



George Washington Memorial Parkway
Washington, DC and Virginia

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan

Assessment of Effects

July 2023



TABLE OF CONTENTS

Acronyms and Abbreviations	ii
Introduction	1
Description of the Proposed Undertaking.....	1
Alternatives	7
Area of Potential Effects	16
Assessment of Effects.....	25
Summary of Effects.....	33
References.....	35

LIST OF FIGURES

Figure 1. General Limits of the GW Parkway South Section and MV Trail Improvements Plan .	3
Figure 2. Limits of GW Parkway South Section and MV Trail Zone 1 Improvements.....	4
Figure 3. Limits of MV Trail Zone 2 Improvements.....	5
Figure 4. Limits of MV Trail Zone 3 Improvements.....	6
Figure 5. Illustration of a Double Threat Crash Scenario	8
Figure 6. Typical Section of GW Parkway (Existing)	9
Figure 7. Typical Section of Proposed Road Diet Pavement Striping Plan.....	9
Figure 8. Typical Section of Trail Widening Distributed Evenly from the Centerline	13
Figure 9. Typical Section of Trail Widening at Physical / Environmental Constraint.....	13
Figure 10. Typical Section of Proposed Trail Bridges	14
Figure 11. Recently Reconstructed Bridge 12 near Fort Hunt.....	14

LIST OF TABLES

Table 1. Summary of GW Parkway South Section Intersection Treatments	12
Table 2. Cultural Landscape Characteristics and Features of the GW Parkway	19

APPENDICES

- Appendix A. Area of Potential Effects Mapping
- Appendix B. GW Parkway and MV Trail Redesign Concepts
- Appendix C. Proposed Action Location Mapping

ON THE COVER

Aerial view of the GW Parkway South Section and inset photographs of the MV Trail at Lady Bird Johnson Park (Columbia Island) (left) and Gravelly Point (right).

ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ABAAS	Architectural Barriers Act Accessibility Standards
AHS	American Horticultural Society
AOE	Assessment of Effects
APE	Area of Potential Effects
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CG-T	Continuous Green-T
DC	District of Columbia
DC HPO	District of Columbia Historic Preservation Office
EA	Environmental Assessment
FHWA	Federal Highway Administration
ft	feet
GW Parkway	George Washington Memorial Parkway
MP	Mile Post
MV Trail	Mount Vernon Trail
MVMH	Mount Vernon Memorial Highway
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act of 1969
NHL	National Historic Landmark
NPS	National Park Service
NRHP	National Register of Historic Places
PROWAG	Public Rights-of-Way Accessibility Guidelines
RRFB	Rectangular Rapid Flashing Beacon
V-CRIS	Virginia Cultural Resource Information System
VDHR	Virginia Department of Historic Resources
VLR	Virginia Landmarks Register

INTRODUCTION

The National Park Service (NPS), in cooperation with the National Capital Planning Commission (NCPC), is developing a George Washington Memorial Parkway (GW Parkway) South Section and Mount Vernon (MV) Trail Improvements Plan (Plan) to guide future actions to improve the roadway and trail while maintaining the scenic and historic character of the GW Parkway. Figure 1 presents the general limits of the proposed improvements.

Pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800) “Protection of Historic Properties” (Section 106), NPS initiated consultation with the District of Columbia Historic Preservation Office (DC HPO) and the Virginia Department of Historic Resources (VDHR) in letters dated November 4, 2022. The letter briefly described the project, defined a draft Area of Potential Effects (APE), and identified known historic properties within the APE. The NPS also sent consultation initiation letters concurrently to the Pamunkey Indian Tribe, Upper Mattaponi Indian Tribe, Rappahannock Tribe, Nansemond Indian Nation, Chickahominy Indian Tribe, Chickahominy Tribe Eastern Division, Monacan Indian Nation, Catawba Indian Nation, Delaware Nation, Absentee Shawnee Tribe of Indians of Oklahoma, and Shawnee Tribe.

VDHR acknowledged receipt of the initiation letter on December 7, 2022, and had several questions regarding the draft APE. The NPS provided responses to VDHR’s comments in a letter dated January 13, 2023. The NPS did not receive comments from the DC HPO or from any of the Tribes.

Since initiating consultation, the NPS has further defined the undertaking and assessed potential effects to cultural resources, which are discussed in this Assessment of Effects (AOE) Report.

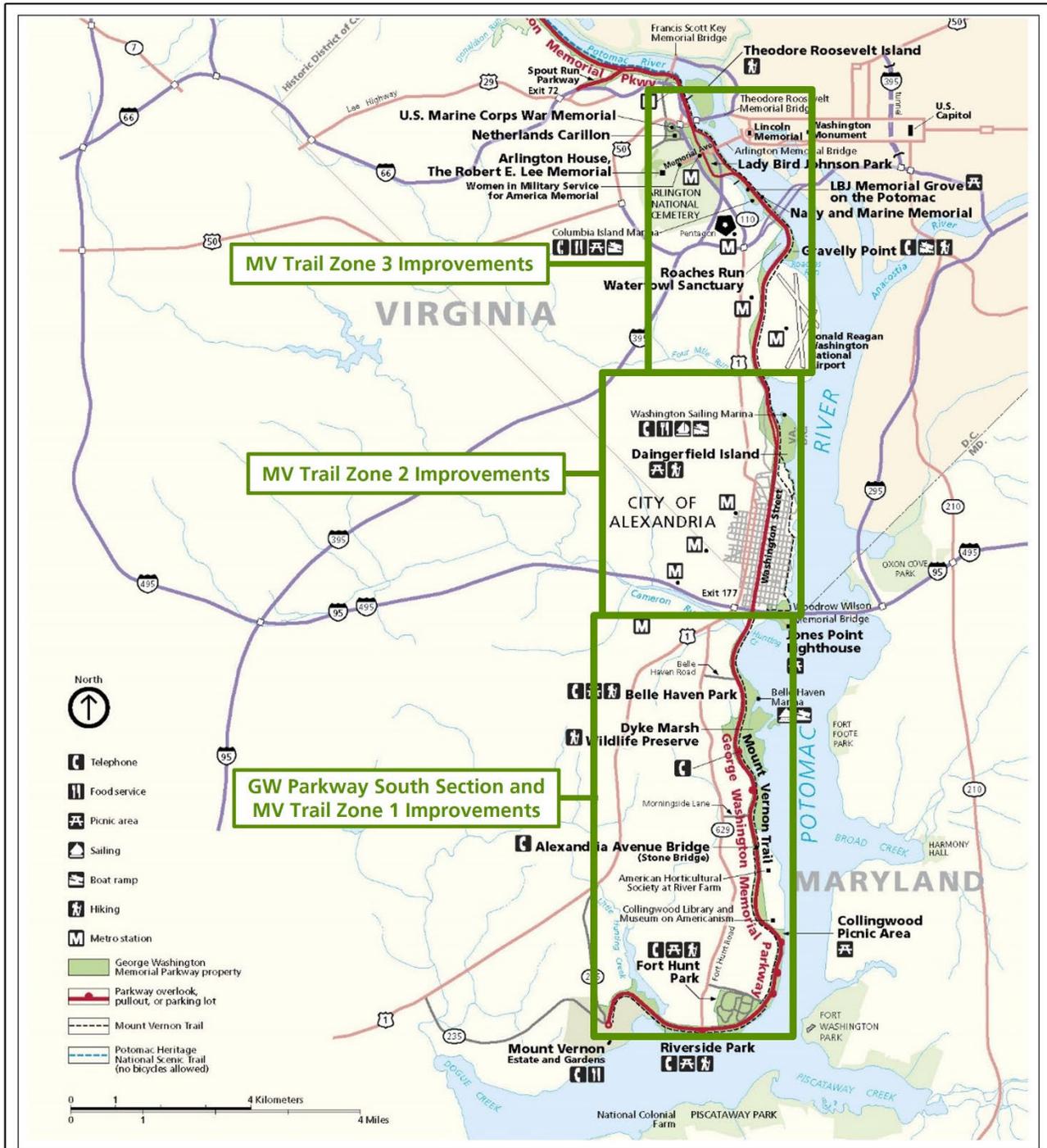
DESCRIPTION OF THE PROPOSED UNDERTAKING

The proposed Plan implementation would rehabilitate and make safety improvements to the South Section of the GW Parkway from the Mount Vernon Estate north to Hunting Creek Bridge just south of the City of Alexandria, Virginia (Figure 2). The GW Parkway South Section is approximately 8.5 miles and is one of the most heavily used roadways in the NPS. This Plan involves comprehensive rehabilitation to restore the historic 1932 roadway and drainage system for the first time, including complete replacement of the deteriorated road surface (concrete slabs), repairs or replacement of drainage structures, and rehabilitation of four bridges. In addition, the Plan includes implementation of a permanent road diet, bicycle/pedestrian crosswalks, and other roadway and intersection improvements. A road diet is a roadway modification that can reduce speeds without changing the number of vehicles on the roadway, making it a safety improvement that is sensitive to the historic character of the GW Parkway. Crosswalks would be designed in accordance with the Public Rights-of-Way Accessibility Guidelines (PROWAG) to comply with the Architectural Barriers Act Accessibility Standards (ABAAS).

The Plan also includes rehabilitation and safety improvements to the MV Trail across all NPS administered sections. The MV Trail has been divided into three management zones for planning purposes. Zone 1 includes the MV Trail section south of Alexandria, Virginia, from Mount Vernon Estate to the Hunting Creek Bridge in Fairfax County, Virginia (Figure 2). Zone 2 consists of the trail

section from the Hunting Creek Bridge to the Four Mile Run Bridge in the City of Alexandria, Virginia (Figure 3). Zone 3 includes the MV Trail section from the Four Mile Run Bridge to the Theodore Roosevelt Island Parking Lot in Arlington County and Washington, District of Columbia (DC) (Figure 4). The NPS does not administer the entire Zone 2 section of the MV Trail, which is partially under the jurisdiction of the City of Alexandria. The NPS has therefore excluded portions of Zone 2 from this Plan.

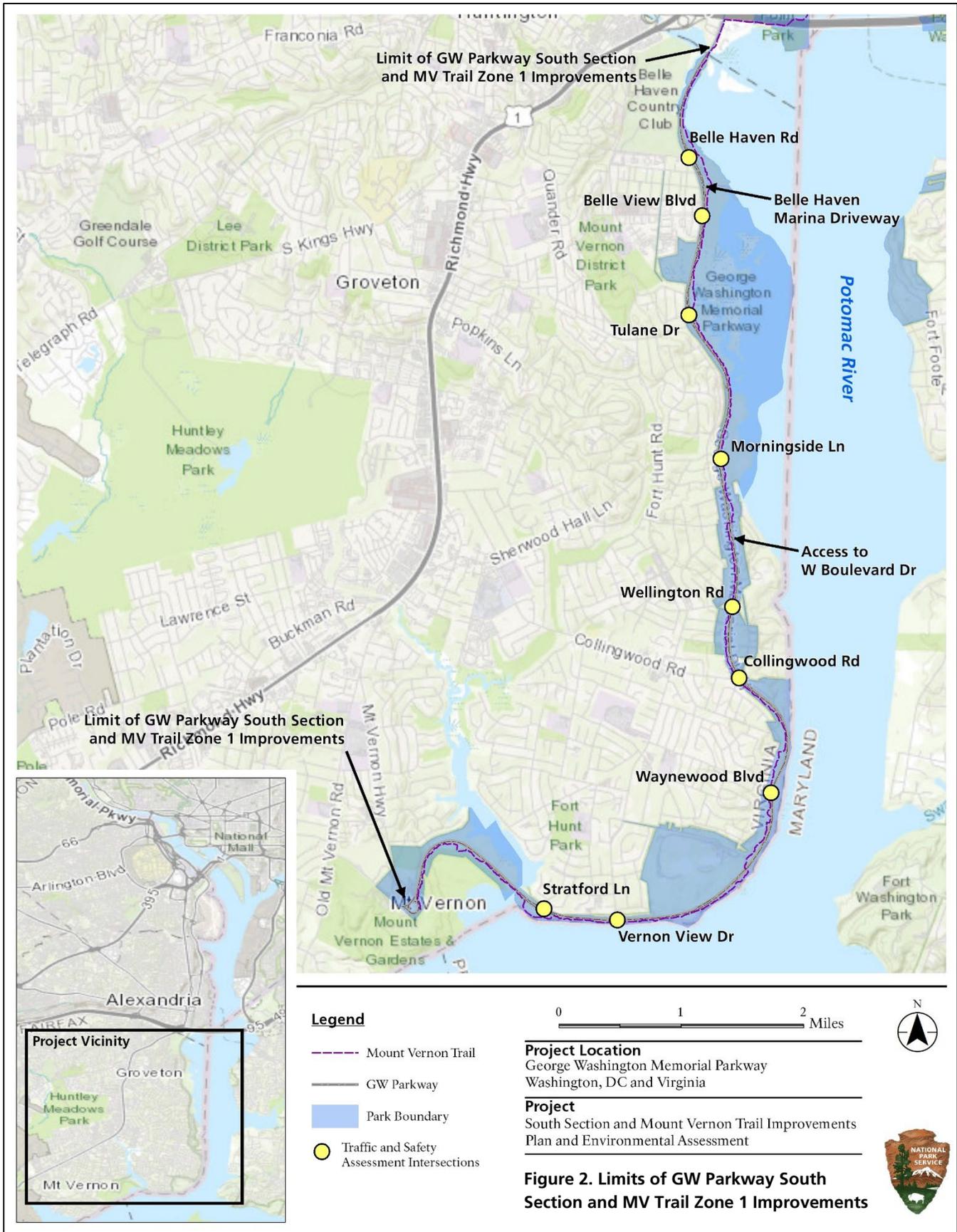
The MV Trail is one of the most heavily used multi-use trails in the country. It is a very popular recreation resource and critical regional transportation link that hosts over one million pedestrians and bicyclists annually. The Plan involves rehabilitation of the trail; geometric changes, such as trail realignment and widening; trail bridge replacement or rehabilitation; trail intersection treatments; drainage improvements; vegetation management; and other trail amenities to improve safety and the visitor experience, and to extend the service life of the trail and minimize future maintenance requirements.

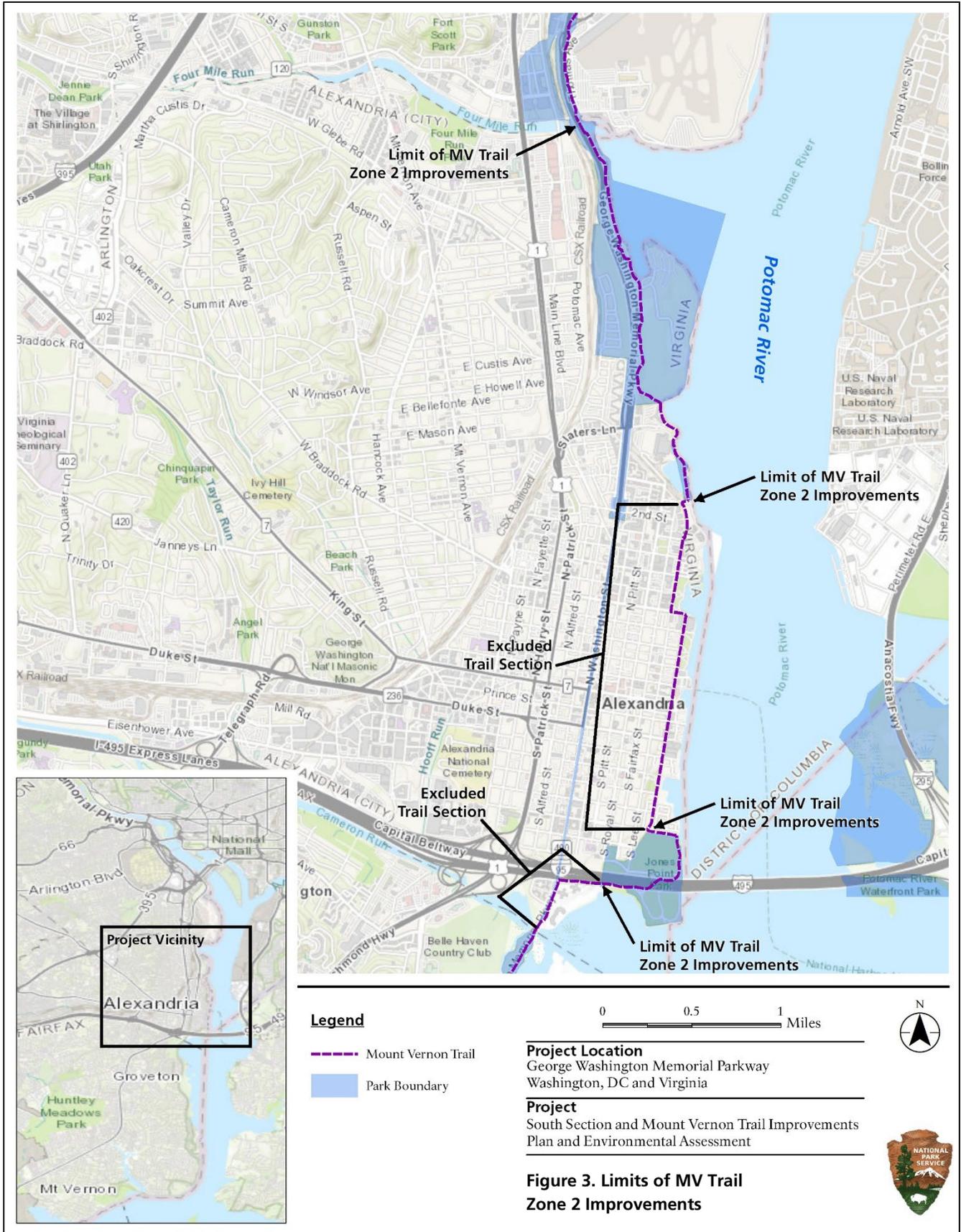


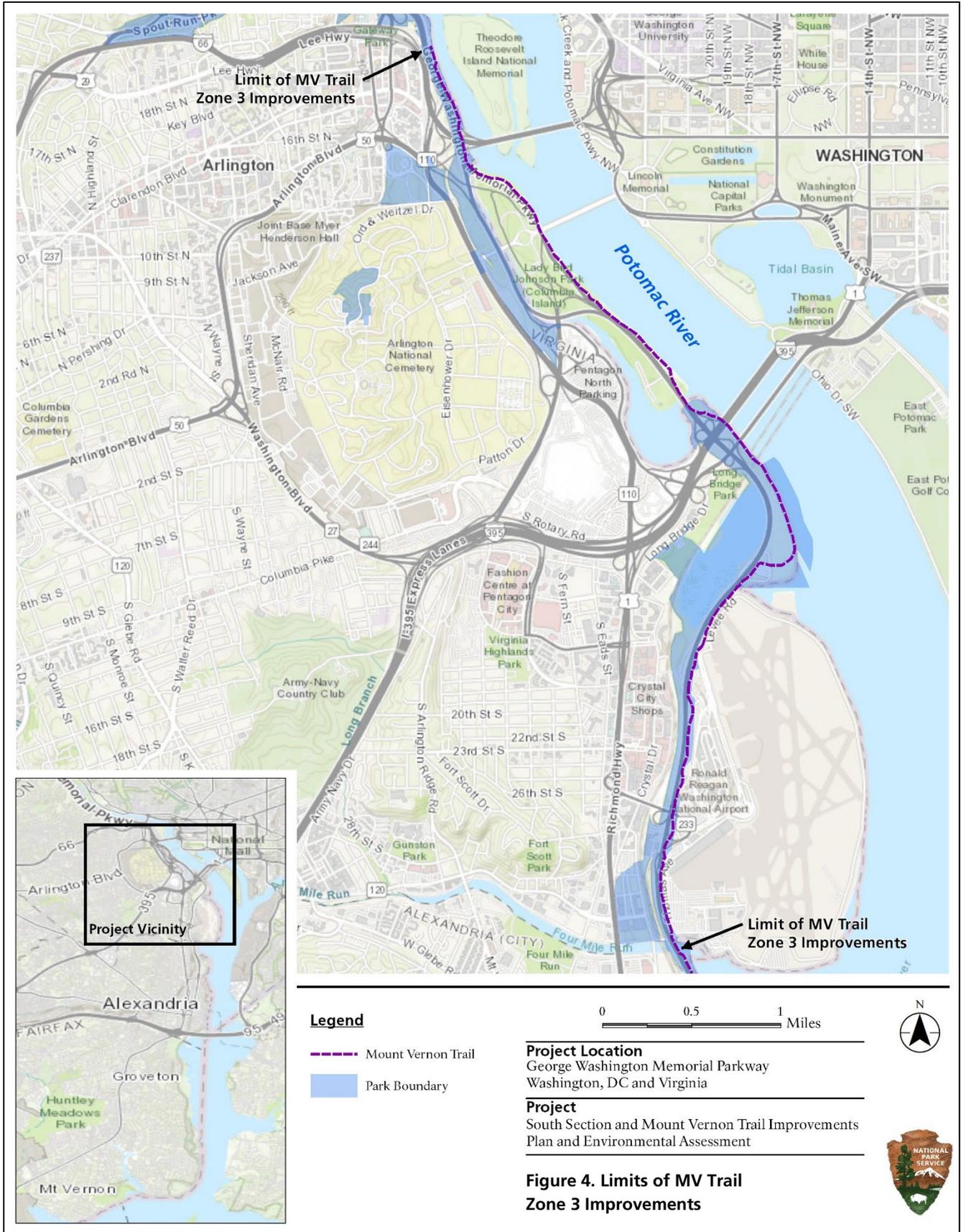
**GEORGE WASHINGTON MEMORIAL PARKWAY
SOUTH SECTION AND MOUNT VERNON TRAIL
IMPROVEMENT PLAN / ENVIRONMENTAL ASSESSMENT**



Figure 1. General Limits of the GW Parkway South Section and MV Trail Improvements Plan







ALTERNATIVES

This section of the AOE describes the no-action alternative and the proposed action for rehabilitation and improvements to the GW Parkway South Section and MV Trail.

