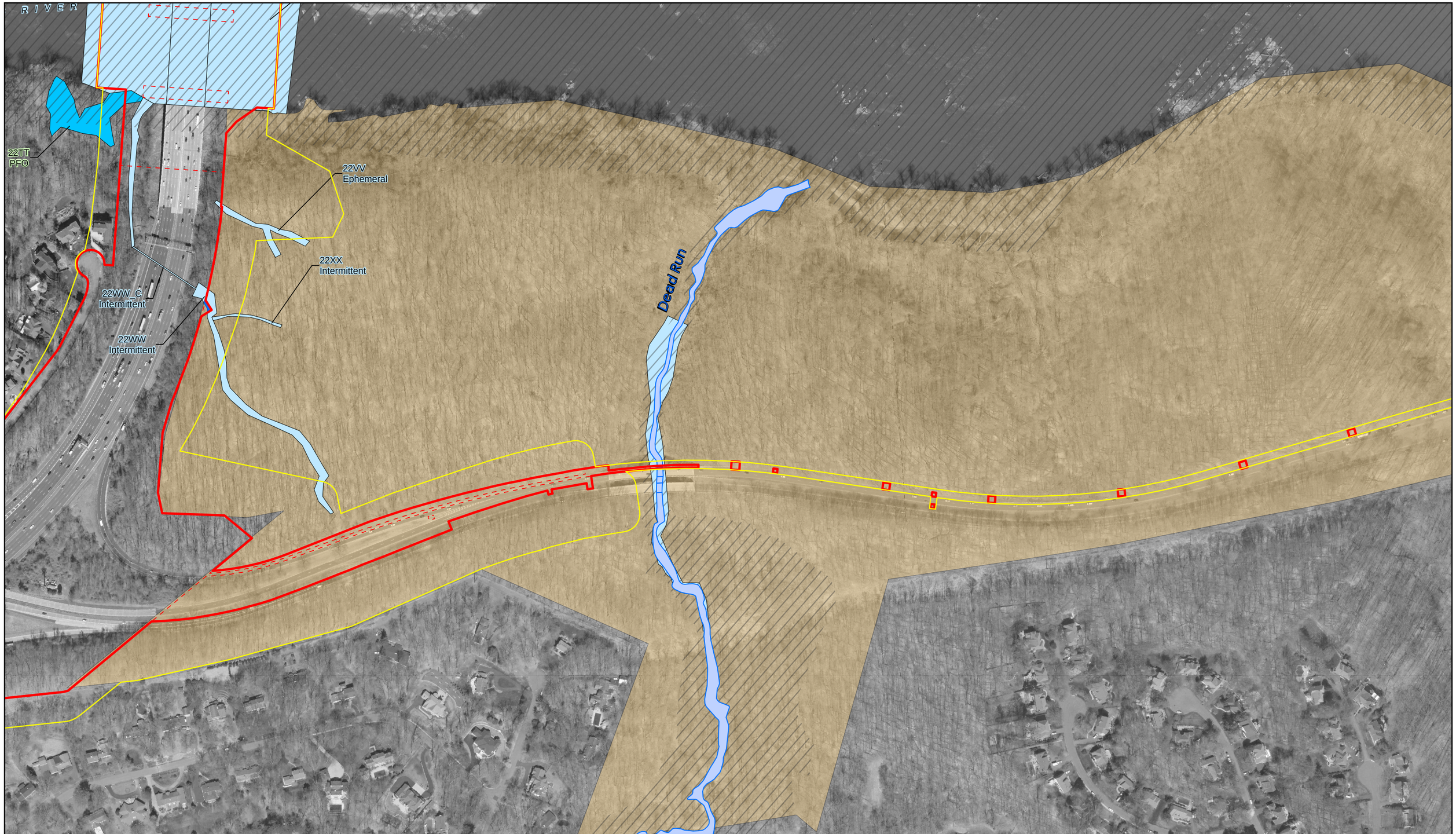
F

0 230 460 920

1 inch = 455 feet

NPS Wetlands

270 495 MANAGED LANES STUDY



Corridor Study Boundary
PA Limit of Disturbance
PA Limit of Disturbance - Perm / Temp Boundary
George Washington Memorial Parkway
Wetland
Stream
Wetland Impact
Stream Impact
FEMA 100 Year Floodplain

NOTE: Dead Run will not be impacted.

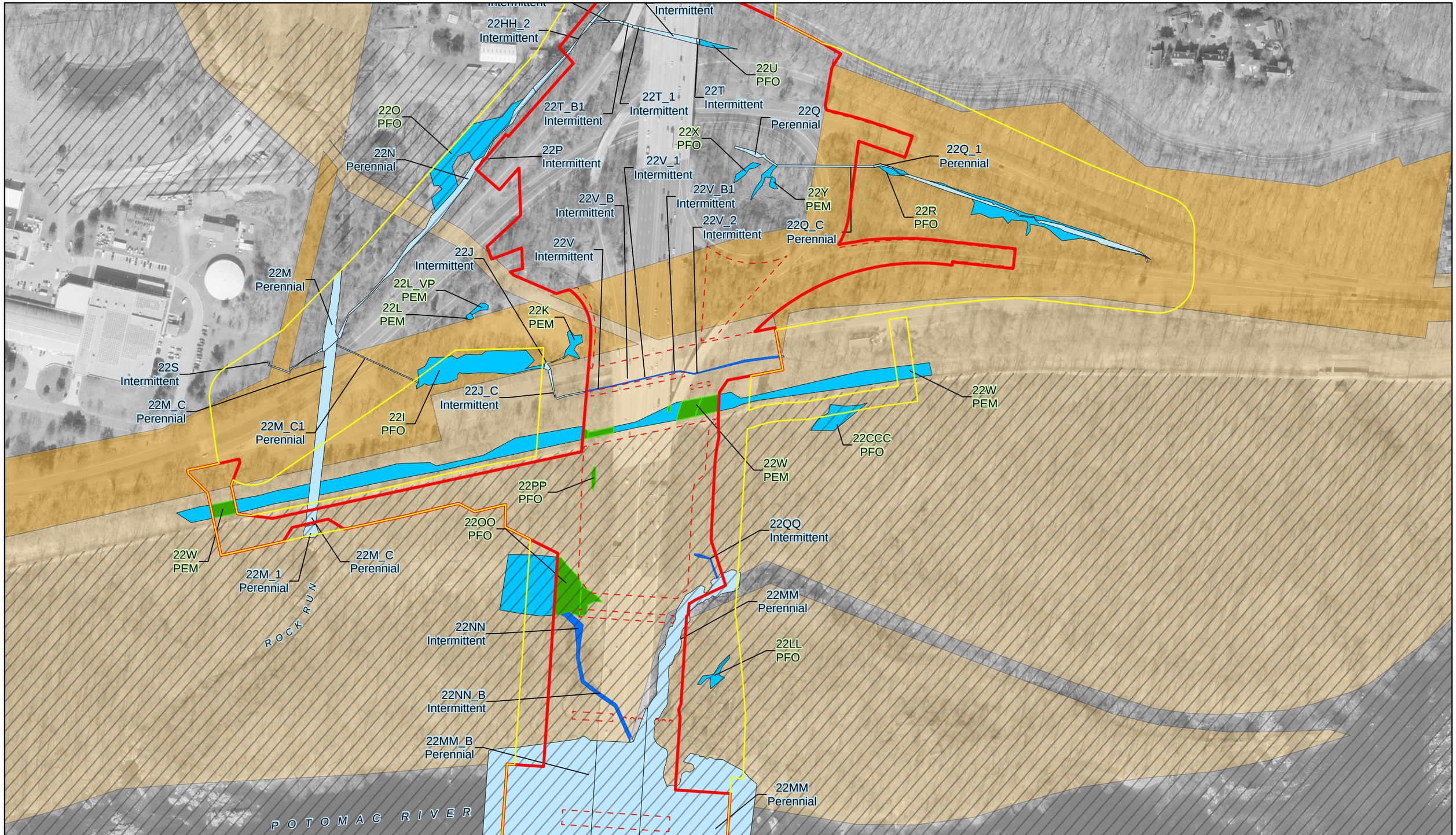
F

0 160 320 640

1 inch = 316 feet

NPS Wetlands
George Washington Memorial Parkway

270 495 MANAGED LANES STUDY



Corridor Study Boundary
PA Limit of Disturbance
PA Limit of Disturbance - Perm / Temp Boundary
Clara Barton Parkway

Chesapeake & Ohio Canal
Stream
Wetland
Stream Impact

Wetland Impact
FEMA 100 Year Floodplain

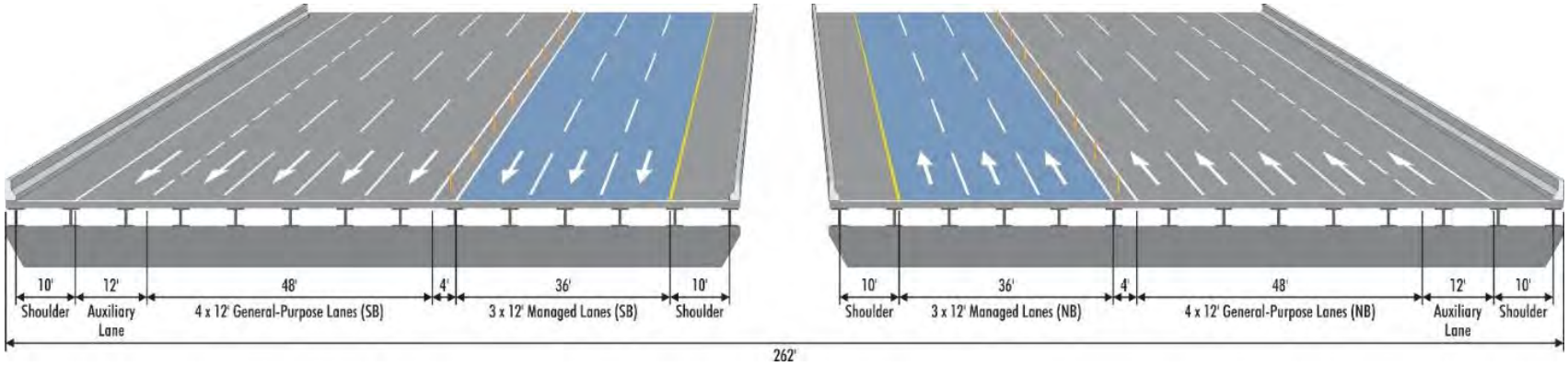
F

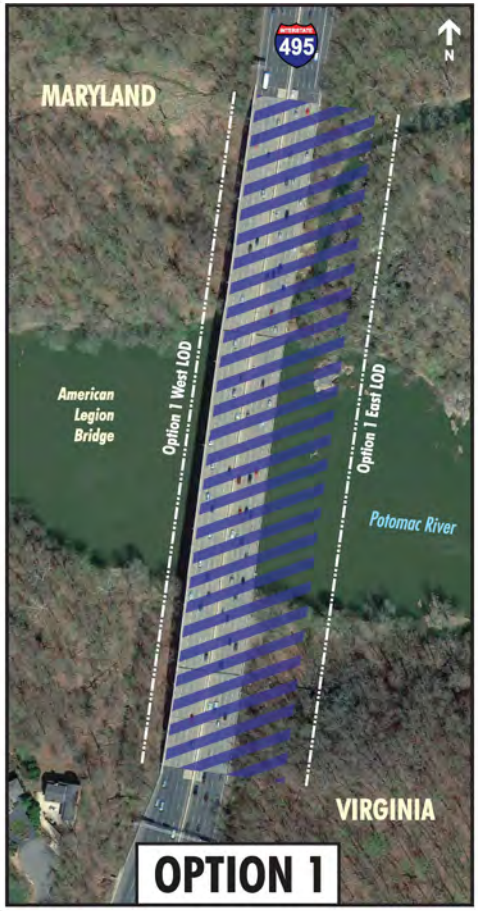
0 125 250 500
1 inch = 250 feet

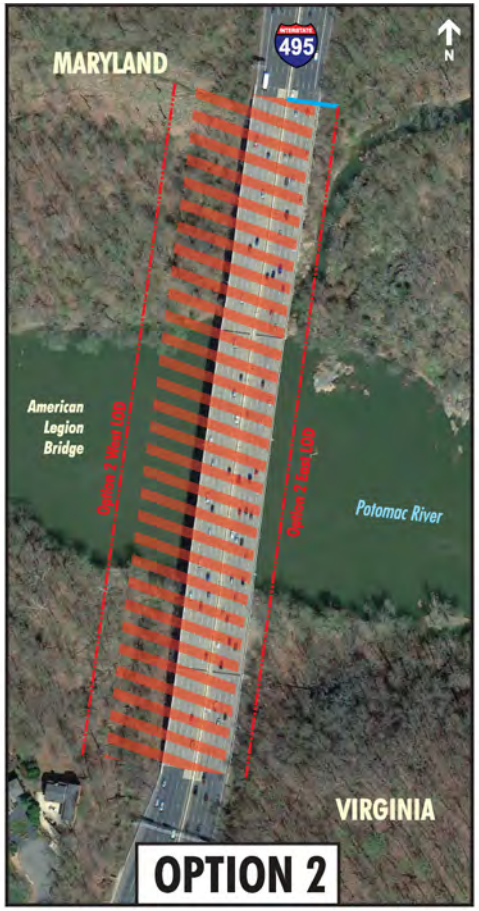
NPS Wetlands
Chesapeake & Ohio Canal
& Clara Barton Parkway

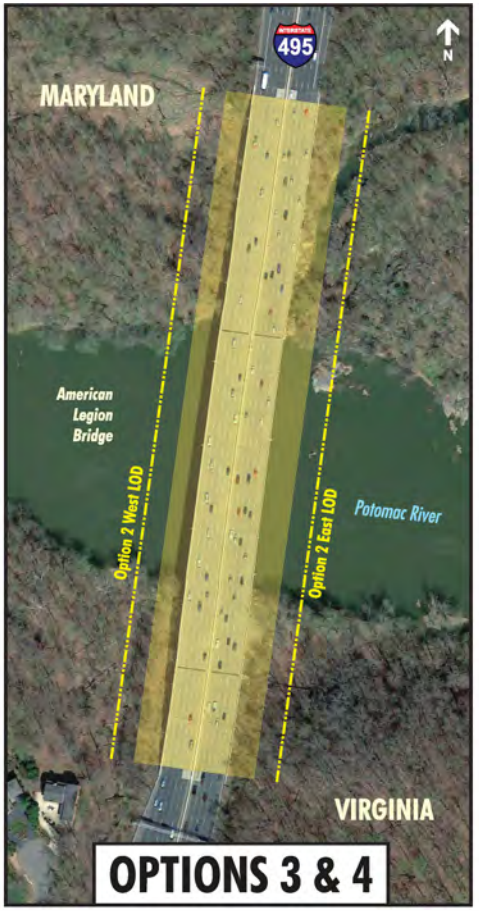
495 270 MANAGED LANES STUDY

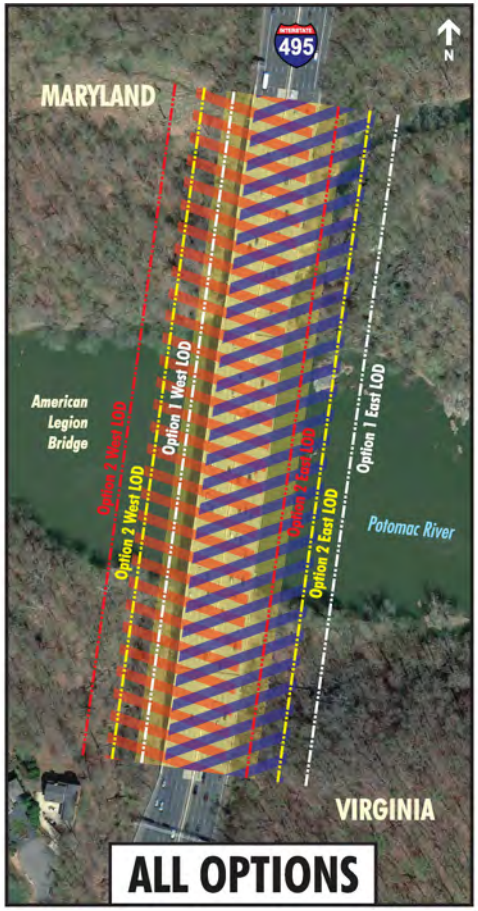
Figure 4: Proposed ALB Typical Section











LEGEND

- Phased Construction - Option 1, Shifted ℄ to East
- Phased Construction - Option 2, Shifted ℄ to West
- Phased Construction - Options 3 & 4, On Same ℄

Note: LOD is set 50' from outside edge of bridge

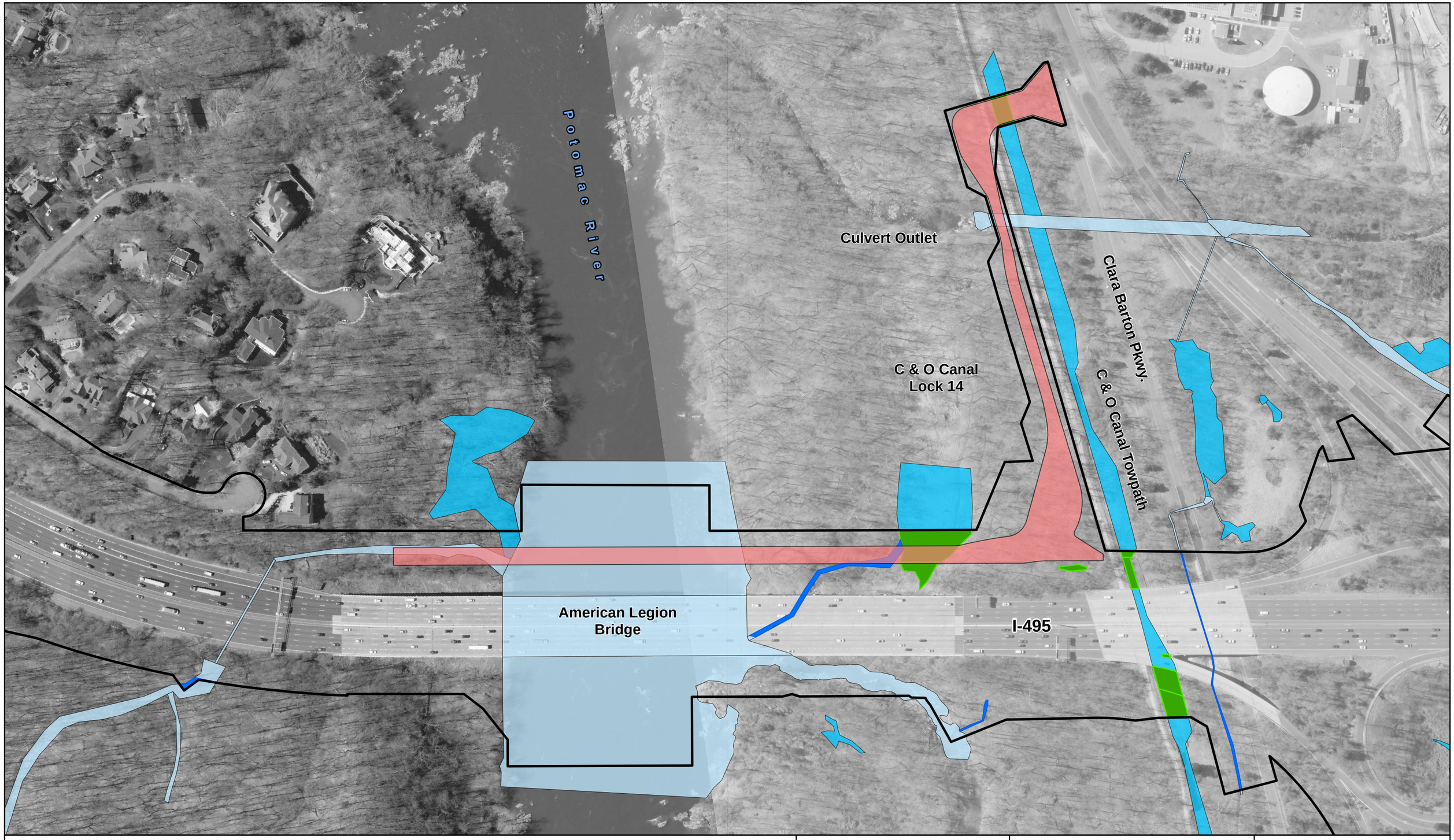
I-495/I-270 Managed Lanes Study

American Legion Bridge Limits of Disturbance (LOD)

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Date: JULY 2021

Figure: 5



PA Limit of Disturbance
Temporary Construction Access Path
Wetland
Stream
Wetland Impact
Stream Impact

N

0 100 200 400

1 inch = 200 feet

American Legion Bridge Northwest Construction Access

270 495 MANAGED LANES STUDY

LOD - Phase 1 South

Clara Barton Parkway (NPS Bound)

Chesapeake & Ohio Canal (NPS Bound)

George Washington Memorial Parkway (NPS Bound)

Impact Area - Clara Barton Parkway

Impact Area - Chesapeake & Ohio Canal

Impact Area - George Washington Memorial Parkway

NPS Park Areas for Calculating Impacts

270 495 MANAGED LANES STUDY

ATTACHMENT B: QUALITATIVE FUNCTIONAL ASSESSMENT

INTRODUCTION

MDOT SHA conducted a detailed functional assessment of all wetlands and streams within National Park Service (NPS) property along the I-495 & I-270 Managed Lanes Study (MLS) Corridor Study Boundary (CSB) in January 2021. A total of 13 nontidal wetlands and 18 streams occur within NPS park units along the corridor study boundary. The NPS park properties assessed included: George Washington Memorial Parkway, Clara Barton Parkway, C&O Canal National Historical Park, Baltimore Washington Parkway, Greenbelt Park, and Suitland Parkway.

Supplemental information supporting the wetland and streams functional assessment is included in Appendices A through C, as follows:

- Appendix A: Field Datasheets
- Appendix B: Rapid Bioassessment Protocol (RBP) Assessment Summary Table
- Appendix C: Photo Documentation

METHODS

Environmental scientists conducted a detailed qualitative biological and physical functional assessment of each wetland and stream within NPS property along the MLS corridor. The assessment included but was not limited to the following:

- Physical parameters
- Groundwater infiltration potential
- Water quality
- Fisheries habitat
- Macroinvertebrate habitat
- Groundwater invertebrates in seep wetlands
- Identification of listed Rare, Threatened or Endangered (RTE) species

These functional parameters were assessed in the field for each wetland system. Observations were recorded in a field notebook and each feature was photo documented (see **Appendix C**). Physical parameters, including wetland type, location in the landscape, flow/drainage, observed hydrology, microtopography, dominant vegetation, overall size, and soil composition were recorded and summarized. The wetland soil profile, landscape position, and hydrology were also assessed to determine the potential for groundwater infiltration within each wetland system. A visual assessment of any standing water was completed to provide an assessment of water quality. Based on the available hydrology and physical parameters of each wetland, an assessment of potential macroinvertebrate habitat was completed. Any available habitat features, including but not limited to standing water, vegetation, leaf packs, woody debris, and roots were noted. Available habitat was sampled using a D-net and a list of any observed macroinvertebrate species was compiled. During this assessment, any spring-fed groundwater seeps were noted and assessed for potential amphipod habitat. These field observations were summarized for each wetland feature and are included in the narratives below. As applicable, the narratives also include a summary of any listed rare, threatened, and endangered (RTE) plant species identified within or adjacent to the wetland systems during surveys previously completed in April through September 2020.

Additionally, data collected during the wetland delineation for the overall MLS was reviewed to inform the NPS wetland functional assessment. During the wetland delineation field assessment, wetland scientists completed a functions and values assessment for all wetlands using the USACE New England Method as presented in The Highway Methodology Workbook Supplement – Wetland Functions and Values; A Descriptive Approach (USACE, 1999). Alongside the best professional judgment of an experienced wetland scientist, this method uses the presence of certain physical characteristics broadly understood to indicate the presence of related functions. The assessed functions and values included:

- Groundwater Recharge/Discharge,
- Floodflow Alteration,
- Fish and Shellfish Habitat,
- Sediment/Toxicant Retention,
- Nutrient Removal,
- Production Export,
- Sediment/Shoreline Stabilization,
- Wildlife Habitat,
- Recreation,
- Educational/Scientific value,
- Uniqueness/Heritage,
- Visual Quality/Aesthetics, and
- Endangered Species Habitat.

During the January 2021 NPS functional assessment, previously completed Functions and Values datasheets were verified in the field. A full assessment of the suitable and principal functions was completed, and additional notes were added, as needed, to describe and characterize each wetland within NPS property. All Wetland Functions and Values datasheets are included in **Appendix A**.

Environmental scientists assessed the same functional parameters within streams occurring on NPS property. Physical parameters, including stream class, location, hydrologic connectivity, substrate, bank stability, and adjacent vegetation were recorded and summarized. A visual assessment of water within the channel was completed to provide an assessment of water quality. Potential pollutants, trash abundance, and disturbances were noted. Each reach was assessed for potential fish habitat and macroinvertebrate habitat features, including, but not limited to, riffles, vegetation, leaf packs, woody debris, pools, and roots. All habitat features and any observed fish species were recorded. Available macroinvertebrate habitat was sampled using a D-net and a list of observed species was compiled.

Additionally, data collected during prior MLS field assessments was reviewed to inform the NPS stream functional assessment. Between September and October of 2020, stream functional assessments were conducted for all perennial and intermittent streams within the MLS corridor study boundary using the EPA's RBP for Habitat Assessment (EPA, 1999). High and low gradient assessments were completed for streams over two percent in grade and below two percent in grade, respectively. The functions assessed between the two forms included:

- Substrate/Available Cover
- Embeddedness
- Pool Substrate Characterization
- Velocity/Depth Regime

- Pool Variability
- Sediment Deposition
- Channel Flow Status
- Channel Alteration
- Frequency of Riffles (or Bends)
- Channel Sinuosity
- Bank Stability
- Vegetative Protection, and
- Riparian Vegetative Zone Width.

Scores from these assessments are presented in the table included in **Appendix B**. A more detailed assessment, the USFWS Stream Function-based Rapid Assessment, was completed for Stream 22MM. This datasheet is included in **Appendix A**. All functional assessment scores and additional field observations described above are summarized in the narratives for each stream below.

RESULTS

Narrative summaries of the characteristics, function, and quality of each wetland and stream are included below and organized by NPS Park Unit.

C&O CANAL NPS UNIT

Wetland 22W

Wetland 22W is an emergent wetland delineated within the Chesapeake and Ohio Canal, spanning the entire width of the MLS Corridor Study Boundary (CSB) from east to west and beneath the I-495 bridge over Clara Barton Parkway. It was classified as an excavated palustrine emergent wetland with persistent vegetation and a temporarily to seasonally flooded water regime (PEM1A/C). This excavated depression lies on an upland terrace high above the adjacent Potomac River, and has no surface water connection to downstream waters.

The wetland is hydrologically supported by surface water runoff that is retained by slowly drained clayey soils. Observed wetland hydrologic indicators included surface water ponding and a shallow water table perched over a dense clay. Other primary hydrologic indicators included sediment deposits, water marks, and water-stained leaves. Secondary hydrologic indicators included a positive FAC-Neutral test.

Vegetation within the wetland varied depending upon subtle differences in topography within the C&O Canal that leads to slight differences in the duration of surface water ponding or soil saturation, and on the availability of sunlight. Where surface water ponding is of longer duration, vegetation was comprised of both broad-leaf cat-tail (*Typha latifolia*) and narrow-leaf cat-tail (*Typha angustifolia*), duck-potato (*Sagittaria latifolia*), sedges (*Carex* spp.), lamp rush (*Juncus effusus*), rice cut grass (*Leersia oryzoides*), invasive common reed (*Phragmites australis*), and two species of hibiscus (*Hibiscu*s spp.). Within drier areas, invasive Japanese stilt grass (*Microstegium vimineum*) predominated along with Japanese bristle grass (*Setaria faberi*) and varieties of goldenrod (*Solidago* spp.). Beneath the existing I-495 bridge over Clara Barton Parkway, little vegetation coverage existed because of shading effects.

Soils within the wetland were a silty clay texture and met the hydric soil criteria by exhibiting a depleted matrix (5Y4/1, 5Y3/1) throughout the 16-inch soil profile. These tight clay soils slowly infiltrate surface water, thus not providing ideal groundwater recharge potential.

Using the methodology described above, three principal functions/values were identified, including: floodflow alteration, wildlife habitat, and uniqueness/heritage. The wetland provides floodflow alteration because of its position within the upper terraces of the Potomac River. Surface water runoff is trapped within the wetland as it drains downslope toward the river, thus allowing the excess runoff to slowly infiltrate, evaporate, or respire through the emergent vegetation within the wetland. The wetland also provides some sediment/toxicant retention and nutrient removal functions, but the opportunity for the presence of sediments, toxicants, and excess nutrients in the watershed above the wetland is relatively low. The wetland does contain numerous flowering and seed producing plants that attract a diversity of wildlife, including valuable pollinators and smaller and larger consumers. The wetland has a high uniqueness/heritage value because of its association with the Chesapeake and Ohio Canal National Historical Park. Remnants of a wooden lock occur within the wetland. The wetland exists because of the historical excavation of the canal. After the canal was abandoned as the primary means of transporting goods to Western Maryland, it eventually silted-in, resulting in the vegetated wetland condition of the canal today.

Since the wetland does not contain an outlet, water that collects within the wetland remains until it infiltrates or evaporates/respires. Therefore, water quality is likely not high. During field investigations some sediment was observed in areas with standing water.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and limited habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of standing water within the lowest areas. Emergent vegetation would be the primary substrate for such macroinvertebrates. During qualitative macroinvertebrate sampling in January 2021, a hellgrammite (Family Corydalidae) was observed, which is a pollution-sensitive organism. An aquatic worm (Subclass Oligochaeta) was also observed, which is a tolerant organism, as well as numerous scuds (Order Amphipoda), which are moderately-sensitive organisms. Scuds are common invertebrates found in wetlands with surface water. There was no evidence of groundwater seeps or springs within the wetland that might contain rare subterranean amphipods.

No federal or state listed threatened or endangered species are known to occur within Wetland 22W. However, several halberd-leaf rose-mallow (*Hibiscus laevis*) plants were observed growing within a small area between Locks 11 and 12 during a targeted MLS Rare, Threatened and Endangered (RTE) Plant Survey in the summer of 2020. Halberd-leaf rose-mallow is a watch list species in Maryland, which means that it is at moderate risk of extinction or extirpation because of a restricted range; relatively few populations or occurrences; or recent and widespread declines, threats, or other factors.

Wetland 22LL

Wetland 22LL is a small, isolated forested wetland situated in a shallow depression at the western end of Plummers Island. It is classified as a palustrine forested wetland with broad-leaved deciduous vegetation

and a seasonally flooded water regime (PFO1C). This depressional wetland lies on an upland terrace high above the Potomac River and Rock Run Culvert and does not appear to have a surface connection to either watercourse.

The wetland is hydrologically supported by surface water runoff that is likely retained by shallow soils perched over bedrock. Bedrock outcroppings occur just upslope of the wetland. Observed wetland hydrologic indicators included surface water ponding between one and 14 inches. Other primary hydrologic indicators included water marks and water-stained leaves. Secondary hydrologic indicators included sparsely vegetated concave surface and geomorphic position.

Vegetation within the wetland included ash-leaf maple (*Acer negundo*) and American elm (*Ulmus americana*) in the canopy, ash-leaf maple, northern spicebush (*Lindera benzoin*), and amur honeysuckle (*Lonicera maackii*) in the shrub layer, and creeping-jenny (*Lysimachia nummularia*), Japanese stilt grass, dotted smartweed (*Persicaria punctata*), Indian wood-oats (*Chasmanthium latifolium*), and false-spike false nettle (*Boehmeria cylindrica*) in the herb layer.

Soils within the wetland were a shallow sandy clay loam texture and met the hydric soil criteria by exhibiting a depleted matrix in the upper six inches of the profile. Rock was present below 10 inches, thus not providing ideal groundwater recharge potential.

Using the methodology described above, three principal functions/values were identified, including: wildlife habitat, educational/scientific value, and uniqueness/heritage. The wetland appears to retain sufficient water during winter and early spring to serve as a vernal pool habitat for obligate and facultative breeding amphibians. The wetland is also located on Plummers Island, which is one of the longest and most intensively studied islands in the United States. The flora and fauna of Plummers Island has been continuously studied since the early part of the twentieth century. The wetland also has a high uniqueness/heritage value because of its association with the Chesapeake and Ohio Canal National Historical Park.

Since the wetland does not contain an outlet, water that collects within the wetland remains until it infiltrates or evaporates/respires. Therefore, water quality is likely not high. During field investigations water was clear and had no odor.

Based on the geomorphic position of this wetland, limited amount of standing water observed during the assessment, and limited habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of standing water within the lowest areas. Emergent vegetation, woody debris, and leaf packs would be the primary substrate/habitat for such macroinvertebrates. During qualitative macroinvertebrate sampling in January 2021, no organisms were found.

No federal or state listed threatened or endangered species are known to occur within Wetland 22LL. However, buttercup scorpion-weed (*Phacelia covillei*), a state endangered spring ephemeral plant, was mapped just outside the limits of the wetland and within the 25-foot wetland buffer. This plant has a limited distribution in Maryland, occurring primarily within this portion of the Potomac River Gorge on upland river terraces. Where it occurs in this area, plant abundance is extremely high, with some areas containing up to 10,000 plants, as documented during a targeted MLS RTE Plant Survey in the early spring of 2020.

Wetland 22OO

Wetland 22OO is a broad emergent and forested wetland swale situated on the second terrace above the Potomac River, just upstream of the American Legion Bridge (ALB) and extending west to Rock Run. It is classified as a palustrine forested wetland with broad-leaved deciduous vegetation and a saturated water regime (PFO1B). Trees are scattered throughout the wetland and large areas are dominated by emergent vegetation. The wetland swale slowly drains southeast to an intermittent stream that discharges into Rock Run Culvert, just above the confluence with the Potomac River.

The wetland is hydrologically supported by surface water runoff from the adjacent uplands and from seasonal groundwater seepage along the base of the upper terrace north of the wetland. Observed wetland hydrologic indicators included surface water ponding between one and two inches. Other primary hydrologic indicators included: a seasonally high groundwater table, soil saturation, iron staining, inundation observed on aerial imagery, and water-stained leaves. Secondary hydrologic indicators included: drainage patterns, geomorphic position, microtopographic relief, and FAC-neutral test.

