

**National Park Service**  
**U.S. Department of the Interior**

**Prince William Forest Park Comprehensive Trails Plan and Environmental Assessment**  
Prince William County, Virginia



**PRINCE WILLIAM FOREST PARK**  
**COMPREHENSIVE TRAILS PLAN**  
**ENVIRONMENTAL ASSESSMENT**  
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# Prince William Forest Park Comprehensive Trails Plan and Environmental Assessment

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## PURPOSE AND NEED

The National Park Service (NPS) is developing a Comprehensive Trails Plan for Prince William Forest Park (the proposed project). Prince William Forest Park (PRWI, or “the park”) is located in Prince William and Stafford Counties, Virginia and is the largest protected natural area in the NPS National Capital Region. Within the National Park System, PRWI is the largest example of a Piedmont forest and contains the largest collection of structures built by the Civilian Conservation Corps (CCC).

The purpose of the proposed project is to provide comprehensive guidance for enhancing the park’s trail system and visitor experience in a manner that is sympathetic with the natural and cultural surroundings and balances resource protection with intended trail uses and long-term management. The proposed project is meant to provide park managers with a framework by which they can manage and maintain existing trails; close/realign existing trails when needed; add new trails and access points where appropriate; and, where feasible, create trails that are universally accessible to meet the Architectural Barriers Act Accessibility Standards (ABAAS) standards.

The Plan is needed to address the following concerns and on-going issues affecting the park’s trail system:

- Over the years, trail segments were added incrementally, without cohesive planning. The resulting trail system has connection issues and is difficult to maintain.
- Many park trails have eroded and degraded due to poor design and alignment, resulting in safety concerns.
- Due to heavy use and erosion, some trail segments are contributing to streambank failures, which increase stream sedimentation and habitat degradation.
- Some trail segments do not connect features of interest within the park, which encourages visitors to go off trail, creating resource issues.
- There is a lack of standardized trail signage.
- The full breadth of allowable trail uses has never been comprehensively planned and assessed.
- The park lacks logical connections to, and integration with, local and regional trail systems.
- The park’s trail system has no direct access from Route 234. Northern neighbors must travel roughly eight to ten miles to reach the park’s main entrance.

## PROJECT AREA

The approximately 14,500-acre project area is located in Prince William and Stafford Counties, Virginia, approximately 30 miles south of Washington, DC. The park is bordered by Interstate (I)-95 to the east, VA 234 (Dumfries Road) to the north, and Marine Corps Base Quantico and Marine Corps Community Services (MCCS) Quantico land to the south and west. Residential communities near the park are located predominantly off of VA 234 (see **Figure 1**). The park consists primarily of Piedmont forest with multiple elevation changes. Important water resources that traverse the park include the headwaters and course of North Branch of Quantico Creek, the course of South Fork Quantico Creek and North Branch Chopawamsic Creek, and all tributaries of the Potomac River within the Chesapeake Bay Watershed.

## PLANNING ISSUES AND CONCERNS FOR DETAIL ANALYSIS

The NPS, participating agencies and stakeholders, and the public identified issues and concerns for detailed analysis during the internal and public scoping processes. These issues and concerns are included in the impact topics that are discussed in the “Affected Environment and Environmental Consequences” section of this Environmental Assessment (EA). The proposed project includes the creation of 12.9 miles of new trails, approximately 29.3 miles of realigned existing trails, approximately 4.3 miles of trails that are universally accessible, expansion of trail uses to include equestrian and additional mountain biking

activities, installation of a water access point and viewing platform, four new park access points (including three new parking areas), and four expanded parking areas.

The proposed project could add new access points to the park, open new areas of the park to the public, provide more connected and looped trail experiences, and expand recreation opportunities. Visitors in vehicles can currently only access the park through the main park entrance on the south side of the park via VA 619 (Joplin Road). Some of the park's existing trails require return through the same route. Other existing trails are loops, but do not offer options for longer or shorter routes. New trails could increase visitor access from outside the park and improve connectivity between the park's existing trail system. Trail bicycle use is currently restricted to the park's 0.2-mile shared use trail, in addition to the 10.5 miles of maintained gravel roads (fire roads), which are not appropriately designed for mountain biking. Horseback riding is not currently allowed at the park. Universally accessible trails are currently limited. The proposed project's potential impacts on visitor access, experience, opportunities, and connectivity are analyzed in detail in the Visitor Use and Experience section of this EA.

The proposed project could introduce or change contributing elements of the documented historic properties listed in the National Register and cultural landscapes. The Prince William Forest Park Historic District encompasses the entire park north and east of VA 619 (Joplin Road) and was listed in the National Register of Historic Places (NRHP) in 2012. Cabin Camps 1-4 and the Cabin Branch Pyrite Mine were individually listed in the NRHP as historic districts in 1989 and 2002, respectively. Historic properties are also documented in a Cultural Landscapes Inventory (CLI) for Cabin Camp 1. The proposed project's potential impacts on historic properties and cultural landscapes are analyzed in detail in the Historic Structures and Cultural Landscapes sections of this EA.

### **PLANNING ISSUES AND CONCERNS DISMISSED FROM FURTHER ANALYSIS**

Some issues and concerns identified during scoping were considered by the NPS, but were ultimately dismissed from detailed analysis because they were determined not central to the proposal or not of critical importance. This section will provide brief descriptions of the issues and concerns determined to not warrant further consideration, as well as a summary justification for the dismissal of each issue.

**Potential for the project to impact archeological resources.** The proposed project has been designed to avoid areas within a 33-foot (10-meter) perimeter around known archeological sites in the park, excluding the proposed conversion of the existing Lykes Lane trail to an accessible trail. Lykes Lane currently traverses through a known archeological site; however, the conversion of this trail to an accessible trail would not result in additional disturbance to the known archeological site because the improvements would be rerouted to avoid the known archeological site.

In areas of the landscape where in situ archeology may occur, such as on lands not previously surveyed for archeology nor disturbed by earlier construction activities, the NPS would conduct a Phase 1 archeological investigation where ground disturbance is proposed after exact project footprints are identified and prior to site work. Any such archeological studies and investigations would be carried out and evaluated for effect before construction and in consultation with the Virginia State Historic Preservation Office (SHPO). Consultations with the Virginia SHPO would occur under the provisions outlined in 36 Code of Federal Regulations (CFR) Part 800 and regulations issued by the Advisory Council on Historic Preservation (ACHP) implementing section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code (USC) 306108). If NRHP-eligible archeological resources are found to be present, the NPS would define the appropriate avoidance, minimization and mitigation measures to be taken in consultation with the SHPO.

Ongoing impacts on archeological resources from existing trails would be addressed through re-routing of trails or the use of wood chips, landscape fabric, or other methods to cover exposed resources. PRWI would manage these impacts in accordance with NPS policies. As a result, the impact topic of archeological resources was dismissed from additional analysis in this EA.



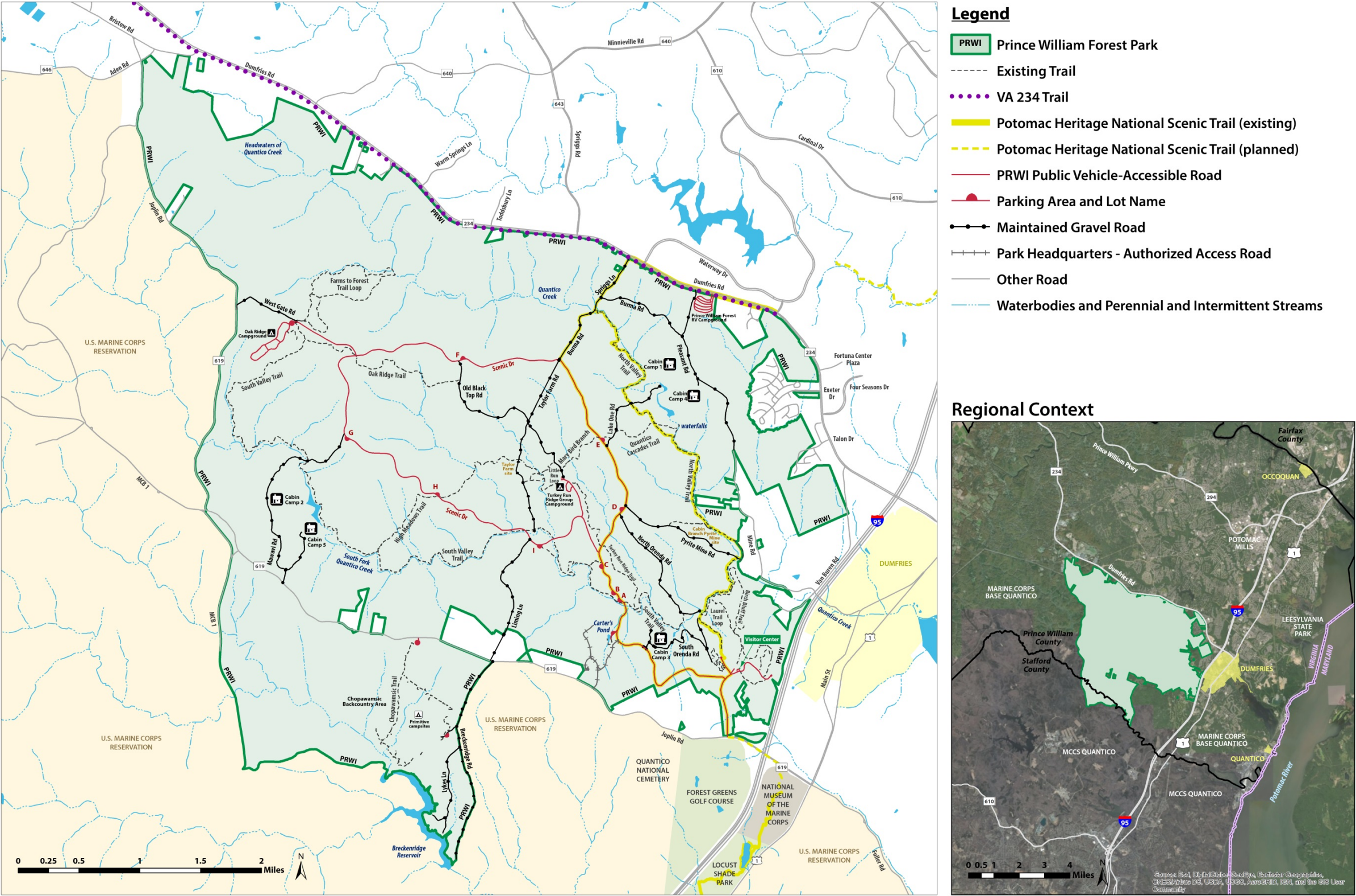


Figure 1: Project Area and Regional Context

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**Potential for the project to impact wetlands.** Approximately 460 acres of the 14,500-acre project area (3.1 percent) are classified as wetlands according to the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory. Wetlands are located throughout the project area along the park's creeks and their tributaries and include freshwater pond, lake, riverine, freshwater emergent, and freshwater forested/shrub wetlands.

The proposed project would add new trail crossings within wetlands; realign sections of existing trails currently within wetlands; convert existing trails in wetlands to accessible foot, mountain biking, or equestrian trails; and add a water access point, such as a pier or dock, to Lake 2/5. The NPS would adhere to procedures set forth in *Procedural Manual #77-1: Wetland Protection* in order to comply with NPS *Director's Order (D.O.) #77-1: Wetland Protection* and to avoid, minimize, and compensate for adverse impacts on wetlands. *Procedural Manual #77-1* defines the actions listed below, which include elements of the proposed project that may be excepted actions from the Statement of Findings requirements and compensation requirements described in the manual as long as specific conditions and Best Management Practices (BMPs) are satisfied. The NPS would adhere to the following conditions and BMPs in the development of trail crossings of wetlands:

- Wetland impacts from fill placement as a result of scenic overlooks and foot/bike trails or boardwalks (including signs), where primary purposes include public education, interpretation, or enjoyment of wetland resources, would be 0.1 acre or less (parking lots, access roads, borrow sites, and other associated facilities cannot be excepted.)
- Small boat ramps/launches, piers, or docks would have a total long-term wetland impact of 0.1 acre or less for the entire project (both onsite and offsite).
- Minor stream crossings would use bridges or other structures that completely span the channel and associated wetland habitat (i.e., no pilings, fill, or other support structures in the wetland/stream habitat).

