



National Park Service
U.S. Department of the Interior
Great Smoky Mountains National Park
North Carolina and Tennessee

FINDING OF NO SIGNIFICANT IMPACT
Wears Valley Mountain Bike Trail System

Recommended:

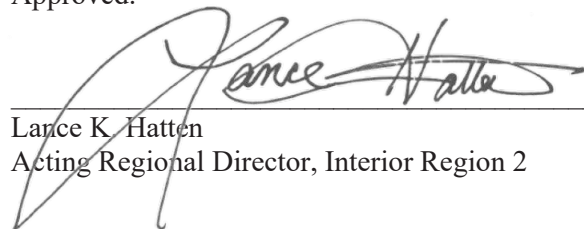
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Approved:



Lance K. Hatten
Acting Regional Director, Interior Region 2

May 18, 2022
Date

INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an environmental assessment (EA) to examine alternatives and environmental impacts associated with a proposed mountain bike trail system within the Wears Valley portion of Foothills Parkway (Parkway) Section 8D at Great Smoky Mountains National Park, Sevier County, Tennessee. Collectively the Parkway and Great Smoky Mountains National Park are referred to as “the Park” in this document. The purpose of the proposed project is to enhance visitor experience by providing a mountain bike trail system to take advantage of new and unique recreational opportunities that exist in the Wears Valley portion of Parkway Section 8D. Previous NPS planning efforts completed between 1968 and 1984 identified this portion of Section 8D as one of the most desirable areas for recreational and other development along the Parkway based on its central location and other factors. While more than 800 miles of trails exist in the Park, fewer than 8 miles are designated for biking. Public roads within the Park are open to biking, but no purpose-built mountain biking trails exist.

The EA analyzed four alternatives: the no-action alternative, which provides a basis for comparing environmental impacts of the action alternatives, and three action alternatives for construction of a mountain bike trail system.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the *Wears Valley Mountain Bike Trail System Revised Environmental Assessment* (February 2022) and associated decision file. The original EA was made available for public review from October 16 through November 15, 2020. During the public comment period, NPS received a comment regarding the potential effects of the proposed mountain bike trail system on karst resources. As a result, a dedicated study to identify karst features in the project area was undertaken in 2021, and NPS prepared a Revised EA to analyze potential effects on karst resources in more detail. Additionally, the Revised EA documents that a Superintendent’s written determination, rather than a special regulation, will be prepared to designate the proposed trail system as a bicycle route in accordance with the NPS Bicycle Rule (36 Code of Federal Regulations 4.30). The Revised EA was made available for public review from February 8 through March 10, 2022. Seventy-two pieces of correspondence were received during both comment periods. Attachment A provides the public comment report, including NPS responses to substantive comments received on the Revised EA and original EA. As required by NPS *Management Policies 2006*, a finding of non-impairment is included as attachment B.

SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

Based on the analysis presented in the Revised EA and after considering public comments, NPS selected alternative 3 (Proposed Action and NPS preferred alternative). Under the selected alternative, NPS will construct a mountain bike trail system with approximately 4.2 miles of easy trail (green, less than 5% slope), 2.9 miles of moderate trail (blue, 5% to 10% slope), and 4.7 miles of advanced trail (black, 10% to 15% slope) for a total of 11.8 miles of mountain bike trails. The selected alternative will also include approximately 2.3 miles of pedestrian-only trails in the project area for a total of 14.1 miles of trails. An approximately 0.93-mile access road will be constructed along the proposed Parkway Section 8D road alignment to access the mountain bike trail system and trailhead. One centralized trailhead with approximately 135–145 parking spaces will be located at the end of the access road. The preliminary location for the trailhead is partially forested. NPS will refine the location of this trailhead during design to reduce the amount of required tree clearing, potentially locating the trailhead partially or fully within an existing field. Amenities at the trailhead will include a bike wash and repair station; a comfort station (restrooms) with a subsurface sewage disposal system (i.e., septic system); picnic tables; and an informational kiosk for orientation, trail etiquette, and rules for mountain biking. The selected alternative may also include a concession/bike rental building and/or a fee collection station, depending on the

operational strategy determined by the Park. The exact footprint and massing of these buildings will be determined during final design. The selected alternative has a mountain bike trail capacity of 177 people at one time based on assumptions outlined in the Revised EA.

Approximately 25 acres will be disturbed during the construction period. Sustainable design concepts and construction techniques will be used to quickly eliminate water from the trail system after a rain event, which will reduce erosion, standing water, and long-term trail maintenance needs.