Vegetation within the wetland included scattered ash-leaf maple and American sycamore (*Platanus occidentalis*) in the canopy. The herbaceous layer was dominated by invasive reed canary grass (*Phalaris arundinacea*) with scattered false-spike false nettle, lizard's-tail (*Saururus cernuus*), Asiatic tearthumb (*Persicaria perfoliata*), and pinkweed (*P. pensylvanica*).

Soils within the wetland were not sampled during the initial wetland delineation because the project did not have invasive access from the NPS. During the assessment in January 2021, soil samples met the depleted matrix hydric soil indicator within the upper 12 inches. Soils had clayey textures within the upper 1.5 feet and were a sandy loam texture below that depth. Soil textures likely allow slow groundwater infiltration and recharge during drier portions of the year.

Using the methodology described above, three principal functions/values were identified, including: nutrient removal, production export, and wildlife habitat.

Water quality within the wetland did not appear high, as iron flocculent was present where standing water was observed.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrates, including isopods and amphipods (scuds), were found within a shallow swale through the wetland that retained several inches of water during the early January sampling effort. Emergent vegetation was the primary substrate for these macroinvertebrates.

No federal or state listed threatened or endangered species are known to occur within Wetland 22OO. However, the state endangered buttercup scorpion-weed was mapped just outside the limits of the wetland and within the 25-foot wetland buffer to the north and south. This plant has a limited distribution in Maryland, occurring primarily within this portion of the Potomac River Gorge on upland river terraces. Where it occurs in this area, plant abundance is extremely high, with some areas containing up to 10,000 plants, as documented during a targeted MLS RTE Plant Survey in the early spring of 2020.

Wetland 22PP

Wetland 22PP is a narrow, isolated forested wetland swale situated on a shallow depression on the upper terrace slope just upstream of the ALB and downslope of the C&O Canal Towpath. It is classified as a palustrine forested wetland with broad-leaved deciduous vegetation and a temporarily flooded water regime (PFO1A). The wetland swale slowly drains south but dissipates where the slope increases, and water quickly diffuses in sheet and channel flow downslope toward Wetland 22OO.

The wetland is hydrologically supported by surface water runoff from the adjacent uplands and from seasonal near-surface groundwater seepage along the slope of the upper terrace. Observed wetland hydrologic indicators included shallow surface water ponding in pockets to a quarter inch depth. Other primary hydrologic indicators included a seasonally high groundwater table and soil saturation. Secondary hydrologic indicators included drainage patterns, geomorphic position, and FAC-neutral test.

Vegetation within the wetland included scattered American elm in the canopy and amur honeysuckle in the shrub layer. The herbaceous layer was dominated by dotted smartweed with scattered creeping Japanese honeysuckle (*L. japonica*) vine, seedling green ash (*Fraxinus pennsylvanica*), and amur honeysuckle seedlings.

Soils within the wetland met the depleted matrix and redox dark surface hydric soil indicators. During the assessment in January 2021, soil samples had sandy loam to sandy clay loam textures within the upper 1.5 feet. Groundwater discharge occurs seasonally within the wetland and soil textures likely allow slow groundwater infiltration and recharge downslope of the wetland.

Using the methodology described above, two principal functions/values were identified, including groundwater recharge/discharge and production export.

Water quality within the wetland is low, as very little water is retained by the wetland and what is retained is typically sediment laden.

Based on the geomorphic position of this wetland and absence of standing water observed during the assessment, this wetland does not likely support a diverse fauna of macroinvertebrates. No macroinvertebrate habitat exists within the wetland and no macroinvertebrates were observed during the January 2021 assessment.

No federal or state listed threatened or endangered species are known to occur within Wetland 22PP. However, the state endangered buttercup scorpion-weed was mapped just outside the limits of the wetland to the north and south. This plant has a limited distribution in Maryland, occurring primarily within this portion of the Potomac River Gorge on upland river terraces. Where it occurs in this area, plant abundance is extremely high, with some areas containing up to 10,000 plants, as documented during a targeted MLS RTE Plant Survey in the early spring of 2020.

Wetland 22CCC

Wetland 22CCC is a broad forested wetland depression situated at the toe of slope of the C&O Canal Towpath east of I-495. It is classified as a palustrine forested wetland with broad-leaved deciduous

vegetation and a saturated water regime (PFO1B). The broad wetland depression appears to be isolated from downstream receiving waters.

The wetland is hydrologically supported by surface water runoff from the adjacent uplands and from seasonal groundwater seepage along the base of the C&O Canal Towpath. A clay lens about a foot below the ground surface acts to perch surface and near-surface groundwater. Observed wetland hydrologic indicators included surface water ponding up to one inch in depth. Other primary hydrologic indicators included a seasonally high groundwater table, water-stained leaves, and soil saturation. Secondary hydrologic indicators included geomorphic position and FAC-neutral test.

Vegetation within the wetland included red maple (*Acer rubrum*), green ash, and American elm in the canopy and ash-leaf maple, northern spicebush, common pawpaw (*Asimina triloba*), rambler rose (*Rosa multiflora*), and green ash in the shrub layer. The herbaceous layer was dominated by invasive Japanese stilt grass with scattered false-spike false nettle, sweet wood-reed (*Cinna arundinacea*), Japanese honeysuckle vine, and an unknown sedge. The woody vine layer included horsebrier (*Smilax rotundifolia*) and Japanese honeysuckle.

Soils within the wetland met the depleted matrix hydric soil indicator. During the assessment in January 2021, soil samples had silty loam to silty clay loam textures within the upper seven inches. Below ten inches, the soils become more of a silty clay texture, forming a confining layer. Groundwater discharge occurs seasonally within the wetland, but shallow clay soils restrict infiltration and any recharge opportunities.

Using the methodology described above, three principal functions/values were identified, including: production export, wildlife habitat, and uniqueness/heritage. Evidence of deer use of the wetland and the presence of flowering plants provide opportunities for production export to occur. Its uniqueness and heritage value lies in its position immediately adjacent to the C&O Canal Tow Path.

The wetland was free of odors and trash and the shallow standing water appeared clear. Therefore, water quality within the wetland was likely high.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and limited habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of standing water within the lowest areas. Wetted vegetation, leaf packs, and wetted woody debris would be the primary substrates for such macroinvertebrates. During qualitative macroinvertebrate sampling in January 2021, numerous isopods and amphipods (scuds) were observed. The scuds are moderately-sensitive organisms. While the wetland exhibited groundwater seepage along the base of the hillslope, there was no evidence of groundwater springs within the wetland that might contain rare subterranean amphipods.

No federal or state listed threatened or endangered species are known to occur within Wetland 22CCC. However, the state endangered buttercup scorpion-weed was mapped just outside the limits of the wetland and within the 25-foot wetland buffer to the east and west. This plant has a limited distribution in Maryland, occurring primarily within this portion of the Potomac River Gorge on upland river terraces. Where it occurs in this area, plant abundance is extremely high, with some areas containing up to 10,000 plants, as documented during a targeted MLS RTE Plant Survey in the early spring of 2020.

Stream 22M_1

Stream 22M_1 is Rock Run, a perennial stream that flows south through a culvert under Clara Barton Parkway and the C&O Canal into the Potomac River, just west of the ALB. A small portion of Rock Run, just as it flows from under the C&O Canal, is located within the CSB on parkland.

Stream 22M_1 is a natural channel flowing in a wide valley receiving hydrology from headwater tributaries and surface runoff. Due to development, portions of the larger system upstream of the project area have been culverted or impacted by human activities in other ways. Based on the assessment of fish and macroinvertebrate habitat using the Environmental Protection Agency's (EPA) Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at Stream 22M_1 is suboptimal, with 40 to 70 percent available habitat. Overall, the benthic macroinvertebrate habitat consists of gravel, cobble, and bedrock. For fish, habitat is present in large pools, however they are potentially inaccessible due to blockages. Riffles are very stable with both variety and flow diversity and are relatively frequent at Stream 22M_1. The portion of this stream that is within NPS property downstream of the culvert consists of two waterfalls and many riffles present over bedrock material. Pools are present between riffles and in eddies behind boulders providing decent habitat cover. Three of the 4 velocity/depth regimes are present at Stream 22M_1, including shallow-fast, shallow-slow, and slow-deep. The stream substrate is diverse and dominated by gravel, cobble, and bedrock, with less than 5 percent embeddedness. There is little to no sediment deposition in the stream reach and there is no formation of islands or point bars. Water reaches the base of both lower banks and a minimal amount of channel substrate is exposed, other than the larger boulders or bedrock sections. Some channel alteration is present in the section of the reach that exits the boxed culvert, although it was created over 20 years ago. Both banks are stable, with less than 5 percent showing signs of erosion or instability and little potential for future problems. Vegetation protection is low on both banks, with less than 50 percent of the streambank surfaces covered by vegetation, however, the presence of bedrock along both banks provides some protection. The riparian zone consists of a mature high-quality forest, giving both banks a riparian zone of at least 18 meters in width, with minimal to no human activity impacting the riparian zones. Stream 22M_1 receives some sediment and pollution runoff from the upstream roadways; however, no odor was observed, and the water was very clear. Some suds were observed in the pools and only minor amounts of trash were present along the banks.

During a qualitative assessment of the aquatic community at Stream 22M_1, no fish were observed and only a few net-spinning caddisflies (Family Hydropsychidae) were collected. Net-spinning caddisflies are considered moderately pollution-sensitive organisms. Although Stream 22M_1 is a high-quality stream overall, fish were likely not found due to up and downstream blockages. For macroinvertebrates, stable riffles were present, but most sampleable riffles were on bedrock without smaller pieces of rock that macroinvertebrates typically cling to.

Stream 22MM

Stream 22MM is Rock Run Culvert, a large oxbow perennial channel flowing northeast from the Potomac River then southeast around Plummers Island and back into the Potomac. The stream is located just east of the ALB. The section of the perennial channel running northeast parallel to I-495 is within the CSB.

Based on the assessment of fish and macroinvertebrate habitat using the stream function-based rapid assessment, 20 to 70 percent of mixed stable habitat suited for full colonization potential is present. During the time of assessment, water levels were high with little to no flow and a large woody debris jam was present across the channel. Overall, the benthic macroinvertebrate habitat consists of some submerged woody debris, boulders, and only one shallow sampleable riffle. For fish, habitat consist of deep pools, woody debris, roots, and boulder habitat. Although some pools with boulders and root/wood habitat cover are present, most of the channel is a run. The stream bed substrate consists of mostly sand and mud with some large boulders. Cobble and gravel were present at the shallow inlet of Rock Run Culvert providing some shallow riffle habitat. A good amount of the stream bottom is affected by sediment deposition, with fine sediment built up around the boulders. Evidence of flooding and changes in water level indicate varying available habitat conditions. No channel alteration is present at Stream 22MM and the stream has a normal pattern. The bank erosion rate potential on both banks is low, with some evidence of erosion present, but healed over. Both native vegetation cover and boulders are providing bank protection. The riparian zone consists of a mature high-quality forest, giving both banks a riparian zone of at least 18 meters in width, with minimal to no human activity impacting the riparian zones. Approximately 50 percent of the stream is shaded. Stream 22MM receives some sediment and pollution runoff from the adjacent roadway. The water is fairly turbid and there is an abundant amount of trash present in the debris jam.

During a qualitative assessment of the aquatic community at Stream 22MM, small minnow species of fish were observed and aquatic worms (Subclass Oligochaeta), scuds (Order Amphipoda), stoneflies (Order Plecoptera) and mayflies (Order Ephemeroptera) were collected. Aquatic worms are considered pollution-tolerant organisms, scuds are moderately pollution-sensitive, and stoneflies and mayflies are pollutant-sensitive organisms.

Stream 22NN

Stream 22NN is an intermittent stream that flows southeast from Wetland 22OO on the west side of I-495 and flows into the Potomac River immediately under the North side of the ALB.

The stream is within a wide, eroded valley receiving hydrology from both the wetland upstream and surface runoff. As it flows under the bridge, the main channel begins to meander. Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at 22NN is poor, with less than 20 percent available habitat. Overall, the benthic macroinvertebrate habitat consists of a few rocks, leaf packs and woody debris. For fish, habitat is lacking, with only intermittent flows and a lack of pools. Riffles are lacking with embeddedness at 100 percent, however, in the portion of stream under the I-495 bridge, placed riprapriprap is present providing some stabilization and possible habitat. The stream has little flow diversity, with shallow-slow as the only velocity/depth regime present. In portions of the stream outside of the bridge cover substrate is dominated by fine sediment, sand, and small gravel, whereas the stream substrate in the portions under the bridge is dominated by mud with placed riprapriprap present throughout. About 20 percent of the bottom of the streambed is affected by sediment deposition, with slightly more deposition in the portion of the stream flowing under the ALB. Very little water filled the channel during the time of the survey, with most of the channel substrate exposed, especially in the upstream portion that is not under the bridge. The portion of the stream channel that flows under the

bridge had pools of stagnant mud. Some channel alteration is present, especially in the portions of the stream under the ALB where riprapriprap has been placed. The natural flow and location of the channel was also likely altered when I-495 was built. Both banks in the upstream portion that is not under the bridge are moderately stable, with 30 percent showing signs of erosion. The left bank under the bridge is unstable with many raw areas, while the right bank is moderately stable with roughly 30 percent erosion present. Apart from the portion of stream under I-495, 50 to 70 percent of the streambank surfaces are covered by woody roots and vegetation. No vegetation is present under the bridge. Since the stream runs parallel to I-495 upstream before flowing under the bridge, a riparian zone of about 12 meters is present on the left bank, with the right bank consisting of a riparian zone greater than 18 meters. Under the bridge, the riparian zones on both banks are less than 6 meters wide, with only sparse trees present. The upstream portion is partially shaded by vegetation, whereas the bridge provides 100 percent shade for the portion flowing underneath. Stream 22NN receives sediment and pollutant runoff from the adjacent roadway. No odor was present at the time of the survey, however iron floc, turbid water, suspended sediments, and some trash were observed in the stream.

During a qualitative assessment of the aquatic community at Stream 22NN, no fish were observed, but many pouch snails (Family Physidae) and aquatic worms (Subclass Oligochaeta) were collected. Pouch snails and aquatic worms are both considered pollution-tolerant organisms.

Stream 22QQ

Stream 22QQ is an intermittent unnamed tributary that flows southeast into Rock Run Culvert, Stream 22MM. The stream originates from a culvert that flows east under I-495. The entirety of the delineated stream is within the CSB.

Stream 22QQ is within a small gully, likely receiving hydrology from surface runoff. Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at 22QQ is poor, with less than 10 percent available habitat. Overall, the benthic macroinvertebrate habitat consists of only some small areas of shallow, fast-moving water. For fish, habitat is lacking, with only intermittent flows. There are no well-defined riffles or pools providing habitat and there is very little flow diversity. The stream bed substrate is lacking cobble/gravel, consisting mostly of fine sediment, and stream particles are over 75 percent embedded. Roughly 30 percent of the bottom of the streambed is affected by sediment deposition with slight deposition in pools. Very little water was present in the channel during the time of the survey, exposing most of the channel substrate. There is some channel alteration present, with riprapriprap placed throughout the reach and with the upstream portion originating from a culvert. The entire stream channel of 22QQ is incised with roughly 60 percent erosion on both banks, frequent areas of erosion, and head cutting. Less than 50 percent of the streambank surfaces are covered by native vegetation with many raw areas present. The riparian zone consists of a mature, high-quality forest, giving both banks a riparian zone at least 18 meters wide, with minimal to no human activity impacting the riparian zones. Approximately 90 percent of the stream is shaded and is bordered by a mixed-deciduous forest. Stream 22QQ receives sediment and pollution runoff from the adjacent roadway. Iron floc and trash are present within the stream channel, and oil sheen is present on the water's surface in areas of standing water.

During a qualitative assessment of the aquatic community at Stream 22QQ, no fish were observed, but aquatic worms (Subclass Oligochaeta) were collected. Aquatic worms are pollution-tolerant organisms.

GEORGE WASHINGTON MEMORIAL PARKWAY NPS UNIT

Stream 22V

Stream 22V is an intermittent ditch that runs parallel to Clara Barton Parkway and flows east under I-495. The stream flows east through the CSB.

Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for low gradient streams, the epifaunal substrate/available cover at 22V is poor, with less than 10 percent available habitat. Overall, the benthic macroinvertebrate habitat is deficient. For fish, there is no habitat present. Riffles are lacking with little variety and no flow diversity, while pools are mostly small-shallow with no root mat or submerged vegetation. In portions of the stream outside of the bridge cover, substrate is dominated by gravel, sand, and silt, whereas the portions under the bridge are lined with riprap. Only about 30 percent of the bottom of the streambed is affected by sediment deposition, with slightly more deposition in the portion of the stream flowing under the I-495 bridge over Clara Barton Parkway. Very little water filled the channel during the time of the survey, with only pockets of standing water present. Some channel alteration is present, especially in the portions of the stream under the I-495 bridge where it is lined with riprap. The channel was also likely formed or re-shaped when Clara Barton Parkway was built more than 20 years ago, as it now acts as a roadside ditch. The channel of Stream 22V is very straight, likely having been channelized for many years. Both banks are stable to moderately stable, with 5 percent or less of both banks showing signs of erosion. The portion of the stream west of I-495 does have minor amounts of erosion present on both banks, however, it is mostly healed over with some herbaceous vegetation present. The portion under the bridge has no bank instability as they are armored with riprap. Apart from the portion of stream under I-495, 50 to 70 percent of the streambank surfaces are covered by vegetation, with mowed grass present just west of the bridged portion and scattered trees and shrub hedge grove areas present in the remaining portions. No vegetation is present under the bridge. Since the stream runs parallel to a road on the left bank and is impacted by human activities associated with the C&O Canal on the right bank, both banks have riparian zones of less than 12 meters in width. Vegetation is providing very little shade for the stream, as it is bordered by mowed grass and young regenerating woody species. The bridge provides 100 percent of shade for the portion flowing underneath. Stream 22V receives sediment and pollutant runoff from the adjacent roadways. No odor was present at the time of the survey, however cloudiness caused by fine sediments was present in the standing water and trash was observed along the banks.

During a qualitative assessment of the aquatic community at Stream 22V, no fish were observed, but many pouch snails (Family Physidae) and some aquatic sowbugs (Family Asellidae) were collected from the standing water. Pouch snails and aquatic sowbugs are both considered pollution-tolerant organisms.

Stream 22WW

Stream 22WW is an unnamed tributary to the Potomac River. It is an intermittent stream that flows southwest from George Washington Memorial Parkway and into a culvert on the east side of I-495. One small section of the stream within NPS property and near the existing culvert is within the CSB.

The stream is within a small valley likely receiving hydrology from both groundwater seeps and surface runoff. Based on the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover at 22WW is suboptimal, with about 60 percent available habitat within the portion of stream just upstream of the culvert and within the CSB. Overall, the benthic macroinvertebrate habitat consists of small riffles, minor amounts of woody debris, roots, and small leaf packs. For fish, habitat is lacking, with only intermittent flows and downstream blockages. Riffle habitat is stable with some variety and flow diversity and is relatively frequent throughout Stream 22WW. Substrate of the riffles consists of cobble, gravel and bedrock and is roughly 25 percent embedded. Pools are mostly shallow with gravel substrate, but some root mat habitat is available. Leaf packs observed were transient and unlikely to be suitable habitat. Shallow-fast and shallow-slow were the only two depth regimes present at Stream 22WW. Roughly 5 percent of the bottom of the streambed is affected by sediment deposition, with slight deposition in pools. Water filled 50 to 75 percent of the channel during the time of the survey, with 25 to 50 percent of the channel substrate exposed. No evidence of channel alteration is present at Stream 22WW within the CSB on NPS property, however, downstream the stream flows west through a culvert under I-495. Both banks are stable to moderately stable, with roughly 5 percent of both banks eroded; however, less than 50 percent of the streambank surfaces are covered by vegetation. Most of the bank stabilization and protection is from the bedrock, as well as some roots. Stream 22WW is surrounded by a mature high-quality mixed deciduous forest, giving both banks a riparian zone width of at least 18 meters. Very minimal human activity is impacting the riparian zones and approximately 90 percent of the stream is shaded by vegetation. The water within the stream appears clear with no noticeable odor present. Trash was only observed downstream outside of the NPS property at the input of the culvert running under I-495.

During a qualitative assessment of the aquatic community at Stream 22WW, aquatic worms (Subclass Oligochaeta), net-spinning caddisflies (Family Hydropsychidae), stoneflies (Order Plecoptera) and aquatic sowbugs (Family Asellidae) were collected in the stream. Aquatic worms and aquatic sowbugs are considered pollution-tolerant groups of organisms; net-spinning caddisflies are moderately pollution-sensitive; and stoneflies are pollutant-sensitive organisms. As Stream 22WW is a small intermittent channel, it is unlikely to be providing fish habitat, and none were observed during the time of the survey.

NATIONAL CAPITAL PARKS – EAST PARK UNIT- BALTIMORE WASHINGTON PARKWAY

Wetland 10P

Wetland 10P is a forested wetland delineated in the median of the Baltimore Washington Parkway, west of I-495. It is classified as a palustrine forested wetland with persistent vegetation and a saturated water regime (PFO1B). This seep wetland lies along a hillslope and abuts and drains to an intermittent stream (Stream 10F).

The wetland is hydrologically supported by a seasonally high groundwater table and surface water runoff from the surrounding uplands. Observed wetland hydrologic indicators included surface water ponding, a high water table, saturation, and water stained leaves.

Vegetation within the wetland is relatively sparse and is comprised of sweetgum (*Liquidambar styraciflua*), horsebrier, cinnamon fern (*Osmundastrum cinnamomeum*), and sensitive fern (*Onoclea*

sensiblis). Trees are rooted on the edge or just outside the wetland boundary but provide shading to the overall wetland.

Soils within the wetland were a silt loam over sandy loam texture and met the hydric soil criteria by exhibiting a depleted matrix (10YR6/1) throughout 12-inches of the soil profile. These loamy soils allow for infiltration of surface water, however the position of this wetland along an approximately 15% slope limits groundwater recharge potential since surface water drains to the stream downslope. The system provides more groundwater discharge than groundwater recharge potential, as water was observed seeping from the hillslope.

Using the methodology described above, two principal functions/values were identified, including groundwater recharge/discharge and sediment/toxicant retention. Groundwater was observed discharging along the hillslope within this wetland and seeping with light flow to the stream downslope. The wetland provides minor floodflow alteration, since surface water runoff is slowed within the wetland as it drains downslope toward the stream. Although vegetation within the wetland is not particularly dense, and long-term water retention does not occur due to its position along the slope, the wetland vegetation does still provide some sediment/toxicant retention and nutrient removal, since runoff from the adjacent roadways is likely a source of pollutants, sediments, and excess nutrients. Nutrients and organic material are exported from the wetland where it abuts the adjacent stream; therefore, the wetland is suitable to provide production export. The wetland occurs within forest parkland, but is located within a median, and therefore somewhat disconnected from adjacent wildlife habitat.

Since the water within the wetland was observed to be clear and predominantly groundwater, water quality within the wetland is relatively high. However, minor amounts of trash were observed, due to its proximity to the adjacent roadway.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of shallow standing water and leaf packs. During qualitative macroinvertebrate sampling in January 2021, no macroinvertebrates were observed.

Wetland 10GG

Wetland 10GG is a forested wetland delineated within the Baltimore Washington Parkway/Greenbelt Road interchange. It was classified as a palustrine forested wetland with persistent vegetation and a temporarily flooded water regime (PFO1A). This depression occurs downslope of an intermittent stream (Stream 10FF) within the interchange and extends to the toe-of-slope along the roadway.

The wetland is hydrologically supported by surface water runoff from the surrounding roadways, an intermittent stream that dissipates into the wetland, and a high groundwater table. Observed wetland hydrologic indicators included surface water ponding, a high water table, saturation, and water stained leaves. Secondary hydrologic indicators included drainage patterns and geomorphic position.

Vegetation within the wetland is comprised of red maple, sweetgum, tuliptree (*Liriodendron tulipifera*), horsebrier, and eastern poison ivy (*Toxicodendron radicans*).

Soils within the wetland were a sandy clay loam, sandy loam, and clay loam texture and met the hydric soil criteria by exhibiting a dark surface with redox (10YR3/1, 10YR3/2) within the upper 12-inches of the soil profile. These loamy soils allow for infiltration of surface water, thus providing groundwater recharge potential. However, the presence of tighter soils with more clay around 12 inches from the soil surface perches hydrology within the wetland and slows infiltration to some degree.

Using the methodology described above, two principal functions/values were identified, including floodflow alteration and sediment/toxicant retention. The wetland provides floodflow alteration because of its position in a flat, low lying depression within the median. Although the wetland is relatively small, surface water runoff and hydrology from the abutting stream is trapped within the wetland as it drains downslope. The excess runoff slowly infiltrates, evaporates, or respires through the wetland vegetation. The wetland also provides sediment/toxicant retention, as runoff from the adjacent roadways is a source of sediments and toxicants, which can be trapped by wetland vegetation and retained within standing water. The wetland vegetation also provides some nutrient removal, although the vegetative community is not particularly dense or diverse. The wetland occurs within forest parkland, but is located within a median and therefore disconnected from adjacent wildlife habitat.

Since the wetland does not contain an outlet, water that collects within the wetland remains until it infiltrates or evaporates/respires. Therefore, water quality is likely not high. Additionally, runoff containing sediments and toxicants from the roadways surrounding the wetland collects within the wetland. During field investigations, iron flocculent and trash was observed in areas with standing water.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to areas of shallow standing water and leaf packs. During qualitative macroinvertebrate sampling in January 2021, no macroinvertebrates were observed.

Stream 10F

Stream 10F is an unnamed tributary to Brier Ditch that abuts Wetland 10P. It is an intermittent stream that flows northwest to southeast within the median of Baltimore Washington Parkway.

The stream is within a small valley receiving hydrology from both groundwater and surface sources. Based on the habitat assessment using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover is mostly unstable at Stream 10F, with roughly 20 percent livable habitat available for fish and macroinvertebrates. Overall, the benthic macroinvertebrate habitat consists of a few small leaf packs, some woody debris, and shallow riffles comprised of gravel. For fish, no habitat is present, with only intermittent flows and one shallow pool, as well as step riprap causing a blockage. The substrate is comprised of mostly sand, gravel, and cobble and is embedded, with roughly 50 percent of stream particles surrounded by fine sediment. Shallow, slow-moving water is the dominant velocity/depth regime at Stream 10F, with some areas of fast-moving shallow water. Sediment deposition is moderate, with roughly 30 to 50 percent of the stream bottom changing frequently at Stream 10F. Water fills roughly 75 percent of the channel, with roughly 25 percent of the channel substrate exposed. Channelization is present, specifically where the stream flows into and out of two culverts under Baltimore Washington Parkway and riprap stabilization has been placed; however this channelization did not occur in the last 20 years. The riffle habitat at Stream 10F is relatively frequent, but poor overall, with only

shallow riffles present that are comprised of cobble. Both banks are moderately unstable with about 30 percent of the banks having areas of erosion and high erosion potential during floods. Roughly 50 to 70 percent of the surfaces of both streambanks are covered by native vegetation, although disruption is evident, and less than one-half of the potential plant stubble height is remaining. Stream 10F flows through narrow strips of early-mid successional forest and is 75 percent shaded. The riparian zone is over 18 meters on both banks, except for the right bank in the small downstream section that outlets from under the exit ramp, where the riparian zone is about 12 meters. Minimal human impacts are present in the riparian zones. Filamentous algae and iron floc were observed, and trash was present in the stream at the time of the survey. Stream 10F receives pollutants and runoff from adjacent roadways.

During a qualitative assessment of the aquatic community at Stream 10MM, no fish or benthic macroinvertebrates were observed.

Stream 10O

Stream 10O, a small ephemeral channel and tributary to Stream 10F and eventually Brier Ditch, is located entirely within the median of the Baltimore Washington Parkway and flows southwest.

The stream is within a small, shallow valley receiving hydrology from surface water sources. Although an assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols was not conducted, stream characteristics of Stream 10O were briefly evaluated. Stream 10O is a narrow channel that is roughly 2 to 3 feet wide and less than 1 foot deep. At the downstream section, the channel is subterranean for roughly 20 feet. Habitat for benthic macroinvertebrates is lacking and consists of some root mats and decaying leaf packs. Fish habitat is non-existent, as the stream has no flow and is comprised of mostly shallow, stagnant pools with no submerged vegetation and minimal woody debris. The substrate of Stream 10O is sand and silt with no cobble or gravel present, and there is some sediment deposition in pools. There is no evidence of channel alteration at Stream 10O and the stream has a normal, natural pattern. Both banks have little to no erosion, with minimal bare soil or evidence of bank failure. Stream 10O flows through a narrow corridor of early successional forest that shades roughly 80 percent of the channel. The riparian zone on each bank is roughly 12 to 18 meters wide and is minimally impacted by humans. There was no odor at Stream 10O at the time of the survey, but some iron floc was present. Minor amounts of trash were present in and around the channel. Located directly adjacent to the Baltimore Washington Parkway, Stream 10O likely receives runoff from the roadway.

During a qualitative assessment of the aquatic community at Stream 10O, no fish were observed, but riffle beetle larvae (Family Elmidae) were collected. Riffle beetles are moderately pollution-sensitive organisms.

Stream 10FF

Stream 10FF is an intermittent tributary that flows southeast and is located within the Baltimore Washington Parkway/Greenbelt Road interchange. The stream begins at a culvert and dissipates into Wetland 10GG.

The stream is within a low, wide valley receiving hydrology from ground and surface water sources. According to the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for high gradient streams, the lack of epifaunal substrate/available cover at Stream 10FF is apparent, with less than 20 percent available habitat. The existing macroinvertebrate habitat consists of

some leaf packs and woody debris, and no fish habitat is present. The substrate is mostly sand and mud with some gravel, and particles are more than 75 percent surrounded by fine sediment. Consisting of primarily shallow run with intermittent flow, the dominant velocity/depth regime is shallow, slow-moving water. There is little to no enlargement of islands or point bars at Stream 10FF and less than 5 percent of the stream bottom is affected by sediment deposition. For channel flow status, very little water is present, and the water that is present consists mostly of standing pools. Because Stream 10FF originates from a culvert, some channelization is present; however it did not occur in the last 20 years, and no other evidence of channelization was observed. No riffles are present at Stream 10FF. Both banks are stable, with minimal evidence of bank erosion or failure and little potential for future problems. Roughly 50 percent of each bank is protected by vegetation and has obvious disruption, with patches of bare soil or closely cropped vegetation present. Less than one half of the potential plant stubble height is remaining on each bank. The riparian zone on both banks is greater than 18 meters wide and is minimally impacted by humans. Stream 10FF is bordered by an early mid-successional forest that shades roughly 85 percent of the stream. No odor was present at the time of the survey and a small amount of trash was observed in or around the stream. Stream 10FF likely receives pollutants from roadway runoff due to its location, and filamentous algae and iron floc were observed.

During a qualitative assessment of the aquatic community at Stream 10FF, no fish or macroinvertebrates were collected.

Stream 10JJ

Stream 10JJ is an intermittent tributary to Brier Ditch that originates from a reinforced concrete pipe and runs parallel to the Baltimore Washington Parkway, flowing southwest to northeast.

The stream is within a small valley that receives hydrology from ground and surface water sources. The epifaunal substrate/available cover for fish and macroinvertebrates at Stream 10JJ is lacking, with less than 20 percent stable habitat and an obvious lack of substrate, based on the habitat assessment using EPA's Rapid Bioassessment Protocols for high gradient streams. Overall, the benthic macroinvertebrate habitat consists of riprap around the culvert and otherwise shallow riffle/run, while no livable habitat is present for fish due to a lack of pools, roots, and wood. The stream substrate consists of riprap, sand, silt, and gravel and is highly embedded with more than 75 percent of particles surrounded by fine sediment. Slow-shallow water is the only dominant velocity/depth regime at Stream 10JJ. Roughly 50 percent of the stream bottom is affected by sediment deposition, with some deposition of new gravel, sand, or fine sediment on old and new bars. There is very little flowing water at Stream 10JJ and the channel mostly consists of stagnant, standing pools and shallow riffles. Channelization is present at Stream 10JJ as the stream originates from a reinforced concrete pipe and has been straightened historically. Roughly 60 percent of the channel has been altered, and riprap is present on both banks as well as in the channel. Both banks of the stream are moderately stable, and roughly 30 percent of the reach has erosion. Roughly 50 percent of each bank's surfaces are covered by vegetation and disruption is apparent, with patches of bare soil or closely cropped vegetation common and less than one-half of the potential plant stubble height remaining. The riparian zone on the left bank is between 6 and 12 meters wide and has been greatly impacted by humans due to the stream's proximity to the Baltimore Washington Parkway. For the right bank, the riparian zone is greater than 18 meters wide and has not been impacted by humans. Stream 10JJ is bordered by an early mid-successional forest, shading roughly 55 percent of the stream.

Based on a qualitative assessment of the aquatic community at Stream 10JJ near the roadway culvert, no fish were observed, but one crane fly larva (Genus Tipula) was collected. Crane fly larvae are moderately pollution-sensitive organisms.

Stream 10KK

Stream 10KK is an intermittent stream that flows northeast to southwest into Stream 10MM and eventually to Brier Ditch. It is located to the south of Baltimore Washington Parkway and flows parallel to the roadway.

Stream 10KK is a shallow stream with intermittent flow, originating from a pipe that drains runoff from I-495. Based on the habitat assessment using EPA's Rapid Bioassessment Protocols for high gradient streams, less than 20 percent of the epifaunal substrate/available cover for fish and macroinvertebrates is stable, and lack of habitat is apparent. The benthic macroinvertebrate habitat is minimal and consists of mostly leaf packs, while no fish habitat is present. The substrate at Stream 10KK consists of only sand and gravel and is highly embedded, with more than 75 percent of stream particles surrounded by fine sediment. The dominant velocity/depth regime is shallow, slow-moving water, with very little flow and mostly standing pools at Stream 10KK. More than 50 percent of the stream bottom is changing frequently from heavy sediment deposits in the stream and on bars, and pools are absent due to substantial deposits of fine sediment. The channel of Stream 10KK is straight and has been channelized, with the stream flowing along the toe of slope of I-495. Riffle habitat is rated as poor because riffles are nonexistent at 10KK. The banks are moderately stable, and erosion is infrequent, with roughly 5 to 30 percent of each bank having areas of erosion. The vegetative protection on both banks is poor, with less than 50 percent vegetative cover on both banks. Disruption is very high, and vegetation has been removed to 5 centimeters or less in average stubble height. On the left bank, the riparian zone is over 18 meters wide, and human activities have made no impact. On the right bank, the riparian zone is roughly 6 to 12 meters wide due to the stream's proximity to I-495, and therefore human activities have impacted the riparian zone a great deal. Stream 10KK flows through a forested corridor comprised of mid-successional mixed deciduous vegetation, and roughly 70 percent of the stream is shaded. There was no odor at Stream 10KK at the time of the assessment, but iron floc was observed, and the water was cloudy.