The 0.1 acreage limit applies to "single and complete projects" located on discrete sites that also have "independent utility" (i.e., are fully functional units by themselves). Riverine wetland crossings associated with new trails and converted existing trails would be constructed to span the full channel width from uplands to uplands, thereby avoiding impacts to riverine wetlands. Realigned sections of existing trails would also be realigned at least 50 feet away from wetlands to the extent feasible or would install boardwalks and bridges completely spanning the channel, in accordance with *Procedural Manual #77-1*. The new water access point at Lake 2/5 would also not result in wetland impacts greater than 0.1 acres.

The NPS would also adhere to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899, obtain all necessary federal and state permits for proposed project actions occurring in wetlands, and adhere to applicable requirements set forth in the permits. The proposed project would also be conducted in accordance with the Chesapeake Bay Preservation Area Designation and Management Regulations. Adherence to the requirements of *Procedural Manual #77-1* and applicable federal and state permits and regulations would ensure that the proposed project would avoid wetlands and minimize unavoidable wetland impacts to the extent feasible. As a result, this impact topic was dismissed from further consideration in this EA.

**Potential for the project to impact floodplains.** Approximately 171 acres of the 14,500-acre project area (1.2 percent) are located within the 100-year and 500-year floodplains. The floodplains within the project area are primarily located south of VA 619 along North Branch Chopawamsic Creek and the Breckenridge Reservoir, and along South Fork Quantico Creek north of the Lake 2/5 dam (FEMA n.d.). The proposed project would not add accessible trails, new parking areas, or public access roads, nor expand existing parking areas in the 100-year or 500-year floodplain. To further avoid impacts, the proposed project would also not convert existing hiking-only trails in the floodplain to shared-use trails.



The proposed project would add some new trail sections in the floodplain and could realign sections of the Chopawamsic Trail and South Valley Trail with design issues currently in the floodplain. The NPS would adhere to procedures set forth in *Procedural Manual #77-2: Floodplain Management* to eliminate or minimize impacts on the 100-year floodplain to the extent possible. *Procedural Manual #77-2* does not apply to certain park functions that are often located near water for the enjoyment of visitors but require little physical development and do not involve overnight occupation, including “foot trails.”

The NPS would obtain necessary federal and state permits for proposed project actions occurring in the 100-year floodplain and adhere to applicable requirements set forth in the permits to avoid, mitigate, or otherwise minimize floodplain impacts. Adherence to the requirements of *Procedural Manual #77-2* and applicable federal and state permits, in consideration with the relatively small area of the floodplain that would be disturbed at PRWI, would ensure that the proposed project would have a minimal potential to affect the capacity of the 100-year floodplain to store or convey floodwaters, or to result in the displacement of floodwaters further downstream. As a result, this topic was dismissed from further analysis in this EA.

**Potential for the project to impact water resources.** The proposed project would disturb an estimated 28.3 acres of soil and remove an estimated 27.1 acres of vegetation within the 14,500-acre project area due to clearing for trails and parking. Such disturbance and vegetation removal would increase the vulnerability of soil to water and wind erosion and potentially result in the corresponding sedimentation and pollution of downstream watercourses during construction. The NPS and/or its contractors would adhere to applicable BMPs during the construction phases to minimize the erosion of exposed soils and the corresponding pollution and sedimentation of downstream watercourses. Proposed project actions disturbing one acre or more of earth would obtain coverage under Virginia’s General Permit for Discharges of Stormwater from Construction Activities, which would require the preparation of a stormwater management plan and an erosion and sediment control plan. Adherence to the requirements of the permit, stormwater management plans, and erosion and sediment control plans would minimize construction-related impacts on water resources.

The construction of the water access point to Lake 2/5 could involve in-water construction to install support piles, which would potentially disturb bottom sediments and increase turbidity in Lake 2/5 and downstream channels. The NPS and/or its contractors would use applicable BMPs to minimize sediment disturbance and turbidity. Any increases in turbidity would cease upon the completion of the water access point.

New, realigned, and equestrian trails would be designed to be sustainable in relation to slopes and would let water sheet across a trail in a manner that minimizes erosion and sedimentation. Specific BMPs to minimize soil erosion, sediment disturbance, and/or turbidity would be developed as the planning and design state of the proposed project continues. Soils exposed during construction would be re-vegetated or otherwise stabilized following construction completion, at which time construction-related erosion and sedimentation would cease. In areas where tree and vegetation removal would occur, the areas would be revegetated using native grasses, shrubs, or other plants.

Some existing trails contribute to streambank failures, which result in ongoing increases in stream sedimentation. Those trails that are not realigned would be rehabilitated to minimize erosion and reduce drainage issues through trail maintenance and improvements such as constructing grade dips, reestablishing outslopes, and placing, extending, or replacing bogwalks, footbridges, or other measures in low-lying trail areas where the trail becomes muddy during heavy rain events. The phasing of the proposed project over a period of 10 to 15 years would further minimize impacts on water resources resulting from construction activities. The NPS would also monitor equestrian trails for and remove horse manure. The NPS could utilize existing volunteer organizations at the park, such as the Potomac Appalachian Trail Club (PATC), to perform these activities. Adherence to these practices would ensure

that adverse impacts on water resources resulting from the introduction of equestrian trails in the park would be minimal.

The proposed project would not increase the volume of stormwater runoff generated at the park through design or the use of BMPs. Realigned trails, and ongoing trail maintenance to rehabilitate existing trails not realigned, would reduce stormwater run-off through improved design, thereby reducing stream sedimentation. New, realigned, and accessible trails, as well as two new parking lots at Independent Hill and Lykes Lane, would be constructed of permeable materials that would facilitate the percolation of stormwater into the ground. A new parking lot at the intersection of VA 234 and Spriggs Lane and the expansions of parking lots E, F, H, and Oak Ridge Campground Front Lot would each exceed 5,000 square feet and be paved. As required by the Energy Independence and Security Act of 2007, the parking areas would be required to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. As a result, this topic was dismissed from further analysis in this EA.

**Potential for the project to impact vegetation.** Apart from the developed areas such as the visitor center, cabin camps, roads, and parking lots, the project area is almost entirely covered in forest, mostly mixed hardwood forest with a variable understory (NPS 2018). The proposed project would remove approximately 27.1 acres of vegetation within the 14,500-acre project area over the length of 46.0 miles of new and realigned trails, additional trails next to existing maintained gravel roads, and seven new and expanded parking areas. The installation of a viewing platform at Breckenridge Reservoir Selective would result in the removal of understory and trees. The proposed project would avoid large trees to the extent feasible and would not remove vegetation within park areas identified as oligotrophic saturated forest or within 150 feet of small whorled pogonia (*Isotria medeoloides*) sites. The proposed project would also avoid cutting and removing snags (i.e., hollow trunks, excavated cavities, and dead branches in standing, dead, or dying trees) that may serve as important wildlife habitat structures.

New and realigned trails would be designed to be sustainable trails in relation to slopes and would let water sheet across a trail in a manner that minimizes erosion. Erosion can cause tree root exposure and damage to surrounding trees and shrubs. Specific BMPs to minimize soil erosion would be developed as the planning and design state of the proposed project continues. Soils exposed during construction would be re-vegetated or otherwise stabilized following the completion of construction, at which time construction-related erosion would cease. In areas where tree and vegetation removal would occur, the areas would be revegetated using native grasses, shrubs, or other plants.

The proposed project's addition of approximately 12.9 miles of new trails could bring seeds of exotic and invasive plant species into areas of the park that are currently inaccessible to visitors. The proposed project would also provide approximately 5.3 miles of trails for equestrian use at the park. The addition of equestrian trails in PRWI could bring seeds of exotic and invasive plant species through horse manure. The NPS would manage and remove exotic and invasive plant species in accordance to the NPS National Capital Region region-wide invasive plant management plan and specific PRWI policies. Additionally, The NPS would also produce educational materials with BMP information to prevent the introduction and spread of exotic and invasive species to distribute to equestrian groups and the public. The NPS would also post this information on the park's website. BMPs could include equestrians taking responsibility for the removal and disposal of their horse manure and recommending equestrians feed horses certified weed-free feed for several days before and during trail use. The NPS would also monitor equestrian trails for and remove horse manure in accordance with NPS policies. The NPS could utilize existing or new volunteer organizations at the park, such as PATC or equestrian clubs, to perform these activities, including the removal of exotic and invasive plant species. Adherence to these practices would ensure that adverse impacts on vegetation resulting from the introduction of new and equestrian trails in the park would be minimal. For these reasons, this topic was dismissed from detailed analysis in this EA.

**Potential for the project to impact wildlife and wildlife habitat.** Limited construction activities associated with the proposed project could have the potential to damage or remove vegetation or other features that provide habitat for common species of animal wildlife or displace or destroy specimens of common animal wildlife species. However, it is anticipated that many of the displaced specimens would relocate to similar areas of habitat during construction and return to the disturbed areas as construction activities cease and vegetation and other features providing habitat regenerates or is restored. In the long-term, some wildlife species may experience a decline and loss of habitat and some species may experience disruption through the introduction of visitor uses in previously undisturbed areas. NPS biologists or other qualified personnel would develop applicable BMPs to minimize impacts on animal wildlife. The inadvertent destruction of individual specimens of wildlife during small-scale construction activities is not anticipated to result in population-level impacts on any particular species. The implementation of the proposed project over a period of 10 to 15 years would further minimize impacts. In the long term, impacts on common species of wildlife at PRWI would be de minimis. For these reasons, this topic was dismissed from detailed analysis in this EA.

**Potential for the project to impact threatened and endangered species.** In accordance with Section 7 of the Endangered Species Act, the NPS consulted with the USFWS and Virginia Department of Conservation and Recreation's (VDCR) Division of Natural Heritage to determine the potential for, respectively, federally and state-listed protected species to be present at PRWI. This consultation indicated the potential for the federally threatened northern long-eared bat (*Myotis septentrionalis*) and small whorled pogonia (*Isotria medeoloides*) (a vascular plant), and federally endangered Indiana bat (*Myotis sodalis*) and harperella (*Ptilimnium nodosum*) (a vascular plant) to be present at the park. While not known to be present at the park, Prince William County is considered within the historic range of the federally endangered rusty patched bumble bee (*Bombus affinis*) in Virginia; the species is likely to be present in only 0.1 percent of its historical range (USFWS 2017, 2018). Additionally, the Commonwealth of Virginia has designated the little brown bat (*Myotis lucifugus*) and the tri-colored bat (*Perimyotis subflavus*) as state endangered species.

PRWI staff have confirmed through, studies by U.S. Geological Survey (USGS), Virginia Cooperative Fish and Wildlife Research Unit, and Virginia Polytechnic Institute and State University, the presence of the Indiana bat, the northern long-eared bat, the little brown bat, and the tri-colored bat at the park. PRWI has also documented the presence of roosts for the northern long-eared bat in the park. The concentration of identification of Indiana bats in the Chopawamsic Backcountry Area of the park indicates the possible presence of a roost nearby. Ongoing survey work will provide the park data on the presence of the Indiana bat and the northern long-eared bat; this information will be incorporated into ongoing park planning and management decisions.

Prior to and during the implementation period of the proposed project, the NPS would continue to consult with the USFWS and VDCR to identify activities included in the proposed action that would have the potential to affect federally and state listed threatened and endangered species. Adherence to applicable BMPs for all ground-disturbing activities would ensure that the proposed project would have no adverse impacts on the small whorled pogonia or harperella.

To avoid adverse impacts on the northern long-eared bat, the NPS would incorporate new survey information and adhere to a time-of-year restriction between June 1 and July 31 in any year for the removal of known occupied maternity roost trees or trees within 150 feet of known occupied maternity roost trees, and between April 1 to October 31 of any year for the removal of known roost trees. Further, the NPS would not remove trees within 0.25 mile of a known hibernaculum at any time of year without reinitiating Section 7 consultation with the USFWS. If specimens of the Indiana bat, little brown bat, or tri-colored bat are documented within the park prior to implementing activities associated with the proposed project, the NPS would develop and implement BMP in consultation with the USFWS to avoid adverse effects on the Indiana bat.

Through ongoing consultation with the USFWS (and VDCR as needed), adherence to applicable minimization or mitigation measures identified during the consultation process, and performing tree removal only outside of the active period from November 1 to March 31, it is anticipated that the proposed project would have no adverse impacts on federally or state-listed threatened and endangered species occurring at PRWI. As a result, threatened and endangered species and wildlife were dismissed from further analysis in this EA.

**Potential for the project to impact geology and soils.** The proposed project would disturb 28.3 acres of soils within the 14,500-acre project area due to clearing for trails and parking, including some existing trail areas without vegetation. The depth of excavation for trails and new parking lots is estimated to be 0.5 feet. The estimated 24 wetland crossings would be spanned by bridges or structures that do not require footings or that use other methods to avoid soil excavation, such as helical piers that are screwed into soils.

