

6 FINAL SECTION 4(F) EVALUATION

The Final Section 4(f) Evaluation has been prepared with the Final Environmental Impact Statement (FEIS) and focuses on analysis of the Preferred Alternative. This Final Section 4(f) Evaluation builds upon the analysis in the Draft Section 4(f) Evaluation, DEIS and Supplemental DEIS (SDEIS), and has been prepared to support and inform the FEIS.

The DEIS and SDEIS documents can be viewed through the following links on the Program website:

DEIS, Chapter 5: https://oplanesmd.com/wp-content/uploads/2020/11/2020-06-02_DEIS_05_Section_4f.pdf

DEIS, Appendix F: https://oplanesmd.com/wp-content/uploads/2020/07/DEIS_AppF_Draft-Section-4f-Eval_web.pdf

SDEIS, Chapter 5: https://oplanesmd.com/wp-content/uploads/2021/09/SDEIS_05_Updated_DraftSection4f.pdf

The Preferred Alternative considered further coordination with and listening to agencies and stakeholders, including the Officials with Jurisdiction (OWJs) for Section 4(f) properties. The Preferred Alternative is responsive to comments received requesting avoidance of Section 4(f) resources and aligns the I-495 & I-270 Managed Lanes Study (Study) with the previously determined phased delivery and permitting approach.

The Preferred Alternative would avoid the use of 40 Section 4(f) properties totaling approximately 109 acres relative to the DEIS Build Alternatives. The Preferred 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.

This FEIS Chapter includes the following updates:

- Revised impacts based on additional avoidance and minimization as a result of design refinements and reassessment of stormwater management
- Updates on all possible planning to avoid and minimize the use of Section 4(f) properties within the Preferred Alternatives limits
- Updated Least Overall Harm Analysis and Conclusion

6.1 Introduction

Section 4(f) of the US Department of Transportation (USDOT) Act of 1966 as amended (49 United States Code [U.S.C.] § 303(c)) is a Federal Law that protects significant publicly-owned parks, recreation areas, wildlife and/or waterfowl refuges, or any significant public or private historic sites. Section 4(f) applies to all transportation projects that require funding or other approvals by the USDOT. As a USDOT agency, the Federal Highway Administration (FHWA) must comply with Section 4(f) and its implementing regulations

at 23 CFR 774. The Final Section 4(f) Evaluation (**FEIS, Appendix G**) follows established USDOT regulations at 23 Code of Federal Regulations (CFR) 774, FHWA's 2012 *Section 4(f) Policy Paper*, and 23 U.S.C. § 138 and 39 U.S.C. § 303.

Regulations at 23 CFR 774.17 define a Section 4(f) property 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.” 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).

Under Section 4(f), the USDOT, including the FHWA, cannot approve a transportation project that uses Section 4(f) property, unless it is determined 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)(1) and (2)); or
- The use of the Section 4(f) properties, 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)).

The Final Section 4(f) Evaluation (**FEIS, Appendix G** and summarized below) describes Section 4(f) properties identified within the corridor study boundary; discusses potential impacts or use of the Section 4(f) properties; and evaluates potential avoidance alternatives to determine if any are feasible and prudent. It then presents measures to minimize harm and mitigate for the use of Section 4(f) properties and demonstrates that all possible planning to minimize harm to the Section 4(f) properties has been included in the project. Lastly, it presents an analysis to determine the least overall harm alternative.

6.1.1 Purpose and Background

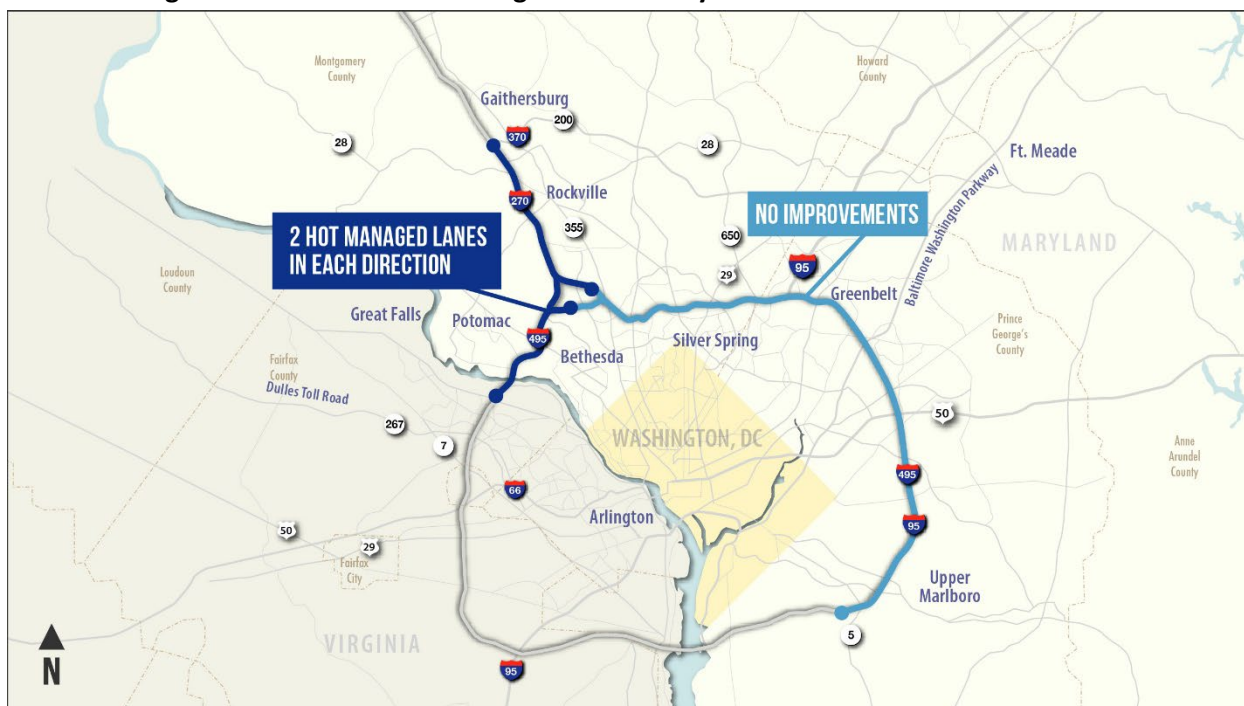
In the SDEIS, published on October 1, 2021, FHWA and Maryland Department of Transportation State Highway Administration (MDOT SHA) identified the Preferred Alternative: Alternative 9 – Phase 1 South, which includes the same improvements proposed as part of Alternative 9 in the DEIS but focuses the build improvements within the Phase 1 South limits only. The Preferred Alternative is described in **Section 6.1.2** below. This decision to identify Alternative 9 – Phase 1 South as the Preferred Alternative was 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 corridors. The Preferred Alternative is responsive to comments received and aligns the Study with the previously determined phased delivery and permitting approach by limiting the build improvements to Phase 1 South and avoiding improvements on I-495 east of the I-270 east spur. The result is complete avoidance of significant Section 4(f) properties within the study limits, which remain the same as the DEIS, on I-495 east of the I-270 east spur to MD 5 in Prince George's County.

6.1.2 Description of Preferred Alternative

The Preferred Alternative includes a two-lane High-Occupancy Toll (HOT) managed lanes network on I-495 and I-270 within the limits of Phase 1 South only (shown in **dark blue** in **Figure 6-1**). On I-495, the

Preferred Alternative consists of adding two new HOT managed lanes in each direction from the George Washington Memorial Parkway (GWMP) in Virginia to west of MD 187. On I-270, the Preferred Alternative consists of converting the one existing High-Occupancy Vehicle (HOV) lane in each direction to a HOT managed lane and adding one HOT managed lane in each direction from I-495 to I-370 and on the I-270 east and west spurs. There is no action, or no improvements, at this time on I-495 east of the I-270 east spur to MD 5 (shown in light blue in **Figure 6-1**). Along I-270, the existing collector-distributor lane designation from Montrose Road to I-370 would be removed as part of the proposed improvements. The managed lanes would be separated from the general purpose lanes using pylons placed within a four-foot wide buffer. Transit buses and HOV 3+ vehicles would be permitted to use the managed lanes toll-free.

Figure 6-1: I-495 & I-270 Managed Lanes Study Corridors – Preferred Alternative



6.1.3 Changes Since the Draft Section 4(f) Evaluation, DEIS and SDEIS

Table 6-1 provides a comparison of the total Section 4(f) impacts identified through the three major milestones of the Study (DEIS, SDEIS and FEIS). These totals reflect the extensive efforts of MDOT SHA to avoid and minimize impacts to Section 4(f) properties. The initial total of approximately 146.8 acres of Section 4(f) property impact (including permanent and temporary impacts) reported in the DEIS and Draft Section 4(f) Evaluation has been reduced to a total of approximately 33.2 acres for this Final Section 4(f) Evaluation and the corresponding FEIS. Of this impact, approximately 14.7 acres would be temporary¹, and approximately 18.5 acres would be permanent.

The total number of Section 4(f) properties impacted was reduced by 38 properties after the DEIS based on the revised limits of the Preferred Alternative and other minimization measures. This left 21 properties with Section 4(f) use reported in the SDEIS. Since the SDEIS, impacts to two additional parks were avoided

¹ Temporarily impacted property would not be permanently acquired by MDOT SHA as part of this project.

including Cabin John Stream Valley Park (Rockville) and Morris Park based on further design refinements. One additional Section 4(f) property was identified (the Washington Biologists' Field Club on Plummers Island) bringing the final total to 20 properties. The highest impact to any single Section 4(f) property is now 10.1 acres to the Chesapeake and Ohio Canal National Historical Park (9.1 acres of which would be temporary). The largest permanent impact to any single park is 5.7 acres of impact to Cabin John Regional Park.

