
# CATOCTIN MOUNTAIN PARK COMPREHENSIVE TRAIL SYSTEM PLAN
## ENVIRONMENTAL ASSESSMENT
## JANUARY 2022

# Catoctin Mountain Park Comprehensive Trail System Plan and Environmental Assessment

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# PURPOSE AND NEED

The National Park Service (NPS) is developing a Comprehensive Trail System Plan (Plan) for Catoctin Mountain Park ("the park") in Thurmont, Maryland to provide comprehensive guidance for enhancing the Park's trail system and visitor experience throughout the park 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 park's purpose is to is to provide quality recreational opportunities in the Catoctin Mountains and serve as a setting and buffer for the Presidential Retreat, while protecting and conserving the park's natural and cultural environments in the spirit of New Deal conservation programs. The Comprehensive Trail System Plan 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).

This Environmental Assessment (EA) describes two alternatives for the proposed Comprehensive Trail System Plan, an action alternative and the no-action alternative, and analyzes the environmental consequences of implementing the alternatives. The EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA); regulations of the Council on Environmental Quality (40 CFR 1500-1508); NPS *Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-Making*; and the NPS NEPA Handbook (NPS 2015). In conjunction with this EA, the project is undergoing a review of potential effects on historic resources in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966. This document is being used for compliance with NEPA of 1969, as amended. A separate Assessment of Effects (AOE) has been prepared for compliance with NHPA of 1966, as amended.

The Plan is needed to address the following concerns and ongoing 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 trails have eroded and degraded due to poor design and alignment, resulting in safety and environmental concerns.
- Some features of interest (e.g., rock climbing) and overnight facilities within the park are not connected to the trail system, which forces visitors to drive to trailheads or walk along roadways to access trails.
- The park does not provide adequate accessible trails to points of interest.
- Visitor use of the park's trails and parking lots is not evenly distributed throughout the park. A majority of visitors utilize the parking lots in the east side of the park, which lack connections to trails in the west side of the park.
- Trail orientation signage and naming conventions within the park are not standardized.
- The park lacks formal connections to, and integration with, local and regional trail systems.
- Some trail crossings of roadways, including Route 77, are unsafe for pedestrians.

## BACKGROUND AND PROJECT AREA

The approximately 5,760-acre project area is located within a rural landscape in Frederick County, Maryland (with the west edge of the park in Washington County) (**Figure 1**). The park is bordered by Route 77 (Foxville Road) and Cunningham Falls State Park to the south and agricultural and forested areas to the north, east, and west. The park is partially bordered by Route 550 (Sabillasville Road) to the

north. The park comprises the easternmost ridge of the Blue Ridge Mountains and consists primarily of an eastern deciduous forest less than 100 years old, rolling hills, narrow ridgetops, valleys, and ravines.

## ISSUES AND IMPACT TOPICS FOR DETAILED ANALYSIS

The NPS, participating agencies and stakeholders, and the public identified issues for detailed analysis during the internal and public scoping processes. The internal scoping process included NPS park staff and resource experts, park volunteers, and representatives from the Potomac Appalachian Trail Club and Mountain Club of Maryland. During the public scoping process, which was open to the general public, comments were received from the general public and members or official representatives of several groups, including the Maryland Department of Transportation State Highway Administration, Cunningham Falls State Park, Frederick County, the Town of Thurmont, Brotherhood of the Jungle Cock, Hagerstown & Frederick Trolley Trail Association, Mid Atlantic Climbers, MORE (Mid Atlantic Off-Road Enthusiasts), Mountain Club of Maryland, Outdoor Alliance DMV, and Wanderbirds Hiking Club.

Identified issues are included in the impact topics that are discussed in the "Affected Environment and Environmental Consequences" section of this EA. The proposed project includes approximately 10.3 miles of new trails; the realignment of approximately 2.7 miles of existing trails; the conversion of approximately 1.3 miles of existing trails to universally accessible trails; the conversion of an existing picnic site to an accessible picnic site; a new accessible trail connecting existing accessible campsites to existing restrooms; the allowance of bikes on an existing administrative road; a designated Fly Fishing Heritage Trail; two improved trail crossings of Route 77; potential future external trail connections; two new parking areas; improvements to four existing parking areas; and improvements to existing small fishing pull-off parking areas along Route 77.

The proposed project could introduce or change elements of the documented historic properties listed in the National Register and cultural landscapes. The entire park is listed in the National Register of Historic Places (NRHP). Camp Misty Mount and Camp Greentop, cabin camps within the park, are also listed in the NRHP as separate historic districts. Historic properties are also documented in Cultural Landscape Inventories for the entire park, Camp Misty Mount, and Camp Greentop. Additionally, the proposed project would have the potential to disturb archeological resources. The proposed project's potential impacts on historic properties and cultural landscapes are analyzed in detail in the Historic Resources section of this EA. The proposed project's potential impacts on archeological resources are analyzed in detail in the Archeological Resources section of this EA.

The proposed project could add new access points to the park, open new areas of the park to the public, provide more connected trail experiences, expand recreation opportunities, and improve circulation within the park. The park's parking lots are concentrated on the east side of the park. These lots frequently reach capacity on weekends. The park's existing trail system does not connect the east and west sides of the park or to the cabin camps. Some of the existing trails require return through the same route. Other existing trails are loops, but do not offer longer or shorter routes. New trails could increase visitor access from outside the park and improve connectivity between the park's east and west trail system and with the cabin camps. Universally accessible trails are currently limited. The proposed project's potential impacts on visitor access, experience, opportunities, connectivity, and circulation are analyzed in detail in the Visitor Use and Experience section of this EA.

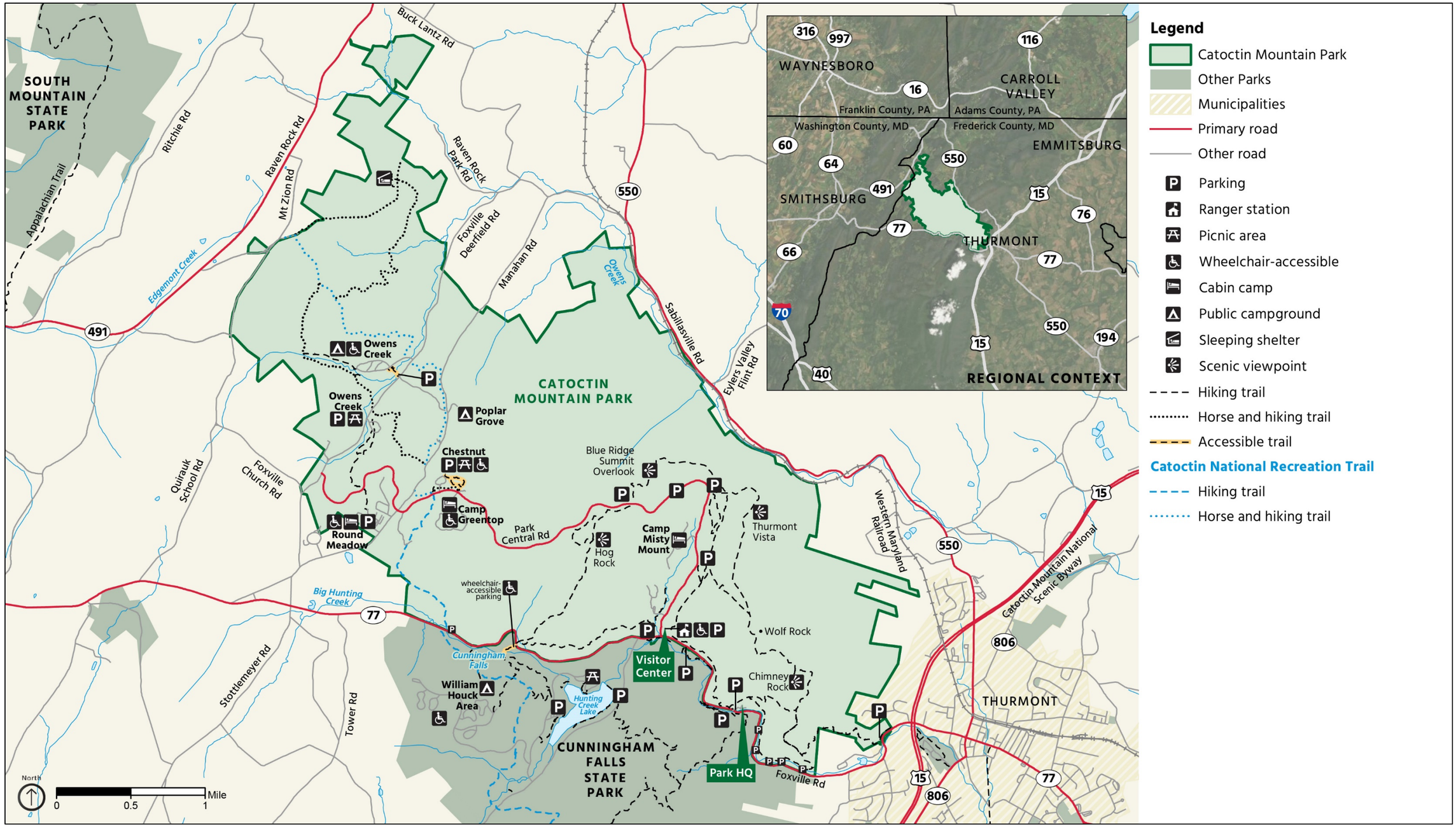


**Figure 1: Project Area and Regional Context**

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## ISSUES AND IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

Some issues 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 wetlands.** Approximately 58.9 acres of the 5,760-acre project area (1.0 percent) are classified as wetlands according to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory. Wetlands are located throughout the project area along the park's creeks and their tributaries and include riverine, freshwater pond, and freshwater forested/shrub wetlands (USFWS 2020).

The proposed project has been designed to avoid areas within a 100-foot buffer around Maryland's Wetlands of Special State Concern (WSSC) (i.e., nontidal wetland habitats designated for special protection under Maryland's nontidal wetlands regulations) with the exception of the expansion of the existing Sawmill Exhibit parking area. The expanded parking area would not affect ground and surface water quality, as well as the unique nature of the WSSC, through the expansion's placement closest to the edge of the 100-foot buffer and the use of design Best Management Practices (BMPs).

The proposed project would add new trail crossings and convert existing trails to accessible trails in non-WSSC wetlands and realign sections of existing trails currently within non-WSSC wetlands. The proposed project would also perform routine trail maintenance activities, including the replacement, in-kind, of foot bridges on existing trails that cross wetlands. The NPS would adhere to procedures set forth in *Procedural Manual #77-1: Wetland Protection* in order to comply with NPS *Director's Order (DO) #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 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 foot 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).
- 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). The proposed project would include six single and complete projects that have independent utility where wetland impacts would be 0.1 acre or less. These projects include wetland crossings associated with new trails and the update of the Blue Blazes Whiskey Still Trail foot bridge crossing Blue Blazes Creek to comply with the ABAAS (if needed). The combined wetland impact of these six projects would be less than 0.1 acres. 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 on wetlands. Realigned sections of existing trails would also be realigned at least 25 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 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. 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 82.0 acres of the 5,760-acre project area (1.4 percent) are located within the 100-year and 500-year floodplains. The floodplains within the project area are primarily located along Owens Creek and Big Hunting Creek (FEMA n.d.). The proposed project would not add accessible trails or accessible amenities in the 100-year or 500-year floodplain.

The proposed project would add a new trail in the 100-year floodplain to the east of the park headquarters and a new trail in the 100-year floodplain connecting the existing Catoctin National Recreation Trail (CNRT) in the park with the CNRT trailhead in Cunningham Falls State Park. The proposed project would also realign sections of the existing trail west of the park headquarters along Route 77 and the Gateway Trail with erosion issues currently in the 100-year floodplain. The realigned trail section would reduce erosion. New and realigned trails would be designed to be sustainable in relation to slopes and shed water from the trail before it has a chance to erode, instead allowing it to permeate into surrounding vegetation. The proposed project would also add a new parking area on Foxville Deerfield Road and expand the existing Sawmill Exhibit parking area in the 100-year 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, and small associated daytime parking facilities in non-high hazard areas provided that the impacts of these facilities on floodplain values are minimized."

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 the park, 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 9.9 acres of soil (or 0.2 percent of the project area) and remove an estimated 9.6 acres of vegetation (or 0.2 percent of the project area) within the 5,760-acre project area due to clearing for trails and parking. Soil disturbance and vegetation removal would be dispersed throughout the park. Such disturbance and vegetation removal would increase the vulnerability of soil, specifically vulnerability 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. 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 phasing of the proposed project over a period of 10 to 15 years could increase long-term sediment load resulting from construction activities for a longer duration, but would minimize the potential for an acute one-time impact on water resources.

New and realigned trails would be designed to be sustainable in relation to slopes and shed water from the trail before it has a chance to erode, instead allowing it to permeate into surrounding vegetation. 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. Ongoing trail maintenance activities included in the proposed project, such as the repair or replacement of existing, or installation of new erosion control and drainage features, would further minimize erosion.

Soils exposed during construction would be re-vegetated or otherwise stabilized following construction completion, at which time construction-related erosion and sedimentation would cease. New trails, realigned trails, and accessible trails would avoid the removal of large trees; the removal of other trees would be avoided to the extent feasible. New parking areas and improvements to existing parking areas would avoid the removal of trees to the extent feasible. In areas where tree and vegetation removal would occur, the areas would be revegetated using native grasses, shrubs, trees, or other plants where needed for soil stabilization and a natural appearance.

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 turnpikes, foot bridges, or other measures in low-lying trail areas where the trail becomes muddy during heavy rain events.

The proposed project would increase the volume of stormwater runoff generated at the park overall and could generate stormwater runoff impacts at specific locations that were previously not impacted. Stormwater runoff would be limited through design or the use of BMPs. Realigned trails and ongoing trail maintenance would reduce stormwater runoff through improved design, thereby reducing stream sedimentation. New, realigned, and accessible trails, as well as the two new parking areas and the improved existing Horse Trailer parking lot, Sawmill Exhibit parking area, and Lewis Area parking area, would be constructed of permeable materials that would facilitate the percolation of stormwater into the ground. Water shed from trails would also permeate into surrounding vegetation. The expanded footprint of the existing Visitor Center parking lot, the improved footprint of the Lewis Area parking area, and the footprint of the new parking areas at Mount Zion Road and Foxville Deerfield Road would exceed 5,000 square feet. As required by the Energy Independence and Security Act of 2007 (EISA), 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. According to the U.S. Environmental Protection Agency's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* (2009), "the intention of EISA Section 438 is to preserve or restore the hydrology of the site during the development or redevelopment process. To be more specific, this requirement is intended to ensure that aquatic biota, stream channel stability, and historical aquifer recharge rates of receiving waters are not negatively impacted by changes in runoff temperature, volumes, durations and rates resulting from federal projects." The parking areas would be designed to a predevelopment hydrology standard using this Technical Guidance document.