During the construction phases, the NPS and/or its contractors would adhere to applicable BMPs to minimize the erosion of exposed soils and the corresponding pollution and sedimentation of downstream watercourses. Construction disturbing one acre more of earth would obtain coverage under Virginia's General Permit for Discharges of Stormwater from Construction Activities, which would require the preparation of a stormwater management plan and an erosion and sediment control plan. Adherence to the requirements of the permit and stormwater management and erosion and sediment control plans would minimize construction-related impacts on soils. The phasing of the proposed project over a period of 10 to 15 years would further minimize impacts on soils resulting from construction activities.

Some portions of the proposed project, primarily the various segments of the proposed pedestrian trails, would be built on soils classified as prime farmland or farmland of statewide importance. However, no active cultivation occurs on these soils, which is primarily forest and covers most of the park. None of the proposed trails, which would be of permeable materials, would remove any land from active agriculture. As a result, this topic was dismissed from further analysis in this EA.



## ALTERNATIVES

This EA analyzes the potential environmental consequences of two alternatives. The elements of these alternatives are described in detail in this chapter. Impacts associated with the actions proposed under each alternative are outlined in the “Affected Environment and Environmental Consequences” chapter of this EA. In addition, several other approaches to enhance the park’s trail system and visitor experience were dismissed from further consideration. These concepts are described in this chapter under “Alternatives Considered but Dismissed.”

### ALTERNATIVE A: NO-ACTION

Alternative A proposes to retain the park’s existing trail system, allowed trail uses, access points, and parking areas (see **Figure 1**). Alternative A would retain the park’s existing 40-mile trail system, including both hiking-only trails and maintained gravel roads, under its current condition and maintenance regimen. Existing trail sections with moderate or severe erosion and other design issues would remain in their current location and continue to experience erosion. The only accessible trail at the park would continue to be the 0.3-mile loop Piedmont Forest Trail.

Under Alternative A, 30 miles of the park’s trails would continue to be open only to hikers. Mountain biking would continue to be allowed only on the 10.5 miles of maintained gravel roads and the 0.2-mile shared-use Muschette Trail. Equestrian uses would continue to be prohibited from the park.

Visitors would also continue to access the park by vehicle through the main park entrance on VA 619 (Joplin Road) near I-95. Visitors with vehicles would continue to access the trail system through existing internal parking areas. Some internal parking areas would continue to experience overflow parking problems.

### ALTERNATIVE B: ACTION ALTERNATIVE

Alternative B would be the implementation of the proposed project. Alternative B proposes to provide new trails and accessible trails, realign existing trail sections with design problems, and expand allowed uses on trails in the park. Alternative B also proposes to provide new access points to the park, add three new parking areas, and expand four existing parking areas, which would support connections to the existing and planned regional trail network. These changes to trail, use, access, and parking would augment ongoing trail maintenance and resources management practices. These elements are described below and shown in **Figure 2** through **Figure 4**. The “Avoidance Area” shown in these figures is described in **Appendix A**.

**Methodology and Design Parameters** - Under Alternative B, the alignment of new and realigned trails, as well as the location of new parking areas and expanded parking areas, would be carefully sited to avoid archeological sites, cemeteries, sensitive habitats, and steep and unsustainable slopes, and minimize crossings of water resources and wetlands, and unsuitable soils to the extent feasible, as described in **Appendix A**.

New and realigned trails, along with new and converted mountain biking and equestrian trails, would also be designed, constructed, and maintained according to appropriate trail design standards, including recommendations for tread width, surface, grade, cross slope, clearing, and turn parameters as also described in **Appendix A**. All accessible trails would be designed and constructed to comply with the 2015 Architectural Barriers Act (ABA) Standards, including design parameters as described in **Appendix A**.

**New Trails** - Alternative B would provide approximately 12.9 miles of new trails, which would be a 32 percent increase to the park’s trail system if fully realized. The new trails would generate links between existing trails to create shorter and longer loop options, create new pedestrian access points into the park, and connect to new areas and features of interest in the park. New trails would be added to the northwest

portion of the park, along the North Branch of Quantico Creek, and in the Chopawamsic Backcountry Area. New trails added to other areas of the park would improve trail connections to multiple locations, including South Fork Quantico Creek, within the Scenic Drive loop, and from the Brittany neighborhood subdivision off of Exeter Drive. All new trails would allow hiking. Approximately 2.0 miles and 4.1 miles of new trails would also allow mountain bikers and equestrians, respectively. No new trail sections would allow shared use by both mountain bikers and equestrians.

**Realigned Trails** - Alternative B would also close and realign sections of existing trails, including internal cabin camp trails, that suffer from moderate or severe erosion or other condition problems due to heavy use or poor design and alignment. Realigned trails would alleviate unsafe conditions; reduce erosion, which has contributed to streambank failures; and create more sustainable trails. Approximately 29.3 miles of existing trails would be realigned, including priority trail sections, identified in **Appendix B**. Ongoing trail maintenance would rehabilitate existing trails not realigned to minimize erosion and reduce drainage issues.

**Accessible Trails** - Alternative B would provide approximately 4.3 miles of trails that are universally accessible for visitors with physical disabilities. These new accessible trails would provide loop routes, create access to points of interest in the park, and connect to parking areas. Approximately 1.2 miles of new trails would be accessible trails and approximately 3.2 miles of existing trails would be converted to accessible trails.

Alternative B would provide accessible trails in Cabin Camps 1, 2, 4, and 5, specifically in areas shown in **Figure 4**. New accessible trails in these Cabin Camp areas would connect buildings and features where cabin camp user groups congregate at, or otherwise use on a daily basis (e.g., dining hall, craft, lodge, pavilion, restrooms, and council ring). The new accessible trails would create a minimum of one accessible unit in each camp.

**Expansion of Trail Uses** - Alternative B would expand the mountain biking trail system and would establish trails for horseback riding in the park. New mountain biking trails would create a loop trail option, connect trails that currently allow mountain biking (i.e., maintained gravel roads), and provide more trail options for mountain bikers in the park. There are currently no equestrian trails in the park; therefore, equestrian trails would provide a new trail use in the park.

Alternative B would open the 1.9-mile Oak Ridge Trail to mountain biking and create an approximately 5.4-mile mountain biking trail loop starting and ending at the proposed new parking area along VA 234. The trail loop would proceed along Spriggs Lane to Burma Road to Taylor Farm Road to Old Black Top Road to a new trail connecting parking lot F back to Burma Road. The Oak Ridge Trail would be improved to mountain biking trail standards and would continue to allow hikers. A trail designed, constructed, and maintained according to bicycle trail design parameters would be constructed parallel to the existing maintained gravel roads in the mountain biking trail loop. The new trail connecting parking lot F and Burma Road would allow hikers in addition to mountain bikers, but would be designed, constructed, and maintained according to bicycle trail design parameters. In total, Alternative B would provide approximately 6.6 miles of trails designed, constructed, and maintained specifically according to mountain biking trail design parameters.

Alternative B would create an approximately 7.8-mile equestrian trail loop starting and ending at the proposed new parking area at Independent Hill. The trail loop would proceed along a new connecting trail to the Farms to Forest Trail Loop to West Gate Road back to a new connecting trail. Sections of the Farms to Forest Trail Loop would be improved to equestrian trail standards and continue to allow hikers. A trail designed, constructed, and maintained according to equestrian trail design parameters would be constructed parallel to the West Gate Road. The new trails in the equestrian trail loop would allow hikers, but would be designed, constructed, and maintained according to equestrian trail design parameters. In total, Alternative B would provide approximately 5.3 miles of trails designed, constructed, and maintained specifically according to equestrian trail design parameters.

**Parking** - Alternative B would provide three new parking areas and expand four existing parking areas. The new parking areas on VA 234 (Dumfries Road) at Spriggs Lane/Waterway Drive, VA 646 (Aden Road) at Independent Hill, and at Lykes Lane near Breckenridge Road would create new access points to the park. The new parking area at VA 234 (Dumfries Road) would be a paved lot of up to 100 spaces that would accommodate cars, buses, and RVs, covering approximately 1.1 acres. The new parking area at VA 646 (Aden Road) would be a lot of up to 25 spaces of crushed stone (or similar material) that could accommodate eight horse trailers covering approximately 1.2 acres. The new parking area at Lykes Lane would replace an informal parking area located north of Lykes Lane, off Breckenridge Road. Both the new VA 646 (Aden Road) and Lykes Lane lots would be crushed stone (or similar permeable material).

Four existing parking lots (lots E, F, H, and the Oak Ridge Campground Front Lot) would be expanded by a total of up to 46 paved parking spaces covering 0.5 acres. The number of parking spaces and surface type for each new and expanded existing parking area is provided in **Appendix A**.

**New Perimeter Access** - New perimeter parking would create access points to the park, provide direct access to the park from VA 234 and the Independent Hill area, connect to the park's trail system, and accommodate future visitor growth. New parking areas and expanded parking areas in the interior of the park would alleviate parking demand and overflow, provide more parking options along Scenic Drive, improve parking connectivity to trails, and accommodate future visitor growth. A new trail from the Brittany neighborhood would enable visitor access from the northeast portion of the park. Alternative B would not preclude future access to Mine or Van Buren Roads as part of a potential regional trails and pedestrian network.

**Other Visitor Access Improvements** - Alternative B would provide a water access point, such as a pier or dock, to Lake 2/5 along the South Valley Trail to allow non-Cabin Camp users to visit the lake. Alternative B would also add a viewing platform at the end of Lykes Lane to provide visitors with views to the Breckenridge Reservoir.

Alternative B would also improve signage throughout the park consistent with the Prince William Long-Range Interpretive Plan (NPS 2009) guidelines. Standardized trail signs would be placed at new trailheads, accessible trailheads, critical trail intersections, and trailheads that allow mountain bikers or equestrians. New signs would provide clear direction for the navigation of new, existing, and realigned trails. Signs at accessible trailheads would comply with the 2015 ABA Standards for trailhead signs. Signs at shared-use trailheads would provide information about the allowed trail user groups and appropriate trail yielding etiquette. Signs at the intersection of the North Valley Trail and the new Cabin Camp 1 and Cabin Camp 4 connecting trails would inform users of the park's larger trail system that these new connecting trails are only for Cabin Camp users. New park entrance and orientation signage would also be added to the new VA 234 (Dumfries Road) at Spriggs Lane/Waterway Drive and VA 646 (Aden Road) at Independent Hill parking areas.

## **ALTERNATIVES CONSIDERED BUT DISMISSED**

The NPS considered a wide range of options to enhance the park's trail system and visitor experience during scoping, including alternative trail locations, multiple trail uses, and additional park access points. Some options were ultimately dismissed from further consideration, as described below.

**Perimeter Trail** - A trail around the western perimeter of the park along Joplin Road was considered; however, the option was dismissed from further consideration because the element would not meet the proposed project's Purpose and Need. A perimeter trail would be difficult to manage the trail's length around the park's 14,500-acre area. The trail's length and perimeter location would also create safety concerns. The trail could potentially result in transportation impacts on Joplin Road due to maintenance or emergency services response. A perimeter trail would create the potential for new informal social trails into the park to form; these informal trails would be difficult to patrol and would potentially encourage non-camping visitors to enter the park after hours.

**Trails Connecting Cabin Camps** - New trails providing direct connections between cabin camps were considered. Excluding Cabin Camp 3, the cabin camps are only available to rent by groups. The cabin camps are popular sites for organized groups such as scouts, church groups, clubs, weddings, and family reunions. The option was dismissed from further consideration because groups from different cabin camps could potentially disturb the privacy of other cabin camp groups and events.

**Specific Routes for Washington-Rochambeau Road and Van Buren or Mine Roads Access** – Several additional trail routes connecting to regional trails and pedestrian system were also considered. In these cases, no specific route was identified due to the need for additional information or planning.

- A new trail along the now obsolete spur of the Washington-Rochambeau Road located at the eastern edge of the park was considered. The option was dismissed from further consideration because a cultural landscape treatment approach and plan have not yet been developed for the historic road trace. This trails plan does not preclude a future trail in this location, should cultural landscape treatment options include visitor use of the trace as a trail.
- A new connecting trail from Van Buren Road or Mine Road into the park was considered as a means for adding a new access point closer to the town of Dumfries. However, Mine Road to the west of Van Buren Road and Van Buren Road to the south of Mine Road are dead-end roads without sidewalks or parking. This trails plan does not preclude the establishment of future trails in this location, if and when the roadway infrastructure would support trail connections for visitors.