No Action Alternative

The no action alternative describes the action of continuing the present management operations and conditions. It does not imply or direct discontinuing the present action or removing existing uses, development, or facilities. The no action alternative provides a basis for comparing the management direction and environmental consequences of the proposed action. The NPS would respond to future needs and conditions associated with the roadway and trail without significant actions or changes in present course should the NPS select the no action alternative for implementation.

Under the no action alternative, the NPS would continue to maintain the GW Parkway South Section and MV Trail. Management actions would include the minimum rehabilitation and repairs necessary to maintain operation of the roadway and trail infrastructure and amenities. The concrete pavement of the GW Parkway South Section would continue to deteriorate, requiring frequent maintenance and spot repairs, and safety and drainage issues would continue to occur. Federal Highway Administration (FHWA) would continue to conduct scheduled structural inspections of the roadway bridges to ensure they are safe for motorists. The NPS would conduct only minor structural repairs on the bridges under the no action alternative until comprehensive rehabilitation efforts are necessary that would occur under other future planning decisions. Along the MV Trail, deteriorating trail and bridge surfaces would require frequent maintenance and spot repairs, and the potential for user conflicts and crashes, as well as trail hazards, would continue to increase. The NPS may incorporate small-scale spot improvements or repairs on the GW Parkway or MV Trail as part of other future planning decisions.

GW Parkway South Section and MV Trail Improvements (Proposed Action)

GW Parkway South Section – Roadway Infrastructure Improvements

The proposed action for the GW Parkway South Section includes complete replacement of the deteriorated concrete road surface, gutters, and mountable curbs where they are present. The NPS would resolve drainage issues by repairing or replacing drainage structures (e.g., culverts, ditches, drainpipes, and stormwater inlets), and would incorporate stormwater management best management practices (BMPs) to address water quantity management and water quality treatment, as needed. The NPS would rehabilitate four bridges, as needed, including the Little Hunting Creek Bridge, Fort Hunt Overpass Bridge, Alexandria Avenue Overpass Bridge, and Hunting Creek Bridge. Bridge-specific rehabilitations would be based on recommendations from inspections conducted by FHWA. Other actions include installing mumble strips, grading areas of steep shoulder drop off, replacing or resetting signs and guardrails, installing milepost markers, and pruning back tree limbs and other vegetation that is encroaching on the Parkway. The mapping in Appendix C identifies many of the general and site-specific improvements included in the proposed action for the GW Parkway.

GW Parkway South Section – Road Diet

The park is seeking to improve safety for people who drive, walk, and bicycle, which the NPS can best achieve by implementing multiple traffic calming solutions in conjunction with crosswalk improvements. To accomplish this, the NPS would implement a road diet, or roadway reconfiguration, along the GW Parkway South Section where feasible based on traffic modeling. Road diets generally involve restriping a roadway to remove a traffic lane and repurposing the pavement for center median turn lanes, outside dedicated right or left turn lanes, or road shoulder. Road diets are low-cost options that can yield substantial benefits, including enhanced safety, improved mobility, and the reclaiming of space for a reallocation of other uses. Road diets can also create opportunities to safely design crosswalks that avoid “double threat” crash scenarios without the need for new infrastructure. Double threat scenarios exist for pedestrians at crosswalks with two or more lanes of traffic traveling in the same direction as illustrated on Figure 5. In this situation, vehicles stopped at the crosswalk may block oncoming vehicles from view, or oncoming vehicles may not see pedestrians in the crosswalk because other vehicles are blocking them from view.

The NPS obtained the services of the US Department of Transportation Volpe Center in early 2023 to assess the traffic impacts of reducing the number of travel lanes along the GW Parkway South Section between Belle Haven Road and Mount Vernon Estate (i.e., implementing a road diet). The results of the study indicated that excessive delays would occur because of current and projected traffic volumes between Belle Haven Road and Tulane Drive if the NPS implements a road diet within this section of the GW Parkway. However, the study suggested that two travel lanes (one lane in each direction) is sufficient to accommodate traffic volumes without excessive delay from Tulane Drive to Mount Vernon Estate, except at the intersection approaches that require additional lanes for turning movements. As such, the NPS proposes to implement a road diet where excessive delays are not anticipated, between Mount Vernon Estate and Belle View Boulevard in the southbound direction, and between Mount Vernon Estate and Tulane Drive in the northbound direction.

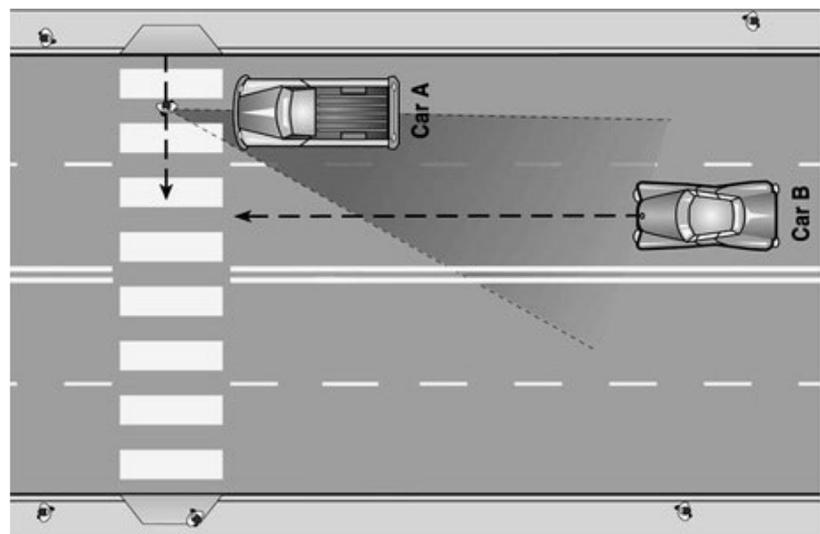


Figure 5. Illustration of a Double Threat Crash Scenario (Source: Pedestrian and Bicycle Information Center 2023)

The NPS would implement the proposed road diet using pavement striping and signage to reduce the number of travel lanes to one lane northbound and one lane southbound. The additional pavement area would be reallocated to establish two right-hand shoulders or dedicated right-turn lanes at southbound intersections, as well as a striped median or center turn lane. Figure 6 provides a typical section of the existing GW Parkway South Section. Figure 7 provides a typical section of the proposed road diet pavement striping plan between intersections. Figure 1 and Figure 2 in Appendix B provide plan views of the proposed road diet striping plan for road sections where the northbound and

southbound lanes are joined and road sections where the lanes are separated by a varying width vegetated median.

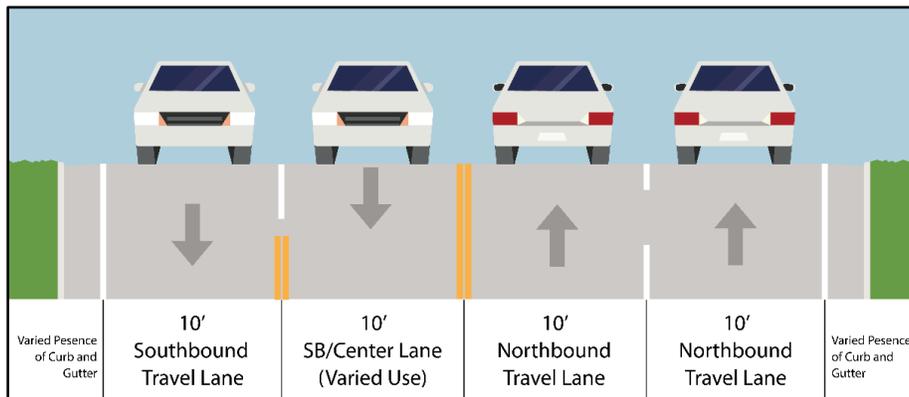


Figure 6. Typical Section of GW Parkway (Existing)

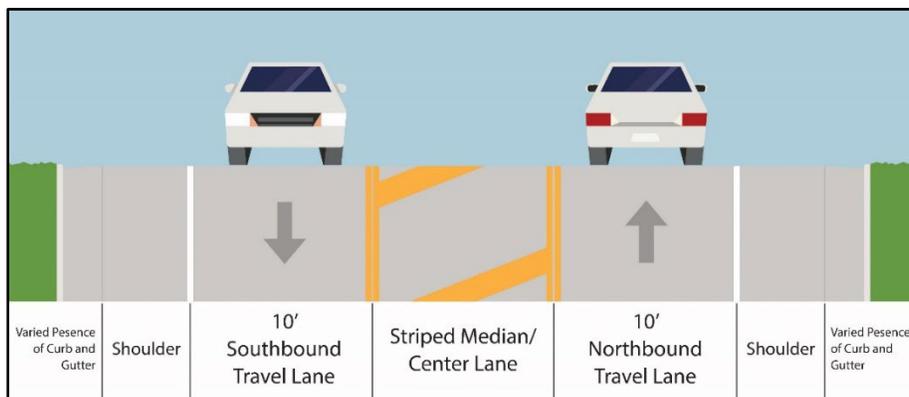


Figure 7. Typical Section of Proposed Road Diet Pavement Striping Plan

GW Parkway South Section – Roadway and Intersection Safety Improvements

In conjunction with the proposed road diet, the NPS also proposes safety improvements at the nine intersections along the GW Parkway South Section evaluated during the Traffic and Safety Context Sensitive Solutions Assessment (NPS 2021). The NPS also proposes safety improvements at the Belle Haven Marina Driveway, at the access road to West Boulevard Drive, and at Outlet Road / East Boulevard Drive. The NPS would establish a Continuous Green-T (CG-T) intersection configuration using striping and signage at the Morningside Lane (Appendix B, Figure 10), Tulane Drive (Appendix B, Figure 11), Belle View Boulevard (Appendix B, Figure 12), and Belle Haven Road (Appendix B, Figure 14) intersections. The CG-T intersection design allows one major street direction of travel to pass through the intersection without stopping. Left-turn vehicles from the side street use a channelized receiving lane on the major street to merge onto the major street. The channelized left-turn lane from the side street improves safety by reducing the potential for angle crashes on the major street, and the free-flow condition on the major street increases efficiency by reducing delays. The NPS would also make striping improvements to establish dedicated right turn lanes in the southbound direction at the Stratford Lane (Appendix B, Figure 3), Vernon View Drive (Appendix B, Figure 4), Waywood Boulevard (Appendix B, Figure 5), Collingwood Road (Appendix B, Figure 6), Wellington Road (Appendix B, Figure 7), and West Boulevard Drive (Appendix B, Figure 9) intersections in conjunction with the proposed road diet. At the Belle Haven Marina Driveway (Appendix B, Figure

13), the NPS would establish a dedicated left turn lane onto the driveway from the GW Parkway southbound approach. Similarly, at the Outlet Road / East Boulevard Drive (Appendix B, Figure 8) intersection, the NPS would establish a dedicated left turn lane from the GW Parkway southbound approach and a dedicated right turn lane onto Outlet Road from the northbound approach.

The NPS would establish crosswalks designed in accordance with PROWAG to be ABAAS-compliant at the Stratford Lane, Vernon View Drive, Collingwood Road, Wellington Road, Outlet Road / East Boulevard Drive, Tulane Drive, Belle View Boulevard, the Belle View Marina Driveway, and Belle Haven Road intersections. In conjunction with the road diet, the NPS would coordinate implementation of crosswalks with other traffic calming and safety measures, that may include pedestrian median refuge areas, intersection lighting where appropriate, rectangular rapid flashing beacons (RRFBs), and speed limit feedback signage. These are inter-related actions intended to improve pedestrian and bicyclist safety by reducing speeds of vehicular traffic and increasing visibility and predictability of nonmotorized movements. The NPS would construct sidewalks and paved trails to connect neighborhoods to the crosswalks and to existing facilities east of the GW Parkway, such as the Mount Vernon Trail and bus stops. The NPS would relocate the bus stop signs at the existing dedicated bus pull-off areas to be more accessible from the proposed pedestrian crossings, where applicable.

Beginning in 1955, the concrete surface of the original roadway was expanded at select at-grade intersections to add left-turn and deceleration lanes. During the last comprehensive pavement rehabilitation completed in 1986, the NPS added left-turn and deceleration lanes at all at-grade intersections by widening the pavement surface within the median and/or along the outer curb. Under the proposed action, the NPS proposes to restore the original median and outer curb alignment of the concrete roadway surface at several intersections to reduce the number of through or turning lanes, based on traffic modeling. Removing the excess concrete would improve safety by mitigating speeding, reducing the distance required for pedestrians and bicyclists to cross the GW Parkway, and improving stopping sight distances for motorists turning off the GW Parkway across MV Trail crosswalks on side streets. Reducing pavement area allows this space to be repurposed for pedestrian and bicycle facilities, helps address stormwater concerns, and allows the opportunity for the NPS to reinstate original green space in the median and/or along the outer curb alignment.

Table 1 provides a summary of the treatments proposed at each intersection along the GW Parkway South Section. Each arrow represents one lane and the driving maneuver.

The use of automated speed enforcement technology (i.e., speed cameras) would be supported through a limited number of mobile or fixed stations, not to exceed five fixed locations. The implementation and use would be based upon the NPS obtaining the legal authority to issue civil citations for traffic infractions, which is not currently the case. The creation of an automated speed enforcement program would also require the need for policies, procedures, practices, hardware, software, staffing, and funding to upkeep and maintain the program and equipment throughout its life cycle.

Implementation of the proposed action for the GW Parkway South Section would enable NPS to maintain a park road within a unit of the NPS with significant recreational and commuter use. It restores the Parkway to its historical intentional design, provides a safer experience for commuters

and visitors while maintaining the Parkway's character-defining features, addresses pedestrian safety, and ensures the continued use of the Parkway for future generations.

Appendix C includes location mapping of the various improvements that make up the proposed action for the GW Parkway South Section.

Table 1. Summary of GW Parkway South Section Intersection Treatments

Intersection	Southbound Intersection Approach Lanes	Northbound Intersection Approach Lanes	Restore Historic Median Alignment	Restore Historic Outer Curb Alignment	Establish Pedestrian Crosswalk	Relocate Bus Stop Sign
Belle Haven Rd	↔↓↓	↔↑	Partial Restoration	Historic Alignment Appears in Place	Yes	Yes
Belle Haven Marina Driveway	↓↓↔	↑↑↔	Partial Restoration	Driveway Improvements Only	Yes	No Bus Stop
Belle View Blvd	↔↓	↔↑	Partial Restoration	Yes	Yes	No Bus Stop
Tulane Dr	↔↓↔	↔↑	Yes	Yes	Yes	Yes
Morningside Ln	↔↓	↔↑	No Median	Yes	No	No Bus Stop
Access to W Boulevard Dr	↔↓	↔↑	No Median	Historic Alignment Appears in Place	No	No Bus Stop
Outlet Rd / E Boulevard Dr	↓↔	↑↔	No Median	Historic Alignment Appears in Place	Yes	No Bus Stop
Wellington Rd	↔↓	↔↑	No Median	Yes	Yes	Yes
Collingwood Rd	↔↓↔	↔↑↔	Yes	Yes	Yes	Yes
Waynewood Blvd	↔↓	↔↑	No Median	Yes	No	No Bus Stop
Vernon View Dr	↔↓	↔↑	No Median	Yes	Yes	Yes
Stratford Ln	↔↓↔	↔↑↔	Yes	Yes	Yes	Yes

Mount Vernon Trail – Trail Infrastructure Improvements

The NPS proposed action for the MV Trail involves rehabilitation, widening, and minor realignments of the asphalt pavement surface of the MV Trail, trail spurs, and exit/entry paths. The asphalt pavement is in poor condition along much of the trail, exhibiting medium to high severity transverse cracking, longitudinal cracking, edge cracking, and uneven surface due to tree roots extending underneath the pavement. Within MV Trail Zone 1, trail rehabilitation would include widening from the typical 8–9-foot width to a maximum width of 10 feet depending on physical and environmental constraints. Ten feet is the minimum width recommended by American Association of State Highway and Transportation Officials (AASHTO) for two-directional multi-use paths / trails. In NPS administered portions of Zones 2 and 3, the NPS proposes widening the MV Trail from the typical 8-9-foot width to a maximum width of 12 feet depending on physical and environmental constraints. Establishing a 12-foot-width within this section of the MV Trail conforms to AASHTO guidelines for multi-use paths / trails that serve high user volumes and/or a high proportion of pedestrians. Figure 8 presents a typical section of proposed trail widening evenly distributed from the trail centerline, while

Figure 9 presents an example section where widening may be distributed to one side of the trail due to a physical or environmental constraint. In addition to the proposed trail rehabilitation and widening, to the extent practical the NPS would establish temporary detours during construction to maintain access along the MV Trail for pedestrians and bicyclists.

Due to trail widening, the NPS would incorporate stormwater management BMPs into the project. Establishing BMPs for stormwater management would account for a large portion of the proposed trail work and construction-related disturbance that would be needed to implement the MV Trail

improvements. The NPS would also evaluate existing inlets and culverts for potential replacement, construct new ditches where appropriate, clear or regrade existing ditches, and conduct other miscellaneous work to improve drainage and alleviate ponding issues along the MV Trail.

Mount Vernon Trail – Trail Bridges

Under this Plan, the NPS would replace four MV Trail bridges in poor condition, including Bridge 1 in Zone 1, and Bridges 25, 28, and 29 in Zone 2. The NPS would replace these bridges with new structures that are 14 feet rail-to-rail to meet current AASHTO standards for multi-use trails (Figure 10). The NPS would install new bridges that are replacing bridges in wetlands using helical piles at the same locations of the existing bridge footings to avoid wetland disturbance, where feasible. It may be determined during bridge design that new or additional footings may become necessary.

The NPS would also repair / rehabilitate 29 MV Trail bridges that do not require full replacement, including Bridges 2-11 and 13-22 in Zone 1, Bridges 26 (interim rehabilitation) and 27 in Zone 2, and Bridges 29a, 19b, 29x, 29c, and 30A in Zone 3. The NPS would also rehabilitate the trail section on the Humpback Bridge and the Rosslyn trail bridge

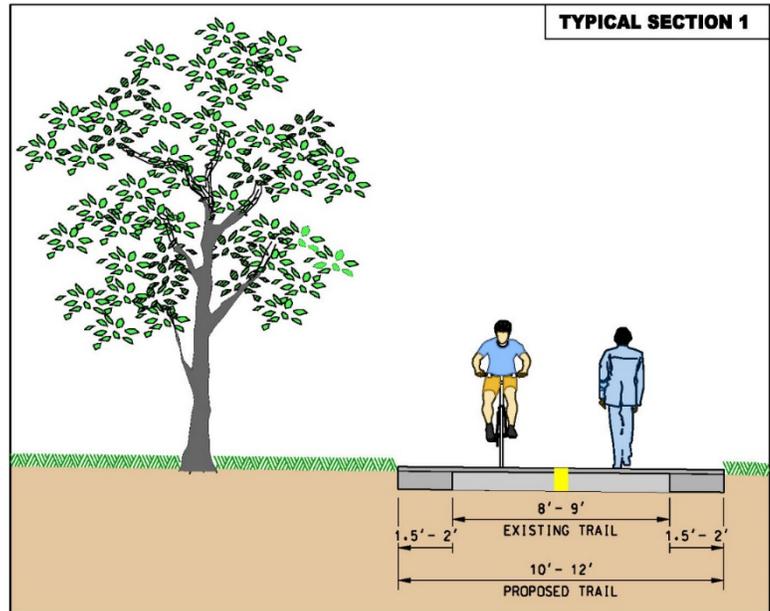


Figure 8. Typical Section of Trail Widening Distributed Evenly from the Centerline

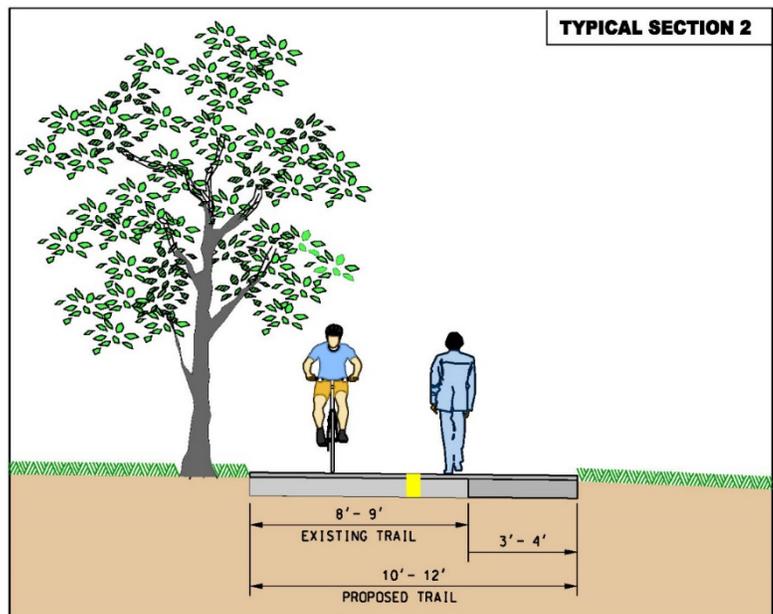


Figure 9. Typical Section of Trail Widening at Physical / Environmental Constraint

north of the Theodore Roosevelt Island parking lot. Rehabilitation activities would generally include bridge widening, replacing rotting or deteriorating structural components, installing new tread surface and railings, clearing vegetation, and other necessary improvements. The NPS would remove bridges within wetlands, rehabilitate the bridges outside the wetland, and then reinstall the bridges on the existing footings to avoid wetland disturbance.

The NPS is also replacing several MV Trail bridges as part of planning decisions separate from this Plan, including Bridge 12 in Zone 1 (Figure 11), which the NPS replaced in 2022; Bridges 23 and 24 in Zone 2 are scheduled for replacement in 2023; Bridge 26 in Zone 2 is planned for replacement (schedule to be determined) as part of the Potomac River Generating Station Power Plant Redevelopment Project; and a decision to replace and widen Bridge 31 was made as part of the Theodore Roosevelt Island Cultural Landscape Report and Environmental Assessment (EA) completed in 2018.