Proposed project actions involving 5,000 square feet or more of earth disturbance would obtain coverage under Maryland's General Permit for Stormwater Associated with Construction Activity (General Permit), which would require the preparation of an erosion/sediment control plan. Adherence to the requirements of the permit, erosion/sediment control, and stormwater management plans would minimize construction-related impacts on water resources. 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

eastern deciduous forest, containing a mixture of oaks (*Quercus* spp.), hickories (*Carya* spp.), maples (*Acer* spp.), and tulip poplars (*Liriodendron tulipifera*) (Thomas et al. 2013). The proposed project would remove approximately 9.6 acres of vegetation within the 5,760-acre project area over the length of 10.3 miles of new trails, 2.7 miles of realigned trails, 1.3 miles of accessible trails, two new parking areas, and four improved existing parking areas. Vegetation would be removed from an approximately 5-foot wide corridor for new and realigned hiking trails and an approximately 8-foot wide corridor for realigned trails open to horseback riding. These clearing widths are consistent with trail design parameters identified in the U.S. Forest Service's *Trail Construction and Maintenance Notebook 2007 Edition* for Class 2 (moderately developed) and Class 3 (developed) trails (see **Appendix A**). For existing trails converted to accessible trails, vegetation would be removed from an approximately three-foot wide corridor along the existing trail alignment, assuming the existing trail corridor is approximately two feet wide, to comply with the ABAAS clear tread width. Vegetation removal associated with the implementation of the proposed project would occur over a period of 10 to 15 years.

The proposed project would not remove vegetation within park areas identified as G2 (Imperiled) rare ecosystems. The proposed project would also not remove vegetation within park areas identified as Maryland Natural Heritage Areas, which are located in G2 (Imperiled) and G3 (Vulnerable) rare ecosystems and areas not identified as G2 or G3 rare ecosystems within the park. One exception to the above is the expansion of the existing Sawmill Exhibit parking area, which would remove vegetation within a Maryland Natural Heritage Area. 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 trails, realigned trails, and accessible trails would avoid the removal of large trees; the removal of other trees would be avoided to the extent feasible. New parking areas and improvements to existing parking areas would avoid the removal of trees to the extent feasible. In areas where tree and vegetation removal would occur, the areas would be revegetated using native grasses, shrubs, trees, or other plants where needed for soil stabilization and a natural appearance. New and realigned trails would be designed to be sustainable trails in relation to slopes and shed water from the trail before it has a chance to erode, instead allowing it to permeate into surrounding vegetation. Erosion can cause tree root exposure and damage to the surrounding trees and shrubs and smother aquatic vegetation if silt recaches streams or other waterways. Specific BMPs to minimize soil erosion would be developed as the planning and design state of the proposed project continues. Ongoing trail maintenance activities included in the proposed project, such as the repair or replacement of existing, or installation of new erosion control and drainage features, would further minimize erosion.

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, trees, or other plants where needed for soil stabilization and a natural appearance.

The proposed project's addition of approximately 10.3 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 NPS would monitor and remove exotic and invasive plant species in accordance to the NPS National Capital Region region-wide invasive plant management plan and specific park policies.

Of the approximately 9.6 acres of vegetation removed, the proposed project would remove approximately 4.6 acres of vegetation within areas of the park identified as having the highest resilience to climate change of all areas within the park (see **Appendix A**) over the length of 5.1 miles of new trails, 2.0 miles of realigned trails, 0.6 miles of accessible trails, and the improved existing Horse Trailer parking lot. Additional conservation measures will be put in place to protect these areas from stressors including, but not limited to, invasive exotic species, canopy loss, and development.

Adherence to the above described practices would ensure that impacts on vegetation resulting from the proposed project 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 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 the park 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 to determine the potential for federally-listed protected species to be present at the park. This consultation indicated the potential for the federally threatened northern long-eared bat (*Myotis septentrionalis*) and federally endangered Indiana bat (*Myotis sodalis*) to be present at the park. In a letter dated October 5, 2021, the USFWS determined that the proposed project will have "no effect" on the northern long-eared bat and Indiana bat because while the project is within range of the species, it is unlikely that the species would occur within the project area. Maryland has designated the northern long-eared bat as a state-listed threatened species and the Indiana bat as a state-listed endangered species. The NPS has confirmed, through studies by the U.S. Geological Survey (USGS), Virginia Cooperative Fish and Wildlife Research Unit, and Virginia Polytechnic Institute and State University, the presence of the northern long-eared bat and the Indiana bat at the park (Ford and Deeley 2017).

Prior to and during the implementation period of the proposed project, the NPS will complete Section 7 consultation with the USFWS and Maryland Department of Natural Resources Wildlife and Heritage Service (DNR) to identify activities included in the proposed action that would have the potential to affect federally and state listed threatened and endangered species.

To avoid adverse impacts on the northern long-eared bat and Indiana bat, the NPS would incorporate new survey information and would not remove trees between June 1 and July 31 (i.e., the pup season). For the northern long-eared bat, the NPS would 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 are documented within the park prior to implementing activities associated with the proposed project, the NPS would develop and implement BMPs in consultation with the USFWS to avoid adverse impacts on the Indiana bat.

Through ongoing consultation with the USFWS (and DNR as needed), adherence to applicable minimization or conservation 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 the park. 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 an estimated 9.9 acres of soils within the 5,760-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 six 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. Proposed project actions involving 5,000 square feet or more of earth disturbance would obtain coverage under Maryland's General Permit, which would require the preparation of an erosion/sediment control plan. Adherence to the requirements of the permit and erosion/sediment control and stormwater management 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.

The proposed project would avoid soils classified as prime farmland or farmland of statewide importance, except for the proposed realignment of the existing Horse Trail in the northwest section of the park and the improvement of the existing Lewis Area parking area. However, no active cultivation occurs on these soils. The existing Horse Trail is located in a primarily forested area. The Lewis Area parking lot would be resurfaced with permeable materials. 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, access points, and parking areas (see **Figure 1**). Alternative A would retain the park's existing 24.3-mile trail system under its current condition and maintenance regimen. Trails would continue to be maintained by volunteers, Student Conservation Association trail crews, and Youth Conservation Corps crews. 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 trails at the park would continue to be the 0.36-mile loop Spicebush Nature Trail and the 0.14-mile Sawmill Trail. The park would continue to prohibit the use of bicycles on the trail system, including the administrative road connecting Manahan Road and Foxville Deerfield Road. The CNRT and Cunningham Falls Nature Trail crossing of Route 77 would remain in their current location.

Visitors with vehicles would continue to access the trail system through the park's existing parking areas. A majority of visitors would continue to utilize the parking areas on the east side of the park (i.e., the Lewis Area parking areas and parking areas along Park Central Road from the Visitor Center parking lot to the Hog Rock parking lot).

## ALTERNATIVE B: ACTION ALTERNATIVE

Alternative B would be the implementation of the proposed project. Alternative B proposes to provide new trails and accessible trails and amenities, realign existing trail sections with design problems, improve trail crossings of Route 77, and provide opportunities for trail connections to local and regional trail systems. Alternative B also proposes to allow the use of bikes on an administrative road, designate a Fly Fishing Heritage Trail, add two new parking areas, and improve four existing parking areas, which would support connections to the existing and planned trail network. These changes to trail connectivity, access, and parking would augment ongoing trail maintenance and resources management practices. These elements are described below and shown in **Figure 2** to **Figure 4**.

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

New and realigned 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 Accessibility Standards (ABAAS), including design parameters as described in **Appendix A**.

**New Trails** - Alternative B would provide approximately 10.3 miles of new trails, which would be a 42.3 percent increase to the park's trail system if fully realized. The new trails would connect existing trails on the east and west sides of the park; generate links between existing trails to create shorter and longer loop options; connect the Cabin Camps to the trail system; connect to new areas and features of interest in the

park, such as the northern area of the park, bouldering sites, and a "stone stream" near the Park Headquarters; and create new pedestrian access points into the park. All new trails would allow hiking. New foot bridges would be installed as needed to cross wetlands and streams. New interpretive waysides would be installed to educate visitors about resources along the new trails.

**Realigned Trails** - Alternative B would also close and realign sections of existing trails that suffer from moderate or severe erosion or other condition problems due to heavy use or poor design and alignment. Realigned trails would improve visitor experience; provide for safer road crossings; alleviate unsafe conditions; reduce erosion, which has contributed to streambank failures; and create more sustainable trails. Approximately 2.7 miles of existing trails would be realigned. Natural groundcover vegetation would be allowed to grow into the closed trail section, but the closed trail section would be maintained to include a trace so that the alignment is legible in the landscape. Ongoing trail maintenance would rehabilitate existing trails not realigned to minimize erosion and reduce drainage issues.

**Accessible Trails and Amenities** - Alternative B would convert approximately 1.3 miles of existing trails to trails that are universally accessible. These new accessible trails would provide loop routes, create access to points of interest in the park, and connect to parking areas. Existing parking areas that provide access to these new accessible trails would be updated to comply with ABAAS.

Alternative B would provide a new accessible trail connecting existing accessible campsites to the existing restrooms at Owens Creek Campground. Alternative B would also convert an existing picnic site at the Chestnut Picnic Area to an accessible picnic site. The site would be located within the interior of the parking loop and adjacent to existing parking and the existing accessible path connecting to the existing restroom facility. The existing path from the existing accessible picnic site to the restroom facility would be converted to an accessible trail.

**Bike Trail** - Alternative B would permit the use of bikes, including mountain bikes and electric bikes (e-bikes), on the 0.4-mile administrative road connecting Manahan Road and Foxville Deerfield Road. The allowance of bikes on this administrative road would provide bicycle access to Owens Creek Campground via Manahan Road. For these purposes, an e-bike is considered a two- or three-wheeled cycle with fully operable pedals and an electric motor of not more than 750 watts that meets the requirements of one of the three classes defined in 36 CFR 1.4, which are determined by the level of pedal assistance and speed.

**Fly Fishing Heritage Trail** – Alternative B would designate approximately 0.7 miles of the existing Gateway Trail along Big Hunting Creek as a Fly Fishing Heritage Trail. This trail would provide opportunities to learn about the practices and history of fly fishing, including how it relates to Big Hunting Creek. Interpretive signage would be added along the trail. The five existing small fishing pull-off areas along Route 77 would also be improved by adding interpretive signage and formalizing pedestrian access to Big Hunting Creek.

**Road Crossing Improvements** – Alternative B would improve two trail crossings between the park and Cunningham Falls State Park on Route 77. These improved road crossings would enhance the visitor experience and alleviate unsafe conditions. From west to east, these crossings include the CNRT crossing and the Cunningham Falls Nature Trail crossing. The NPS would work with the Maryland Department of Transportation State Highway Administration (SHA) and Cunningham Falls State Park to improve the crossings. Potential options include, but are not limited to, realigning the road crossing to a safer location with better vehicle sight distances, working with SHA to control the speed of traffic, install pedestrian crossing signs, and/or install traffic calming devices, and working with Cunningham Falls State Park to install trail directional signage.

**Potential Future External Trail Connections** – The NPS would coordinate with appropriate entities to connect the park's trail system to the Appalachian Trail, and the Town of Thurmont. These entities could include the Potomac Appalachian Trail Club, Appalachian Trail Conservancy, City of Hagerstown Watershed, Town of Thurmont, SHA, South Mountain State Park, Frederick County, Preserve Middletown Valley/Catoctin Watershed, Catoctin Land Trust, Hagerstown & Frederick Trolley Trail Association, and private property owners. Exact trail routes and how the routes are implemented would be dependent on potential agreements with these entities.

**Parking -** Alternative B would provide two new parking areas and improve four existing parking areas. New parking areas on Foxville Deerfield Road and Mount Zion Road would provide parking options on the west side of the park, alleviate parking demand and overflow, improve parking connectivity to trails, and accommodate future visitor growth. The new parking area on Foxville Deerfield Road would be an unpaved lot that would accommodate up to 20 cars, covering approximately 0.2 acres. The new parking area at Mount Zion Road would be an unpaved lot that would accommodate up to 15 cars and 2 horse trailers, covering approximately 0.4 acres.

The existing Visitor Center parking lot would be expanded towards Route 77 and restriped to improve vehicle circulation when the lot is full. The expanded parking lot would increase the existing number of parking spaces by six spaces. The expanded portion of the lot would cover approximately 0.2 acres. At the Lewis Area, the parking area would be enlarged from 10 to 20 spaces and resurfaced, with pervious materials, to define the parking area more clearly. The expanded portion of the parking area would cover approximately 0.1 acres. The entrance lane would be resurfaced, the trailhead would be improved, drainage issues would be addressed, and NPS park signage would be installed to formalize the area as a park entrance and improve visitor experience and wayfinding. At the Horse Trailer parking lot, the end of the parking lot would be expanded to allow horse trailers to turn around and exit through the existing access point to Park Central Road. At the Sawmill Exhibit parking area, the parking area would be widened to accommodate two buses parked end to end parallel with Foxville Deerfield Road. At the northern end, trees would be removed and fill added for leveling. The expanded parking area would increase the existing number of parking spaces by five spaces. The expanded portion of the parking area would cover approximately 0.02 acres. The number of parking spaces and surface type for each new and improved existing parking area is provided in **Appendix A**.

**Signage** – Alternative B would improve signage throughout the park consistent with the Catoctin Mountain Park Long Range Interpretive Plan (2008) guidelines. Standardized trail signs would be placed at new trailheads, accessible trailheads, critical trail intersections, bouldering sites, and trailheads that allow equestrians. New signs would provide clear direction for the navigation of new, existing, and realigned trails. Signs at accessible trailheads would comply with ABAAS for trailhead signs. Signs at shared-use trailheads would provide information about the allowed trail user groups and appropriate trail yielding etiquette. Signs on new trails leading into Camp Misty Mount, Camp Greentop, and park offices would inform users of the park's larger trail system that these new connecting trails are only for Camp users and, in the case of park offices, employees. New park entrance and orientation signage would also be added to the new parking area on Mount Zion Road and improved parking area at the Lewis Area. The installation of new signs would involve hole digging to install sign posts. Metal reflective tags would be installed on trees as blazes to replace existing paint.