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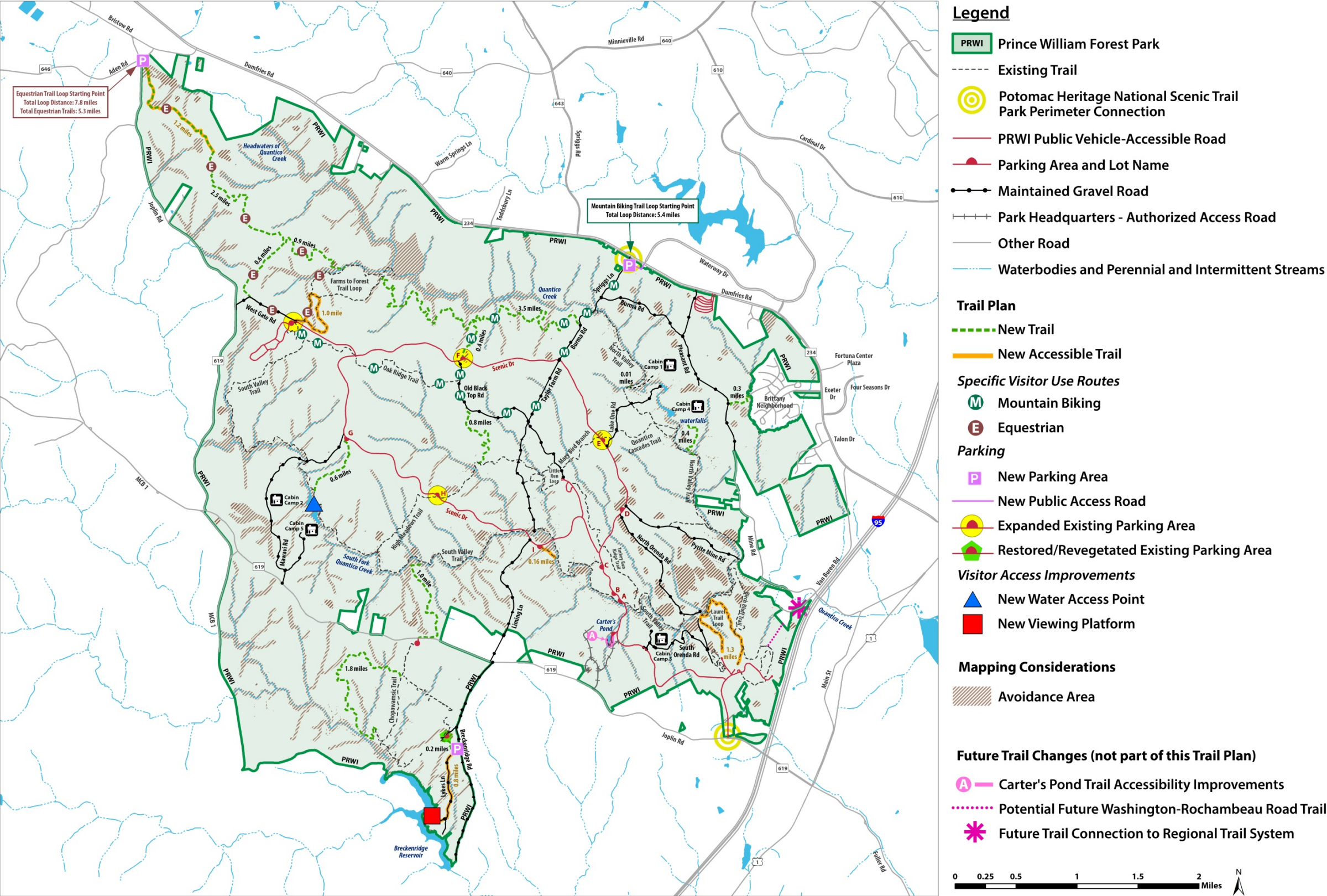


Figure 2: Action B Action Alternative



VA 646 (Aden Road) at Independent Hill



VA 234 (Dumfries Road) at Spriggs Lane/Waterway Drive



Lykes Lane



Legend

- PRWI Prince William Forest Park
- Existing Trail
- PRWI Public Vehicle-Accessible Road
- Parking Area
- Maintained Gravel Road
- Other Road
- Signalized Intersection
- Waterbodies and Perennial and Intermittent Streams
- Trail Plan
  - New Trail
  - New Accessible Trail
- Parking
  - P New Parking Area - Maximum 15 spaces
  - P New Parking Area - Maximum 25 vehicle spaces and 8 horse trailer spaces
  - P New Parking Area - Maximum 100 spaces
  - New Public Access Road
  - Restored/Revegetated Existing Parking Area
- Mapping Considerations
  - Avoidance Area

Locator Map

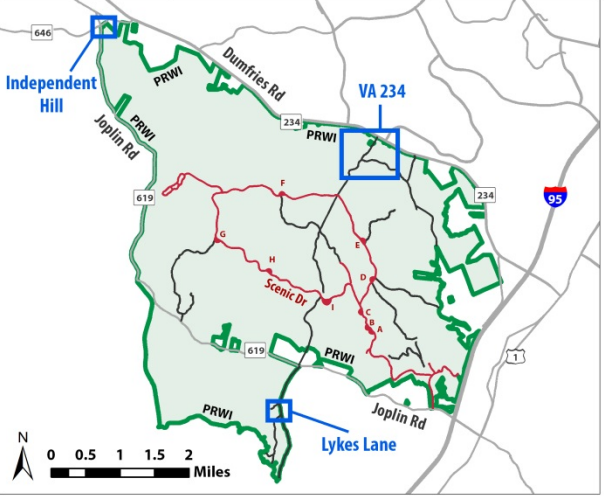


Figure 3: Action B Action Alternative – New Parking Area and Public Access Roads



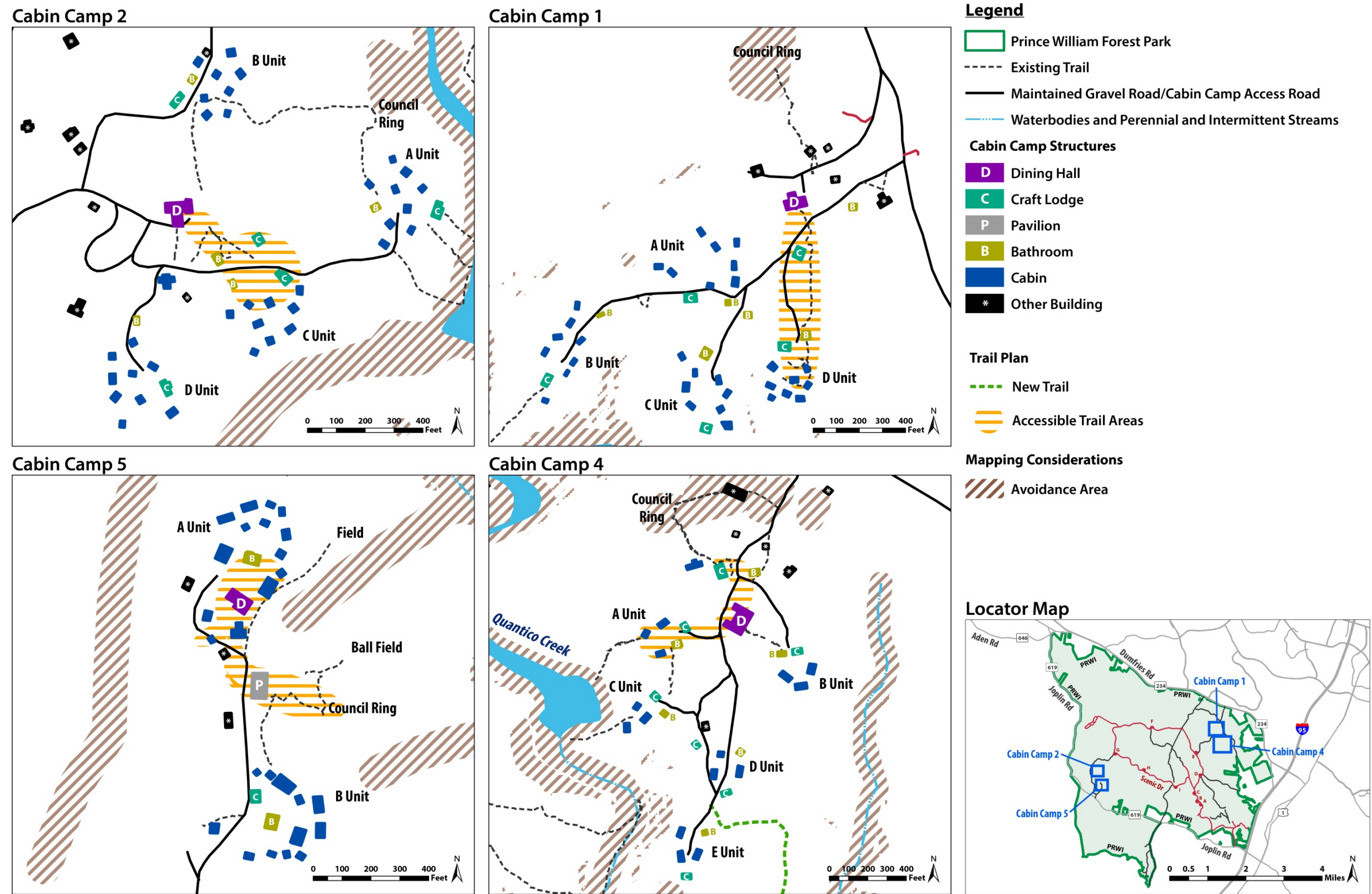


Figure 4: Action B Action Alternative – Cabin Camp Accessible Trail Areas



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## AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes current environmental conditions in and surrounding the project area. The discussion is focused on resources that could potentially be affected by the implementation of the proposed project and provides a baseline for understanding the current condition of the resources. The section also includes an analysis of the environmental consequences, or “impacts,” of the no action and action alternatives.

The affected environment description is followed by the environmental consequences analysis for each resource topic. The resource topics analyzed here correspond to the planning issues and concerns described in the “Purpose and Need” section of this EA.

In accordance with the Council on Environmental Quality (CEQ) regulations, the environmental consequences analysis includes the direct, indirect, and cumulative impacts potentially resulting from the proposed alternatives (40 CFR 1502.16). The intensity of the impacts is assessed in the context of the park’s purpose and significance, and any resource-specific context that may be applicable (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts are described and their effect on the severity of the impact is noted. The methods used to assess impacts vary depending on the resource being considered, but are generally based on a review of pertinent literature and park studies, information provided by on-site experts and other agencies, professional judgment, and park staff knowledge and insight.

**Cumulative Impacts Methodology:** The EA also considers cumulative impacts – defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts are addressed in this EA by resource topic for both the action and no-action alternatives. To determine the potential cumulative impacts, past, current, and anticipated future projects within the project site and the surrounding area were identified. These cumulative projects are summarized in **Table 1**.

**Table 1: Anticipated Cumulative Projects In and Around the Project Site**

Past, Present, or Future	Cumulative Impact Project	Description
Future	Carter’s Pond Accessible Trail Improvements	PRWI will make improvements to the trail around Carter’s Pond to make it accessible and to add accessible parking.
Future	Cabin Camp 4 Building 85 Accessibility Improvements	PRWI currently has funding to make Building 85 (Staff Quarters) in Cabin Camp 4 accessible.
Future	New Mountain Biking Trails near Breckenridge Road	U.S. Marine Corps Base Quantico is constructing mountain biking trails near Breckenridge Road, which borders PRWI, for the Quantico Mountain Biking Club.
Future	New Equestrian Trails	U.S. Marine Corps Base Quantico is constructing approximately 20 miles of equestrian trails at its facility.
Future	Prince William County Trails Plan	Prince William County is updating its county-wide trails plan.
Future	Independent Hill Small Area Plan	Prince William County is updating its Small Area Plan, and has included Independent Hill in the next round of these plans. These plans potentially include guidance for new development, including design guidelines, level of service analysis, and economic development analysis.
Future	Prince William County Comprehensive Plan Update	Prince William County has begun updating its comprehensive plan. This plan update could potentially include guidance for land use, economic development, parks and recreation, and mobility.