Table 6-1: Comparison of Total Section 4(f) Impacts for Study Milestones

Study Milestone	Total Section 4(f) Impacts (Acres)	Number of Section 4(f) Properties Impacted
DEIS and Draft Section 4(f) Evaluation (Alternative 9)	146.8	59
SDEIS (Preferred Alternative)	39.1	21
FEIS and Final Section 4(f) Evaluation (Preferred Alternative)*	33.2	20

Note: Impacts rounded to the closest 0.1 acres.

* Includes the Washington Biologists' Field Club, which is contained entirely within the Chesapeake and Ohio Canal National Historical Park and was not identified as a Section 4(f) property until after the SDEIS due to recent identification of the property's NRHP eligibility.

The Preferred Alternative has resulted in a net reduction of approximately 113.6 acres of impact to Section 4(f) properties, including both parks and historic resources, compared to the DEIS Alternative 9. (Refer to **Section 6.4** for more detailed information). Impacts were avoided by limiting the Build Alternative to within the Phase 1 South limits, and by minimizing impacts to several parks and historic resources following consideration of public and agency comments received during the DEIS and SDEIS public comment periods. MDOT SHA and FHWA coordinated closely with the OWJs in a series of office and field meetings to identify opportunities to further avoid and minimize impacts to historic resources and park land including contributing features within parks such as forested areas, wetlands, and waterways within the Preferred Alternative limits of disturbance (LOD).

Since the DEIS and Draft Section 4(f) Evaluation, MDOT SHA engaged in substantial efforts to avoid and minimize impacts to park and historic resources around the American Legion Bridge (ALB). These efforts resulted in the development of a team of national and local experts in design, structures, and constructability tasked with looking for innovative ways to avoid and minimize impacts to these resources of national significance (refer to **Chapter 5, Section 5.4 and FEIS, Appendix G** for details). In the DEIS, Alternative 9 impacted 29.4 acres of these three park properties; the SDEIS minimized impacts to 17 acres; and the FEIS Preferred Alternative further minimized impacts to 16.2 acres, of which 2.6 are considered permanent impacts and the rest temporary.

Another focus area for avoidance and minimization was at the Morningstar Tabernacle No. 88 Moses Hall and Cemetery (Morningstar Cemetery) located adjacent to the I-495 inner loop just south of Cabin John Parkway. Since the DEIS, additional investigations and design refinements of the LOD have led to complete avoidance of the Morningstar Cemetery property. Refer to **FEIS, Chapter 5, Section 5.7 and FEIS, Appendices G and I**.

The Preferred Alternative LOD no longer impacts two City of Rockville Parks: the Millennium Garden Park and Cabin John Stream Valley Park. Regarding Millennium Garden Park, the property was initially identified as a Section 4(f) property in the DEIS; however, based on further research, it was determined that the property is owned by MDOT SHA and therefore, no longer considered a Section 4(f) resource in the SDEIS. No impacts would occur to the property under the Preferred Alternative due to design refinements. Since the SDEIS, further refinements of the stormwater management concept for the Preferred Alternative have resulted in avoidance of impacts to the City of Rockville Cabin John Stream Valley Park.

Design refinements have reduced impacts to two City of Gaithersburg parks including Morris Park and Malcolm King Park. Impacts to Morris Park in Gaithersburg have been eliminated completely, and permanent impacts to Malcolm King Park have been reduced by 0.8 acres compared to the SDEIS.

One newly identified Section 4(f) property, the Washington Biologists' Field Club on Plimmers Island, is included in the Final Section 4(f) Evaluation. The property was surveyed for eligibility on the NRHP and determined eligible by MHT after the SDEIS was published. The property would incur an estimated permanent impact of 0.28 acres, which was reduced from the previous impact of 1.9 acres under DEIS Alternative 9. The property is located entirely within another Section 4(f) property, the Chesapeake and Ohio Canal National Historical Park. More information is included in **Section 2.6 of FEIS, Appendix G**.

For the properties where a Section 4(f) use would occur under the Preferred Alternative, **Table 6-2** below provides a comparison of the impacts in the DEIS, the SDEIS, and this Final Section 4(f) Evaluation and FEIS. Note that the DEIS included only a total impact calculation and did not distinguish between permanent and temporary impacts as in the SDEIS and Final Section 4(f) Evaluation. The last column in **Table 6-2** summarizes, at a high-level, changes to impacts from the SDEIS related to design refinements of the Preferred Alternative LOD at each property. Additional details on changes to each property since the SDEIS are provided in the Final Section 4(f) Evaluation (**FEIS, Appendix G**).

Table 6-2: Comparison of DEIS, SDEIS and Final Section 4(f) Evaluation Impacts

Section 4(f) Property	DEIS Impact (Alt 9) (acres)	SDEIS Impacts (acres)	Final Section 4(f) Impacts (acres)	Changes from SDEIS Impacts
George Washington Memorial Parkway	Total: 12.2	Permanent: 0.7 Temporary: 3.7 Total: 4.4	Permanent: 0.6 Temporary: 3.8 Total: 4.4	Shift of 0.1 acres from permanent impact to temporary
Chesapeake & Ohio Canal National Historical Park ¹	Total: 15.4	Permanent: 1.0 Temporary: 9.1 Total: 10.1	Permanent: 1.0 Temporary: 9.1 Total: 10.1	No change
Clara Barton Parkway ¹	Total: 1.8	Permanent: 1.6 Temporary: 0.9 Total: 2.5	Permanent: 1.1 Temporary: 0.6 Total: 1.7	Impacts decreased by 0.8 acres, including a reduction of 0.5 acres of permanent and 0.2 acres of temporary impact.

Section 4(f) Property	DEIS Impact (Alt 9) (acres)	SDEIS Impacts (acres)	Final Section 4(f) Impacts (acres)	Changes from SDEIS Impacts
Washington Biologists' Field Club	N/A	N/A	Permanent: <0.1 Temporary: 0.27 Total: 0.28	Property was not identified as NRHP-eligible in the DEIS or SDEIS. However, impacts were reduced from 1.9 acres of permanent impact to 0.2 acres from the DEIS.
Carderock Springs Historic District	No Impact	Permanent: < 0.1 Temporary: < 0.1 Total: < 0.1	Permanent: < 0.1 Temporary: < 0.1 Total: < 0.1	No change
Gibson Grove AME Church	No Impact	Permanent: 0.1 Temporary: 0.0 Total: 0.1	Permanent: 0.1 Temporary: 0.0 Total: 0.1	No Change
Cabin John Stream Valley Park Unit 2	Total: 1.1	Permanent: 0.8 Temporary: 0.6 Total: 1.4	Permanent: 0.6 Temporary: <0.1 Total: 0.6	Impacts decreased by 0.8 acres, including a reduction of 0.2 acres of permanent and 0.5 acres of temporary impact
Burning Tree Club	Total: 0.8	Permanent: 1.3 Temporary: 0.0 Total: 1.3	Permanent: 1.3 Temporary: 0.0 Total: 1.3	No change
Academy Woods	Total: 0.2	Permanent: 0.2 Temporary: 0.0 Total: 0.2	Permanent: 0.2 Temporary: 0.0 Total: 0.2	No change
Cabin John Regional Park	Total: 5.7	Permanent: 5.7 Temporary: 0.6 Total: 6.3	Permanent: 5.7 Temporary: 0.6 Total: 6.3	No change
Tilden Woods Stream Valley Park	Total: 0.2	Permanent: 0.6 Temporary: 0.1 Total: 0.7	Permanent: 0.3 Temporary: 0.1 Total: 0.4	Permanent impacts reduced by 0.3 acres
Old Farm Neighborhood Conservation Area	Total: 0.1	Permanent: 0.1 Temporary: 0.0 Total: 0.1	Permanent: 0.1 Temporary: 0.0 Total: 0.1	No change
Cabin John Stream Valley Park Unit 6	Total: 0.4	Permanent: 0.8 Temporary: 0.0 Total: 0.8	Permanent: 0.8 Temporary: <0.1 Total: 0.8	Temporary impacts increased 0.02
Cabin John Stream Valley Park (Rockville)	Total: 2.1	Permanent: 2.1 Temporary: 0.0 Total: 2.1	No impact	Impacts eliminated
Bullards Park and Rose Hill Stream Valley Park	Total: 0.3	Permanent: 3.3 Temporary: 0.0 Total: 3.3	Permanent: 3.3 Temporary: 0.0 Total: 3.3	No change

Section 4(f) Property	DEIS Impact (Alt 9) (acres)	SDEIS Impacts (acres)	Final Section 4(f) Impacts (acres)	Changes from SDEIS Impacts
Rockmead Park	Total: 0.2	Permanent: 0.2 Temporary: 0.1 Total: 0.3	Permanent: 0.2 Temporary: 0.1 Total: 0.3	No change
Woottons Mill Park	Total: 0.2	Permanent: 0.7 Temporary: 0.0 Total: 0.7	Permanent: 0.7 Temporary: 0.0 Total: 0.7	No change
Woodley Gardens	Total: 0.7	Permanent: 1.2 Temporary: 0.1 Total: 1.3	Permanent: 1.2 Temporary: 0.1 Total: 1.3	No change
Rockville Senior Center and Park	Total: 0.7	Permanent: 1.0 Temporary: 0.0 Total: 1.0	Permanent: 1.0 Temporary: 0.1 Total: 1.1	Temporary impact has increased by 0.1 acres
Ward Building	Total: 0.1	Permanent: 0.2 Temporary: 0.0 Total: 0.2	Permanent: 0.2 Temporary: 0.0 Total: 0.2	No change
Malcolm King Park	Total: 0.1	Permanent: 1.3 Temporary: 0.0 Total: 1.3	Permanent: 0.4 Temporary: <0.1 Total: 0.5	Permanent impacts decreased by 0.8 acres
Morris Park	Total: 0.1	Permanent: 1.1 Temporary: 0.0 Total: 1.1	No impact	Impacts eliminated

Note: all impacts rounded to the closest 0.1 acres.