**Trail Maintenance** – Alternative B would include routine maintenance on new, realigned, and existing trails. Maintenance activities would include:

- Re-grade trail surfaces
- Remove extant berms that prevent proper drainage
- Replace, in-kind, greenstone gravel within trail corridor

- Repair or replace, in-kind, existing trail features, such as foot bridges, water bars, check dams, turnpikes, culverts, French drains, and steps
- Install new erosion control and drainage features, such as water bars, check dams, culverts, French drains, puncheons, and turnpikes. New features will match existing nearby features. Water bars and check dams will be constructed of native logs and stone and stabilized with weed-free soil from nearby tree root balls and rebar and/or new or nearby rocks. Turnpikes will be framed with native logs and infilled with stone collected from nearby or greenstone aggregate. Cultural resources staff would be consulted to ensure no archeological resources, historic stone walls, or other resources listed or eligible for listing in the NRHP are impacted.
- Clear water bars and check dams buried by soil accumulation
- Clear loose rocks and accumulation of debris from trail corridor
- Fill voids in tread as needed with nearby gathered and crushed rocks in the absence of available tree root balls for soil collection. Cultural resources staff would be consulted to ensure no archeological resources, historic stone walls, or other resources listed or eligible for listing in the NRHP are impacted.
- Borrow pit establishment may be necessary to obtain needed material to re-establish trail tread. Borrow pits are excavated holes no larger than three feet long by three feet wide by three feet deep and are only used when crushed rock, tree root balls for soil collection, and imported material is not available. Borrow pits must be rehabilitated by minimizing the visual impact of the pit and for safety. All pits would be filled in with rock, downed trees and branches so that it is not visible from the trail. Cultural resources staff would be consulted to ensure no archeological resources, historic stone walls, or other resources listed or eligible for listing in the NRHP are impacted.
- Narrow trails that have been widened by visitors walking on the edges by raking previously disturbed edges of the trail corridor toward the center of the trail. Edges may also be covered with existing downed brush and nearby rocks to deter foot traffic. Cultural resources staff would be consulted to ensure no archeological resources, historic stone walls, or other resources listed or eligible for listing in the NRHP are impacted.
- Install stone retaining walls along steep trails to hold trail tread to a sloping sidehill by constructing outside walls. The new retaining walls would be planned, designed, and installed to be compatible with the historic character of the landscape through appropriate scale, materials, form, and other considerations. The retaining walls would not radically change, obscure, damage, or destroy contributing features.
- Eliminate social trails by restoring natural vegetation along social trails or covering with nearby downed woody debris. Methods and species selected for re-seeding must be approved in advance by park natural resources staff.
- Install temporary signage along existing trail corridor to notify visitors and staff of danger, direction, and areas closed to the public
- Cut or cover exposed roots within existing trail corridor to prevent tripping
- Repair and/or replace, in-kind, existing trail signs and wayside exhibits
- Trim herbaceous and woody vegetation within the trail corridor
- Cut through fallen trees that are blocking the trail corridor

### MITIGATION MEASURES OF THE PROPOSED ACTION

Mitigation measures would be implemented under the proposed action, whenever feasible, for resource protection and to minimize disruption to visitors. The exact mitigation measures would depend upon the final design and plan approvals by relevant agencies. The following mitigation measures are proposed to reduce impacts as a result of the proposed action. Mitigation measures may be mandatory, such as those measures that are required by law, special conditions of permits or authorizations, or by NPS policy. Some measures are voluntary, including those measures that are not required but would be implemented into the final design as a best practice to reduce resource impacts or visitor disruption.

## Historic Resources

Alternative B would minimize impacts on historic resources by designing new features to be compatible with the rustic character of the park landscape 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*.

## Archeological Resources

The NPS would avoid adverse impacts on archeological resources by conducting a Phase I archeological survey for undocumented areas and areas previously subjected only to pedestrian survey without shovel testing 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 Maryland Historic Trust (MHT) [Maryland's State Historic Preservation Office (SHPO)] and Tribal Historic Preservation Offices (THPOs). If NRHP-eligible or potentially 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 MHT and THPOs.

A protocol for the unanticipated discovery of cemeteries or human remains will be developed for the construction contractor. If any Native American burials, cemeteries, or funerary objects are encountered, the NPS would contact federally recognized Tribes with affiliation in Maryland, in accordance with the Native American Graves Repatriation Act (NAGPRA).

The NPS would also avoid disturbing known archeological resources during design and construction to the extent practicable. During the construction phase, the NPS would also minimize ground-disturbing activities to the extent practicable, including using existing vehicle circulation areas and construction methods that minimize land disturbance. If appropriate, archeological monitoring would also take place during construction.

## Visitor Use and Experience

In order to minimize impacts on visitor use and experience during construction, the NPS would perform construction work during off-peak visitor use periods where possible, minimizing construction impacts.

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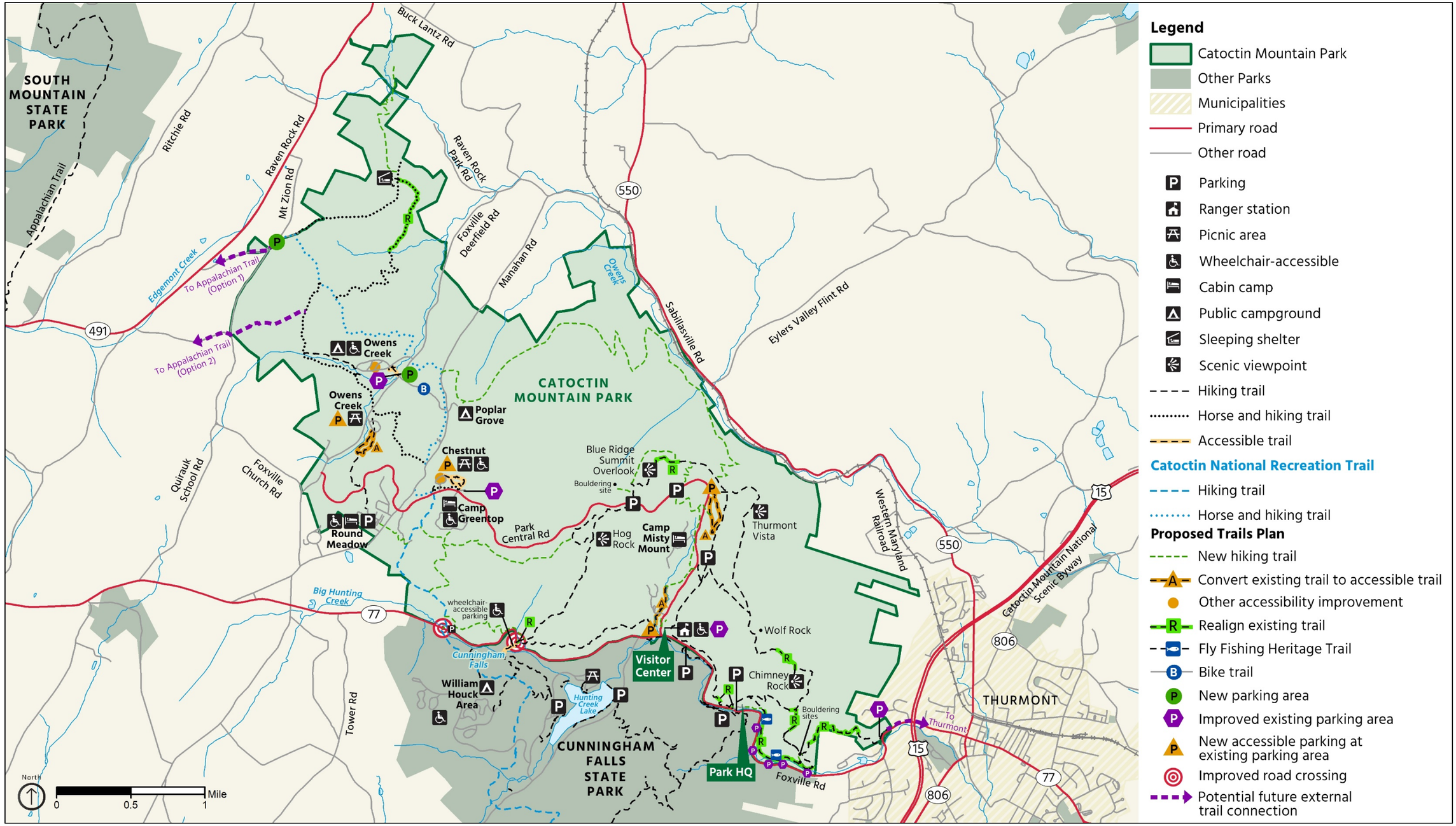


**Figure 2: Alternative B: Action Alternative**

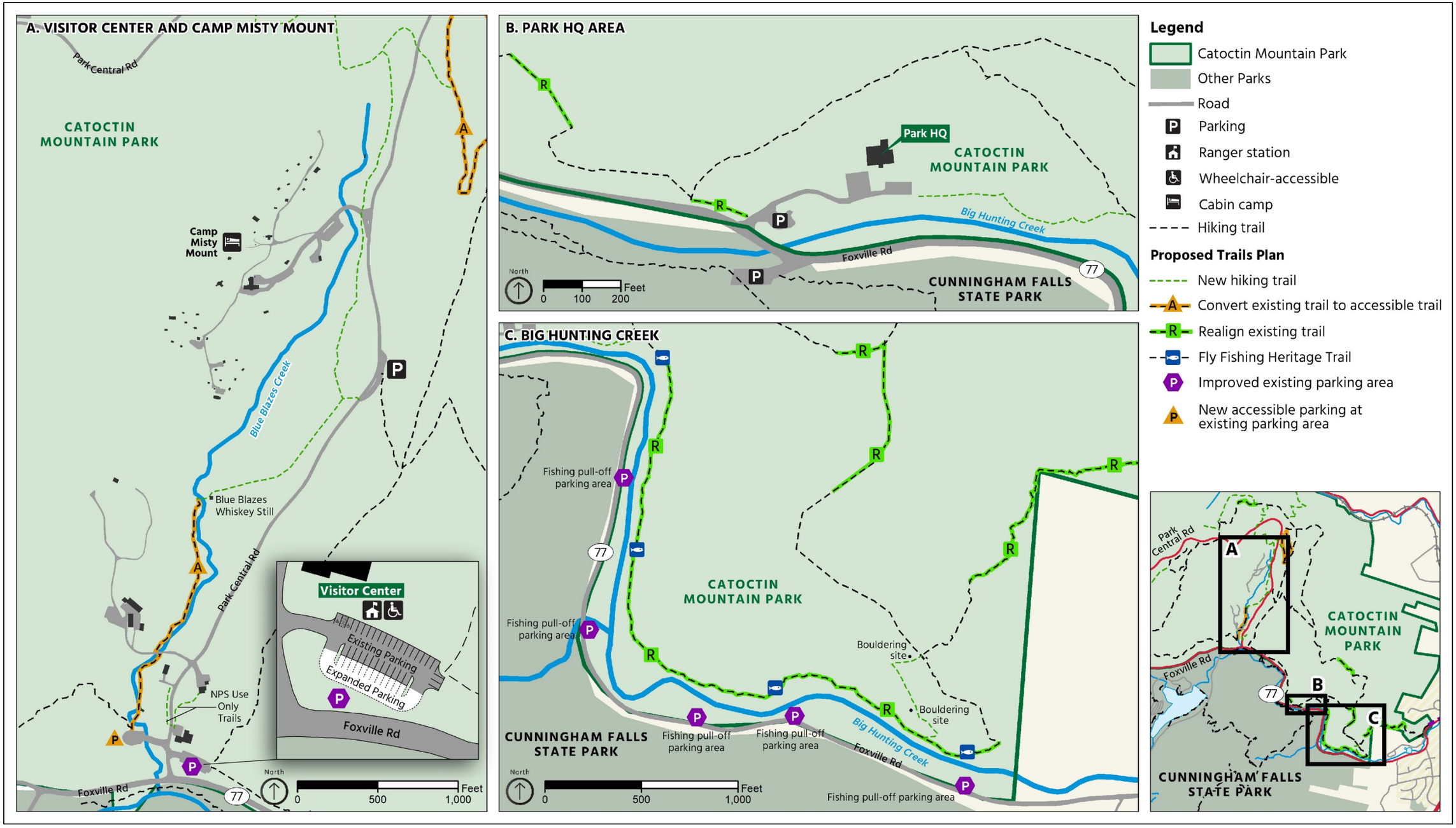


**Figure 3: Alternative B: Action Alternative – Proposed Improvements on the East Side of the Park**

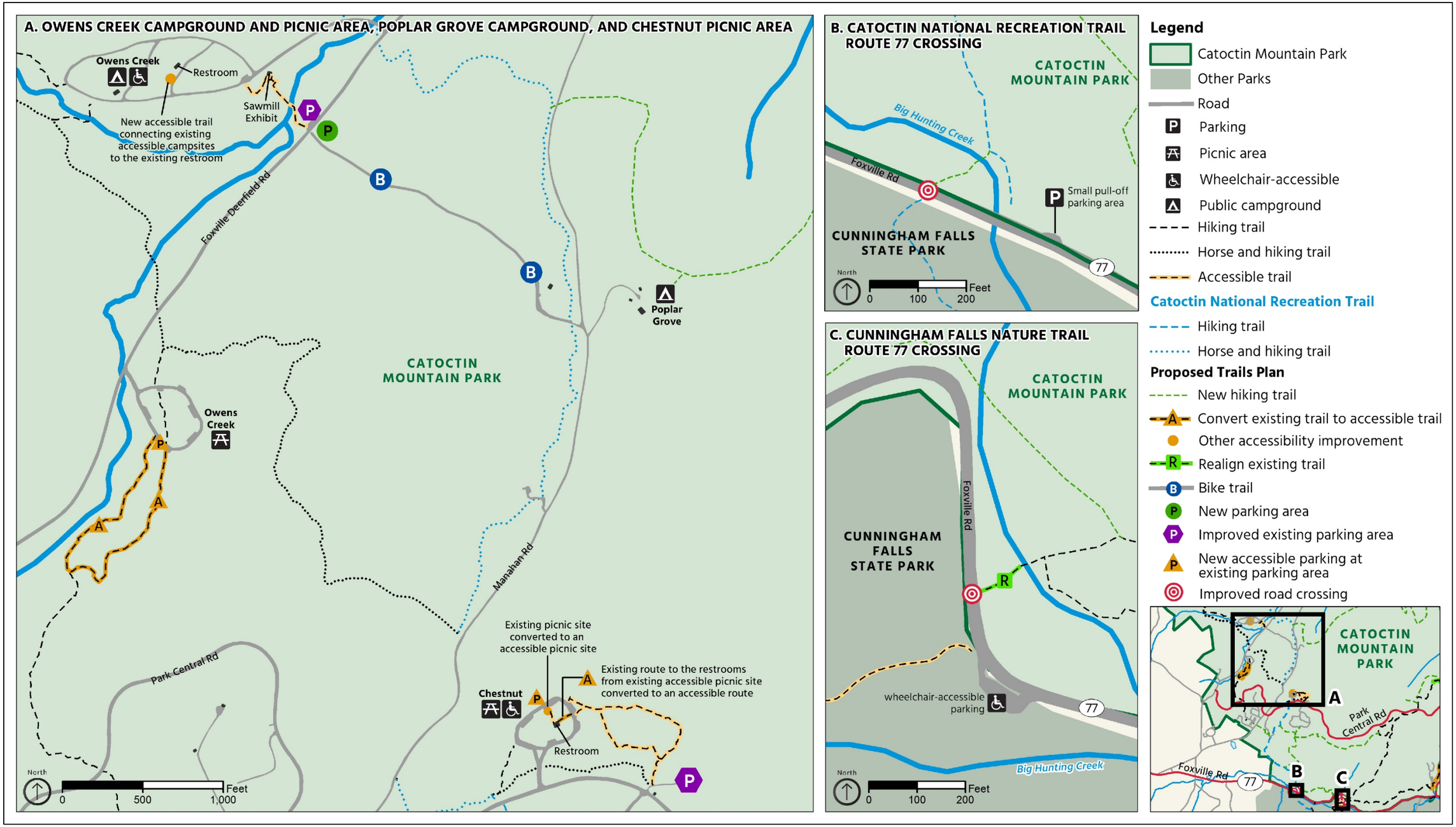


**Figure 4: Alternative B: Action Alternative – Proposed Improvements on the West Side of the Park**

## 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 new trail locations, expansion of allowed trail uses, and additional park access points. Some options were ultimately dismissed from further consideration, as described below.