## HISTORIC STRUCTURES

Historic properties were identified within the project's area of potential effect (APE) (see **Figure 5**). As defined by 36 CFR 800.16(d), the APE represents "the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Historic structures at PRWI are documented in the NRHP nominations for Prince William Forest Park Historic District (2012), Chopawamsic Recreational Demonstration Area (RDA) – Camp (1) Goodwill Historic District (1989), Chopawamsic RDA – Camp (2) Mawavi Historic District (1989), Chopawamsic RDA – Camp (3) Orenda/SP-26 Historic District (1989), Chopawamsic RDA – Camp (4) Pleasant Historic District (1989), Cabin Branch Pyrite Mine Historic District (2002), and Emergency Conservation Works (ECW) Architecture at Prince William Forest Park, 1933-42 Multiple Property Listing (1989).

In this EA, the different types of historic properties are addressed by resource type to best describe the impacts of the proposed project on the park's physical resources. The NPS evaluates historic structures, cultural landscapes, and archeological resources as different resource categories. As a result, some features that make up a cultural landscape are also listed under historic structures. This section specifically addresses historic structures that have been included in or have been determined eligible for the NRHP, all of which are encompassed by at least one historic district or multiple property listing. For the purposes of retaining the association of the structures that is part of their historic character, this section groups structures based on their relevant historic district. Cultural landscapes are addressed of the Cultural Landscapes section that follows.

## Affected Environment

The APE contains six historic districts: the Prince William Forest Park Historic District, four Chopawamsic Recreational Demonstration Area camp historic districts, and the Cabin Branch Pyrite Mine Historic District. The landscape setting of Cabin Camp 1, which is documented in a CLI, is addressed in the Cultural Landscapes section.

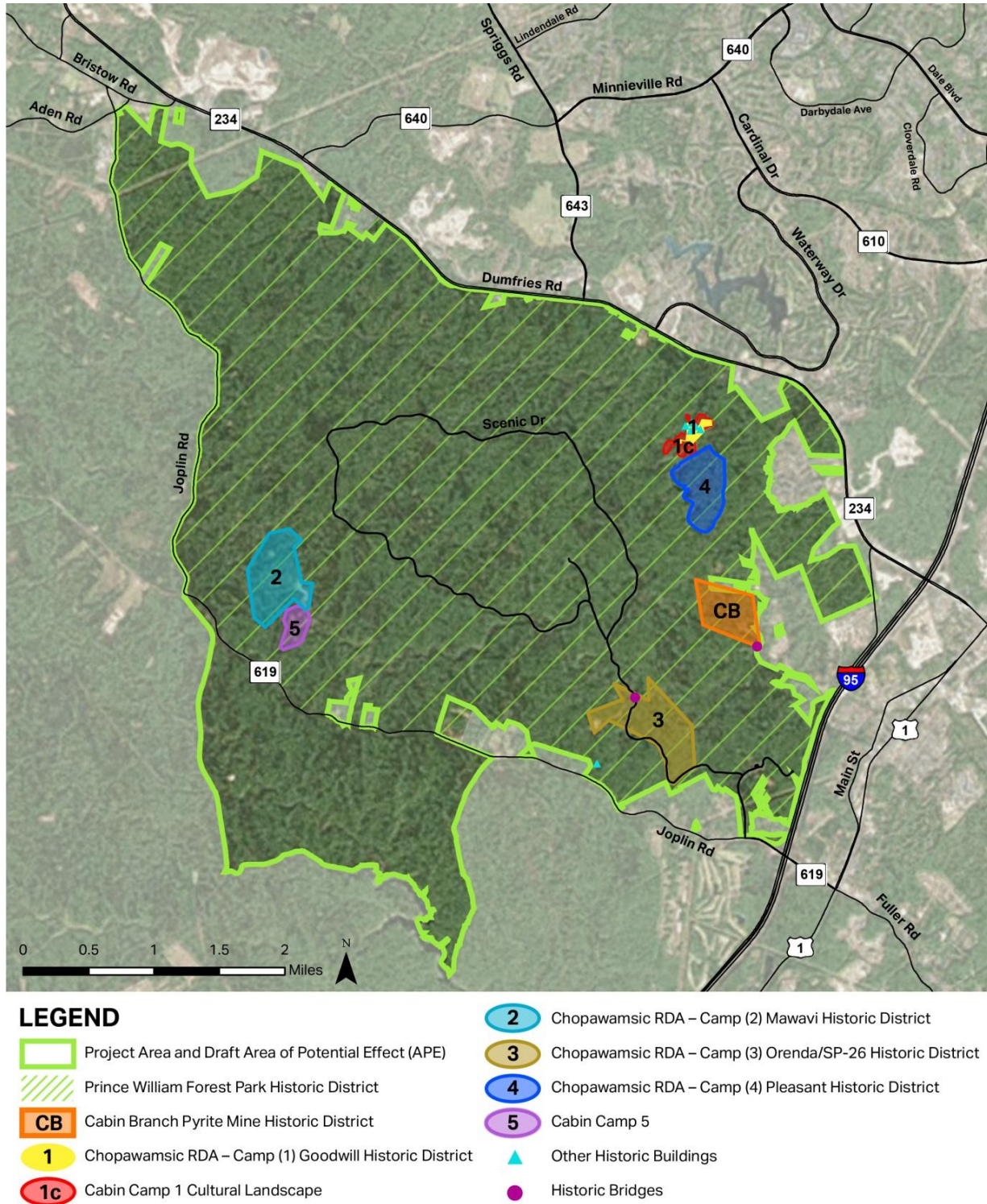
***Prince William Forest Park Historic District*** - The Prince William Forest Park Historic District encompasses the entire park north and east of VA 619 (Joplin Road). The district has an extensive history dating back at least 9,000 years when Native American people inhabited the district's hills. The Prince William Forest Park Historic District is significant due to its association with the American Park Movement, role in the development and training of the first US intelligence agency, and for its association with the broad cultural changes that occurred in northern Virginia. It is nationally significant as a model for the RDA program that provided camps specifically for African Americans during the era of segregation. It is also an intact collection of rustic style CCC-built camp buildings.

The PRWI Historic District contains 82 contributing buildings and structures, including Carter's Pond and Dam, a vehicular bridge, resources associated with the Cabin Branch Pyrite Mine and in all five cabin camps, and other miscellaneous resources. The PRWI Historic District also contains 194 contributing structures associated with five historic districts previously listed in the National Register (NPS 2012).

***Chopawamsic Recreational Demonstration Area Camps*** - The APE includes the five cabin camps constructed by the CCC between 1936 and 1940 (see Figure 6 for example photos of Cabin Camps). Of these, Camps 1, 2, 3, and 4 were listed in the NHRP in 1989:

- Chopawamsic RDA – Camp (1) Goodwill Historic District
- Chopawamsic RDA – Camp (2) Mawavi Historic District
- Chopawamsic RDA – Camp (3) Orenda/SP-26 Historic District
- Chopawamsic RDA – Camp (4) Pleasant Historic District

These historic districts cumulatively encompass 456 acres of PRWI. Contributing resources within these four historic districts cumulatively include 144 buildings, two sites, and seven structures. Contributing buildings generally include unit lodges, administration/office buildings, craft lodges, dining



**Figure 5: Area of Potential Effect**



halls/kitchens, staff quarters, infirmaries, washhouses and latrines, storage buildings, garages, and other buildings. Contributing structures include a water tower, entrance gates, vehicular bridges, and dams.

All contributing resources are related to the movement within the progressive era of the New Deal to build model resource-reclamation projects, and the accompanying rise of rustic architecture. The grouping of the contributing resources within these districts represents three themes and movements of the 1930s: 1) the social-welfare efforts of the New Deal manifested in the CCC, 2) the trend in outdoor recreation and mobility, and 3) NPS role in land reclamation (NPS 1989a-d).

***Cabin Branch Pyrite Mine Historic District*** - The Cabin Branch Pyrite Mine encompasses 88 acres and is located mostly within PRWI along the North Branch Quantico Creek. Between 1889 and 1920, large quantities of pyrite ore were mined and shipped to processing plants to produce sulfuric acid. Physical remains of the mine include foundations of at least twelve buildings, railroad tracks, approximately eight mine shafts, and extensive underground workings. Tools, rails, hardware, and other artifacts are still found within the historic district today. Contributing resources within the historic district include 42 structures and four sites, including the Cabin Branch Pyrite Mine Trail and the North Valley Trail (NPS 2002).

***Emergency Conservation Works (ECW) Architecture at Prince William Forest Park, 1933-42*** - The ECW Architecture at Prince William Forest Park is a multiple property listing in the NRHP covering numerous elements within PRWI. The listing includes the natural landscape and the built elements within the park that were constructed by the CCC, which was created by the Emergency Conservation Work Act of 1935. The ECW Architecture at PRWI is significant because it represents early 20th-century federal efforts to provide recreational facilities for low-income groups and families living in congested urban centers in the form of organized camping facilities. PRWI is culturally significant for its rustic architecture, natural landscape, and sympathetic park design. The park is historically important as one of six RDAs established in Virginia--the fourth largest in the nation--by the CCC.

The following character-defining elements have been identified within PRWI:

- Natural landscape features
  - streams
  - drainages and ridges
  - forest
- Constructed landscape features
  - park roads
  - foot trails
  - dams and lakes
- Architectural typology
  - sleeping quarters: cabins
- Administration/service: i.e., infirmary, dining hall, latrine
  - recreational/cultural: crafts lodge, campfire ring
- Architectural design
  - NPS "pattern book" sources: picturesque plans, elevations
  - indigenous materials: i.e., wood, stone
  - hand-crafted (or simulated) features: i.e., hardware
  - horizontal emphasis: single story, low roof lines

Some topographic changes occurred at the site for the establishment of the main park entrance, draining and grading, and the construction of trails, which were intended to follow watercourses and connect to points of interest.

## About the Analysis

Potential impacts on historic structures affect the historic character and integrity of the property as defined by the NRHP. The impacts, direct or indirect, adverse or beneficial, are analyzed in consideration of additional regulations and guidance provided by NEPA, Section 106 of the NHPA, and the *Secretary of Interior's Standards for the Treatment of Historic Properties*, *NPS Management Policies 2006*, and *Director's Order 28*.

As part of the Section 106 process, an Assessment of Effects has been prepared for the proposed project and will be submitted to the Virginia Department of Historic Resources (DHR), Virginia's SHPO, for consultation and concurrence in conjunction with this EA.

## Impacts of Alternative A: No-Action

***Prince William Forest Park Historic District*** - Under Alternative A, no changes would occur to the PRWI's buildings and structures. Sections of existing trails currently have moderate or severe erosion or other design issues. Some of these trails are contributing sites, whereas other trails run near multiple contributing resources. For example, the Cabin Branch Pyrite Mine and North Valley Trails are contributing sites and run near contributing structures and sites within the Cabin Branch Pyrite Mine. The trail at Carter's Pond and the South Valley Trail are adjacent to Carter's Pond and Lake 5, respectively, which are both contributing sites. Current maintenance practices would continue to be applied to trail sections with moderate or severe erosion or other design issues. PRWI would continue to realign short segments of failed trail without a systematic approach, and would therefore have no noticeable changes on the park's historic structures over the short term.

Over the long term, further erosion to the existing trails would continue, and would continue to diminish trail conditions. These changes in conditions could result in detectable changes to historic structures, but would not result in the de-listing of the park from the NRHP.

***Chopawamsic Recreational Demonstration Area Camps*** - Under Alternative A, no changes would occur to the Chopawamsic RDA Camp buildings, structures, and sites. As a result, no long-term impacts on the Chopawamsic RDA Camps would occur.

***ECW Architecture at Prince William Forest Park, 1933-42*** - Under Alternative A, no changes would occur to the park's natural landscape features, architectural typology, and architectural styling. However, sections of existing trails currently have moderate or severe erosion or other design issues. Current maintenance practices would continue to be applied to these trails. No changes to the design or alignment of these trails would occur, and would therefore have no noticeable changes on the park's foot trails (i.e., part of the man-made landscape) over the short term.

Over the long term, no changes to the design or alignment of these trails would occur, which would lead to further erosion and diminishing trail conditions. These changes in conditions could result in detectable changes to the foot trails, but would not result in the de-listing of the ECW Architecture at Prince William Forest Park from the NRHP.

***Cabin Branch Pyrite Mine Historic District*** - Under Alternative A, no changes would occur to the Cabin Branch Pyrite Mine's structures and sites. However, sections of the Cabin Branch Mine Trail and North Valley Trail through the Cabin Branch Pyrite Mine currently have moderate or severe erosion or other design issues. Both of these trails are contributing sites to the Historic District and run near multiple contributing structures and sites. Current maintenance practices would continue to be applied to these trails. No changes to the design or alignment of these trails would occur, and would therefore have no noticeable changes on the Cabin Branch Pyrite Mine structures and sites over the short term.