During a qualitative assessment of the aquatic community at Stream 10KK, no fish were observed, but a predaceous diving beetle (Family Dytiscidae) larva was collected. Predaceous diving beetles are moderately pollution-sensitive organisms.

Stream 10MM

Stream 10MM, an intermittent stream and a tributary to Brier Ditch, begins north of Baltimore Washington Parkway and flows south through a culvert, turning southwest to parallel Baltimore Washington Parkway when it exits the culvert just south of the roadway.

The stream is within a narrow, incised valley receiving hydrology from both ground and surface water sources. Stream 10MM was assessed using EPA's Rapid Bioassessment Protocols for high gradient streams as well as the stream function-based rapid assessment. The epifaunal substrate/available cover is unstable at Stream 10MM, with less than 20 percent livable habitat available for fish and macroinvertebrates. Overall, the benthic macroinvertebrate habitat consists of a few small leaf packs, some roots, and shallow riffles comprised of sand and gravel. For fish, habitat is minimal, consisting of

some shallow pools with minimal roots that are lacking cover. The substrate is comprised of mostly sand and gravel with some cobble and is highly embedded, with more than 75 percent of stream particles surrounded by fine sediment. Shallow, slow-moving water is the only dominant velocity/depth regime at Stream 10MM, with very little flowing water present. More than 50 percent of the stream bottom is changing frequently from sediment deposition at Stream 10MM, and pools are almost absent due to substantial deposits of fine sediment. Channelization is present, specifically in the upstream section where the stream has been altered along an embankment before it flows into a culvert under I-495; however this channelization did not occur in the last 20 years. The riffle habitat at 10MM is poor, overall, with only a few riffles present that are comprised of sand and gravel. In the most downstream section of the stream reach, several head cuts are present, and banks are highly eroded. Above the head cuts, however, both banks are moderately stable, with five 5 to 30 percent of the banks having small areas of erosion that are mostly healed over. Roughly 70 to 90 percent of the surfaces of both streambanks are covered by native vegetation, although some disruption is evident. In the downstream section, Stream 10MM flows through a forested corridor of mid-successional mixed deciduous forest and is 85 percent shaded. In the upstream section, the stream is more exposed to sunlight with roughly 30 percent shading. The riparian zone is roughly 12 to 18 meters on both banks in the downstream section, with minimal impact by humans. In the upstream section, the left bank has a riparian zone that is less than 12 meters wide and has been impacted by humans due to maintenance from the roadway. There was no odor at Stream 10MM at the time of the assessment, but extensive iron floc was observed. Trash was also abundant within and around the channel, including large pieces of asphalt and concrete.

During a qualitative assessment of the aquatic community at Stream 10MM, no fish were observed, but aquatic worms (Subclass Oligochaeta), pouch snails (Family Physidae), and net-spinning caddisflies (Family Hydropsychidae) were collected. Aquatic worms and pouch snails are pollution-tolerant organisms, while net-spinning caddisflies are moderately pollution-sensitive.

Stream 10PP

Stream 10PP is an intermittent stream flowing from Wetland 10NN. The stream begins north of Baltimore Washington Parkway and flows south through a culvert, turning southwest to parallel the Baltimore Washington Parkway entrance ramp, eventually draining to Brier Ditch.

The stream is within a narrow valley receiving hydrology from ground and surface water sources. The epifaunal substrate/available cover for fish and macroinvertebrates at Stream 10PP is roughly 50 percent stable in the downstream section and roughly 20 percent stable in the upstream section, based on the habitat assessment using EPA's Rapid Bioassessment Protocols for high gradient streams. The benthic macroinvertebrate habitat consists of a few small leaf packs, some roots, and shallow riffles comprised of riprap, cobble, sand, and gravel. For fish, there are no pools or woody debris, although some root habitat is present. In the downstream section, the culvert that the stream flows from is perched and has created a blockage for fish, preventing them from traveling upstream. The substrate is highly embedded in the downstream section, with more than 50 percent of stream particles surrounded by fine sediment, and is less embedded in the upstream section, with less than 25 percent of stream particles surrounded by fine sediment. Shallow-fast and shallow-slow are the only 2 velocity/depth regimes present at Stream 10PP. Although there is minimal sediment deposition on the stream bottom, newly deposited sediment was observed along both banks in the downstream section. The channel is full at Stream 10PP, with water

reaching the base of both banks and little to no substrate exposed. Stream 10PP has been channelized, with riprap present along both banks and as substrate in the upstream section, as well as along the left bank in the downstream section. In both sections, the channel runs along the toe-of-slope of I-495 and has been straightened. Riffles are relatively frequent at Stream 10PP. For bank stability, both banks are stable and have minimal evidence of failure, with roughly 5 percent of bank surfaces affected by erosion. Roughly 50 percent of both banks are protected by bank vegetation, with apparent disruption, some of which is due to riprap placement. Patches of bare soil or closely cropped vegetation are common, and the vegetation that is present has been trimmed to less than one half of its potential height. The downstream section runs through a mid-successional forest corridor that shades roughly 70 percent of the stream, while the upstream section is more exposed due to its proximity to I-495 and is only 30 percent shaded. The left bank in the downstream section and the right bank in the upstream section both have riparian zones that are roughly 18 meters wide, with minimal human impact. The right bank in the downstream section has a riparian zone that is roughly 12 meters wide, while the left bank in the upstream section has a riparian zone that is roughly 6 meters wide, both of which have been greatly impacted by humans. Iron floc and trash were observed at Stream 10PP at the time of the assessment, and a petroleum odor was present when assessing the upstream section.

During a qualitative assessment of the aquatic community at Stream 10PP, no fish were observed, but pouch snails (Family Physidae) and damselfly larvae (Suborder Zygoptera) were collected. Pouch snails are pollution-tolerant organisms and damselfly larvae are moderately pollution-sensitive.

NATIONAL CAPITAL PARKS – EAST PARK UNIT- GREENBELT PARK

Wetland 10EE

Wetland 10EE is a forested wetland delineated in the median of the Baltimore Washington Parkway, west of I-495. It was classified as a palustrine forested wetland with persistent vegetation and a saturated water regime (PFO1B). This depression lies along the roadway toe-of-slope and drains to a culvert along Baltimore Washington Parkway.

The wetland is hydrologically supported by seasonally high groundwater and surface water runoff from the surrounding uplands. Observed wetland hydrologic indicators included surface water ponding, a high water table, saturation, sediment deposits, and water stained leaves.

Vegetation within the wetland is comprised of red maple, sweetgum, willow oak (*Quercus phellos*), horsebrier, an unknown grape species (*Vitis* sp.), Japanese honeysuckle, and eastern poison ivy.

Soils within the wetland were a silty or sandy clay loam texture over clay and met the hydric soil criteria by exhibiting a depleted matrix (10YR4/2) within the upper 6 inches of the soil profile. These tight clay soils slowly infiltrate surface water, thus not providing ideal groundwater recharge potential.

Using the methodology described above, two principal functions/values were identified, including floodflow alteration and sediment/toxicant retention. The wetland provides floodflow alteration due to its position in a flat, low lying depression along the roadside. Although the wetland is relatively small, some surface water runoff is trapped within the wetland as it drains downslope toward the culvert, which outfalls to wetlands and streams visible on aerial imagery north of Baltimore Washington Parkway. The

excess runoff slowly infiltrates, evaporates, or respires through the wetland vegetation. The wetland also provides sediment/toxicant retention, as runoff from the highway is a source of sediments and toxicants, which can be trapped and retained by wetland vegetation and standing water. The wetland vegetation also provides some nutrient removal, although the vegetative community is not particularly dense or diverse. The wetland occurs within forest parkland, but is located within a median, and therefore disconnected from adjacent wildlife habitat.

Since the wetland is located directly along the roadway and water appears to collect within the wetland and remain until it infiltrates or drains slowly to the culvert, water quality is likely not high. During field investigations, some sediment was observed in areas with standing water. Iron flocculent, algae, and abundant trash was also observed.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to areas of standing water and habitat features included leaf packs, woody debris, and root wads. During qualitative macroinvertebrate sampling in January 2021, the only macroinvertebrates observed were midges (Family Chironomidae), which are a pollution-tolerant group of organisms.

Stream 10A

Stream 10A, a small ephemeral channel and tributary to Brier Ditch, is located west of Baltimore Washington Parkway southbound and flows west into Greenbelt Park, just south of I-495.

The portion of the stream within the CSB at the culvert outfall is incised and receives hydrology from surface sources. Although an assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols was not conducted, because this is an ephemeral channel, stream characteristics of Stream 10A were briefly evaluated. Stream 10A originates at a culvert and a severe head cut occurs approximately 30 feet from the roadway. The habitat for benthic macroinvertebrates is very poor, with some woody debris, roots, sandy gravel, and little to no flow. Fish habitat is non-existent, as the stream has low flow and no pools. The substrate of Stream 10A consists of silt and sandy gravel with heavy sediment deposition present at the culvert. Channel alteration is present as upstream is culverted; however, this channelization did not occur in the last 20 years. Moderate erosion is present overall, with some exposed banks and roots. Stream 10A is at the edge of a mid-successional forest that shades roughly 75 percent of the channel. The riparian zone is 18 meters wide and is minimally impacted by humans. The water is cloudy with suspended sediments and abundant trash present. Located directly adjacent to the Baltimore Washington Parkway, Water10A likely receives runoff from the roadway.

During a qualitative assessment of the aquatic community at Stream 10A, no fish were observed, but pouch snails (Family Physidae) were collected. Pouch snails are pollution tolerant organisms.

Stream 10AAA

Stream 10AAA is an intermittent stream that flows into Wetland 10XX, which connects to a main unnamed tributary to Brier Ditch. Stream 10AAA flows west from under the Baltimore Washington Parkway southbound into Greenbelt Park, just south of I-495.

The portion of the stream, where it originates within the CSB and before it abuts Wetland 10XX, is a small, scoured out section that receives hydrology from surface sources. Based on the habitat assessment using EPA's Rapid Bioassessment Protocols for high gradient streams, the epifaunal substrate/available cover is lacking at Stream 10AAA, with less than 20 percent livable habitat available for fish and macroinvertebrates. The benthic macroinvertebrate habitat consists of some gravel and cobble. For fish, no habitat is available, as there are only intermittent flows. The stream originates at a 3-to-4-foot head cut at the end of a riprap channel. Substrate just downstream of the headcut is comprised of mostly clay, cobble, and gravel with about 25 percent embeddedness. Shallow, slow-moving water is the only dominant velocity/depth regime at Stream 10AAA. Between 5 to 30 percent of the stream bottom is impacted by sediment deposition and there is slight deposition in pools. Water fills roughly 50 percent of the available channel, with riffle substrates mostly exposed. Channelization is present through most of this section of the stream reach, with the stream flowing from a culvert and riprap placed for stabilization at the outlet, however this channelization did not occur in the last 20 years. Riffles at Stream 10AAA are relatively frequent, but poor quality overall, with only shallow riffles present that are comprised of gravel and cobble. Both banks are unstable where the stream originates, with obvious bank sloughing and severely eroded, raw areas. Downstream, banks are stable with minor erosion and the stream becomes more naturalized as it flows into Wetland 10XX. Roughly 50 to 70 percent of the surfaces of both streambanks are covered by native vegetation, although disruption is evident, and less than one-half of the potential plant stubble height is remaining. Stream 10AAA flows through a mid-successional mixed deciduous forest and is roughly 75 percent shaded. The riparian zone is over 18 meters wide on both banks, with minimal human impacts present. Trash is present, particularly at the head cut, and filamentous algae is present just downstream of the eroded headcut portion of stream within the CSB. Stream 10AAA receives pollutants and runoff from adjacent roadways.

During a qualitative assessment of the aquatic community at Stream 10AAA where it originates upstream of Wetland 10XX, no fish or benthic macroinvertebrates were observed.

NATIONAL CAPITAL PARKS – EAST PARK UNIT- SUITLAND PARKWAY

Wetland 3KKK

Wetland 3KKK is a scrub-shrub wetland delineated along the north side of Suitland Parkway, west of the I-495 overpass. It was classified as a palustrine scrub-shrub wetland with persistent vegetation and a saturated water regime (PSS1B). This shallow depression lies within the floodplain of Henson Creek (Stream 3L) and drains to Henson Creek via an abutting ephemeral channel (Stream 3LLL).

The wetland is hydrologically supported by surface water runoff from Suitland Parkway that is retained by slowly drained clayey soils. Observed wetland hydrologic indicators included surface water ponding and saturation perched over rock and clay. Secondary hydrologic indicators included geomorphic position and a positive FAC-Neutral test.

Vegetation within the wetland is comprised of deer-tongue rosette grass (*Dichanthelium clandestinum*), sweetgum, lamp rush, groundseltree (*Baccharis halimifolia*), and an unknown goldenrod (*Solidago* sp.).

Soils within the wetland were a sandy clay texture and met the hydric soil criteria by exhibiting a depleted matrix (10YR4/2) throughout the 10-inch soil profile. A confining rock layer occurs at a depth of

approximately 10 inches from the soil surface. These tight clay soils over rock slowly infiltrate surface water, thus not providing ideal groundwater recharge potential.

Using the methodology described above, production export was the only identified principal function/value provided by the wetland. The wetland provides production export value since wildlife food sources grow within the wetland, which are utilized and exported by wildlife. Additionally, organic plant material is exported to the adjacent perennial stream via an ephemeral channel. The wetland provides some floodflow alteration because of its depressional position within the terraced floodplain of Henson Creek. Surface water runoff is trapped and retained within the wetland as it drains from Suitland Parkway toward the adjacent stream, thus allowing the excess runoff to slowly infiltrate, evaporate, or respire through the emergent and shrub vegetation within the wetland. Surface water within the wetland provides some minor groundwater recharge potential, but this is limited by clay soils and a confining rock layer. The wetland also provides some sediment/toxicant retention and nutrient removal functions, as runoff from the adjacent roadways is likely a source of all three, and dense vegetation within the wetland provides trapping and utilization potential. Dense vegetation within this wetland also provides some stabilization of the adjacent stream bank against minor flood events. Due to its location within a forested stream corridor on parkland, this wetland also provides some suitability for wildlife habitat.

Since the wetland is located along the roadway embankment and receives hydrology from a pipe outfall that drains the roadway, water quality is likely not high. However, during field investigations, surface water observed within the wetland was relatively clear and minor amounts of trash were observed near, but not within, the wetland.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of shallow standing water. Emergent vegetation would be the primary substrate for such macroinvertebrates. No macroinvertebrates were observed during qualitative sampling in January 2021.

Wetland 3M

Wetland 3M is an emergent wetland delineated along both banks of perennial Stream 3L (Henson Creek), north of Suitland Parkway and east of I-495. It was classified as a palustrine emergent wetland with persistent vegetation and a saturated water regime (PEM1B). This wetland occurs within a low-lying bench in the floodplain of Henson Creek.

The wetland is hydrologically supported by out of bank flow from the adjacent stream and a seasonally high groundwater table. Observed wetland hydrologic indicators included surface water, saturation, a high groundwater table, and sediment deposits. Other primary hydrologic indicators included oxidized rhizospheres along living roots. Secondary hydrologic indicators included drainage patterns and a positive FAC-Neutral test.

Vegetation within the wetland includes invasive Japanese stilt grass, deer-tongue rosette grass, sweetgum, and an unknown aster species (*Symphyotrichum* sp.).

Soils within the wetland were a sandy loam and sandy clay loam texture and met the hydric soil criteria by exhibiting a depleted matrix (10YR4/1) from 5-12 inches within the soil profile. These sandy loam and clay loam soils contribute to a high level of infiltration of surface water and interaction with the groundwater table.

Using the methodology described above, two principal functions/values were identified, including floodflow alteration and sediment/shoreline stabilization. The wetland provides floodflow alteration because of its low-lying position within a floodplain bench along Henson Creek (Stream 3L), where it can detain excessive flood flows from the adjacent channel. Although the wetland is not large, some surface water runoff is trapped within the wetland as it drains downslope toward Henson Creek from Suitland parkway, thus allowing the excess runoff to infiltrate or respire through the emergent vegetation within the wetland. The wetland also provides some sediment/toxicant retention and nutrient removal functions, as there is potential for the presence of sediments, toxicants, and excess nutrients in the Streamhed above the wetland. However, vegetation within the wetland is not particularly diverse, and open water/long-duration water retention is not present within the wetland. Wetland 3M does contain some wildlife food sources and is located within a forested stream corridor. Therefore, it has some suitability to provide production export and wildlife habitat. The wetland provides sediment/shoreline stabilization along Henson Creek, as herbaceous plants and scattered shrub/saplings are providing stabilization of the stream bank against minor flood events.

During field investigations, only a small amount of surface water was observed. Some sediment and cloudiness were observed in areas with standing water; therefore, water quality is likely not high. Additionally, cloudy water and extensive iron flocculent were observed within the adjacent stream channel.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely very limited since minimal standing water was observed and the potential habitat, which consists of a few small leaf packs, is very poor and lacks structure. During qualitative macroinvertebrate sampling in December 2020, no macroinvertebrates were observed.

Wetland 3O

Wetland 3O is a forested wetland located north of Henson Creek and Suitland Parkway and east of I-495. It was classified as palustrine forested wetland with persistent vegetation and a seasonally flooded/saturated water regime (PFO1E). This wetland occurs within a broad depression and drains to Henson Creek (Stream 3L) through a narrow swale where it parallels I-495 and overlaps parkland.

The wetland is hydrologically supported by a seasonally high groundwater table and surface water from one ephemeral and one perennial channel that both dissipate into the wetland. Observed wetland hydrologic indicators within the swale portion of the wetland included surface water and drainage patterns.

Vegetation within the swale portion of Wetland 3O along the highway is relatively sparse and includes deer-tongue rosette grass, horsebrier, Japanese honeysuckle, and an unknown aster species.

Soils within the wetland were a sandy loam and sandy clay loam texture and met the hydric soil criteria by exhibiting a depleted matrix (2.5Y5/2) from 1-10 inches within the soil profile. These sandy loam and clay loam soils with gravel contribute to a relatively high level of infiltration of surface water. However, hydrology within the swale drains quickly to Henson Creek and therefore is not likely to infiltrate and provide groundwater recharge.

Using the methodology described above, four suitable functions/values were identified, including sediment/toxicant retention, nutrient removal, production export, and wildlife habitat. The wetland receives hydrology from roadway runoff draining from I-495, which is a source of toxicants, sediments, and excess nutrients. Although water moves relatively quickly through the wetland swale and vegetation is not particularly dense, herbaceous vegetation within the wetland swale and trees rooted along the edge can trap these sediments and utilize a portion of excess nutrients before they reach Henson Creek downslope. The wetland contains plant species that serve as wildlife food sources and is located within a forested stream corridor. Therefore, this wetland has suitability to provide production export and wildlife habitat.

During field investigations, shallow surface water was observed within the swale. Overall, the water appeared relatively clear, but trash was observed along the adjacent slope and within the overall wetland depression.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited. Potential habitat features consist of shallow standing water, gravel, and small leaf packs. During qualitative macroinvertebrate sampling in January 2021, one aquatic sowbug (Family Asellidae) was observed, which is a pollution-tolerant organism.

Wetland 3T

Wetland 3T is a forested wetland delineated north of Suitland Parkway and Henson Creek and west of the I-495 overpass. It was classified as a palustrine forested wetland with persistent vegetation and a temporarily flooded water regime (PEM1A). This micro depression/hillslope lies within the floodplain of the perennial headwaters of Henson Creek (Stream 3L and 3S). A small portion of Wetland 3T is located within parkland. This portion of the wetland shows evidence of prior disturbance in the vicinity of an existing sewer line manhole.

The wetland is hydrologically supported by overflows from the adjacent stream channels. Wetland hydrologic indicators were lacking within the small portion of wetland on parkland during the January 2021 field assessment. However, during the wetland delineation primary hydrologic indicators, including saturation and a high water table, were observed within the wetland. Secondary hydrologic indicators included the presence of crayfish burrows.

Vegetation within the wetland is comprised of deer-tongue rosette grass, Japanese honeysuckle, green ash, an unknown aster species, an unknown grass species, Japanese stilt grass, and Virginia wildrye (*Elymus virginicus*).

Soils within the wetland were a sandy clay loam and sandy clay texture and met the hydric soil criteria by exhibiting a depleted matrix (2.5Y5/2, 2.5Y4/2, and 2.5Y4/1) within 10 inches of the soil profile. A

confining rock/restrictive layer was observed within the wetland on parkland. These tight clay soils above the rock layer slowly infiltrate surface water, thus not providing ideal groundwater recharge potential.

Using the methodology described above, five suitable functions/values were identified, including: sediment/toxicant retention, nutrient removal, production export, sediment/shoreline stabilization, and wildlife habitat. The wetland provides sediment/toxicant retention and nutrient removal because of its position along the roadway toe-of-slope, between I-495 and two perennial streams. The presence of dense emergent vegetation and woody stems provide an opportunity to trap sediments and utilize excess nutrients present in surface water runoff. The wetland contains flowering and seed producing plants that could attract smaller and larger wildlife consumers and is located within a forested stream corridor. Therefore, this wetland has some suitability to provide production export and wildlife habitat.

Since no surface water was observed within the wetland, water quality was not assessed during the January 2021 field visit. Based on the geomorphic position of this wetland, absence of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Additionally, no macroinvertebrate habitat was observed within the wetland on parkland.

Wetland 3V

Wetland 3V is a forested wetland delineated along the north side of Suitland Parkway, west of the I-495 overpass. It was classified as a palustrine forested wetland with persistent vegetation and a seasonally flooded water regime (PFO1C). This swale wetland originates at a culvert along Suitland Parkway and drains north through the floodplain into Henson Creek (Stream 3L).

The wetland is hydrologically supported by surface water runoff from Suitland Parkway that is retained by slowly drained clayey soils. Observed wetland hydrologic indicators included surface water ponding and saturation perched over rock and clay. Water-stained leaves and drainage patterns are also present within the wetland.

Vegetation within the wetland is comprised of Japanese stilt grass, an unknown aster species, and sweet wood-reed. Tree and other woody species including sweetgum, red maple, black gum, eastern poison ivy, and Japanese honeysuckle are present within the majority of the wetland, but only within MDOT SHA right-of-way.

Soils within the wetland were a sandy clay texture and met the hydric soil criteria by exhibiting a depleted matrix (10YR4/1, 2.5Y4/2) throughout the profile. A confining rock layer occurs at a depth of approximately 20 inches from the soil surface. These tight clay soils over rock slowly infiltrate surface water, thus not providing ideal groundwater recharge potential.

Using the methodology described above, three principal functions/values, including sediment/toxicant retention, nutrient removal, and production export were identified. Due to the excess sediment, pollutants, and nutrients in the surface water runoff from the adjacent roadways, the wetland provides sediment/toxicant retention and nutrient removal functions, and dense vegetation within the wetland provides trapping and utilization potential. The wetland provides production export value since wildlife food sources grow within the wetland, which are utilized and exported by wildlife. Additionally, organic plant material is exported to the adjacent perennial stream where the swale abuts the stream. The wetland provides some floodflow alteration because of its depressional position within the terraced

floodplain of Henson Creek. Surface water runoff is trapped and retained within the wetland as it drains from Suitland Parkway toward the adjacent stream, thus allowing the excess runoff to slowly infiltrate, evaporate, or respire through the emergent and woody vegetation within the wetland. Dense vegetation within this wetland also provides some stabilization of the adjacent stream bank against minor flood events. Due to its location within a forested stream corridor on parkland, this wetland also provides some suitability for wildlife habitat.

Since the wetland is located along the roadway embankment and receives hydrology from a pipe outfall that drains the roadway, water quality is likely not high. During field investigations, surface water observed within the wetland was somewhat cloudy and minor amounts of trash were observed near, but not within, the wetland.

Based on the geomorphic position of this wetland, small amount of standing water observed during the assessment, and lack of habitat structure, this wetland likely does not support a diverse fauna of macroinvertebrates. Macroinvertebrate use of the wetland is likely limited to periods of shallow standing water and wetted leaves. No macroinvertebrates were observed during qualitative sampling in January 2021.

Stream 3L

Stream 3L is a perennial headwater of Henson Creek that flows east to west under I-495 and parallel to Suitland Parkway. Wetland 3M abuts both banks of Stream 3L east of I-495, and Wetlands 3V, 3T, and 3KKK are adjacent to the stream west of I-495.

The stream is located within a moderately wide valley receiving hydrology from both ground and surface water sources. According to the assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols for low gradient streams, the epifaunal substrate/available cover at Stream 3L is lacking, with less than 15 percent available habitat within the portion of stream in the CSB. Overall, the benthic macroinvertebrate habitat consists of some woody debris and some leaf packs. For fish, available habitat consists of some riffles in the upstream portion of the stream within the CSB and one shallow pool with roots and snags. Riffles are shallow and have little flow diversity, with substrate consisting mostly of gravel and sand with some cobble. Pools are mostly shallow with all mud substrate, no submerged vegetation, and little root mat habitat. However, some leaf packs and woody debris were noted. Roughly 50 percent of the bottom of the streambed is affected by sediment deposition, with slight deposition in pools in the section upstream of I-495 and moderate deposition in pools in the section downstream of I-495. Water filled 50 to 75 percent of the channel during the time of the survey, with 25 to 50 percent of the channel substrate exposed. Some evidence of channel alteration is present, specifically in the section downstream of I-495 where the stream bottom and banks have been stabilized with concrete more than 20 years ago. The channel of Stream 3L is relatively straight. Both banks are stable to moderately stable, with less than 30 percent of both banks showing signs of erosion, and with infrequent, small areas of erosion that are mostly healed over with vegetation. Roughly 70 percent of the streambank surfaces are covered by native vegetation, with roughly one half of the potential plant stubble height remaining due to evident disruption. Although the stream runs parallel to Suitland Parkway on the left bank, both banks have riparian zones of at least 18 meters in width, with minimal to no human activity impacting the riparian zones. Approximately 40 percent of the stream is shaded and is bordered by regenerating woody species, herbs, and young mixed-deciduous forest. There was also evidence of beaver activity. No odor

was present at the time of the survey and no trash was observed in or around the stream, but iron floc was abundant, and the water was cloudy in appearance.

During a qualitative assessment of the aquatic community at Stream 3L, no fish were observed, but aquatic worms (Subclass Oligochaeta), crayfish (Order Decapoda), and scuds (Order Amphipoda) were collected in the stream. Aquatic worms are considered a pollution-tolerant group of organisms, while crayfish and scuds are moderately pollution-sensitive.

Stream 3LLL

Stream 3LLL is a small ephemeral channel that receives drainage from abutting Wetland 3KKK and collects stormwater runoff from Suitland Parkway and I-495, ultimately flowing into Henson Creek. Stream 3LLL is located to the west of I-495 and flows south to north.

The stream is within a flat riparian area receiving hydrology from both ground and surface water sources. Although an assessment of fish and macroinvertebrate habitat using EPA's Rapid Bioassessment Protocols was not conducted, since this is an ephemeral channel, stream characteristics of Stream 3LLL were briefly evaluated. At roughly 1-foot wide and a few inches in depth, Stream 3LLL is lacking habitat for fish and benthic macroinvertebrates. Very little flowing water is present, with substrate consisting of clay and sand. For macroinvertebrates, the only available habitat is dead herbaceous vegetation that has fallen over from the banks and into the channel, as well as a few decaying leaves. With no pools, woody debris, or riffles, there is no fish habitat at Stream 3LLL. Although Stream 3LLL drains the roadway and the channel is straight with no bends, there are no signs of channelization present and the channel seems to have formed naturally. There is a highly eroding head cut at the confluence of Stream 3LLL and Henson Creek, indicating that stormwater runoff flows can be significant. Above the head cut, both banks are stable with little to no erosion or bare soils, with minimal evidence of bank failure. Both streambank surfaces are protected by vegetation, although plant diversity is lacking, and no trees are present. The riparian zone consists of herbaceous vegetative and regenerating woody species and is greater than 18 meters on both banks. There was no odor at Stream 3LLL at the time of the survey, but some iron floc was present. Trash was also present within the channel.

During a qualitative assessment of the aquatic community at Stream 3LLL, no fish or macroinvertebrates were collected.

Stream 3S

Stream 3S is a perennial headwater of Henson Creek located to the west of I-495, flowing northeast to southwest and running parallel to I-495.

The stream is within a moderately wide valley receiving hydrology from both ground and surface water sources. The small portion of Stream 3S located on parkland at the confluence with Stream 3SS within the CSB has been channelized into a 2-foot trapezoidal wetted concrete channel, with no natural habitat features available for fish and macroinvertebrates. Based on the habitat assessment using EPA's Rapid Bioassessment Protocols for low gradient streams, the epifaunal substrate/available cover is unstable and lacking, with less than 10 percent livable habitat at Stream 3S. Although there are no pools present in this portion of Water 3S on NPS property within the CSB, shallow pools are present immediately upstream where the stream is not concrete-lined. Substrate in pools consists of a mixture of materials including gravel and firm sand, and root mats are common. There is moderate sediment deposition at Stream 3S,

with 50 to 80 percent of the stream bottom affected by deposits of new gravel, sand, or fine sediment. Sediment deposits are also present on old and new bars within the stream and along the banks. At roughly 1 to 2 inches deep, the channel is full of fast-moving water, with minimal substrate exposed. Overall, the stream is straight with no bends due to channelization. The concrete channel has greatly altered the natural conditions of Stream 3S by removing instream habitat as well as altering both banks. Because the banks are concrete, they are stabilized and have little potential for future erosional problems, showing no evidence of existing erosion or bank failure. However, the edge of the concrete as its downstream end appears to be deteriorating along the bottom of the stream. Roughly 50 to 70 percent of the surfaces of both banks are covered by vegetation and disruption is apparent, with less than one-half of the potential plant stubble height remaining. Roughly 30 percent of the stream is shaded, and the vegetation that is present consists of regenerating woody species as well as many invasive species. On the left bank, the riparian zone is roughly 6 to 12 meters wide and has been significantly impacted by humans. On the right bank, the riparian zone is 12 to 18 meters wide and human impact has been minimal. There was no odor present at Stream 3S at the time of the survey, but extensive iron floc was observed. Trash was also abundant within and around the channel.

During a qualitative assessment of the aquatic community at Stream 3S, no fish were observed. The only macroinvertebrates observed were midges (Family Chironomidae), which are a pollution-tolerant group of organisms.

DRS, MN, LN
1/11/21

Wetland Function-Value Evaluation Form

Total area of wetland >0.60 Ac Human made? Yes Is wetland part of a wildlife corridor? Yes or a "habitat island"? _____

Adjacent land use forest, tow path Distance to nearest roadway or other development 0-150 Ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? several * Wildlife & vegetation diversity/abundance (see attached list)

* outside study area

Wetland I.D. 22W - C+O canal

Latitude 38.972411 Longitude -77.178513

Prepared by: MMS Date 10/31/15

Wetland Impact: Type PEM Area >0.60Ac

Evaluation based on: Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2, 7, 15, 8, 13		
Floodflow Alteration	✓		3, 4, 5, 6, 7, 8, 9, 10, 13, 15	✓	
Fish and Shellfish Habitat		✓	4, 7		
Sediment/Toxicant Retention	✓		1, 2, 3, 4, 5, 8,		
Nutrient Removal	✓		3, 4, 5, 6, 7, 8, 9, 10, 11		
Production Export	✓		1, 2, 4, 7, 5, 8, 9, 12, 14		
Sediment/Shoreline Stabilization		✓	3, 15		
Wildlife Habitat	✓	✓	3, 4, 5, 6, 7, 8, 9, 13, 14, 19, 20, 21,	✓	
Recreation	✓		1, 4, 6, 9, 12		
Educational/Scientific Value		✓	5		
Uniqueness/Heritage	✓		12, 13, 16, 17, 19, 21, 22, 23, 25	✓	C+O canal
Visual Quality/Aesthetics		✓	2, 3, 5, 7, 8, 9, 12		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

DKS, MN, LN 1/11/21

Wetland Function-Value Evaluation Form

Total area of wetland 0.05Ac Human made?_____ Is wetland part of a wildlife corridor? Yes or a "habitat island"?_____

Adjacent land use Forest + Bedrock Distance to nearest roadway or other development 140 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Middle

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 22LL

Latitude 38.970275 Longitude -77.178429

Prepared by: MRN Date 10/31/18

Wetland Impact:
Type PFO Area 0.05Ac

Evaluation based on:
Office_____ Field ✓

Corps manual wetland delineation completed? Y ✓ N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	2, 6, 15		wetland is small, perched pool of water on bedrock island
Floodflow Alteration		✓	3, 5, 6, 8,		
Fish and Shellfish Habitat		✓	1,		
Sediment/Toxicant Retention		✓	3, 4,		
Nutrient Removal		✓	3, 5, 7,		
Production Export		✓	1, 2,		
Sediment/Shoreline Stabilization		✓	5,		
Wildlife Habitat	✓		1, 3, 4, 5, 7, 8, 10, 18	✓	minor function as open water pool on bedrock island during portions of the year; Potential Vernal Pool habitat.
Recreation		✓	1, 5, 7,		
Educational/Scientific Value	✓	✗	2, 4, 5, 6, 11, 13, 16	✓	National Park property. Wetland on Plummers I.S. that has been studied by Washington Biological Field Club 2 100 yrs.
Uniqueness/Heritage	✓	✗	10, 11, 12, 16, 17, 19, 22, 25,	✓	
Visual Quality/Aesthetics		✓	2, 5, 6, 7, 8,		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

DRS, MN, LN 1/11/21

Wetland Function-Value Evaluation Form

Total area of wetland >0.5Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"?