**Trail Connection to Route 550** – A new trail connecting to Route 550 and a new parking area along Route 550 were considered. These elements were dismissed from further consideration because a connection across the Owens Creek stream bank and the existing railroad right-of-way would be required and the area between Route 550, the railroad right-of-way, and Owens Creek is steep and narrow.

**Trail Connections between the Visitor Center, Park Headquarters, and the Wolf Rock Trail/Chimney Rock Trail** – New trail connections in the area between the Visitor Center, Park Headquarters, and the Wolf Rock Trail/Chimney Rock Trail, including previously abandoned trail routes, were considered; however, these connections were dismissed from further consideration because they would provide redundant connections, resulting in resource impacts. An existing trail loop already connects the Visitor Center, Park Headquarters, Chimney Rock, and Wolf Rock.

**Trail Connections to Additional Bouldering Sites –** New trail connections to additional bouldering sites, including the General Boulder, Bullfrog Boulder, and Sick Bay Boulder were considered. A new trail connection to the General Boulder was dismissed from further consideration because potential trail routes could not avoid steep and unsustainable slopes, which would make constructing and maintaining a sustainable trail not feasible, and the general area around the boulder is steep and rocky, which would create visitor safety concerns and make emergency service responses difficult. A new trail connection to the Bullfrog Boulder and Sick Bay Boulder was dismissed from further consideration due to the location of sensitive resources in the area.

**Mountain Biking Trails** – The establishment of mountain biking trails in the park, including new trails that would allow mountain biking and improving existing trails to mountain biking trail standards, was considered. There are currently no mountain biking trails in the park. Mountain biking trails were dismissed from further consideration because multiple mountain biking trail opportunities currently exist nearby, including the Emmitsburg Watershed, Frederick Municipal Forest, and Gambrill State Park. These existing trails do not connect to the park. A potential regional off-road bike trail following the CNRT within the park is in the conceptual planning phase and could be considered in future plans. However, the compatibility of bike and equestrian use on some sections of this trail would need to be addressed.

**Realignment of the CNRT section along Manahan Road** – The realignment of the CNRT section that currently follows Manahan Road to a location that does not follow the roadway was considered; however, the realignment was dismissed from further consideration because that section of Manahan Road does not currently experience a lot of vehicle traffic and is already a disturbed route.

**Additional Improved Road Crossings along Route 77** – An improved road crossing between the Park Headquarters parking area and the Cunningham Falls State Park parking area for the Cat Rock Trailhead on Route 77 was considered. The two parking areas do not align with one another and are separated by Big Hunting Creek, which flows through a culvert under Route 77. The two parking areas are also located along a curve on Route 77 with poor vehicle sight distances. An improved road crossing was also considered to the east of the Visitor Center near the Cunningham Falls State Park parking area along Route 77. During the preparation of the Plan, the NPS met with SHA to discuss options for improvements in these two areas. The road crossing near Park Headquarters was dismissed from further consideration because it would require widening the Route 77 Big Hunting Creek bridge, which is not NPS property.

The road crossing near the Visitor Center was dismissed from further consideration because the crossing would only be needed during peak visitation periods when visitors park along the shoulder of Route 77 due to lack of parking elsewhere. The NPS and SHA determined that a crossing would not prevent visitors from walking along the road shoulder.

**Improved Parking Area at the Route 77 and CNRT Intersection** – An expansion of the existing parking area along Route 77 near the CNRT trailhead was considered; however, the expansion was dismissed from further consideration because of the presence of sensitive resources in the area.

**New Parking Area at the Braestrup Property** – A new parking area at the northwest corner of the park, known as the Braestrup property, was considered; however, this parking area was dismissed from further consideration due to the need for additional planning for the future use of this property.

**Potential Future External Trail Connection to Caboose Farm** – A potential future external trail connection to Caboose Farm along Manahan Road was considered; however, this connection was dismissed from further consideration because the CNRT is currently located along the NPS boundary with the Caboose Farm property, providing an existing connection.

### RATIONAL FOR THE PREFERRED ALTERNATIVE

The preferred alternative is the alternative that "would best accomplish the purpose and need of the proposed action while fulfilling [the NPS] statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors" (46.420(d)). The NPS has identified Alternative B as the preferred alternative because Alternative B would meet the project purpose and need. Alternative B would provide more connections between existing trails, to features of interest, and local and regional trail systems; improve visitor safety and wayfinding; and address park maintenance.

# AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the current environmental conditions in and around the project area, as well as reasonably foreseeable environmental trends and/or planned actions, and provides a baseline for understanding the resources that could be impacted by implementation of the proposed action. 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 chapter.

The Environmental Consequences analysis includes an analysis of the short-and long-term, beneficial and adverse environmental consequences or "impacts" of the No-Action and Action Alternatives. The Council on Environmental Quality defines impacts as changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives [40 CFR 1508.1(g)].

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. 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.

## HISTORIC RESOURCES

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 properties in the APE are documented in the NRHP nominations for Catoctin Mountain Park [Catoctin Recreational Demonstration Area (RDA)] (2014), Camp (1) Misty Mount Historic District (1989), Camp (2) Greentop Historic District (1989), and Emergency Conservation Works (ECW) Architecture at Catoctin Mountain Park Multiple Property Listing (1989); and the Cultural Landscape Inventories (CLIs) completed by the NPS for Catoctin Mountain Park (2002), Camp Misty Mount (2006), and Camp Greentop (2015). The NPS also currently manages all Mission 66 era resources and Job Corps related-resources as contributing to the Catoctin Mountain Park Historic District.

### Affected Environment

This section of the EA addresses historic resources within the APE. The APE contains numerous overlapping historic resources, including districts, cultural landscapes, buildings, objects, and sites. Many resources contribute to multiple properties. A description of these historic properties and their contributing resources is provided in **Appendix C**, the AOE prepared for the proposed project as part of the Section 106 process. Specific resources that contribute to these historic properties are summarized in **Table 1**.

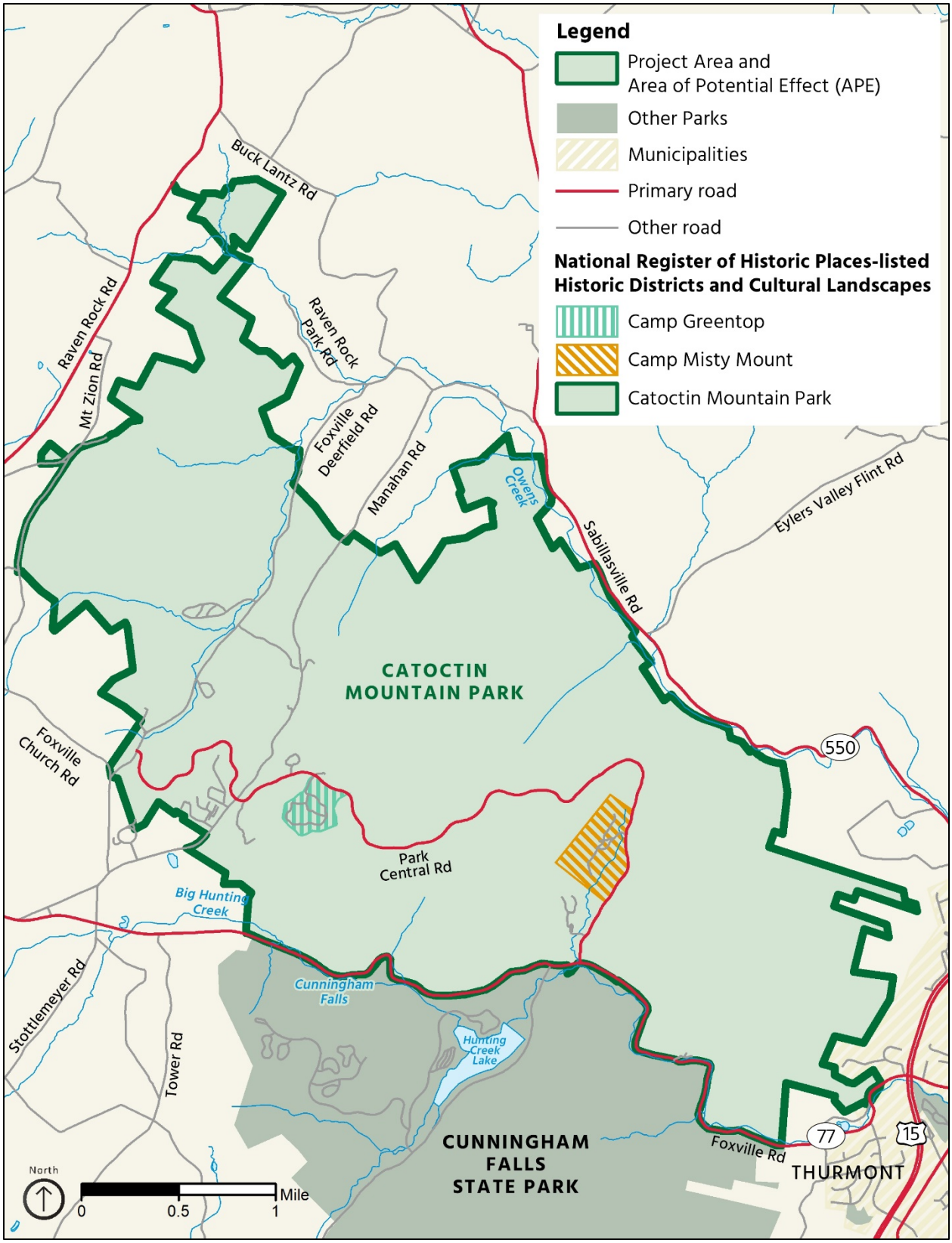


**Figure 5: Area of Potential Effect**

**Table 1: Contributing Resources**

| Contributing Resources | Resources contribute to: | | |
|---|---|---|---|
| | **Catoctin Mountain Park (Catoctin RDA) Historic District (HD) (including the Catoctin Mountain Park Cultural Landscape (CL))** | **Camp (1) Misty Mount HD (including the Camp Misty Mount CL)** | **Camp (2) Greentop HD (including the Camp Greentop CL)** |
| Circulation | ✓ | ✓ | ✓ |
| Buildings and structures | ✓ | ✓ | ✓ |
| Cluster arrangement | ✓ | ✓ | ✓ |
| Small-scale features | ✓ | ✓ | ✓ |
| Constructed water features | ✓ | | |
| Cultural traditions | ✓ | | |
| Archeological sites | ✓ | ✓ | |
| Vegetation | ✓ | ✓ | ✓ |
| Natural systems and features | ✓ | | ✓ |
| Land use | ✓ | | ✓ |
| Spatial organization | ✓ | | ✓ |
| Topography | ✓ | | ✓ |
| Views and vistas | ✓ | | |

## About the Analysis

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

As part of the Section 106 process, an AOE has been prepared for the proposed project and will be submitted to the MHT, the Delaware Nation Historic Preservation Office, the Seneca-Cayuga Nation, and the Tuscarora Nation for consultation and concurrence in conjunction with this EA.

Reasonably foreseeable environmental trends and/or planned actions considered in this analysis includes the NPS's proposed replacement and improvement of all primary and portions of secondary utility systems under jurisdiction of the park.

## Impacts of Alternative A: No Action

Under Alternative A, no changes would occur to the park's contributing buildings and structures, cluster arrangement, small-scale features, constructed water features, cultural traditions, vegetation, land use, spatial organization, and views and vistas.

Existing trails would remain in their current location and current trail maintenance practices would continue. Some of the existing trails that currently have moderate or severe erosion or other condition problems are contributing trails. A portion of these contributing trails are also parallel or within the vicinity of the park's creeks and streams (i.e., contributing natural systems and features and topography). Additionally, some of the park's existing trails, including some of those with erosion or other condition problems, traverse contributing archeological sites. Current maintenance practices would continue to be applied to trail sections with moderate to severe erosion or other condition problems. No changes to the design or alignment of these trails would occur, and would therefore have no noticeable changes on these contributing circulation features, natural systems and features, and topography over the short-term. Because no new earth disturbances would occur, there would also be no new impacts on contributing archeological sites over the short-term.

The NPS's proposed replacement and improvement of the park's utility systems would involve the removal of trees and vegetation and changes to five contributing buildings. Project elements were designed to mitigate potential impacts to historic resources and blend in with the surrounding landscape (NPS 2021). The project would result in temporary adverse impacts on historic resources during construction; however, the impacts would be short-term and within a site-specific area of the park, and phased over time.

Over the long-term, the retention of the current trail design and alignment would lead to further erosion, diminishing trail conditions and creek and stream conditions. These changes in conditions would not substantially alter the character of the park's contributing circulation, natural systems and features, and topography, but could result in detectable changes to the contributing trails, streams, creeks, and archeological sites. Continued foot traffic on existing trail sections that traverse archeological sites could result in impacts on the sites.

As a result, Alternative A would have detectable long-term adverse impacts on the Catoctin Mountain Park (Catoctin RDA) HD, but would not result in the de-listing of the Catoctin Mountain Park HD from the NRHP. No changes would occur to the Camp (1) Misty Mount and Camp (2) Greentop historic districts.