The Proposed Action Location Mapping included as Appendix C provide the locations of the bridges along the MV Trail proposed for replacement or rehabilitation, as well as the bridges that the NPS has, or will, replace under separate NPS planning decisions.

Mount Vernon Trail – Trail Safety, Accessibility, and Wayfinding Improvements

The NPS also proposes trail realignments, trail roundabouts, and addressing pinch points at site-specific locations. Within the MV Trail Zone 1 area, the NPS proposes a slight adjustment at the approach to Trail Bridge 1 at approximately Mile Post (MP) 0.5. Within the MV Trail Zone 2 area, the NPS proposes to straighten a curve on Daingerfield Island at approximately MP 12.1 (Appendix B, Figure 13). Within MV Trail Zone 3, the NPS proposes to construct a roundabout where the MV Trail and Four Mile Run Trail merge near MP 13 (Appendix B,

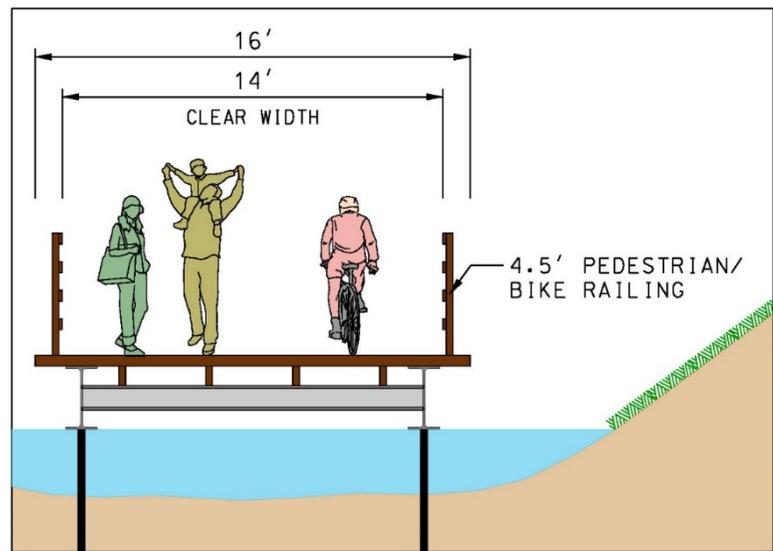


Figure 10. Typical Section of Proposed Trail Bridges



Figure 11. Recently Reconstructed Bridge 12 near Fort Hunt
(Source: Friends of Mount Vernon Trail 2023)

Figure 14), as well as where the MV Trail and 14th Street Bridge Trail merge at approximately MP 15.8 (Appendix B, Figure 15).

Furthermore, the NPS would address the pinch point under Arlington Memorial Bridge in Zone 3 at approximately MP 16.8. The roadway space along GW Parkway northbound between the exit to Washington Boulevard and the entrance from South Arlington Boulevard would be rebalanced to create a safer and more consistent experience for users. The existing merge created by striping and temporary posts would be formalized with curb and extended toward the north to South Arlington Boulevard, allowing South Arlington Boulevard to merge more safely onto GW Parkway as an added lane. This would also eliminate the existing MV Trail pinch point under Memorial Bridge and provide the opportunity to incorporate stormwater BMPs throughout this section.

The NPS would also make improvements to trail warning signage and pavement markings at pinch points under the Fort Hunt Road Overpass Bridge at approximately MP 2.7 in Zone 1 and at the Crystal City Connector in Zone 3 at approximately MP 14. The NPS also proposes safety improvements on the Northdown Road section of the MV Trail in Zone 1 at approximately MP 5.3. Improvements would include treatments to reduce shared use conflicts along this section of the trail. Subject to any land or permitting requirements, improvements could include signage and/or road markings.

The NPS would improve signing and striping along the entire trail length and implement trail-to-trail and trail-to-road intersection safety improvements. The NPS would implement a uniform sign palette that utilizes the NPS identifier. Signage may include co-branding for Congressionally designated trails that use the same route. Signs would include directional, wayfinding, and safety. All signs would conform to Manual on Uniform Traffic Control Devices standards, NPS Uniguide standards, and park sign guidance, as appropriate. The NPS would improve signage, striping, and accessible ramps at all at-grade MV Trail roadway crossings.

Dense vegetation overhangs or encroaches on the trail, reducing site distance and causing other safety concerns. The NPS would therefore conduct tree pruning and clear vegetation along the trail and at trail bridges to improve these conditions during construction. The NPS would continue to conduct vegetation maintenance after the project is completed by trimming or clearing vegetation along the trail on an as-needed basis.

Mount Vernon Trail – Amenity Upgrades

The NPS also proposed to replace / upgrade trail amenities such as benches, bike racks, and railings; install drinking water fountains with a bottle filling option; and other miscellaneous work for pedestrian “comfort stations” along the MV Trail. The NPS would support new Capital Bikeshare Stations at Columbia Island Marina in Lady Bird Johnson Park, Daingerfield Island, Belle Haven Park, Fort Hunt Park, Riverside Park, and Mount Vernon Estate, in addition to the existing stations at Theodore Roosevelt Island and Gravelly Point Park. The NPS would permanently remove the existing porta-john facilities at Riverside Park and Gravelly Point under this Plan. However, the NPS proposes to construct a permanent restroom facility at Gravelly Point near the boat ramp and install a separated pedestrian sidewalk along the east side of the parking lot connecting the restroom to the MV Trail (Appendix B, Figure 18). The NPS would also make intersection safety improvements where the sidewalk crosses the trail.

Appendix C includes location mapping of the various improvements that make up the proposed action for the MV Trail.

AREA OF POTENTIAL EFFECTS

The NPS presented the draft APE for the GW Parkway South Section and MV Trail Improvements Plan with the Section 106 consultation initiation letters dated November 4, 2022. The APE considers all the potential direct effects that implementing the Plan could have on historic properties, as well as other indirect effects, including, but not limited to, visual effects and impacts to overall viewsheds. The APE consists of the area within the southernmost boundary of the GW Parkway (from Mount Vernon Estate to the City of Alexandria), a section at Jones Point within Alexandria, and a narrower portion of the GW Parkway boundary north of the City of Alexandria. The APE also includes the western portion of Theodore Roosevelt Island to consider any potential visual effects that may occur at that section of the MV Trail. North of Alexandria, a minimum buffer of approximately 90 feet (ft) (with the trail at the center) was employed. In areas north of National Airport, where the trail cuts in further from the river, the river is used as the eastern boundary (except at Gravelly Point where the relatively flat topography conceals the visibility of the trail, and it was determined visual effects would be limited to the immediate area surrounding the trail).

Immediately south of Alexandria, the APE is constrained over Hunting Creek by the Hunting Creek Bridge. Otherwise, the APE extends a minimum of approximately 80 feet east of the MV Trail, and the APE's western edge is generally the extent of the Mount Vernon Memorial Highway (MVMH) boundary. The APE considers that all road alterations would occur within the footprint of the road itself and would not result in any visual effects outside the MVMH boundary. At Fort Hunt, the APE varies from the MVMH boundary, extending west to include consideration of construction staging areas at Fort Hunt. For much of the southern portion of the MVMH and MV Trail, the natural topography (sloping towards the river) or the side road at West Boulevard Drive, provides a visual buffer between these elements and residential developments to the west. In some areas south of Alexandria, the MV Trail is outside the official MVMH boundary and so the APE is extended in those areas, following the trail. North of Outlet Road / East Boulevard Dr, the APE was expanded east to encompass the western boundary of Wellington at River Farm.

The boundaries of the APE overlap with several boundaries of historic properties, especially the GW Parkway. Other historic properties within the draft APE are the Mount Vernon Estate, Fort Hunt, Wellington at River Farm, the Alexandria Historic District, Washington National Airport Terminal and South Hangar Line, Arlington Memorial Bridge, and the Theodore Roosevelt Island National Memorial. The APE also includes areas that have the potential to uncover archaeological resources.

This section describes the historic properties the NPS identified within the APE. This includes all historic districts, individually listed historic properties, and properties that have been determined eligible for listing in the National Register of Historic Places (NRHP), the DC Inventory of Historic Sites, the Virginia Landmarks Register (VLR), and County-designated historic landmarks. This section also describes areas of archeological potential identified as part of a comprehensive Phase IA assessment for the GW Parkway South Section and MV Trail Improvements. Since consultation initiation, the NPS has expanded the APE to include Wellington at River Farm at the request of Fairfax County. Fairfax County also requested that the Tauxemont Historic District be identified as a historic

property. However, the closest point of the Tauxemont Historic District is over 800 feet from the GW Parkway and is well outside the APE. The NPS therefore decided not to include the district as a historic property for this Section 106 process. Revised APE mapping is included in Appendix A.

George Washington Memorial Parkway / Mount Vernon Memorial Highway

The GW Parkway is a planned and landscaped scenic roadway—honoring the nation’s first president—and is intended to protect and preserve cultural resources and the natural landscape along the Potomac River shoreline. Congress designated the GW Parkway as a unit of the national park system on May 29, 1930, through Public Law 71-284. It extends approximately 31.5 miles along the Potomac River through Virginia, Maryland, and Washington, DC. The Parkway offers magnificent scenic vistas of Washington, DC and the Potomac River, and it connects several important historic sites, memorials, and recreation areas in the Washington, DC metropolitan area.

The GW Parkway was constructed in two primary stages between 1929 and 1970. The first section, called the Mount Vernon Memorial Highway, extends for 15.2 miles between Arlington Memorial Bridge, located in Lady Bird Johnson Park (originally known as Columbia Island), and George Washington’s Mount Vernon Estate. It was completed in 1932 to commemorate the bicentennial of Washington’s birth. The second, northern section of the Parkway extends for 9.7 miles in Virginia—from Arlington Memorial Bridge to Interstate-495—and for 6.6 miles in Maryland as the Clara Barton Parkway (renamed in Barton’s honor in 1989). It was built in stages starting in the 1940s and opened in 1965.

The Mount Vernon Memorial Highway was listed in the VLR and NRHP in 1981 under criterion B for its commemoration of George Washington and under criterion C for landscape architecture (NPS 1981). It is also significant under criterion A for its association in the broader planning of Washington, DC and for its engineering as an early example of Parkway construction. The north section of the GW Parkway was listed in the NRHP in 1995 under the same criteria (NPS 1995). An updated NRHP nomination form is being developed for the GW Parkway that clarifies that it meets criterion A for its significance related to the commemoration of the life of George Washington and the larger historic trends of commemorating the nation’s first president at the time of the bicentennial celebration of his birth, and criterion B, for its association with George Washington. The period of significance is from 1929 to 1972, ranging from the year in which construction began to when the Mission 66 program completed alterations to recreational areas within the GW Parkway and the MV Trail was added.

The GW Parkway was the first parkway constructed and maintained by the US Government. It was designed by Jay Downer and Gilmore Clarke and was landscaped to maximize scenic, aesthetic, and commemorative qualities. The Bureau of Public Roads, which was responsible for the construction of the Parkway, hired Downer and Clarke because they had designed the successful Westchester County parkways in New York, which were believed to be the most modern roadways at the time with the most appropriate engineering standards. Their design for the GW Parkway incorporated long spiral curves, grade-separated interchanges, teardrop medians at intersections, limited and staggered east and west intersections to minimize the amount of traffic crossing the Parkway, and grading that merged the roadway into the surrounding landscape (NPS 2021). Distinctive stone-faced arch bridges, concrete slab base, beveled curbing, and extensive landscape plantings—designed by landscape architect Wilbur Simonson and plantsman Henry Nye—are other character-defining features of the Parkway design and are specifically referenced in the NRHP nomination.

Simonson created distinct vegetative landscapes, each with its own character, along the GW Parkway South Section. For example, along the causeway south of Hunting Creek, plantings are low so that the wide-open space of the river surrounds the roadway. Near Belle View, the plantings are savannah-like with large shade trees spread throughout a grassy landscape allowing filtered views to the river (NPS 2021). Additionally, memorial plantings along the MVMH, which included individual trees, groves, and memorial plaques were sponsored by various women's groups, and the species of trees chosen typically reflected the Virginian landscape. Few of the memorial plantings retain their integrity. Many are missing or have been fully or partially replaced and are interspersed with other trees. Since the initial planting of the Parkway, various plans have been implemented to augment or replace the original vegetation. The most significant changes to its vegetative character are the increases in forest cover and the loss of almost all flowering and ornamental vegetation, making the present landscape seem less composed and more natural than when first completed (NPS 2021). In the 1960s First Lady, Lady Bird Johnson spearheaded the Beatification Program (1964-1968) during which, landscape architect Edward D. Stone Jr. designed a planting plan for Columbia Island, which was renamed Lady Bird Johnson Park in 1968 in her honor.

Other contributing features, in addition to the roadway, include the adjoining land that supports the intention of the design and planning of the Parkway, containing parkland, scenic pullouts, picnic areas and natural features such as marshes and scenic riverfront. Other cultural sites along the GW Parkway South Section contribute to the significance of the Parkway's cultural landscape, including Mount Vernon Estate, Wellington at River Farm, and Fort Hunt. Residential developments, including Belle View and Wellington Villa also contribute as neighboring areas that are fitting to the intention of adjacent parkway developments. Intersections on the western side of the Parkway were built to lead into residential neighborhoods, except for the access roads to Fort Hunt. East and West Boulevard Drives run roughly parallel to the Parkway through the Wellington Villa and Collingwood neighborhoods, acting as collector roads to control traffic and limit access to the Parkway to a few intersections.

Road intersections, recreation area access roads and parking lots, car pullouts / offshoot roads, and pairs of north and southbound bus stops are provided along the GW Parkway South Section mainline. Fourteen bus stops are original to the design of the GW Parkway South Section to serve the adjacent communities. Bus stops that correspond with an intersection are designed with an acceleration lane for traffic entering the parkway and measure 40 feet long by 10 feet wide. Originally, the bus stops featured wooden shelters, which are no longer extant.

Today, the GW Parkway is a key transportation artery in northern Virginia, providing access to Washington, DC, Arlington County, Fairfax County, and the City of Alexandria. Transportation uses remain the same, although the quantity of users has grown. Many residents use the GW Parkway as a commuter route, and the number of scenic drivers and motorists going to Mount Vernon Estate make up a smaller percentage of the volume of traffic. However, the Parkway retains moderate to high levels of integrity, including its spatial organization, land use, topography, vegetation, circulation, views and vistas, buildings and structures (bridges, culverts, retaining walls, overpasses) and small-scale features (signs, plaques, curbs, lampposts, guardrails).

In the 1970s, two Alexandria residents, Ellen Pickering and Barbara Lynch, petitioned the NPS to build a bike trail along the GW Parkway. Emboldened by the growing popularity of cycling and large gatherings of bicycle activists, they petitioned the NPS to provide the right of way for a multi-use trail

and supply the cinder ash to construct a trail. In exchange, Pickering and Lynch organized numerous volunteers to build the first 4.5-mile section of the MV Trail, which extended from Slaters Lane in Alexandria to the 14th Street Bridges. The trail opened on April 15, 1972. In 1973, the NPS completed a 7.5-mile extension of the trail, connecting it to the Mount Vernon Estate. In 1977, the trail was paved, and by 1988 it was extended to Theodore Roosevelt Island, where a bridge connected it to the Custis Trail, providing access to Rosslyn, Virginia. Bridle and pedestrian paths were originally proposed along the GW Parkway South Section, especially between Mount Vernon and Fort Hunt, but were never fully implemented (NPS 2021). The multi-use trail fulfilled this original vision. Similarly, in Lady Bird Johnson Park (Columbia Island), the trail followed the alignment of an earlier bridle path, running along the grass verge between the GW Parkway and the Potomac River (NPS 2022).

According to the *Cultural Landscape Inventory for the Mount Vernon Memorial Highway – North of Alexandria* (NPS 2022), the MV Trail is a contributing feature of the GW Parkway as it reflects the original design’s desire for a recreational trail associated with the roadway, and provides scenic views of Washington, DC and the Potomac River for pedestrians and bicyclists. Its features are consistent with the original intention of the Parkway and are considered compatible with the cultural landscape.

The GW Parkway mixes scenic and recreational driving with recreational cyclists, pedestrians, picknickers, commuters, and riders of mass-transit, all of whom are visible along the length of roadway. The combined effect of multiple users, visible residences, memorial plantings, etc. gives the Parkway a human-scale, which is a distinct characteristic particular to the GW Parkway.

As a cultural landscape, the GW Parkway is defined by several landscape characteristics and features that contribute to its integrity. Table 2 articulates these characteristics and assesses their existing integrity as noted in the *Cultural Landscape Inventory for the Mount Vernon Memorial Highway – North of Alexandria* (NPS 2022) and the *Cultural Landscape Inventory for the Mount Vernon Memorial Highway – South of Alexandria* (NPS 2021).

Table 2. Cultural Landscape Characteristics and Features of the GW Parkway

Feature	Description
<p>Natural Systems and Features</p>	<p>Natural attributes include the Potomac River, its tributaries and marshes, and the rolling forested terrain. Specific natural systems include Dyke Marsh, Great and Little Hunting Creeks, Four Mile Run, Roaches Run, and Daingerfield Island. There are several areas that were subject to reclamation and cut and fill operations, filling portions of the tidal wetlands and creating a more defined shoreline, especially at Lady Bird Johnson Park (Columbia Island) and Gravelly Point. Natural systems and features retain a high integrity to the period of significance.</p>
<p>Spatial Organization</p>	<p>The spatial organization is linear, consisting of a series of distinct places formed by the GW Parkway’s topography, alignment, natural systems and features, and planting design. Such spaces transition from forest and wetland to pastoral and urban landscapes. A 200-foot protected right of way north of Alexandria controls future development and physical and visual interruptions. The number of overhead crossings and access points north of Alexandria has increased since original construction and urban development to the west has expanded. However, the spatial organization retains high integrity.</p>
<p>Land Use</p>	<p>The GW Parkway combines transportation, recreation, and commemoration. Overall land use has been retained. Transportation and recreation uses have experienced growing demand but remain the same and retain high integrity.</p>

Feature	Description
Topography	The natural topography of the GW Parkway varies and includes low, rolling terrain descending to sea level; broad estuaries and marshlands near the river; low, wide headlands separated by easterly running tributaries and the estuaries and marshes at their mouths. GW Parkway designers took advantage of these conditions, aligning the roadway to rise and fall with the topography. Cut and fill operations in some areas were undertaken in a way to avoid unsightly and unnatural scarring of the rolling terrain. Topography retains high integrity.
Vegetation	The planting design transformed the existing forest, fields, and marshes into a naturalistic, stylized version of the surrounding coastal plain landscape, using substantial flowering, fruiting, and fragrant vegetation to create a sequence of vegetation zones that motorists would pass through. Later plantings introduced greater plant diversity and greater use of evergreen species. The maturation of vegetation and increase in forest cover has diminished the legibility of the original planting composition and has obscured certain views and vistas. Sponsored memorial groves of trees were planted, but few survive to this day. Almost all original flowering and ornamental vegetation has been lost south of Alexandria, although small flowering dogwood and eastern redbud trees have been replanted or reseeded on the edges of the forest. Some original plantings have proven to be highly invasive, and some planting borders and woodlands are heavily invaded by these species. Overall, the vegetation is diminished and has modest integrity. The integrity of the memorial groves is lost.
Circulation	The GW Parkway is a four-lane concrete and asphalt roadway with limited access provided by at-grade interchanges that connects Washington, DC and the Mount Vernon Estate. The north section of the Parkway continues from Memorial Bridge to Interstate 495. Specific circulation features include a series of teardrop medians, a series of bus stops, roadside pullouts, and parking lots in adjoining parks and picnic areas. Alterations have occurred. However, many were done within the period of significance, including realignment for the construction of Washington National Airport. The MV Trail, though added to the landscape late in the period of significance, is an important circulation feature that accommodates both transportation and recreation uses and is compatible with the historic landscape. Overall, the circulation retains a medium degree of integrity.
Buildings and Structures	Buildings and structures along the GW Parkway consist of bridges and culverts that carry the roadway over creeks and intersecting roads in addition to two retaining walls. Such features are faced with rusticated stone, enhancing the rustic feeling important to the GW Parkway's design. Original wooden bus shelters are no longer extant. Several (non-contributing) restroom facilities have been added at Belle Haven and Riverside Parks. North of Alexandria, bridges, culverts, comfort stations, marina buildings, maintenance buildings, boat launches, a greenhouse, and sheds are examples of buildings and structures that were added during the NPS Mission 66 campaign, providing recreational features and support facilities. Overall, buildings and structures retain high integrity.
Views and Vistas	Views of the Potomac River, Washington, DC, and historic structures are important to the GW Parkway's character and its commemorative purpose. The original design south planned three types of views: those of specific sites historically linked to George Washington, views of and across the Potomac River, and inland views of the wooded hillsides. North of Alexandria, there are more focused views of the Washington Monument and US Capitol Building. Many of the originally planned views have been lost due to increased vegetation and peripheral development. Overall, the views and vistas have a low level of integrity.

Feature	Description
<p>Small-Scale Features</p>	<p>Signs, lampposts, guardrails, beveled curbs, and memorial plaques contribute to the GW Parkway landscape. The original wooded signs have been replaced by modern, steel signs and rustic light fixtures and guardrails were removed. Light standards selected for the section north of Alexandria were different from those specified south of Alexandria. Plazas with benches and water fountains have been added along the MV Trail. Overall, small-scale features have a low level of integrity.</p>
<p>Archeological Sites</p>	<p>A total of 11 archeological sites have been identified and many more as-yet unidentified pre-contact and historic period sites are presumed to exist. Archeological sites retain a high level of integrity.</p>

Mount Vernon Estate

The Mount Vernon Estate, home to George Washington, his family, and hundreds of enslaved men, women, and children who lived there under the Washington Family’s control, is a National Historic Landmark (NHL), designated in 1960. It was listed in the NRHP in 1966 and the VLR in 1969. It includes the Georgian-style mansion house, outbuildings, gardens and lawn, fields, a recreated slave cabin, the Slave Cemetery and memorial, and George and Martha Washington’s tomb. Washington, a general, statesman, and first President of the United States, inherited the estate in 1752, and it served as his home until his death in 1799. Following his military service in 1758, he spent the next 15 years at the estate until the eve of the American Revolution, becoming one of the richest, largest, and most industrious planters in Virginia.