Adjacent land use forest Distance to nearest roadway or other development 50 ft

Dominant wetland systems present PEM/PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 22 00

Latitude 38.971083 Longitude -77.150072

Prepared by: MRS Date 10/31/18

Wetland Impact:
Type PFO Area >0.5 Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	13		
Floodflow Alteration		✓	5,6,9,18		
Fish and Shellfish Habitat		✓	1		
Sediment/Toxicant Retention		✓	4,5,9,		
Nutrient Removal	✓		1,3,5,7,8,9,12,11	✓	Dense vegetation, but watershed is primarily small and forested → low sediment load
Production Export	✓		1,2,4,5,7,8,12, M	✓	
Sediment/Shoreline Stabilization		✓	2,3,		
Wildlife Habitat	✓		3,4,8,13,15,M,21,	✓	
Recreation		✓	1,5,12		
Educational/Scientific Value		✓	5,6,		
Uniqueness/Heritage		✓	16,17,19		
Visual Quality/Aesthetics		✓	4,5,8.		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

DRS, MN, LW 1/11/21

Wetland Function-Value Evaluation Form

Total area of wetland 0.01 Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? _____

Adjacent land use Forest, roadway Distance to nearest roadway or other development 50 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 22PP

Latitude 38.9719 Longitude -77.179505

Prepared by: MRS Date 10/31/18

Wetland Impact:
Type PFO Area 0.01 Ac

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		0, 4, 5, 13, 15	✓	Water seeping out of side; no spring may receive GW seepage from highway embankment
Floodflow Alteration		✓	2, 3, 7, 9,		very limited drainage area
Fish and Shellfish Habitat		✓	1		
Sediment/Toxicant Retention		✓	–		
Nutrient Removal		✓	–		
Production Export	✓	✓	1, 4, 5, 10, 12, 13	✓	Deer use area, flowering shrubs attract pollinators
Sediment/Shoreline Stabilization		✓	2, 5,		
Wildlife Habitat		✓	3, 5, 7, 8, 17		Deer tracks/feces
Recreation		✓	1, 4,		
Educational/Scientific Value		✓	10,		
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland ~0.15ac Human made? N Is wetland part of a wildlife corridor? yes or a "habitat island"?

Adjacent land use Forest Distance to nearest roadway or other development ~15'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? yes. If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 22CCC

Latitude 38.972134 Longitude -77.176950

Prepared by: HN, DKS Date 1/11/21

Wetland Impact:
Type PFO Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	2, 6, 15		Perched hydrology
Floodflow Alteration	✓		2, 3, 5, 6, 9, 18		Isolated system
Fish and Shellfish Habitat		✓	1		
Sediment/Toxicant Retention			3, 4, 7, 9		
Nutrient Removal			3, 5, 7, 8, 9, 10, 11		not likely to be an abundance of excess nutrients in runoff
Production Export	✓		1, 2, 4, 5, 7, 8, 13	✓	Evidence of deer within wetland
Sediment/Shoreline Stabilization		✓	2, 5		
Wildlife Habitat	✓		1, 3, 4, 5, 7, 8, 9, 13, 15, 17	✓	Evidence of wildlife, feces - tracks
Recreation		✓	1, 4, 5, 12		
Educational/Scientific Value		✓	2, 4, 5, 6, 10, 13		
Uniqueness/Heritage	✓		10, 16, 17, 19, 28	✓	Part of Potomac Gorge, along C&O Canal towpath
Visual Quality/Aesthetics		✓	2, 5, 6, 7, 8, 9		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

EXISTING and PROPOSED REACH LEVEL STREAM FUNCTION-BASED RAPID ASSESSMENT FIELD DATA SHEET

Watershed: Potomac River/Rock Run
Stream: 22MM (Trib)
Reach Length:
Photo(s):
Reach ID:

Rater(s): LT/AB/AN
Date: December 3, 2020
Latitude: 38.970705
Longitude: -77.178789

Reach Score/Reach Total Ex. ___/170 Prop.: ___/170 Quality: Ex: ___ Prop:____

Function-based Rapid Reach Level Stream Assessment

Assessment Parameter	Measurement Method	Category: Functioning	Functioning-at-Risk	Not Functioning
Runoff	**Stream Function Pyramid Level 1 Hydrology**			
	1. Concentrated Flow	No potential for concentrated flow/impairments from adjacent land use	Some potential for concentrated flow/impairments to reach restoration site, however, measures are in place to protect resources	Potential for concentrated flow/impairments to reach restoration site and no treatments are in place
	Existing Condition	10 9 8	7 6 5 4	(3) 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	2. Flashiness	Non-flashy flow regime as a result of rainfall patterns, geology, and soils, impervious cover less than 6%	Semi-flashy flow regime as a result of rainfall patterns, geology, and soils, impervious cover 7 - 15%	Flashy flow regime as a result of rainfall patterns, geology, and soils, impervious cover greater than 15%
	Existing Condition	10 9 8	(7) 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	Stream Function Pyramid Level 1 Hydrology Overall EXISTING Condition	**F (FAR) NF**	**Score: 10**	
	Stream Function Pyramid Level 1 Hydrology Overall PROPOSED Condition	**F FAR NF**	**Score:**	
Floodplain Connectivity (Vertical Stability)	**Stream Function Pyramid Level 2 Hydraulics**			
	3. Bank Height Ratio (BHR)	<1.20	1.21 - 1.50	>1.50
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	4a. Entrenchment (Meandering streams in alluvial valleys or Rosgen C, E, DA Streams)	>2.2	2.1 - 1.4	<1.4
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	4b. Entrenchment (Non meandering streams in colluvial valleys or Rosgen B Streams)	>1.4	1.3 - 1.1	<1.1
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	5. Floodplain Drainage	no concentrated flow; runoff is primarily sheet flow; hillslopes < 10%; hillslopes >200 ft from stream; ponding or wetland areas and litter or debris jams are well represented	runoff is equally sheet and concentrated flow (minor gully and rill erosion occurring); hillslopes 10 - 40%; hillslopes 50 - 200 ft from stream; ponding or wetland areas and litter or debris jams are minimally represented	concentrated flows present (extensive gully and rill erosion); hillslopes >40%; hillslopes <50 ft from stream; ponding or wetland areas and litter or debris jams are not well represented or absent
	Existing Condition	10 9 8	7 6 (5) 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	6. Vertical Stability Extent	Stable	Localized Instability	Widespread Instability
	Existing Condition	10 (9) 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	Stream Function Pyramid Level 2 Hydraulics Overall EXISTING Condition	**F (FAR) NF**	**Score: 14**	
	Stream Function Pyramid Level 2 Hydraulics Overall PROPOSED Condition	**F FAR NF**	**Score:**	

Reach ID:		Reach Score/Reach Total Ex. ___/170 Prop.: ___/170	Quality: Ex: ___ Prop:____

Function-based Rapid Reach Level Stream Assessment

Assessment Parameter	Measurement Method	Category: Functioning	Functioning-at-Risk	Not Functioning
Stream Function Pyramid Level 3 Geomorphology				
Riparian Vegetation (Score = Average of Left and Right bank, max score of 10)	7. Riparian Vegetation Zone (EPA, 1999, modified)	Riparian zone extends to a width of >100 feet; good vegetation community diversity and density; human activities do not impact zone; invasive species not present or sparse	Riparian zone extends to a width of 25-100 feet; species composition is dominated by 2 or 3 species; human activities greatly impact zone; invasive species well represented and alter the community	Riparian zone extends to a width of <25 feet; little or no riparian vegetation due to human activities; majority of vegetation is invasive
	Left Bank Existing	10 9 8	7 6 5 **(4)**	3 2 1
	Left Bank Proposed	10 9 8	7 6 5 4	3 2 1
	Right Bank Existing	10 9 8	7 **(6)** 5 4	3 2 1
	Right Bank Proposed	10 9 8	7 6 5 4	3 2 1
Lateral Stability (Score =Average of Left and right bank, max score of 10)	8. Dominant Bank Erosion Rate Potential	Dominate bank erosion rate potential is low or BEHI/NBS Rating: L/VL, L/L, L/M, L/H, L/VH, M/VL	Dominate bank erosion rate potential is moderate or BEHI/NBS Rating: M/L, M/M, M/H, L/Ex, H/L, M/VH, M/Ex, H/L, H/M, VH/VL, Ex/VL	Dominate bank erosion rate potential is high or BEHI/NBS Rating: H/H, H/Ex, VH/H, Ex/M, Ex/H, Ex/VH, VH/VH, Ex/Ex
	Existing Condition (Right bank)	10 9 **(8)**	7 6 5 4	3 2 1
	Proposed Condition (Right Bank)	10 9 8	7 6 5 4	3 2 1
	Existing Condition (Left bank)	10 9 **(8)**	7 6 5 4	3 2 1
	Proposed Condition (Left Bank)	10 9 8	7 6 5 4	3 2 1
	9. Lateral Stability Extent	Stable	Localized Instability	Widespread Instability
	Existing Condition	10 9 8	7 **(6)** 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
Bedform Diversity (Do not complete if stream is ephemeral)	10. Shelter for Fish and Macroinvertebrates (EPA 1999)	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, rubble, gravel, cobble and large rocks, or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient)	20-70% mix of stable habitat; suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale)	Less than 20% mix of stable habitat; lack of habitat availability less than desirables obvious; substrate unstable or lacking
	Existing Condition	10 9 8	7 6 **(5)** 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	11a. Pool-to-Pool Spacing Ratio (Watersheds < 10 mi^2)	4.0 - 5.0	3.0 - 4.0 ***or*** 5.0 - 7.0	< 3.0 ***or*** >7.0
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	11b. Pool-to-Pool Spacing Ratio (Watersheds > 10 mi^2)	5.0 - 7.0	3.5 - 5.0 ***or*** 7.0 - 8.0	<3.5 ***or*** >8.0
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	12a. Pool Max Depth Ratio/Depth Variability (Gravel Bed Streams)	>1.5	1.2 - 1.5	<1.2
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1
	12b. Pool Max Depth Ratio/Depth Variability (Sand Bed Streams)	>1.2	1.1 - 1.2	<1.1
	Existing Condition	10 9 8	7 6 5 4	3 2 1
	Proposed Condition	10 9 8	7 6 5 4	3 2 1

Reach ID:		Reach Score/Reach Total Ex. ___/170 Prop.: ___/170	Quality: Ex: ___ Prop:___

Function-based Rapid Reach Level Stream Assessment

Assessment Parameter	Measurement Method	Category: Functioning	Functioning-at-Risk	Not Functioning

Bedform Diversity (Do not complete if stream is ephemeral)

Moderate Gradient Perennial Streams in Colluvial Valleys

Measurement Method	Functioning			Functioning-at-Risk				Not Functioning		
11. Pool-to-Pool Spacing Ratio (3-5% Slope)	2.0 - 4.0			4.0 - 6.0				>6.0		
Existing Condition	10	9	8	7	6	5	4	3	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1
12. Pool Max Depth Ratio/Depth Variability	>1.5			1.2 - 1.5				<1.2		
Existing Condition	10	9	8	7	6	5	4	3	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1

Stream Function Pyramid Level 3 Geomorphology Overall EXISTING Condition F (FAR) NF **Score:** 42

Stream Function Pyramid Level 3 Geomorphology Overall PROPOSED Condition F FAR NF **Score:**

Stream Function Pyramid Level 4 Physicochemical

Water Quality and Nutrients (Do not complete if stream is ephemeral)

Measurement Method	Functioning			Functioning-at-Risk				Not Functioning		
13. Water Appearance and Nutrient Enrichment (USDA 1999)	Very clear, or clear but tea-colored; objects visible at depth 3 to 6 ft (less if slightly colored); no oil sheen on surface; no noticeable film on submerged objects or rocks. Clear water along entire reach; diverse aquatic plant community includes low quantities of many species of macrophytes; little algal growth present			Frequent cloudiness especially after storm events; objects visible to depth 0.5 to 3.0 ft; may have slight green color; no oil sheen on water surface. Fairly clear or slightly greenish water along entire reach; moderate algal growth on stream substrate				Very turbid or muddy appearance most of the time; objects visible at depth< 0.5 ft; slow moving water maybe bright green; other obvious water pollutants; floating algal mats, surface scum, sheen or heavy coat of foam on surface; or strong odor of chemicals, oil, sewage, or other pollutants. Pea-green, gray, or brown water along entire reach; dense stands of macrophytes clogging stream; severe algal blooms creating thick algal mats in stream		
Existing Condition	10	9	8	7	6	5	(4)	3	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1
14. Detritus (Petersen, 1992)	Mainly consisting of leaves and wood without sediment covering it			Leaves and wood scarce; fine organic debris without sediment				Fine organic sediment - black in color and foul odor (anaerobic) or detritus absent		
Existing Condition	10	9	8	7	6	5	(4)	3	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1

Stream Function Pyramid Level 4 Physicochemical Overall EXISTING Condition F FAR NF **Score:**

Stream Function Pyramid Level 4 Physicochemical Overall PROPOSED Condition F FAR NF **Score:**

Stream Function Pyramid Level 5 Biology

Biology (Do not complete if stream is ephemeral)

Measurement Method	Functioning			Functioning-at-Risk				Not Functioning		
15. Macroinvertebrate	Abundant			Rare				Not present		
Existing Condition	10	9	8	7	6	5	4	(3)	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1
16. Macroinvertebrate Tolerance	Abundant intolerant species			Limited intolerant species				Only tolerant species		
Existing Condition	10	9	8	7	6	5	4	(3)	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1
17. Fish Presence	Abundant			Rare				Not present		
Existing Condition	10	9	8	7	6	5	4	(3)	2	1
Proposed Condition	10	9	8	7	6	5	4	3	2	1
If existing biology is FAR or NF, provide description of cause(s)	Too large to assess. No pools/riffles. No root mats or woody debris. Scarce vegetation.									

Stream Function Pyramid Level 5 Biology Overall EXISTING Condition F FAR NF **Score:**

Stream Function Pyramid Level 5 Biology Overall PROPOSED Condition F FAR NF **Score:**

Reach ID:		Reach Score/Reach Total Ex. ___/170 Prop.: ___/170	Quality: Ex: ___ Prop:____

Function-based Rapid Reach Level Stream Assessment

Assessment Parameter	Measurement Method	Category		
		Functioning	Functioning-at-Risk	Not Functioning

Bankfull Determination and Rosgen Stream Classification

Rosgen Stream Type (Observation)	B2				
Regional Curve (circle one):	Piedmont	Coastal Plain	Allegheny Plateau/Ridge and Valley	Urban	Karst
DA (sqmi)					
BF Width (ft)			BF Area (sqft)		
BF Depth (ft)			Percent Impervious (%)		

Field Measurements

Parameter	Measurements and Ratios			
Water surface to geomorphic feature elevation difference				
Riffle Mean Depth at Bankfull Stage (dbkf)				
Riffle Width at Bankfull Stage (Wbkf)				
Riffle XS Area at Bankfull Stage (Abkf = dbkf*Wbkf)				
Floodprone Area Width (Wfpa) (Wfpa=Width at elevation determined by 2xDmax)				
Entrenchment Ratio (ER) (ER=Wfpa/Wbkf)				
Low Bank Height (LBH)				
Riffle Maximum Depth at Bankfull Stage (Dmax)				
Bank Height Ratio (BHR) (BHR=LBH/Dmax)				
BEHI/NBS Ratings and Lengths				
Pool to Pool Spacing (P-P)				
Pool to Pool Spacing Ratio (P-P Ratio) (P-P Ratio=P-P/Wbkf)				
Pool Maximum Depth at Bankfull Stage (Dmbkfp)				
Pool Depth Ratio (Dmbkfp Ratio) (Dmbkfp Ratio=Dmbkfp/dbkf)				
Macroinvertebrate Taxa Observed				

1/19/21 NPS Func. Assessment
MN, LE, KS

Wetland Function-Value Evaluation Form

Total area of wetland <1Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Forest Distance to nearest roadway or other development ~50'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 10P

Latitude 38.990027 Longitude -76.888065

Prepared by: MRS Date 5/29/18

Wetland Impact:
Type PFO Area <0.1Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,4,5,7,10,13,15,14	✓	Water observed seeping from hillslope
Floodflow Alteration	✓	✓	2,3,4,5,7,13		
Fish and Shellfish Habitat		✓	1,15		
Sediment/Toxicant Retention	✓	✓	1,2,3,4,9,10,13,14	✓	Directly downslope from roadway
Nutrient Removal	✓	✓	3,4,5,7,10,12,14		vegetation sparse and no long duration water retention
Production Export	✓		1,2,10,11,13		
Sediment/Shoreline Stabilization		✓	2,3,4,5		
Wildlife Habitat		✓	3,6,7,8		
Recreation		✓	1		
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓	17		
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

1/19/24 NPS Functions Assessment

MM, LE, KS

Wetland Function-Value Evaluation Form

Total area of wetland 0.1A Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Roadway Distance to nearest roadway or other development 20'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. LOGG

Latitude 38.99476 Longitude -76.87709

Prepared by: SH Date 11/16/18

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes	4, 5, 7, 8, 9, 15		
Floodflow Alteration	Yes	2, 3, 4, 5, 6, 7, 8, 9, 10, 13	✓	Wetland can retain hydrology from intermittent channel upslope + overland sheet flow
Fish and Shellfish Habitat	No	1, 17		
Sediment/Toxicant Retention	Yes	1, 2, 5, 7, 9, 10, 11, 13, 15	✓	Sed/tox in roadway runoff, veg + standing water present to trap + retain
Nutrient Removal	Yes	3, 4, 5, 10, 13		potential for some nutrient attenuation - veg not particularly diverse - wetland remains saturated + ponded water present
Production Export	No	1, 2		No real signs of export.
Sediment/Shoreline Stabilization	No	3, 4, 14		
Wildlife Habitat	No	7, 8, 11		Within NPS property but disconnected from adj forested hab. due to presence within interchange.
Recreation	No	1		
Educational/Scientific Value	No			
Uniqueness/Heritage	No	1, 5		
Visual Quality/Aesthetics	No			
ES Endangered Species Habitat	No			
Other				

Notes:

* Refer to backup list of numbered considerations.

1/19/24 NPS Functional Assessment
MM LE, ICS

Wetland Function-Value Evaluation Form

Total area of wetland 0.1 Ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Roadway Distance to nearest roadway or other development 30'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Middle

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 10FE

Latitude 38.98665 Longitude -76.89141

Prepared by: SH Date 11/16/18

Wetland Impact: Type N/A Area N/A

Evaluation based on: Office ✓ Field ✓

Corps manual wetland delineation completed? Y ___ N ___

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes	2,4,5,15		
Floodflow Alteration	Yes	2,3,4,5,6,7,9,15	✓	Holds standing water
Fish and Shellfish Habitat	No	1		
Sediment/Toxicant Retention	Yes	1,2,3,5,7,9	✓	Observed suspended sediments in standing water
Nutrient Removal	Yes	2,3,4,5,10		Ponded water
Production Export	No	1,2,11,13		
Sediment/Shoreline Stabilization	No	3		
Wildlife Habitat	No	3,7,8,11		
Recreation	No	1		
Educational/Scientific Value	No			
Uniqueness/Heritage	No	17		
Visual Quality/Aesthetics	No			
ES Endangered Species Habitat	No			
Other				

Notes:

* Refer to backup list of numbered considerations.

MN, LE, SS – 1/13/21

Wetland Function-Value Evaluation Form

Total area of wetland 0.08ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Forest + roadway Distance to nearest roadway or other development ~50'

Dominant wetland systems present PSS Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 3KKK

Latitude 38.831043 Longitude -76.874216

Prepared by: MN, SL, SK Date 5/17/2018

Wetland Impact:
Type _____ Area _____

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓	✓	2,4,6,13,15	N	
Floodflow Alteration	✓		4,5,6,7,9,13,18	N	
Fish and Shellfish Habitat		✓		N	Not associated w/ intermittent or perennial watercourse.
Sediment/Toxicant Retention	✓		1,2,3,7	N	Not associated w/ intermittent or perennial watercourse
Nutrient Removal	✓	✓	3,4,8,9,10,11	N	Not associated w/ intermittent or perennial watercourse
Production Export	✓		1,2,4,5,7,10,11,13,	Y	
Sediment/Shoreline Stabilization	✓		1,3,9,13,14,15	N	
Wildlife Habitat	✓		3,6,7,8,12,13,17,18,21	N	
Recreation		✓	1,2,4	N	
Educational/Scientific Value		✓	11	N	
Uniqueness/Heritage		✓	1,5,7,13,19,22,14,17	N	Although this wetland has numerous qualities, it is not a unique wetland for this region.
Visual Quality/Aesthetics		✓	2.	N	
ES Endangered Species Habitat		✓		N	
Other					

Notes: Wetland situated on both sides of 3LL. Also abuts 3V and adjacent to 3L.

*Refer to backup list of numbered considerations.

MN, SS, LE 1/13/21

Wetland Function-Value Evaluation Form

Total area of wetland 0.02 ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest Distance to nearest roadway or other development ~100'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 1* Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 3M

Latitude 38.830782 Longitude -76.872558

Prepared by: HT, EM Date 4/9/18

Wetland Impact:
Type _____ Area _____

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	2,4,5,7,15	N	
Floodflow Alteration	✓		4,5,6,7,8,9,10,11,13,18	Y	
Fish and Shellfish Habitat		✓	1,4,8,14,15,16,17	N	may only provide fish habitat during flood stage or wet season. Only area with standing water is downstream of wetland.
Sediment/Toxicant Retention	✓		1,2,9,10,13,16	N	
Nutrient Removal	✓		3,4,8,9,10	N	
Production Export	✓		1,2,4,5,7,10,13	N	
Sediment/Shoreline Stabilization	✓		1,3,4,6,9,12,13,15	Y	
Wildlife Habitat	✓		3,5,6,7,8,13,18,21,	N	
Recreation		✓	1,2,4	N	
Educational/Scientific Value		✓	11	N	
Uniqueness/Heritage		✓	1,5,7,13,14,17,19,22	N	Although this wetland has numerous qualities, it is not a unique wetland for this region.
Visual Quality/Aesthetics		✓	2	N	
ES Endangered Species Habitat		✓		N	
Other					

Notes: Wetland bench abutting perennial stream; receives hydrology from stream

* Refer to backup list of numbered considerations.

MN, LE, SS 1/13/21

Wetland Function-Value Evaluation Form

Total area of wetland 1.9ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use forest Distance to nearest roadway or other development ~100'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 30

Latitude 38.83107 Longitude -76.87200

Prepared by: TTEM Date 4/9/18

Wetland Impact:
Type ____ Area ____

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	2,5,7, ~~8,9~~	N	~~Floodplain wetland begins at terminus of perennial stream~~ Wetland swale w/in impacted area. No evidence of GW R/D.
Floodflow Alteration		✓	~~1~~, 4, 5, ~~8~~, 13, ~~14~~, ~~16~~, ~~18~~	N	~~Wetland begins at terminus of perennial channel~~ Wetland swale w/in impacted area not providing Floodflow alteration, but upslope wetland is.
Fish and Shellfish Habitat		✓	~~3~~, 4, 8, ~~9~~, ~~16~~	N	~~Watercourse is dammed upstream of wetland, rip-rap prevalent, no mucky habitat within water course~~ Not provided w/in impacted area.
Sediment/Toxicant Retention	✓		1, 2, ~~3~~, ~~7~~, ~~9~~, 10, 11, ~~12~~, 14, 15, 16	~~N~~	~~Retention Evidence pond and dammed stream upstream of wetland, excessive amount of iron floc present~~ Not a principal function w/in impact area
Nutrient Removal	✓		~~5~~, ~~8~~ 4, 8, 9, 10	N	~~Wetland collects sediments and nutrients from surrounding roads and commercial lots~~
Production Export	✓		1, 2, 4, ~~6~~, 7, 10	N	~~Evidence of deer and other mammals present in wetland~~
Sediment/Shoreline Stabilization		✓	1, 3, ~~9~~, 15	N	
Wildlife Habitat	✓		~~3~~ 4, 7, 8, 15, 17, 18, ~~19~~, ~~20~~	N	~~Evidence of deer and other mammals~~ present Most of habitat outside of impact area in broader depression
Recreation		✓	1, 2, 4	N	
Educational/Scientific Value		✓	11	N	
Uniqueness/Heritage		✓	1, 5, 7, 13, 14, 17, 19, 22	N	Although this wetland has numerous qualities, it is not a unique wetland for this region.
Visual Quality/Aesthetics		✓	2	N	
ES Endangered Species Habitat		✓		N	
Other					

Notes:

*Refer to backup list of numbered considerations.

MN, LE, S5 - 1/13/21

Wetland Function-Value Evaluation Form

Total area of wetland 0.1ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use forest, stream Distance to nearest roadway or other development ~50'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 3T

Latitude 38.83165 Longitude -76.8733

Prepared by: TT, EM Date 4/9/18

Wetland Impact:
Type _____ Area _____

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	2,4,6,10,	N	Impact area does not appear to show signs of GW/R/D. due to its small size + weak hydrology.
Floodflow Alteration		✓	3,4,5,9,18	N	portion of wetland w/in impact area does not provide floodflow alteration
Fish and Shellfish Habitat		✓	1	N	
Sediment/Toxicant Retention	✓		1,2,7,9,	N	
Nutrient Removal	✓		3,4,8,9	N	
Production Export	✓		1,2,5,7,	N	
Sediment/Shoreline Stabilization	✓		2,3,6,7,12,13,14,15	N	Although multiple qualifiers apply to this wetland, due to its small size and location outside of the active floodplain, S/SS is not a principal function
Wildlife Habitat	✓		3,6,7,8,12,13,17,18,21		
Recreation		✓	1,2,4		
Educational/Scientific Value		✓	11		
Uniqueness/Heritage		✓	1,5,7,13,19,22,14,17		Although this wetland has numerous qualifiers, it is not unique for this region.
Visual Quality/Aesthetics		✓	2		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

MN, LE, SS - 1/13/21

Wetland Function-Value Evaluation Form

Total area of wetland 0.02ac Human made? Yes (ditched from culvert) Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Forest, Roadway Distance to nearest roadway or other development ~25'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present no

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 3V

Latitude 38.87404 Longitude -76.873946

Prepared by: HT, EM Date 4/9/18

Wetland Impact:
Type ~~~~ Area ~~~~

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ~~~~

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,4,6,13,15	N	
Floodflow Alteration	✓		4,5,6,7,9,13,18	N	
Fish and Shellfish Habitat		✓	8,14,16,17	N	
Sediment/Toxicant Retention	✓		1,2,3,7,10,13,14,15,16	Y	
Nutrient Removal	✓		3,4,8,9,10,11,12,13,14	Y	
Production Export	✓		1,2,4,5,7,10,11,13	Y	
Sediment/Shoreline Stabilization	✓		1,3,9,13,14,15	N	
Wildlife Habitat	✓		3,6,7,8,12,13,17,18,21	N	
Recreation		✓	1,2,4	N	
Educational/Scientific Value		✓	11	N	
Uniqueness/Heritage		✓	1,5,7,13,19,22,14,17	N	
Visual Quality/Aesthetics		✓	2	N	
ES Endangered Species Habitat		✓		N	
Other					

Notes:

* Refer to backup list of numbered considerations.

RBP ASSESSMENT SUMMARY TABLE

FEATURE ID	CLASSIFICATION	HIGH GRADIENT RBP HABITAT PARAMETERS													TOTAL SCORE
		SUBSTRATE/ AVAILABLE COVER	EMBEDDEDNESS	VELOCITY/ DEPTH REGIME	SEDIMENT DEPOSITION	CHANNEL FLOW STATUS	CHANNEL ALTERATION	FREQUENCY OF RIFFLES (OR BENDS)	BANK STABILITY		VEGETATIVE PROTECTION		RIPARIAN VEGETATIVE ZONE WIDTH		
									LB	RB	LB	RB	LB	RB	
C & O CANAL NPS UNIT															
22M_1	Perennial	12	19	15	20	18	15	18	10	9	3	3	10	10	162
22NN	Intermittent	3	0	3	14	3	16	3	6	6	4	5	6	10	79
22QQ	Intermittent	2	0	2	11	2	14	0	2	2	1	1	10	10	57
GEORGE WASHINGTON PARKWAY NPS UNIT															
22V	Intermittent	2	8	2	13	3	11	1	8	8	3	3	4	5	71
22WW	Intermittent	14	16	10	15	10	20	16	9	8	1	2	10	10	141
NATIONAL CAPITAL PARKS - EAST PARK UNIT - BALTIMORE WASHINGTON PARKWAY															
10F.S1	Intermittent	7	11	8	10	11	13	16	5	5	5	4	9	9	113
10O	Ephemeral	EPHEMERAL, NO RBP ASSESSMENT													
10FF	Intermittent	3	0	2	19	2	14	0	9	9	3	3	10	9	83
10JJ	Intermittent	4	1	4	6	4	8	0	5	5	3	4	4	10	58
10KK	Intermittent	2	2	2	5	3	8	0	6	6	2	2	10	4	52
10MM	Intermittent	2	1	2	2	2	14	0	8	8	6	6	7	10	68
10PP	Intermittent	6	18	8	19	19	6	17	9	9	3	2	3	8	127
10PP_1	Intermittent	13	8	10	19	19	11	19	9	8	3	3	8	5	135
NATIONAL CAPITAL PARKS - EAST PARK UNIT - GREENBELT PARK															
10A	Ephemeral	EPHEMERAL, NO RBP ASSESSMENT													
10AAA	Intermittent	3	15	3	12	7	11	16	2	3	4	5	9	9	99
NATIONAL CAPITAL PARKS - EAST PARK UNIT - SUITLAND PARKWAY															
3LLL	Ephemeral	EPHEMERAL, NO RBP ASSESSMENT													

RBP ASSESSMENT SUMMARY TABLE

FEATURE ID	CLASSIFICATION	LOW GRADIENT RBP HABITAT PARAMETERS													TOTAL SCORE
		SUBSTRATE/ AVAILABLE COVER	POOL SUBSTRATE CHARACTERIZATION	POOL VARIABILITY	SEDIMENT DEPOSITION	CHANNEL FLOW STATUS	CHANNEL ALTERATION	CHANNEL SINUOSITY	BANK STABILITY		VEGETATIVE PROTECTION		RIPARIAN VEGETATIVE ZONE WIDTH		
									LB	RB	LB	RB	LB	RB	
NATIONAL CAPITAL PARKS - EAST PARK UNIT - SUITLAND PARKWAY															
3L	Perennial	6	10	5	14	15	15	2	8	9	8	7	10	10	119
3S.S4	Perennial	2	16	1	8	16	1	1	10	10	4	4	5	8	86

C & O CANAL NPS UNIT

Wetland 22W – PEM

Wetland 22LL – PFO

Wetland 22OO – PFO

Wetland 22PP – PFO

Wetland 22CCC – PFO

Waters 22M_1 – Perennial

Waters 22MM – Perennial

Waters 22MM – Perennial

Waters 22NN – Intermittent

Waters 22NN – Intermittent

Waters 22QQ – Intermittent

Waters 22QQ – Intermittent

GEORGE WASHINGTON PARKWAY NPS UNIT

Waters 22V – Intermittent

Waters 22V – Intermittent

Waters 22WW – Intermittent

Waters 22WW – Intermittent

NACE - BALTIMORE WASHINGTON PARKWAY

Wetland 10P – PFO

Wetland 10GG – PFO

Waters 10F – Intermittent

Waters 10F – Intermittent

Waters 10O – Ephemeral

Waters 10O – Ephemeral

Waters 10FF – Intermittent

Waters 10FF – Intermittent

Waters 10JJ – Intermittent

Waters 10KK – Intermittent

Waters 10KK – Intermittent

Waters 10MM – Intermittent

Waters 10MM – Intermittent

Waters 10PP – Intermittent

Waters 10PP_1 – Intermittent

NACE - GREENBELT PARK

Wetland 10EE – PFO

Waters 10A – Ephemeral

Waters 10A – Ephemeral

Waters 10AAA – Intermittent

Waters 10AAA – Intermittent

NACE - SUITLAND PARKWAY

Wetland 3KKK – PSS

Wetland 3M – PEM

Wetland 3O – PFO

Wetland 3T – PFO

Wetland 3V – PFO

Waters 3L – Perennial

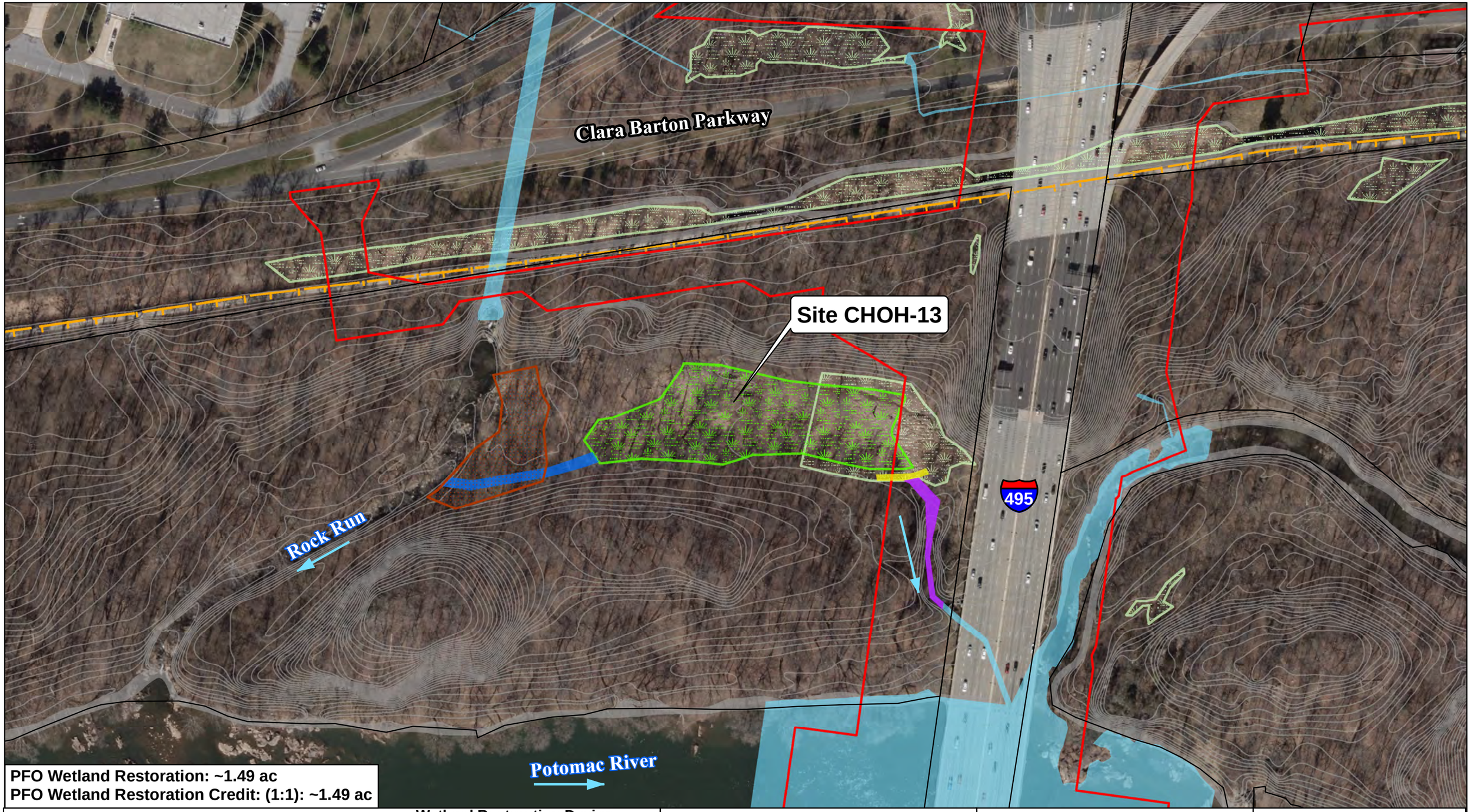
Waters 3L – Perennial

Waters 3LLL – Ephemeral

Waters 3LLL – Ephemeral

Waters 3S – Perennial

ATTACHMENT C: CHOH 13 CONCEPT PLAN



Wetland Restoration Design

- Parcel Boundaries
- Phase 1 South LOD
- 100 Year FEMA Floodplain
- 2' Contours
- Delineated Streams
- Delineated Wetlands
- Sub-Surface Bedrock
- PFO Wetland Restoration
- Channel Fill
- Groundwater Dam & Micro-berm
- Outlet Channel

N W E S

0 75 150 225 300 Feet

1 inch = 150 feet

I-495 & I-270 Managed Lanes Study
NPS Wetland Mitigation
Concept Design Plan
Site CHOH-13

495 270 MANAGED LANES STUDY

Attachment D

United States Department of the Interior

Office of the Secretary
Washington, D.C. 20240

July 12, 2022

IN REPLY REFER TO: 4111
ER 21/0425

Via Electronic Mail Only

Ms. Caryn J. G. Brookman
Environmental Program Manager
707 North Calvert Street, P-601
Baltimore, MD 21202

RE: I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation

Dear Ms. Brookman:

The U.S. Department of the Interior (Department) has reviewed the Federal Highway Administration's (FHWA) and Maryland Department of Transportation State Highway Administration's (MDOT SHA) I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation. The Department submits the following comments on behalf of the National Park Service (NPS).