Over the long term, further erosion to the existing trails would continue, and would continue to diminish trail conditions. These changes in conditions could result in detectable changes on the Cabin Branch Mine Trail, North Valley Trail, and the Cabin Branch Pyrite Mine historic structures. These changes would not result in the de-listing of the Cabin Branch Pyrite Mine from the NRHP.

**Cumulative Impacts:** Although Alternative A would continue to result in ongoing adverse impacts on historic structures as a result of erosion, Alternative A would have no new impacts on historic structures. Therefore, Alternative A would not contribute to cumulative impacts on historic structures.

**Conclusion:** Alternative A would result in no new detectable adverse impacts on historic structures and would not contribute to adverse impacts on the overall adverse cumulative impacts on historic structures.

### **Impacts of Alternatives B: Action Alternative**

**Prince William Forest Park Historic District** - No changes to the historic day use, camping, or administrative uses of PRWI would occur. The natural environment features of the park would remain, including the park's overall topography, the features of the Quantico Creek watershed, and the forest ecosystem. No changes would occur to the historic structures within PRWI except those outlined below:

- Alternative B would realign sections of existing trails with moderate or severe erosion or other design issues; the existing sections of realigned trails would no longer serve as trails. These trails include the South Valley Trail, North Valley Trail, Farms to Forest Trail Loop, Quantico Cascades Trail, High Meadows Trail, Crossing Trail, Cabin Branch Mine Trail, the access trail from Cabin Camp 4 A-Unit to Lake 4, and others. Vegetation would be allowed to grow uninhibited into the closed trail section.
- Some existing trails in the park would be converted to accessible trails, including sections of the Farms to Forest Trail Loop. New accessible trails would also be created in Cabin Camps 1, 2, 4, and 5. In order to comply with the 2015 ABA Standards, the conversion of existing trails to accessible trails may require changes to the trail surface material and the construction of all accessible trails may require localized and minimal topographic alterations. New accessible trails would introduce trails in the park where there currently are no trails and could introduce trails in the Cabin Camps where there currently are no defined trails.
- Multiple new trails would be located within the park; most would be located in areas away from contributing buildings, structures, sites and objects. A new trail would lead out of Cabin Camp 4 to connect to the North Valley Trail.
- A new structure would provide access to the eastern shore of Lake 2/5.
- New trails would be constructed parallel to Burma Road and Old Blacktop Road to accommodate mountain bikers.
- New parking would be added at Spriggs Lane, Independent Hill, and Lykes Lane, and expanded at Oak Ridge Campground Front Lot and multiple points along Scenic Drive.

The closing and realignment of sections of the Cabin Branch Mine Trail and North Valley Trail with moderate or severe erosion or other design problems could result in noticeable direct adverse impacts on contributing structures and sites within the Cabin Branch Pyrite Mine. Adverse impacts on these structures and sites would occur from trail construction and trail realignment from their historic location.

The introduction of the Lake 2/5 water access feature and accessible, new, and realigned trails would result in indirect, adverse impacts on the park due to circulation and topography changes and the addition of these features within and in the vicinity of the park's buildings, structures, sites, and objects. Realigned and new trails in areas where no trails are present would result in changes to circulation patterns. The development of new and accessible trails could minimally alter existing topography in order to provide appropriate slopes for trails, as well as alter the character associated with the Cabin Camps' rustic architecture and design harmony between the natural and manmade landscape. The new trails and water access feature would also expand awareness by visitors of the historic resources within PRWI.

The new parking at Independent Hill and Spriggs Lane would support visitor access from the northern and eastern portion of the park, but would not alter primary circulation routes leading to contributing elements of the Prince William Forest Park Historic District. Expansion of parking in areas along Scenic

Drive would be consistent with existing usage. New and expanding parking areas would be located away from contributing historic resources. Although the installation of parking at these points would require vegetation removal, the overall vegetated character of the park would remain.

Proposed park features designed to be compatible with the rustic character of the landscape would minimize impacts on Prince William Forest Park Historic District by using indigenous materials, muted colors, and a design that is representative of the rustic style and sympathetic and complementary to the surrounding landscape. These design actions would be undertaken in a manner that is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Overall, changes to Prince William Forest Park Historic District would be noticeable, but would not result in the de-listing of the park from the NRHP.

**Chopawamsic Recreational Demonstration Area Camps** - Alternative B would not result in physical changes to the buildings, structures, or sites within the Chopawamsic RDA Camps, except for Lake 2/5. A new point of interest would provide access to the eastern shore of Lake 2/5.

Alternative B would introduce new trails and realign existing trails within and in the vicinity of the Chopawamsic RDA Camps, as outlined below:

- Some existing trails in Cabin Camps 1, 2, and 4 would be converted to accessible trails and/or new accessible trails would be created in these Cabin Camps. In order to comply with the 2015 ABA Standards, the conversion of existing trails to accessible trails may require changes to the trail surface material and the construction of all accessible trails may require topographic alterations. New accessible trails could introduce trails in the Cabin Camps where there currently are no defined trails.
- Alternative B would realign sections of internal Cabin Camp trails with moderate or severe erosion or other design issues, including the access trail from Cabin Camp 4 A-Unit to Lake 4; the existing sections of realigned trails would no longer serve as trails.
- Alternative B would realign sections of the South Valley Trail with moderate or severe erosion or other design issues on the eastern shore of Lake 2/5; the existing sections of the realigned South Valley Trail would no longer serve as trails.
- A new trail would lead out of Cabin Camp 4 to connect to the North Valley Trail.

The introduction of a Lake 2/5 water access feature, accessible, new, and realigned trails would result in indirect, adverse impacts on the Chopawamsic RDA Camps due to the addition of these features within and in the vicinity of the Camps' buildings, structures and sites. These changes could alter the character associated with these camps' rustic architecture and design harmony between the natural and man-made landscape. The water access feature and new trails would aim to minimize impacts on the Chopawamsic RDA Camps by using indigenous materials, muted colors, and a design that is representative of the rustic style and sympathetic and complementary to the surrounding landscape. These design actions would be undertaken in a manner that is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The new trails and water access feature would also expand visitor awareness of the historic resources within PRWI. Overall, changes to the Chopawamsic RDA Camp areas would be noticeable, but would not result in the de-listing of the Chopawamsic RDA Camps from the NRHP.

**ECW Architecture at Prince William Forest Park, 1933-42** - Under Alternative B, changes would occur to the park's forest. New trails and parking lots would be added, existing trails would be realigned, and existing parking lots would be expanded within the park's forest. However, the introduction, realignment, and expansion of these elements within the forest would not be noticeable at a large scale. New parking areas would be constructed in areas with existing tree clearings, when possible. Although Alternative B would remove approximately 27.2 acres of vegetation of the 14,500-acre project area, such impacts would be minimal within the context of the park's forested area. Therefore, the park would continue to maintain its forested character.

Changes would also occur to constructed landscape features associated with the ECW Architecture at PRWI, as outlined below:

- New trails would be constructed within the rights of way of Burma Road and Old Blacktop Road to accommodate mountain bikers.
- Alternative B would realign sections of existing trails, including internal Cabin Camp trails, with moderate or severe erosion or other design issues; the existing sections of realigned trails would no longer serve as trails. Natural vegetation would be allowed to grow into the closed trail section.
- Some existing trails in the park would be converted to accessible trails. New accessible trails would also be created. These changes would also occur in Cabin Camps 1, 2, 4, and 5. In order to comply with the 2015 ABA Standards, the conversion of existing trails to accessible trails may require changes to the trail surface material and the construction of all accessible trails may require topographic alterations. New accessible trails would introduce trails in the park where currently no trails and would introduce trails in the Cabin Camps where there no defined trails are currently present.
- A new point of interest would provide access to the eastern shore of Lake 2/5.

As a result, Alternative B would have direct, adverse impacts on the park's foot trails (i.e., part of the man-made landscape). No direct impacts would occur on the architectural typology and styling. However, the introduction of a Lake 2/5 water access feature and accessible, new, and realigned trails would result in indirect, adverse impacts on the setting of the architectural typology and styling due to the addition of these features within, and in, the vicinity of the Cabin Camps. These changes could alter the character associated with these camps' rustic architecture and design harmony with the natural and manmade landscape adjacent to the ECW architecture. The water access feature and new trails would aim to minimize impacts on the ECW Architecture by using indigenous materials, muted colors, and a design that is representative of the rustic style and sympathetic and complementary to the surrounding landscape. These design actions would be undertaken in a manner that is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Overall, changes to the ECW Architecture would be noticeable, but would not result in the de-listing of the ECW Architecture at Prince William Forest Park from the NRHP.

**Cabin Branch Pyrite Mine Historic District** - Alternative B would close and realign sections of the Cabin Branch Mine Trail and North Valley Trail with moderate or severe erosion or other design issues. Both of these trails are contributing sites to the Cabin Branch Pyrite Mine based, which lie on the routes of the main track and spur tracks for the mine. The relocation of these trails would result in a beneficial impact on the main track and spur track. The Cabin Branch Mine Trail and North Valley Trail also run near multiple contributing structures and sites. Adverse impacts on these structures and sites could occur from trail construction and trail realignment. The surrounding character of the new trails would be similar to that of the existing trails.

Alternative B would result in a temporary adverse impact on the Cabin Branch Pyrite Mine Historic District during construction; however, the impacts would be short-term. Following the construction period, Alternative B would have a noticeable beneficial impact on the Cabin Branch Pyrite Mine Historic District.

**Cumulative Impacts:** Other past, present, and reasonably foreseeable future projects that have or will likely have cumulative impacts on historic structures include the accessibility improvements at Cabin Camp 4 and Carter's Pond. PRWI's plans to make Cabin Camp 4's Building 85 (Staff Quarters) accessible could have a detectable adverse impact on Building 85, which is a contributing building to the PRWI Historic District, Chopawamsic RDA – Camp (4) Pleasant Historic District, and ECW Architecture at PRWI multiple property listing. Building 85's accessibility improvements could also have an indirect, adverse impact on the setting of Cabin Camp 4 due to Building 85's proximity to other contributing

resources. These changes could alter the feeling associated with the camp's rustic architecture and design harmony with the natural and manmade landscape. The accessibility improvements at Carter's Pond would alter the existing trail, which is within the Cabin Camp 3 Historic District, through changes in topography and materials. Changes would be undertaken in a manner that is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Alternative B would result in adverse impacts on historic resources within PRWI. The other reasonably foreseeable future projects described above could also have an adverse impact on historic resources with PRWI. Therefore, when the adverse impacts of Alternative B are combined with the impacts of cumulative projects, an overall adverse cumulative impact would result.

**Conclusion:** Alternative B would result in detectable adverse impacts on historic structures and would contribute adverse impacts on the overall adverse cumulative impact on historic structures.

## CULTURAL LANDSCAPES

### Affected Environment

Cultural landscapes consist of "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values." Cultural landscapes include the features and systems that compose the existing landscape and convey the historic character of the landscape associated with a historic period of significance. Landscapes provide a setting for historic buildings and structures. Cultural landscape characteristics include natural systems and features, topography, spatial organization, vegetation, land use, circulation, views and vistas, buildings and structures, and small-scale features that contribute to the landscape's historic character. Cultural landscapes in the APE include Cabin Camp 1, as described below.

**Cabin Camp 1** - A CLI was completed by the NPS for Cabin Camp 1 in 2011. Character-defining features of Cabin Camp 1 identified in the camp's CLI include (NPS 2011):

- **Buildings and Structures.** The building and structures built in the 1930s by the CCC are examples of the rustic style established by the NPS to popularize and standardize park architecture during the New Deal era when an expansion of national and state park systems was occurring at a rapid pace. Many of the buildings and structures maintain integrity.
- **Cluster Arrangement.** Early park planners deemed the camp's hub-and-spoke layout with designated areas for both large and small groups desirable for the health, safety, and mystique of group camping.
- **Topography.** The CCC made topographic alterations in a way that retained the look and feel of the naturally occurring topography.
- **Spatial Organization.** The camp is located in the undulating landscape of the Quantico Creek watershed and in an area where a deciduous forest provides shade in the summers and sun in the winters. The proximity of the camp to Quantico Creek was intentional; the creek was dammed by the CCC and used by campers for swimming and boating. The units are separated by ravines and hidden from each other behind vegetation.
- **Circulation.** An entrance road to the camp remains in its historic position and the main roads that lead people around the camp are as they were in the 1930s. Historic plans show a rectangular north-south oriented parking lot in the location of the existing east-west oriented parking lot. It is unclear whether the north-south oriented parking lot was ever constructed or if the current parking lot reflects the historic orientation.
- **Small Scale Features.** A campfire circle on the north side of the camp and a flagpole in front of the Administration building were both included in the original plan.