¹ 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 American Legion Bridge.

6.2 Use of Section 4(f) Properties

Pursuant to 23 CFR 774.17, a “use” of Section 4(f) property occurs:

1. When land is **permanently incorporated** into a transportation facility;
2. When there is a **temporary occupancy** of land that is adverse in terms of the statute’s preservation purpose as determined by the criteria in 23 CFR 774.13(d). A temporary occupancy of land does not constitute a “use” within the meaning of Section 4(f) if the following conditions are satisfied:
 - The duration of the occupancy must be less than the time needed for the construction of the project, and no change of ownership occurs;
 - Both the nature and magnitude of the changes to the Section 4(f) land are minimal;
 - No permanent adverse physical changes, nor interference with activities or purposes of the resources on a temporary or permanent basis, are anticipated;
 - The land must be returned to a condition that is at least as good as existed prior to the project; and

- There is documented agreement with the appropriate Federal, State, or local officials having jurisdiction over the land that the above conditions have been met.
3. When there is a **constructive use** of a Section 4(f) property. As defined in 23 CFR 774.15, a constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. The degree of impact and impairment must be determined in consultation with the OWJs in accordance with 23 CFR 774.15(d)(3).

6.2.1 De Minimis Impact

An impact to a significant 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.

Following 23 CFR 774.5(b), the public should be afforded an opportunity to review and comment on the effects of the Proposed Action on the protected activities, features, or attributes of the Section 4(f) parks, recreation areas or wildlife and waterfowl refuges. Opportunity for public review applies to historic sites as well. This is accomplished during the Section 106 process. Documentation of consulting party involvement is required (23 CFR 774.5(b) and 774.7(b)). Moreover, the OWJs over the property, after being informed of the public comments and FHWA's intent to make the *de minimis* impact finding, must concur in writing that the project will not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f).

Upon fulfilling the requirements set forth in 23 CFR 774.5(b), FHWA made a Section 4(f) *de minimis* impact findings for 13 of the 20 impacted properties listed in **Table 6-2**. 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**.

6.3 Officials with Jurisdiction

In the case of public parks, recreation areas, and wildlife and waterfowl refuges, the OWJs are the officials of the agency or agencies that own or administer the property in question and who are empowered to represent the agency on matters related to the property. There are no wildlife and waterfowl refuges within the corridor study boundary. There are four OWJs over park properties that would incur a Section 4(f) use as a result of this project: National Park Service (NPS), Maryland-National Capital Park and Planning Commission (M-NCPPC), Montgomery County, City of Gaithersburg, and City of Rockville.

Some public parks, recreation areas, and wildlife and waterfowl refuges are also historic properties included in, or eligible for inclusion in the NRHP. In other cases, historic sites are located within the

property boundaries of public parks, recreation areas, and wildlife and waterfowl refuges. When either of those situations exists and a project alternative proposes use of land from the historic site, there will be more than one official with jurisdiction. The OWJs over historic sites are the Maryland Historical Trust (MHT) in Maryland and the Virginia Department of Historic Resources (VDHR) in Virginia. The Advisory Council on Historic Preservation (ACHP) is also an OWJ over historic sites when they are involved in Section 106 consultation.

6.4 Section 4(f) Inventory

6.4.1 Overview

The Draft Section 4(f) Evaluation included descriptions of all Section 4(f) properties identified within the corridor study boundary, the use of Section 4(f) properties for all previously evaluated alternatives, and discussion of minimization measures for each property. The SDEIS updated this information based on the Preferred Alternative (Alternative 9 – Phase 1 South), which avoids the use of Section 4(f) properties within the study limits outside of Phase 1 South where no improvements are proposed, resulting in lower overall impacts to Section 4(f) properties. **Figures 6-2 and 6-3** present an inventory of Section 4(f) properties that are adjacent to the Preferred Alternative LOD; properties not impacted by the Preferred Alternative are labeled in red. **Table 6-3** presents the Section 4(f) properties impacted by the Preferred Alternative. Each property with a potential Section 4(f) use is then described in **Sections 2.3 through 2.22** of the *Final Section 4(f) Evaluation (Appendix G)*. **Table 6-3** notes the OWJ for each Section 4(f) property; the OWJ is designated in the Section 4(f) regulations and are for the purposes of Section 4(f) only.

Table 6-3: Summary of Section 4(f) Property Use

Section 4(f) Property	Official(s) with Jurisdiction ¹	Property Type	Section 4(f) Approval	Final Section 4(f) Impacts ²
George Washington Memorial Parkway	ACHP, NPS, VDHR	Public Park and Historic Property	Individual Evaluation	Permanent: 0.6 Temporary: 3.8 Total: 4.4
Chesapeake and Ohio Canal National Historical Park ³	ACHP, MHT, NPS	Public Park and Historic Property	Individual Evaluation	Permanent: 1.0 Temporary: 9.1 Total: 10.1
Clara Barton Parkway ³	ACHP, MHT, NPS	Public Park and Historic Property	Individual Evaluation	Permanent: 1.1 Temporary: 0.6 Total: 1.7
Washington Biologists' Field Club on Plummers Island	MHT, NPS	Historic Property	Individual Evaluation	Permanent: <0.1 Temporary: 0.27 Total: 0.28
Carderock Springs Historic District	MHT	Historic Property	<i>De minimis</i>	Permanent: <0.1 Temporary: <0.1 Total: <0.1
Gibson Grove AME Church	MHT	Historic Property	Individual Evaluation	Permanent: 0.1 Temporary: 0.0 Total: 0.1
Cabin John Stream Valley Park Unit 2	M-NCPPC Montgomery County	Public Park	<i>De minimis</i>	Permanent: 0.6 Temporary: 0.0 Total: 0.6
Burning Tree Club	MHT	Historic Property	<i>De minimis</i>	Permanent: 1.3 Temporary: 0.0 Total: 1.3