## Impacts of Alternative B: Action Alternative

Alternative B would retain the park's cluster arrangement of Camp Misty Mount and Camp Greentop, constructed water features, cultural traditions, land use, and views and vistas. No changes would occur to the park's circulation, buildings and structures, small-scale features, archeological sites, vegetation, natural systems and features, spatial organization, and topography except those outlined below.

- New trails would be introduced throughout the park, which would provide connections between existing trails and roadways on the east and west sides of the park and to Camp Misty Mount, Camp Greentop, and Camp Round Meadow. Some of these new trails would be within the vicinity of contributing buildings, structures, and small-scale features; connect to contributing roads and trails; and/or cross the park's streams, which are contributing natural systems and features and topography. New trails would be designed to be compatible with the character and materials of existing trails.

- Sections of existing trails with moderate or severe erosion or other condition problems would be realigned. These trails are contributing features, except the Gateway Trail from the trailhead at the Lewis Area parking area to the trail's T-intersection and the trail between the Park Headquarters and the Visitor Center. Some of these trails also traverse contributing archeological sites. The existing sections of realigned trails would no longer serve as trails. Natural groundcover vegetation would be allowed to grow into the closed trail section, but the closed trail section would be maintained to include a trace. Some of these trails would be realigned away from the park's contributing archeological sites and streams, which are contributing natural systems and features and topography.
- The existing Blue Blazes Whiskey Still Trail, Charcoal Trail, and Brown's Farm Nature Trail would be converted to accessible trails. These trails are contributing trails. In order to comply with ABAAS, the conversion of existing trails to accessible trails may require changes to the trail surface material and width, and minor topographic alterations.
- Alternative B would provide new parking areas along Foxville Deerfield Road (a contributing circulation road) and Mount Zion Road; improve the Visitor Center parking lot and Horse Trailer parking lot; and update existing parking areas where accessible trails are proposed to comply with ABAAS. These new and improved parking areas would be within the vicinity of contributing buildings, structures, small-scale features, and circulation features; would require the removal of vegetation; and may require topographic alterations.
- Alternative B would include routine trail maintenance activities.
- Alternative B would permit the use of bikes on the administrative road connecting Manahan Road and Foxville Deerfield Road, which currently allows pedestrians and official vehicle use.
- Alternative B would designate a section of the Gateway trail along Hunting Creek, a contributing trail, as a Fly Fishing Heritage Trail and add interpretive signage along the trail.

Alternative B would not result in physical changes to contributing buildings, structures, and small-scale features, including these features at Camp Misty Mount, Camp Greentop, Camp Round Meadow, the Blue Blazes area, and at Owens Creek Campground. However, new trails would be introduced in the vicinity of these contributing features. A new trail would be located to the east of Camp Misty Mount between the camp and Park Central Road near the culvert located under the camp entrance road at Blue Blazes Creek. New trails would lead out of Camp Round Meadow and Camp Greentop. The new trails would introduce defined trails in the camps' vicinity where there currently are none, thus altering the setting of the camps' buildings. New trails in the vicinity Camp Misty Mount and Camp Greentop could alter the character associated with these camps' rustic architecture and design harmony with the adjacent natural and man-made landscape. New accessible trails in the Blue Blazes area and at Owens Creek campground could also alter the character associated with Mission 66 and Job Corps buildings.

The introduction of new, realigned, and accessible trails, routine trail maintenance, and new and improved parking areas would result in physical changes to contributing circulation, spatial organization, archeological sites, vegetation, natural systems and features, and topography features. New trails in areas where no trails are present would result in changes to circulation patterns and spatial organization. New trails would create new paths of circulation within the park and provide visitor access to areas of the park that are currently inaccessible to visitors, including along Owens Creek north of Park Central Road, between the Hog Rock Trail and the CNRT, and to the Braestrup property. However, new trails would also provide connections between contributing trails on the east and west sides of the park, improving the trail system's overall interconnectedness. New trails providing connections to Camp Misty Mount and Camp Greentop would not result in changes to these cabin camps' broad circulation patterns.

Trails that are no longer in use at the park and have not been evaluated for their NRHP eligibility are treated by NPS as contributing until their status is identified. Although new trails would not follow the

exact alignment of trails no longer in use, new trails would establish trail connections that the trails no longer in use once provided between specific areas of the park. For example, new trails would provide trail connections between Camp Greentop, the CNRT, and the Hog Rock Trail, and connect the Poplar Grove Campground to the north area of the park towards Owens Creek.

The closing and realignment of sections of contributing trails with moderate or severe erosion or other condition problems would alter the historic locations of these circulation features. However, the realigned trail sections would not result in changes to the park's broader circulation patterns. Contributing trails would maintain their overall existing character and setting of a natural trail within a woodland setting. Natural groundcover vegetation would be allowed to grow into the closed trail section, but the closed trail section would be maintained to include a trace so that the historic alignment is legible in the landscape.

Routine trail maintenance activities would help maintain or improve trails' function as circulation features by preventing trail erosion and diminished trail conditions. Indigenous materials would be used to the extent practicable for maintenance activities. New erosion control and drainage features would match existing nearby features, use native logs, and use stone or rocks collected from nearby, to the extent practicable. Voids in trail tread would be filled, as needed, by nearby gathered and crushed rocks in the absence of available tree root balls for soil collection. If borrow pits are established to obtain needed material to re-establish trail tread, the pits would be filled with rock, downed trees and branches so that it is not visible from the trail. Trail edges that have been widened may be covered with existing downed brush and nearby rocks. Cultural resources staff would be consulted on these described maintenance activities to ensure no resources listed or eligible for listing in the NRHP are affected. Overall, the existing character and setting of these natural trails within a woodland setting would be retained.

Some of the sections of existing trails with moderate or severe erosion or other condition problems that would be realigned currently traverse contributing archeological sites. These existing trail sections would be realigned away from archeological sites, which would prevent future site disturbances caused by erosion from trail use.

Alternative B would also result in changes 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 and expanded parking areas would be constructed in areas with existing tree clearings, when possible. Although the Action Alternative would remove approximately 9.6 acres of vegetation of the 5,760-acre project area, such impacts would be minimal within the context of the park's forested area. Therefore, the park would retain its overall vegetated character. New trails within the vicinity of Camp Misty Mount and Camp Greentop could be visible from within the camps, but would not noticeably alter the vegetative character of the camps. New, realigned, and accessible trails would avoid the removal of large trees; the removal of other trees would be avoided to the extent feasible. New and expanded parking areas would be constructed in areas with existing tree clearings, when possible. In areas where tree and vegetation removal would occur, the areas would be revegetated using native grasses, shrubs, trees, or other plants where needed.

The development of new trails, accessible trails, new parking areas, and improved parking areas could minimally alter existing topography to provide appropriate slopes for trails and parking. Some new trails would include stream crossings, while sections of existing trails with moderate or severe erosion or other condition problems would be realigned away from the streams. However, the mountainous features, central plateau, and streams would be retained.

Proposed Plan features designed to be compatible with the rustic character of the landscape would minimize impacts on the park's historic resources 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 Catoctin

Mountain Park (Catoctin RDA), Camp (1) Misty Mount, and Camp (2) Greentop HDs would be noticeable. However, these changes would not result in the de-listing of the HDs from the NRHP. In conclusion, Alternative B, as well as the NPS's proposed replacement and improvement of the park's utility systems, would result in detectable adverse impacts on historic resources.

### ARCHEOLOGICAL RESOURCES

## Affected Environment

This section of the EA addresses archeological resources within the APE. A Phase I archeological survey has not been conducted for the entirety of the APE. Approximately half of the park has not been subject to any form of archeological survey of some level. Surveyed areas generally include areas along most of the park's existing trails, around Camp Misty Mount and Camp Greentop, along Owens Creek, the Lewis Area, and along a buffered area surrounding proposed improvements to the park's utility infrastructure. Previous archeological studies/surveys have documented 156 archeological sites throughout the park. Some of the park's existing trails currently traverse through or are in the vicinity of these documented archeological sites. Six of the 156 sites contribute to the 2014 Catoctin Mountain Park HD NRHP listing. Historic sites within the park include sites related to the charcoal industry (hearths and collier's huts), farmsteads/domestic sites, mining sites, and refuse/building debris discard sites. Prehistoric sites include quarry or workshop sites, rockshelters, camp sites, and artifact scatters (Bedell et al. 2011; Favret and Greenberg 2021; Johnson and Regan 2021; Katz et al. 2021).

Although approximately half of the park has not been subject to any form of archeological survey, previous archeological studies/surveys have noted:

- Unsurveyed areas of the park that have a high probability of containing NRHP-eligible archeological resources include land along Manahan Road and the northwest section of the park.
- The presence of family cemeteries at the park is quite unlikely based on historic research conducted for the study.

## About the Analysis

Archeological resources typically exist in subsurface contexts. Archeological resource surface finds are also possible. Archeological structural ruins, such as stairs, can also occur above ground. Therefore, potential impacts on archeological resources are assessed according to the extent to which the proposed alternatives would involve ground disturbing activities such as excavation or grading. Analysis of possible impacts on archeological resources is based on a review of previous archeological studies, consideration of the proposed design concepts, and other information available on the archeological context of the area. The APE for archeological resources is identical with that defined for historic properties.

As defined in the implementing regulations of the Archaeological Resources Protection Act of 1979 (ARPA) at 43 CFR 7.3a, archeological resources are any material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest. Any resources within the APE that meet this definition and are, or may be, defined as significant under NRHP Criterion D (having the potential to provide information important to history or prehistory) are granted protection as required under ARPA. ARPA is intended to protect archeological resources on public lands for the present and future benefit of the American people.

As part of the Section 106 process, an AOE has been prepared for the proposed project and will be submitted to the MHT, the Delaware Nation Historic Preservation Office, the Seneca-Cayuga Nation, and the Tuscarora Nation for consultation and concurrence in conjunction with this EA.

Reasonably foreseeable environmental trends and/or planned actions considered in this analysis includes the NPS's proposed replacement and improvement of all primary and portions of secondary utility systems under jurisdiction of the park.

## Impacts of Alternative A: No Action

Under Alternative A, existing trails would remain in their current location and current trail maintenance practices would continue. Some of the park's existing trails traverse through documented archeological sites. Some sections of existing trails currently have moderate or severe erosion or other condition problems. Current maintenance practices would continue to be applied to these trail sections. Because no changes to the design or alignment of the park's trails would occur, there would be no new earth disturbances and therefore, no new impacts on archeological resources over the short-term.

Over the long-term, the retention of the current trail design and alignment for trails with moderate or severe erosion or other condition problems would lead to further erosion, diminishing trail conditions and creating the potential for new social trails to form to avoid diminished trail sections. These changes in conditions could result in impacts on documented and undocumented archeological resources. Continued foot traffic on existing trail sections could also result in impacts on documented and undocumented archeological resources. The NPS's proposed replacement and improvement of the park's utility systems may have adverse impacts on archeological resources. The authors of the Phase I archeological survey conducted in advance of this project recommended that this project would have no noticeable impact on archeological resources and that no further survey is required (NPS 2021). As a result, Alternative A, as well as the NPS's utility system project, would have long-term adverse impacts on the park's archeological resources.

## Impacts of Alternative B: Action Alternative

Alternative B proposes new, accessible, and realigned trails, new use of bikes on an existing administrative road, routine trail maintenance activities, and new and improved parking areas in areas of the park previously subject to archeological survey. Elements proposed in Alternative B are designed to avoid areas within a 33-foot (10-meter) buffer around documented archeological sites in the park, excluding the proposed routine maintenance activities of existing trails and the proposed conversion of existing trails to accessible trails. Some existing trails currently traverse through documented archeological sites; however, the routine maintenance of these trails would not result in additional disturbance to the archeological site because the NPS would conduct the maintenance activities in a manner that would avoid disturbing the site. 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. The NPS would manage these impacts in accordance with NPS policies.

Routine trail maintenance activities could also include the establishment of borrow pits to obtain needed material to re-establish trail tread and the collection of native logs and stone or rocks collected from nearby. The construction of new earthen-surfaced trails may also harvest/mine earth from within the park. Routine trail maintenance activities would also be performed on the CNRT, which traverses through one archeological site and is near one archeological site, both of which the 2014 Catoctin Mountain Park HD NRHP nomination identify as contributing. Previous archeological survey efforts at these sites have revealed sub-surface components.

Archeological sites have been identified along the Blue Blazes Whiskey Still Trail, the Charcoal Trail, and the Brown's Farm Nature Trail Loop, which are proposed to be converted to accessible trails. All except one of the archeological sites are located outside of the trail pathway. However, these trail pathways are located within a 33-foot buffer of the archeological sites. The proposed new accessible trails

would avoid these documented archeological sites and would establish a buffer to avoid encountering subsurface features or other archeological artifacts during construction. For the one site located directly on the trail pathway, the trail intentionally bisects the site as part of an interpretive display. The continued use of the site as part of the trail will exacerbate damage to the site. (Johnson and Regan 2021). The conversion of the trail to an accessible trail may require minor ground disturbance, such as vegetation removal and minor topographic alterations.

New, accessible, and realigned trails and new and improved parking areas are also proposed in areas of the park that have not been subject to archeological survey. Therefore, any ground-disturbing activities planned in these areas associated with the implementation of Alternative B could encounter undocumented archeological resources. Ground disturbance related to the proposed project elements could disrupt or displace unknown archeological resources and result in a loss of integrity of the archeological resource, resulting in an adverse impact. The NPS shall conduct an archeological survey for undocumented areas and areas previously subjected only to pedestrian survey without shovel testing, including for those areas where borrow pits may be established, material collected, and earth harvested/mined for the construction of new trails and routine trail maintenance activities. These surveys would take place 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 MHT and THPOs. Consultations 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 NHPA of 1966, as amended (54 United States Code (USC) 306108). If NRHP-eligible or potentially 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 MHT and THPOs.

A protocol for the unanticipated discovery of cemeteries or human remains will be developed for the construction contractor. If any Native American burials, cemeteries, or funerary objects are encountered, the NPS would contact federally recognized Tribes with affiliation in Maryland, in accordance with NAGPRA.

The NPS would also avoid disturbing documented archeological resources during design and construction to the extent practicable. During the construction phase, the NPS would also minimize ground-disturbing activities to the extent practicable, including using existing vehicle circulation areas and construction methods that minimize land disturbance. If appropriate, archeological monitoring would also take place during construction.

### VISITOR USE AND EXPERIENCE

## Affected Environment

The park is a forested landscape that provides a variety of outdoor active and passive recreation and education opportunities. Overall, the park contains trails for hiking, running, horseback riding, solitude, and wildlife viewing; park roads and trails for cross-country skiing; scenic overlooks and vistas; historical and interpretive exhibits; creeks for fishing; opportunities for rock climbing and bouldering; campsites; and picnic areas (see **Figure 6**).