Once consisting of approximately 8,000 acres and organized into five farms (Mansion House, Douge Run, Muddy Hole, River, and Union), the estate has been divided and subdivided since Washington’s death. The Mansion House farm remains almost intact, and 430 acres are owned by the Mount Vernon Ladies’ Association, which forms the boundary of the landmarked estate. Mount Vernon is the founding reason for the GW Parkway’s existence, and the rotary circle is the Parkway’s southern terminus. The GW Parkway’s terminus at the traffic circle is outside of but immediately adjacent to the Mount Vernon Estate’s historic property boundary, while portions of the MV Trail are located within the boundary. The landscape of the circular terminus at Mount Vernon and its adjoining sidewalks and parking lots, exist partially on lands owned by the Mount Vernon Ladies’ Association and are secured for NPS use with easements.

Fort Hunt

Fort Hunt served as a defensive fortification from 1898 to the First World War. It incorporated four concrete batteries, built according to the comprehensive Endicott system of seacoast defenses, occupying high ground with unobstructed field of fire across open land toward the Potomac River. It was the last defensive complex constructed along the river to guard Washington, DC from naval attack, and originally operated as a sub-post of Fort Washington. In 1899, it was designated Fort Hunt in honor of Major General Henry Hunt, chief of Union artillery in the Civil War. When in use, some 30 additional support structures, including officer and enlisted housing, a small hospital, a mess hall, and various shops and sheds also stood on the site.

In 1932, the property was transferred to the Office of Public Buildings and Public Parks of the National Capital, which was assumed in 1933 by the NPS. The land between the batteries and the

river, historically important to the guns' field of fire, is now occupied by the GW Parkway. The site was briefly reoccupied by the military in World War II, serving as a prison camp for captured German and Japanese officers. It was returned to the NPS in 1948. Today, the only structures that remain include the four batteries, a battery commander's station, a residence, and a stable.

In the 1960s, new recreational facilities were installed, including buildings, roads, and landscaping all funded through the NPS Mission 66 program. The program was the largest construction program in NPS history, embracing the Modern Movement, which formed the basis for architecture, landscape architecture, and engineering. The most prominent structure from this period is the picnic pavilion, featuring a stone foundation, walls, and chimneys; exposed timber trusses; and wood siding. The partially open structure includes an office, lobby, stage, restrooms, and large fireplaces. The property was listed in the NRHP in 1976 and the VLR in 1979.

Wellington at River Farm

Also known as "Wellington, Washington's River Farm," the property was purchased by George Washington in 1760 and served as one of the five farms that were part of his landholdings. During his ownership, it was home to at least 57 enslaved men, women, and children. The property remained in the Washington family until 1859. It is believed that sometime between 1760 and 1790, a dwelling was constructed. Photographs from 1894 and 1908 show the residence on the property as being a two-and-a-half story masonry building with shed roof front porch and a two-story, two-bay wide wing, attached by a two-story hyphen. In 1919, owner Malcolm Matheson, Sr. began to rehabilitate and add to the building in the Colonial Revival style. Matheson also added service buildings to the grounds. In 1973, the property was purchased by the American Horticultural Society (AHS) to serve as their national headquarters. AHS rehabilitated the residence and modified the landscape, adding an orchard, children's garden, and meadow, in addition to many display and test gardens.

Due to its historical significance, the property was listed on the Fairfax County Inventory of Historic Sites in 1969. It is considered eligible but is not currently listed in the NRHP or VLR. There is also a moderate to high probability that both historic and pre-contact archaeological resources are located throughout the property. Since the 1950s it has been touted by the NPS as a place of interest along the GW Parkway. Since 1973, it has served as a public amenity and open space recreation for the community. An easement on the property runs along the western edge, adjacent to the GW Parkway that prevents the area's subdivision, disallows signage, restricts driveways on or across the area, and limits the removal of trees.

Alexandria Historic District

Alexandria was founded in 1749 by Scottish merchants and was named after Scotsman John Alexander. Its streets were laid out in a uniform plan grid, and it became the principal seaport of Northern Virginia. The historic district consists of nearly one hundred blocks and is the largest concentration of 18th - and 19th-century urban architecture in Virginia, including numerous mansions, townhouses, churches, and commercial buildings. The district features many federal townhouses that are of special importance. The district was designated as an NHL and was listed in the NRHP in 1966 and in the VLR in 1968. In 1984, the NRHP nomination was amended to recognize early 20th-century development in the city. The district also includes Jones Point Lighthouse and the District of Columbia South Cornerstone, which were separately listed in the NRHP and VLR in 1980. The

lighthouse and cornerstone are adjacent, although outside of the section of the Plan's APE that is in Jones Point Park (refer to Appendix A).

Washington National Airport Terminal and South Hangar Line

Washington National Airport is an 850-acre site along the Potomac River in Arlington County, Virginia. It is bordered on the west by the GW Parkway and was created primarily on filled land. The airport opened in 1941. The historic airport terminal is an arc-shaped building designed with influences from Art Deco, Streamlined Moderne, and Stripped Classical styles. The building's length is reduced in stepped intervals. The west elevation, facing the counterclockwise central rotary, features a dominant vertical portico with eight, square, capless concrete piers and curving sidewalk canopies that were designed to protect passengers at the edge of the traffic circle from inclement weather. The South Hangar Line, constructed between 1941 and 1948, is a utilitarian design for airplane hangars.

The Washington National Airport Terminal and South Hangar Line property is historically and architecturally significant. It was listed in the NRHP in 1997 for its association with American aviation technology and the broad pattern of New Deal government initiatives. The property is the first federally constructed commercial airport in the country designed for civilian flight, and its terminal design, runway configuration, runway lengths, lighting, and instrument landing systems were innovations that influenced airport design throughout the country. The South Hangar represents an important technological advance in the construction of airplane hangars. Within the property boundary, several additional resources have been determined eligible for the NRHP by the VDHR, which serves as the Virginia State Historic Preservation Office. These resources include the Jet Engine Test Cell, the Abingdon Research Station, and the Abingdon Archaeological Site.

Arlington Memorial Bridge

Arlington Memorial Bridge spans the Potomac River between the Lincoln Memorial and Lady Bird Johnson Park (Columbia Island). Its neoclassical design features nine broad masonry arches that cross the Potomac River, dressed in granite ashlar, except for the central draw span, which featured pressed ornamental molybdenum steel. Additional segmental-arched openings allow the GW Parkway to pass at the west end and Ohio Drive SW to pass on the east end. The masonry arches spanning the river are capped with bison head keystones, sculpted by Alexander Proctor. Granite balustrades with recessed benches delineate the upper edges of the bridge and specially designed lampposts are spaced along the curbs of the roadway. In Lady Bird Johnson Park, Memorial Avenue turns around the circular Columbia Plaza before continuing across the Boundary Chanel bridge to terminate at the Arlington Hemicycle with Arlington Cemetery and Arlington House rising as the focal point on the hill above.

The bridge is an important component of the Memorial Avenue Corridor Cultural Landscape, which also includes Memorial Circle, Memorial Avenue, and the entrance to Arlington National Cemetery. The composition of these components—distilled as bridge, plaza, and hemicycle—was designed by the world-renowned firm of McKim, Mead and White, and construction took place between 1926 and 1932. The property was listed in the NRHP in 1980.

From 2018 to 2020, the NPS rehabilitated the bridge to extend its lifespan. The functionally obsolete bascule (drawbridge) span was removed and replaced with a new under-truss structure that looks similar to the former drawbridge. The project also included the replacement of concrete sidewalks,

refitting granite curbs, and repairing the granite bridge railings and lampposts. More than 4,000 pieces of the bridge's historic granite were removed, repaired, cleaned, and reinstalled.

Theodore Roosevelt Island National Memorial

Theodore Roosevelt Island is an island in the Potomac River and a national memorial to Theodore Roosevelt and his devotion to the conservation of America's natural resources. It is a significant cultural landscape, designed by famed landscape architect Frederick Law Olmsted, Jr. and his associate, Henry V. Hubbard. The island itself, representing a native woodland, and the architectural memorial plaza—designed in collaboration by architect Eric Gugler and sculptor Paul Manship—constitute the memorial, making it unique among presidential memorials. The island also has the potential to yield significant archaeological resources. The island was listed as a historic district in the DC Inventory of Historic Sites in 1964, was listed in the NRHP in 1966, and was named a National Monument in 2001.

Archeological Resources

The vicinity of Washington, DC, including the Virginia shore of the Potomac River, was used for various purposes by Native Americans before the arrival of European settlers. Several Algonquian-speaking tribes lived in the region in the early 1600s. They lived in semi-permanent villages in the Potomac River Valley that were typically located on bluffs, terraces, or high floodplains near rivers or major tributaries, where they farmed and engaged in seasonal hunting, fishing, and gathering. They also built seasonal satellite camps along smaller interior streams. Native Americans lived in settlements on both sides of the river. The largest was comprised of 100 houses and permanent defenses. Written records note villages at the mouths of both Little Hunting and Great Hunting Creeks. The land now occupied by Fort Hunt Park itself lay in the territory of the Tauxenents, a tribe centered at Mason Neck. European settlers subsequently settled the area, displacing these tribes. Different portions of the land now occupied by the GW Parkway were developed and disturbed to various degrees over the past 400 years, and the array of potential archeological sites demonstrates the extensive history of human occupation along the shoreline.

A draft *Phase IA Archaeological Overview for the Proposed Rehabilitation of the George Washington Memorial Parkway (South Section) and Mount Vernon Trail* was produced by New South Associates, Inc. in May 2023. The draft report notes that of the roughly 18 miles of GW Parkway and MV Trail assessed for archeological potential, 9.5 miles have potential for the presence of archeological resources, the majority of which is located south of Alexandria, where the landscape remained rural in nature for an extended period and lacked widespread industrial activity. Additionally, an approximately 2,000-ft section of the MV Trail is located within Jones Point Park, at the south point of the Alexandria Historic District. Previous archeological studies have identified several sites located in what was once the Virginia Shipbuilding Company shipyard, established in 1918. However, this site is considered not eligible for the NRHP. Modifications to the MV Trail at Jones Point Park pose no threat to potential archeological resources. Areas of archeological potential are indicated on the APE mapping in Appendix A.

Additionally, 14 previously recorded archeological sites registered in the Virginia – Cultural Resource Information System (V-CRIS) are located within 250 ft of the GW Parkway South Section and within 50 ft of the MV Trail. Two of the 14 sites have been evaluated for their NRHP eligibility and were recommended potentially eligible. Both are Middle Woodland archeological sites containing

numerous pre-contact artifacts located in the vicinity of Waynewood Boulevard. The remaining sites have not been evaluated for their NRHP eligibility. Known archeological sites are not identified on the APE mapping in Appendix A due to the sensitive nature of the information.

ASSESSMENT OF EFFECTS

The NPS applied the Criteria of Adverse Effect, as defined in 36 CFR 800.5, to assess the potential effects of the GW Parkway South Section and MV Trail Improvements Plan on historic properties within the APE. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. Examples of adverse effects on historic properties as noted in 36 CFR 800.5 include, but are not limited to:

1. the physical destruction of or damage to all or part of the property;
2. the alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, and provision of handicapped access, that is not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*;
3. the removal of the property from its historic location;
4. the change in character of the property's use or of physical features within the property's setting that contribute to its historic significance;
5. the introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
6. the neglect of a property which causes its deterioration; and
7. the transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of that property's historic significance.

The following analysis is an assessment of the effects of the proposed Plan implementation on all listed and eligible historic properties and is based on the Section 106 criteria of effect. It should be noted that this report only addresses the adverse effects that would impact the integrity and/or significance of historic properties. The NPS is analyzing other environmental impacts in the EA being developed for the project in accordance with National Environmental Policy Act (NEPA) regulations.

No Action Alternative

In the no action alternative, the NPS would continue to maintain the GW Parkway South Section and MV Trail. Management actions would include the minimum rehabilitation and repairs necessary to maintain operation of the roadway, trail infrastructure, and amenities. The concrete pavement of the GW Parkway South Section would continue to deteriorate, requiring frequent maintenance and spot repairs, and safety and drainage issues would continue to occur. FHWA would continue to conduct scheduled structural inspections of the roadway bridges to ensure they are safe for motorists. The NPS would conduct only minor structural repairs on the bridges under the no action alternative until comprehensive rehabilitation efforts are necessary that would occur under other future planning decisions. Along the MV Trail, deteriorating trail and bridge surfaces would require frequent maintenance and spot repairs, and the potential for user conflicts and crashes, as well as trail hazards,

would continue to increase. The NPS may incorporate small-scale spot improvements or repairs on the GW Parkway or MV Trail as part of other future planning decisions.

Determination of Effect

Under the no action alternative, adverse effects to the GW Parkway South Section may occur should routine maintenance measures fail to stop the continued deterioration of roadway, trail, or drainage infrastructure that results in effects that diminish the integrity of design, materials, and workmanship.

GW Parkway South Section and MV Trail Improvements (Proposed Action)

GW Parkway / Mount Vernon Memorial Highway (MVMH)

The proposed action incorporates many changes within the GW Parkway historic property, including roadway, trail, and trail bridge infrastructure improvements; roadway and intersection safety improvements and a road diet; trail safety, accessibility, and wayfinding improvements; and trail amenity upgrades. Such rehabilitation efforts would adhere to the Secretary of the Interior's *Standards for Rehabilitation* (the *Secretary's Standards*) and would retain the characteristics and integrity of the resources that contribute to the significance of the GW Parkway.

Road Surfaces and Bridges

At the south section of the GW Parkway, many physical changes would occur. Deteriorated concrete road surface panels would be replaced in-kind. In some sections the existing road surface concrete is original and historic. However, by replacing the concrete in-kind, the design and material integrity of the Parkway would not be diminished.

Additionally, four bridges that contribute to the significance of the Parkway, including Hunting Creek Bridge, Alexandria Ave Overpass Bridge, Fort Hunt Road Overpass Bridge, and Little Hunting Creek Bridge, would be rehabilitated based on recommendations from future inspections conducted by FHWA. The NPS would ensure that improvements are sensitive to the design characteristics of the bridges and would adhere to the *Secretary's Standards*. For example, efforts would be made to retain, repair, or replace in-kind the character-defining features of the bridges, which includes the rusticated facing stone and brick-faced features.

Traffic-Calming and Intersection Modifications

The proposed action would introduce a permanent road diet between Mount Vernon Estate and Belle View Boulevard in the southbound direction, and between Mount Vernon Estate and Tulane Drive in the northbound direction. The road diet would introduce additional striping and signage, and the excess pavement area would be reallocated to establish two right-hand shoulders or dedicated right-turn lanes, as well as a striped median or center turn lane. The introduction of a road diet is a context-sensitive safety improvement, that would reduce speeds without causing excessive delays.

Modifications, including the reconfiguring of intersections, would be made at 12 intersections to improve vehicular as well as pedestrian and bicyclist safety. To improve safety, the NPS proposes to install enhanced signs, pavement markings, lighting, and rumble strips, and vegetation and tree limbs would be pruned back along the GW Parkway South Section. As articulated in Table 1, the historic median alignment at three of the 12 intersections would be partially restored. At three other

intersections, the median alignment would be fully restored. At six intersections, where no median existed, the conditions would remain unchanged. Additionally, at eight of the 12 intersections, the historic outer curb alignment would be restored. At three, the historic curb alignment remains in place and would be unchanged. At one intersection, the existing curb alignment would remain, and driveway improvements would be made.

Pedestrian crosswalks would be designed at nine of the 12 intersections in accordance with PROWAG to comply with ABAAS. Additionally, sidewalks and paved trails would be constructed to connect neighborhoods to the crosswalks and to existing facilities such as the MV Trail and bus stops along the GW Parkway. Such crosswalks and pathways would be minimal and sensitive to the road design and landscape and would not diminish the significance or integrity of the Parkway, just as the existing MV Trail is compatible and does not diminish the Parkway's significance or integrity. Finally, the bus stop signs at six of the 12 intersections would be relocated within the dedicated bus pull-off areas to be more accessible from the proposed pedestrian crossings. The design of the bus pull-off areas would not change, although the concrete pavement surface may be replaced, if necessary.

Intentionally, the proposed action does not include the use of traffic signals, which were considered intrusive and not in keeping with the Parkway's historic character and original design. Instead, all traffic calming and intersection modifications are in keeping with the *Secretary's Standards* and would not diminish the GW Parkway's significance or integrity of design, materials, feeling, and association.

Mount Vernon Trail Alterations

The proposed action includes several alterations to the MV Trail. Notably, the south section of the trail (Zone 1)—extending from Mount Vernon Estate to Hunting Creek Bridge—would be widened to a maximum width of 10 feet, depending on physical and environmental constraints. The NPS administered sections north of Alexandria (Zones 2 and 3) would be widened to a maximum width of 12 feet, depending on physical and environmental constraints. It was determined that the trail should not be widened to 14 feet, as this would cause unacceptable impacts to natural resources and increase the likelihood of impacts to vegetation and archaeological resources.

Minor trail realignments would also occur. The trail's existing curve would be straightened at Daingerfield Island (MP 12.1) and changed to have a gentler curve at Gravelly Point (just before MP 15). Roundabouts would be constructed where the MV Trail merges with the Four Mile Run Trail (MP 13) and where the MV Trail merges with the 14th Street Bridge Trail (MP 15.8). The trail would also be widened under Arlington Memorial Bridge by extending the northbound parkway lane reduction to the merge with Arlington Boulevard, using the newly acquired space to widen the trail under the bridge.

Additionally, the Plan would replace four trail bridges that are in poor condition and repair 29 other trail bridges that do not require full replacement. The four replacement bridges would be 14 ft wide to meet current AASHTO standards, and helical piles would be used at the locations of the existing bridge footings, although additional footings may become necessary. Trail signage and striping would also be improved, and accessible ramps will be installed at all at-grade trail roadway crossings.

Trail widening would require the pruning and removal of vegetation and plantings along the route. Such physical effects would be kept to the minimum necessary for safety and widening the trail. The

NPS established a conceptual-level limits of disturbance for the GW Parkway and MV Trail improvements to develop planning estimates of tree removal, impervious surface increases, stormwater management requirements, and for other assessments. Using GIS analysis, the NPS was able to estimate that approximately 3.5 acres of forested area would potentially be cleared to widen the MV Trail and improve drainage and stormwater management practices along the trail and Parkway. The types of trees in these areas include a variety of oak, tulip poplar, American beech, silver maple, box-elder, red maple, sweetgum, blackgum, eastern cottonwood, green ash, American elm, black walnut, Virginia pine, and many others that may occupy the understory. The forested areas generally consist of trees that range greatly in size and maturity.

Tree surveys would be conducted as part of the detailed design process that would be used to identify opportunities to avoid and minimize tree removal, taking special measures to avoid the removal of legacy trees, including memorial trees that were planted during the original construction of the Parkway and trees that were protected / remain since prior to the original construction. The Plan would also avoid removing trees greater than 18 inches in diameter, to the extent feasible.

During construction, fencing would be installed around the critical root zones of trees planned for protection to prevent physical damage from vehicles and equipment, as well as from excavation, soil compaction, or stockpiling. If roots must be impacted, clean cuts from a pruning saw should be used on roots larger than two inches in diameter to promote a flush of new roots, helping the tree recover from injury to ensure that many trees along the trail maintain their health and longevity. The NPS would investigate other opportunities to minimize tree impacts in addition to root pruning.

The MV Trail, which is a contributing feature of the GW Parkway, would continue to run through a picturesque setting of lawns, groupings of trees, and floral displays, with framed and panoramic views of the river and Washington, DC. Increasing the trail's width, replacing four bridges, and rehabilitating 29 others would alter the MV Trail's design. However, its circulation pattern will remain intact as will its associated views and vistas. Overall, the trail's integrity of location, setting, design, feeling, and association would not be diminished.

Drainage Features

In connection with the road surface treatments along the GW Parkway South Section, drainage structures, including culverts, ditches, drainpipes, and stormwater inlets would also be rehabilitated or replaced as needed. Many elements of the Parkway's drainage system are historic, dating to 1932. According to the *Cultural Landscape Inventory for the Mount Vernon Memorial Highway – South of Alexandria* (NPS 2021), there are many historic culverts: 39 small, circular pipe culverts and four larger, stone arch culverts. The smaller culverts consist of natural stone headwalls, constructed with rough-cut local stone with a concrete-cased metal pipe under the roadway. The construction of the larger arch culverts and the headwalls of the smaller culverts align with the rugged aesthetic and traditional stone construction of other elements along the Parkway. Other drainage features include various metal grate inlets and splash aprons, constructed of cobblestones, concrete, or a combination of both.

The necessary rehabilitation or replacement of any such features would adhere to the *Secretary's Standards*. Any drainage structures that require replacement would be designed to replicate the existing culverts. In 1984, several new culverts and headwalls were added to the Parkway and were constructed in the same natural stone block style as the original culverts or were constructed in

concrete with stone-faced wingwalls or headwalls. Work to replace the historic (original) or 1984 culverts would follow these construction methods, retaining the integrity of design and materials.

In connection with the MV Trail improvements, new ditches may be constructed, existing inlets and culverts may be replaced, and other miscellaneous work would be conducted as needed to improve drainage and alleviate ponding along the trail. Widening the MV Trail would increase the extent of impervious surface and would require stormwater management. Stormwater management BMPs would be implemented to minimize the effects of stormwater on surrounding areas. Possible BMPs include the use of porous or permeable pavement, bio-retention filters, filtering systems, open channel systems, and impervious surface disconnection. In each instance, BMPs would be sensitively incorporated into the landscape so as not to cause visual effects that would impact the integrity of the Parkway's setting, design, feeling, and association.