The Park aims to proceed with construction only after an operational strategy and new long-term funding sources for administration, operation, and maintenance of the area are identified. A business assessment will be conducted to determine the best strategy for serving the needs of visitors while balancing impacts on staff and resources. The business assessment will include a detailed analysis of staffing requirements and estimated costs associated with administration, operation, and maintenance of the mountain bike trail system for each Park division. If a commercial service contract is determined to be the most desirable strategy, Park staff will prepare and analyze a plan in a separate NEPA effort.

RATIONALE

NPS selected alternative 3 (preferred alternative) because:

- It is consistent with the Park's conservation mandate and meets the purpose of and need for the action by providing the most total trail mileage (bike and pedestrian) for viewing and enjoying the Park's resources and balancing the total miles of easy, moderate, advanced, and pedestrian trails to offer the best variety of ride options and appeal to multiple user groups.
- It will provide opportunities for visitors to enjoy the park, gain appreciation of park resources, and derive inspiration from the resources.
- It can accommodate any of the three operational strategies identified on page 13 of the Revised EA, pending a detailed business analysis by the Park.
- It includes mitigation measures to avoid and minimize impacts on Park resources and visitors. While some resources will experience long-term, adverse impacts, there is no potential for significant impacts to occur.

MITIGATION MEASURES

The selected alternative includes the following mitigation measures.

Design and Construction

- Design and construct trails to (1) keep users from going off the trail, (2) avoid sensitive plants, and (3) avoid removal of large trees and damage to retained trees during construction.
- Incorporate bear-wise practices into the project design, including using bear-proof dumpsters, minimizing the number of picnic tables in the trailhead area, confining picnicking to a small area, and minimizing places where visitors tend to congregate and eat along the trails. Require the contractor to remove food trash daily or use a bear-proof dumpster during the construction period.
- Modify the proposed bike trail alignments to the extent possible to avoid or minimize impacts on sensitive plant species. Conduct pre-construction surveys and flagging for avoidance in areas where known sensitive plant species intersect with bike routes and associated infrastructure.
- Conduct tree and vegetation clearing between November 15 and March 31 to avoid impacts on federally listed bats and nesting birds. As noted above, avoid removal of large-diameter trees whenever possible to minimize impacts on bat habitat. Avoid damage to and properly prune damaged limbs on remaining adjacent trees, in accordance with established arboricultural practices.

- Initiate construction in open field areas outside the grassland nesting bird breeding season (April 23 to August 15), when feasible. If construction must start during the breeding season, manage open field areas within the project footprint (approximately 10 acres) prior to construction through continued haying or mowing to avoid impacts on grassland nesting birds covered under the Migratory Bird Treaty Act. The first haying or mowing should be completed before the breeding season (April 23 to August 15) to discourage birds from establishing nests. Subsequent treatments may be necessary to keep grasses within the project footprint considerably lower than surrounding, unmaintained open areas until construction starts.
- Prepare a post-construction Revegetation Plan, to include at a minimum: (1) the location of revegetation sites; (2) locations and details for any needed topsoil storage; (3) plant species to be used; (4) time of year that the seeding will occur and the methodology of the seeding; (5) measures to control invasive vegetation; (6) monitoring plans; and (7) locations of temporary or permanent barricades, or other means to protect revegetation areas.
- Aerate any ground surface temporarily disturbed during construction and replant with native vegetation or Park-approved seed mix to reduce compaction and prevent erosion.
- Implement sediment and erosion control measures consistent with the requirements and recommendations contained in the *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012). File a Notice of Intent with the Tennessee Department of Environment and Conservation (TDEC) to obtain coverage under the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Stormwater Associated with Construction Activities (Permit Number TNR100000). Develop site-specific stormwater pollution prevention plan in accordance with Part 3 of the General Permit.
- Require contractor to develop and adhere to a spill prevention control and countermeasures plan during construction.
- Use excelsior logs, natural fiber blankets, and/or hydromulch (weed- and pest-free) in areas of disturbed bare soil with a potential for erosion to reduce surface runoff velocities and prevent sediment from entering drainages. Use erosion control materials composed of fully biodegradable, non-plastic material (no “photodegradable” plastic is authorized).
- Construct a wildlife tunnel for amphibians and small mammals underneath the access road north of Cove Creek.
- Cease all work in the immediate area if archeological materials are inadvertently discovered. Do not proceed with work until authorized by the Superintendent, in consultation with the Park Cultural Resources Program Manager or the Park Archeologist.
- Close the project area to visitor use during the construction period.
- Implement the following measures to stop further spread of invasive plants into and out of the project area:
 - Clean all earthmoving and seeding equipment prior to entering NPS lands, including wheels, undercarriages, dozer belly pans, bumpers, and all parts of heavy equipment. Complete all washing outside NPS lands. Once cleaned, the contractor will schedule inspection with Park staff to confirm sufficiency.
 - Use only topsoil, rock, sand, gravel, or other natural materials from Park-inspected and approved sources.
 - Treat priority invasive plant infestations in areas subject to ground disturbance prior to construction. Monitor and re-treat for one to three years post-construction, as appropriate. After the initial post-construction monitoring and control period, integrate invasive plant