The Department submitted formal comments during the public scoping period on May 1, 2018, on the Draft Environmental Impact Statement/Section 4(f) Evaluation on November 9, 2020, and on the Supplemental Draft Environmental Impact Statement/Section 4(f) Evaluation on November 10, 2021. In addition to monthly Cooperating Agency meetings, the NPS has extensively coordinated with MDOT SHA separately to further minimize any impacts to NPS parklands and resources. The Department understands that the FHWA and MDOT SHA have worked closely with the NPS in preparing both the Supplemental Draft Environmental Impact Statement as well as the FEIS and final Section 4(f) Evaluation. Resulting from this coordination, impacts to national park land have been reduced from approximately 99 acres to 16.48 acres (2.8 acres permanent, 13.77 acres temporary) for the proposed replacement of the American Legion Bridge and the installation of infrastructure for a shared use pedestrian path to the C&O Canal towpath. Most of these impacts will be mitigated through measures implemented as part of the Section 106 Programmatic Agreement, the Wetlands Statement of Findings, and the Mitigation Agreement that the NPS and MDOT SHA are developing, which will include the measures listed on pages 6-18 through 6-21 of the FEIS. The FEIS was developed in coordination with the NPS and meets NPS requirements; therefore, the Department has no further comments on the FEIS but would like to note that the NPS and MDOT SHA will need to coordinate on design development and construction methodology to continue effort to reduce impacts.

SECTION 4(f) EVALUATION

Upon review of the Final Section 4(f) Evaluation, the Department agrees that there is no feasible and prudent alternative to use of Section 4(f) properties in the project study area, the proposed action includes all possible planning to minimize harm to lands and resources, and that the Preferred Alternative, Alternative 9, Phase 1 South, is the alternative with least overall harm.

The Department notes that continued coordination between the NPS and MDOT SHA is required as the study moves into developing designs and prepares construction methodology to further minimize and avoid impacts to NPS resources. In particular, the NPS has specific concerns regarding the sensitive resources found on Plummers Island, located beneath the American Legion Bridge, and requests input in the continuing refinement of the designs and construction methodology in order to ensure impacts are kept at a minimum, or to avoid impacts to the island all together. In addition, as referenced in the Section 4(f) Evaluation, the MDOT SHA and the developer will continue to coordinate with the NPS to review the condition of the existing connection between the C&O towpath and MacArthur Boulevard side path outside this project study area.

Thank you for the opportunity to provide comments and for your consideration of our important resources. We also appreciate the close coordination that the FHWA and MDOT SHA have had with the NPS on this project, and we look forward to future continued collaboration in these planning efforts. Any further coordination should be handled through Tammy Stidham, Deputy Associate Regional Director, Lands and Planning, National Capital Region, National Park Service, 1100 Ohio Drive SW, Washington, D.C. 20242, (202) 619-7474 or tammy_stidham@nps.gov.

Sincerely,

Stephen G. Tryon
Director, Office of Environmental
Policy and Compliance

cbrookman@mdot.maryland.gov

Attachment E

ATTACHMENT B: NON-IMPAIRMENT DETERMINATION

By enacting the National Park Service (NPS) Organic Act of 1916 (Organic Act), Congress directed the US Department of Interior and the NPS to manage units *"to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations"* (54 USC 100101). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no "*derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress*" (54 USC 100101).

The NPS has discretion to allow impacts on Park resources and values when necessary and appropriate to fulfill the purposes of a Park (NPS 2006 sec. 1.4.3). However, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006 sec 1.4.3). An action constitutes an impairment when its impacts "*harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values*" (NPS 2006 sec 1.4.5). To determine impairment, the NPS must evaluate "*the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts*" (NPS 2006 sec 1.4.5).

This determination on impairment has been prepared for the selected alternative described in the Record of Decision for the I-495 & I-270 Managed Lanes Study, which states NPS's approval for use of land from three units of the national park system: George Washington Memorial Parkway, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway (part of the George Washington Memorial Parkway). The NPS will allow MDOT SHA, through NPS Special Use Permits, to construct the Selected Alternative within the three NPS properties described above. Upon NPS concurrence with a Letter of Consent from the Federal Highway Administration (FHWA), the FHWA will develop and execute a non-exclusive Highway Easement Deed over NPS land that will be used for highway purposes, specifically for the operation and maintenance of structures built and developed under the Selected Alternative. NPS will also issue a special use permit for the construction of those structures. An impairment determination is made for those NPS resources being impacted and analyzed for the selected alternative. An impairment determination is not made for visitor use and experience because impairment findings relate back to park resources and values. Visitor use and experience are not generally considered to be park resources or values according to the Organic Act and cannot be impaired in the same way that an action can impair park resources and values.

Land Use and Property: As part of this decision, the NPS expects that a highway easement deed will be executed by FHWA to MDSHA, to authorize the permanent use of approximately 2.7 acres of NPS parkland (1.0 acres within Chesapeake and Ohio Canal National Historical Park, 1.1 acres within Clara Barton Parkway, and 0.6 acres within George Washington Memorial Parkway) for highway purposes. The total amount of temporary impacts for the construction special use permit is approximately 13.5 acres (9.1 acres of Chesapeake and Ohio Canal National Historical Park, 0.6 acres of Clara Barton Parkway, and 3.8 acres of George Washington Memorial Parkway).

While the loss of these NPS lands through the execution of a highway easement deed would be permanent, it would not constitute an impairment to park resources. The areas being lost are a small percentage of the total areas of each respective park. In addition, these locations are within an area of significant existing transportation infrastructure and the only recreational opportunities occur on the trails that pass underneath the existing bridge. The use of these roads and trails would not be impacted by this project. The temporarily impacted areas will be restored.

Wetland Resources and Waters of the U.S.: NPS Director's Order 77-1 (DO 77-1) establishes the policies, requirements, and standards by which NPS meets its responsibilities to protect and preserve wetlands in compliance with Executive Order 11990. The selected alternative will not result in

impairment due to the small amount of wetlands (approximately 0.2 acres) that will be permanently lost when compared to the total area of similar habitat within the Parks. In addition, the wetlands being permanently lost are relatively inaccessible for the traditional recreational values of wetlands (i.e., bird watching, education, wildlife photography, etc.), and will not result in a noticeable change. Lastly, as determined through DO 77-1, MDOT SHA will compensate NPS for the permanent and temporary loss of these wetlands. This compensation will include a 1.1:1 mitigation ratio (of total impacted area) to elevate the ecological functions and values of similar types of wetlands on NPS lands.

Vegetation and Wildlife: Implementation of the selected alternative will result in the loss of approximately 1,161 trees, which equates to approximately 9.78 acres in tree canopy, and it is assumed that all other existing vegetation and wildlife habitat will be removed within the limits of disturbance. There will also be some loss of individuals of State rare, threatened, and endangered species within the LOD. Following construction, those areas needed for temporary construction purposes will be revegetated using native vegetation and will be monitored and managed to prevent colonization by nonnative invasive species. Mitigations for State listed species will be developed specifically for each species impacted. While the project area will be replanted with native vegetation, it will not return to mature forest for many years. Ground cover and bushes and shrubs should return relatively quickly, providing habitat to those species that utilize that type of vegetation. Wildlife species that require mature forests will not find suitable habitat within the project area; however, similar habitats exist in close proximity. Overall, vegetation communities within the park will continue to exist in a condition similar to their current state. Current and future generations of visitors will have similar opportunities to experience these habitats and the species that use them. Therefore, implementation of the selected action will not result in impairment to aquatic and terrestrial vegetation.

Cultural Resources: The introduction of new transportation infrastructure will temporarily and permanently alter views from the two historic districts within the area of potential effect (Chesapeake and Ohio Canal National Historical Park and the George Washington Memorial Parkway, all of which are on the National Register of Historic Places (NRHP)). The views from Clara Barton Parkway, which is a sub-unit of the George Washington Memorial Parkway would also be affected. The selected alternative adds new physical elements and will result in the removal or alteration of mature trees that contribute to the districts.

MD SHA determined, in accordance with Section 106 of the National Historic Preservation Act of 1966 (Section 106), and with VDHR and MHT concurrence, that the Project will result in adverse effects on the Chesapeake and Ohio Canal National Historical Park, Clara Barton Parkway, and the George Washington Memorial Parkway. The adverse effects result from permanent change in ownership and the adverse effects to the contributing features resulting from the actions taking place within the limits of disturbance.

As such, a Section 106 Programmatic Agreement (PA) was prepared and fully executed between Federal Highway Administration, Maryland Department Of Transportation State Highway Administration, National Park Service, Maryland State Historic Preservation Officer, Virginia State Historic Preservation Officer, and Advisory Council on Historic Preservation (the Signatories). This PA contained conditions and stipulations regarding means by which these adverse effects to historic properties will be avoided, minimized, and mitigated and how these mitigations will continue throughout the life of the Project. Also, pursuant to the terms of the PA, the need for further archeological investigations will be determined in the future using a phased identification approach and in consultation with the appropriate SHPO and Consulting Parties. Required investigations and evaluations will be conducted during Final Design once precise locations for ground-disturbing activities have been identified. The executed Section 106 PA between the Signatories containing conditions and stipulations regarding the Project is provided in Appendix B of this ROD.

While there will be adverse impacts to historic properties under Section 106 to both historic districts, none of these impacts will constitute an impairment to either of the associated Parks or their resources. The design of the new infrastructure will be done in accordance with the Section 106 PA and will avoid and minimize impacts to the extent possible and will mitigate unavoidable impacts when necessary. The new infrastructure will be located in areas that currently contain transportation infrastructure. Lastly, the recreational/interpretive opportunities that currently take place within these existing transportation corridors are minimal, mostly consisting of trails passing underneath the existing bridges. Implementing the selected alternative would not prohibit the use of these trails. These impacts will not diminish the overall integrity of the resources and values provided by the Chesapeake and Ohio Canal National Historical Park, Clara Barton Parkway, and the George Washington Memorial Parkway, and will not diminish the opportunities to enjoy those resources or values.

CONCLUSION

While the selected alternative will result in impacts on the resources of the Chesapeake and Ohio Canal National Historical Park, Clara Barton Parkway, and the George Washington Memorial Parkway, its placement within the current transportation corridor will not result in the impairment of NPS resources. With NPS's decision to consent to FHWA's execution of a highway easement deed and to allow permission to use NPS lands for the Project, implementation of the Selected Action will not result in adverse impacts that would threaten resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park; (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other NPS planning documents. There will be no impairment to park resources or values from implementing the Selected Action.

Attachment F

MITIGATION AGREEMENT

REGARDING THE

I-495 & I-270 MANAGED LANES STUDY

between the

NATIONAL PARK SERVICE

and

MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

This Mitigation Agreement ("Agreement") by and between the NATIONAL PARK SERVICE ("NPS"), acting through the Regional Director, National Capital Region, and the MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION ("SHA" or "Project Sponsor"), acting through its State Highway Administrator, sets forth the terms by which the Project Sponsor will mitigate impacts to and around NPS properties from construction and implementation of the Selected Alternative of the I-495 & I-270 Managed Lanes Study (Project). Throughout this Agreement the NPS or SHA may be referred to individually as "a party," and they may be referred to jointly as "the parties."

ARTICLE I – BACKGROUND AND OBJECTIVES

The Federal Highway Administration (FHWA), as the lead Federal agency and in cooperation with the Project Sponsor, prepared a Final Environmental Impact Statement (FEIS) under the National Environmental Policy Act (NEPA), a Programmatic Agreement (PA) under Section 106 of the National Historic Preservation Act (NHPA), and a Section 4(f) Evaluation (4(f) Evaluation) for the Project. The study area encompasses the 48-mile corridor on 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. The Selected Alternative, Alternative 9 - Phase 1 South (Exhibit A), includes build improvements within the limits of Phase 1 South, totaling approximately 15 miles of proposed improvements. The Phase 1 South project area includes I-495 from south of the George Washington Memorial Parkway in Virginia 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. There is no action or improvements included at this time on I-495 east of the I-270 east spur to MD 5 (Exhibit A).

The Project will impact the George Washington Memorial Parkway, the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP), and the Clara Barton Parkway in the manner detailed in the FHWA Record of Decision (ROD). The Selected Alternative, as described in the FHWA ROD, would require the permanent use of up to 2.7 acres and the temporary use of up to 13.5 acres of George Washington Memorial Parkway, C&O Canal NHP, and Clara Barton Parkway properties, with documented impacts to natural and cultural resources (Exhibit B).

The NPS is mandated to and responsible for administering the national park system of the United States. The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The NPS preserves and manages these areas for the benefit and inspiration of all the people of the United States. The George Washington Memorial Parkway, C&O Canal NHP, and Clara Barton Parkway are lands owned by the United States and administered by the NPS.

The George Washington Parkway is a publicly owned park that extends along the Potomac River from I-495 to Mount Vernon in Virginia. The George Washington Memorial Parkway is a scenic roadway honoring the nation's first president, and it protects and preserves cultural and natural resources along the Potomac River below Great Falls to Mount Vernon. Features within George Washington Memorial

Parkway include the Potomac Heritage National Scenic Trail and Turkey Run Park conservation area. The park boundary of the George Washington Memorial Parkway extends 38.3 miles and comprises approximately 7,300 acres including all administrative units and features. The George Washington Parkway is also a Historic District that was listed in the National Register of Historic Places (NRHP) on June 2, 1995. It is historically significant under Criterion B for its association with the life of George Washington and Criterion C for its embodiment of the distinctive characteristics of a parkway. It is home to over 100 species of threatened and endangered species. The George Washington Parkway provides direct access to I-495 in both directions in Virginia just south of the American Legion Bridge.

The C&O Canal NHP encompasses 19,628.10 acres and 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. The C&O Canal NHP became a unit of the NPS as a national monument in 1961 and was then established as a national park in 1971. The C&O Canal NHP was designated 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. It contains more than 1,300 historic structures, including one of the largest collections of historic resources across the national park system. The C&O Canal NHP was listed in the NRHP on October 15, 1966, prior to becoming a national park. A supplementary listing under the name "Chesapeake and Ohio Canal National Historical Park" was added to the NRHP on February 3, 2015. The C&O Canal NHP is listed in the NRHP under Criteria A, C, and D. In addition to 455 contributing resources previously listed in the NRHP, the supplemental listing added 796 contributing resources comprising 106 buildings, 175 sites, 483 structures, and 32 objects. Portions of the C&O Canal NHP are located directly under the American Legion Bridge in Maryland.

The Clara Barton Parkway is an extension of the George Washington Memorial Parkway in Maryland and preserves cultural and natural resources where it extends 6.6 miles along the northern shore of the Potomac River between the Naval Surface Warfare Center at Carderock and the Chain Bridge in Washington, DC. The historic boundary in Maryland comprises 96.2 acres. Though Clara Barton Parkway has a separate historic boundary in Maryland, it is part of the larger George Washington Memorial Parkway Historic District. The Clara Barton Parkway provides direct access to I-495 in both directions in Maryland just north of the American Legion Bridge.

The NPS Impact Fund Account was established by a July 10, 2015 Memorandum of Agreement between the NPS and the Conservation Fund for the purpose of funding and implementing mitigation projects to offset impacts to NPS parklands and resources.

The parties have agreed to address the impacts of the Project on NPS lands through the implementation of a broad package of mitigation measures, identified during the planning process to ensure compliance with various Federal laws, regulations, and policies, including NEPA, the Section 4(f) evaluation process, and the NHPA Section 106 consultation process. Those measures include items listed in Exhibit C, and Section 106 mitigation measures identified in the PA (Exhibit D), including the clarifications included in article III(A).

The Project Sponsor's obligation to fund the mitigation activities is contingent upon:

1. Issuance of the FHWA ROD, identifying the Selected Alternative as outlined in the FEIS to proceed to construction and the completion of the NEPA, NHPA, and Section 4(f) processes;
2. Issuance of the NPS ROD, which authorizes the use of NPS property as further described therein;
3. Identification of required real property transactions and/or land use authorizations consistent with applicable authorities allowing for the above-described use of NPS-administered land and execution of any agreement(s) needed to implement such transactions and/or authorizations; and
4. Advancement of the final design of the Selected Alternative and steps to initiate construction, including the Project Sponsor identifying the necessary funding to deliver the Project, and entering into relevant design and construction contracts for the Project. If or when potential

impacts are reduced or avoided as a result of the design process and after discussion and agreement between the parties, the relevant mitigation items and commitments in Article III and Exhibit D of this Agreement will be reduced in proportion to the reduced impact or no longer implemented if the impact is avoided completely.

ARTICLE II – AUTHORITY

A. For NPS:

54 U.S.C. 100101, *et seq*. – The NPS Organic Act directs the Secretary of Interior to promote and regulate National Park System lands by such means and measures as to conform to the fundamental purpose of such lands, namely conservation of the scenery and natural and historic objects and wildlife therein, and to provide for the enjoyment of these resources in a manner and by such means that will leave them unimpaired for the enjoyment of future generations.

B. For Project Sponsor:

Annotated Maryland Transportation Code § 8-201 *et seq*. – The SHA has authority to determine and change from time to time the location, construction, geometrics, design, and maintenance of the State highway system and is authorized under § 8-204(d) to enter into this Agreement with the NPS and to assume the duties, responsibilities, and obligations set forth in this Agreement consistent with the appropriations requirements referenced in Article X(C) of this Agreement.

ARTICLE III – STATEMENT OF WORK

A. Compensatory Mitigation Items

The Project Sponsor shall provide a total of $7,410,365 for the NPS Impact Fund Account. The Project Sponsor shall convey the $7,410,365 to the NPS Impact Fund Account incrementally as detailed in Article IV. The funds will be used to fund the compensatory mitigation projects specified herein in the amounts specified below to minimize or offset the unavoidable impacts of the Project on natural and cultural resources within the George Washington Memorial Parkway, C&O Canal NHP, and Clara Barton Parkway. The funds will be paid into the NPS Impact Fund Account and will be administered pursuant to the terms of that Memorandum of Agreement; however, in no event shall the administration of such funds or performance of said mitigation projects result in any delay or material disturbance to Project Sponsor's design and construction activities provided that the terms of this Agreement, conditions of the Special Use Permit, stipulations identified in the respective NEPA, and planning documents are being met.

The Project Sponsor shall provide the mitigation items and commitments as listed in Exhibit C to include the following compensatory mitigation items which include changes and clarification from what is listed:

1. **$4,000,000 C&O Canal NHP Condition Assessment and Repairs (Mitigation Item #13):** SHA will complete a pre-construction condition assessment and develop preliminary designs with Class C cost estimates for the repair and rehabilitation of the historic locks and bypass flumes within the Seven Locks area of the C&O Canal NHP, between Locks 8 and 14. Guidance on requirements for a Class C cost estimate are located at the following: https://www.nps.gov/dscw/definitionsdc_c.htm. Copies of the assessment will be provided to the NPS and to the Maryland State Historic Preservation Officer (MD SHPO). SHA will provide funds to the NPS Impact Fund Account and the NPS will coordinate repair and rehabilitation activities in concert with the Conservation Fund. SHA will contribute $4 million towards the scope and repairs identified in the assessment. The SHA will provide the NPS with a draft rehabilitation plan to a level required to develop Class C cost estimates for review and comment. The NPS will implement the Project including completing any design needed above what was required for the Class C Cost Estimate and preparing construction plans.

2. **$2,350,000 C&O Canal NHP Infrastructure Repairs (Mitigation Item #17):** SHA will contribute an amount equal to the fair market value (valued at $2,350,000.00) of the James Audia property toward the scope and repairs identified in the Class C cost estimate for the repair and rehabilitation of the historic locks and bypass flumes with the Seven Locks area of the C&O Canal NHP, between Locks 8 and 14. SHA will provide funds to the NPS Impact Fund Account and the NPS will coordinate repair and rehabilitation activities in concert with the Conservation Fund.

3. **$250,000 Clara Barton Parkway Cultural Landscape Report**. SHA will provide funds to the NPS Impact Fund Account and the NPS will coordinate the preparation of a Cultural Landscape Report for the Clara Barton Parkway.

4. **$60,000 George Washington Memorial Parkway Climate Action Plan (Mitigation Item #19)**. SHA shall provide funds for the preparation of a Climate Action Plan by the NPS for the George Washington Memorial Parkway.

5. **$750,365 Tree Replacement. (Mitigation Item # 9):** SHA will provide funds for tree impacts, based on inch-for-inch replacement of DBH impacted.

ARTICLE IV – DISBURSEMENT OF FUNDS

The total amount of funds provided by the Project Sponsor for compensatory mitigation will not exceed the sum of $7,410,365 and shall be used solely for the projects set forth in Article III(A) of this Agreement. The funds shall be distributed incrementally when the Project Sponsor submits application for the NPS Special Use Permits and the NPS determines that the applications are complete for this Project and will be subject to any applicable Maryland appropriations requirements referenced in Article X(C) of this Agreement.

1. A total of $750,365 will be distributed to the NPS Impact Fund Account when the NPS receives and determines is complete the Special Use Permit Application for early work activities at the George Washington Memorial Parkway and Clara Barton Parkway, funding item 5 in Article III.A.
2. A total of $310,000 will be distributed to the NPS Impact Fund Account when the NPS receives and determines is complete the amended Special Use Permit Application for final construction activities at the George Washington Memorial Parkway and Clara Barton Parkway, funding items 3 and 4 in Article III.A

3. A total of $2,350,000 will be distributed to the NPS Impact Fund Account when the NPS receives and determines is complete the Special Use Permit Application for early work activities at the C&O Canal National Historic Park, funding item 2 in Article III.A.

4. A total of $4,000,000 will be distributed to the NPS Impact Fund Account when NPS receives and determines is complete the amended Special Use Permit Application for final construction activities at the C&O National Historic Park, funding item 1 in Article III.A.

Subject to Article V of this Agreement, the Project Sponsor or its designee shall transmit funds to the Conservation Fund separately for each mitigation item that NPS or its designee is responsible for implementing in accordance with Article V of this Agreement. All unused funds shall be returned to the Project Sponsors if it is determined by mutual agreement of the parties that they are no longer required for the intended purposes outlined in this Agreement.

For Instructions to wire account, please contact:

Ms. Monica Garrison
Vice President for Finance
The Conservation Fund
1655 N. Fort Myer Dr., Suite 1300
Arlington, VA 22209
Telephone: (703) 525-6300
Email: mgarrison@conservationfund.org

ARTICLE V – ESTIMATE AND SCHEDULE FOR EXPENDITURE OF FUNDS

The NPS, working with The Conservation Fund, will use commercially reasonable best efforts to expend the funds in accordance with this Agreement. Upon receipt of funds by The Conservation Fund, a schedule for expenditure of funds will be developed for each project that will include targets for obligation, completion of planning and design, and implementation.

NPS shall submit a final schedule for all NPS-implemented projects referenced in this Agreement to Project Sponsor and ensure coordination of NPS deliverables with the Project's design and construction schedules. All documentation of completed projects will be submitted by NPS to the Project Sponsor in electronic form.

ARTICLE VI – REPORTING

The NPS will prepare an annual financial review and narrative status report that will be submitted to the Project Sponsor by June 30 of each calendar year, beginning the first year in which funds are deposited in the NPS Impact Fund Account. The report shall provide detailed status on the budget and the percent completion of the project.

ARTICLE VII – TERM OF AGREEMENT

This Agreement is effective as of the date of the last signature and will expire upon the final completion of all mitigation projects defined in Article III of this agreement.

ARTICLE VIII – MODIFICATION AND TERMINATION

A. This Agreement may be modified only by a written instrument executed by the parties.

B. Either party may terminate this Agreement prior to the issuance of a NPS Special Use Permit by providing the other party with thirty (30) days advance written notice (hereinafter the "Terminating Party"). The parties will meet promptly and seek to resolve any disputes and discuss methods to avoid such termination. Prior to termination, the parties shall enter into a non-binding dispute resolution process to resolve any disputes. If this agreement is terminated before mitigation activities initiated by either party as described in Article III have begun, the Terminating Party shall reimburse or make whole the other party.

ARTICLE IX – KEY OFFICIALS

A. Key officials are essential to ensure maximum coordination and communication between the parties and the work being performed. They are:

1. **NPS:**

Charles Cuvelier
Superintendent
George Washington Memorial Parkway
700 George Washington Memorial Parkway
McLean, Virginia 22101
Phone: (703) 289-2511
Email: charles_cuvelier@nps.gov

Tina Cappetta
Superintendent
Chesapeake and Ohio Canal National Historical Park
142 W Potomac Street
Williamsport, MD 21795
Phone: (410) 982-9239
Email: tina_cappetta@nps.gov

Tammy Stidham
Associate Regional Director
Lands and Planning
1100 Ohio Drive SW
Washington, DC 20242
Phone: 202-619-7474
Email:tammy_stidham@nps.gov

2. **Project Sponsor:**

Jeffrey T. Folden, P.E., DBIA
Director, I-495 & I-270 Program Office
Maryland Department of Transportation, State Highway Administration
707 N. Calvert Street, Mail Stop M-LL1
Baltimore, Maryland 21202
Phone: (410) 637-3321
Email: jfolden1@mdot.maryland.gov

B. **Communications**: The Project Sponsor will address any communication regarding this Agreement to the NPS key officials. The NPS will address any communication regarding this Agreement to the Project Sponsor key official.

C. **Changes in Key Officials**: To the extent practicable, neither the NPS nor the Project Sponsor may make any permanent change in a key official without written notice to the other party reasonably in advance of the proposed change. The notice will include a justification with sufficient detail to permit evaluation of the impact of such a change on this Agreement. Any permanent change in the office or title of the key officials will be made only by modification to this Agreement; however, the employee or officer holding the title may change from time to time upon written, advance notice to the extent reasonably practicable.

ARTICLE X – GENERAL PROVISIONS

A. **Non-Discrimination:** All activities pursuant to or in association with this Agreement shall be conducted without discrimination on grounds of race, color, sexual orientation, national origin, disabilities, religion, age, sex, or any otherwise unlawful use of characteristics as well as

in compliance with the requirements of any applicable federal and state laws, regulations, or policies prohibiting such discrimination. This shall include but is not limited to the requirements of Executive Order 11246; Title VI of the Civil Rights Act of 1964, as amended, (78 Stat. 252, 42 U.S.C. 2000d et seq.); Title V, Section 504 of the Rehabilitation Act of 1975, as amended, (87 Stat. 394, 29 U.S.C. 794); the Age Discrimination Act of 1975 (89 Stat. 728, 42 U.S.C. 6101 et seq.).

B. **NPS Appropriations**: Pursuant to 31 U.S.C. § 1341, nothing contained in this Agreement shall be construed to obligate NPS, the Project Sponsor, or the United States of America to any current or future expenditure of funds in advance of the availability of appropriations from Congress or state legislature and their administrative allocation for the purposes of this Agreement.

C. **SHA Appropriations:** All payments hereunder by SHA to NPS are subject to the budgetary and appropriation requirements of Section 3-216(d)(2) of the Transportation Article of the Annotated Code of Maryland. The NPS acknowledges and agrees that funding under this Agreement is expressly dependent upon the availability to SHA of funds appropriated by the General Assembly and that, except as otherwise provided for herein, SHA shall not be held liable for any breach of this Agreement due to the absence of an appropriation. SHA shall use its best efforts to include in the annual Consolidated Transportation Program the amounts agreed to in this Agreement.

D. **Member of Congress:** Pursuant to 41 U.S.C. § 22, no Member of Congress shall be admitted to any share or part of any contract or agreement made, entered into, or adopted by or on behalf of the United States, or to any benefit to arise thereupon.

E. **Lobbying Prohibition:** Pursuant to 18 U.S.C. §1913, no part of the money appropriated by any enactment of Congress shall, in the absence of express authorization by Congress, be used directly or indirectly to pay for any personal service, advertisement, telegram, telephone, letter, printed or written matter, or other device, intended or designed to influence in any manner a Member of Congress, a jurisdiction, or an official of any government, to favor, adopt, or oppose, by vote or otherwise, any legislation, law, ratification, policy, or appropriation, whether before or after the introduction of any bill, measure, or resolution proposing such legislation, law, ratification, policy, or appropriation; but this shall not prevent officers or employees of the United States or of its departments or agencies from communicating to any such Members or official, at his request, or to Congress or such official, through the proper official channels, requests for legislation, law, ratification, policy, or appropriations which they deem necessary for the efficient conduct of the public business, or from making any communication whose prohibition by this Article might, in the opinion of the Attorney General, violate the Constitution or interfere with the conduct of foreign policy, counterintelligence, intelligence, or national security activities. Violations of this Article shall constitute violations of Section 1352(a) of Title 31.

F. **Third Parties Not to Benefit:** This Agreement does not grant rights or benefits of any nature to any third party.

G. **Assignment, Binding Effect:** Neither party may assign any of its rights or obligations under this Agreement without the prior written consent of the other party. Consent will not be unreasonably withheld or delayed. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns. The parties waive the defense of lack of consideration.

H. **Non-exclusive:** This Agreement in no way restricts the parties from entering into similar agreements, or participating in similar activities or arrangements, with other public or private agencies, organizations, or individuals.

I. **Compliance with Applicable Laws:** This Agreement and performance hereunder is subject to all applicable laws, regulations and government policies, whether now in force or hereafter enacted or promulgated. Nothing in this Agreement shall be construed as (i) in any way affecting the authority of the NPS to supervise, regulate, and administer its property under applicable laws, regulations, and management plans or policies as they may be modified from time-to-time or (ii) inconsistent with or contrary to the purpose or intent of any Act of Congress.

J. **Disclaimers of Government Endorsement:** The Project Sponsor will not publicize or circulate materials (such as advertisements, solicitations, brochures, press releases, speeches, pictures, movies, articles, manuscripts, or other publications), suggesting, expressly or implicitly, that the United States of America, the Department of the Interior, NPS, or any government employee endorses any business, brands, goods or services.

K. **Public Release of Information:** The Project Sponsor must obtain prior written approval through the NPS Key Official (or his or her designee) for any public information releases (including advertisements, solicitations, brochures, and press releases) related to the Agreement that refer to the Department of the Interior, any bureau, park unit, or employee (by name or title), or to this Agreement. The specific text, layout, photographs, etc., of the proposed release must be submitted with the request for approval. The NPS will make a good-faith effort to expeditiously respond to such requests. The foregoing shall not apply to any non-substantive or incidental reference, including construction updates to the public and sub-contractor procurements issued by the Project Sponsor's contractors and consultants related to this Agreement.

L. **Merger:** This Agreement, including any attachments hereto, and/or documents incorporated by reference herein, contains the sole and entire agreement of the parties.

M. **Waiver:** Failure to enforce any provision of this Agreement by either party shall not constitute waiver of that provision. Waivers must be express and evidenced in writing.

N. **Counterparts:** This Agreement may be executed in counterparts, each of which shall be deemed an original (including copies sent to a party by facsimile transmission) as against the party signing such counterpart, but which together shall constitute one and the same instrument.

O. **Agency:** The Project Sponsor is not an agent or representative of the United States, the Department of the Interior, or NPS, nor will the Project Sponsor represent itself as such to third parties.

P. **Survival:** Any and all provisions that, by themselves or their nature, are reasonably expected to be performed after the expiration or earlier termination of this Agreement shall survive and be enforceable after the expiration or earlier termination of this Agreement. Any and all liabilities, actual or contingent, that have arisen during the term of this Agreement and in connection with this Agreement shall survive expiration or termination of this Agreement.

Q. **Partial Invalidity:** If any provision of this Agreement or the application thereof to any party or circumstance shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement or the application of such provision to the parties or circumstances other than those

to which it is held invalid or unenforceable shall not be affected thereby, and each provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

R. **Captions and Headings:** The captions, headings, article numbers, and paragraph numbers and letters appearing in this Agreement are inserted only as a matter of convenience and in no way shall be construed as defining or limiting the scope or intent of the provisions of this Agreement nor in any way affecting this Agreement.

IN WITNESS THEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.