Amenity Upgrades

The proposed action also includes the installation of, or upgrades to, benches, bike racks, bike railings, and drinking water fountains with bottle filling options along the MV Trail. Additionally, a new permanent restroom facility would be constructed at Gravelly Point that would be approximately 26 ft x 20 ft. The NPS would need to extend sewer and water lines to the new facility and if necessary, construct a wastewater lift station. Otherwise, no new water infrastructure would be required to implement the proposed improvements. New water fountains would be installed to upgrade those already existing. Additionally, the NPS would support new Capital Bikeshare Stations at seven new locations, in addition to those already at Theodore Roosevelt Island and Gravelly Point. Such amenities would be sensitively placed and designed to be compatible with the aesthetic of the GW Parkway so as not to diminish its significance and integrity or impede views and vistas to the Potomac River and Washington, DC.

Determination of Effect

Despite the number of modifications to the GW Parkway South Section and MV Trail that would occur under the proposed action, such work would be in adherence with the *Secretary's Standards* and would not diminish the significance or integrity of the historic property. However, to ensure that the *Secretary's Standards* are adhered to, especially at this early phase of project planning, it is recommended that an agreement document be developed to continue Section 106 consultation. More information is provided in the Summary of Effects section, below.

Physical changes to the roadway would not alter its location, size, or scale. While sections of original pavement would be replaced, the concrete material would be replicated so as not to diminish the integrity of materials or workmanship. The same is true for repairs to or replacements of various drainage features, especially culvert headwalls. Added amenity features would also be sensitive to and compatible with the GW Parkway.

The GW Parkway South Section has a distinctly domestic feel, and its stylized landscape is consistent with the domestic scale of Mount Vernon and the surrounding suburban neighborhoods. Changes in the circulation, including the road diet and other intersection modifications, are compatible with the original design intent and character of the Parkway. The setting, design, feeling, and association of the Parkway would remain intact, notably the abundance and visibility of recreational activities, the relationships to adjoining residential properties, and the planting designs. Significant road design

elements that include long spiral curves, limited at-grade intersections, “banana-split and tear-drop intersections, and the concrete surface, would be maintained or restored.

The MV Trail dates to the 1970s and reflects the original idea of a separate recreational path. It began as a cinder path in 1972-1974 and was paved in 1977. Sections have been realigned and relocated in the past to allow for drainage swale construction and other improvements. Widening the trail with consideration for minimizing tree removal, and sensitively implementing BMPs for stormwater management, would not make the trail incompatible with the GW Parkway.

Visual effects would occur due to physical modifications. However, such effects would be minor and well distributed throughout the property. Individually as well as cumulatively, the visual impact of adding or upgrading signage, benches, bike racks, water fountains, a new restroom facility at Gravelly Point, and seven Capital Bikeshare stations would not affect the significance or integrity of the property. All items would be sensitively placed so as not to affect any views and vistas and would not diminish the integrity of setting. The visual aesthetic of the GW Parkway and MV Trail would be maintained and visual connections between the road, trail, landscape features, surrounding neighborhoods, and scenic views of the Potomac River and other monuments and memorials would be unchanged.

As a cultural landscape, the GW Parkway is defined by several landscape characteristics, including its natural systems and features, spatial organization, land use, topography, vegetation, circulation features, buildings and structures, views and vistas, small-scale features, and archaeology. Individually and cumulatively, the rehabilitation of and minor alterations to the road surfaces and bridges, Parkway intersections, MV Trail, drainage features, and amenities would not diminish the existing integrity of any of these characteristics, and the significance of the GW Parkway would be retained.

Based on this analysis, the NPS finds the proposed action would have no adverse effect to the GW Parkway.

However, due to the Plan’s conceptual phase of design, the full extent of effects to the GW Parkway cannot be known at this time. Therefore, as is discussed below in the *Summary of Effects*, the NPS intends to pursue the negotiation and execution of an agreement document in accordance with 36 CFR 800.6(c) to ensure adherence to the *Secretary’s Standards* and that adverse effects would not occur from those portions of the Plan that are subject to additional design and refinement, including bridge rehabilitation and drainage and culvert work.

Mount Vernon Estate

Portions of the MV Trail and the GW Parkway’s circular terminus and surrounding landscape are located within the Mount Vernon Estate, as is the section of parking lot proposed to establish a Capital Bikeshare Station. Therefore, physical effects from the Plan would occur. However, such physical effects are minor and would not diminish the significance or integrity of the property. Visual effects from the MV Trail alterations, traffic circle safety, improved crosswalk, and new Capital Bikeshare Station would be very minor and would not diminish the integrity of location, setting, design, workmanship, materials, feeling or association of the historic property. Construction impacts would likewise be temporary and minor, mostly representing a temporary visual change at the circular terminus.

Determination of Effect

Based on this analysis, the NPS finds the proposed action would have no adverse effect to the Mount Vernon Estate.

Fort Hunt

The proposed action would have no physical effects to Fort Hunt. Similarly, there would be little to no visual effects due to the intervening distance, vegetation, and the scope of the alternative. The Plan would make improvements to trail warning signage and pavement markings at pinch points under the Fort Hunt Road Overpass Bridge. However, such changes are just outside the historic property boundary and would have very minor visual effects due to the sloping topography of the site. The Plan would also include the placement of a Capital Bikeshare Station at the far eastern edge of the property. This change would be reversible and would have a minor visual effect, not diminishing the integrity of the property. Construction effects would be temporary and minor as a portion of the property may be used for construction staging. However, this staging area would be visually unobtrusive so as not to detract from the historic resources on the property. The significance and integrity of Fort Hunt would not be diminished.

Determination of Effect

Based on this analysis, NPS finds the proposed action would have no adverse effect to Fort Hunt.

Wellington at River Farm

The proposed action would have no physical effects to Wellington at River Farm. Similarly, due to the intervening distance and separation by East Boulevard Drive, vegetation, and the scope of the alternative, the proposed work would not be visible from the property. Additionally, no physical or visual effects from construction would occur.

Determination of Effect

Based on this analysis, NPS finds the proposed action would have no effect to Wellington at River Farm.

Alexandria Historic District

The Plan would widen the MV Trail within Jones Point Park, resulting in a minor physical effect. Such minor changes, both physical and visual, would not affect the significance or integrity of the historic district, which is drawn from the significance of the 18th through early 20th century architecture. Visual changes would be indistinguishable from the new construction of the Woodrow Wilson Bridge above the section of MV Trail and the intervening distance and separation by dense vegetation at Jones Point Park.

Determination of Effect

Based on this analysis, NPS finds the proposed action would have no adverse effect to the Alexandria Historic District.

Washington National Airport Terminal and South Hangar Line

The proposed action would have no physical effects to Washington National Airport Terminal. Similarly, due to the intervening distance and separation by Thomas Avenue, vegetation, topography, and the scope of the proposed action, the proposed work would not be visible from the property. Additionally, no physical or visual effects from construction would occur.

Determination of Effect

Based on this analysis, NPS finds the proposed action would have no effect to Washington National Airport Terminal and South Hangar Line.

Arlington Memorial Bridge

Physical modifications would be made to the MV Trail beneath the Arlington Memorial Bridge. However, such changes would not directly affect the property. Visual effects from the physical modifications would be minor and would not diminish the significance or integrity of the property. Additionally, physical and visual effects from construction would be temporary and minor and would not diminish integrity.

Determination of Effect

Based on this analysis, NPS finds the proposed action would have no adverse effect to Arlington Memorial Bridge.

Theodore Roosevelt Island National Memorial

The proposed action would have no physical effects to Theodore Roosevelt Island National Memorial. Similarly, due to the intervening distance and separation by the Potomac River, vegetation, and the scope of the proposed action, the proposed work would not be visible from the property. Additionally, no physical or visual effects from construction would occur.

Determination of Effect

Based on this analysis, NPS finds the proposed action would have no effect to Theodore Roosevelt Island National Memorial.

Archeological Resources

As discussed above, two archaeological sites potentially eligible for listing in the NRHP are located along the GW Parkway and are within the APE. An additional 12 sites that have not been evaluated are located within or adjacent to the APE, and there is approximately 9.5 miles of MV Trail or GW Parkway South Section that have the potential for the presence of archeological resources.

Ground disturbance related to the MV Trail improvements would generally be limited to the extent of widening and placement of stormwater management BMPs, in addition to the physical space required to safely operate construction equipment. Construction related to work on the GW Parkway and the repair or replacement of drainage elements would be carefully planned and monitored so as not to create unnecessary ground disturbance outside the limits of the element or feature to be modified or replaced. Similarly, all MV Trail bridges requiring replacement and repair would utilize existing

bridge footings to the extent possible, although it may be determined during bridge design that new or additional footings are necessary.

Ground disturbance at the south end of Gravelly Point, in relation to the construction of a new restroom facility that would measure approximately 26 ft x 20 ft and the possible installation of a wastewater lift station, has the potential to affect deeply buried pre-contact archeological resources. However, according to the Phase IA assessment, such resources would likely be contained beneath layers of modern fill. Therefore, depending on the depth of ground disturbance necessary, archeological resources at Gravelly Point may be affected.

Determination of Effect

While the proposed action considers many precautions to avoid physical disturbance to archeological resources, such effects may occur and may adversely affect resources that may be evaluated and determined to be eligible for listing in the NRHP. The Phase IA assessment recommended that all areas identified as possessing potential for archeological resources should be subject to additional survey and subsurface investigation prior to any ground disturbing activities.

SUMMARY OF EFFECTS

Overall, due to the potential for adverse effects to archeological resources that are eligible, or that may be eligible, for listing in the NRHP, the NPS finds the proposed action to have a potential adverse effect to historic properties. The NPS intends to develop designs for the proposed GW Parkway and MV Trail improvements that avoid impacts to significant archeological sites. Opportunities for avoidance may include relocating improvements outside of archeologically sensitive areas, shifting the MV Trail alignment away from known sites, and reducing the extent of trail widening. If avoidance of a known site is not possible, the NPS would consult with DC HPO and / or VDHR to develop an appropriate plan to investigate the site and delineate the site boundaries more accurately and / or evaluate the site's National Register eligibility. Additionally, the NPS would conduct subsurface investigations at localized areas where ground disturbance is unavoidable within areas of archeological potential that have not been surveyed. Construction in areas identified to have low or no archeological potential may be monitored to ensure intact archeological deposits are not disturbed. Archeological monitoring and discoveries plan may also be used, either in conjunction with pre-construction investigations, or as an alternative, to aid in reducing and avoiding impacts to archeological resources during construction.

To resolve potential adverse effects associated with the project and ensure currently unidentified adverse effects do not occur as designs are developed in accordance with the *Secretary's Standards*, the NPS intends to pursue the negotiation and execution of an agreement document in accordance with 36 CFR 800.6(c). The agreement document would define the continued consultation process for the identification and evaluation of resources, and the resolution of any adverse effects on NRHP-eligible archeological resources associated with the GW Parkway South Section and MV Trail Improvements Plan. The agreement document would also include stipulations for design review by consulting parties to ensure adherence to the *Secretary's Standards* and that adverse effects would not occur from those portions of the Plan that are subject to additional design and refinement, including bridge rehabilitation and drainage and culvert work.

The NPS would work with the DC HPO, VDHR, and the consulting parties, to identify strategies to avoid, minimize, and mitigate the adverse effects that may result to archeological resources after additional survey and subsurface investigations are conducted during design phases of Plan implementation. Those measures would be outlined and included within the agreement document.

REFERENCES

- Bradley, Kevin; Kaitlin Ahern; and Kelly Higgins. “Phase 1A Archaeological Overview for the Proposed Rehabilitation of the George Washington Memorial Parkway (South Section) and Mount Vernon Trail.” New South Associates, Fairfax, Virginia, 2023.
- Fairfax County Department of Planning and Development. “Proposal for the Establishment of the Wellington at River farm Historic Overlay District.” Fairfax County, 2021.
- Hooper, Carol; Elizabeth Lampl, and Judith Robinson. *National Register of Historic Places Nomination: Washington National Airport Terminal and South Hangar Line, Arlington, VA*. Washington, DC: Robinson & Associates, Inc, 1994.
- Johnson Mirmiran and Thompson. “Section 106 Assessment of Effects – Theodore Roosevelt Island CLR/EA.” 2018.
- Krakow, Jere. *National Register of Historic Places Nomination: George Washington Memorial Parkway, Arlington, VA; Fairfax, VA; Montgomery, MD; Washington, DC*. Denver, Colorado: National Park Service, 1993.
- Larew, Marilyn. *National Register of Historic Places Nomination, National Historic Landmark: Mount Vernon, Fairfax, VA*. Washington, DC: National Park Service, 1977.
- Mackintosh, Barry. *National Register of Historic Places Nomination: Arlington Memorial Bridge, Washington, DC*. Washington, DC: National Park Service, 1979.
- Mackintosh, Barry. *National Register of Historic Places Nomination: Fort Hunt, Fairfax, VA*. Washington, DC: National Park Service, 1979.
- Mackintosh, Barry. *National Register of Historic Places Nomination: Mount Vernon Memorial Highway, Alexandria, VA; Arlington, VA; Fairfax, VA; Washington, DC*. Washington, DC: National Park Service, 1980.
- National Park Service. “Cultural Landscapes Inventory Mount Vernon Memorial Highway – North of Alexandria – George Washington Memorial Parkway.” 2022.
- National Park Service. “Cultural Landscapes Inventory Mount Vernon Memorial Highway – South of Alexandria – George Washington Memorial Parkway.” 2021.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan

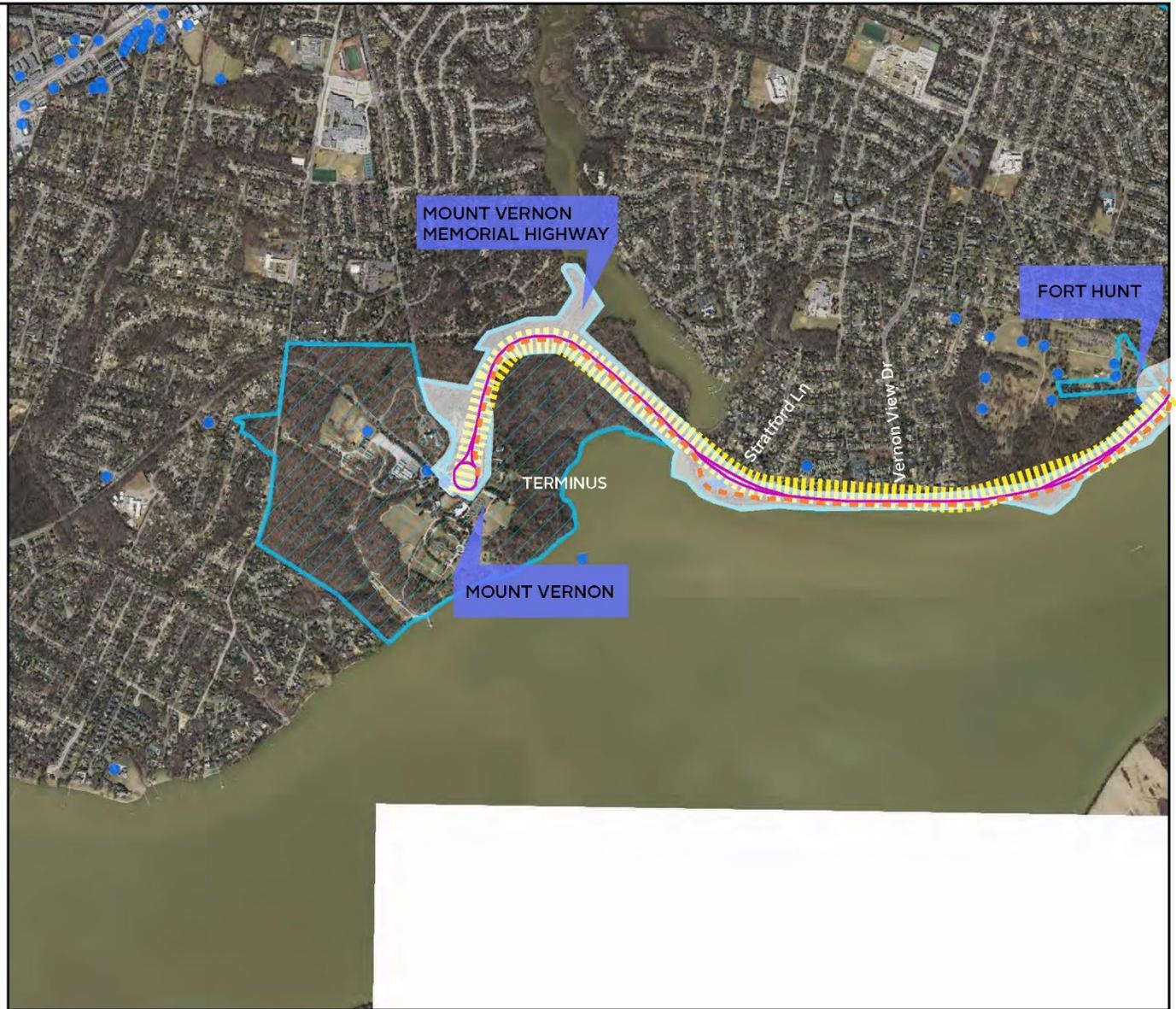
Assessment of Effects

Appendix A. Area of Potential Effects Mapping



Legend

- Public View Architecture Points
- Public View Historic Districts
- George Washington Memorial Parkway
- Mount Vernon Trail
- Area of Potential Effect (APE)
- Identified Historic Properties within APE
- Archaeological Potential



Map 1 of 7



Feet

0 600 1200 1800 2400
 1:36,112 / 1"=3,009 Feet

Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

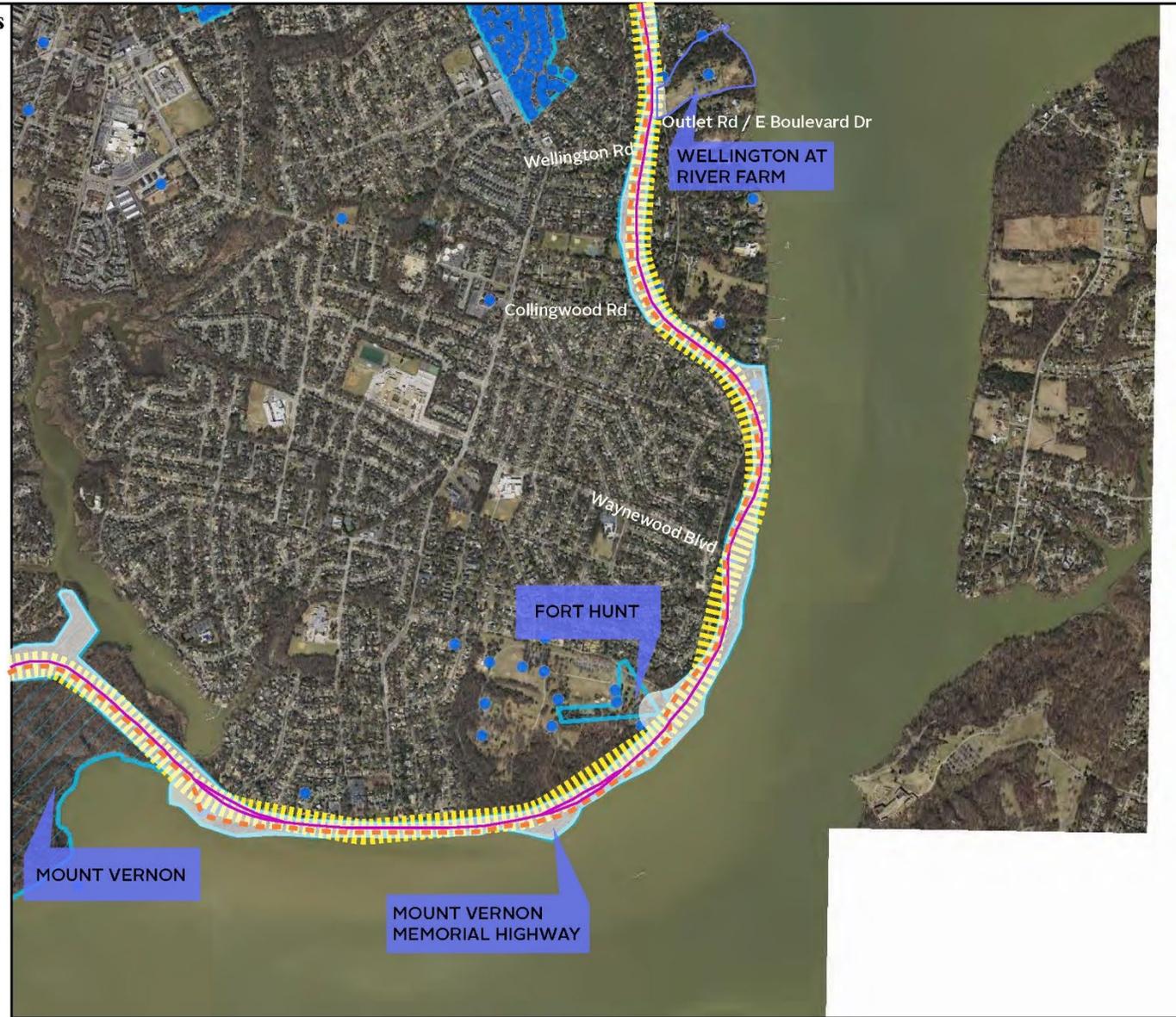
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.