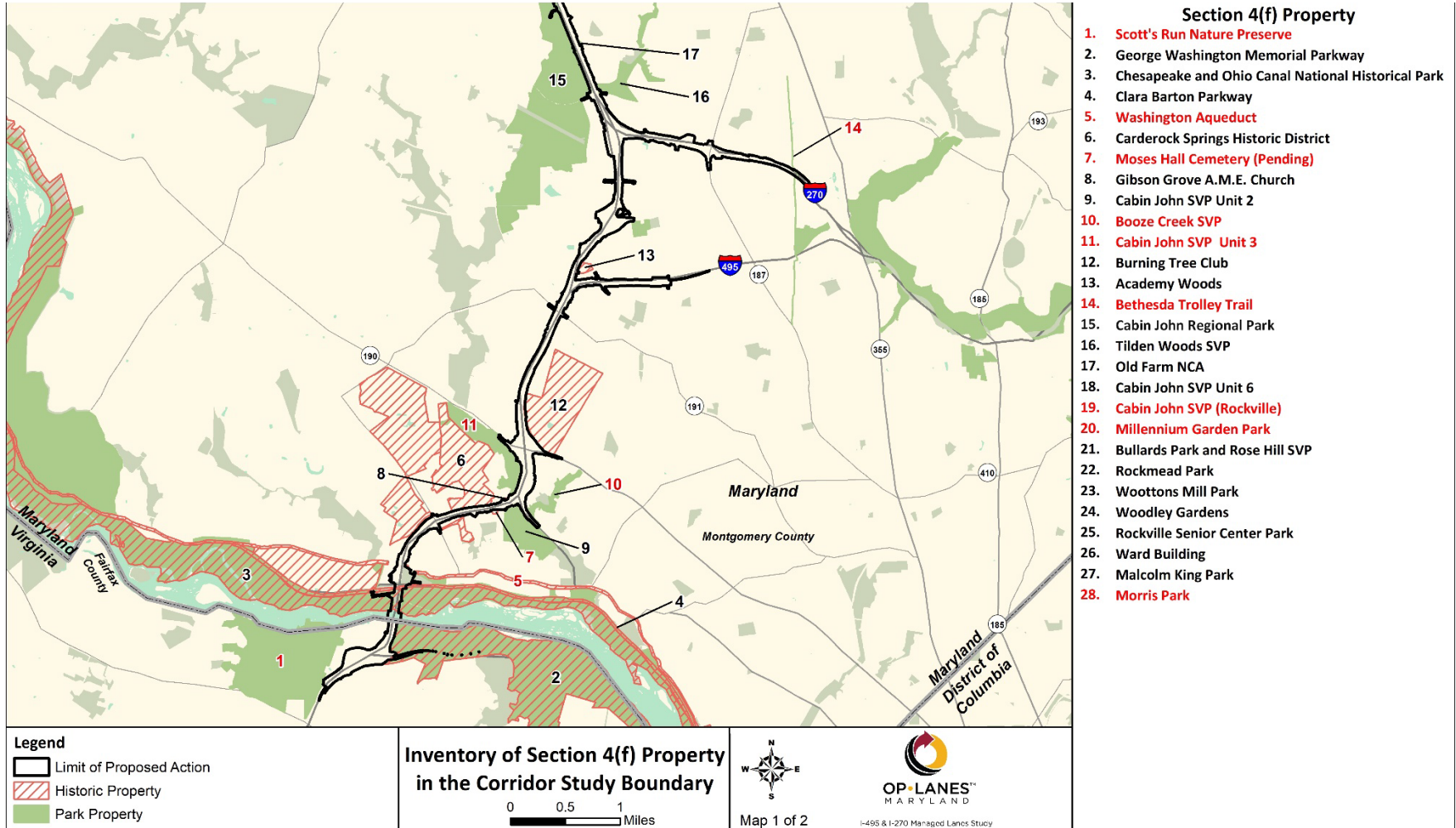
Section 4(f) Property	Official(s) with Jurisdiction ¹	Property Type	Section 4(f) Approval	Final Section 4(f) Impacts ²
Academy Woods	MHT	Historic Property	<i>De minimis</i>	Permanent: 0.2 Temporary: 0.0 Total: 0.2
Cabin John Regional Park	M-NCPPC Montgomery County	Public Park	Individual Evaluation	Permanent: 5.7 Temporary: 0.6 Total: 6.3
Tilden Woods Stream Valley Park	M-NCPPC Montgomery County	Public Park	<i>De minimis</i>	Permanent: 0.3 Temporary: 0.1 Total: 0.4
Old Farm Neighborhood Conservation Area	M-NCPPC Montgomery County	Public Park	<i>De minimis</i>	Permanent: 0.1 Temporary: 0.0 Total: 0.1
Cabin John Stream Valley Park Unit 6	M-NCPPC Montgomery County	Public Park	<i>De minimis</i>	Permanent: 0.8 Temporary: <0.1 Total: 0.8
Bullards Park and Rose Hill Stream Valley Park	City of Rockville Department of Recreation and Parks	Public Park	Individual Evaluation	Permanent: 3.3 Temporary: 0.0 Total: 3.3
Rockmead Park	City of Rockville Department of Recreation and Parks	Public Park	<i>De minimis</i>	Permanent: 0.2 Temporary: 0.1 Total: 0.3
Woottons Mill Park	City of Rockville Department of Recreation and Parks	Public Park	<i>De minimis</i>	Permanent: 0.7 Temporary: 0.0 Total: 0.7
Woodley Gardens	MHT	Historic Property	<i>De minimis</i>	Permanent: 1.2 Temporary: 0.1 Total: 1.3
Rockville Senior Center and Park	City of Rockville Department of Recreation and Parks, MHT	Public Park and Historic Property	<i>De minimis</i>	Permanent: 1.0 Temporary: 0.1 Total: 1.1
Ward Building	MHT	Historic Property	<i>De minimis</i>	Permanent: 0.2 Temporary: 0.0 Total: 0.2
Malcolm King Park	City of Gaithersburg Department of Parks, Recreation and Culture	Public Park	<i>De minimis</i>	Permanent: 0.4 Temporary: <0.1 Total: 0.5

Note: 1. VDHR serves as the Virginia State Historic Preservation Office; MHT serves as the Maryland State Historic Preservation Office.

2. All impacts quantities rounded to the tenths. 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.

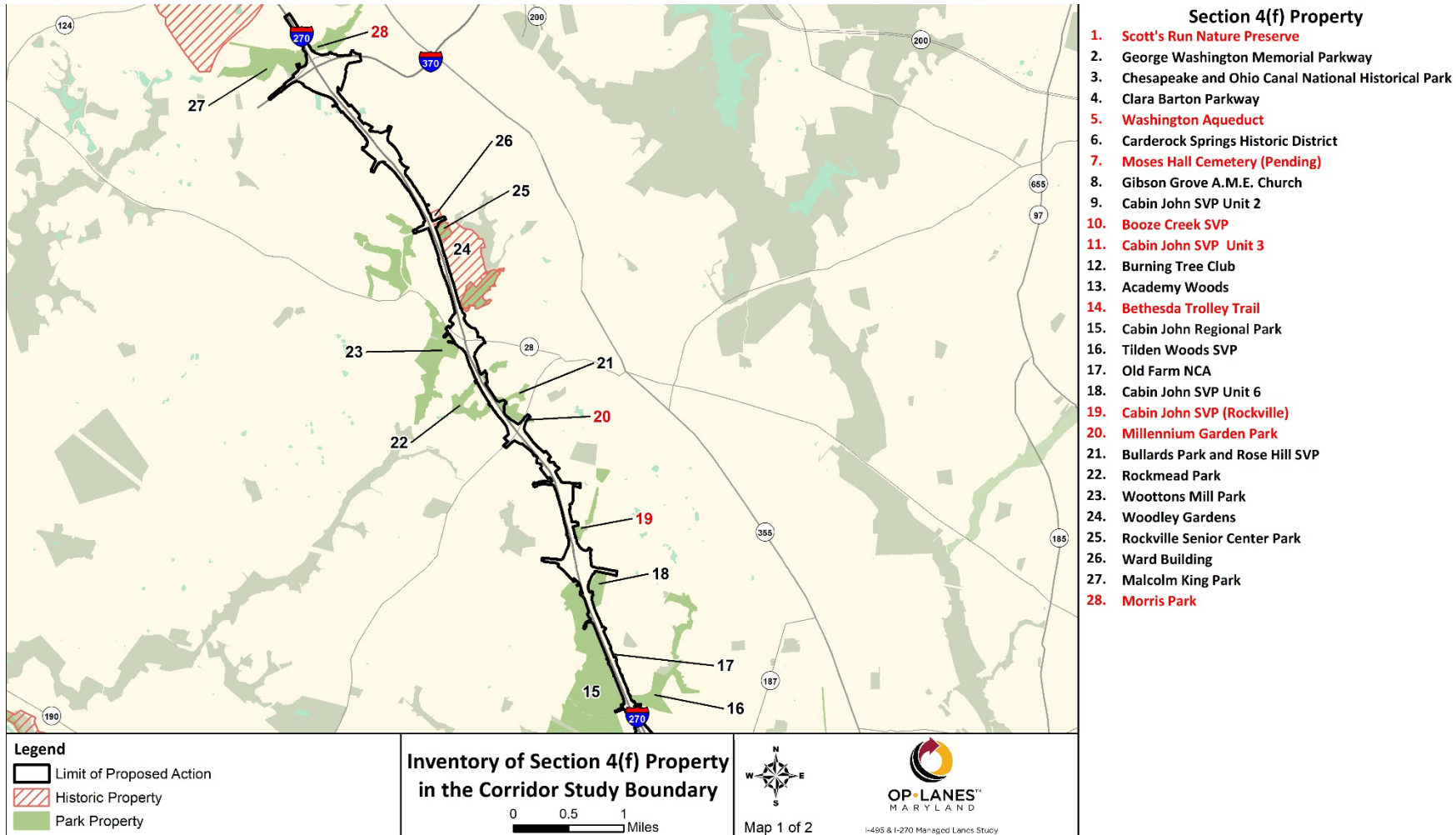
3. Section 4(f) impacts to Chesapeake and Ohio Canal National Historical Park and Clara Barton Parkway as currently noted in Chapter 5 exclude the area that currently has an existing transportation use. The area within NPS property defined as transportation use includes existing I-495 at-grade roadway 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 American Legion Bridge.

Figure 6-2: Inventory of Section 4(f) Properties (Map 1 of 2)



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.

Figure 6-3: Inventory of Section 4(f) Properties (Map 2 of 2)



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.

As described in **Section 1.2.2.A** of the Draft Section 4(f) Evaluation (https://oplanesmd.com/wp-content/uploads/2020/07/DEIS_AppF_Draft-Section-4f-Eval_web.pdf), a constructive use analysis was conducted to evaluate whether the proposed action, while not directly incorporating land from a Section 4(f) property or properties, has proximity impacts that would substantially impair the use or value of the resource or resources. These analyses evaluate how the Proposed Action affects neighboring or nearby Section 4(f) properties and determines if impacts from the proposal would result in substantial impairment of the activities, features, or attributes that qualify the resource for protection under Section 4(f). The constructive use analysis determined that no constructive uses would occur from noise, visual intrusions, restrictions of access, or vibrations.

6.4.2 Section 4(f) Properties Avoided

While the study limits remain the same as noted in the DEIS, the limits of build improvements under the Preferred Alternative are limited to Phase 1 South only. There is no action or no improvements included at this time on I-495 east of the I-270 east spur to MD 5. Additionally, two park properties within the Phase 1 South area, Morris Park and Cabin John Stream Valley Park in Rockville, have been avoided based on design refinements since the SDEIS. As a result of these refinements, the Preferred Alternative would avoid the use of 40 Section 4(f) properties that were previously reported as Section 4(f) uses in the DEIS and Draft Section 4(f) Evaluation, reducing the total acreage of Section 4(f) use by approximately 108.8 acres. This avoidance comprises the vast majority of the net reduction in impacts to Section 4(f) properties of 113.6 acres compared to DEIS Alternative 9. The properties avoided and acreage of Section 4(f) use previously included in the DEIS and SDEIS are included in **Table 6-4**.