management with the parkwide program,. based on observed conditions and management priorities.

- Implement the following measures to avoid and minimize impacts on karst resources consistent with the *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012) and *Appendix B - Stormwater Design Guidelines for Karst Terrain of the Tennessee Permanent Stormwater Management and Design Guidance Manual* (TDEC & UT 2014), as applicable.
 - Avoid and minimize potential impacts to identified karst-like features and features of interest identified in figure 15 of the Revised EA. Avoid direct disturbance of soil or vegetation within a buffer surrounding identified karst-like features during the design and construction process. The size of the avoidance buffer will be consistent with those established for water resources and based on the best professional judgment of technical specialists knowledgeable of the specific karst feature and local karst resources.
 - Design access road, trailhead areas (buildings, parking, and septic systems), trails, and stormwater management system to minimize alteration of existing drainage into and out of these features.
 - Conduct geophysical and geotechnical surveys, as applicable, to inform siting and design of the access road, trailhead areas (buildings, parking, and septic systems), and stormwater management system considering recommendations provided in the Karst Investigation Report (NPS 2022). Initial surveys will be conducted within the area of disturbance for the access road and trailhead areas with a buffer added to account for siting of stormwater management measures. The size of the buffer will be based on best professional judgment of the survey and design team, and additional survey areas may be included as appropriate. The area of disturbance will be based on the 30% conceptual design drawings for the selected alternative. Survey data will inform the design process as follows:
 - If survey results indicate that underground karst features are not present, detailed design will proceed based on the existing 30% conceptual site plan for the selected alternative.
 - If survey results indicate that underground karst features are present, NPS will consider options for modifying the site plan to avoid and minimize impacts on identified underground karst resources. Any modifications to the existing site plan will occur within the existing project area analyzed in the Revised EA.
 - If modifications to the site plan are feasible, additional geophysical and geotechnical surveys will be conducted.
 - If survey results for the modified site plan indicate that underground karst features are not present, NPS will modify the proposed action, determine if additional NEPA documentation is required, and identify the appropriate level of documentation in accordance with Council on Environmental Quality (CEQ) regulations and the NPS *NEPA Handbook* (NPS 2016). NPS will not implement the action until any required additional NEPA review is complete.
 - If no practicable alternatives exist for re-siting the proposed access road and trailhead area to avoid identified karst features, NPS will consider other design options and mitigation measures to minimize impacts on karst resources. If other design options and mitigation measures are feasible, NPS will revise the proposed action.

- If the selected alternative is modified based on survey findings, NPS will determine if additional NEPA documentation is required and identify the appropriate level of documentation in accordance with CEQ regulations and the NPS *NEPA Handbook* (NPS 2016). NPS will not implement the action until any required additional NEPA review is complete.
- Design permanent stormwater management measures as required by section 438 of the Energy Independence and Security Act of 2007 and following karst-specific guidelines such as those found in *Appendix B - Stormwater Design Guidelines for Karst Terrain* of the *Tennessee Permanent Stormwater Management and Design Guidance Manual* (TDEC & UT 2014).
 - Design stormwater management to prevent increased runoff volumes while retaining existing runoff volume to maintain groundwater recharge.
 - Minimize the amount of impervious surface to reduce the volume and velocity of stormwater runoff generated.
 - Design stormwater management measures to minimize ponding, widely distribute infiltration, and treat runoff in a series of small runoff reduction methods such as rain gardens, small-scale bioretention systems, and dry swales before it becomes concentrated.
- Maintain positive site drainage to collect and transport surface water away from structural areas and karst features that would otherwise not receive such surface water during construction and for the life of the structure.
- Verify that subsurface piping is sealed and pressure tested (if required given karst conditions) prior to its placement in service. Maintain the subsurface piping to identify leaks and correct them in a timely manner.
- Design bridge to help ensure that the bridge and access road are above the level of a 100-year flood event. Install gates along the Parkway to allow for closure of the area if warranted.
- Follow Federal Highway Administration *Design Standards for Highways in National Flood Insurance Program Mapped Floodplains* (FHWA 1986).