Legend

- Public View Architecture Points
- Public View Historic Districts
- George Washington Memorial Parkway
- Mount Vernon Trail
- Area of Potential Effect
- Identified Historic Properties within APE
- Archaeological Potential



Map 2 of 7



Feet

0 600 1200 1800 2400
1:36,112 / 1"=3,009 Feet

Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

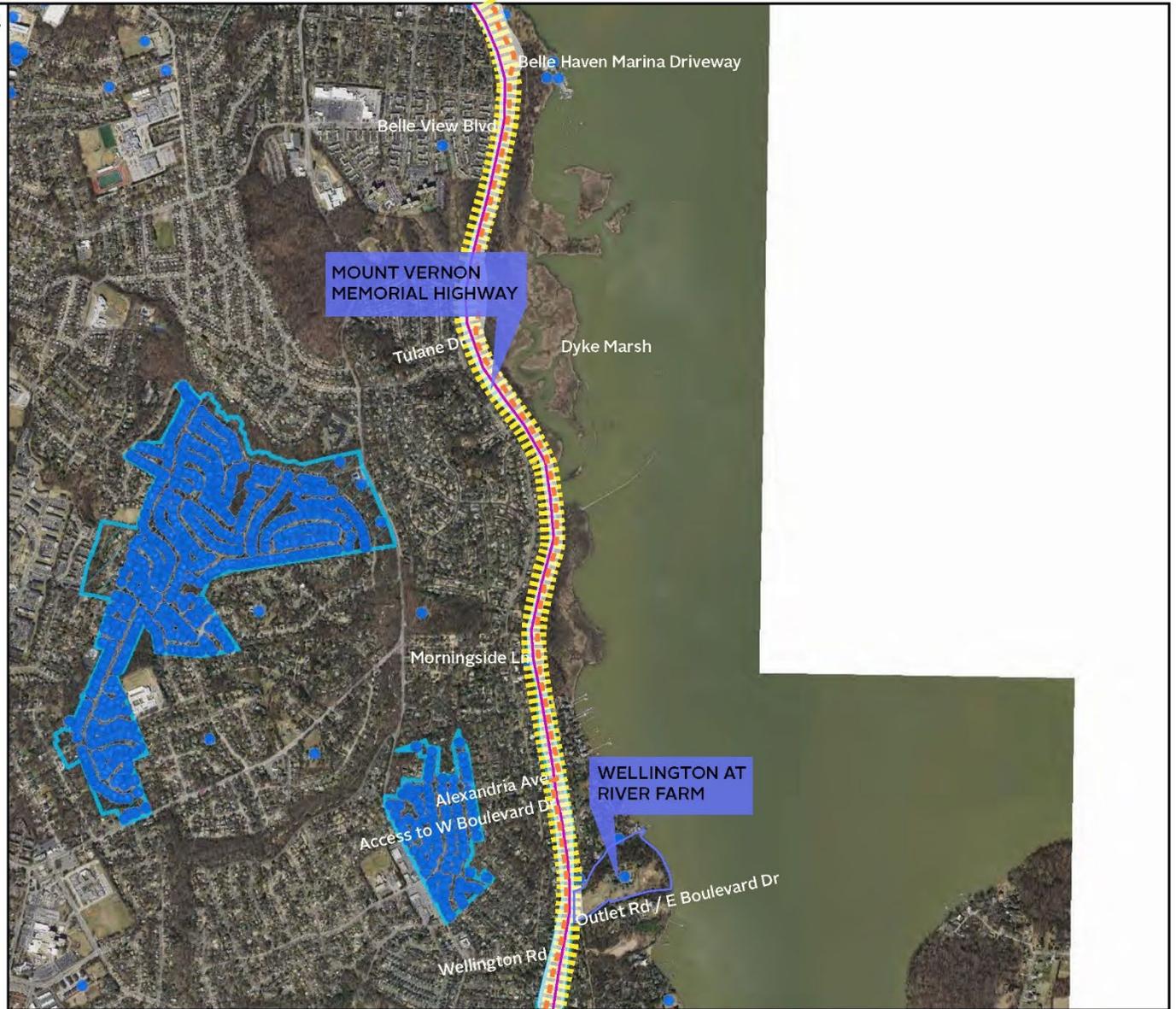
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive to the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.



Legend

- Public View Architecture Points
- Public View Historic Districts
- George Washington Memorial Parkway
- Mount Vernon Trail
- Area of Potential Effect
- Identified Historic Properties within APE
- Archaeological Potential



Map 3 of 7



Feet

0 600 1200 1800 2400
 1:36,112 / 1"=3,009 Feet

Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

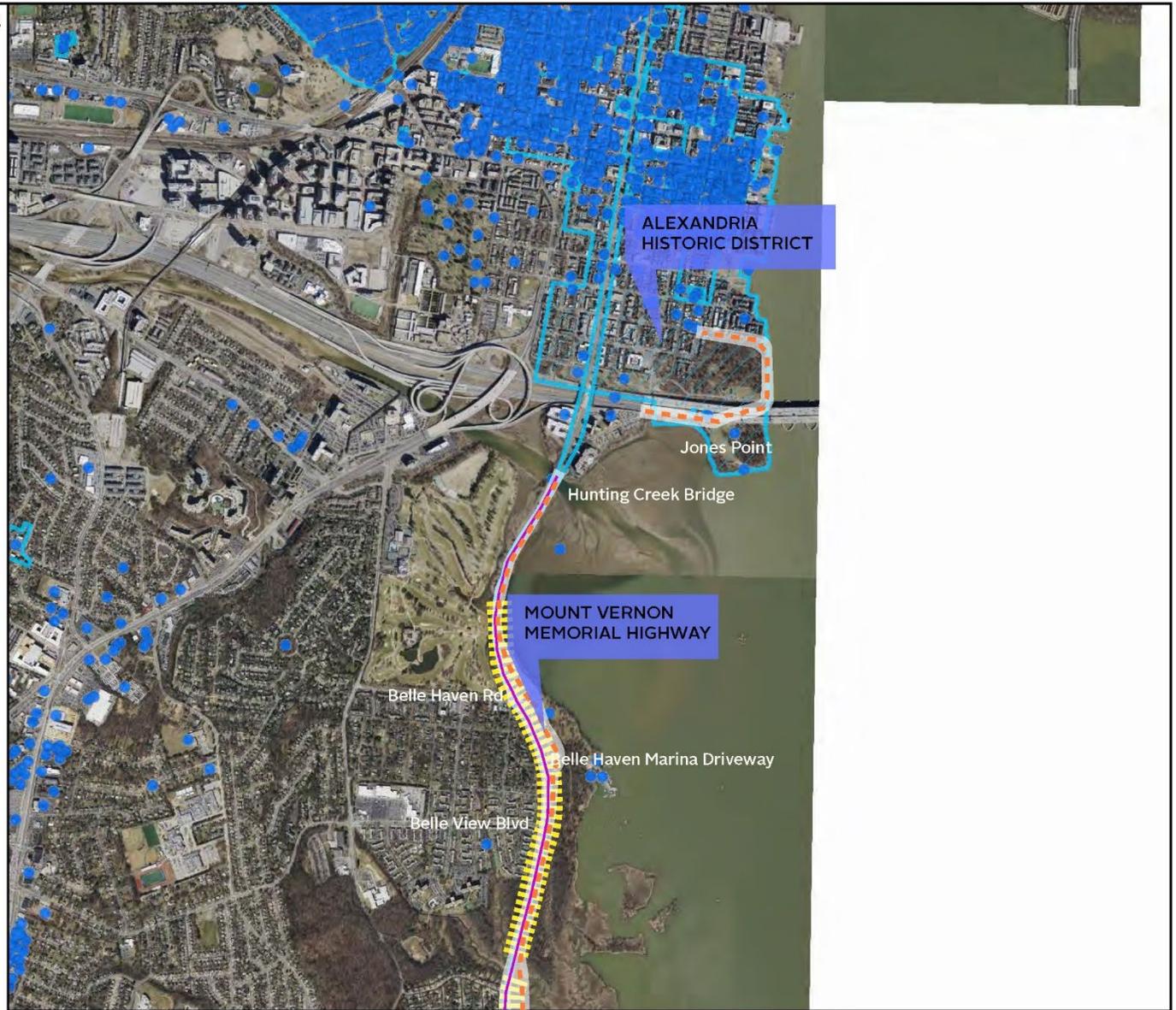
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive to the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.



Legend

- Public View Architecture Points
- Public View Historic Districts
- George Washington Memorial Parkway within Plan Scope
- Mount Vernon Trail within Plan Scope
- Area of Potential Effect
- Identified Historic Properties within APE
- Archaeological Potential



Map 4 of 7



Feet

0 600 1200 1800 2400
 1:36,112 / 1"=3,009 Feet

Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Legend

- Public View Architecture Points
- Public View Historic Districts

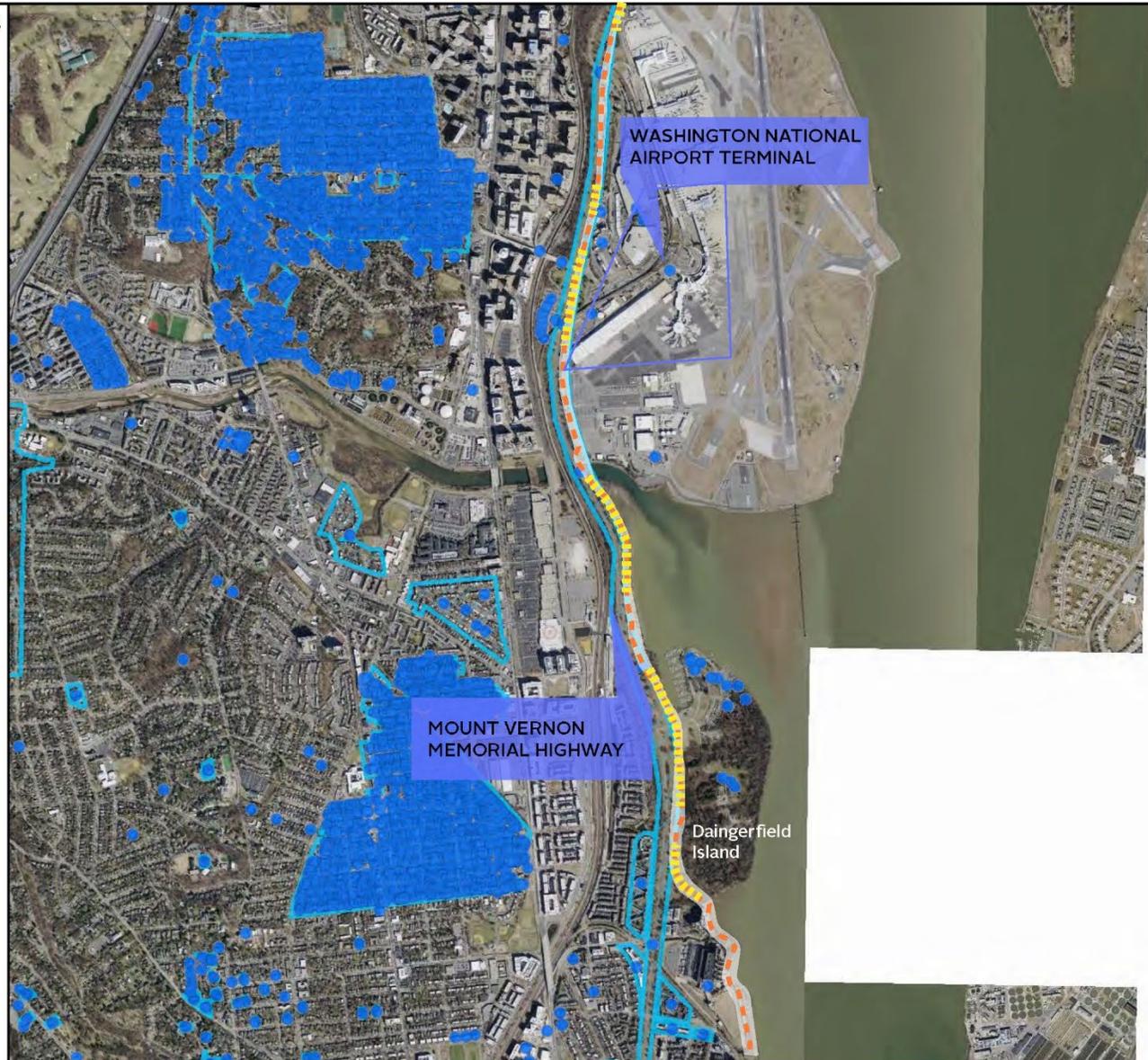
- Mount Vernon Trail within Plan Scope
- Area of Potential Effect
- Identified Historic Properties within APE
- Archaeological Potential

Map 5 of 7



Feet

0 600 1200 1800 2400
1:36,112 / 1"=3,009 Feet



Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

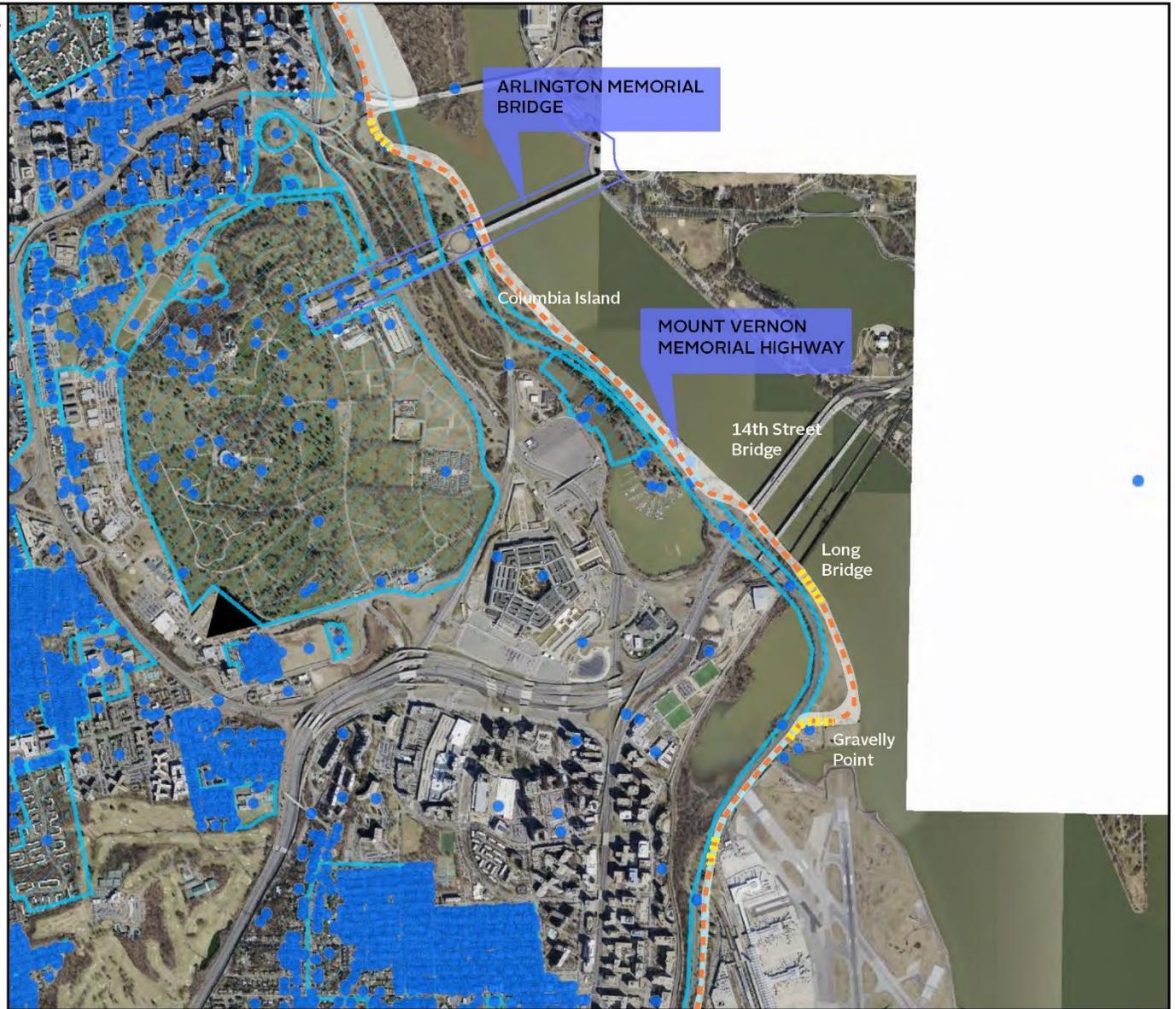
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive to the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Legend

- Public View Architecture Points
- Public View Historic Districts

- Mount Vernon Trail
- Area of Potential Effect
- Identified Historic Properties within APE
- Archaeological Potential



Map 6 of 7



Feet

0 600 1200 1800 2400
1:36,112 / 1"=3,009 Feet

Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive to the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Legend

- Public View Architecture Points
- Public View Historic Districts

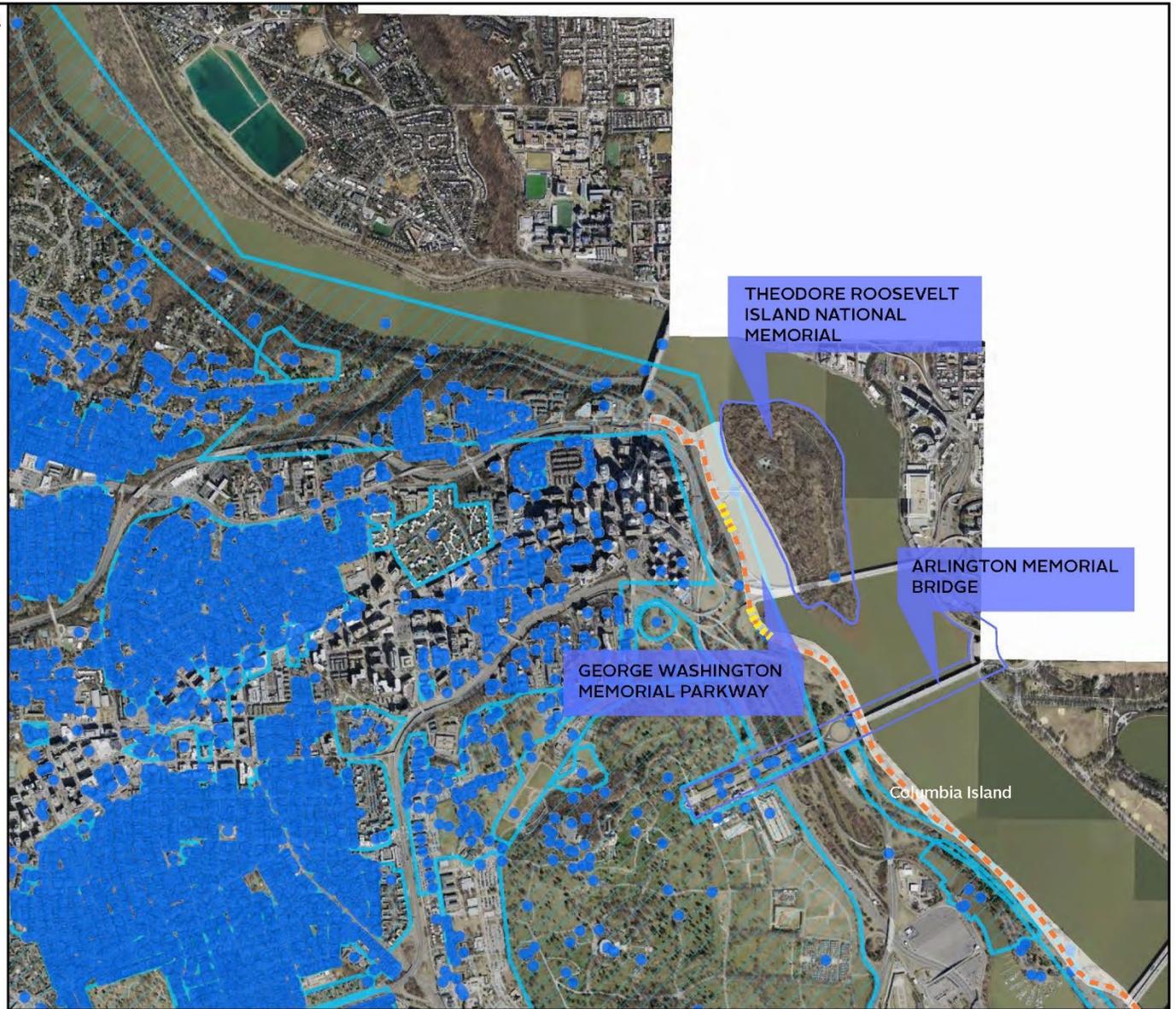
- Mount Vernon Trail
- Area of Potential Effect
- Identified Historic Properties within APE
- Archaeological Potential

Map 7 of 7



Feet

0 600 1200 1800 2400
1:36,112 / 1"=3,009 Feet



Title: George Washington Memorial Parkway - South Section & Mount Vernon Trail Improvement Plan

Date: 12/8/2022

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive to the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan

Assessment of Effects

Appendix B. GW Parkway and MV Trail Redesign Concepts



Legend

-  Existing pavement
-  Edge line
-  Dividing line
-  Travel direction arrows



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Road Diet Striping Plan – Typical Section
(No Median)



Figure 1. Conceptual Road Diet Striping Plan – Typical Section (No Median)



Legend

-  Existing pavement
-  Edge line
-  Dividing line
-  Travel direction arrows



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Road Diet Striping Plan – Typical Section
(Varying Width Median)



Figure 2. Conceptual Road Diet Striping Plan – Typical Section (Varying Width Median)