In 2019, the park received an estimated 296,846 visitors, including approximately 25,441 overnight stays in the park. Historically, the number of visitors at the park is highest in the spring through the fall months and lowest in January and February. From 2000-2019, the busiest month on average was June, followed by October and August (NPS n.d.a, n.d.b). During the spring and fall months, park visitation from the general public is busy on most weekends. Frederick County Public School groups come to the Visitor Center and use other park facilities and trails on the weekdays. During the summer months, the park can

be busy every day with general visitors and numerous camp groups. During the winter months, park visitation is the slowest (NPS 2008).

Park visitors are composed of local recreational users (i.e., people who live in Frederick County, MD and adjacent counties) (approximately 60 percent of total visitors), regional/National vacationers (approximately 40 percent of total visitors), and education groups (i.e., schools and other groups from Frederick County, Baltimore, and Washington, DC) (approximately one percent of total visitors) (NPS 2008).

**Visitor Access to the Park** - The main roadways bordering the park include Route 77 to the south, Mount Zion Road to the northwest, and Route 550 to the northeast. Visitors may access the park by vehicle through Route 77, Manahan Road, and Foxville Deerfield Road. The park's parking areas along the park perimeter are located on Route 77 and include the Lewis Area, Park Headquarters, Visitor Center, and several small pull-off parking areas along the roadway. Another parking area along the park perimeter is located at Camp Round Meadow off of Manahan Road. Additional parking areas along the perimeter of the park used by park visitors, but not on NPS property, include parking areas along Route 77 within Cunningham Falls State Park, which are located across from Park Headquarters and Visitor Center and at a wheelchair-accessible only parking area at Cunningham Falls; and a gravel parking area on private property along Mount Zion Road at the CNRT northern trailhead.

Pedestrians may enter the park through trailheads located at the perimeter parking areas. No sidewalks, multi-use paths, or designated bike lanes connect to the park.

**Internal Vehicle Circulation and Parking** - The main roadway within the park is Park Central Road, which is a two-lane road that provides internal east-west circulation within the park. Foxville Deerfield Road and Manahan Road, two-lane roads that connect to Park Central Road, provide north-south circulation within and through the park. Park Central Road is closed for 2.5 miles from the Visitor Center (i.e., just west of the Hog Rock parking lot) and one mile between Foxville Deerfield Road and Manahan Road for winter recreation approximately mid-December to mid-March. The gravel portion of Manahan Road north of Park Central Road is also closed during the winter months and can be used for winter recreation.

Park Central Road connects to several parking areas that provide access to the park's trail system. Additional parking area are located along Foxville Deerfield Road. The park's existing parking areas and their number of parking spaces are provided in **Appendix B**. The parking areas on the east side of the park frequently and quickly reach capacity on the weekends, especially at the Visitor Center, and cause congestion. Park staff have reported challenges to encourage visitors to park in the parking areas on the west side of the park.

**Trail System** - The park has approximately 24.3 miles of hiking trails, including approximately 7.6 miles of trails open to horseback riding. These trails vary in length and difficulty. Most trails intersect with other trails and therefore, provide pedestrians with loop trail experiences of varying lengths. However, some of these loops do not offer options for longer or shorter routes. Some of the park's trails require return through the same route.

The trail system is divided between the east and west sides of the park. No trails connect the east and west trail systems. The east trail system is popular among visitors and connects to the park's overlooks and vistas; provides access to the Visitor Center and Cunningham Falls; and includes a trail paralleling Big Hunting Creek and trails with historical and interpretive exhibits. The west trail system connects to picnic areas and campgrounds; passes through remnants of former farms; and includes horseback riding trails and accessible trails. The west trail system provides a wilder and more quiet hiking experience where visitors are more likely to see wildlife, wetlands, and an up-close view of nature.

The park's cabin camps, Camp Misty Mount and Camp Greentop, do not connect to the park's trail system. Camp users walk along Park Central Road to access trailheads or drive from the cabin camps to the park's parking lots to access the trail system.

Accessible trails at the park include the 0.36-mile loop Spicebush Nature Trail and the 0.14-mile Sawmill Trail, both located on the west side of the park.

Bicycles are allowed on the park roads. Bicycles are prohibited on the park's trail system, including the administrative road connecting Manahan Road and Foxville Deerfield Road.

The park's trail system provides two external trail connections, both to Cunningham Falls State Park via the CNRT and the Cunningham Falls Nature Trail. Both trails cross at unmarked crossings of Route 77 where the speed limit is 35 miles per hour. The two sides of each trail across the roadway are not aligned with one another, which leads visitors to walk along the side of the roadway to access the other side of the trail. The Cunningham Falls Nature Trail crossing is also located between two curves in a sloping section of the roadway. Vehicles approaching the crossing from either direction and crossing pedestrians have little visibility because of the curves and forested vegetation.

**Other Park Amenities** - Owens Creek Campground contains three accessible campsites. The campsites do not connect to the campground's restrooms via an accessible route. The Chestnut Picnic Area contains one accessible picnic site, which is located along the exterior of the picnic area's parking loop. The picnic area's restrooms are located in the interior of the parking loop. The accessible picnic site does not connect to the restrooms via an accessible route.

### About the Analysis

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

Reasonably foreseeable environmental trends and/or planned actions considered in this analysis includes the NPS's proposed replacement and improvement of all primary and portions of secondary utility systems under jurisdiction of the park.

## Impacts of Alternative A: No Action

Alternative A would not add new outdoor recreation or education opportunities, visitor access points, parking lots, trails, trail crossings of roadways, accessible trails, external trail connections, or other park amenities. The park would continue to prohibit bicycle use on the trail system, including the administrative road connecting Manahan Road and Foxville Deerfield Road. Existing visitor access points, parking lots, trail crossings of roadways, and signage would remain the same. No changes to current visitation levels would occur due to Alternative A.

No changes would occur to the approximately 2.7 miles of existing trail sections 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.

The implementation of the NPS's proposed replacement and improvement of the park's utility system would take approximately two to four years to complete. During this time, visitor access to specific areas of the park would be disrupted and construction would increase noise, the presence of construction equipment, truck traffic on the park's interior roads, and the removal of vegetation, all of which 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 during the off-peak visitor use periods to the extent practicable. Once the project is complete, the impacted areas would be restored to their original or mostly original condition. The project would have beneficial impacts on the visitor use and experience as a result of the overall improved reliability of the park's new system (NPS 2021).

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 adverse impacts on visitor use and experience.

## Impacts of Alternative B: Action Alternative

Alternative B would add new recreation and education opportunities in the park. New trails would be added to the 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 with physical disabilities. New and improved existing parking lots would increase visitor access points to the park and the trail system, improve circulation within existing lots, 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 realignment of existing trails, conversion of existing trails to accessible trails, or construction of improvements to existing parking lots. 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** – Alternative B would add one new access point and improve seven existing access points along the park's perimeter. A new parking area on Mount Zion Road, which would accommodate up to 15 cars and 2 horse trailers, would provide an additional parking option on the west side of the park, prevent park visitors from parking on private property, accommodate future visitor growth, and provide access to the northern trailhead of the CNRT. The expansion and restriping of the existing Visitor Center parking lot would improve vehicle circulation and reduce congestion when the lot is at capacity, improve bus circulation, and provide additional parking.

The resurfacing of the existing Lewis Area parking area and installation of NPS park signage would clearly define the parking area, improve visibility of the trailhead, and improve visitor awareness of the parking area as a formal entrance to the park. The expansion of the parking area would also provide additional parking. The addition of interpretive signage to the five existing small fishing pull-off area along Route 77 and formalization of pedestrian access from these areas to Big Hunting Creek would provide new education opportunities and improve access to the creek.

**Internal Vehicle Circulation and Parking** – Alternative B would add one new parking area and improve two existing parking areas within the park. A new parking area on Foxville Deerfield Road, which would accommodate up to 20 cars, and the expanded existing Sawmill Exhibit parking area, which would accommodate two buses total or an additional five cars, would provide an additional parking option on the west side of the park and accommodate additional visitors accessing the Sawmill Exhibit, interpretive programs at the campground amphitheater, and the new northern trail connecting the west and east sides of the park from Manahan Road to the Blue Ridge Summit Trail. The expansion of the end of the Horse Trailer parking lot would improve horse trailer circulation within the parking lot.


**Figure 6: Photos of Trails, Accessible Amenities, and Cabin Camps in the Park**
(1) Brown's Farm Trail trailhead at Owens Creek Picnic Area; (2) Trail between Chimney Rock and Park Headquarters; (3) Sawmill Trail; (4) Accessible picnic site at the Chestnut Picnic Area; (5) Blue Ridge Summit Overlook; (6) Cunningham Falls Nature Trail crossing of Route 77; (7) Camp Misty Mount; and (8) Camp Greentop

**Trail System** – Alternative B would provide approximately 10.3 miles of new trails in the park, increasing the total length of trails from approximately 24.3 to 34.6 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 trail loop options for longer and shorter routes and provide trail users more parking options and options to return to their starting point via a different route.

Visitors would gain access to additional points of interest and additional areas of the park that are currently inaccessible to visitors, including bouldering sites, a "stone stream" east of the Park Headquarters, the northern portion of the park near Owens Creek, and the Braestrup property. New trails north and south of Park Central Road would also connect the east and west sides of the park's trail system, which would reduce congestion at parking areas on the east side of the park, and provide new trail loop options that vary in length and difficulty. These new trails include a northern trail connecting Manahan Road on the west side of the park with the Blue Ridge Summit Trail on the east side of the park, and several trails connecting the CNRT on the west side of the park with the Hog Rock Trail and Cunningham Falls Nature Trail on the east side of the park. New trails on the east side of the park would also create new trail loop options. A new trail around the Blue Ridge Summit Overlook would provide a short challenging loop. New trails would also connect the Blue Blazes Whiskey Still Trail, the No Name parking lot (which does not currently connect to the trail system), the Wolf Rock/Chimney Rock parking lot, and the Thurmont Vista/Charcoal Exhibit parking lot.

Users of Camp Misty Mount and Camp Greentop would gain direct trail access to the park's larger trail system. A new trail connecting to the entrance road for Camp Misty Mount would connect to the Blue Blazes Whiskey Still Trail, the Wolf Rock/Chimney Rock Trail, and the Charcoal Trail. A new trail leading out of Camp Greentop would connect to new trails connecting to the CNRT on the west side of the park and the Hog Rock Trail on the east side of the park, both which would provide access south to Cunningham Falls. These new trail connections would reduce congestion in some parking areas and improve pedestrian safety because the new trails would eliminate the need for camp users to drive to trail heads or walk along roadways to access the park's larger trail system. Users of Camp Round Meadow would gain a second point of trail access to the park's larger trail system. A new trail leading out of Camp Round Meadow would connect to the CNRT.

Alternative B would convert approximately 1.3 miles of existing trails to trails that are universally accessible for visitors with physical disabilities, increasing the total length of accessible trails in the park from approximately 0.5 to 1.8 miles. These accessible trails would provide new user groups and individuals access to points of interest in the park, including the Blue Blazes Whiskey Still, the Charcoal Trail, and remnants of a former farm along the Brown's Farm Nature Trail Loop. These accessible trails would also provide new user groups and individuals new educational opportunities.

Alternative B would close and realign approximately 2.7 miles of existing trails with moderate or severe erosion or other condition problems. 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.

Bike users would have a trail option in the park. Alternative B would permit the use of bikes, including mountain bikes and e-bikes, on the 0.4-mile administrative road connecting Manahan Road and Foxville Deerfield Road. The allowance of bikes on this administrative road would provide bicycle access to Owens Creek Campground via Manahan Road, and provide new user groups and individuals a trail experience. For example, e-bikes may be used by older individuals or individuals with physical limitations who may not be able to hike or utilize a traditional bicycle. Because the administrative road would allow hikers and bike users, this trail could create conflicts between different trail users or an unpleasant visitor experience. For example, mountain bikers or e-bike users 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 e-bike users. Although e-bikes do create some noise associated with the electric motor, it is a level similar to that produced by traditional bicycles and is unlikely to cause any auditory nuisance beyond that of a traditional bicycle (Larson et al. 2016).

The addition of interpretive signage along the new trails, including the newly designated Fly Fishing Heritage Trail along the Gateway Trail, would provide new education opportunities at the park.

The improvement of the CNRT and Cunningham Falls Nature Trail crossings of Route 77 would improve pedestrian safety. A new short trail spur from the CNRT that would align with the CNRT trailhead in Cunningham Falls State Park and the realignment of the Cunningham Falls Nature Trail would eliminate the need for visitors to walk along the side of Route 77 to access the other side of the trail. Additional improvements coordinated with SHA and Cunningham Falls State Park would increase vehicle visibility and awareness of pedestrian crossings and improve visitor wayfinding between the two sides of the trail.

Alternative B would also provide two new external trail connections to the Appalachian Trail and Town of Thurmont, which would integrate the park's trail system with other local and regional trail systems.

The placement of consistent and standardized signage at new trailheads and critical trail intersections, and the replacement of existing painted blazes with metal reflective tags would improve visitor wayfinding.

**Other Park Amenities** – Alternative B would provide a new accessible trail connecting existing accessible campsites to existing restrooms at Owens Creek Campground, convert an existing picnic site at the Chestnut Picnic Area to an accessible picnic site, and convert the existing path to the restrooms from the existing accessible picnic site to an accessible trail. These changes would improve access to restrooms for visitors with physical disabilities. No changes would occur to the park's other existing amenities.

In conclusion, the addition of new trails and parking areas, realignment of existing trail sections, improvement of road crossings, and improvement of existing parking areas would improve visitor access and connections to and within the park, improve trail user safety, and expand recreation and education opportunities, but would temporarily disrupt visitor access to certain trails or locations within the park. The NPS's proposed replacement and improvement of the park's utility system would also temporarily disrupt visitor access and experience as described in the previous Impacts of Alternative A: No Action section. Alternative B, as well as the NPS's utility system project, 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.

# CONSULTATION AND COORDINATION

The NPS involved the public 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 MHT in a letter dated January 11, 2021. The NPS initiated consultation with the Delaware Nation Historic Preservation Office, the Seneca-Cayuga Nation, and the Tuscarora Nation in letters dated January 27, 2021. The NPS has prepared an AOE report for the proposed project and will send it to the state and tribal historic preservation officers for review in conjunction with this EA.
- The NPS initiated Section 7 consultation via the USFWS's online Information for Planning and Consultation (IPaC) system on August 3, 2021. Ongoing consultation would occur during implementation of the proposed action.