Operation

- Encourage trail users to clean equipment and bike tires before and after use to control the spread of non-native/invasive plant species.
- Include informational kiosks with additional information to educate users on low-impact riding, reasons to stay on the trail, and the importance of cleaning equipment to prevent tracking non-native plants into the Park.
- Educate visitors on “leave-no-trace” practices and consequences associated with bears consuming human food and becoming habituated to humans.
- Implement good housekeeping practices, including daily and evening cleanup of human food and trash in the trailhead area.
- Implement standard protocols for managing human-bear conflicts consistent with bear-wise principles and the Park’s black bear management guidelines.
- Remove hazard trees only in consideration of bat protection requirements. If removal of a hazard tree with bat roost characteristics is needed between April 1 and November 14, NPS will have a qualified individual observe for bats for 30 minutes before and after sunset. The tree will be removed the following morning if bats were not observed. If bats were observed, the tree will be

re-surveyed and will not be cut until survey confirms that bats are no longer roosting in the tree. In cases where imminent harm to life and property exists, hazard tree removal can be completed year-round in accordance with take exemptions under the 4(d) rule for the northern long-eared bat. The 4(d) rule provides measures that are necessary and advisable for conserving northern long-eared bats, and it prohibits purposeful take of the northern long-eared bat except in certain instances, including removal of hazardous trees for the protection of human life. The Park could also temporarily close the area near the hazard tree until bats are no longer roosting in the tree.

OTHER ALTERNATIVES ANALYZED IN THE EA

In addition to the NPS selected alternative described above, the EA analyzed a no-action alternative and two action alternatives with variations on the length and types of trail system and variations in trailhead locations and facilities (pages 7–20 of the Revised EA). Alternative 2 was not selected because it did not provide a pedestrian-only trail, which could increase the potential for user conflicts relative to alternative 3. In addition, the two-trailhead concept considered under alternative 2 would increase long-term infrastructure maintenance requirements compared to alternative 3. Alternative 4 was not selected based on its lower bike trail capacity (128 people at one time compared to 177 for alternative 3) and because it did not include a possible concessions/bike rental space, which would limit operational strategies available to the Park.

FINDING OF NO SIGNIFICANT IMPACT

NPS reviewed the environmental impacts described in the Revised EA and determined that no significant direct, indirect, or cumulative impact will occur to any of the Park's resources.

As described in the Revised EA and Statement of Findings for Wetlands and Floodplains, the selected alternative has the potential for adverse and beneficial impacts on Park resources, including soils, surface waters, vegetation, wetlands, floodplains, visitor use and experience, and wildlife, including threatened and endangered species. No significant adverse impacts were identified. The signed Statement of Findings is provided in attachment C.

SOILS

Construction of the mountain bike trail system, access road, and trailhead will disturb approximately 25.3 acres of soils and cause displacement, compaction, and erosion that will affect soil processes and require soil management. During operation and use of the trail system, upland areas with steep grades (i.e., >10%), could result in greater soil degradation than areas with limited slope. However, trails that are routed across slopes will experience less erosion from tread incision and water runoff than trails that run directly down slope. Most soils in the project area are well-drained and moderately permeable; therefore, it is anticipated that soil cohesion will be maintained. Use of sustainable design concepts and mitigation measures will reduce the potential for adverse impacts and will include building trails in dry soils where possible, maintaining grades, using grade reversals and drainage installations, and incorporating signage reminding visitors to stay on the trail and not to ride on wet trails. These methods will quickly eliminate water from the upland trail system after a rain event, which will further reduce erosion, standing water, and long-term trail maintenance needs.

The selected alternative will have long-term, adverse impacts on soils, but NPS has determined that the impacts will not be significant because:

- Direct, short- and long-term, adverse impacts will affect only 6% of all soils in the project area.
- Only 1% of soils in the project area will be permanently altered.
- Impacts will be on commonly occurring soils in this area of the Park that are well-drained, moderately permeable, and moderately favorable for recreational development.

- Mitigation measures, including use of sustainable design concepts and sediment and erosion control measures, will effectively minimize potential impacts.