For the **Maryland Department of Transportation**:

ATTEST: **STATE HIGHWAY ADMINISTRATION**

Trudy Edwards

By: _____ (SEAL)
William Pines, P.E.
Administrator

APPROVED AS TO FORM AND RECOMMENDED FOR APPROVAL:

LEGAL SUFFICIENCY

Linda DeVuono
Assistant Attorney General

_____
Jeffrey T. Folden, P.E., DBIA
Director, I-495 & I-270 Program Office

For the **NATIONAL PARK SERVICE**:

KIMBERLY HALL Digitally signed by KIMBERLY HALL Date: 2024.03.20 16:58:29 -04'00'

03/20/2024

Kym A. Hall
Regional Director
National Capital Region

Date

Exhibits:

Exhibit A – Map of Project Area

Exhibit B – Impact Maps

Exhibit C – FHWA Record of Decision, Appendix A: Compensatory Mitigation Items

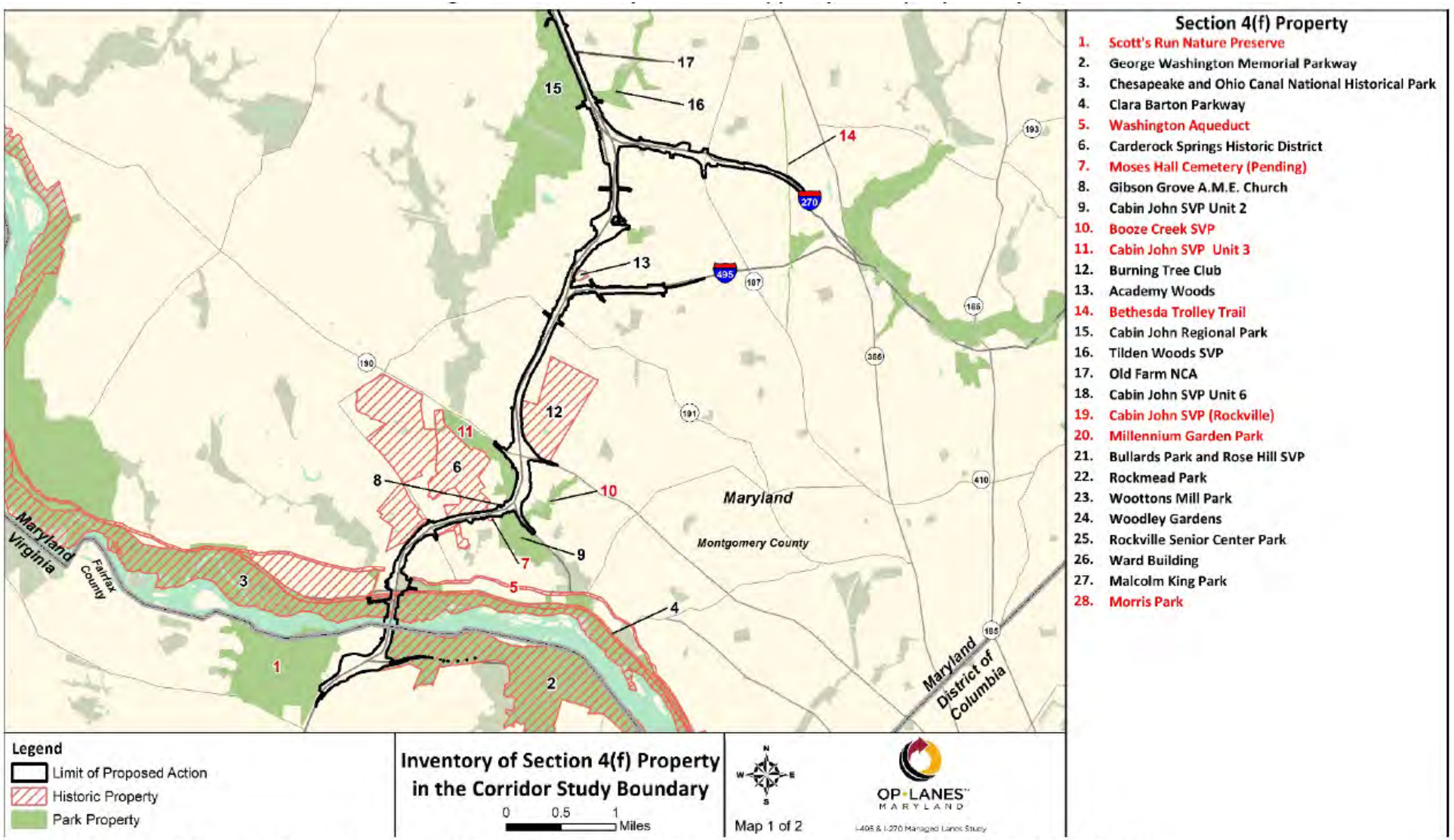
Exhibit D – FHWA Record of Decision, Appendix C: Section 106 Programmatic Agreement

EXHIBIT A: Map of Project Area

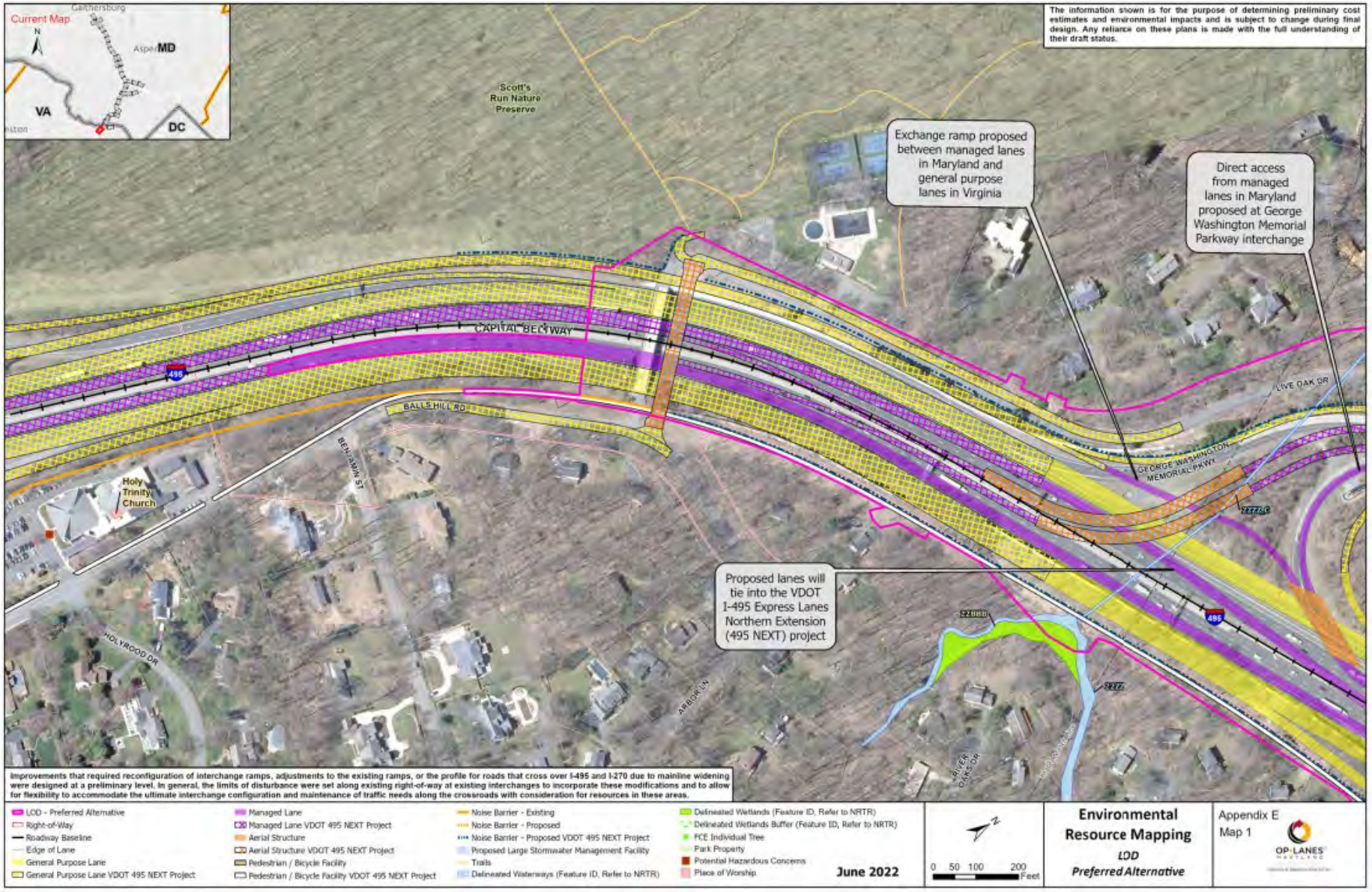
Source: I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement

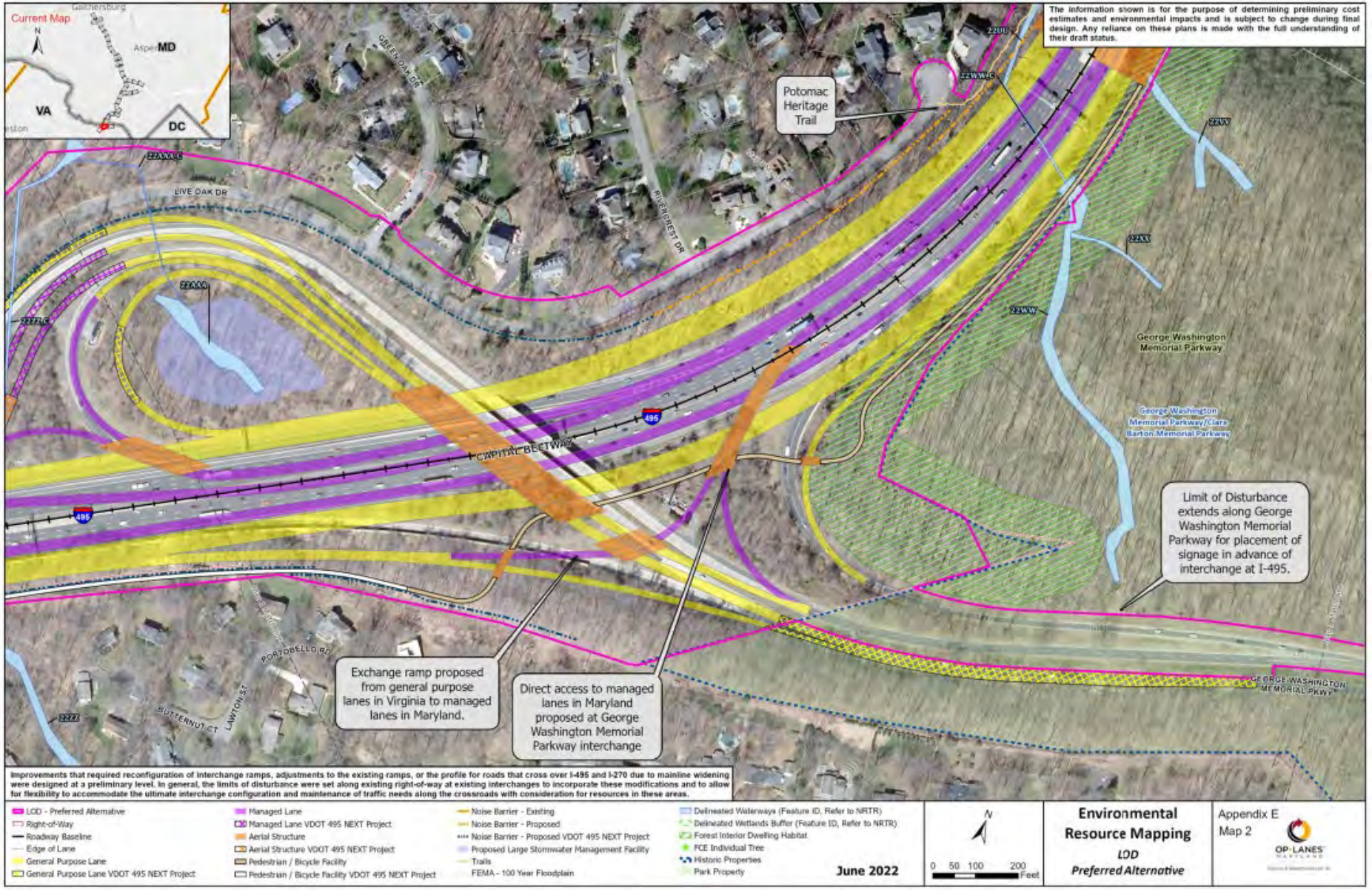
EXHIBIT B: Impact Maps – George Washington Memorial Parkway, C&O Canal NHP, and Clara Barton Parkway

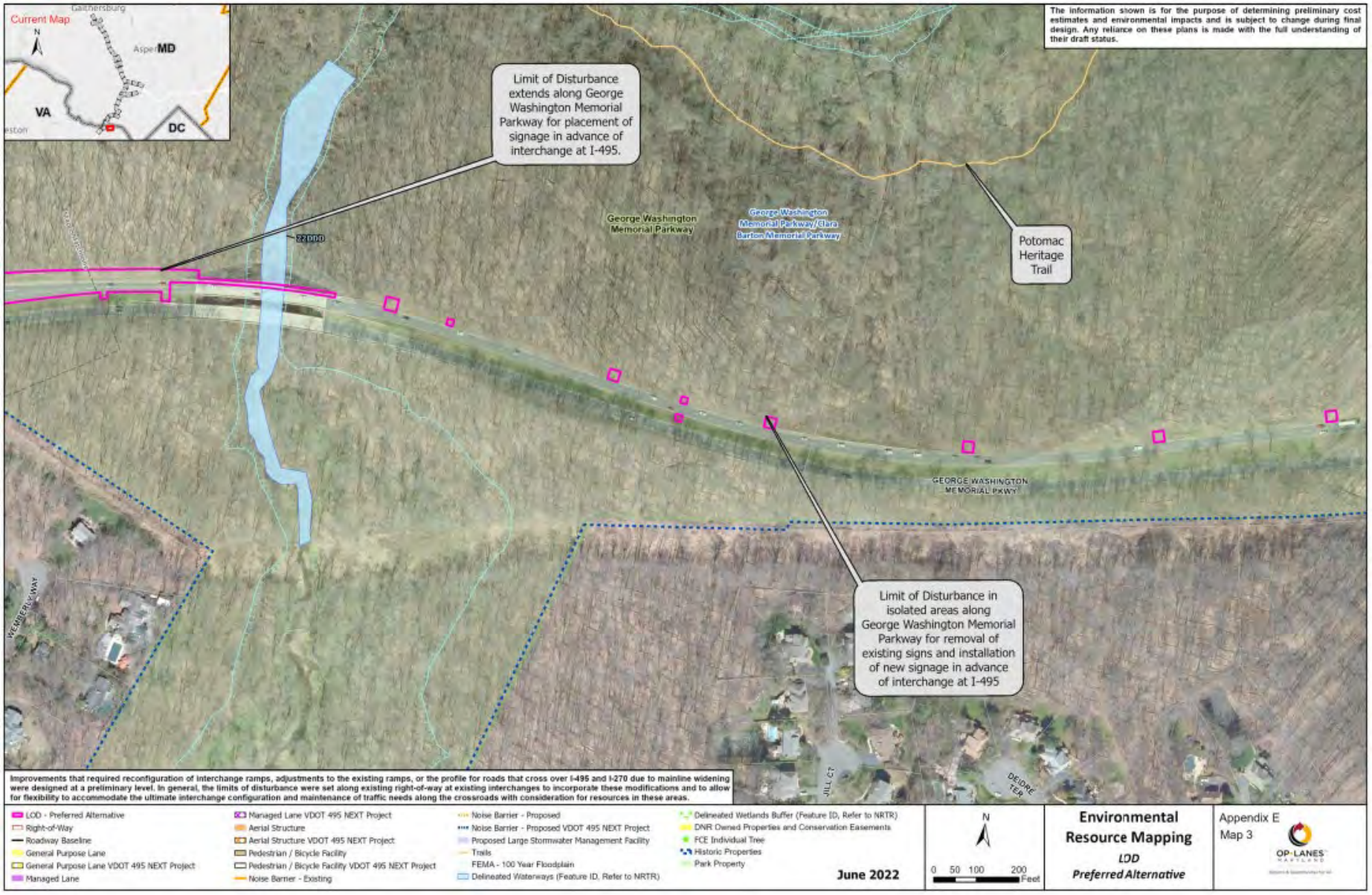
Source: I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement

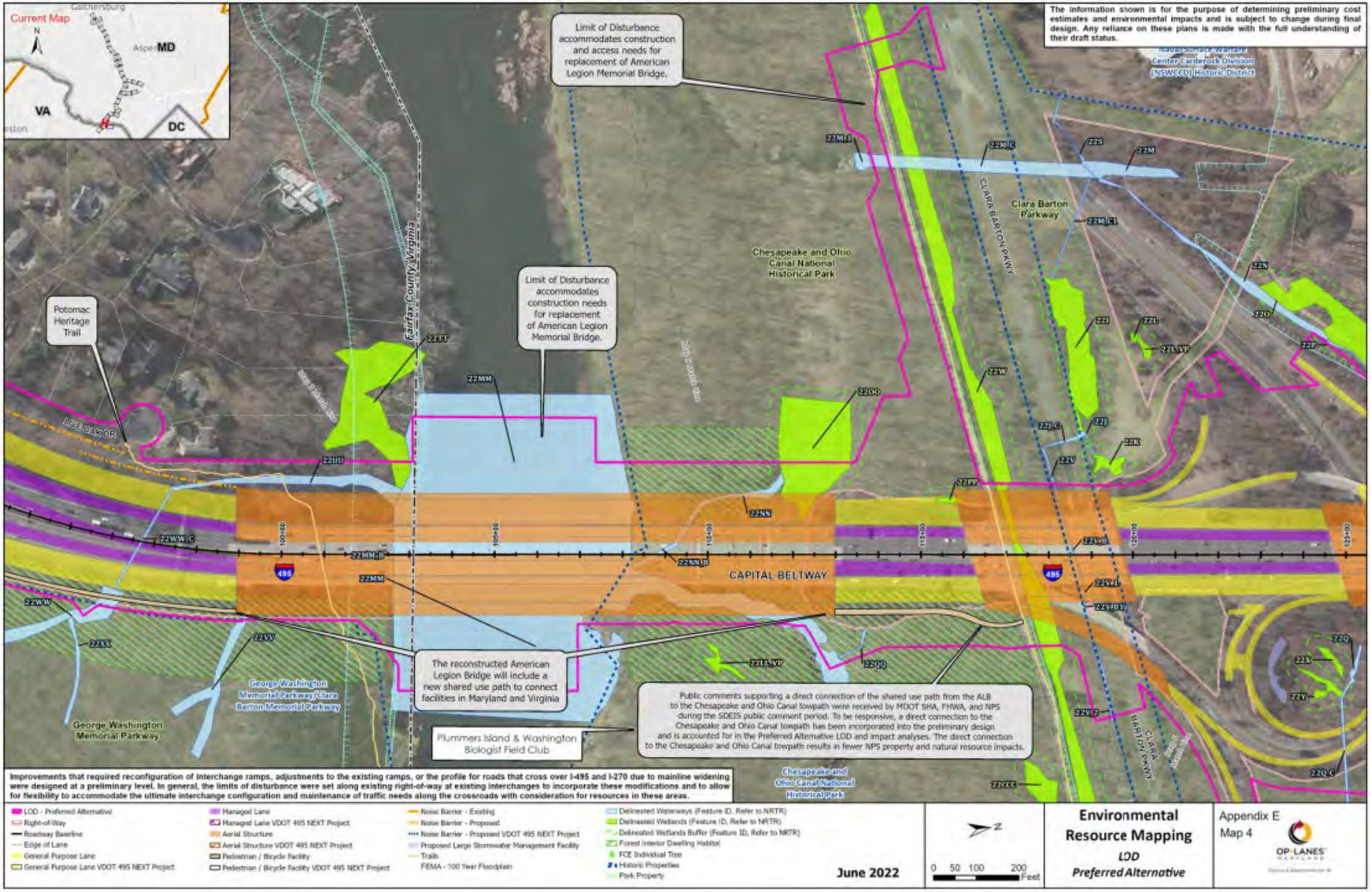


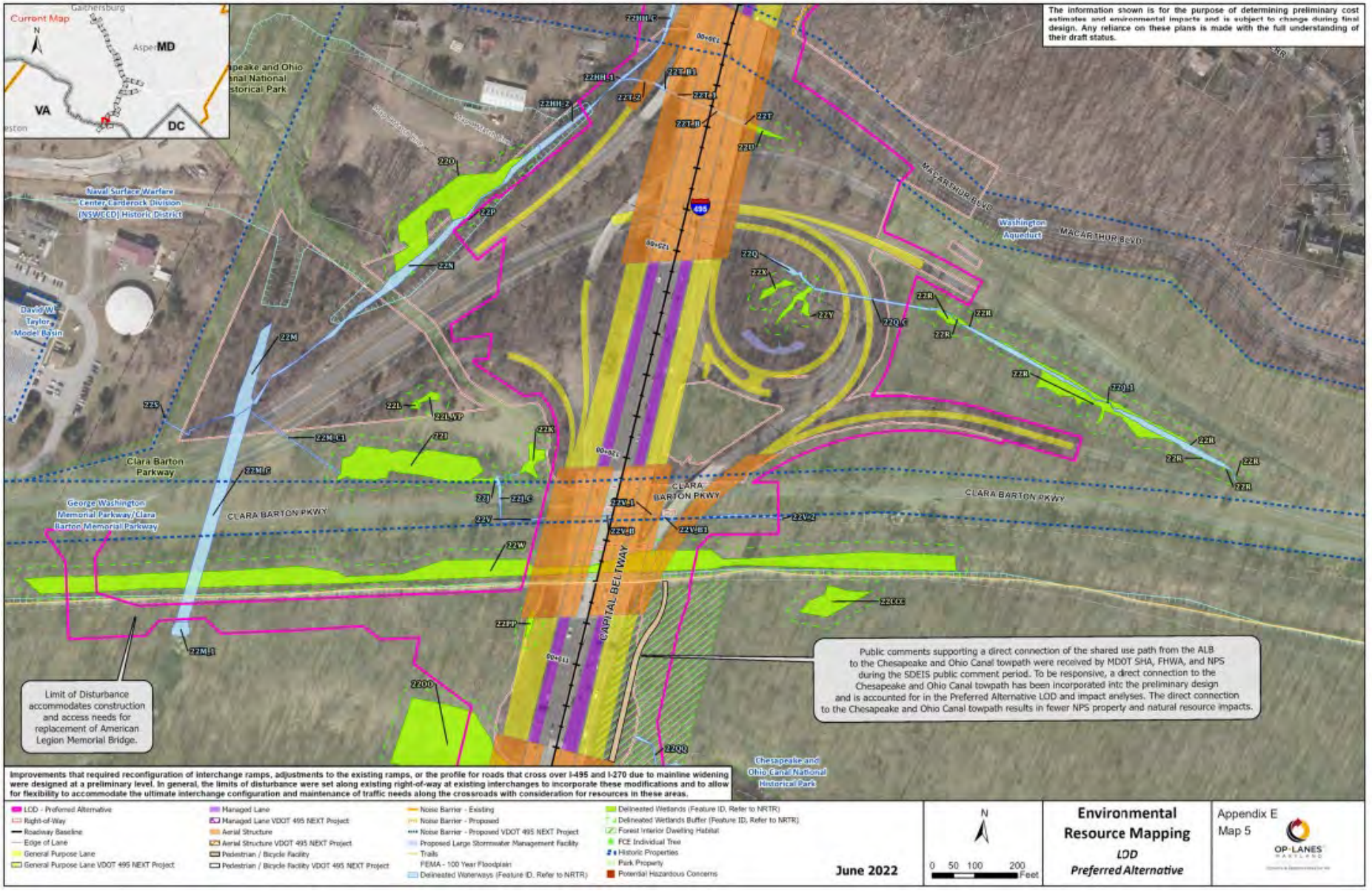
Note: Properties labeled and numbered in red are included as part of the Section 4(f) inventory but are not impacted by the Preferred Alternative.


Current Map
Gaithersburg
Aspen Hill
MD
VA
DC
The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status.
Scott's Run Nature Preserve
Exchange ramp proposed between managed lanes in Maryland and general purpose lanes in Virginia
Direct access from managed lanes in Maryland proposed at George Washington Memorial Parkway interchange
CAPITAL BELTWAY
495
BALLS HILL RD
BENJAMIN ST
Holy Trinity Church
LIVE OAK DR
GEORGE WASHINGTON MEMORIAL PKWY
Proposed lanes will tie into the VDOT I-495 Express Lanes Northern Extension (495 NEXT) project
HOLYROOD DR
ARBOR LN
RIVER OAKS DR
Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.
LOD - Preferred Alternative
Right-of-Way
Roadway Baseline
Edge of Lane
General Purpose Lane
General Purpose Lane VDOT 495 NEXT Project
Managed Lane
Managed Lane VDOT 495 NEXT Project
Aerial Structure
Aerial Structure VDOT 495 NEXT Project
Pedestrian / Bicycle Facility
Pedestrian / Bicycle Facility VDOT 495 NEXT Project
Noise Barrier - Existing
Noise Barrier - Proposed
Noise Barrier - Proposed VDOT 495 NEXT Project
Proposed Large Stormwater Management Facility
Trails
Delineated Waterways (Feature ID, Refer to NRTR)
Delineated Wetlands (Feature ID, Refer to NRTR)
Delineated Wetlands Buffer (Feature ID, Refer to NRTR)
FCE Individual Tree
Park Property
Potential Hazardous Concerns
Place of Worship
June 2022
0 50 100 200 Feet
Environmental Resource Mapping
LOD
Preferred Alternative
Appendix E
Map 1
OP-LANES MARYLAND


Current Map
MD
VA
DC
The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status.
Potomac Heritage Trail
GREENOAK DR
LIVE OAK DR
RIVERBEND DR
CAPITAL BELTWAY
George Washington Memorial Parkway
George Washington Memorial Parkway/Clara Barton Memorial Parkway
Limit of Disturbance extends along George Washington Memorial Parkway for placement of signage in advance of interchange at I-495.
Exchange ramp proposed from general purpose lanes in Virginia to managed lanes in Maryland.
Direct access to managed lanes in Maryland proposed at George Washington Memorial Parkway interchange
PORTOBELLO RD
BUTTERNUT CT
LAWTON ST
GEORGE WASHINGTON MEMORIAL PKWY
Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.
LOD - Preferred Alternative
Right-of-Way
Roadway Baseline
Edge of Lane
General Purpose Lane
General Purpose Lane VDOT 495 NEXT Project
Managed Lane
Managed Lane VDOT 495 NEXT Project
Aerial Structure
Aerial Structure VDOT 495 NEXT Project
Pedestrian / Bicycle Facility
Pedestrian / Bicycle Facility VDOT 495 NEXT Project
Noise Barrier - Existing
Noise Barrier - Proposed
Noise Barrier - Proposed VDOT 495 NEXT Project
Proposed Large Stormwater Management Facility
Trails
FEMA - 100 Year Floodplain
Delineated Waterways (Feature ID, Refer to NRTR)
Delineated Wetlands Buffer (Feature ID, Refer to NRTR)
Forest Interior Dwelling Habitat
FCE Individual Tree
Historic Properties
Park Property
June 2022
0 50 100 200 Feet
Environmental Resource Mapping
LOD
Preferred Alternative
Appendix E
Map 2
OP-LANES MARYLAND


Current Map
N
Gaithersburg
Aspen
MD
VA
DC
The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status.
Limit of Disturbance extends along George Washington Memorial Parkway for placement of signage in advance of interchange at I-495.
George Washington Memorial Parkway
George Washington Memorial Parkway/Clara Barton Memorial Parkway
Potomac Heritage Trail
GEORGE WASHINGTON MEMORIAL PKWY
Limit of Disturbance in isolated areas along George Washington Memorial Parkway for removal of existing signs and installation of new signage in advance of interchange at I-495
Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.
LOD - Preferred Alternative
Right-of-Way
Roadway Baseline
General Purpose Lane
General Purpose Lane VDOT 495 NEXT Project
Managed Lane
Managed Lane VDOT 495 NEXT Project
Aerial Structure
Aerial Structure VDOT 495 NEXT Project
Pedestrian / Bicycle Facility
Pedestrian / Bicycle Facility VDOT 495 NEXT Project
Noise Barrier - Existing
Noise Barrier - Proposed
Noise Barrier - Proposed VDOT 495 NEXT Project
Proposed Large Stormwater Management Facility
Trails
FEMA - 100 Year Floodplain
Delineated Waterways (Feature ID, Refer to NRTR)
Delineated Wetlands Buffer (Feature ID, Refer to NRTR)
DNR Owned Properties and Conservation Easements
FCE Individual Tree
Historic Properties
Park Property
June 2022
N
0 50 100 200 Feet
Environmental Resource Mapping
LOD
Preferred Alternative
Appendix E
Map 3
OPLANES MARYLAND


Current Map
Gaithersburg
Aspen
MD
VA
DC
The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status.
Limit of Disturbance accommodates construction and access needs for replacement of American Legion Memorial Bridge.
Limit of Disturbance accommodates construction needs for replacement of American Legion Memorial Bridge.
Potomac Heritage Trail
Fairfax County, Virginia
Chesapeake and Ohio Canal National Historical Park
Clara Barton Parkway
CLARA BARTON PKWY
CAPITAL BELTWAY
George Washington Memorial Parkway/Clara Barton Memorial Parkway
George Washington Memorial Parkway
The reconstructed American Legion Bridge will include a new shared use path to connect facilities in Maryland and Virginia
Plummers Island & Washington Biologist Field Club
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 direct connection to the Chesapeake and Ohio Canal towpath results in fewer NPS property and natural resource impacts.
Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.
LOD - Preferred Alternative
Right-of-Way
Roadway Baseline
Edge of Lane
General Purpose Lane
General Purpose Lane VDOT 495 NEXT Project
Managed Lane
Managed Lane VDOT 495 NEXT Project
Aerial Structure
Aerial Structure VDOT 495 NEXT Project
Pedestrian / Bicycle Facility
Pedestrian / Bicycle Facility VDOT 495 NEXT Project
Noise Barrier - Existing
Noise Barrier - Proposed
Noise Barrier - Proposed VDOT 495 NEXT Project
Proposed Large Stormwater Management Facility
Trails
FEMA - 100 Year Floodplain
Delineated Waterways (Feature ID, Refer to NRTR)
Delineated Wetlands (Feature ID, Refer to NRTR)
Delineated Wetlands Buffer (Feature ID, Refer to NRTR)
Forest Interior Dwelling Habitat
FCE Individual Tree
Historic Properties
Park Property
June 2022
0 50 100 200 Feet
Environmental Resource Mapping
LOD
Preferred Alternative
Appendix E
Map 4
OP LANES MARYLAND


Current Map
Gaithersburg
Aspen
MD
VA
DC
The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status.
Naval Surface Warfare Center, Carderock Division (NSWCCD) Historic District
David W. Taylor Model Basin
Clara Barton Parkway
George Washington Memorial Parkway/Clara Barton Memorial Parkway
CLARA BARTON PKWY
CAPITAL BELTWAY
MACARTHUR BLVD
Washington Aqueduct
Chesapeake and Ohio Canal National Historical Park
Limit of Disturbance accommodates construction and access needs for replacement of American Legion Memorial Bridge.
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 direct connection to the Chesapeake and Ohio Canal towpath results in fewer NPS property and natural resource impacts.
Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.
LOD - Preferred Alternative
Right-of-Way
Roadway Baseline
Edge of Lane
General Purpose Lane
General Purpose Lane VDOT 495 NEXT Project
Managed Lane
Managed Lane VDOT 495 NEXT Project
Aerial Structure
Aerial Structure VDOT 495 NEXT Project
Pedestrian / Bicycle Facility
Pedestrian / Bicycle Facility VDOT 495 NEXT Project
Noise Barrier - Existing
Noise Barrier - Proposed
Noise Barrier - Proposed VDOT 495 NEXT Project
Proposed Large Stormwater Management Facility
Trails
PEMA - 100 Year Floodplain
Delineated Waterways (Feature ID, Refer to NRTR)
Delineated Wetlands (Feature ID, Refer to NRTR)
Delineated Wetlands Buffer (Feature ID, Refer to NRTR)
Forest Interior Dwelling Habitat
FCE Individual Tree
Historic Properties
Park Property
Potential Hazardous Concerns
June 2022
N
0 50 100 200 Feet
Environmental Resource Mapping
LOD
Preferred Alternative
Appendix E
Map 5
OP-LANES MARYLAND

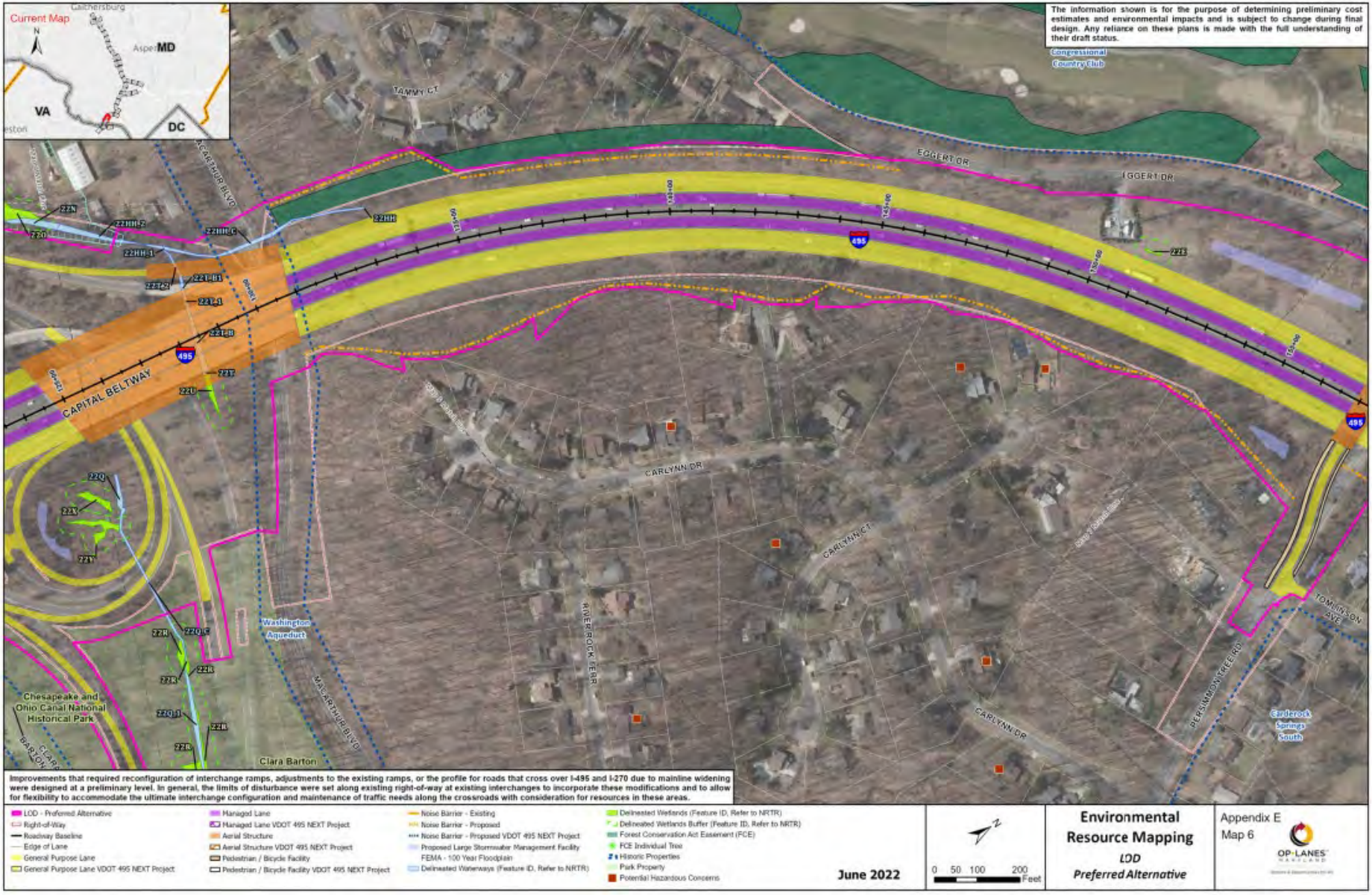

Current Map
Gaithersburg
Aspen
MD
VA
DC
The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status.
Congressional Country Club
TAMMY CT
EGGERT DR
MACARTHUR BLVD
CAPITAL BELTWAY
495
CARLYNN DR
CARLYNN CT
RIVER ROCK TERR
PERSIMMON TREE RD
TOMLINSON AVE
Washington Aqueduct
MACARTHUR BLVD
Chesapeake and Ohio Canal National Historical Park
Clara Barton
Cinderock Springs South
Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.
LOD - Preferred Alternative
Right-of-Way
Roadway Baseline
Edge of Lane
General Purpose Lane
General Purpose Lane VDOT 495 NEXT Project
Managed Lane
Managed Lane VDOT 495 NEXT Project
Aerial Structure
Aerial Structure VDOT 495 NEXT Project
Pedestrian / Bicycle Facility
Pedestrian / Bicycle Facility VDOT 495 NEXT Project
Noise Barrier - Existing
Noise Barrier - Proposed
Noise Barrier - Proposed VDOT 495 NEXT Project
Proposed Large Stormwater Management Facility
FEMA - 100 Year Floodplain
Delineated Waterways (Feature ID, Refer to NRTR)
Delineated Wetlands (Feature ID, Refer to NRTR)
Delineated Wetlands Buffer (Feature ID, Refer to NRTR)
Forest Conservation Act Easement (FCE)
FCE Individual Tree
Historic Properties
Park Property
Potential Hazardous Concerns
June 2022
0 50 100 200 Feet
Environmental Resource Mapping
LOD
Preferred Alternative
Appendix E
Map 6
OP-LANES MARYLAND

EXHIBIT C: FHWA Record of Decision, Appendix A: Compensatory Mitigation Items

Source: Federal Highway Administration (FHWA), I-495 and I-270 Managed Lanes Study Final Environmental Impact Statement and Record of Decision, Appendix A: Mitigation and Commitments by MDOT SHA and P3 Developer, https://oplanesmd.com/wp-content/uploads/2022/08/FHWA_ROD_AppA_CommitmentsMitigation_p.pdf.