Table 6-4: Avoided Section 4(f) Use by the Preferred Alternative

Section 4(f) Properties No Longer Impacted by the Preferred Alternative	Acres of Avoided Section 4(f) Use
Andrews Manor Park	2.6
Baltimore Washington Parkway	69.3
Beckett Field	0.2
Beltsville Agricultural Research Center (BARC)	0.5
Blair Local Park	0.4
Buddy Attick Lake Park	0.1
Cabin John Stream Valley Park (Rockville)	2.1
Calvary Evangelical Lutheran Church	<0.1
Carsondale	0.1
Cherry Hill Road Park	1.8
Douglas E. Patterson Park	0.7
Fleming Local Park	0.1
Forest Glen Historic District	0.2
Forest Glen Neighborhood Park	0.3
Glenarden Historic District	0.8
Greenbelt Historic District	0.3
Greenbelt Park	0.6
Grosvenor Estate (Wild Acres)	0.1

Section 4(f) Properties No Longer Impacted by the Preferred Alternative	Acres of Avoided Section 4(f) Use
Henry P. Johnson Park	<0.1
Henson Creek Stream Valley Park	0.1
Heritage Glen Park	0.5
Hollywood Park	<0.1
Indian Spring Club Estates and Indian Spring Country Club	1.2
Indian Springs Park (City of Greenbelt)	0.1
Indian Springs Terrace Local Park	1.4
Locust Hill Neighborhood Park	0.3
Manchester Estates Park	0.5
McDonald Field	<0.1
Metropolitan Branch, Baltimore & Ohio Railroad	8.8
Montgomery Blair High School Athletic Fields	1.4
Morningstar Tabernacle No. 88 Moses Hall and Cemetery	0.3
Morris Park	1.1
National Park Seminary Historic District / Forest Glen	1.2
Northwest Branch Stream Valley Park, Unit 3	3.2
Rock Creek Stream Valley Park, Unit 2	0.4
Rock Creek Stream Valley Park, Unit 3	3.3
Sligo Creek Parkway	4.1
South Four Corners Neighborhood Park	0.1
Southwest Branch Stream Valley Park	0.3
Suitland Parkway	0.3
TOTAL ACRES AVOIDED	108.8

Note: all avoided impacts presented are relative to DEIS Alternative 9.

Properties that would experience a Section 4(f) use from the Preferred Alternative are detailed in **Sections 2.3 through 2.22** in the *Final Section 4(f) Evaluation (FEIS, Appendix G)*. Within the Preferred Alternative LOD, there is one property subject to the Capper-Cramton Act, Clara Barton Parkway; one property, the Chesapeake and Ohio Canal National Historic Park, subject to Section 6(f). Refer to **Section 1.6.2** of the *Final Section 4(f) Evaluation* for additional information on other relevant authority including the Capper-Cramton Act of 1930 (**FEIS, Appendix G**).

6.5 Avoidance Alternatives and Analysis

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."

The presence of linear Section 4(f) properties such as Cabin John Stream Valley Park, GWMP, and Clara Barton Parkway, that extend perpendicular to the alignment of I-495 or I-270 limits the potential for feasible and prudent avoidance alternatives to exist in this corridor, which makes avoidance of all Section 4(f) properties difficult. Additionally, the corridor study boundary is characterized as a densely populated, urban area with large residential communities and business complexes, large governmental institutions, numerous community facilities, and hundreds of sensitive cultural and natural resources. Since I-495 and I-270 are existing interstate systems that serve local and regional traffic and connect to major arterials in each county, addressing the need on a system level is critical to achieving the overall purpose of the Study.

Six alternatives that would completely avoid the use of Section 4(f) properties have been developed and were discussed in detail in **Section 3** of the **Draft Section 4(f) Evaluation (DEIS, Appendix F)**. They are evaluated in accordance with the definition of a *feasible* and *prudent* avoidance alternative found in 23 CFR 774.17 and are summarized briefly in **Table 6-5** below.

The alternatives previously included in the DEIS least overall harm analysis are carried forward here, as they are still applicable to the current evaluation of least overall harm with revised Phase 1 South limits in this FEIS. The Preferred Alternative, a minimization alternative, is also included for evaluation in the revised discussion of least overall harm.

Table 6-5: Avoidance Alternatives

Avoidance Alternative	Description	Avoidance Analysis Findings ²
Alternative 1: No Build Alternative	Alternative 1 would avoid all Section 4(f) property impacts. Under this alternative routine maintenance and safety improvements would occur but there would be no changes to the existing lane configuration on I-495 and I-270. There would be no operational improvements or increased capacity along I-495 and I-270.	<p>Alternative 1 would avoid impacts to Section 4(f) properties but would be unreasonable to proceed with in light of the Study's stated Purpose and Need. Alternative 1 causes other severe problems of a magnitude that substantially outweigh the importance of protecting Section 4(f) properties.</p> <p>Prudence factor failed per 23 CFR 774.17:</p> <ul style="list-style-type: none"> (i) It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need
Increased Bus Transit	This alternative would include expansion of existing bus transit services within the limits of the Study on both I-270 and I-495 and the additional surrounding roadway network. This could be in the form of an increase in bus service on existing I-495 and I-270 within the limits of the Study, or consideration of dedicated facilities such as bus rapid transit systems on existing infrastructure.	<p>An extensive regionwide network of dedicated BRT facilities along I-495 and I-270 would not achieve the Study's Purpose and Need. It would be unreasonable to proceed with the Bus Transit Alternative in light of the stated Purpose and Need. This avoidance alternative causes other severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) properties.</p> <p>Prudence factor failed per 23 CFR 774.17:</p> <ul style="list-style-type: none"> (i) It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need

² Refer to the definition of *feasible and prudent avoidance alternative* in 23 CFR § 774.17.

Avoidance Alternative	Description	Avoidance Analysis Findings ²
Transportation System Management/Transportation Demand Management (TSM/TDM)	Transportation System Management (TSM)/Transportation Demand Management (TDM) strategies are improvements to existing facilities that improve the operation and coordination of transportation services and facilities.	<p>A TSM/TDM Alternative would not accommodate existing and future long-term traffic, nor would these measures enhance trip reliability. In addition, the TSM/TDM Alternative would not directly provide an additional travel choice, accommodate Homeland Security, improve the movement of goods and services, nor enhance multimodal connectivity; and it would not provide a revenue source. Based on these factors, the TSM/TDM Alternative is not a feasible and prudent alternative. This avoidance alternative causes other severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) properties.</p> <p>Prudence factors failed per 23 CFR 774.17:</p> <ul style="list-style-type: none"> (i) It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need (ii) It results in unacceptable safety or operational problems
Section 4(f) Avoidance Alternative 1	Section 4(f) Avoidance Alternative 1 would construct four new managed lanes off-alignment between George Washington Memorial Parkway and MD 4, outside of I-495. To avoid the use of any Section 4(f) property on I-270, four managed lanes would be constructed off alignment to the west of existing I-270. The alignment of Section 4(f) Avoidance Alternative 1 would rejoin existing I-270 at the MD 200 interchange, the limit of the Study.	<p>Section 4(f) Avoidance Alternative 1 would result in additional construction, maintenance, and operational costs of an extraordinary magnitude. After reasonable mitigation, it would still cause severe social, economic, and environmental impacts; severe disruption to established communities; and severe impacts to environmental resources protected under other Federal statutes. Section 4(f) Avoidance Alternative 1 causes other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) properties.</p> <p>Prudence factors failed per 23 CFR 774.17:</p> <ul style="list-style-type: none"> (iii) After reasonable mitigation, it still causes: <ul style="list-style-type: none"> (A) Severe social, economic, or environmental impacts; (B) Severe disruption to established communities; (D) Severe impacts to environmental resources protected under other Federal statutes; (iv) It results in additional construction, maintenance, or operational costs of an extraordinary magnitude
Section 4(f) Avoidance Alternative 2	Section 4(f) Avoidance Alternative 2 would construct four new managed lanes off-alignment between George Washington Memorial Parkway and MD 4. The managed lanes would be constructed inside the alignment of existing I-495 through nearly full the limits of the Study. To avoid the use of any Section 4(f) property on I-270, four managed lanes would also be	Avoidance Alternative 2 would result in additional construction, maintenance, and operational costs of an extraordinary magnitude. After reasonable mitigation, it would still cause severe social, economic, and environmental impacts; severe disruption to established communities; and severe impacts to environmental resources protected under other Federal statutes. Section

Avoidance Alternative	Description	Avoidance Analysis Findings ²
	constructed off alignment to the east of existing I-270.	<p>4(f) Avoidance Alternative 2 causes other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) properties.</p> <p>Prudence factors failed per 23 CFR 774.17:</p> <ul style="list-style-type: none"> (iii) After reasonable mitigation, it still causes: <ul style="list-style-type: none"> (A) Severe social, economic, or environmental impacts; (B) Severe disruption to established communities; (D) Severe impacts to environmental resources protected under other Federal statutes; (iv) It results in additional construction, maintenance, or operational costs of an extraordinary magnitude
Section 4(f) Avoidance Alternative 3	Section 4(f) Avoidance Alternative 3 would construct four managed lanes as proposed in the Preferred Alternative. However, where impacts to Section 4(f) properties would occur, the location specific options would be incorporated into the alignment of Section 4(f) Avoidance Alternative 3.	<p>Although Section 4(f) Avoidance Alternative 3 would result in additional construction, maintenance, and operational costs of an extraordinary magnitude. After reasonable mitigation, it would still cause severe social, economic, and environmental impacts; severe disruption to established communities; and severe impacts to environmental resources protected under other Federal statutes. Section 4(f) Avoidance Alternative 3 causes other severe problems of a magnitude that substantially outweighs the importance of protecting Section 4(f) properties.</p> <p>Prudence factors failed per 23 CFR 774.17:</p> <ul style="list-style-type: none"> (iii) After reasonable mitigation, it still causes: <ul style="list-style-type: none"> (A) Severe social, economic, or environmental impacts; (B) Severe disruption to established communities; (D) Severe impacts to environmental resources protected under other Federal statutes; (iv) It results in additional construction, maintenance, or operational costs of an extraordinary magnitude

The Preferred Alternative would not avoid the use of all Section 4(f) properties. It would, however, avoid the use of 40 Section 4(f) properties and reduce the total acreage of Section 4(f) use by approximately 108.8 acres compared to DEIS Build Alternative 9 (**Table 6-3**). This comprises the vast majority of the net reduction in impacts to Section 4(f) properties of 113.6 acres compared to DEIS Alternative 9.