SURFACE WATER

Increased turbidity and sedimentation to downstream areas from the construction of the mountain bike trail system, access road, and trailheads could affect surface waters in the project area. Construction activities at water crossings could result in short-term increases of downstream turbidity levels from localized sediment disturbance. Trail design will require the construction of elevated structures to avoid and minimize disturbances, which could result in additional short-term impacts, including temporary partial flow diversions during construction; however, these structures will reduce the potential for long-term impacts. Operation of the mountain bike trail system could result in long-term sedimentation and water quality impacts to surface waters. Visitor use of the trails could cause wear to the dirt trail surface and possibly widen these surfaces, which will increase the potential for soil erosion and sediment transport to surface waters. The addition of 5.6 acres of new impervious areas and permanent loss of forest vegetation cover (13.3 acres) will lead to increased surface water runoff from the project area, which could increase pollutant loadings in streams. Buffers between stream channels and the proposed access road and trailhead will limit the overall impact of new impervious areas on the project area watershed; however, the increased storm runoff will be long term and have small, localized impacts.

The project stormwater plan and erosion control plan will include applicable TDEC stormwater construction permit conditions (i.e., NPDES regulations), and the detailed design of the project will incorporate specific stormwater control measures that could include rain gardens, infiltration systems, and bioswales. In addition to use of the trails, the selected alternative will include a subsurface sewage disposal system to treat wastewater from the restrooms. Under the selected alternative, assuming a conventional septic system is appropriate for the site, the septic field will be situated near the developed trailhead in open, non-forested areas and outside floodplains and buffers for wetlands, minimizing the potential for the lateral transfer of septic runoff into the stream. The specific type of sewage disposal system and size of the associated drain fields will be defined during the project design process based on site-specific soil and geotechnical surveys in consultation with TDEC.

The selected alternative will have long-term, adverse impacts on surface waters, but NPS has determined that the impacts will not be significant because:

- Trail design, surface waters buffers, and the design and siting of the septic system will ensure surface water quality in the project area during operation will remain similar to the existing water quality conditions.
- Impacts will not likely result in water quality levels outside the limits of the designated uses for surface water resources in Wears Valley.
- Construction mitigation measures will minimize sedimentation, and impacts will be short term and likely localized to construction areas.

VEGETATION

Construction and operation of the mountain bike trail system will result in direct, short- and long-term, adverse impacts on vegetation from the removal of forest and open field land cover and from the potential spread of non-native invasive species. Approximately 14.4 acres of forest and 9.9 acres of open fields will be removed during construction. However, approximately half of open field removal (4.8 acres) will be temporary disturbance, which will be revegetated in accordance with the project-specific Revegetation Plan. Temporarily disturbed areas will be reseeded after construction, and the open field setting will be maintained through continued haying or annual mowing. Large-diameter trees will be avoided to the extent possible.

The selected alternative will have long-term, adverse impacts on vegetation, but NPS has determined that the impacts will not be significant because:

- The affected vegetation communities are common and are not imperiled or otherwise considered rare.
- Species composition in the project area will not change.
- Mitigation measures will be implemented to monitor and control non-native invasive plants.

VISITOR USE AND EXPERIENCE

Construction and operation of the mountain bike trail system will result in both adverse and beneficial impacts on visitor use and experience. Park visitors will experience beneficial impacts from the addition of a new recreation type. The trail system will be designated for mountain bike use to minimize conflicts between cyclists and pedestrians. Inclusion of a designated pedestrian trail will increase diversity of recreational experiences available at the site and further reduce the potential for user conflicts.

Construction will adversely affect the current visitor experience for birding when the area is closed during the construction period. Post-construction, the presence of the new bridge over Cove Creek will contribute long-term, adverse effects on existing birding in this portion of the project area. Birders who currently use an existing roadbed in the alignment of the proposed access road and bridge will be affected. However, the area around Cove Creek and the adjacent wetland will be accessible by a pedestrian trail. The wetland and other areas will continue to provide opportunities for birding. The development of the mountain bike system could increase visitation, but it may also contribute to distributing visitation from congested areas in the Park, such as Cades Cove, which could reduce visitation pressure in other areas of the Park. To manage congestion, the Park will implement the management strategies and mitigation measures included in appendix B of the Revised EA.

The selected alternative will result in long-term, beneficial impacts on visitors who desire a purpose-built mountain bike trail system. Birders and hikers who currently use the project area and surrounding trail network will experience additional auditory intrusions compared to current conditions (short- and long-term, adverse impacts), but because Wears Valley is already a developed area and not managed as wilderness, the adverse impacts will not be significant.