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	PARKLAND		
	NATIONAL PARK SERVICE		
9.	Develop and implement a Comprehensive Ecological Restoration Plan and Cost Estimate for Restoring Limits of Disturbance to Preexisting Conditions for the impacted area. The plan shall include the following components: • *Forest and terrestrial vegetation restoration including:* o Avoiding and minimizing impacts to trees within and surrounding the LOD through a robust tree protection plan. o Survey impacted vegetation community prior to construction to determine existing community composition and develop replanting plan based on survey results. o Replanting forest (including shrub and herbaceous layers) inch-for-inch within LOD in temporary impact areas and providing non-native invasive (NNI) species control and maintenance and monitoring for 5 years within reforestation area. o 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. o Providing monetary compensation for remaining tree impacts, based on inch for inch replacement of DBH impacted. • *Rare, Threatened and Endangered plant species restoration including:* o Conducting a final pre-construction of rare, threatened or endangered (RTE) plant inspection. o Collecting seeds and/or individual RTE plant species from impact area prior to construction. o Cultivating plants and storing seeds/propagating plants from seed in an off-site nursery. o Reestablishing RTE species from stored seed and cultivated and propagated plants following construction and topsoil restoration.	M	Final Design & Construction

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe

	• *Topsoil salvage and restoration including:*
	  ○ Salvaging topsoil from impact area and storing in nearest possible stockpile location.
	  ○ Restoring subsoils and reduce compaction via ripping, discing, plowing or double-digging following construction.
	  ○ Placing salvaged topsoil in impact area following construction.
	• *Herpetofauna translocation including:*
	  ○ Conducting Herpetofauna relocation effort immediately prior to construction activities
	  ▪ Conducting a sweep through a portion of the impact area with approximately 10 biologists searching for and capturing reptiles and amphibians and logging all captures.
	  ▪ Relocating captured individuals safely away from the impact area.
	  ▪ Conducting a second sweep through the same portion of impact area, logging all captures and relocating captured individuals.
	  ▪ Conducting a third sweep and relocate effort, if the number of captured individuals is not dramatically reduced and continue sweeping the portion of the work area until the number of captured individuals is minimal.
	  ▪ Continuing the multiple sweep process until the entire work area is cleared.
	• *Downed woody debris salvage and restoration including:*
	  ○ Moving all downed woody debris from the impact area to the edge of the impact area just outside of the E&S measures as part of the clearing operation.
	  ○ Restoring downed woody debris, if appropriate, to the impact area following construction and topsoil restoration.		

10.	Create/restore 1.53 acres of wetland northwest of American Legion Bridge (Site ID CHOH-13) per the Wetland Statement of Findings.	M	Construction
11.	Install new white legend and border on brown background guide signs along I-495 for the George Washington Memorial Parkway exit.	M	Construction
12.	Shift bridge piers north of Lock 13 to the maximum extent possible while maintaining adequate vertical clearance of 12 feet, 6 inches between towpath and bottom of bridge steel to accommodate NPS equipment. Design new ALB to capture all drainage outfall using downspouts. The downspouts will be located so the water does not drop onto areas with frequent pedestrian use.	C	Final Design
13.	Complete a pre-construction condition assessment of locks, masonry walls, towpath, and canal prism throughout entire LOD and develop and implement a plan for repairs identified during condition assessment subject to NPS approval.	M	Final Design

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
14.	Develop Interpretive product on archeological sites; Create web-based Story Map, waysides, and/or brochures.	M	Final Design & Construction
15.	Complete a pre-construction condition assessment of Potomac Heritage Trail within the LOD and develop and implement a plan to restore and improve the trail within the LOD, in consultation and agreement with NPS.	M	Final Design
16.	Prepare Visitor and Ecological Impact Study.	C	Completed
17.	Acquire James Audia property (two parcels totaling 1.4 acres) as replacement parkland for impacts to George Washington Memorial Parkway. If unavailable, acquire or convey property for replacement parkland of similar size and/or function in coordination with NPS.	M	Final Design
18.	Convey a portion of the MDOT SHA owned former Ridenour property (38.7 acres) to NPS as replacement parkland for impacts to Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway.	M	Final Design
19.	Provide monetary compensation up to $60,000 to NPS to update and refine the George Washington Memorial Parkway Climate Action Plan.	M	Final Design & Construction
20.	The Preferred Alternative will result in temporary closure of the Potomac Heritage National Scenic Trail within the LOD during construction. A detour route, if determined to be necessary, will continue to be developed by MDOT SHA and the Developer in coordination with NPS, Fairfax County, and VDOT. The segment of the trail within the LOD would be restored on a new alignment after construction is completed.	M	Final Design, Construction & Post-construction
21.	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, within the LOD.	C	Final Design
22.	Design and construct, in coordination with NPS and the Washington Biologists' Field Club, slope armoring along the upstream side of Plummers Island within the LOD to mitigate for future slope erosion as a result of tree clearing with the LOD. The slope armoring could include, but is not limited to, a rip-rap slope, live staking, and brush layering or any combination of armoring that will provide a blended natural aesthetic with the topography and historic nature of the island.	C	Final Design & Construction
23.	Develop and evaluate additional options for the American Legion Bridge during final design that would further minimize or avoid physical impact to Plummers Island, in consultation with the National Park Service.	C	Final Design

ID No.	Mitigation and Commitments	Mitigation (M) or Commitment (C)	Timeframe
	CULTURAL RESOURCES (SECTION 106)		
49.	Provide monetary compensation not to exceed $250,000 for a Cultural Landscape Report for Clara Barton Parkway (historical narrative; updated existing conditions, analysis, and evaluation; and treatment guidelines for management of character defining features).	M	Final Design
50.	Prepare National Register Nomination for Dead Run Ridges Archaeological District in coordination with NPS and submit to Virginia SHPO.	M	Final Design
51.	Complete Phase III Archaeological Data Recovery at 44FX0374, 44FX0379 and 44FX0389 (George Washington Memorial Parkway) and develop associated public interpretation materials.	M	Final Design
52.	Complete Phase III Archaeological Data Recovery at 18MO749 and 18MO751 (Chesapeake and Ohio Canal) and develop associated public interpretation materials.	M	Final Design

EXHIBIT D: FHWA Record of Decision, Appendix C: Section 106 Programmatic Agreement

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
NATIONAL PARK SERVICE,
MARYLAND STATE HISTORIC PRESERVATION OFFICER,
VIRGINIA STATE HISTORIC PRESERVATION OFFICER
AND
ADVISORY COUNCIL ON HISTORIC PRESERVATION

Implementing Section 106 of the National Historic Preservation Act for the I-495 and I-270 Managed Lanes Study
Anne Arundel, Frederick, Montgomery and Prince George's Counties, Maryland, and Fairfax County, Virginia

WHEREAS, the U.S. Department of Transportation, Federal Highway Administration (FHWA), plans to approve the I-495 and I-270 Managed Lanes Study (MLS), a proposed Public-Private Partnership (P3) administered by the Maryland Department of Transportation State Highway Administration (MDOT SHA); and

WHEREAS, the MLS Preferred Alternative, "Alternative 9 Phase I South" (Project) consists of construction of Priced Managed Lanes along Interstates 495 and 270, beginning in Fairfax County, Virginia, and extending north to approximately Interstate 370, and east along the separated portions of I-495 ("spurs") to approximately Maryland Route 187, as described in detail via documentation linked in Attachment 4; and

WHEREAS, FHWA has determined that the Project is an undertaking, as defined in 36 C.F.R. §800.16(y), and thus is subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, and its implementing regulations, 36 C.F.R. Part 800 as amended; and

WHEREAS, MDOT SHA, with the approval of FHWA, intends to deliver the Project as a P3 using the services of a private sector developer or multiple developers who will advance the Project and be responsible for design, construction, operation and maintenance, subject to approvals by MDOT SHA and/or FHWA; and

WHEREAS, the Project may be implemented in construction phases, yet to be fully defined, and although this Programmatic Agreement (PA) reflects evaluation of the entire defined Project, certain commitments may require phased implementation; and

WHEREAS, FHWA is the lead agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004); and

WHEREAS, MDOT SHA, on behalf of FHWA, has established and updated the Area of Potential Effects (APE) for the project in consultation with the Maryland State Historic Preservation Office (MD SHPO) and Virginia State Historic Preservation Office (VA SHPO), encompassing the corridor project limits as described above, including areas of direct limits of disturbance, inclusive of all project elements with the potential to affect historic properties, such as identified natural resource and park mitigation sites, and a sufficient buffer for audible and visual effects where they may be likely to occur; a link to the detailed map of the APE is provided in Attachment 4; and

WHEREAS, the National Park Service (NPS) agrees FHWA is the lead federal agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004) and has agreed to participate in this PA as an Invited Signatory; and

WHEREAS, federal agencies which, at FHWA's invitation, designate FHWA as the lead federal agency for the Project may use this PA to fulfill their obligations under Section 106 of the NHPA according to 36 C.F.R. 800.2(a)(2), without the need for amendment of this PA, provided that FHWA follows the requirements of this PA; and

WHEREAS, NPS would authorize permanent use of the affected federal park property for the Project through coordination with FHWA for a Highway Deed Easement and would issue a permit for temporary use of land under its administration for construction-related activities. NPS intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14; and

WHEREAS, the Project will involve the use of lands managed by the NPS within the Chesapeake and Ohio Canal National Historical Park, a unit of the National Park System, and the George Washington Memorial Parkway (GWMP), a unit of the National Park System, that includes the Clara Barton Parkway; and

WHEREAS, NPS is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 U.S.C. § 100101(a) to "conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations"; and

WHEREAS, the GWMP, a unit of the National Park System, with portions located in Montgomery County, Maryland; and Fairfax and Arlington Counties and the City of Alexandria in Virginia, was established following the authorization of the parkway pursuant to what is known as the Capper-Cramton Act, Public Law 71-284, 46 Statute 482 (1930), and came to be administered by NPS pursuant to Executive Order 6166 of June 10, 1933. The GWMP is on the National Register of Historic Places (NRHP) for its association with twentieth century parkway design, engineering, landscape architecture, park planning and conservation, commemoration, and an association with George Washington; and

WHEREAS, the Clara Barton Parkway is the portion of the GWMP that runs along the Maryland side of the Potomac River and which also became part of the National Park System through the

Capper-Cramton Act (originally as the Maryland portion of the GWMP). The Clara Barton Parkway, as a portion of the GWMP, is also on the NRHP; and

WHEREAS, the Chesapeake and Ohio Canal National Historical Park, a unit of the National Park System, stretches along the Potomac River from Rock Creek at Georgetown in Washington, D.C., to Cumberland, Maryland, for 184.5 miles, was established as a national monument in 1961 and was then established as a national historical park by Congress in 1971, through Public Law 91-664 for the purpose of preserving and interpreting the 19th century transportation canal and its associated scenic, natural, and cultural resources; and providing opportunities for education and appropriate outdoor recreation. The Chesapeake and Ohio Canal National Historical Park is listed on the NRHP and contains more than 1,300 historic structures, including one of the largest collections of 19th century canal features and buildings in the national park system. The towpath and canal cross underneath I-495 at the American Legion Bridge, in Bethesda, Maryland; and

WHEREAS, FHWA has elected to phase the identification, evaluation, and effects assessment of certain portions of the APE and historic properties where unavailability of access or design information precluded such identification, evaluation and assessment, as provided in 36 C.F.R. 800.4(b)(2), and 36 C.F.R. 800.5(a)(3); and

WHEREAS, FHWA will ensure additional identification, evaluation, and assessment is completed in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to avoid, minimize, or mitigate for any potential adverse effects to historic properties; and

WHEREAS, FHWA has initiated consultation pursuant to 36 C.F.R. 800.3(c) with the MD SHPO by letter on April 12, 2018 and the VA SHPO by letter on May 14, 2019, and the term "SHPO" is used to refer to both state offices when one is not specified; MDOT SHA on behalf of FHWA will continue to consult with the appropriate SHPO and consulting parties under the terms of this PA in order to identify historic properties, assess the effects of the Project on historic properties, and, if necessary, resolve adverse effects to historic properties; and

WHEREAS, FHWA, pursuant to 36 C.F.R. 800.6(a)(1)(i)(C), on March 26, 2018, initiated Section 106 consultation with the Advisory Council on Historic Preservation (ACHP), and the ACHP has chosen to participate in the consultation pursuant to 36 C.F.R. 800.6(a)(1)(iii); and

WHEREAS, FHWA, pursuant to 36 C.F.R. § 800.10(c), invited the Secretary of the Interior (Secretary) to participate in consultation by letter dated March 16, 2020, as the Project includes National Historic Landmarks (NHL) within the APE, and the National Park Service, National Capital Area NHL Program (NPS-NHL) has represented the Secretary concerning the NHLs within the Project throughout consultation and will continue to participate in future consultations involving the NHLs, and

WHEREAS, FHWA, ACHP, MDOT SHA, and the MD SHPO, under the *Amended Programmatic Agreement Among the Federal Highway Administration, the Maryland Department of Transportation State Highway Administration, the Advisory Council on Historic Preservation, the Maryland State Historic Preservation Officer, Implementing Section 106 of the National*

Historic Preservation Act for the Federal-aid Highway Program in Maryland ("Statewide PA", linked in Attachment 4), have agreed to delegate certain authorities relating to Section 106 of the NHPA to MDOT SHA for Federal-aid Highway Projects in Maryland; and

WHEREAS, MDOT SHA, pursuant to the Statewide PA, employs professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history who will oversee implementation of stipulations in this PA; and

WHEREAS, MDOT SHA, on behalf of FHWA, pursuant to 36 C.F.R. 800.4(a)(1), has established and updated the APE for the Project in consultation with the MD and VA SHPO, has identified historic properties within the APE, and has identified adversely affected properties, as described in the *Draft Section 106 Technical Report* of January 2020 and subsequent documentation (linked in Attachment 4); and

WHEREAS, MDOT SHA and FHWA, pursuant to 36 C.F.R 800.2(d) have sought and considered the views of the public regarding the Project's effects on historic properties by providing notice and information in following its public involvement procedures under the National Environmental Policy Act (NEPA); and

WHEREAS, MDOT SHA, during the course of consultation, has invited the parties listed in Attachment 2 to participate in consultation on the Project; and

WHEREAS, the parties listed in Attachment 3, based on their relationship to specific actions as specified in this PA, or interest in historic properties affected by the project, have been invited to be consulting parties and concur by signing this PA; and

WHEREAS, MDOT SHA and FHWA have initiated consultation with Federally recognized Native American tribal nations (Tribes) listed in Attachment 2 and provided the Tribes with information about the Project. MDOT SHA, on behalf of FHWA, has invited the same Tribes to be consulting parties, as shown in Attachment 3, and concur by signing this PA; and

WHEREAS, FHWA has invited MDOT SHA and NPS to be invited Signatories to this PA, based on their responsibilities for implementation of its terms, and all Signatories, required and invited, are referred to as "Signatories" to this document; and.

WHEREAS, FHWA has determined that the Project will have an adverse effect on NRHP-listed or eligible properties ("historic properties") including the George Washington Memorial Parkway (Clara Barton Parkway), the Chesapeake and Ohio Canal National Historical Park, the Washington Biologists' Field Club on Plummers Island, Gibson Grove African Methodist Episcopal Zion Church, archaeological sites 44FX3922 (Dead Run Ridges Archaeological District), 44FX0374, 44FX0379, 44FX0389, 18MO749 and 18MO751; that additional effects may not be completely known; and that FHWA intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14 and to govern the implementation of the Project and the resolution of adverse effects.

NOW, THEREFORE, FHWA, NPS, ACHP, MDOT SHA, MD SHPO, and VA SHPO, (hereinafter "Signatories") agree that the Project will be implemented in accordance with the following Stipulations in order to take into account the effect of the Project on historic properties and that these Stipulations will govern compliance of the Project with Section 106 of the NHPA until this PA expires or is terminated.

Stipulations

I. Roles and Responsibilities

A. **FHWA** is the lead federal agency and is responsible for ensuring the terms of this PA are carried out.

B. **MDOT SHA** is delegated authority by FHWA under this PA and the Statewide PA to continue defined aspects of consultation, Project compliance review, and mitigation implementation. MDOT SHA will be primarily responsible for implementation of this PA excepting where otherwise specified. Additionally:

1. MDOT SHA will enter into agreements with one or more developers to design, build, and operate the Project. MDOT SHA will ensure the work of the developer or developers conforms to the requirements of this PA and may task the developer(s) with assistance with certain commitments (such as context-sensitive design); however, MDOT SHA may not delegate consultation obligations or other responsibilities specified in this PA to the developer(s).
2. MDOT SHA will require the developer(s) to retain professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history for the duration of design and construction to assist with design commitments, liaise with MDOT SHA cultural resources staff and facilitate compliance with this PA.
3. MDOT SHA, on behalf of FHWA, will consult with the relevant SHPO(s) for actions under this PA and 36 C.F.R. 800.

C. **NPS** is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 U.S.C. § 100101(a).

D. **SHPO**: The Maryland Historical Trust (MD SHPO) has jurisdiction as established in the NHPA for historic properties in Maryland. The Virginia Department of Historic Resources (VA SHPO) has jurisdiction as established in the NHPA for historic properties in Virginia. The SHPOs will:

1. Respond to requests from MDOT SHA for concurrence on eligibility determinations, effect determinations, and technical documents within a 30-day review period unless otherwise specified in this PA, or MDOT SHA specifically

provides for an extended review period at the time of submittal. MDOT SHA and FHWA may assume concurrence or no objection to determinations and submittals if no response is received within 30 days, if no extended timeline is specifically established in the review request or if no timeline is specified in 36 C.F.R. 800. All durations referenced in this PA refer to calendar days.

2. Provide written comments, share general technical assistance/guidance, and make available to MDOT SHA or its designates survey records or other documents necessary to fulfill the requirements of this PA.

E. ACHP will provide policy guidance, provide comment on issues that may arise as requested by parties to this PA, and participate in dispute resolution as specified in Stipulation XIII.

F. Consulting Parties/Public

1. MDOT SHA has consulted with or provided the opportunity to consult to the parties listed in Attachment 2 prior to finalizing this PA. Because the Preferred Alternative no longer affects numerous historic properties identified in earlier alternatives considered, several parties listed in Attachment 2 no longer have a demonstrable interest in historic properties affected by the Project. Parties listed in Attachment 3 continue to have a defined relationship to the Project and have been invited to concur in this PA.

2. MDOT SHA will provide all consulting parties in Attachment 3, regardless of concurring status, with opportunities to consult on Project changes or new elements with the potential to affect historic properties. MDOT SHA will offer other appropriate consulting parties the opportunity to rejoin or newly join consultation in the event of new or revised Project elements. Consulting parties may sign this PA as concurring parties at any time after execution of the PA with the invitation of MDOT SHA or FHWA. Additional consulting parties may be included in Attachment 3 without the need to amend this PA.

3. Concurrence with the PA by a party does not necessarily indicate that the party supports the Project, the Preferred Alternative, or endorses all stipulations of this PA, but rather indicates the desire of such parties to acknowledge consultation and/or remain involved in implementation of specific terms of this PA.

4. MDOT SHA will provide for notification of the public for substantial changes to the Project that would result in an expanded APE or new effects to historic properties consistent with 36 CFR 800.8(c)(1)(iv) and procedures under NEPA to ensure ongoing opportunities for public input. As appropriate, this process may identify new consulting or concurring parties who may wish to join the PA at a later time in response to Project refinement.

II. Professional Standards

A. Guidelines, standards and regulations relevant to this PA and its purposes are listed below, and links to these documents are found in Attachment 4. Additionally, it is the intention of the Signatories to interpret this PA to incorporate any subsequent standards, revisions of standards, or applicable guidance issued by the Secretary, ACHP, or MD SHPO or VA SHPO as then in force during this PA.

1. 36 C.F.R. Part 800: Protection of Historic Properties, as amended (2004);
2. *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983);
3. Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983)
4. *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994), including *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018);
5. *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (Maryland Historical Trust, Revised 2019);
6. *Guidelines for Conducting Historic Resources Survey in Virginia* (Virginia Department of Historic Resources, revised September 2017)
7. 36 C.F.R Part 79: Curation of Federally-Owned and Administered Archaeological Collections
8. *NPS Museum Handbook*, National Park Service, revised 2019
9. Program Comment for Actions Affecting Post-1945 Concrete Steel Bridges (77 FR 68790);
10. *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
11. *Section 106 Archaeology Guidance* (ACHP, 2009)
12. Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects (ACHP February 2007);
13. National Register of Historic Places Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service revised 1997), National Register of Historic Places Bulletin 16A, *How to Complete the National Register Registration Form* (National Park Service revised 1997), and other National Register Bulletins as applicable
14. NPS Management Policies – Section 5, Cultural Resource Management (2006)

15. Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017); and accompanying guidelines for Treatment of Historic Properties (1995, Revised 2017) and Cultural Landscapes (1996)

III. General Project Section 106 Commitments

A. MDOT SHA will implement mitigation concurrent with construction phasing where impacts will occur; in the event that the Project is modified or certain elements causing adverse effects are not constructed, MDOT SHA will notify Signatories and consulting parties of the change at such time as a final decision is made to remove such elements and amend the PA as necessary.

B. MDOT SHA cultural resources staff who meet Secretary of the Interior's Professional Qualifications Standards will oversee implementation of all mitigation commitments and other terms of this PA.

C. Consultation on Reforestation and other Mitigation Sites

1. MDOT SHA is obligated to provide reforestation mitigation for the Project pursuant to the Maryland Reforestation Law (MD Nat Res Code § 5-103). Reforestation must occur within 2 years or 3 growing seasons of completion of construction. MDOT SHA is also coordinating with the NPS to identify reforestation sites to account for impacted NPS-managed lands. The locations to be used for reforestation are not yet fully identified. Reforestation activities may take the form of conservation easements or other noninvasive activities which would not affect historic properties. MDOT SHA will not consult on easements or conservation actions where no ground disturbance is involved. If areas outside the APE are identified for reforestation where new plantings or other activities with the potential to affect historic properties are identified, MDOT SHA will consult in accordance with Stipulation IV to add such areas to the APE, identify historic properties, and evaluate effects to historic properties. MDOT SHA will avoid adverse effects to historic properties to the maximum extent practicable in selecting reforestation planting sites. If adverse effects are unavoidable, MDOT SHA will amend this PA in accordance with Stipulation XII to resolve any such adverse effects.

2. As Project development proceeds, additional and revised mitigation or enhancement locations for impacts to resources other than historic properties may be identified. These resources include, but are not limited to wetlands, stormwater, and parks. To account for effects to historic properties at these locations, when actions are proposed at such locations that may affect historic properties, MDOT SHA will amend the APE and follow the procedure described in Stipulation IV below.

IV. Consultation Regarding Project Development

A. Further consultation requirements regarding specific historic properties affected by the Project are described in Stipulation V. As project design advances or ancillary activities not currently known are identified, MDOT SHA will initiate consultation with SHPOs and other consulting parties (as described below) using the following process.

1. MDOT SHA cultural resources staff will review proposed changes that affect project location, design, methods of construction, materials, or limits of disturbance (LOD), for potential new effects to historic properties. Should these changes necessitate an expansion of the APE, or if the changes would affect known or potential historic properties differently than described in this PA, MDOT SHA will consult on behalf of FHWA as described in Stipulation IV.B below.
2. If MDOT SHA, working with the developer(s), finds design or construction solutions that avoid or further minimize adverse effects to historic properties, MDOT SHA will consult in accordance with the procedures in Stipulation IV.B to seek concurrence with any updated determinations of effect, and amend this PA in accordance with Stipulation XII.
3. MDOT SHA, on behalf of FHWA, will consult upon changes to the LOD within the existing APE where additional archaeological investigation is recommended in the Cultural Resources Technical Report or where such recommendations are identified in subsequent consultation documentation, including the treatment plans described in Stipulations VI and VII.
4. MDOT SHA, on behalf of FHWA, will consult as specified elsewhere in this PA regarding specific stipulations, including Monitoring of Performance (Stipulation VIII).

B. MDOT SHA, on behalf of FHWA, consistent with the principles described in 36 C.F.R. §§ 800.3 – 6, will consult with the appropriate SHPO(s), Signatories, concurring parties to this PA, Tribes who may ascribe religious and cultural significance to properties pursuant to 36 C.F.R. § 800.3(f)(2), local public agencies with jurisdiction and other consulting parties identified for this undertaking as appropriate on:

1. Amendments to the APE, consistent with 36 C.F.R. § 800.16(d), including identification and documentation of any new historic properties within the amended APE consistent with 36 C.F.R § 800.4(a) and (b).
2. New or revised determinations of eligibility for historic properties within the APE as described above, consistent with 36 C.F.R § 800.4(c).
3. New or revised assessment of effects to historic properties within the APE as described above, consistent with 36 C.F.R § 800.5.

4. If MDOT SHA determines there are any new adverse effects to historic properties, it will notify FHWA. MDOT SHA and FHWA will consult with the SHPO and identified consulting parties to resolve the adverse effects consistent with 36 C.F.R § 800.6, including alternatives to avoid, minimize or mitigate such adverse effects; MDOT SHA and FHWA will follow the procedures in Appendix 3 and/or amend this PA as necessary to document such resolution of any new adverse effects.

C. MDOT SHA will consult with the relevant SHPO(s), Signatories, Tribes, and appropriate consulting parties on archaeology inventory, archaeological evaluations for NRHP eligibility, and effect determinations for archaeological historic properties.

D. MDOT SHA will provide consultation materials in written or electronic form, and follow timelines for comment opportunity as specified in Stipulation I. D.

V. Property-Specific Commitments

MDOT SHA will be responsible for ensuring the following mitigation and commitments are carried out, under the oversight of FHWA. MDOT SHA will either complete mitigation itself or enter into legally binding agreements with partner agencies to ensure the following stipulations are fulfilled, subject to the requirements of each stipulation below. Mitigation and commitments will be implemented by authorized construction phase, unless there is opportunity to provide advanced mitigation that is mutually agreeable to all parties, is feasible to advance, and is identified by MDOT SHA as a priority. All commitments regarding design-review with consulting parties will be conducted in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to influence design to avoid impacts or ensure compatibility to the extent practicable with historic properties. Preliminary engineering activities to support design of future phases, such as geotechnical studies or other similar, minimally invasive activities with limited potential to affect historic properties may proceed within the APE prior to construction authorization and will not require consultation or advance mitigation.

A. George Washington Memorial Parkway (including Clara Barton Parkway)

1. MDOT SHA will continue property-specific Design-Review consultation with NPS and SHPOs to ensure a context-sensitive design for new facilities, and, through the ongoing design process, minimize, to the extent practicable, impacts to character-defining features and resources that contribute to the George Washington Memorial Parkway/Clara Barton Parkway as a historic property. Key elements for NPS review include the bridge design, trail connections, retaining walls, ramp improvements, signage plans and barrier. MDOT SHA will provide NPS and SHPOs a comment opportunity on plans at a draft level of design and a second opportunity prior to finalization of design for elements on

NPS property or within the APE adjacent to NPS property; for each review there will be minimum 30-day review period. In the event of objections relating to the final design from NPS or SHPOs that cannot be resolved, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will provide NPS funding in an amount not to exceed $250,000 for a Cultural Landscape Report (CLR) for Clara Barton Parkway. The CLR will include historical narrative, updated existing conditions and analysis and evaluation, and treatment guidelines for management of character-defining features. NPS will complete the CLR within five (5) years of receipt of funds from MDOT SHA and provide a copy of the completed CLR, along with a summary of implementation of any treatment measures in a timely manner following their implementation, to MD SHPO and MDOT SHA.

B. Dead Run Ridges Archaeological District (44FX3922) and individual sites 44FX0374, 44FX0379 and 44FX0389

1. In consultation with VA SHPO, NPS, and other appropriate consulting parties including consulting Tribes, MDOT SHA will develop and implement Phase III data recovery on sites 44FX0374, 44FX0379, 44FX0389 and the Dead Run Ridges Archaeological District (44FX3922) as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

2. MDOT SHA will prepare a NRHP nomination form for the Dead Run Ridges Archaeological District, no later than 12 months following finalization of the report documenting the Phase III data recovery in Stipulation V. B. 1 above, basing the nomination on the report findings. MDOT SHA will provide a copy of the draft nomination to NPS staff for review and comment prior to formal submission of the draft nomination to VA SHPO. MDOT SHA will work with VA SHPO's Register Program to develop a final draft nomination for the Dead Run Ridges Archaeological District, and VA SHPO's Register Program will process the final draft for listing in the NRHP pursuant to its established policies and procedures. The Department of Historic Resources State Review Board is under no obligation to approve the nomination for listing in the NRHP. Should the nomination be unsuccessful, or additional information be requested beyond the scope of the completed data recovery efforts, MDOT SHA will not be required to complete further fieldwork or analysis beyond what is agreed to in the treatment plan specified in Stipulation VI, or otherwise pursue nomination of the district.

C. Chesapeake and Ohio Canal National Historical Park

1. MDOT SHA will continue property-specific Design-Review consultation with NPS to ensure a context-sensitive design for new facilities constructed as

part of the Project, and, through the ongoing design process, minimize to the extent practicable impacts to character-defining features and resources that contribute to the Chesapeake and Ohio Canal National Historical Park as a historic property. MDOT SHA will provide NPS and MD SHPO a comment opportunity on design plans at a draft level of design, and a second opportunity prior to finalization of design for elements within the APE on or adjacent to NPS property; for each review there will be a minimum 30-day review period. In the event of objections from NPS or MD SHPO that cannot be resolved relating to the final design, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will locate new bridge piers away from Lock 13 as part of the new Clara Barton Parkway Bridge and will avoid placing piers for the new structure closer to Lock 13 than the current bridge piers, as shown in the Preferred Alternative.

3. MDOT SHA will protect Lock 13 in place during construction, by limiting LOD around the lock structure and providing an appropriate buffer to prevent damage. MDOT SHA will rehabilitate or restore the structure if needed following construction, with treatment determined by or in consultation with NPS and MD SHPO as described below in Stipulation V.C.4 and VC.5. As part of the Archaeological Treatment Plan in Stipulation VI, MDOT SHA will include archaeological monitoring or other treatment approaches during construction in the area around Lock 13.

4. MDOT SHA will conduct a condition assessment of lock structures, the Canal and the Towpath within the Project LOD prior to construction and provide copies of the assessment to MD SHPO and NPS. MDOT SHA will provide for rehabilitation of lock structures, the Canal, and Towpath within the Project LOD following completion of substantial construction within the affected area. MDOT SHA will provide NPS and MD SHPO with a draft rehabilitation plan for review and comment prior to implementing the plan

5. MDOT SHA will provide for vibration damage monitoring of other susceptible historic structures at Chesapeake and Ohio Canal National Historical Park within the APE during construction, specifically, Lock 12 and Lock 14. Additional vulnerable structures or features (such as masonry walls) to be monitored may be identified in consultation with NPS during the preparation and review of the condition assessment identified in Stipulation V.C.4.

a. Should notable acute or incremental damage directly resulting from construction means or methods be identified as a result of the vibration monitoring, MDOT SHA will follow Section A of the Inadvertent Discovery Plan (Attachment 1).

b. General wear or degradation of the historic fabric during construction that is not attributable to specific construction practices or incidents will be remediated by the rehabilitation plan in Stipulation V.C.4.