6.6 All Possible Planning

Section 4(f) states FHWA may not approve the use of Section 4(f) property unless there is no feasible and prudent avoidance alternative, and the action includes all possible planning to minimize harm to the property resulting from such use. “All possible planning,” as defined in 23 CFR 774.17, includes all reasonable measures to minimize harm or mitigate for adverse impacts and effects. The cost of mitigation should be a reasonable public expenditure in light of the severity of the impact on Section 4(f) property, in accordance with 23 CFR 771.105(e).

The DEIS and SDEIS presented measures that had been identified to ensure all possible planning to minimize harm and mitigate for adverse impacts and effects. These measures are summarized here and detailed in **Section 4 of the Draft Section 4(f) Evaluation (DEIS, Appendix F)** and **Chapter 5 of the SDEIS**. Additional minimization and mitigation efforts have been implemented in conjunction with the Preferred Alternative presented in this FEIS and the Final Section 4(f) Evaluation, which were summarized in section 6.1.3 of this chapter and provided in greater details in **Section 4 of FEIS, Appendix G**.

Since the publication of the SDEIS, MDOT SHA has coordinated with the OWJs for impacted Section 4(f) properties to identify specific mitigation commitments.

Pursuant to Section 106, MDOT SHA has prepared a Programmatic Agreement to resolve adverse effects to historic properties (**FEIS, Appendix J**). 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).

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 **Section 6.6.1** of this chapter, **Chapter 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.

6.6.1 Mitigation

MDOT SHA has coordinated extensively with the OWJs on Section 4(f) properties impacted by the Preferred Alternative to identify a comprehensive package of mitigation measures. Final mitigation commitments have been developed to include all possible planning to minimize harm in coordination with the OWJs. Mitigation measures in this section are organized by OWJ.

A. National Park Service

MDOT SHA has coordinated with NPS to identify a comprehensive package of mitigation measures to account for impacts to GWMP, Chesapeake and Ohio Canal National Historical Park, and Clara Barton Parkway. The measures identified are listed below.

- 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.
- Survey 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 (NNI) 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.
- Providing monetary compensation 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 (Site ID CHOH-13) per the Wetland Statement of Findings.
- Install new white legend and border on brown background guide signs along I-495 for the GWMP 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 of locks, masonry walls, towpath, and canal prism throughout entire LOD and develop and implement a plan for repairs identified during condition assessment.
- Complete Phase III Archaeological Data Recovery at 44FX0374, 44FX0379 and 44FX0389 (GWMP) and develop associated public interpretation materials (in Virginia).
- Complete Phase III Archaeological Data Recovery at 18MO749 and 18MO751 (Chesapeake and Ohio Canal) and develop associated public interpretation materials (In Maryland).
- Prepare National Register Nomination for Dead Run Ridges Archaeological District.
- Develop Interpretive product on archeological sites; Create web-based Story Map, waysides, and/or brochures.
- Provide monetary compensation for a Cultural Landscape Report for Clara Barton Parkway (historical narrative; updated existing conditions and analysis and evaluation; and treatment guidelines for management of character defining features).
- 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.
- Acquire James Audia property (two parcels totaling 1.4 acres) as replacement parkland for impacts to GWMP. If unavailable, acquire or convey property for replacement parkland of similar size and/or function in coordination with NPS.
- 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.

- Provide monetary compensation up to \$60,000 to update and refine the GWMP Climate Action Plan.
- The Preferred Alternative will result in temporary closure of the Potomac Heritage National Scenic Trail within the LOD during construction. A detour, if determined to be necessary, will continue to be developed by MDOT SHA and the Developer in coordination with NPS, Fairfax County, and the Virginia Department of Transportation. The segment of the trail within the LOD would 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 Plummerville 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.
- Evaluate additional options for the American Legion Bridge during final design that would further minimize or avoid physical impact to Plummerville Island.

B. M-NCPPC

MDOT SHA has coordinated with M-NCPPC to identify a comprehensive package of mitigation measures to account for impacts to M-NCPPC park properties, including all possible planning to minimize harm to the Section 4(f) resources. Mitigation measures are grouped below based on general mitigation applicable to all park impacts, and mitigation measures specific to one or more M-NCPPC properties.

a. General Mitigation

General measures applicable to all M-NCPPC park impacts include:

- 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.
- 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.
- Evaluate the ability to re-convey unused property previously owned by M-NCPPC back to that agency post construction.
- Convey the MDOT SHA owned 3.15-acre right-of-way located at MD 97 and 16th Street.
- Convey two MDOT SHA owned 15.35-acre parcels (Acct. no. 161300980570 and 161300980626) located between Northwood High School and Northwest Stream Valley Park.

b. Cabin John Stream Valley Park Unit 2

Mitigation measures specific to Cabin John Stream Valley Park Unit 2 include:

- Plan, design and construct improvements to formalize the Cabin John Trail trailhead parking area along Seven Locks Road including:
 - Reconstructing 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.
 - Optimizing 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.
 - Providing drainage and stormwater management facilities as required to treat new impervious area per County requirements.
 - Install signage prohibiting littering/dumping, replace existing trash can, and remove existing illicitly dumped material.
 - Relocate existing sign kiosk.
 - Construct bicycle repair stand, with tools and pump at Cabin John trailhead.
- Stream stabilization (~1,000 linear feet) along Cabin John Creek including:
 - Remove all concrete structures within stream 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.
- Plan, design and implement forest and terrestrial vegetation mitigation including:
 - NNI control for 7 years within 50-foot buffer of LOD.
 - Infill plantings, on park property, consisting of shrubs, understory/canopy trees and herbaceous seeding within NNI control areas (50-foot buffer from LOD).
- 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.

c. Cabin John Regional Park

Mitigation measures specific to Cabin John Regional Park include:

- 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.
- Plan, design and construct improvements for pedestrian and cycling access to the Robert C. McDonnell 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.
 - 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.
- Plan, design and construct improvements to the existing parking area on Tuckerman Lane near the Robert C. McDonnell Campground access road including:
 - Resurfacing the existing paved lot. (Paved area measures approximately 2500 square feet. (25 feet x 100 feet).
 - 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.
- 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 M-NCPPC-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.
- 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.
- Plan, design and implement forest and terrestrial vegetation mitigation including:

- Conducting forest stand delineation within 100-foot 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 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-foot buffer from LOD on park property).

d. Tilden Woods Stream Valley Park, Old Farm Neighborhood Conservation Area, and Cabin John Stream Valley Park Unit 6

Mitigation measures specific to Tilden Woods Stream Valley Park, Old Farm Neighborhood Conservation Area, and Cabin John Stream Valley Park Unit 6 include:

- 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.
- Plan, design, and implement forest and terrestrial vegetation mitigation including:
 - NNI control for 7 years within 50-foot buffer of LOD within on park property.
 - Infill plantings consisting of shrubs, understory/canopy trees and herbaceous seeding within NNI control areas (50-foot buffer from LOD) on park property.
- 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

C. City of Gaithersburg

Mitigation specific to the impacts to Malcolm King Park include the conveyance of a 4.03-acre MDOT SHA-owned property (Acct. no. 09-02213932) to City of Gaithersburg.

D. City of Rockville

Mitigation measures for impacts to Bullards Park and Rose Hill Stream Valley Park, Rockmead Park, Woottons Mill Park, and the Rockville Senior Center and Park include:

- 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.
- Acquire the 1.32-acre Betty B. Casey Property (on Fleet Street) (Acct. no 160400144125) and convey to the City of Rockville

- Acquire the 0.42-acre Lodging Partners LLC Property (41 Maryland Avenue) (Acct. no. 160403198603) and convey to the City of Rockville
- Acquire the 4.23-acre Cynthia Robertson Property (Potomac Woods) (Acct. no. 160401523951) and convey to the City of Rockville
- 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.

E. Maryland Historical Trust

Mitigation for Section 4(f) impacts to historic properties were coordinated with MHT. Mitigation measures are listed below. Because some of the historic properties are also park properties, some mitigation measures are duplicated from the lists above under park OWJs.