WILDLIFE

As discussed above for vegetation, the selected alternative will have adverse impacts on birds, bats, and bears due to permanent habitat alteration. Species will experience temporary impacts from noise during construction, but mortality is not anticipated. The access road, trails, and trailhead will fragment habitat and create edges that may cause changes in the bird community by dissecting habitats into smaller patches. Increased sunlight, temperature extremes, wind exposure, and reduced humidity could alter forest habitats, which would influence vegetation structure and food availability. The presence of trails and use by mountain bikers and pedestrians could alter species composition, disrupt nesting, or disturb foraging birds and bats directly adjacent to the trails.

While large-diameter trees will be avoided to the extent possible, construction will include the removal of some trees greater than 5 inches diameter at breast height that provide summer roosting habitat for bats, including the federally listed Indiana and northern long-eared bat. To minimize impacts on roosting bats, and in accordance with the 4(d) rule for northern long-eared bats, tree clearing will be conducted from November 15 to March 31, when bats are hibernating, making injury or mortality to bats during tree removal unlikely. Noise or visual disturbance from visitor use of the trail system is initially anticipated to result in behavioral responses to these stressors, but bats will likely become habituated to visitor use of the trail system over the long term. NPS has completed informal consultation with the US Fish and Wildlife Service (USFWS) pursuant to section 7 of the Endangered Species Act. On October 9, 2020, NPS submitted a biological evaluation to USFWS and requested concurrence on findings of “not likely to

adversely affect” for the Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), and little brown bat (*Myotis lucifugus*). In a letter dated October 29, 2020, USFWS concurred with the Park’s findings of not likely to adversely affect for these species.

Most of the forest removal will be for trails, which will not noticeably alter forested habitat for bears; however, establishing trails could disrupt established travel corridors. The development of a new visitor use area in the Park could increase the potential for bears to adapt to the presence of humans, which can adversely affect the health of bears and make them more unpredictable and dangerous as they lose their instinctive fear of humans.

The selected alternative will have short- and long-term, adverse impacts on wildlife, but NPS has determined that the impacts will not be significant because:

- The project is not likely to adversely affect species listed under the Endangered Species Act and will have no effect on critical habitat designated under the Endangered Species Act.
- NPS will conduct tree and vegetation clearing between November 15 and March 31 to avoid impacts on federally listed bats and nesting birds and will avoid removal of large-diameter trees whenever possible to minimize impacts on bat habitat.
- NPS will initiate construction in open field areas outside the grassland nesting bird breeding season (April 23 to August 15), when feasible. If construction must start during the breeding season, vegetation in open field areas within the project footprint will be managed to avoid impacts on grassland nesting birds.
- The project is not expected to result in bird population-level impacts or changes in the composition of bird species using the project area.
- No population-level effects or changes to species composition in the project area are expected.

KARST RESOURCES

Construction and operation of the mountain bike trail system will alter the existing landscape through the construction of unpaved trails, a road, bridge, parking areas, and two developed trailhead areas with septic systems, disturbing 25 acres of land associated with karst topography. Potential karst-related issues include alterations to the existing stormwater runoff patterns, changes to the groundwater system from new septic systems, and introduction or alteration of preferential subsurface flow paths; however, potential impacts will be limited with the implementation of karst-specific mitigation measures described above. The proposed trailhead location will not be adjacent to any karst-like features or features of interest. Direct disturbance to karst-like features and ponds in the vicinity of the trails and access road will be avoided during the design and construction process by establishing buffers around them. Additionally, geotechnical surveys (geophysical surveys and borings) will be conducted during the design process to determine the presence of underground karst features in the vicinity of the proposed road and trailhead areas prior to any ground disturbance. Survey results will be used to modify the site plan as needed to avoid underground karst features and inform road, bridge, building, septic, and stormwater design. These mitigation measures will maintain positive site drainage to collect and transport surface water away from karst features.

The selected alternative will avoid long-term, adverse impacts on karst resources, and these impacts will not be significant because:

- As noted in the mitigation measures, underground karst resources will be identified through additional surveys completed in tandem with the design process. Trail design, karst resource buffers, and the design and siting of the septic system will ensure karst resources are not directly altered.

- Stormwater management for the site will be designed to prevent increased runoff volumes while retaining existing volume to maintain groundwater recharge, in compliance with section 438 of the Energy Independence and Security Act of 2007. Stormwater management will also improve runoff quality and minimize rerouting of stormwater from existing drainages.
- Construction mitigation measures and the adherence to stormwater management and NPDES requirements will further limit potential effects on karst resources.