- **Vegetation.** The camp was built in an area that was covered with deciduous forest. The laborers constructing the camp worked with the existing vegetation rather than implementing a formal planting plan. Current vegetation in the camp is similar in character to the vegetation found on the site during 1935-1945.
- **Constructed Water Features.** A dam on Quantico Creek was constructed by the CCC during the initial planning and construction of the camp. The dam impounds an approximately 1.8 acre area, known as Lake 1, which provided an area for swimming and boating.
- **Land Use.** Land use at the camp has been almost exclusively limited to group camping from the time it was built in the early 1930s through today.

### About the Analysis

Potential impacts on cultural landscapes affect the historic character and integrity of the landscape as defined in the park's NRHP district nominations and CLIs. The impacts, direct or indirect, adverse or beneficial, are analyzed in consideration of additional regulations and guidance provided by NEPA, Section 106 of the NHPA, and the *Secretary of Interior's Standards for the Treatment of Historic Properties, DO-28*, and other NPS guidance for the treatment of cultural landscapes.

As part of the Section 106 process, an Assessment of Effects has been prepared for the proposed project and will be submitted to the Virginia SHPO for consultation and concurrence in conjunction with this EA.

### Impacts of Alternative A: No-Action

Under Alternative A, no changes would occur to Cabin Camp 1's buildings and structures, cluster arrangement, spatial organization, circulation, small scale features, vegetation, constructed water features, and land use. Cabin Camp 1 contains internal trails with moderate or severe erosion or other design issues. Current maintenance practices would continue to be applied to these trails. No changes to the design or alignment of these trails would occur, and would therefore have no noticeable changes on the trails over the short term, maintaining the camp's topography.

Over the long term, the retention of the current trail design and alignment would lead to further erosion. Although such erosion would be detectable, it would not substantially alter the character of the naturally occurring topography. As a result, Alternative A would have detectable long term adverse impacts on the cultural landscape.

**Cumulative Impacts:** Although Alternative A would continue to result in ongoing adverse impacts on cultural landscapes as a result of erosion, Alternative A would have no new impacts on the Cabin Camp 1 cultural landscape. Therefore, Alternative A would not contribute to cumulative impacts on the cultural landscape.

**Conclusion:** Alternative A would result in no new detectable adverse impacts on the Cabin Camp 1 cultural landscape and would not contribute to cumulative impacts on the cultural landscape.

### Impacts of Alternatives B: Action Alternative

Alternative B would retain Cabin Camp 1's cluster arrangement, spatial organization, and land use. The camp's circulation, small scale features, vegetation, and constructed water features would not be altered. No changes would occur to the camp's buildings and structures and topography except those outlined below:

- Some existing trails in Cabin Camp 1 would be converted to accessible trails and/or new accessible trails would be created in the cabin camp. In order to comply with the 2015 ABA Standards, the conversion of existing trails to accessible trails may require changes to the trail surface material and the construction of all accessible trails may require topographic alterations.
- Sections of internal Cabin Camp trails with moderate or severe erosion or other design issues, including the trail from the B-Unit to Quantico Creek and the trail to the Council Ring, would be closed and realigned.



- The introduction of accessible and realigned trails could result in direct, adverse impacts on the camp's look and feel of natural occurring topography. New accessible and realigned trails may require some topographic alterations to meet 2015 ABA Standards and create sustainable trails.

No direct impacts would occur on the camp's buildings and structures. However, new accessible and realigned trails would result in indirect, adverse impacts on the setting and feeling of the camp's buildings and structures. Accessible and realigned trails would introduce trails in Cabin Camp 1 where there currently are no defined trails. Accessible and realigned trails could also alter the feeling associated with the camp's rustic architecture. New trails would aim to minimize impacts on the camp by using indigenous materials, muted colors, and a design that is representative of the rustic style and sympathetic and complementary to the surrounding landscape. These design actions would be undertaken in a manner that is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Prior to the implementation of this Trails Plan, PRWI would provide cultural landscape reports for the PRWI trails system and each of the Cabin Camps. Overall, changes to the Cabin Camp 1 cultural landscape would be noticeable.

**Cumulative Impacts:** Alternative B would have noticeable long-term impacts on the Cabin Camp 1 cultural landscape due to changes in topography and the setting and feeling of the camp's buildings and structures. None of the other past, present, or reasonably foreseeable future projects addressed in this EA would result in changes to the cultural landscape. Thus, Alternative B would contribute to cumulative adverse impacts on the cultural landscape.

**Conclusion:** Alternative B would result in detectable adverse impacts on the Cabin Camp 1 cultural landscape due to changes in topography and the setting and feeling of the camp's buildings and structures. Alternative B would contribute to cumulative adverse impacts on the cultural landscape when considered with past, present, and reasonably foreseeable future projects occurring at or in the vicinity of the park.

## VISITOR USE AND EXPERIENCE

### Affected Environment

PRWI is a natural landscape of mixed hardwood forest that provides a variety of outdoor recreation, education, and research opportunities within 30 miles of approximately 3.9 million people. Overall, the park contains forested trails for hiking, running, solitude, and wildlife viewing; scenic roads for biking; campsites; reservoirs and streams for fishing; and backcountry areas for backpacking, solitude, and natural quietness.

In 2017, PRWI received an estimated 360,540 visitors, including approximately 110,576 overnight stays in the park (NPS n.d.). Historically, the number of visitors to PRWI is highest in the summer months and lowest in January and February. The busiest month is June, followed by August and September. Visitor numbers are also higher on the weekends (NPS 2009).

A majority of the park visitors are local residents who use the park for recreational activities. Frequently, these visitors are associated with school, camping or cabin camping groups, or come individually to exercise, hike, bike, picnic, bird watch, or walk their dogs. Other visitor groups include regional residents, school groups (primarily local schools within Prince William and Stafford Counties), campers, and families from the region and local area. Senior citizens, minorities, and individuals with physical or cognitive impairments are not frequent park users (NPS 2009).

***Visitor Access to the Park*** - As noted previously, the main roadways bordering PRWI include I-95 to the east, VA 234 (Dumfries Road) to the north, and VA 234 (Bristow Road) and VA 646 (Aden Road) to the northwest. VA 619 (Joplin Road) partially borders PRWI to the south and west and separates the Chopawamsic Backcountry Area from the rest of the park. Visitors may access the park by vehicle only through the main park entrance on VA 619 (Joplin Road). However, a majority of the park visitors are local residents and larger residential communities near the park are located predominantly off of VA 234. Neighbors north of the park must travel roughly eight to ten miles to access the main park entrance.

Increased population growth adjacent to the park has created a greater demand for connections to the nearby communities (NPS 2013). Local visitors have created informal “social” trails into the park from the Brittany neighborhood subdivision off of Exeter Drive on VA 234. However, these social trails have resulted in visitors cutting through Cabin Camps 1 and 4, reducing the camp users’ privacy.

No sidewalks, multi-use paths, or designated bike lanes connect to the main park entrance. Pedestrians may use informal paths along, and bicyclists may legally ride on, VA 619 (Joplin Road) to gain access to the main park entrance or the park’s maintained gravel roads on VA 619 (Joplin Road). The multi-use trail along VA 234 (Dumfries Road) to the north of the park provides pedestrian and bicycle access to the park. This trail connects to the two maintained gravel roads, Spriggs Lane and Pleasant Road, within the park.

***Internal Vehicle Circulation and Parking*** - The main roadway within PRWI is Scenic Drive, which is a narrow, two-lane loop road that provides internal circulation within the park. From parking lot D to West Gate Road, one travel lane of Scenic Drive is striped with two bike lanes (one in each direction), leaving a single lane open to one-way traffic traveling from parking lot D to West Gate Road. The park also contains approximately 10.5 miles of maintained gravel roads that connect to VA 234 (Dumfries Road), VA 619 (Joplin Road), Scenic Drive, the cabin camps, and pedestrian trails. Locked gates on these roads prevent public vehicle access, but allow PRWI vehicle, pedestrian, and bicycle use of these roads.

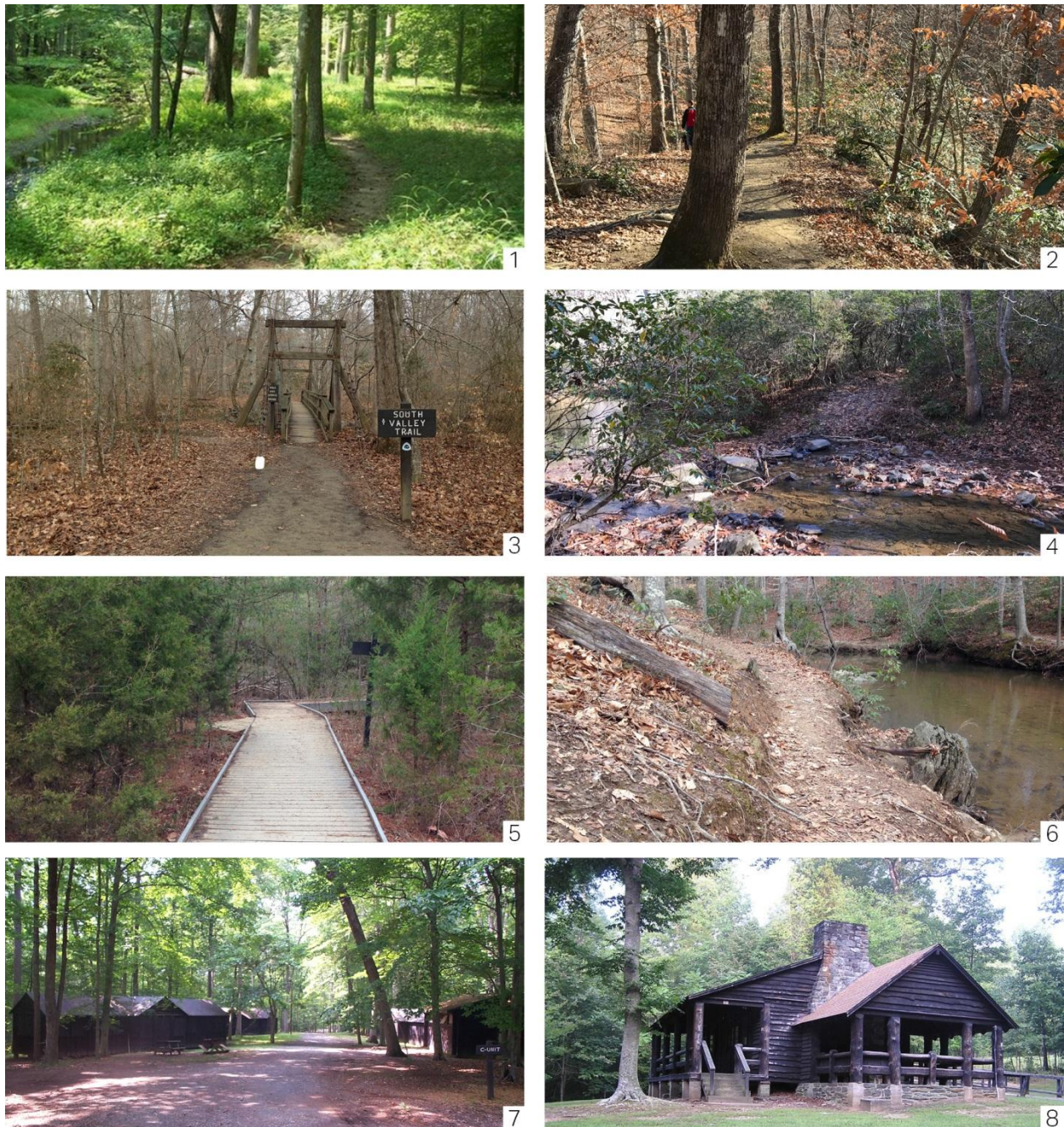
Scenic Drive provides internal circulation within the park and connects to several parking lots that provide access to the park’s trail system. The park’s existing parking lots and their number of parking spaces are provided in **Appendix C**. Parking lots typically fill only on the weekends, some weekday holidays, or when weather conditions are ideal in the spring or fall. More specifically, parking lot A regularly reaches capacity during the week throughout the year. Parking lot D regularly reaches capacity on the weekends due to its location at the start of the one-way section of Scenic Drive. When parking lot H reaches capacity, visitors typically park along the road near the lot. The Oak Ridge Campground front lot can also reach capacity on the weekends if the lot is used as overflow parking from the campground.