- Prepare a Cultural Landscape Report for Clara Barton Parkway.
- Prepare National Register Nomination for Dead Run Ridges Archaeological District.
- Complete Phase III Archaeological Data Recovery at 44FX0374, 44FX0379 and 44FX0389 (GWMP) and develop associated public interpretation materials.
- Complete Phase III Archaeological Data Recovery at 18MO749 and 18MO751 (Chesapeake and Ohio Canal) and develop associated public interpretation materials.
- Complete National Register Nomination for Washington Biologists' Field Club on Plummers Island.
- Place temporary fencing along the LOD within Plummers Island to delimit construction activities.
- Fund or implement a photographic survey documenting conditions before, during and post-construction on Plummers Island within the APE boundary and provide the results to the Washington Biologists' Field Club and NPS.
- Fund or develop GIS 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.
- 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.
- 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.
- Provide Washington Biologists' Field Club historical content related to Plummers Island as part of the above digitization effort to incorporate into their website.
- Complete additional archaeological investigations of LOD surrounding Morningstar Tabernacle No. 88 Moses Hall and Cemetery and monitor for potential archaeological findings during construction.

- 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 the MD State Historic Preservation Officer 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.
- Complete additional archaeological investigations of the LOD in the general vicinity of the Montgomery County Poor Farm adjacent to I-270 near Wootton Parkway.
- Improve the stormwater drainage on the First Agape 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.

6.7 Least Overall Harm

Pursuant to 23 CFR 774.3(c)(1), if the avoidance analysis determines that there is no feasible and prudent avoidance alternative, then only the alternative that causes the least overall harm may be approved. Because no feasible and prudent avoidance alternative has been identified, all remaining alternatives are evaluated to determine which would cause the least overall harm.

23 CFR 774.3(c)(1) identifies seven factors for identifying the alternative with the least overall harm.

- Factor 1: The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);
- Factor 2: The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- Factor 3: The relative significance of each Section 4(f) property;
- Factor 4: The views of the OWJs over each Section 4(f) property;
- Factor 5: The degree to which each alternative meets the Purpose and Need for the project;
- Factor 6: After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- Factor 7: Substantial differences in costs among the alternatives.

6.7.1 Draft Section 4(f) Least Overall Harm Evaluation

The Draft Section 4(f) Evaluation included a preliminary assessment of least overall harm which compared location-specific avoidance options, other minimization alternatives, and Alternatives Retained for Detailed Study (ARDS) based on the least overall harm criteria. (Refer to **DEIS, Appendix F, Section 5.**)

The DEIS included discussion of 18 location-specific alternatives identified to avoid the use of individual Section 4(f) properties, developed to be incorporated into the DEIS Build Alternatives. Each alternative was evaluated using the seven factors of least overall harm. The alternatives consisted of alignment shifts,

tunnels, or bridges that were developed to avoid specific Section 4(f) properties for which the impacts were not anticipated to be *de minimis*.

In general, the evaluation determined that these location specific options would result in additional use of other Section 4(f) properties, adverse impacts of a severe magnitude to resources not subject to Section 4(f) protection, or a substantial increase in cost. Because the location-specific options modify relatively short portions of the end-to-end Build Alternatives, each would meet the Purpose and Need of the Study to some degree. However, the analysis determined that the location specific options that more substantially deviate from the existing alignments of I-495 and I-270 and result in a lengthier travel routes would be less effective in addressing the project needs.

The DEIS considered other minimization alternatives including Alternative 5: 1-Lane High-Occupancy Toll Managed Lane Network and the MD 200 Diversion Alternative. These were evaluated along with the six Build Alternatives that were retained for detailed study in the DEIS. These alternatives included managed lanes that differ in the manner in which the proposed travel lanes would be designated and configured. The six ARDS included Alternatives 8, 9, 9M, 10, 13B, and 13C. These are described in detail in the **DEIS, Chapter 2, Section 2.6**.

6.7.2 Final Least Overall Harm Analysis

The preliminary results of the Least Overall Harm Analysis were presented in the **DEIS, Appendix F, Section 5.4**, and are summarized below for each of the alternatives (**Table 6-6**). The table has been updated to include the Preferred Alternative and finalize the least overall harm analysis.

Based on the analysis detailed in **Table 6-6** below, MDOT SHA has identified the Preferred Alternative (Alternative 9 – Phase 1 South) as the alternative with least overall harm. The Preferred Alternative would have substantially equal ability to mitigate adverse impacts to each Section 4(f) property relative to the DEIS Build Alternatives (Alternatives 8, 9, 9 Modified, 10, 13B and 13C). However, due to the shorter limits and substantial number of properties avoided, the Preferred Alternative would have fewer property impacts to mitigate compared to the DEIS Build Alternatives. The Preferred Alternative would have substantially lower overall harm to Section 4(f) properties due to the shorter project limits and fewer Section 4(f) properties impacted. The lower overall harm applies in consideration of both the acreage and number of properties impacted relative to the DEIS Build Alternatives, as well as the relative significance of each Section 4(f) property.

MDOT SHA has provided multiple opportunities for the OWJ to provide their views on the least overall harm analysis, including the comment periods for the DEIS, Draft Section 4(f) Evaluation and SDEIS. Extensive coordination with the OWJs has been conducted to identify a comprehensive strategy of avoidance, minimization, and mitigation for unavoidable Section 4(f) impacts. Input from the OWJs has focused largely on avoidance, minimization, and mitigation measures. No OWJs have objected to the identification of the Preferred Alternative as the alternative with least overall harm in accordance with the regulations at 23 CFR 774.

The Preferred Alternative satisfies the Purpose and Need for the Project, though to a somewhat lesser extent than the DEIS Build Alternatives as noted in **Table 6-6**. The Preferred Alternative would also require substantially lower magnitude of overall impacts to properties not protected by Section 4(f) due to the

shorter project limits. The estimated cost of the Preferred Alternative (\$3.75 to \$4.25 billion) would be lower than other Build Alternatives.

While some of the other alternatives and location specific options would reduce harm to one or more Section 4(f) properties, each of these alternatives would have problems related to cost and/or the ability to meet Purpose and Need. The MD 200 Diversion Alternative and Alternative 5 would each fail to meet the Purpose and Need. Each of the Location Specific Options (LS-1 through LS-11) would meet the Purpose and Need but would have substantially greater cost compared to the Preferred Alternative. Furthermore, many of the Location Specific Options would create additional impacts to other Section 4(f) properties as noted in **Table 6-6**.

Based on the information presented in the Draft Section 4(f) Evaluation, the Updated Draft Section 4(f) Evaluation, and this Final Section 4(f) Evaluation, FHWA and MDOT SHA have reached a conclusion that the Preferred Alternative is the alternative with least overall harm. The Preferred Alternative meets the Purpose and Need for the Study and impacts far fewer Section 4(f) properties and total acreage relative to the other Build Alternatives that would meet the Purpose and Need. The Preferred Alternative would avoid the use of 40 Section 4(f) properties totaling approximately 108.8 acres relative to the DEIS Build Alternatives. The Preferred Alternative would require use of a total of 33.2 acres of Section 4(f) property (including temporary and permanent), compared to 146.8 acres for the DEIS Build Alternative 9. Coordination with the OWJs has continued since the DEIS and documented in the FEIS.

6.8 Coordination

Section 4(f) regulations require the Draft Section 4(f) Evaluation be made available for coordination and comment to OWJs over the Section 4(f) resource (23 CFR §774.5). Since publication of the DEIS in July 2020, MDOT SHA has conducted conference calls, meetings, and field reviews, or sent letters to the following agencies with jurisdiction over parkland along the Phase 1 South limits: NPS, M-NCPPC Montgomery County, National Capital Planning Commission (NCPC), City of Rockville, and the City of Gaithersburg. FHWA and MDOT SHA have also held meetings and coordinated with the agencies with jurisdiction over historic sites, including NPS, ACHP, NCPC, MHT, and the VDHR. MDOT SHA has worked closely with the OWJs over all Section 4(f) properties to identify minimization and mitigation measures necessary for Section 4(f) approval. **FEIS, Chapter 8, Section 8.3.3** details the meetings held and the topics covered.

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), which included a preliminary conclusion on the avoidance and least overall harm analysis. USDOI consultation will continue with review of the Final Section 4(f) Evaluation in coordination with the FEIS which will enable USDOI to provide comments on FHWA's conclusions regarding the existence of feasible and prudent avoidance alternatives, the inclusion of all possible planning to minimize harm to Section 4(f) properties (including mitigation), and the least overall harm alternative. The Preferred Alternative would not affect resources requiring coordination with USDA and HUD and, therefore, consultation with these agencies is not necessary.

The public was given notice and afforded an opportunity to comment on the Draft Section 4(f) Evaluation and Updated Draft Section 4(f) Evaluation per 23 CFR 774(b)(2). This public involvement has been conducted in conjunction with the overall NEPA document public involvement process, as outlined in **FEIS, Chapter 8, Section 8.2**.

Prior to making a Section 4(f) *de minimis* impact determination, public notice and opportunity for public review is required. For historic resources, MDOT SHA has notified MHT and consulting parties of the intent to make a *de minimis* impact determination via letters as part of the Section 106 process. For park resources, the opportunity for public notice and review occurred as part of the public review of the DEIS and SDEIS as the intent to make a *de minimis* impact determination has been documented in the Draft Section 4(f) Evaluation and the Updated Section 4(f) Evaluation. A supplemental opportunity for public review was also provided for one park property that was not identified as a potential *de minimis* impact in the Draft Section 4(f) Evaluation or the Updated Draft Section 4(f) Evaluation, but due to additional impact minimization, was identified as a *de minimis* impact in the Final Section 4(f) Evaluation. All public comments on the DEIS, SDEIS, and subsequent opportunity for public review related to the intent to make *de minimis* impact determinations were provided to the OWJs. In addition, the MDOT SHA sent a request for written agreement from each OWJ that the impacts to specific parks will not adversely affect the features, attributes, or activities qualifying those properties for protection under Section 4(f). The OWJs have concurred with multiple 4(f) *de minimis* applications, as required by regulation. This concurrence does not mean the OWJ supports the Preferred Alternative as defined in the FEIS. Section 4(f) compliance and a *de minimis* impact determination is separate and distinct from other federal requirements and should not be construed as the OWJ supporting the Preferred Alternative. Refer to **FEIS, Appendices I and S** for copies of this correspondence.