AGENCY AND TRIBAL CONSULTATION

The National Historic Preservation Act section 106 consultation process was completed with the Tennessee state historic preservation officer (SHPO). On March 3, 2020, NPS provided the SHPO with the draft area of potential effect (APE) and cultural resource survey methodology. On March 12, 2020, the Tennessee SHPO concurred with the proposed APE and survey methodology. The Phase I Survey report was submitted to the Tennessee SHPO on October 6, 2020. The Tennessee SHPO replied on October 7 and requested revisions to the Phase I report. On October 29, NPS provided a revised Phase I report and an assessment of effect. On October 30, 2020, the Tennessee SHPO concurred with the NPS determination of no adverse effect on historic properties.

Letters were also sent to four Native American Tribes (the Eastern Band of the Cherokee Indians, Cherokee Nation, United Keetoowah Band of Cherokee Indians in Oklahoma, and Chickasaw Nation) on April 9, 2020, with the draft APE and survey methodology. Another letter was sent on July 23, 2020, to announce the public scoping period. Additional letters were sent on October 16, 2020, to announce the availability of the EA, and on October 6, 2020, to provide the Phase I Archeological Survey Report.

The Tennessee SHPO, Chickasaw Nation, and Cherokee Nation responded to the Park's requests for consultation. The Chickasaw Nation stated on October 8, 2020, that the project was outside its area of interest, and it deferred to the federally recognized First American Tribe(s) who have identified a connection to the project area. Both the Tennessee SHPO and Cherokee Nation requested additional information for concurrence. After the Park provided the requested information, the Tennessee SHPO concurred with the project on October 30, 2020, and the Cherokee Nation concurred on November 2, 2020. The Cherokee Nation did not object to the project but requested that NPS avoid potentially eligible sites; the Cherokee Nation also requested to be contacted if the APE or scope changed or if items of cultural significance were discovered.

As noted above under "Wildlife," NPS completed informal consultation with USFWS pursuant to section 7 of the Endangered Species Act. On October 9, 2020, NPS submitted a biological evaluation to USFWS and requested concurrence on findings of "not likely to adversely affect" for the Indiana bat, northern long-eared bat, tricolored bat, and little brown bat. In a letter dated October 29, 2020, USFWS concurred with the Park's findings of not likely to adversely affect for these species.

CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement. The selected alternative will not have a significant effect on the human environment in accordance with section 102(2)(c) of NEPA.

Based on the foregoing, it has been determined that an environmental impact statement is not required for this project and, thus, will not be prepared.

REFERENCES

Federal Highway Administration (FHWA)

- 1986 *Design Standards for Highways in National Flood Insurance Program Mapped Floodplains.*
<https://www.fhwa.dot.gov/engineering/hydraulics/policymemo/860402.cfm>

National Park Service, US Department of the Interior (NPS)

- 2022 “Karst Summary Report for Wears Valley Mountain Bike Trail, Metcalf Bottoms Access Improvements, and Foothills Parkway Section 8D.” January 2022

Tennessee Department of Environment and Conservation (TDEC)

- 2012 *Tennessee Erosion & Sediment Control Handbook. A Stormwater Planning and Design Manual for Construction Activities.* Fourth Edition. August.

Tennessee Department of Environment and Conservation and University of Tennessee (TDEC & UT)

- 2014 Tennessee Permanent Stormwater Management and Design Guidance Manual. Prepared by TDEC Division of Water Resources and UT Department of Biosystems Engineering and Soil Science; Tennessee Water Resources Research Center; and Stormwater Management, Assistance, Research and Training (SMART) Center. First Edition. December 2014.
<https://tnpermanentstormwater.org/manual.asp>

ATTACHMENT A – PUBLIC COMMENT RESPONSE REPORT



Great Smoky Mountains National Park

Wears Valley Mountain Bike Trail System
Revised Environmental Assessment

Public Comment Response Report

April 2022

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INTRODUCTION

Great Smoky Mountains National Park (the Park) initiated a 30-day public comment period for the *Wears Valley Mountain Bike Trail System Revised Environmental Assessment* (EA) on February 8, 2022, and the public was invited and encouraged to provide feedback on the document. The information obtained during this public comment period was reviewed, and substantive comments received responses from the National Park Service (NPS).