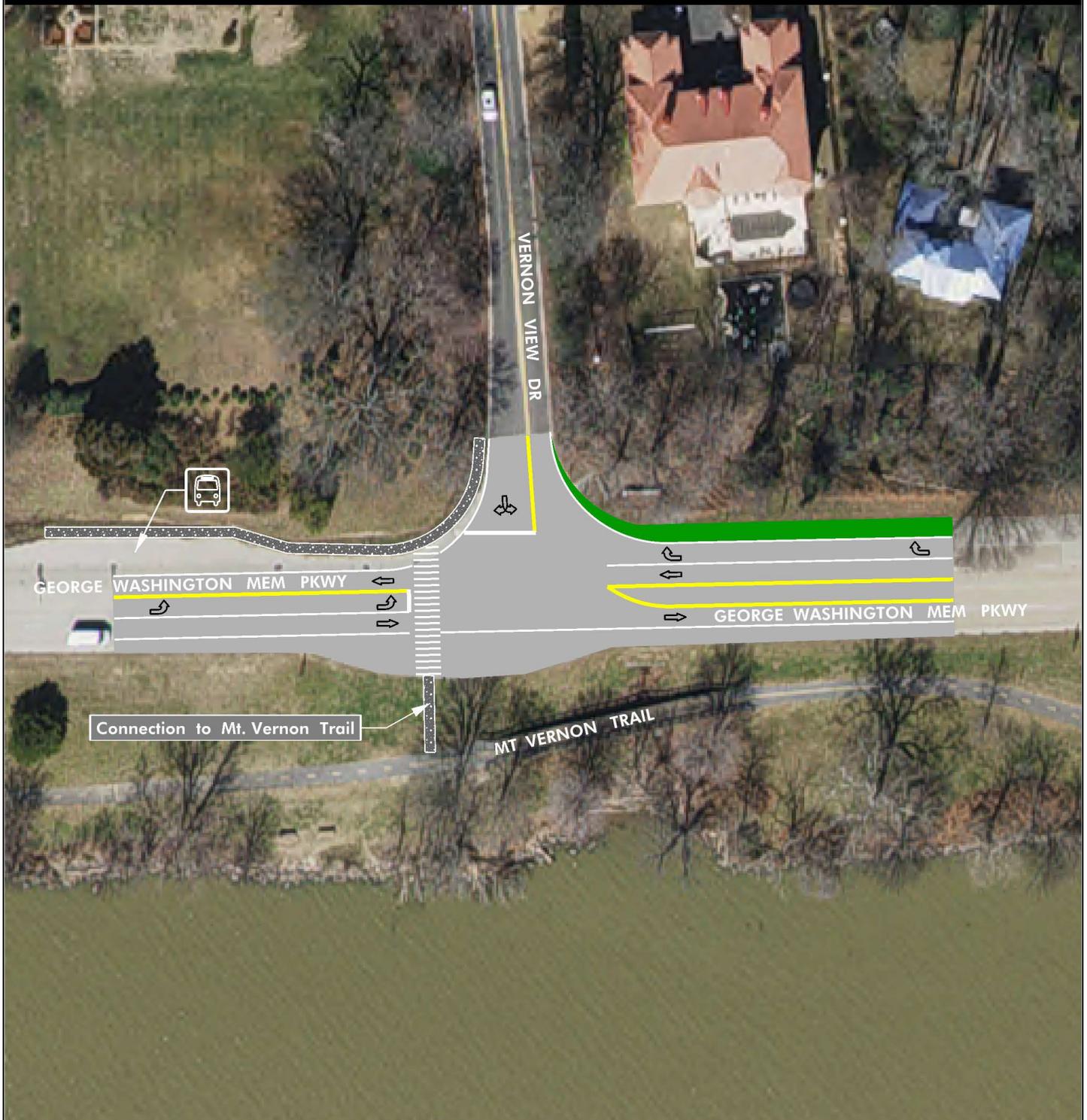
- | | |
|----------------------------------|-------------------------|
| Concrete pavement reconstruction | Edge line |
| Concrete sidewalk | Dividing line |
| Pavement removal | Crosswalk |
| Bus stop | Yield |
| Flexposts | Travel direction arrows |



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Stratford Lane



Figure 3. Conceptual Intersection Redesign – Stratford Lane



Legend

- | | | | |
|--|----------------------------------|--|-------------------------|
| | Concrete pavement reconstruction | | Edge line |
| | Concrete sidewalk | | Dividing line |
| | Pavement removal | | Crosswalk |
| | Bus stop | | Yield |
| | Flexposts | | Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Vernon View Drive



Figure 4. Conceptual Intersection Redesign – Vernon View Drive



Legend

- | | |
|--|---|
|  Concrete pavement reconstruction |  Edge line |
|  Concrete sidewalk |  Dividing line |
|  Pavement removal |  Crosswalk |
|  Bus stop |  Yield |
|  Flexposts |  Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Waynewood Boulevard



Figure 5. Conceptual Intersection Redesign – Waynewood Boulevard



Legend

- | | |
|----------------------------------|-------------------------|
| Concrete pavement reconstruction | Edge line |
| Concrete sidewalk | Dividing line |
| Pavement removal | Crosswalk |
| Bus stop | Yield |
| Flexposts | Travel direction arrows |



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Collingwood Road



Figure 6. Conceptual Intersection Redesign – Collingwood Road



Legend

- | | |
|----------------------------------|-------------------------|
| Concrete pavement reconstruction | Edge line |
| Concrete sidewalk | Dividing line |
| Pavement removal | Crosswalk |
| Bus stop | Yield |
| Flexposts | Travel direction arrows |



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Wellington Road



Figure 7. Conceptual Intersection Redesign – Wellington Road



Legend		50' 0 50' 100'	
	Concrete pavement reconstruction		Edge line
	Concrete sidewalk		Dividing line
	Pavement removal		Crosswalk
	Bus stop		Yield
	Flexposts		Travel direction arrows

Project:
George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan and Environmental Assessment

Conceptual Intersection Redesign – Outlet Road / E. Boulevard Drive

Figure 8. Conceptual Intersection Redesign – Outlet Road / E. Boulevard Drive



Legend

- | | | | |
|--|----------------------------------|--|-------------------------|
| | Concrete pavement reconstruction | | Edge line |
| | Concrete sidewalk | | Dividing line |
| | Pavement removal | | Crosswalk |
| | Bus stop | | Yield |
| | Flexposts | | Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan and Environmental Assessment
Conceptual Intersection Redesign – W. Boulevard Drive



Figure 9. Conceptual Intersection Redesign – Access to W. Boulevard Drive



Legend

- | | | | |
|--|----------------------------------|--|-------------------------|
| | Concrete pavement reconstruction | | Edge line |
| | Concrete sidewalk | | Dividing line |
| | Pavement removal | | Crosswalk |
| | Bus stop | | Yield |
| | Flexposts | | Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Morningside Lane



Figure 10. Conceptual Intersection Redesign – Morningside Lane



Legend

- | | | | |
|--|----------------------------------|--|-------------------------|
| | Concrete pavement reconstruction | | Edge line |
| | Concrete sidewalk | | Dividing line |
| | Pavement removal | | Crosswalk |
| | Bus stop | | Yield |
| | Flexposts | | Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Tulane Drive



Figure 11. Conceptual Intersection Redesign – Tulane Drive



Legend

	Concrete pavement reconstruction		Edge line
	Concrete sidewalk		Dividing line
	Pavement removal		Crosswalk
	Bus stop		Yield
	Flexposts		Travel direction arrows

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan and Environmental Assessment

Conceptual Intersection Redesign – Belle View Boulevard

Figure 12. Conceptual Intersection Redesign – Belle View Boulevard



Legend

- | | |
|--|---|
|  Concrete pavement reconstruction |  Edge line |
|  Concrete sidewalk |  Dividing line |
|  Pavement removal |  Crosswalk |
|  Bus stop |  Yield |
|  Flexposts |  Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Intersection Redesign – Belle Haven Marina
Driveway



Figure 13. Conceptual Intersection Redesign – Belle Haven Marina Driveway



Legend

- | | |
|----------------------------------|-------------------------|
| Concrete pavement reconstruction | Edge line |
| Concrete sidewalk | Dividing line |
| Pavement removal | Crosswalk |
| Bus stop | Yield |
| Flexposts | Travel direction arrows |

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan and Environmental Assessment
Conceptual Intersection Redesign – Belle Haven Road



Figure 14. Conceptual Intersection Redesign – Belle Haven Road



Legend

- Asphalt pavement reconstruction
- Pavement removal
- Dividing line

50' 0 50' 100'

Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Trail Realignment – Daingerfield Island Curve

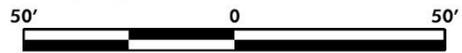


Figure 15. Conceptual Trail Realignment – Daingerfield Island Curve



Legend

- | | |
|---|---|
|  Asphalt pavement reconstruction |  Edge line |
|  Curb and gutter |  Dividing line |
|  Pavement removal |  Yield |
|  Cobblestone |  Travel direction arrows |



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Roundabout Design – Four Mile Run Trail

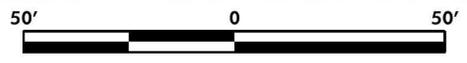


Figure 16. Proposed Roundabout Design – Four Mile Run Trail



Legend

- | | | | |
|--|---------------------------------|--|-------------------------|
| | Asphalt pavement reconstruction | | Edge line |
| | Curb and gutter | | Dividing line |
| | Pavement removal | | Yield |
| | Cobblestone | | Travel direction arrows |



Project:
George Washington Memorial Parkway South Section and
Mount Vernon Trail Improvements Plan
and Environmental Assessment
Conceptual Roundabout Design – 14th Street Bridge Trail



Figure 17. Proposed Roundabout Design – 14th Street Bridge Trail



Legend

- Asphalt pavement reconstruction
- Proposed Sidewalk
- Pavement removal
- Proposed Restroom
- Dividing line

Project:
George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan and Environmental Assessment
Conceptual Trail Realignment with Proposed Sidewalk and Restroom – Gravelly Point



Figure 18. Conceptual Trail Realignment with Proposed Sidewalk and Restroom – Gravelly Point

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan

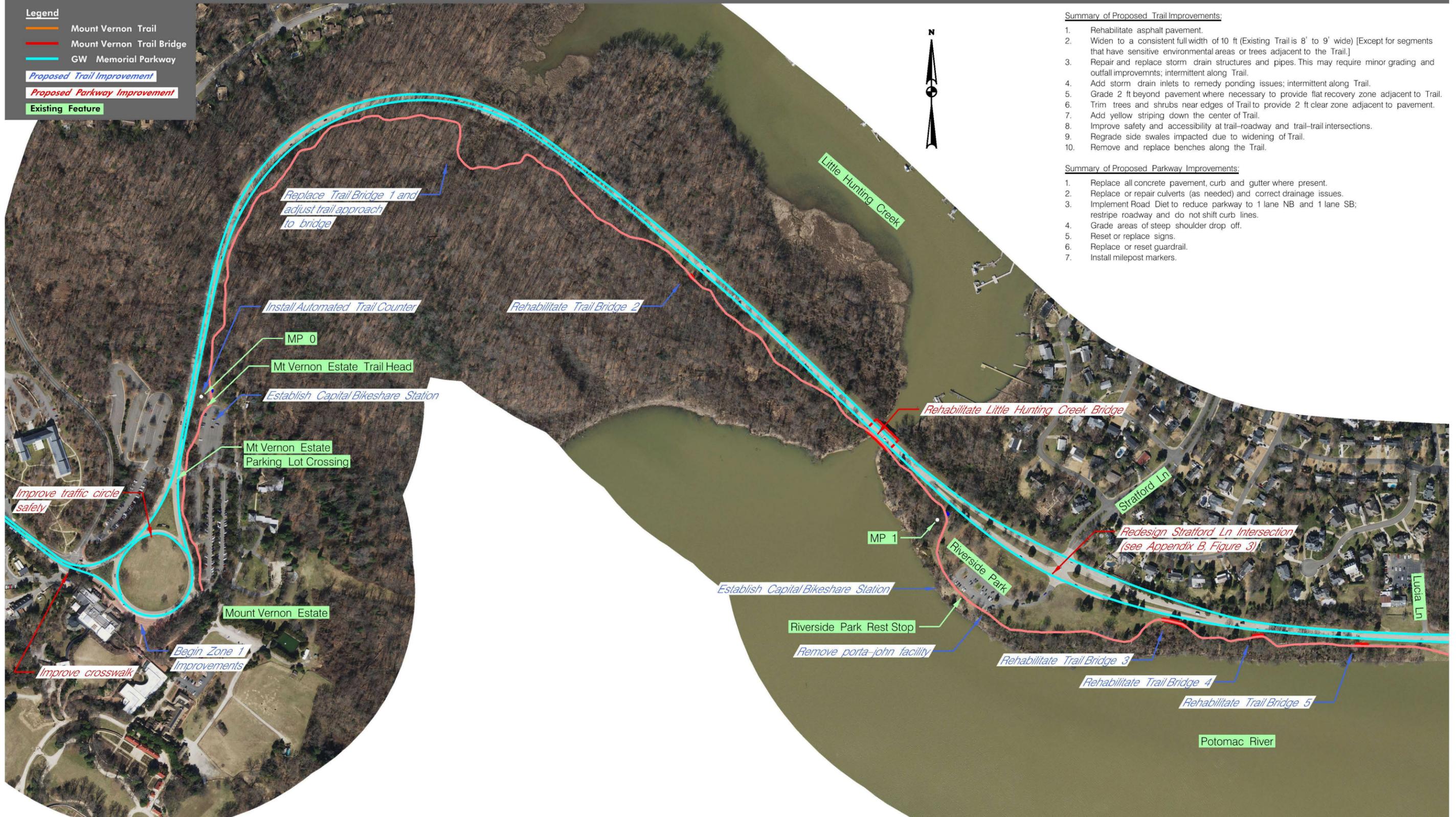
Assessment of Effects

Appendix C. Proposed Action Location Mapping

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



- Legend**
- Mount Vernon Trail
 - Mount Vernon Trail Bridge
 - GW Memorial Parkway
 - Proposed Trail Improvement
 - Proposed Parkway Improvement
 - Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 10 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

Summary of Proposed Parkway Improvements:

1. Replace all concrete pavement, curb and gutter where present.
2. Replace or repair culverts (as needed) and correct drainage issues.
3. Implement Road Diet to reduce parkway to 1 lane NB and 1 lane SB; restripe roadway and do not shift curb lines.
4. Grade areas of steep shoulder drop off.
5. Reset or replace signs.
6. Replace or reset guardrail.
7. Install milepost markers.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



- Legend**
- Mount Vernon Trail
 - Mount Vernon Trail Bridge
 - GW Memorial Parkway
 - Proposed Trail Improvement
 - Proposed Parkway Improvement
 - Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 10 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

Summary of Proposed Parkway Improvements:

1. Replace all concrete pavement, curb and gutter where present.
2. Replace or repair culverts (as needed) and correct drainage issues.
3. Implement Road Diet to reduce parkway to 1 lane NB and 1 lane SB; restripe roadway and do not shift curb lines.
4. Grade areas of steep shoulder drop off.
5. Reset or replace signs.
6. Replace or reset guardrail.
7. Install milepost markers.

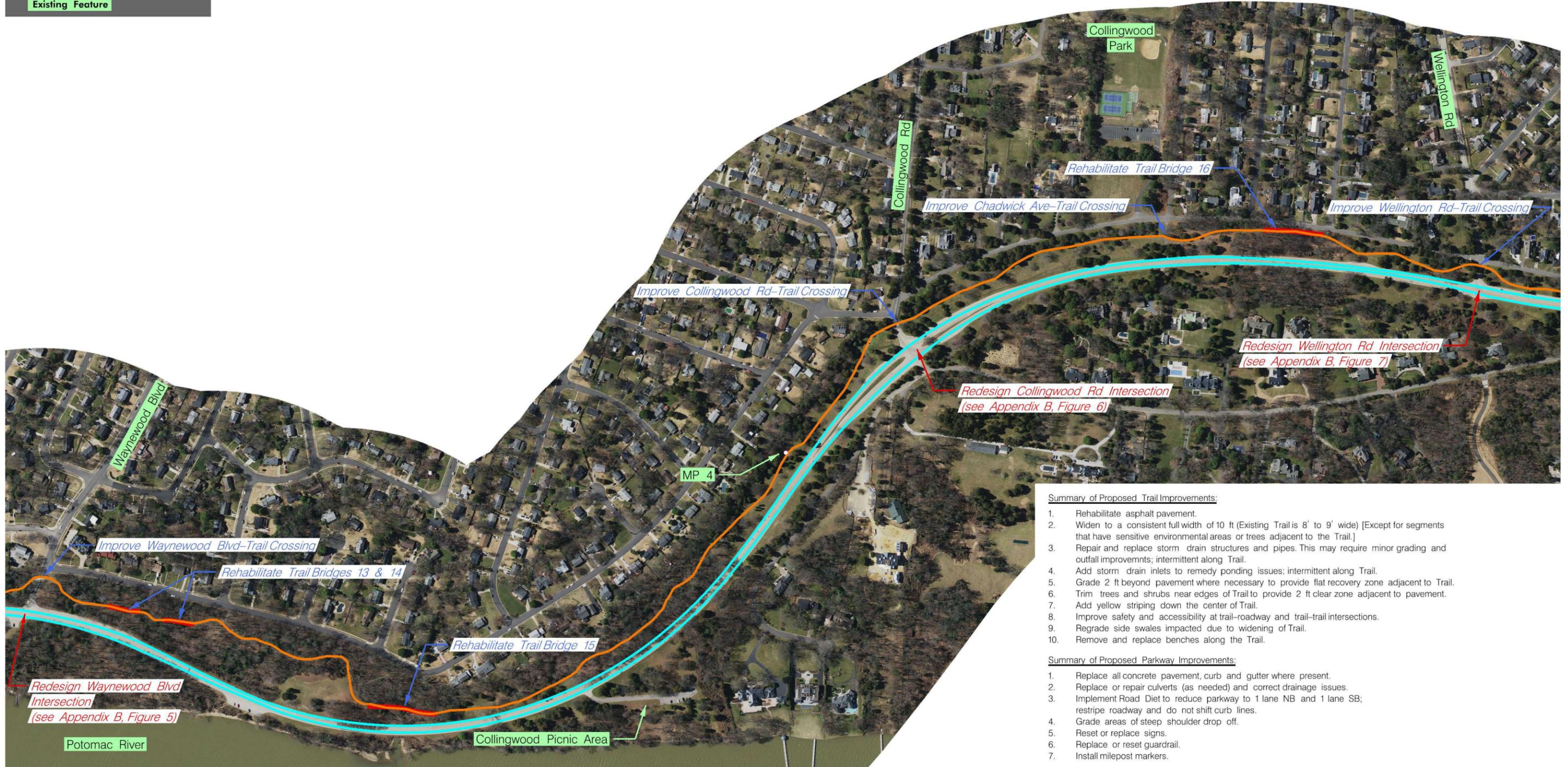
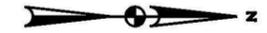


George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Proposed Parkway Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 10 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

Summary of Proposed Parkway Improvements:

1. Replace all concrete pavement, curb and gutter where present.
2. Replace or repair culverts (as needed) and correct drainage issues.
3. Implement Road Diet to reduce parkway to 1 lane NB and 1 lane SB; restripe roadway and do not shift curb lines.
4. Grade areas of steep shoulder drop off.
5. Reset or replace signs.
6. Replace or reset guardrail.
7. Install milepost markers.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Proposed Parkway Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 10 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

Summary of Proposed Parkway Improvements:

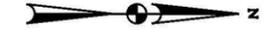
1. Replace all concrete pavement, curb and gutter where present.
2. Replace or repair culverts (as needed) and correct drainage issues.
3. Implement Road Diet to reduce parkway to 1 lane NB and 1 lane SB; restripe roadway and do not shift curb lines.
4. Grade areas of steep shoulder drop off.
5. Reset or replace signs.
6. Replace or reset guardrail.
7. Install milepost markers.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Proposed Parkway Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 10 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

Summary of Proposed Parkway Improvements:

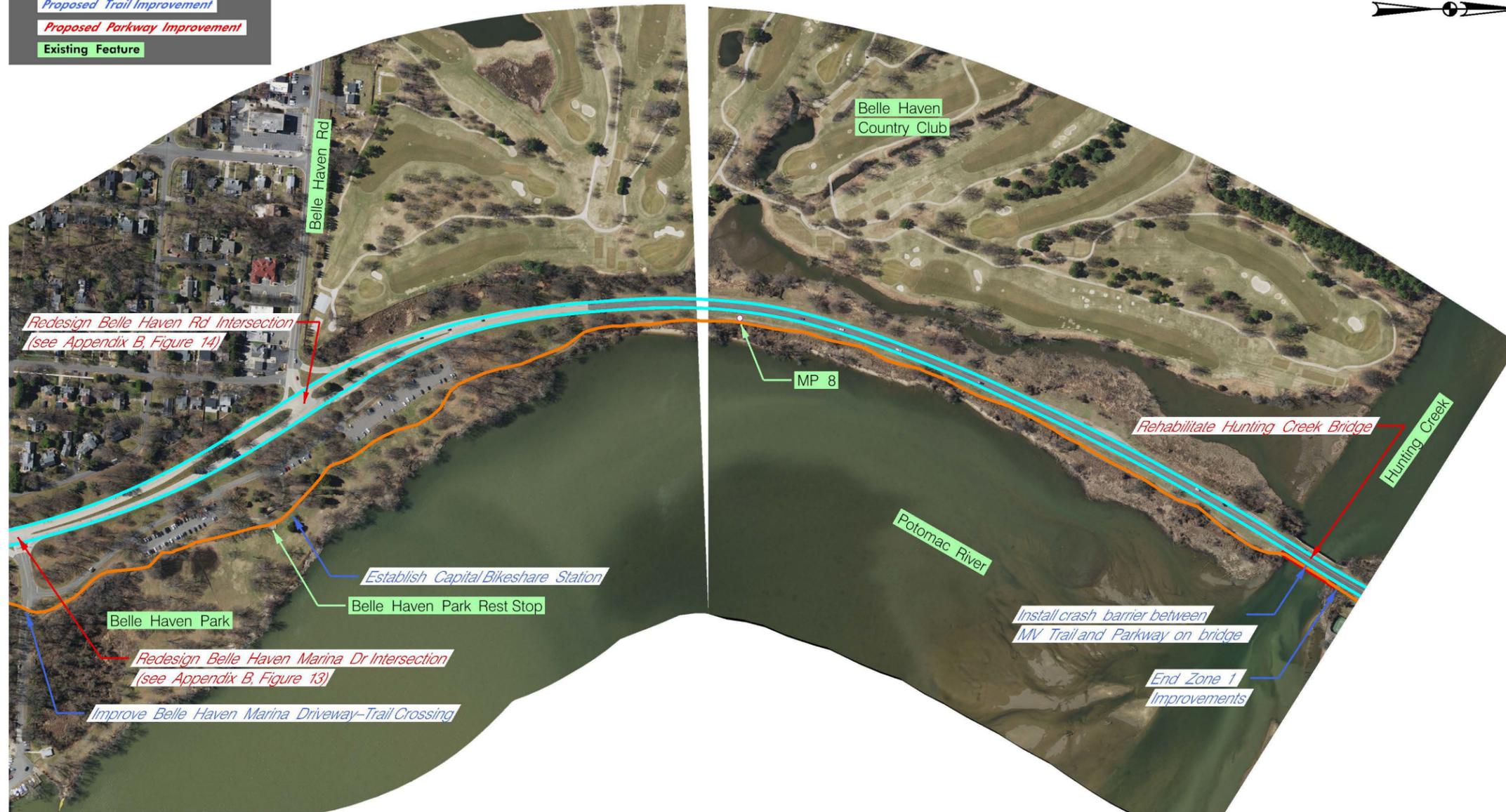
1. Replace all concrete pavement, curb and gutter where present.
2. Replace or repair culverts (as needed) and correct drainage issues.
3. Implement Road Diet to reduce parkway to 1 lane NB and 1 lane SB; restripe roadway and do not shift curb lines.
4. Grade areas of steep shoulder drop off.
5. Reset or replace signs.
6. Replace or reset guardrail.
7. Install milepost markers.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Proposed Parkway Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 10 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