6.9 Conclusion

Based on the information presented in the Draft Section 4(f) Evaluation, Updated Draft Section 4(f) Evaluation, and this Final Section 4(f) Evaluation, FHWA and MDOT SHA have concluded that there is no feasible and prudent alternative to the use of land from the Section 4(f) properties identified in **Table 6-2**, and the proposed action includes all possible planning to minimize harm, and the Preferred Alternative is the alternative with the least overall harm.

Table 6-6: Least Overall Harm Analysis

Alternative	i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property	ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection	iii. The relative significance of each Section 4(f) property	iv. The views of the official(s) with jurisdiction over each Section 4(f) property	v. The degree to which each alternative meets the purpose and need for the project	vi. After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)	vii. Substantial differences in costs among the alternatives	Preliminary Summary
DEIS Build Alternatives								
Alternative 8	Substantially equal ability to mitigate adverse impacts to each Section 4(f) property	Substantially equal relative harm given the physical footprint among the Build Alternatives. Harm would occur to properties as described in Section 2	All DEIS build alternatives would impact the same number of Section 4(f) properties	OWJs provided views during the review period of the DEIS, Draft Section 4(f) Evaluation and SDEIS. No OWJs objected to the identification of the Preferred Alternative as the alternative with least overall harm	Meets Purpose and Need to a Lesser Degree	Substantially equal magnitude of adverse impacts to properties not protected by Section 4(f)	Total Cost of Alternative would be between \$8.7 and \$9.6 billion	Would meet the Purpose and Need to a lesser degree than other DEIS Build Alternatives. Would create traffic problems that would reduce trip reliability in the managed lanes.
Alternative 9					Meets Purpose and Need to Greater Degree		Total Cost of Alternative would be between \$8.7 and \$9.6 billion	Would meet the Purpose and Need; impacts to properties protected by Section 4(f) are minimized; appropriate mitigation measures for use of Section 4(f) property to minimize harm.
Alternative 9 Modified					Meets Purpose and Need to a Lesser Degree	Lesser Magnitude of Adverse Impacts than Build Alternatives	Cost of Alternative would be between \$8.5 and \$9.3 billion. Not financially viable owing to lower revenue.	Would meet the Purpose and Need to a lesser degree than other DEIS Build Alternatives because it does not successfully address existing traffic and long-term traffic growth or enhance trip reliability, and it is not financially viable.
Alternative 10					Meets Purpose and Need	Greater Magnitude of Adverse Impacts than other Build Alternatives	Total Cost of Alternative would be between \$9.0 and \$9.9 billion	Would have greater impacts to Section 4(f) Properties, natural resources, and property relocations as well as greater cost, but would provide no additional benefit in meeting Purpose and Need.
Alternative 13B					Meets Purpose and Need to a Lesser Degree	Substantially equal magnitude of adverse impacts to properties not protected by Section 4(f)	Total Cost of Alternative would be between \$8.7 and \$9.6 billion. Not financially viable owing to lower revenue	Would meet the Purpose and Need to a lesser degree than the other DEIS Build Alternatives. Would only accommodate traffic growth in the peak direction during peak period. Would not be financially self-sufficient.
Alternative 13C					Meets Purpose and Need to a Lesser Degree		Total Cost of Alternative would be between \$8.8 and \$9.7 billion. Not financially viable owing to lower revenue	Would meet the Purpose and Need to a lesser degree. Would have negative impacts to travel along I-495 during the AM peak period as reversible lanes can only be operated in one direction at a time. Would not be financially self-sufficient.
Preferred Alternative								
Preferred Alternative Alternative 9 – Phase 1 South	Substantially equal ability to mitigate adverse impacts to each Section 4(f) property relative to the DEIS Build Alternatives, with fewer property impacts to mitigate.	Substantially lower overall harm due to shorter project limits and fewer Section 4(f) properties impacted.	Less harm than DEIS Build Alternatives	Modified project limits to avoid Section 4(f) properties, in response to feedback from OWJ. OWJs provided views during the review period of the SDEIS. No OWJs objected to the identification of the Preferred Alternative as the alternative with least overall harm	Meets Purpose and Need to a Lesser Degree	Substantially lower magnitude of overall impacts to properties not protected by Section 4(f) due to shorter project limits	Cost of Alternative would be between \$3.75 and \$4.25 billion.	Would meet the Purpose and Need. Would have substantially lower impacts to Section 4(f) properties and resources not protected by Section 4(f) due to shorter project limits.

Alternative	i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)	ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection	iii. The relative significance of each Section 4(f) property	iv. The views of the official(s) with jurisdiction over each Section 4(f) property	v. The degree to which each alternative meets the purpose and need for the project	vi. After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)	vii. Substantial differences in costs among the alternatives	Preliminary Summary
Other Alternatives Considered								
MD 200 Diversion Alternative	Greater Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	OWJs provided views during the review period of the DEIS, Draft Section 4(f) Evaluation and SDEIS. No OWJs objected to the identification of the Preferred Alternative as the alternative with least overall harm	Does not meet Purpose and Need	Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Cost of Alternative would be between \$7.0 and \$8.1 billion. Not financially viable owing to lower revenue.	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. Would not be financially self-sufficient.
Alternative 5	Greater Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	OWJs provided views during the review period of the DEIS, Draft Section 4(f) Evaluation and SDEIS. No OWJs objected to the identification of the Preferred Alternative as the alternative with least overall harm	Does not meet Purpose and Need	Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Cost of Alternative would be between \$7.8 and \$8.5 billion. Not financially viable owing to lower revenue.	Alternative 5 does not meet the Study's Purpose and Need because it does not address existing traffic and long-term traffic growth or enhance trip reliability, and it is not financially viable.
Location Specific Options								
LS-1	Greater Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	OWJs provided views during the review period of the DEIS, Draft Section 4(f) Evaluation and SDEIS. No OWJs objected to the identification of the Preferred Alternative as the alternative with least overall harm	Meets Purpose and Need	Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-1 would meet the Purpose and Need of the project, it would cost \$600 million more to construct than the DEIS Build Alternatives along this portion of the project.
LS-2	Greater Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives			Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative Not financially viable owing to lower revenue	Option LS-2 would adequately meet the Purpose and Need of the project, it would cost in excess of \$1 billion more than the DEIS Build Alternatives along this portion of the project.
LS-3	Less Ability to Mitigate than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives			Greater Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-3 would result in 10.4 acres of additional impacts to Section 4(f) properties, which would create additional mitigation along this portion of the project when compared to the DEIS Build Alternatives. Would cost in excess of \$1.7 billion more than the DEIS Build Alternatives along this portion of the project.
LS-4	Less Ability to Mitigate than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives			Greater Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives	When compared to the DEIS Build Alternatives, Option LS-4 would result in 11 acres of additional impacts to Section 4(f) properties and cost nearly \$700 million more.

Alternative	i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)	ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection	iii. The relative significance of each Section 4(f) property	iv. The views of the official(s) with jurisdiction over each Section 4(f) property	v. The degree to which each alternative meets the purpose and need for the project	vi. After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)	vii. Substantial differences in costs among the alternatives	Preliminary Summary
LS-5	Less Ability to Mitigate than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	OWJs provided views during the review period of the DEIS and Draft Section 4(f) Evaluation. No OWJs objected to the identification of the Preferred Alternative as the alternative with least overall harm.	Meets Purpose and Need	Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-5 would result in 3.8 acres of additional impacts to Section 4(f) properties and cost \$27 million more than the DEIS Build Alternatives along this portion of the Study.
LS-6	Great Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives			Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-6 would cost \$25 million more than the DEIS Build Alternatives along this portion of the Study.
LS-7	Less Ability to Mitigate than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives			Greater Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-7 would result in an increase of 12 acres of impact to Section 4(f) properties, result in 547 additional relocations, and cost approximately \$1.2 billion more than the DEIS Build Alternatives along this portion of the Study.
LS-8	Less Ability to Mitigate than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives			Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-8 would result in 0.9 acres of additional impacts to Section 4(f) properties and cost \$250 million more than the DEIS Build Alternatives along this portion of the Study.
LS-9	Greater Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives			Lesser Magnitude of Adverse Impacts than Build Alternative	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-9 would cost approximately \$200 million more than the DEIS Build Alternatives along this portion of the Study.
LS-10	Less Ability to Mitigate than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives	Greater Harm than DEIS Build Alternatives			Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	When compared to the DEIS Build Alternatives, Option LS-10 would result in 6.1 acres of additional impacts to one Section 4(f) property: BARC. Option LS-10 would cost approximately \$88 million more than the DEIS Build Alternatives along this portion of the project.
LS-11	Greater Ability to Mitigate than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives	Less Harm than DEIS Build Alternatives			Lesser Magnitude of Adverse Impacts than DEIS Build Alternatives	Greater Cost than DEIS Build Alternatives or Preferred Alternative	Option LS-11 would cost approximately \$500 million more than the DEIS Build Alternatives along this portion of the project.