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# APPENDIX A: TRAILS PLAN METHODOLOGY AND GUIDANCE

## NEW TRAILS

New trails would:

- Avoid an "Avoidance Area" defined as the following:
  - Within 33 feet (10 meters) of documented archeological sites
  - Rare plant locations
  - Maryland Natural Heritage Areas
  - G2 (Imperiled) rare ecosystems
  - Within 25 feet of seeps and springs
  - Within 100 feet of Maryland's Wetlands of Special State Concern (WSSC)
  - Generally within 25 feet of non-WSSC wetlands except where a trail crosses a wetland via a foot bridge
  - On slopes greater than 50 percent
- Minimize crossings of water resources and wetlands
- Avoid floodplains to the extent feasible
- Follow guidance for creating sustainable trails in relation to slopes as described in the U.S. Forest Service's *Trail Construction and Maintenance Notebook 2007 Edition* and National Park Service (NPS) Denver Service Center's *Trail System Planning: A Guidebook*. According to this guidance, new connecting trails would, to the extent feasible:
  - Maintain an average trail slope of 10 percent or less, while minimizing trail sections on 15 to 50 percent slopes
  - Avoid slopes greater than 50 percent
  - Follow topographic contour lines
  - Traverse along the sideslope
  - Keep uphill and downhill trail sections on slopes less than 10 percent

The Avoidance Area and other water resource considerations (i.e., wetlands and floodplains) in relation to Alternative B are shown in **Figure A- 1**.

## Design Parameters

The U.S. Forest Service's *Forest Service Handbook (FSH) 2309.18 Trails Management Handbook* defines five trail classes: Trail Class 1 (Minimally Developed), Trail Class 2 (Moderately Developed), Trail Class 3 (Developed), Trail Class 4 (Highly Developed), and Trail Class 5 (Fully Developed). The Trail Class is the prescribed scale of development for a trail and represents its intended design and management standards. Trail Classes also generally reflect the level of recreational challenge provided by a trail. The identification of the appropriate Trail Class for each trail or trail segment should be based on the management intent for the trail or trail segment. More information about the trail attributes of the five trail classes can be found in **Table A- 1**.

**Table A- 2** summarizes design parameters or technical guidelines for the survey, design, construction, and maintenance of Class 2 and Class 3 new trails that only allow hikers and pedestrians.

### *Additional Slope Guidance*

For sustainability purposes, new trails would:

- Be constructed in accordance with the "half rule" (i.e., the trail grade should be no more than half the side slope grade)
- Follow a rolling contour design (i.e., traverses a hill or side slope at a gentle grade)
- Include frequent grade reversals
- Include an outsloped tread (i.e., the tread is lower on outside or downhill side of the trail than it is on the inside or uphill side of the trail) of at least five percent

These design parameters would let water sheet across a trail in a manner that minimizes erosion and sedimentation. Some construction techniques, such as hardening or rock armoring, and soil types may reduce the need to strictly adhere to the 10 percent average slope parameter.

In order to reverse the trail direction on hillsides and for quick elevation gains, new connecting trails would use switchbacks, climbing turns, or steps where appropriate. Switchbacks are appropriate for steeper terrain on slopes steeper than 15 percent and preferably on sideslopes ranging from 15 to 45 percent. Climbing turns are appropriate for gentle slopes that are typically 15 percent or less and ideally on 7 percent side slopes. Steps could also be used to quickly gain elevation in a short distance on trails. Trails steeper than 20 percent can be difficult to maintain and therefore, could incorporate steps or hardened surfaces into their design (U.S. Forest Service 2007).

### *Wetlands*

The appropriate structure used across wetlands is highly dependent on site conditions. Riverine crossings associated with new trails would be constructed to span the full channel width from uplands to uplands whenever possible, thereby avoiding impacts to riverine wetlands to the extent feasible. These crossings could involve bridges or other structures that do not require pilings, fill, or other support structures in the wetland/stream habitat. Trails across wetlands could also include boardwalks if the total wetland impact from fill placement is 0.1 acre or less (NPS 2016).

### *Climate Change Resiliency*

Areas of the park north and east of Park Central Road and east of Manahan Road are areas with the highest resilience to climate change of all areas within the park (see **Figure A- 2**). Therefore, additional conservation measures will be put in place to protect these areas from stressors including, but not limited to, invasive exotic species, canopy loss, and development.

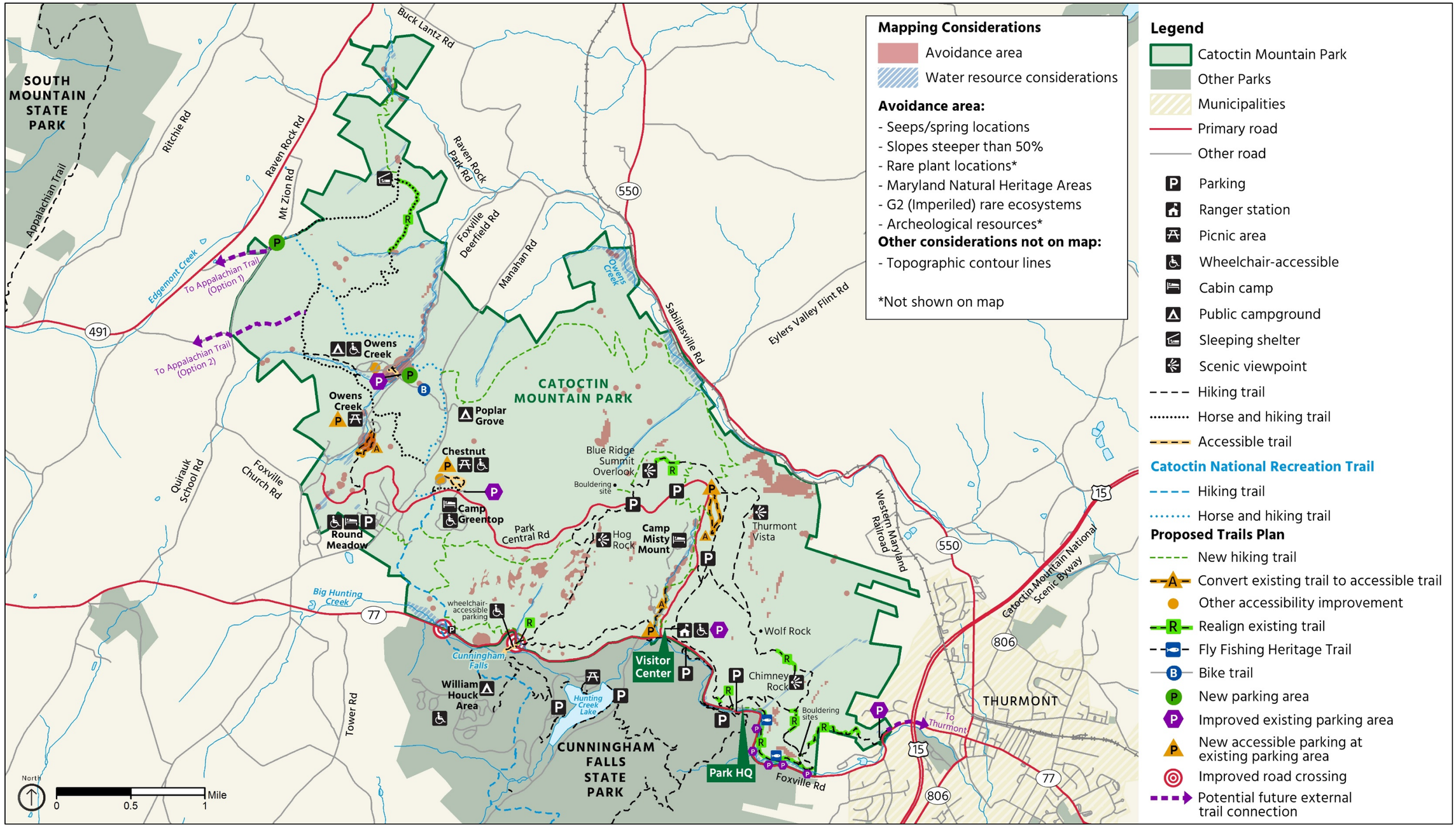


**Figure A- 1: Avoidance Area and Water Resource Considerations**

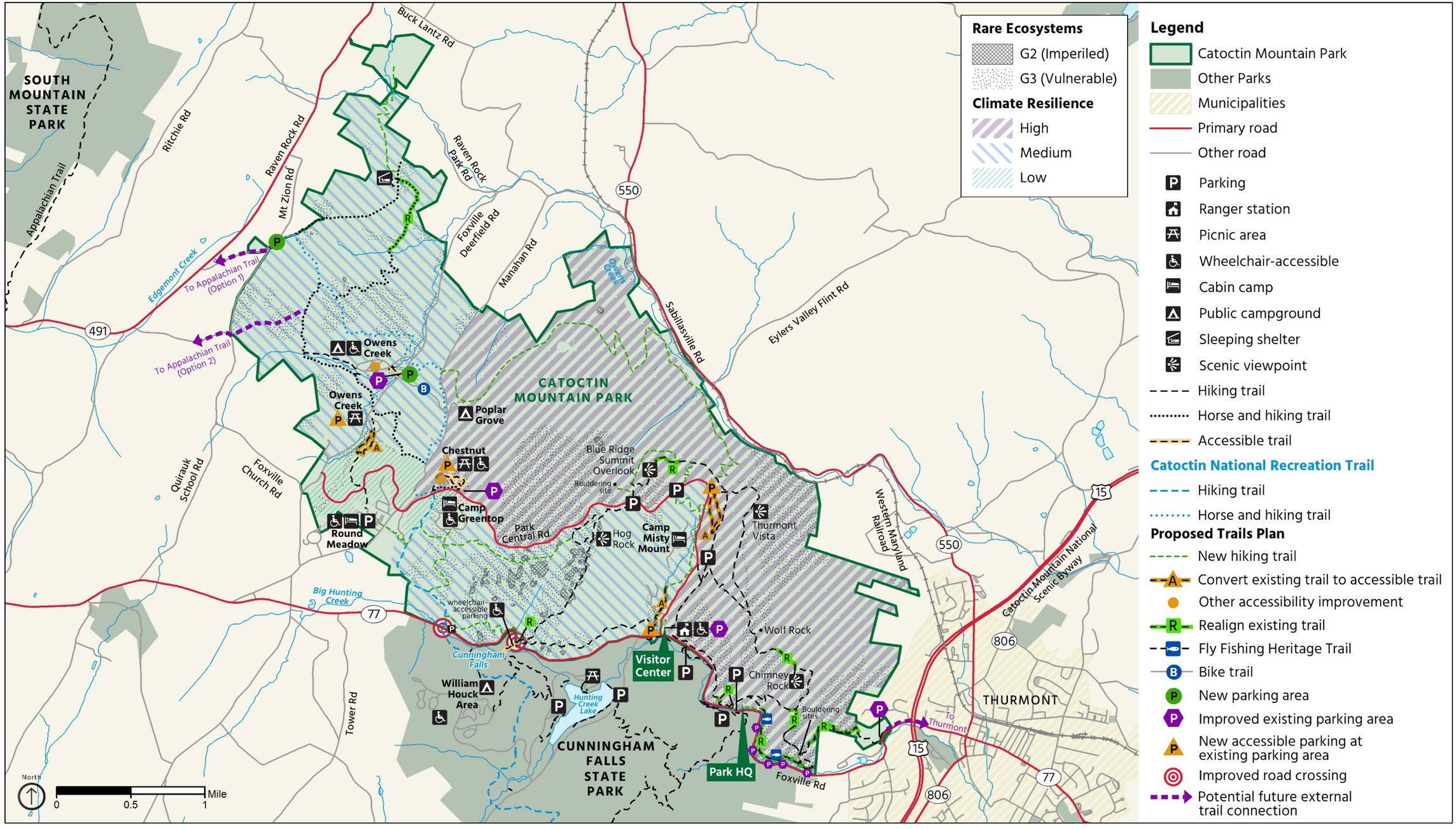


**Figure A- 2: Rare Ecosystems and Climate Change Resiliency**

**Table A- 1: Trail Attributes by Trail Class[1]**

| Trail Attributes | Trail Class | | | | |
|---|---|---|---|---|---|
| | 1<br>Minimally Developed | 2<br>Moderately Developed | 3<br>Developed | 4<br>Highly Developed | 5<br>Fully Developed |
| **Tread & Traffic Flow** | Tread intermittent and often indistinct<br>May require route finding<br>Single lane, with no allowances constructed for passing<br>Predominantly native materials | Tread continuous and discernible, but narrow and rough<br>Single lane, with minor allowances constructed for passing<br>Typically native materials | Tread continuous and obvious<br>Single lane, with allowances constructed for passing where required by traffic volume in places where there is no reasonable opportunity to pass<br>Native or imported materials | Tread wide and relatively smooth, with few irregularities<br>Single lane, with allowances constructed for passing where required by traffic volume in places where there is no reasonable opportunity to pass<br>Double lane where traffic volume is high and passing is frequent<br>Native or imported materials<br>May be hardened | Tread wide, firm, stable, and generally uniform<br>Single lane, with frequent turnouts where traffic volume is low to moderate<br>Double lane where traffic volume is moderate to high<br>Commonly hardened with asphalt or other imported material |
| **Obstacles** | Obstacles common, naturally occurring, often substantial, and intended to provide increased challenge<br>Narrow passages; brush, steep grades, rocks and logs present | Obstacles may be common, substantial, and intended to provide increased challenge<br>Blockages cleared to define route and protect resources<br>Vegetation may encroach into trailway | Obstacles may be common, but not substantial or intended to provide challenge<br>Vegetation cleared outside of trailway | Obstacles infrequent and insubstantial<br>Vegetation cleared outside of trailway | Obstacles not present<br>Grades typically < 8% |
| **Constructed Features & Trail Elements** | Structures minimal to non-existent<br>Drainage typically provided without structures<br>Natural fords<br>Typically no bridges | Structures of limited size, scale, and quantity; typically constructed of native materials<br>Structures adequate to protect trail infrastructure and resources<br>Natural fords<br>Bridges as needed for resource protection and appropriate access | Structures may be common and substantial; constructed of imported or native materials<br>Natural or constructed fords<br>Bridges as needed for resource protection and appropriate access | Structures frequent and substantial; typically constructed of imported materials<br>Constructed or natural fords<br>Bridges as needed for resource protection and user convenience<br>Trailside amenities may be present | Structures frequent or continuous; typically constructed of imported materials<br>May include bridges, boardwalks, curbs, handrails, trailside amenities, and similar features |
| **Signs [2]** | Route identification signing limited to junctions<br>Route markers present when trail location is not evident<br>Regulatory and resource protection signing infrequent<br>Destination signing, unless required, generally not present<br>Information and interpretive signing generally not present | Route identification signing limited to junctions<br>Route markers present when trail location is not evident<br>Regulatory and resource protection signing infrequent<br>Destination signing typically infrequent outside wilderness areas; generally not present in wilderness areas<br>Information and interpretive signing uncommon | Route identification signing at junctions and as needed for user reassurance<br>Route markers as needed for user reassurance<br>Regulatory and resource protection signing may be common<br>Destination signing likely outside wilderness areas; generally not present in wilderness areas<br>Information and interpretive signs may be present outside wilderness areas | Route identification signing at junctions and as needed for user reassurance<br>Route markers as needed for user reassurance<br>Regulatory and resource protection signing common<br>Destination signing common outside wilderness areas; generally not present in wilderness areas<br>Information and interpretive signs may be common outside wilderness areas<br>Accessibility information likely displayed at trailhead | Route identification signing at junctions and for user reassurance<br>Route markers as needed for user reassurance<br>Regulatory and resource protection signing common<br>Destination signing common<br>Information and interpretive signs common<br>Accessibility information likely displayed at trailhead |
| **Typical Recreation Environs & Experience [3]** | Natural and unmodified<br>ROS: Typically Primitive to Roaded Natural<br>WROS: Typically Primitive to Semi-Primitive | Natural and essentially unmodified<br>ROS: Typically Primitive to Roaded Natural<br>WROS: Typically Primitive to Semi-Primitive | Natural and primarily unmodified<br>ROS: Typically Primitive to Roaded Natural<br>WROS: Typically Semi-Primitive to Transition | May be modified<br>ROS: Typically Semi-Primitive to Rural<br>WROS: Typically Portal or Transition | May be highly modified<br>Commonly associated with visitor centers or high-use recreation sites<br>ROS: Typically Roaded Natural to Urban<br>Generally not present in Wilderness areas |