Summary of Proposed Parkway Improvements:

1. Replace all concrete pavement, curb and gutter where present.
2. Replace or repair culverts (as needed) and correct drainage issues.
3. Implement Road Diet to reduce parkway to 1 lane NB and 1 lane SB; restripe roadway and do not shift curb lines.
4. Grade areas of steep shoulder drop off.
5. Reset or replace signs.
6. Replace or reset guardrail.
7. Install milepost markers.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



- Legend**
- Mount Vernon Trail
 - Mount Vernon Trail Bridge
 - City of Alexandria (No Improvements Proposed)
 - GW Memorial Parkway
 - Proposed Trail Improvement
 - Existing Feature



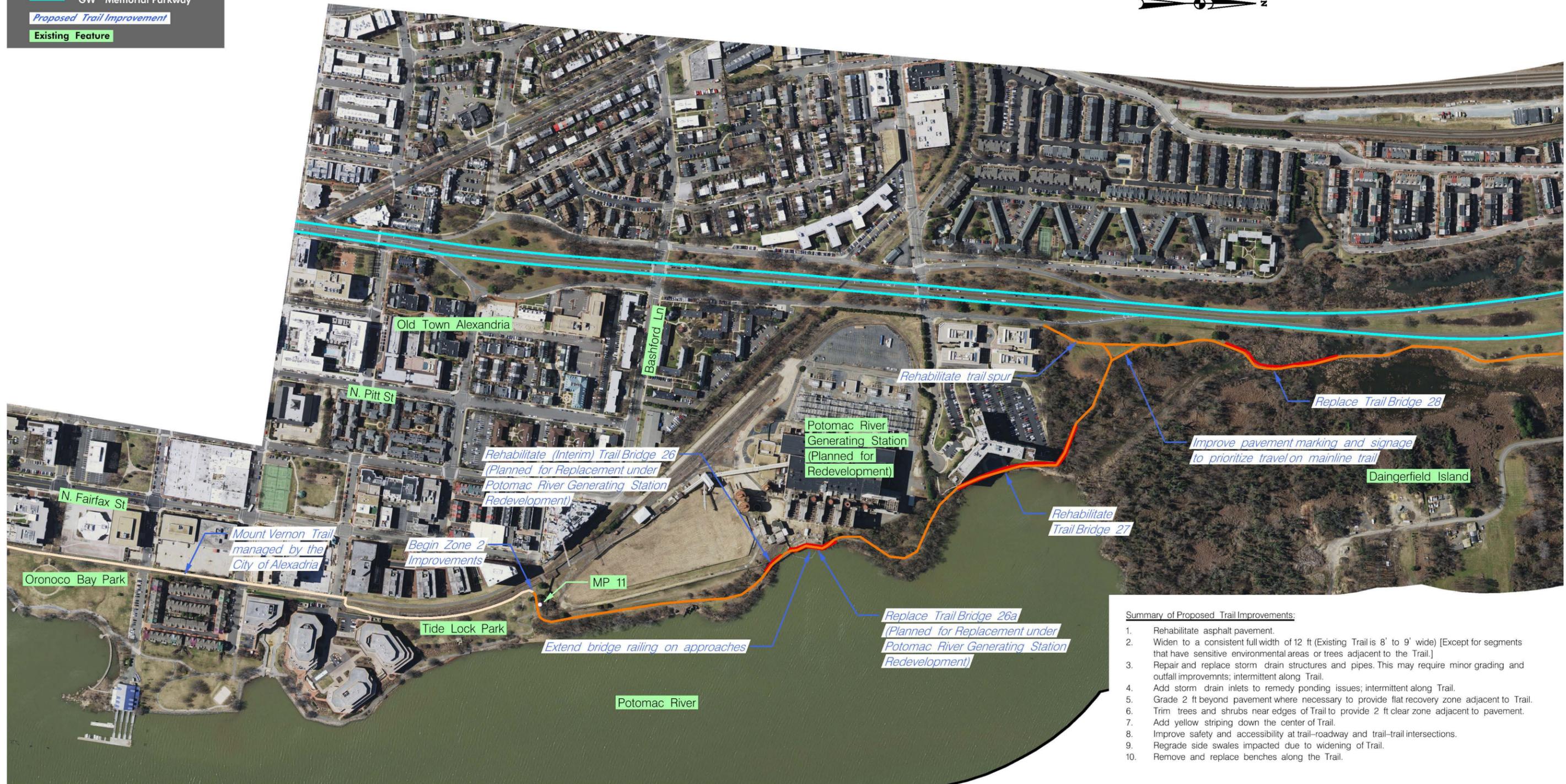
Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



- Legend**
- Mount Vernon Trail
 - Mount Vernon Trail Bridge
 - City of Alexandria (No Improvements Proposed)
 - GW Memorial Parkway
 - Proposed Trail Improvement
 - Existing Feature



Summary of Proposed Trail Improvements:

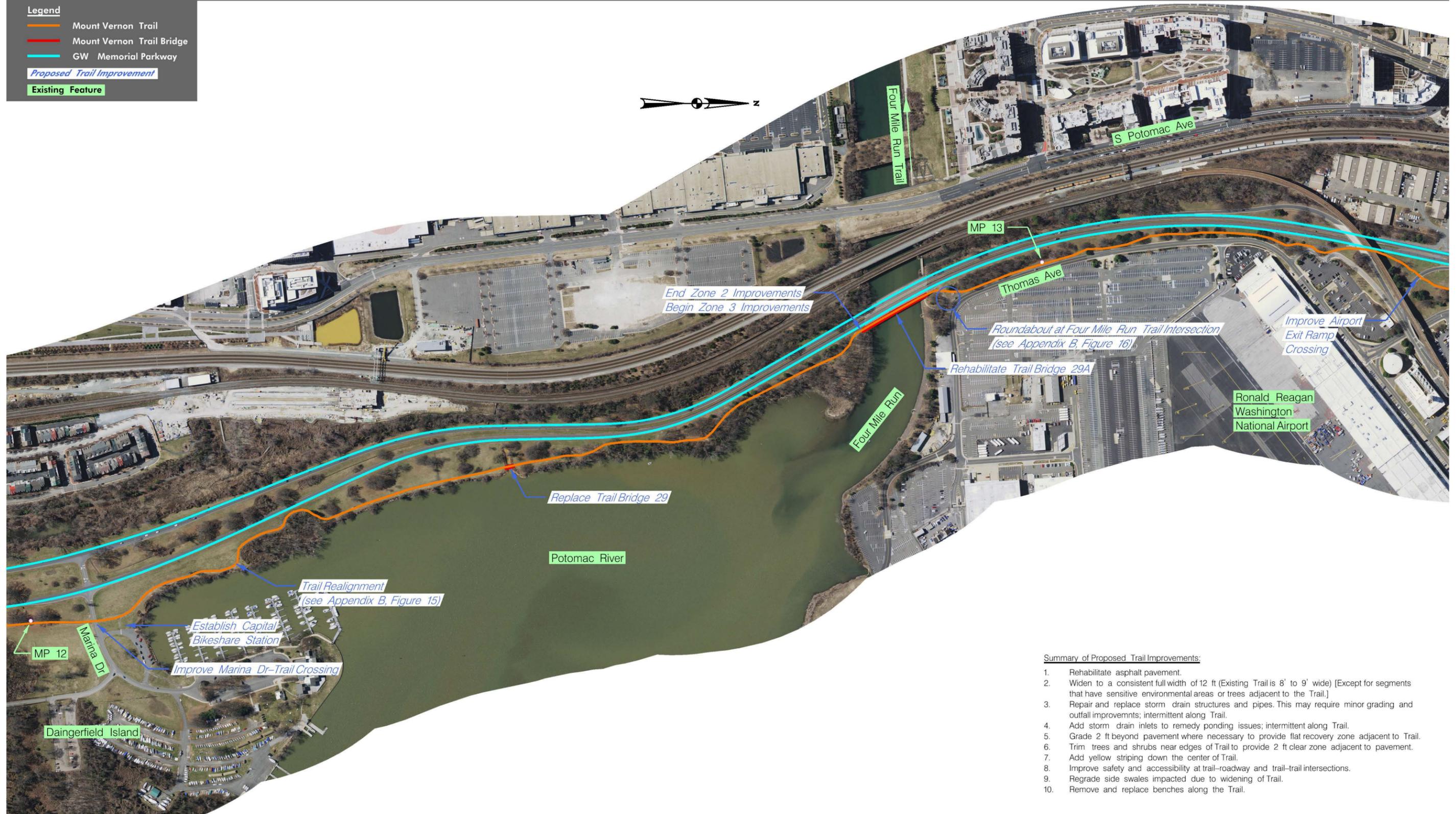
1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

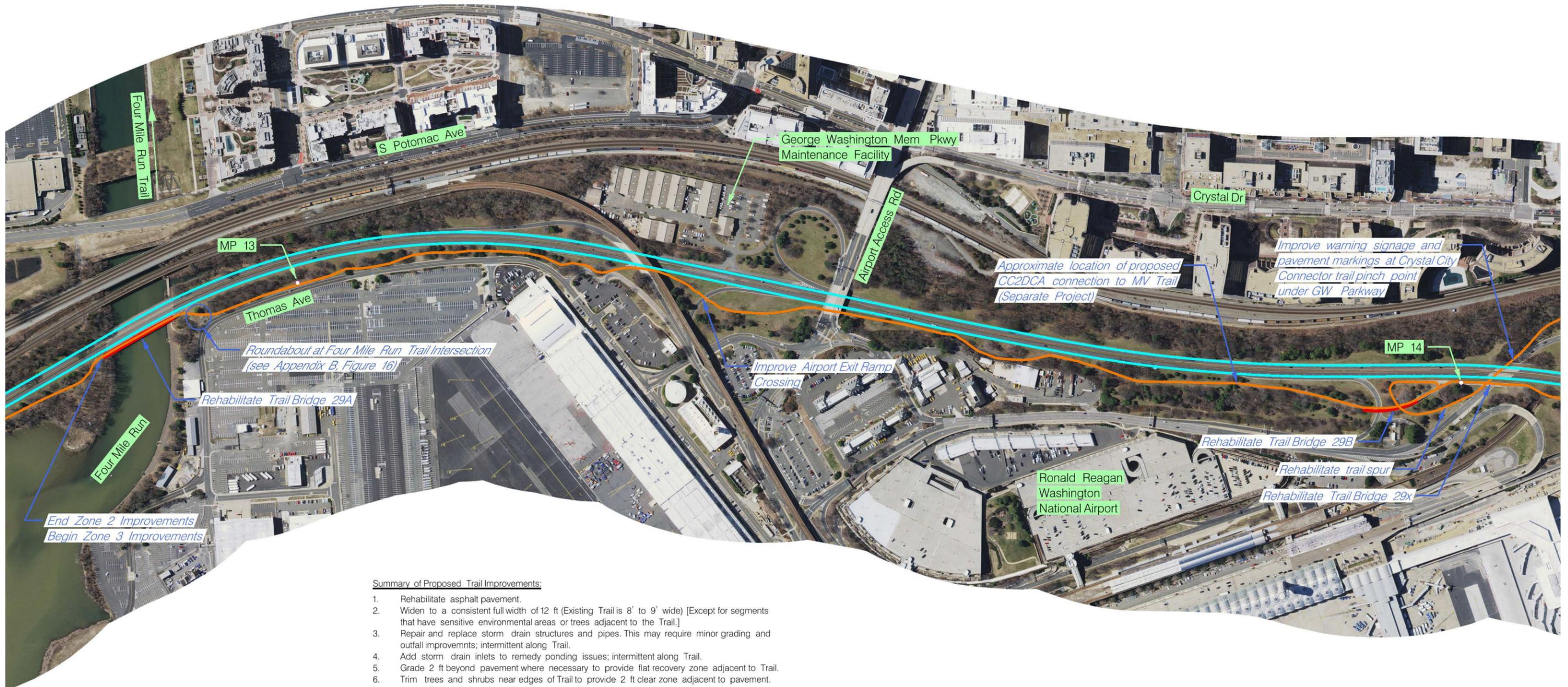
1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

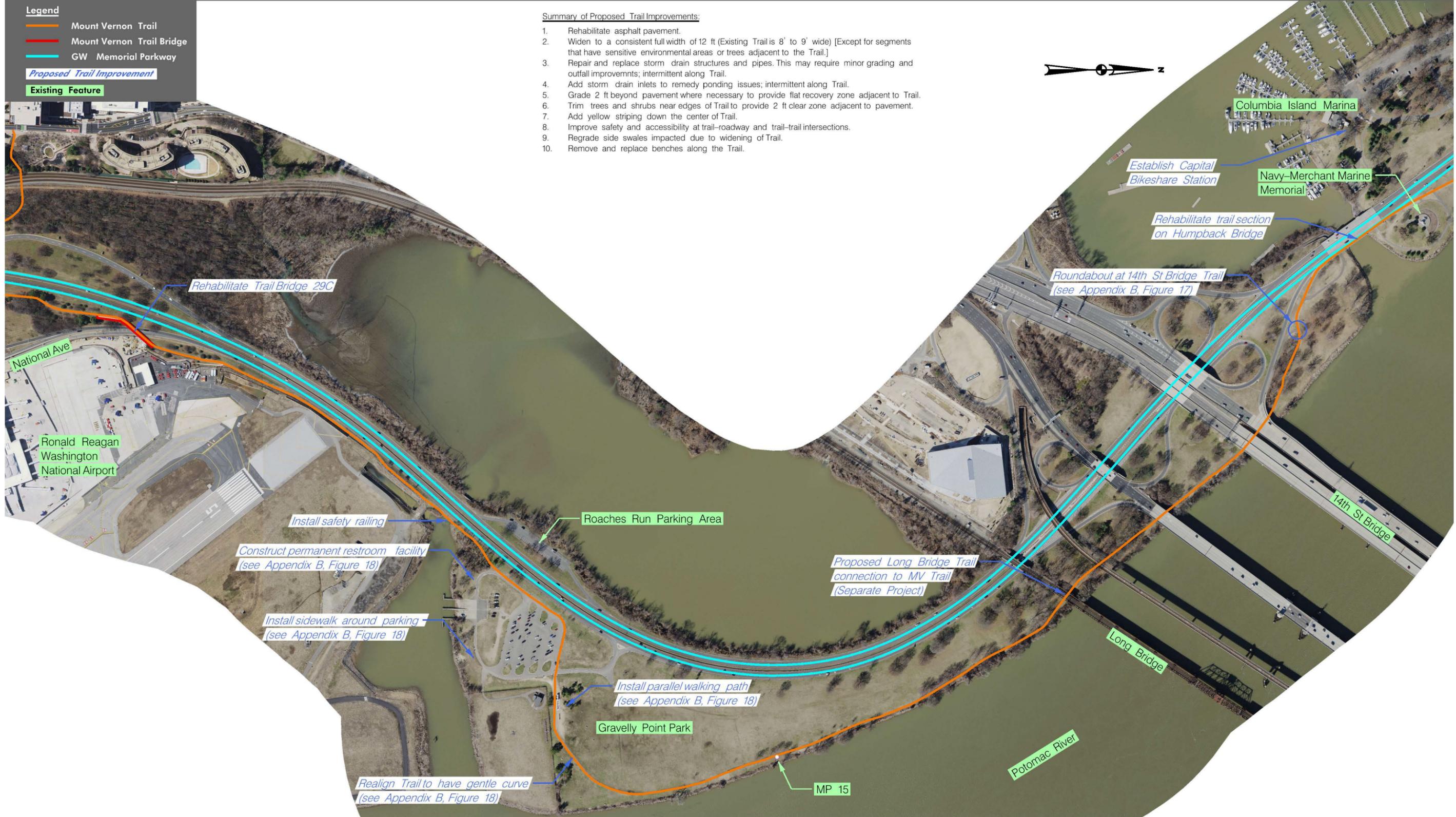
- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway

Proposed Trail Improvement

Existing Feature

Summary of Proposed Trail Improvements:

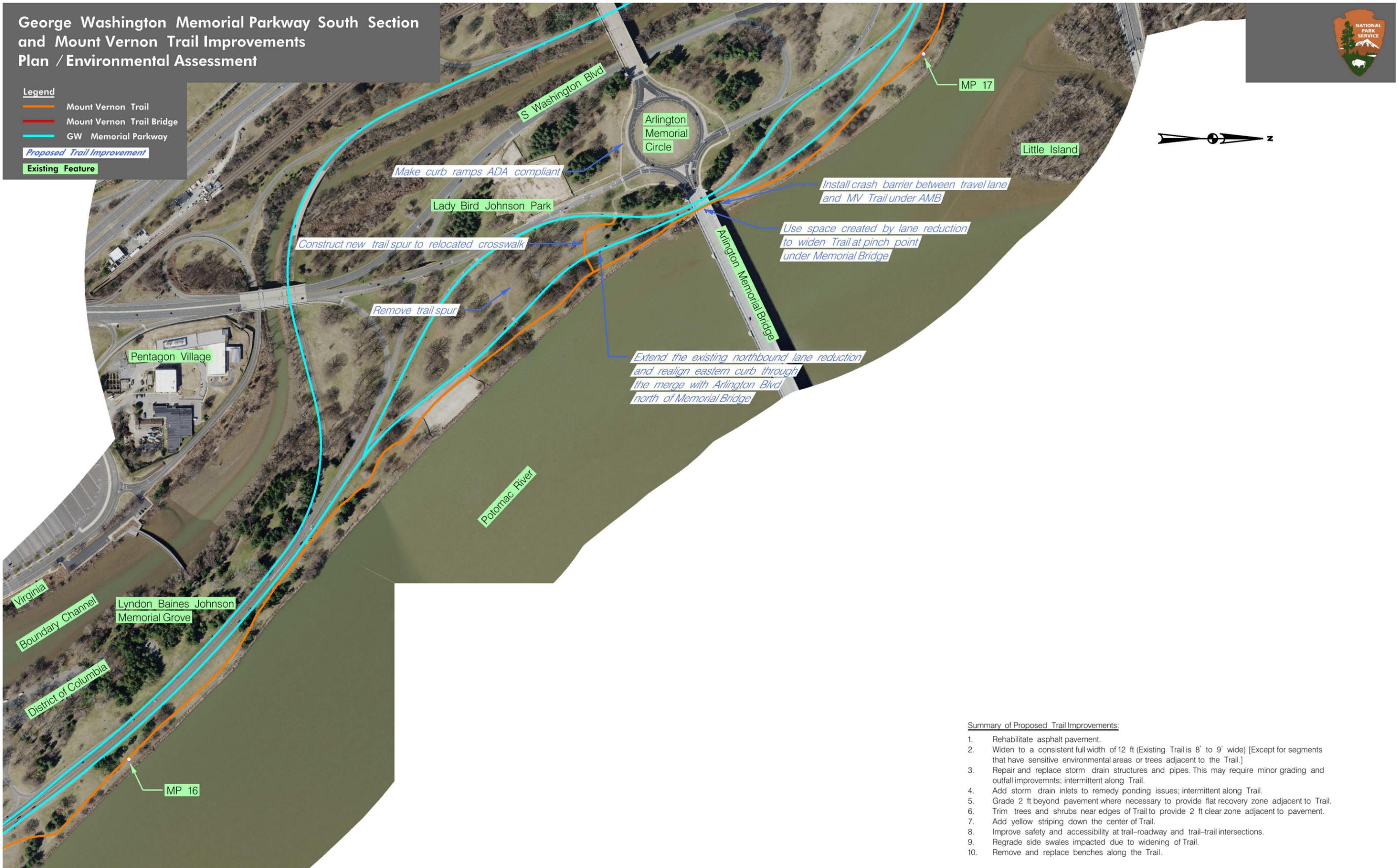
1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.



George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



- Legend**
- Mount Vernon Trail
 - Mount Vernon Trail Bridge
 - GW Memorial Parkway
 - Proposed Trail Improvement
 - Existing Feature



Summary of Proposed Trail Improvements:

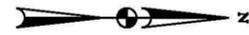
1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

George Washington Memorial Parkway South Section and Mount Vernon Trail Improvements Plan / Environmental Assessment



Legend

- Mount Vernon Trail
- Mount Vernon Trail Bridge
- GW Memorial Parkway
- Proposed Trail Improvement
- Existing Feature



Summary of Proposed Trail Improvements:

1. Rehabilitate asphalt pavement.
2. Widen to a consistent full width of 12 ft (Existing Trail is 8' to 9' wide) [Except for segments that have sensitive environmental areas or trees adjacent to the Trail.]
3. Repair and replace storm drain structures and pipes. This may require minor grading and outfall improvements; intermittent along Trail.
4. Add storm drain inlets to remedy ponding issues; intermittent along Trail.
5. Grade 2 ft beyond pavement where necessary to provide flat recovery zone adjacent to Trail.
6. Trim trees and shrubs near edges of Trail to provide 2 ft clear zone adjacent to pavement.
7. Add yellow striping down the center of Trail.
8. Improve safety and accessibility at trail-roadway and trail-trail intersections.
9. Regrade side swales impacted due to widening of Trail.
10. Remove and replace benches along the Trail.