D. 18MO749 Archaeological Site (C&O Canal)

In consultation with MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

E. 18MO751 Archaeological Site (C&O Canal)

In consultation with MD SHPO, NPS, and other appropriate consulting parties, including Tribes, MDOT SHA will develop and implement a Phase III Data Recovery as specified in Stipulation VI. Technical reporting, as well as interpretive materials suitable for the general public will be requirements of this effort.

F. Washington Biologists' Field Club on Plummers Island

1. MDOT SHA will prepare a NRHP nomination for the Washington Biologists' Field Club on Plummers Island. MDOT SHA will provide a copy of the draft nomination to NPS staff and the Washington Biologists' Field Club (WBFC) for review prior to submittal to MD SHPO and address any comments prior to formal submission of the nomination. Should the nomination be unsuccessful, MDOT SHA will not be required to resubmit the nomination or otherwise complete additional studies or research after addressing comments by NPS staff.
2. MDOT SHA will place temporary fencing along the LOD within Plummers Island to delimit construction activities.
3. MDOT SHA will fund or implement a photographic survey documenting conditions before, during and after construction is completed adjoining Plummers Island, within the APE boundary, and provide the results to WBFC and NPS.
4. MDOT SHA will fund or develop GIS maps to document known current and historical study locations and key natural resource features within the APE to assist in documenting change over time and provide these files to WBFC and NPS.
5. MDOT SHA will procure a sub-meter accurate GPS unit for WBFC to use in long-term monitoring of plant locations, collection sites, and other historical research features.

6. MDOT SHA, subject to any availability or rights restrictions, will provide for digitization and cataloging of historical records related to the WBFC that are under the control of WBFC but housed at the Smithsonian Museum of Natural History, specifically the collection, “SIA RU102005, Smithsonian Institution, Washington Biologists' Field Club, circa 1900-1966 Records” that are not currently available in electronic format, and provide the files to WBFC and NPS.

7. MDOT SHA will provide WBFC historical content, such as a synthesis of the digitized materials in Stipulation V.F.6, to incorporate into their website.

8. MDOT SHA will complete stipulations V.F.1-7., other than those requiring longer timeframes (such as photographic survey after construction), unless continued consultation should necessitate a longer timeframe, within two (2) years of commencement of construction activities on Plummers Island.

G. Morningstar Tabernacle No. 88 Moses Hall and Cemetery

1. As part of context-sensitive design, MDOT SHA will consult with the Trustees of the Morningstar Tabernacle No. 88 Moses Hall and Cemetery, Friends of Moses Hall, First Agape A.M.E. Zion Church, Cabin John Citizens Association, and other consulting parties with a demonstrated interest in the cemetery on context-sensitive treatment of noise barrier facing the cemetery; MDOT will work with the above-listed consulting parties on a context-sensitive treatment of noise barrier facing the cemetery, which may include decorative elements appropriate to the historic property and/or such elements as memorial plaques or signage. MDOT SHA will provide these consulting parties and MD SHPO comment opportunity for Project elements, specifically noise barrier, within the APE adjacent to the cemetery at a draft level of design and a second opportunity prior to finalization of design; for each review there will be a minimum 30-day review period. In the event MD SHPO does not agree with the final design, MDOT SHA and FHWA will follow Stipulation XIII of this PA.

2. MDOT SHA will conduct further studies prior to final design and construction adjacent to the cemetery as part of the treatment plan specified in Stipulation VII. Following completion of the studies in the treatment plan, MDOT SHA and FHWA will provide the results of the studies to MD SHPO and relevant consulting parties and determine project effects to the Morningstar Tabernacle No. 88 Moses Hall and Cemetery in consideration of the results of the studies and the views of the MD SHPO and relevant consulting parties. Should interments be identified outside the identified boundary of the cemetery, and no additional project avoidance options are practicable, MDOT SHA and FHWA will consult on the likely adverse effect, identify mitigation options, and amend this PA as necessary following the procedures in Stipulations IV and XIII of this PA.

H. Gibson Grove A.M.E. Zion Church

1. MDOT SHA will provide First Agape A.M.E. Zion Church at Gibson Grove and MD SHPO a comment opportunity at a draft level of design and a second opportunity prior to finalization of design for Project elements on church property or within the APE adjacent to the church property, with a minimum 30-day review period.

2. MDOT SHA will improve the stormwater drainage on the church property by routing drainage into a new underground culvert to be installed as part of the Project.

3. MDOT SHA will ensure that a parking lot identified in the church's restoration plan is constructed on church property following installation of the culvert drainage design. MDOT SHA will work with First Agape A.M.E. Zion Church on schedule and timing of the culvert and parking lot work to be compatible with ongoing church restoration efforts to the extent practicable.

4. MDOT SHA will ensure Project noise- or vibration- causing construction activities are restricted adjacent to the church during scheduled worship services or key events.

5. MDOT SHA, in coordination with Montgomery County, will install sidewalk on the west side of Seven Locks Road to more accessibly connect Gibson Grove A.M.E. Zion Church and Morningstar Tabernacle No. 88 Moses Hall and Cemetery.

VI. Archaeological Treatment Plan (ATP)

MDOT SHA's goal is to have a comprehensive but flexible ATP that addresses the LOD but can be revised and updated in response to Project design advancement. Prior to construction within affected areas, MDOT SHA will develop an ATP in consultation with SHPOs and appropriate consulting parties. MDOT SHA will provide for a minimum 30-day review of the initial draft of the ATP. MDOT SHA will be responsible for implementing the provisions of the ATP. The ATP will include:

A. Archaeological monitoring requirements during construction.

B. Phase I Survey in areas where property access could not be obtained (as identified in the 2019 Technical Report, Volume 4, Chapter 5): RS-1; RS-2; S-4, SWM S-4, S-5, SWM S-5, S-6, SWM S-6; S-27; SWM S-27, S-8; S-10; S-53, and the vicinity of S-28.

C. Phase I Survey in the vicinity of two sites, 18MO457 and18MO190, to define site boundaries and evaluate NRHP eligibility and potential impacts.

D. Phase II Evaluation of Sites 18MO191 and 18MO752.

E. Phase III Data Recovery investigations at 18MO749 and 18MO751 within the Chesapeake and Ohio Canal National Historical Park and the Dead Run Ridges Archaeological District within the GWMP (44FX3922), and individually eligible sites

within the district 44FX0374, 44FX0379 and 44FX0389. MDOT SHA will prepare a draft NRHP Nomination form for the Dead Run Ridges archaeological district based on the results of Phase III Data Recovery investigation as described in Stipulation V. B. MDOT SHA, in consultation with other parties, will ensure the results of the data recovery are documented in technical reporting consistent with the requirements of Stipulation II, and will define and produce products or other efforts interpreting the data recovery reports to the general public.

F. Provisions in the treatment plan required for work on NPS federal property, including cataloging and curation to NPS standards of artifacts and associated records, permitting under the Archaeological Resources Protection Act and compliance with the Native American Graves Protection and Repatriation Act (NAGPRA).

G. If sites or areas proposed for archaeological treatment in the ATP are avoided by revising the Project LOD or other actions, MDOT SHA will document the revision, including updating effect determinations and seeking SHPO concurrence where required. MDOT SHA will provide such information to appropriate consulting parties and will thereby not need to complete treatment or investigation at such locations.

H. MDOT SHA will ensure required consultation with the appropriate SHPO and appropriate consulting parties occurs on eligibility, effects, and treatment for any newly identified archaeological historic properties prior to final design and construction in areas identified for further archaeological treatment. Reports or similar deliverables will be provided to Signatories and appropriate consulting parties with a minimum 30-day review opportunity.

I. MDOT SHA will consult with SHPO and appropriate consulting parties on the ATP and any revisions or modifications to the ATP. If SHPO concurs with the ATP or future revisions, no amendment of this PA is needed to implement or update the ATP. If SHPO does not agree with the ATP or future proposed changes to the ATP, MDOT SHA will seek to resolve the disagreement or follow the provisions of Stipulation XIII.

VII. Cemeteries and Human Remains Treatment Plan

A. MDOT SHA acknowledges there is some potential for human remains associated with historic properties to be present in at least two areas of the LOD (adjacent to Morningstar Tabernacle No. 88 Moses Hall and Cemetery and in the general location of the Montgomery County Poor Farm) which are not currently accessible for the types of thorough archaeological investigation necessary to definitively identify interments. MDOT SHA will work with the developer(s) to minimize LOD to the maximum extent practicable in these areas

B. The treatment plan will include proposed investigations to identify and evaluate potential graves or human remains in specified sensitive areas to the maximum extent practicable to ensure avoidance or treatment prior to final design and construction.

C. MDOT SHA will consult with SHPO and, where identified, descendants, descendant communities and other appropriate consulting parties to fully identify, recover, and respectfully treat any human remains identified within LOD that cannot be avoided.

D. MDOT SHA will consult with SHPO and, where identified, descendants, descendant communities and other appropriate consulting parties on archaeological monitoring requirements for locations within LOD where potential for human remains is likely during construction, including unverified but reported locations of the Ball Family Cemetery.

E. MDOT SHA will seek input from affected consulting parties and concurrence from SHPO on the treatment plan prior to its implementation. MDOT SHA will be responsible for implementing the treatment plan. If SHPO does not agree with the treatment plan, MDOT SHA will seek to resolve the disagreement or follow the provisions of Stipulation XIII.

F. Activities on Federal Lands, including NPS-managed property, require adherence to NAGPRA. The treatment plan will include provisions for NAGPRA compliance in the event of human remains or funerary objects discovery.

G. MDOT SHA will ensure that at all times human remains are treated with dignity and respect in a manner consistent with ACHP's policy statement on the Treatment of Human Remains, Burial Sites and Funerary Objects.

H. MDOT SHA will ensure no photographs of human remains or associated funerary objects are released to the press or general public.

I. MDOT SHA will be responsible for all expenses for any removal, treatment and relocation/disposition of any human remains or funerary objects impacted by the Project.

J. MDOT SHA will fully implement all relevant provisions of the treatment plan prior to final design and any construction impacts within specified cemetery investigation locations.

VIII. Monitoring of Performance

A. Specific points for continued consultation are defined in Stipulations IV and V.

B. MDOT SHA will, for the duration of the Project, provide Signatories and consulting parties listed in Attachment 3 with a written progress report twice per calendar year describing status of implementation of this PA.

C. MDOT SHA will provide for a meeting opportunity for Signatories and consulting parties listed in Attachment 3 following issuance of each progress report.

D. MDOT SHA will convene additional consulting party meetings as necessary or when requested by any Signatory;

E. MDOT SHA may cancel individual meetings if there are no significant issues for discussion and no Signatory objects to the cancellation.

IX. Post-Review Discovery of Human Remains

MDOT SHA will develop human remains treatment provisions as part of the archaeological and cemetery and human remains treatment plans in Stipulations VI and VII. MDOT SHA will follow the attached Inadvertent Discovery Plan (Attachment 1) should human remains be identified in any areas or situations not covered by the archaeological or cemetery and human remains treatment plans**.**

X. Other Post-Review Discoveries

MDOT SHA will follow the procedures in Attachment 1 of this PA for any inadvertent archaeological discoveries or inadvertent effects to historic properties during construction. MDOT SHA will provide training for the developer(s) in the Inadvertent Discovery Plan requirements.

XI. Confidentiality

The Signatories agree to provide by the provisions of Section 304 of the NHPA, and other applicable requirements, to withhold information concerning the location, character, or ownership of resources where release of such information may endanger the integrity of the resource.

XII. Amendment

Any Signatory to this PA may request that it be amended, whereupon the Signatories will consult in accordance with 36 C.F.R. § 800.14 to consider such an amendment. Amendments will be effective upon the date of the last signature from the Signatories.

XIII. Dispute Resolution

A. Should any Signatory or consulting party object at any time to the manner in which the terms of this PA are implemented, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will take the following steps:

1. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to ACHP. ACHP shall provide FHWA with its comment on the resolution of the objection within 30 days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall

prepare a written response that takes into account any timely advice or comments regarding the dispute from ACHP, Signatories and consulting parties and provide them with a copy of this written response. FHWA will then proceed according to its final decision.

2. If ACHP does not provide its advice regarding the dispute within the 30-day period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and consulting parties to the PA and provide them and ACHP with a copy of such written response.

3. In the case of objections related to NRHP eligibility, any Signatory may object in writing within 30 days to an MDOT SHA or FHWA determination of eligibility. If MDOT SHA and FHWA are unwilling to revise the determination in response to the objection or other relevant information, FHWA (or MDOT SHA on its behalf) will submit the determination to the Keeper of the National Register of Historic Places for a determination pursuant to 36 C.F.R. Part 63.

B. Objections from the Public: Should a member of the public object to an action taken under this PA, or compliance with the PA, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA will ensure that MDOT SHA consults with the objecting party to respond to the objection in coordination with FHWA where relevant, provided the objection is made in writing to the FHWA or MDOT SHA contacts identified in Attachment 5 or any subsequent updates to Attachment 5. MDOT SHA and FHWA will inform other Signatories of the objection and proposed resolution. Should a Signatory disagree with the proposed resolution, the Signatories will follow Stipulation XIII.A.

C. FHWA's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

XIV. Termination

A. Any Signatory to this PA may terminate it by providing 30 days' notice in writing to the other Signatories, provided that the Signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

B. If any Signatory to this PA determines that a term will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation XII, above. If within 30 days (or another time period

agreed to by all Signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other Signatories.

C. In the event of termination, FHWA will comply with 36 C.F.R. § 800 for all remaining actions, or until a new agreement is reached fulfilling such requirements.

This PA will continue in full force and effect until 20 years from the date of execution of the PA, or such time of final acceptance of the Project and when all terms of this PA have been met, should the terms be met prior to the 20-year expiration. The PA will be invalid if the Project is terminated or authorization for the Project is rescinded. At any time in the six-month period prior to its expiration, the Signatories will consult to consider an extension or amendment of the PA. At such time, the Signatories may consider an amendment to extend the PA unmodified for an additional specified duration or consult to amend the PA in accordance with Stipulation XII. No extension or amendment will be effective until all Signatories have signed the amendment or amendment to extend.

In witness thereof, the Signatories to this PA, through their duly authorized representatives, have executed this PA on the days and dates set out on the following pages and certify that they have read, understood, and agreed to the terms and conditions of this PA as set forth herein.

The effective date of this PA is the date of the last signatory page.

This PA may be executed in counterparts, each of which shall constitute an original, and all of which shall constitute one and the same agreement.

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

FEDERAL HIGHWAY ADMINISTRATION

Date 6/06/2022

Gregory Murrill
Division Administrator
FHWA Maryland Division

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

ADVISORY COUNCIL ON HISTORIC PRESERVATION

Date 6.14.2022

Reid J. Nelson
Executive Director (Acting)

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

MARYLAND STATE HISTORIC PRESERVATION OFFICER

Date May 19, 2022

Elizabeth Hughes
Director
Maryland Historical Trust

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

Julie Langan Date 5/19/2022

Julie Langan
Director
Virginia Department of Historic Resources

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

NATIONAL PARK SERVICE

TINA CAPPETTA Digitally signed by TINA CAPPETTA Date: 2022.06.06 12:40:09 -04'00'

Date 6/6/2022

Tina Capetta
Superintendent
Chesapeake and Ohio National Historical Park

Charles Cuvelier Date: 2022.06.06 12:35:53 -04'00'

Date 6/6/2022

Charles J. Cuvelier
Superintendent
George Washington Memorial Parkway

PROGRAMMATIC AGREEMENT AMONG THE FEDERAL HIGHWAY ADMINISTRATION, MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, NATIONAL PARK SERVICE, MARYLAND STATE HISTORIC PRESERVATION OFFICER, VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR THE I-495 AND I-270 MANAGED LANES STUDY, ANNE ARUNDEL, FREDERICK, MONTGOMERY AND PRINCE GEORGE'S COUNTIES, MARYLAND AND FAIRFAX COUNTY, VIRGINIA

May 17, 2022

Signatory:

MARYLAND STATE HIGHWAY ADMINISTRATION

Tim Smith Date 05/27/2022

Tim Smith, P.E.
Administrator

Attachments

1. Inadvertent Discovery Plan
2. All Parties Invited to Consult on the Project
3. Consulting Parties invited to Concur
4. Links to Documentation Referenced
5. Contact Information for FHWA and MDOT SHA staff responsible for PA implementation (to be updated as necessary)

Attachment 1
Inadvertent Discovery Plan

A. Unanticipated Impacts to Architectural Historic Properties: if the Project causes unanticipated impacts to any National Register of Historic Places (NRHP) eligible, listed, or contributing buildings, sites, structures, or objects of the built environment, the contractor must notify the engineer and immediately cease any activity causing ongoing damage until consultation occurs. MDOT SHA shall, in consultation with the appropriate SHPO (VA or MD), determine if adverse effects have occurred to the property/properties and develop a plan for the protection of the historic property, and minimization or mitigation of impacts. If mitigation is identified, FHWA, MDOT SHA, SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. MDOT SHA may hold the developer(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

B. Unanticipated Damage to Known Archaeological Resources: if unauthorized excavation occurs outside the approved limits of disturbance (LOD) or other approved boundaries designed to protect archaeological resources or cemeteries and thereby causes impacts to known, NRHP-eligible properties, MDOT SHA will ensure any activity causing ongoing damage is stopped until consultation occurs. MDOT SHA will conduct a damage assessment consistent with the model used for such assessments under the Archaeological Resources Protection Act (https://www.nps.gov/archeology/pubs/techbr/tchBrf20.pdf). MDOT SHA will use the results of the assessment in consultation with the relevant SHPO to determine if the resource has been adversely affected and determine appropriate mitigation. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from MDOT SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource is affiliated with other known descendant groups or consulting parties, MDOT SHA will consult with such parties as well. Should damage occur on NPS land, MDOT SHA will consult with the NPS staff and regional archaeologist regarding the damage assessment report and any identified mitigation. If mitigation is identified, FHWA, MDOT SHA, SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. MDOT SHA may hold the developer(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

C. Unanticipated Discovery of Human Remains: Should any burials, interments, or human remains (hereafter, "remains") be encountered during construction, MDOT SHA will ensure all applicable construction work in the vicinity of the remains is immediately stopped to prevent damage to the remains, or to any additional remains that might be present in the vicinity. A minimum 100-foot buffer around identified remains will be established by MDOT SHA free of disturbance, to be adjusted as appropriate for the site conditions. Construction may occur outside the buffer unless evidence of additional remains is found. If remains are suspected to be human but not confirmed, MDOT SHA will ensure that such confirmation is made by a qualified professional. Human remains will at all times be treated respectfully and access and visibility limited to the site of discovery to authorized personnel only. Within Maryland, pursuant to State of Maryland Criminal Code § 10-402, the State's Attorney must authorize movement or removal of any remains until determined to be archaeological. If the remains are determined to be archaeological, MDOT SHA and the relevant SHPO will consult to determine treatment of the remains and any other necessary treatment such as work needed to define extent of remains in the most expeditious manner feasible. Within Virginia, human remains and associated funerary objects encountered during the course of actions taken as a result of this PA shall be treated in a manner consistent with the Virginia Antiquities Act (Code of Virginia 10.1-2305) and its implementing regulation (17VAC5-20), adopted by the Virginia Board of Historic Resources and published in the Virginia Register on July 15, 1991.

If the remains are determined archaeological and suspected to be of Native American origin, MDOT SHA, in coordination with FHWA, shall provide notification to tribal governments in accordance with any expressed tribal consultation preferences within 24 hours or as soon as practicable. MDOT SHA and/or FHWA will consult with affected federally recognized Indian Tribes, the Maryland Commission on Indian Affairs and appropriate Maryland Indian groups as appropriate regarding treatment of the remains. MDOT SHA will accommodate tribal cultural preferences to the extent practicable during such an event. If remains can be associated with other known descendant communities or organizations, including the cemetery-affiliated consulting or concurring parties to this PA, such parties shall also be consulted.

If the human remains are likely to be of Native American origin and are located on lands controlled or owned by the U.S. Government, including National Park Service Property within the APE, the Federal land managing agency will assume responsibility for compliance with the Native American Graves Protection and Repatriation Act (NAGPRA; 25 USC 3001), with MDOT SHA assistance.

In consultation with the relevant SHPO, Federally Recognized Indian Tribes, and FHWA as appropriate, and other identified descendant/affiliated consulting parties, the MDOT SHA shall develop a plan for the treatment or disposition of the remains or follow provisions of an existing treatment plan developed per this PA. MDOT SHA shall implement the provisions of the agreed treatment plan.

Should the remains be associated with, or constitute an intact archaeological resource, provision **D** below is also applicable.

D. Unanticipated Discovery of Archaeological Resources**:** If previously unidentified archaeological features, artifacts, or other materials (hereafter, "resource") are discovered during construction, all ground-disturbing work in the vicinity of the resource shall be temporarily suspended or modified to prevent further damage to the resource, and MDOT SHA will provide a reasonable buffer where ground disturbance is prohibited to cover the extent of the resource that may not be exposed.

The MDOT SHA archaeologist shall perform a preliminary inspection to identify the resource and evaluate its likelihood of NRHP eligibility. Following this inspection, construction may resume in the vicinity of but outside the boundary of the archaeological resource as defined by the MDOT SHA archaeologist. If the resource is potentially eligible for the NRHP, MDOT SHA will consult with the relevant SHPO on an eligibility determination and, if determined eligible for the NRHP, every effort shall be made to minimize impacts through redesign or modification of construction methods. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from MDOT SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource can be reasonably identified with other descendant or affiliated communities, MDOT SHA shall also attempt to consult with such parties.

In consultation with the relevant SHPO, MDOT SHA shall develop a plan for the treatment of any resource determined eligible. MDOT SHA shall describe actions proposed to avoid, minimize, or mitigate adverse effects, and request SHPO, tribal, and any other consulting party comments within 5 working days, unless there is a life or safety hazard requiring immediate interim action. MDOT SHA will disclose any interim action affecting the eligible resource taken in the event of a life or safety hazard. MDOT SHA, at its discretion, may establish a longer comment period if practicable in consideration of potential safety, cost, public travel disruption, and other factors. MDOT SHA shall then implement the provisions of the agreed-upon plan and/or amend this PA to document the resolution, should the resource be determined eligible and should the Project adversely affect the resource.

Attachment 2
All Parties Invited to Consult on the Project

Federally Recognized Tribal Nations

- **Absentee-Shawnee Tribe of Oklahoma**
- **Delaware Nation**
- **Delaware Tribe of Indians**
- **Chickahominy Indian Tribe**
- **Chickahominy Indians Eastern Division**
- **Eastern Shawnee Tribe of Oklahoma**
- **Monacan Indian Nation**
- **Nansemond Indian Tribe**
- **Oneida Indian Nation**
- **Onondaga Nation**
- **Pamunkey Indian Tribe**
- **Rappahannock Tribe, Inc.**
- **Saint Regis Mohawk Tribe**
- **Seneca-Cayuga Nation**
- **Shawnee Tribe**
- **Tuscarora Nation**
- **Upper Mattaponi Indian Tribe**

State Recognized and Other Tribes

- **Piscataway Conoy Tribe of Maryland (PCT)**
- **PCT - Cedarville Band of Piscataway**
- **PCT - Choptico Band of Piscataway**
- **Piscataway Indian Nation**

Federal Agencies

- **Department of Defense**
- **General Services Administration**
- **Federal Railroad Administration**
- **Federal Transit Administration**
- **National Capital Planning Commission**
- **National Institute of Standards and Technology**
- **National Park Service**
- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture**
- **U.S. Postal Service**

State Agencies and Organizations

- **Maryland Commission on Indian Affairs**
- **MDOT Maryland Transit Administration**

- **MDOT Maryland Transportation Authority**
- **Maryland Historical Trust**
- **Preservation Maryland**
- **Virginia Department of Historic Resources**
- **Virginia Department of Transportation**
- **Washington Metropolitan Area Transit Authority**

County Agencies and Organizations

- **Charles County Department of Planning**
- **Frederick County**
- **Frederick County Preservation Trust**
- **Maryland Milestones/Anacostia Trails Heritage Area, Inc.**
- **Montgomery County Department of Correction and Rehabilitation**
- **Montgomery County Department of General Services**
- **Montgomery County Department of Transportation**
- **Montgomery County Heritage Area, Heritage Tourism Alliance of Montgomery County**
- **Maryland Milestones**
- **Maryland-National Capital Parks and Planning Commission – Montgomery County Planning – Historic Preservation**
- **Maryland-National Capital Parks and Planning Commission – Montgomery Parks**
- **Maryland-National Capital Parks and Planning Commission – Prince George's County Planning – Historic Preservation**
- **Maryland-National Capital Parks and Planning Commission – Prince George's County Department of Parks and Recreation**
- **Montgomery Preservation, Inc.**
- **Prince George's County Historic Preservation Commission**
- **Prince George's County Historical and Cultural Trust**
- **Prince George's Heritage, Inc.**

Municipal and Other Organizations

- **Cabin John Citizens Association**
- **Canoe Cruisers Association**
- **C&O Canal Association**
- **C&O Canal Trust**
- **Carderock Springs Citizens' Association**
- **City of Gaithersburg**
- **City of College Park**
- **City of Glenarden**
- **City of Greenbelt**
- **City of Rockville**
- **First Agape A.M.E. Zion Church at Gibson Grove**

- **Frederick County Landmarks Foundation**
- **Heart of the Civil War Heritage Area**
- **Indian Spring Community Association**
- **National Park Seminary Master Association**
- **National Trust for Historic Preservation**
- **Peerless Rockville**
- **Rock Creek Conservancy**
- **Save Our Seminary at Forest Glen**
- **Sierra Club Maryland Chapter**
- **Silver Spring YMCA**
- **Trustees of Morningstar Tabernacle No. 88, Inc. (Friends of Moses Hall)**
- **Washington Biologists' Field Club**
- **Village of North Chevy Chase**

Attachment 3
Consulting Parties Invited to Concur

Federally Recognized Tribes

- **Absentee-Shawnee Tribe of Oklahoma**
- **Delaware Nation**
- **Delaware Tribe of Indians**
- **Chickahominy Indian Tribe**
- **Chickahominy Indians Eastern Division**
- **Eastern Shawnee Tribe of Oklahoma**
- **Monacan Indian Nation**
- **Nansemond Indian Tribe**
- **Oneida Indian Nation**
- **Onondaga Nation**
- **Pamunkey Indian Tribe**
- **Rappahannock Tribe, Inc.**
- **Saint Regis Mohawk Tribe**
- **Seneca-Cayuga Nation**
- **Shawnee Tribe**
- **Tuscarora Nation**
- **Upper Mattaponi Indian Tribe**

State Recognized and Other Tribes

- **Piscataway Conoy Tribe of Maryland (PCT)**
- **PCT - Cedarville Band of Piscataway**
- **PCT - Choptico Band of Piscataway**
- **Piscataway Indian Nation**

Federal Agencies

- **Department of Defense**
- **Federal Railroad Administration**
- **Federal Transit Administration**
- **National Capital Planning Commission**
- **National Institute of Standards and Technology**
- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture**

State Agencies

- **Maryland Commission on Indian Affairs**
- **Maryland Department of Transportation – Maryland Transit Administration**
- **Maryland Transportation Authority**
- **Virginia Department of Transportation**

Local and Other Agencies and Groups

- **Cabin John Citizens Association**
- **Canoe Cruisers Association**
- **Carderock Springs Citizens Association**
- **City of Gaithersburg**
- **City of Rockville**
- **C&O Canal Association**
- **C&O Canal Trust**
- **First Agape A.M.E. Zion Church at Gibson Grove**
- **Maryland Milestones**
- **Maryland-National Capital Park and Planning Commission**
- **Montgomery County Heritage Area**
- **Montgomery Preservation, Inc.**
- **National Institute for Standards and Technology**
- **National Trust for Historic Preservation**
- **Peerless Rockville**
- **Preservation Maryland**
- **Trustees of Morningstar Tabernacle No. 88, Incorporated (Friends of Moses Hall)**
- **Virginia Department of Transportation**
- **Washington Biologists' Field Club**

Attachment 4
Links to Documentation Referenced In the I-495 & I-270 Managed Lanes Study PA

Federal Codes and Regulations

16 U.S.C. 470aa-470mm
Archaeological Resources Protection Act (ARPA)
https://uscode.house.gov/view.xhtml?path=/prelim@title16/chapter1B&edition=prelim

25 U.S.C. Ch. 32 § 3001
Native American Graves Protection and Repatriation Act (NAGPRA)
https://uscode.house.gov/view.xhtml?path=/prelim@title25/chapter32&edition=prelim

36 C.F.R. Part 14 and 54 U.S.C. § 100902
Rights-of-Way
https://www.ecfr.gov/current/title-36/chapter-I/part-14
https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100902&num=0&edition=prelim

36 C.F.R. Part 63
Dispute Resolution of Determinations of Eligibility for Inclusion in the NRHP
https://www.ecfr.gov/current/title-36/chapter-I/part-63

36 C.F.R. Part 79
Curation of Federally Owned and Administered Archaeological Collections
https://www.ecfr.gov/current/title-36/chapter-I/part-79

36 C.F.R. Part 800
Implementing Regulations of Section 106 of the National Historic Preservation Act
https://www.ecfr.gov/current/title-36/chapter-VIII/part-800?toc=1

40 C.F.R. 1506.6(a)
Public involvement – National Environmental Policy Act
https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1506#1506.6

54 U.S.C.

- National Park Service and Related Programs
  - § 100101(a) Promotion and Regulation of the National Park Service (NPS Organic Act)
    - https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100101&num=0&edition=prelim
- National Historic Preservation Act
  - § 306108 Effect of Undertaking on Historic Property

- https://uscode.house.gov/view.xhtml?req=(title:54%20section:306108%20edition:prelim)

§ 307103 Access to Information (Section 304)

- https://www.achp.gov/digital-library-section-106-landing/frequently-asked-questions-protecting-sensitive-information

Public Law 71-284, 46 Statute 482 (1930); Executive Order 6166 of June 10, 1933
Capper-Cramton Act and Administration by the National Park Service
https://www.ncpc.gov/about/authorities/cca/
https://www.nps.gov/parkhistory/online_books/anps/anps_3b.htm

State Codes and Regulations

Maryland Criminal Code § 0-402
Courts and Judicial Proceedings
https://law.justia.com/codes/maryland/2013/article-gcr/section-10-402

Maryland Natural Resources Code § 5-103
Reforestation
https://roads.maryland.gov/mdotsha/pages/index.aspx?PageId=158

Virginia Antiquities Act § 10.1-2305
Human Remains
https://law.lis.virginia.gov/vacode/title10.1/chapter23/section10.1-2305/
Implementation - Virginia Administrative Code 17VAC5-20
https://law.lis.virginia.gov/admincode/title17/agency5/chapter20/

Guidelines and Standards

Advisory Council on Historic Preservation

- *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
  https://www.achp.gov/sites/default/files/exemptions/2017-01/final_interstate_exemption_notice.pdf

- *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (ACHP February 2007)
  https://www.achp.gov/sites/default/files/policies/2018-06/ACHPPolicyStatementRegardingTreatmentofBurialSitesHumanRemainsandFuneraryObjects0207.pdf

- *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* (77 FR 68790)
  https://www.federalregister.gov/documents/2012/11/16/2012-27866/program-comment-issued-for-streamlining-section-106-review-for-actions-affecting-post-1945-concrete

- *Section 106 Archaeology Guidance* (ACHP, 2009)
  https://www.achp.gov/sites/default/files/guidance/2017-02/ACHP%20ARCHAEOLOGY%20GUIDANCE.pdf

The Maryland Historical Trust

- Standards and Guidelines for Archaeological Investigations in Maryland (Shaffer and Cole 1994)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_investigations.pdf

- *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_curation.pdf

- Standards and Guidelines for Architectural and Historical Investigations in Maryland (Maryland Historical Trust, Revised 2019)
  https://mht.maryland.gov/documents/PDF/research/Survey_standards_architecture_web.pdf

The National Park Service

- Management Policies – Section 5, Cultural Resource Management (2006)
  https://www.nps.gov/subjects/policy/upload/MP_2006.pdf

- NPS Museum Handbook, National Park Service, revised 2019
  https://www.nps.gov/museum/publications/handbook.html

- NRHP Bulletin 15 – How to Apply the National Register Criteria for Evaluation (National Park Service revised 1997)
  https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf

- Other NRHP Bulletins
  https://www.nps.gov/subjects/nationalregister/publications.htm#:~:text=national%20register%20of%20historic%20places%20bulletins

- The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (1996)
  https://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/index.htm

- The Secretary of the Interior's Guidelines for the Treatment of Historic Properties (1995, Revised 2017)
  https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf

- The Secretary of the Interior's Professional Qualifications Standards
  https://www.nps.gov/articles/sec-standards-prof-quals.htm
  OR see 48 FR 44738
  https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (1983)
  https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017)
  https://www.nps.gov/tps/standards/four-treatments.htm
  OR https://www.ecfr.gov/current/title-36/chapter-I/part-68

The Virginia Department of Historic Resources

- Guidelines for Conducting Historic Resources Survey in Virginia (Virginia Department of Historic Resources, revised September 2017)
  https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual_2017.pdf

Other Referenced Information

- Area of Potential Effects, May 2022 https://oplanesmd.com/wp-content/uploads/2022/05/MLS_APE_Mapping.pdf

- Alternative 9 Phase 1 South project description (currently available here: https://oplanesmd.com/environmental/alternatives/pa/)

- First Agape A.M.E. Zion Church at Gibson Grove parking lot restoration plan (https://oplanesmd.com/wp-content/uploads/2022/04/P3-Gibson-Grove-Church-Parking-Layout.pdf)

- I-495 and I-270 Managed Lanes Study Draft Section 106 Technical Report: https://oplanesmd.com/deis/#:~:text=4(f)%20Evaluation-,appendix%20g,-Cultural%20Resources%20Technical

- MDOT SHA Statewide PA: https://www.roads.maryland.gov/OPPEN/2021_PA_Amendment.pdf

Attachment 5

FHWA and MDOT SHA Staff Contact Information:

For FHWA:

Ms. Jeanette Mar
Environmental Program Manager
FHWA - Maryland Division
George H. Fallon Federal Building
31 Hopkins Plaza, Suite 1520
Baltimore, MD 21201
phone (410) 779-7152
fax (410) 962-4054
jeanette.mar@dot.gov

For MDOT SHA:

Mr. Steve Archer
Cultural Resources Team Leader
Maryland Department of Transportation State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202
phone (410) 545-8508
sarcher@mdot.maryland.gov