Source: U.S. Forest Service 2008

[1] For National Quality Standards for Trails, Potential Appropriateness of Trail Classes for Managed Uses, Design Parameters, and other related guidance, refer to FSM 2353 and FSH 2309.18.
[2] For standards and guidelines on the use of signs and posters on trails, refer to the Sign and Poster Guidelines for the Forest Service (EM-7100-15).
[3] The Trail Class Matrix shows combinations of Trail Class and Recreation Opportunity Spectrum (ROS) or Wilderness Recreation Opportunity Spectrum (WROS) settings that commonly occur, although trails in all Trail Classes may and do occur in all settings. For guidance on the application of the ROS and WROS, refer to FSM 2310 and 2353 and FSH 2309.18.

**Table A- 2: Hiker/Pedestrian Trail Design Parameters[1]**

| **Designed Use HIKER/PEDESTRIAN** | | **Trail Class** | |
|---|---|---|---|
| | | **2** | **3[2]** |
| **Design Tread Width** | **Wilderness** (Single Lane) | 6" – 18" | 12" – 24"<br>Exception: may be 36" – 48" at steep side slopes |
| | **Non-Wilderness** (Single Lane) | 6" – 18" | 18" – 36" |
| | **Non-Wilderness** (Double Lane) | 36" | 36" – 60" |
| | **Structures** (Minimum Width) | 18" | 18" |
| **Design Surface [3]** | **Type** | Native, limited grading<br>May be continuously rough | Native, with some on-site borrow or imported material where needed for stabilization and occasional grading<br>Intermittently rough |
| | **Protrusions** | ≤ 6"<br>May be common and continuous | ≤ 3"<br>May be common, not continuous |
| | **Obstacles** (Maximum Height) | 14" | 10" |
| **Design Grade [3]** | **Target Grade** | 5% – 18% | 3% – 12% |
| | **Short Pitch Maximum** | 35% | 25% |
| | **Maximum Pitch Density** | 20% – 30% of trail | 10% – 20% of trail |
| **Design Cross Slope** | **Target Cross Slope** | 5% – 20% | 5% – 10% |
| | **Maximum Cross Slope** | 25% | 15% |
| **Design Clearing** | **Height** | 6' – 7' | 7' – 8' |
| | **Width** | 24" – 48"<br>Some light vegetation may encroach into clearing area | 36" – 60" |

| Designed Use HIKER/PEDESTRIAN | | Trail Class 2 | Trail Class 3[2] |
|---|---|---|---|
| | **Shoulder Clearance** | 6" – 12" | 12" – 18" |
| **Design Turn** | **Radius** | 2' – 3' | 3' – 6' |

Source: U.S. Forest Service 2008

[1] For definitions of Design Parameter attributes (e.g., Design Tread Width and Short Pitch Maximum), see FSH 2309.18, section 05.

[2] Trail Class 3 have the potential to be accessible. If assessing or designing trails for accessibility, refer to the Forest Service Trail Accessibility Guidelines (FSTAG) for more specific technical provisions and tolerances (FSM 2350).

[3] The determination of the trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.

#### REALIGNED TRAILS

Existing trail sections with moderate or severe erosion or other condition problems would be realigned to the extent practicable to:

- Avoid the Avoidance Area as previously described
- Be located on sustainable slopes as previously described

### Design Parameters

Realigned existing trail sections would be designed, constructed, and maintained in the same manner as new trails. The realigned section of the trail would connect to the existing trail with a smooth transition and not include any abrupt turns (U.S. Forest Service 2007). Trail markings and signage would be removed on the closed trail section and new trail markings or signage would be added to the new realigned trail section. Natural vegetation would be allowed to grow into the closed trail section, but the closed trail section would be maintained to include a trace so that the alignment is legible in the landscape.

Realigned trail sections that only allow hikers and pedestrians would be designed, constructed, and maintained according to design parameters summarized in **Table A- 2**. Realigned trail sections that allow equestrians in addition to hikers and pedestrians would be designed, constructed, and maintained according to the design parameters summarized in **Table A- 3**. Each trail class has specific design parameters that are related to the trail's "Managed Use." A managed use is the mode of travel that is actively managed and appropriate on a trail based on its design and management. Realigned trails would be designed and built to accommodate one "designed use," but more than one managed use may be allowed on the trail. The designed use is the managed use of the trail that requires the most demanding design, construction, and maintenance parameters. Generally, equestrian trails have more demanding design specifications than hiking trails (U.S. Forest Service 2008).

In areas of the park with high resiliency to climate change, additional conservation measures will be put in place when realigning existing trail sections to protect the high resiliency areas from stressors including, but not limited to, invasive exotic species, canopy loss, and development.

**Table A- 3: Equestrian Trail Design Parameters[1]**

| **Designed Use EQUESTRIAN** | | **Trail Class** | |
|---|---|---|---|
| | | **2** | **3** |
| **Design Tread Width** | **Wilderness** (Single Lane) | 12" – 18"<br>May be up to 48" along steep side slopes<br>48" – 60" or greater along precipices | 18" – 24"<br>May be up to 48" along steep side slopes<br>48" – 60" or greater along precipices |
| | **Non-Wilderness** (Single Lane) | 12" – 24"<br>May be up to 48" along steep side slopes<br>48" – 60" or greater along precipices | 18" – 48"<br>48" – 60" or greater along precipices |
| | **Non-Wilderness** (Double Lane) | 60" | 60" – 84" |
| | **Structures** (Minimum Width) | Other than bridges: 36"<br>Bridges without handrails: 60"<br>Bridges with handrails: 84" clear width | Other than bridges: 36"<br>Bridges without handrails: 60"<br>Bridges with handrails: 84" clear width |
| **Design Surface [2]** | **Type** | Native, with limited grading<br>May be frequently rough | Native, with some on-site borrow or imported material where needed for stabilization and occasional grading<br>Intermittently rough |
| | **Protrusions** | ≤ 6"<br>May be common and continuous | ≤ 3"<br>May be common, not continuous |
| | **Obstacles** (Maximum Height) | 12" | 6" |
| **Design Grade [2]** | **Target Grade** | 5% – 20% | 3% – 12% |
| | **Short Pitch Maximum** | 30% | 20% |
| | **Maximum Pitch Density** | 15% – 20% of trail | 5% – 15% of trail |

| **Designed Use EQUESTRIAN** | | **Trail Class** | |
|---|---|---|---|
| | | **2** | **3** |
| **Design Cross Slope** | **Target Cross Slope** | 5% – 10% | 3% – 5% |
| | **Maximum Cross Slope** | 10% | 8% |
| **Design Clearing** | **Height** | 8’ – 10’ | 10’ |
| | **Width** | 72”<br>Some light vegetation may encroach into clearing area | 72” – 96” |
| | **Shoulder Clearance** | 6” – 12”<br>Pack clearance: 36” x 36” | 12” – 18”<br>Pack clearance: 36” x 36” |
| **Design Turn** | **Radius** | 4’ – 5’ | 5’ – 8’ |

Source: U.S. Forest Service 2008

[1] For definitions of Design Parameter attributes (e.g., Design Tread Width and Short Pitch Maximum), see FSH 2309.18, section 05.

[2]The determination of the trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.

#### ACCESSIBLE TRAILS AND AMENITIES

Existing trails converted to accessible trails would:

- Connect to existing parking areas that would be updated to comply with the 2015 Architectural Barriers Act Standards (ABAAS).
- Be located on existing zero to twelve percent slopes to the extent feasible. The 2015 Architectural Barriers Act (ABA) Standards inform accessible trail routes and areas. Trails in compliance with ABA may have running slopes up to 12 percent. However, trail segments with slopes steeper than five percent are limited in length by the ABA Standards. Therefore, the construction of accessible trail segments on existing six to twelve percent slopes may require grade modifications to meet this length requirement. The construction of accessible trail segments on existing slopes steeper than 12 percent would require grade modifications.

### Design Parameters

The design of accessible trails, connecting accessible parking areas, and accessible picnic sites would be designed and constructed to comply with the 2015 ABAAS. According to these standards, the surface of accessible trails, passing spaces, and resting intervals would be firm and stable. The surface of accessible trails would also be in accordance with the park’s cultural landscape and viewshed goals. The clear tread width would be a minimum of 36 inches. Trails with a clear tread width less than 60 inches would provide passing spaces compliant with ABAAS at intervals of 1,000 feet maximum. In areas where a trail

would be heavily used, a 60-inch minimum clear tread width is recommended. The running slope of any trail segment would not exceed 12 percent. Not more than 30 percent of the total length of the trail would have a running slope steeper than 8.33 percent. Where the running slope of a trail segment exceeds five percent, the maximum length of the trail segment would be in accordance with **Table A- 4** and a resting interval would be provided at the top and bottom of each segment. Accessible trails would also comply with additional accessible trail design parameters related to passing spaces, tread obstacles, openings, slopes, resting intervals, protruding objects, and trailhead signs in the 2015 ABAAS.

**Table A- 4: Maximum Running Slope and Segment Length of Accessible Trails**

| Running Slope of Trail Segment | | Maximum Length of Segment |
|---|---|---|
| Steeper than | But not Steeper than | |
| 1:20 (5%) | 1:12 (8.33%) | 200 feet |
| 1:12 (8.33%) | 1:10 (10%) | 30 feet |
| 1:10 (10%) | 1:8 (12%) | 10 feet |

Source: U.S. Access Board 2015

In areas of the park with high resiliency to climate change, additional conservation measures will be put in place when converting existing trails to accessible trails to protect the high resiliency areas from stressors including, but not limited to, invasive exotic species, canopy loss, and development.

### PARKING

New parking areas would:

- Avoid the Avoidance Area as previously described
- Be located on 10 percent or less slopes
- Use areas with existing tree clearings or prior, non-historic development (i.e., disturbed), when possible

Expanded existing parking areas would:

- Avoid the Avoidance Area as previously described to the extent feasible
- Be located on 10 percent or less slopes

The proposed maximum number of parking spaces and surface for each new and improved parking area are provided in **Table A- 5** and **Table A- 6**.

In areas of the park with high resiliency to climate change, additional conservation measures will be put in place when constructing a new parking area or expanding existing parking areas to protect the high resiliency areas from stressors including, but not limited to, invasive exotic species, canopy loss, and development.

**Table A- 5: New Parking Areas**

| New Parking Area | Proposed Maximum Number of Parking Spaces | Surface |
|---|---|---|
| Foxville Deerfield Road | 20 car spaces | Packed |
| Mount Zion Road | 15 car spaces and 2 horse trailer spaces | Packed |
| **Total Maximum Parking Spaces** | **35 car spaces and 2 horse trailer spaces** | |

**Table A- 6: Improved Existing Parking Areas**

| Existing Parking Area | Number of Parking Spaces | | | Surface |
|---|---|---|---|---|
| | Existing | Proposed Maximum Addition | Total | |
| Lewis Area | 10 | 10 | 20 | Packed |
| Visitor Center | 38 | 6 | 44 | Paved |
| Horse Trailer | 4 | 0 | 4 | Packed |
| Sawmill | 5 | 5 | 10 | Packed |
| **Total Maximum Parking Space Addition** | | **21** | | |

## REFERENCES

National Park Service (NPS). 2016 (June). National Park Service Procedural Manual #77-1: Wetland Protection.

U.S. Access Board. 2015. Architectural Barriers Act (ABA) Standards (2015). Available: https://www.access-board.gov/attachments/article/1029/ABAstandards.pdf . Accessed August 15, 2018.

U.S. Forest Service. 2007 (July). Trail Construction and Maintenance Notebook 2007 Edition.

———. 2008 (October). Forest Service Handbook (FSH) 2309.18 – Trails Management Handbook. Approved September 30, 2008.

# APPENDIX B: PARKING

The park's existing parking lots and their approximate number of parking spaces are provided in **Table B-1**. Although not included, parking is available at small pull-off parking areas along Route 77 and at all of the cabin camps and other campgrounds in the park.

**Table B- 1: Inventory of Existing Parking Lots in Catoctin Mountain Park**

| Parking Lot | Non-Accessible Regular Spaces | Accessible Spaces | Oversized Spaces | Total Spaces |
|---|---|---|---|---|
| Visitor Center (and secondary lot) | 60 | 2 | 0 | 62 |
| Wolf Rock/Chimney Rock | 7 | 0 | 0 | 7 |
| Thurmont Vista/Charcoal Exhibit | 35 | 0 | 0 | 35 |
| No Name | 5 | 0 | 0 | 5 |
| Hog Rock | 47 | 1 | 0 | 48 |
| Chestnut Picnic Area | 28 | 2 | 2 | 32 |
| Horse Trailer | 0 | 0 | 4 | 4 |
| Owens Creek Picnic Area | 34 | 0 | 0 | 34 |
| Sawmill Exhibit | 4 | 1 | 0 | 5 |
| Manahan Road (Camp Round Meadow) | 59 | 1 | 0 | 60 |
| Lewis Area | 10 | 0 | 0 | 10 |
| Park Headquarters Outer Area | 5 | 0 | 0 | 5 |
| **Total** | **294** | **7** | **6** | **307** |

# APPENDIX C: ASSESSMENT OF EFFECTS