***Trail System*** - PRWI has approximately 40 miles of trails, including approximately 30 miles of hiking trails and approximately 10.5 miles of maintained gravel roads (see Figure 1 and Figure 6). The hiking trails are currently open to pedestrian use and the maintained gravel roads are currently open to pedestrian and bicycle use. A majority of the park’s trail system is located inside the Scenic Drive loop, to the east of the Scenic Drive, and along South Fork Quantico Creek. These trails vary in length and difficulty with some trails paralleling the park’s creeks or passing by sites of interest, such as the Cabin Branch Pyrite Mine ruins, remnants of the Taylor family farm, or cemeteries. Most trails intersect with other trails or maintained gravel roads and therefore, provide pedestrians with loop trail experiences of varying length. However, some of these loops do not offer options for longer or shorter routes. Trail connections to Scenic Drive also provide pedestrians with additional loop experiences. However, no sidewalk or trail is located adjacent to Scenic Drive. Some of the park’s trails require return through the same route.

The park’s five cabin camps also contain internal trail systems which do not connect to the park’s larger trail system and are only accessible to those with cabin camp reservations. Unless using the cabin camps, park visitors have limited exposure to the cabin camps.

Accessible trails at the park include the 0.3-mile loop Piedmont Forest Trail. More than 12 miles of paved roads, mostly on the Scenic Drive loop, are available for on-road biking. Off-road biking is allowed on the 0.2-mile shared-use Muschette Trail and 10.5 miles of maintained gravel roads. Almost all of the maintained gravel roads connect to Scenic Drive, with only a few intersecting with other gravel roads or roads outside of the park. The maintained gravel roads primarily provide mountain bikers without-and-back trail experiences. The gravel roads do not provide mountain bikers with loop trail experiences unless mountain bikers ride along Scenic Drive, which is paved. The maintained gravel roads were not originally designed for mountain bikers and the road surface is not appropriate for mountain biking. PRWI staff has also noted that mountain bikers do not currently like riding on the maintained gravel roads.





**Figure 6: Photos of Trails and Cabin Camps in PRWI**

(1) Little Run Loop Trail; (2) South Valley Trail; (3) Bridge crossing over Quantico Creek (South Valley Trail and Laurel Trail Loop); (4) Trail crossing over Quantico Creek (North Valley Trail); (5) Boardwalk near Cabin Branch Pyrite Mine (North Valley Trail); (6) North Valley Trail; (7) Cabin Camp 3; (8) Cabin Camp 1 Craft Lodge

**Other Park Amenities** - PRWI also has cabin, tent, tent trailer, RV, and backcountry campgrounds that can accommodate individuals to large groups depending on the specific campground. Five cabin camps accommodate groups of 60 to 200 individuals and contain sleeping cabins, an activity building, restrooms, kitchens, dining halls, and other features (see Figure 6). The cabin camps are popular sites for organized groups such as scouts, church groups, clubs, weddings, and family reunions. Only Cabin Camp 3 is accessible via the main park entrance road, which most park visitors use to access the park. Additional visitor amenities at the park include a visitor center, picnic pavilions, and a ball field.

### **About the Analysis**

Potential impacts on visitor use and experience at and in the vicinity of the park were analyzed in consideration of the current visitor uses and activities, types of projects included in the alternatives, the estimated increase in visitors that would result from the implementation of each alternative, and professional knowledge and judgment.

### **Impacts of Alternative A: No-Action**

Alternative A would not add new outdoor recreation, education, or research opportunities, visitor access points, parking lots, trails, accessible trails, or other park amenities. Existing visitor access points, parking lots, signage, and which trails allow off-road biking would remain the same. No changes to current visitation levels would occur due to Alternative A.

No changes would occur to existing trails with moderate or severe erosion or other design issues. Current maintenance practices would continue to be applied to these trails. No changes to the design or alignment of these trails would occur, and would therefore have no noticeable changes on these trails over the short term, maintaining visitor use and experience.

Over the long term, the continued location and design of these trails would result in further erosion and diminishing trail conditions, potentially resulting in trail closures. These changes would alter or prohibit visitor use and experience on these trails. Therefore, Alternative A would result in long-term direct adverse impacts on visitor use and experience.

**Cumulative Impacts:** Although Alternative A would continue to result in ongoing adverse impacts on visitor use and experience due to erosion, Alternative A would have no new impacts on visitor use and experience. Therefore, Alternative A would not contribute to cumulative impacts on visitor use and experience.

**Conclusion:** Under Alternative A, changes to the park's trails with moderate or severe erosion or other design issues would occur incrementally and would be difficult to detect in the short term, but would be recognizable in the long term. These changes would result in detectable adverse impacts on visitor use and experience. Alternative A would also contribute adverse impacts on the overall adverse cumulative impact on visitor use and experience.

### **Impacts of Alternatives B: Action Alternative**

Alternative B would add new recreation, education, and research opportunities in PRWI. New trails would be added to park, increasing connectivity to currently disconnected areas and providing opportunities for visitors to experience points of interest and areas of the park currently inaccessible to visitors. Generally, signage improvements throughout the park would improve visitor wayfinding. New accessible trails would increase access to recreation and points of interest in the park for visitors. New mountain biking and equestrian trails would expand and provide new recreation opportunities, respectively. New and expanded existing parking lots would increase visitor access points to the park and the trail system and accommodate future visitor growth.

Construction activities, such as grading, the removal of vegetation, and resurfacing, would temporarily close areas of the park to visitors and could limit use of certain trails or locations within the park, such as during the construction of accessible trails, realignment of existing trails, or conversion of existing trails to mountain biking or equestrian trails. Construction would be dispersed across the park, phased over time

(10 to 15 years), and construction work would occur during off-peak visitor use periods where possible, minimizing construction impacts.

**Visitor Access to the Park** - Under Alternative B, four new access points along the park's perimeter would provide visitors, including local residents and residential communities along VA 234 (Dumfries Road), with more connection options to the park's trail system. Three new parking areas at VA 234 (Dumfries Road) at Spriggs Lane/Waterway Drive (up to 100 spaces that accommodates cars, buses, and RVs), VA 646 (Aden Road) at Independent Hill (up to 25 spaces that accommodate eight horse trailers), and Lykes Lane near Breckenridge Road (up to 15 spaces) would provide access to the park's trail system and would reduce the distance some visitors with vehicles would need to travel to access the park. The formalization of an existing "social" trail into the park from the Brittany neighborhood subdivision would provide another pedestrian access point into the park.

**Internal Vehicle Circulation and Parking** - Alternative B would provide up to 46 new parking spaces in the interior of the park. The expansion of parking lots E, F, and H would provide visitors with additional parking options along the one-way section of Scenic Drive when parking lot D is at capacity. Expanded lot F would accommodate additional visitors accessing the new connecting trail between Burma Road and the Farms to Forest Trail Loop. The expanded parking lots F and H would alleviate existing parking demand at this lot and safety concerns related to visitors currently parking along Scenic Drive when the lot is at capacity.

The expanded Oak Ridge Campground Front Lot would accommodate additional day-use visitors using the new accessible Farms to Forest Trail Loop, day-use visitors using the new trails in the northwest portion of the park, and campground users.

**Trail System** - Alternative B would provide approximately 12.9 miles of new trails in PRWI, increasing the total length of trails from approximately 40 to 52.9 miles. Generally, new trails would establish connections between existing trails and increase connections between existing parking lots and existing trails. New trails would also create new pedestrian access points into the park, including from VA 646 (Aden Road) at Independent Hill and the Brittany neighborhood subdivision. Overall, new trails would create new trail loop options for longer and shorter routes and provide trail users more options to return to their starting point via a different route.

Visitors would gain access to additional areas of the park that are currently inaccessible to visitors, including the northwest portion of the park, along Quantico Creek between Burma Road and the Farms to Forest Trail Loop, and the Chopawamsic Backcountry Area. New trails from Burma Road, the Farms to Forest Trail Loop, the South Valley Trail, and Parking areas F and G would connect visitors to additional features of interest within the park such as Quantico Creek and the new Lake 2/5 water access point.

Cabin Camp 1 and 4 users would gain direct trail access to the park's larger trail system. A new trail would lead out of Cabin Camp 4 to connect to the North Valley Trail. A new trail would also connect an existing trail leading out of Cabin Camp 1 with the North Valley Trail.

Alternative B would provide approximately 4.3 miles of accessible trails, increasing the total length of accessible trails in PRWI from 0.3 to 4.6 miles, excluding new accessible trails in the cabin camps. These accessible trails would provide visitors access to or views of points of interest in the park, Breckenridge Reservoir, waterfalls along and a bridge across South Fork Quantico Creek, and the site of the Poor House, which was constructed in the park in 1794 and stood until the 1920s. Accessible trails in Cabin Camps 1, 2, 4, and 5, would also provide new user groups and individuals the opportunity to experience the Cabin Camps.

Mountain bikers would have increased trails options in the park. Alternative B would provide approximately 6.6 miles of new mountain biking trails or existing trails converted to mountain biking trails, increasing the total length of trails where mountain biking is allowed in PRWI from 10.7 to 17.3 miles. These trails would provide trail loop options and longer trail routes.



Equestrians would have new access to the park. Alternative B would provide an estimated 5.3 miles of new equestrian trails or existing trails made available for equestrian use. These trails would provide a trail loop option with parking to accommodate new equestrian activities.

Because mountain biking and equestrian trails would also allow pedestrians, these trails could create conflicts between different trail users or an unpleasant visitor experience. For example, mountain bikers may traverse a trail more slowly than desired due to the presence of pedestrians, or birdwatching or wildlife viewing pedestrians may be disrupted by the noise of approaching mountain bikers or horses. Alternative B would also close and realign approximately 29.3 miles of existing trails, including internal cabin camp trails, with moderate or severe erosion or other design issues. Because sustainably aligned and designed trails would replace these existing trail sections, Alternative B would reduce safety concerns of trail users and provide trail users with better maintained trails.

***Other Park Amenities*** - Alternative B would add two new amenities, including a water access feature at Lake 2/5 and a viewing platform at Lykes Lane for the Breckenridge Reservoir. These amenities would provide visitors access to or views of park points of interest currently inaccessible to visitors. No changes would occur to the park's other existing amenities.

**Cumulative Impacts:** Alternative B would have noticeable beneficial impacts on visitor use and experience. Other past, present, and reasonably foreseeable future projects that have, or will likely have, beneficial cumulative impacts on visitor use and experience at and in the vicinity of the park, are described under Alternative A.

Alternative B would result in an overall beneficial impact associated with the addition of new and accessible trails and parking lots, the realignment and improvement of existing trails, and the expansion of existing parking lots. When the beneficial incremental impact of Alternative B is combined with the beneficial impacts of other projects, an overall noticeable beneficial cumulative impact would result.

**Conclusion:** The addition of new and accessible trails and parking lots, the realignment and improvement of existing trails, and the expansion of existing parking lots would improve visitor access and connections to and within the park and expand recreation opportunities, but would temporarily disrupt visitor access to certain trails or locations within the park. Alternative B would result in temporary adverse impacts on visitor use and experience during construction; however, the impacts would be short-term, within a site-specific area of the park, and phased over time. Following the construction period, Alternative B would have noticeable beneficial impacts on visitor use and experience, and would contribute to cumulative beneficial impacts on visitor use and experience.

## CONSULTATION AND COORDINATION

The NPS conducted public involvement during the NEPA process to provide an opportunity for the public to comment on the proposed project. Consultation and coordination with federal and state agencies and other interested parties was also conducted to refine the alternatives and identify issues and/or concerns related to park resources. This section provides a brief summary of the public involvement and agency consultation and coordination that occurred during planning:

- The NPS held one public scoping meeting during the 30-day public scoping comment period at which time, the public, agencies, and interested parties were invited to submit comments on the proposed project.
- The NPS initiated consultation with the Virginia DHR, which serves as Virginia's SHPO, in a letter dated February 13, 2018. The NPS has prepared an Assessment of Effects report for the proposed project and will send it to DHR for review in conjunction with this EA. The current consultation involves the development of the plan; implementation actions will go through separate 106 consultations with SHPO and stakeholders.
- The NPS initiated Section 7 consultation via the USFWS's online Information for Planning and Consultation (IPaC) system on June 19, 2018. Ongoing consultation would occur during implementation of the proposed action.



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