The public was encouraged to submit comments through NPS's Planning, Environment, and Public Comment (PEPC) website (<https://parkplanning.nps.gov/WearsValleyBikeTrails>). Comments were also accepted by US mail. Fifty pieces of correspondence were received during the comment period. This report describes how NPS considered the public comments and provides the responses to substantive comments, which are grouped together by area of concern.

The Park had previously initiated a 30-day public comment period for the *Wears Valley Mountain Bike Trail System EA* on October 16, 2020. The public was invited and encouraged to provide feedback on the EA. During this time, one virtual public meeting was held over Zoom on October 29, 2020. Twenty-two pieces of correspondence were received during the 2020 comment period.

PUBLIC OUTREACH DURING THE COMMENT PERIOD

NPS issued a press release on February 8, 2022, announcing the availability of the Revised EA. NPS also sent the press release to more than 200 interested individuals and organizations notifying them of the opportunity to comment. On that date, the NPS PEPC website (<http://parkplanning.nps.gov/WearsValleyBikeTrails>) was opened for the public to submit comments.

For the 2020 EA, NPS issued a press release on October 16, 2020, announcing the availability of the EA. A letter was sent to adjacent property owners announcing the availability of the EA for public review. NPS also sent the press release to more than 200 interested individuals and organizations notifying them of the opportunity to comment. On that date, the NPS PEPC website was opened for the public to submit comments on the EA. Due to the COVID-19 pandemic, no in-person public meetings were held. As noted above, one virtual public meeting was held over Zoom on October 29, 2020, during which the public was encouraged to ask questions over a live question-and-answer platform following an overview presentation about the EA. Nineteen people attended the virtual meeting.

DEFINITION OF TERMS

Primary terms used in the document are defined below.

Correspondence: A correspondence is the entire document received from a commenter and includes letters, written comment forms, comments entered directly into PEPC, and any other written comments provided by US mail or in person at the park.

Comment: A comment is a portion of the text within a correspondence that addresses a single subject. It could include such information as an expression of support or opposition for an alternative, additional data regarding the existing condition, or suggestions for resource topics to be considered.

Code: A code is a grouping centered on a common subject. The codes were developed during the comment analysis process and are used to track major issues.

Concern: Concerns are statements that summarize the comments under each code. Some codes require multiple concern statements, while others do not.

COMMENT ANALYSIS METHODOLOGY

Correspondence was received via US mail or correspondence entered directly into the PEPC system. Letters received through the US mail were entered into the PEPC system for analysis.

Once all correspondence was entered into PEPC, each was read, and specific comments within each unique correspondence were identified. When identifying comments, every attempt was made to capture the full breadth of comments submitted.

To categorize comments, each comment was given a code to identify its general content and to group similar comments. Eleven codes were used to categorize the public comments received. An example of a code developed for this project is *IS3000 – Issues: Wildlife*. In some cases, the same comment may be categorized under more than one code, reflecting the fact that the comment may contain more than one issue or suggestion. Once every correspondence was broken into comments, all comments were categorized into concern statements or summarized with similar comments.

CONCERN RESPONSE REPORT

This report summarizes the comments received during the public comment period. Tables 1 through 12 provide concern statements and responses to comments received during the February 2022 Revised EA public review period. Tables 13 through 20 provide concern statements and responses to comments received during the October 2020 EA public review period, which were also provided as appendix D in the Revised EA. In some cases, responses provided in the Revised EA have been updated for clarity.

TABLE 1. AE1000 – ALTERNATIVES AND ELEMENTS – TRAILS/AMENITIES

Concern ID 1: One commenter provided suggestions for the trail design, including adding a paved bike lane and a walking lane, linking the trail to a regional trail system, providing bathroom facilities, and expanding the system to be longer than 50 miles.
NPS Response: Because the proposed action is focused on creating recreational opportunities within the Park, alternatives outside the Park boundary were not considered. The proposed alternatives do include restroom facilities or separate pedestrian and bike trails to reduce potential user conflicts. Paved trails are not conducive to mountain biking and were not considered for this effort.
Concern ID 2: One commenter recommended locating the trails along wooded areas to reduce potential disruption on the hayfield and mowing.
NPS Response: Specific location of the trails will be finalized during the design process; this suggestion will be considered during that process.

TABLE 2. AE3000 – ALTERNATIVES AND ELEMENTS – OPERATIONS AND MAINTENANCE

Concern ID 3: Commenters requested NPS disclose the cost of the mountain bike trail system, including operational costs and NPS staffing availability.
NPS Response: The purpose of National Environmental Policy Act (NEPA) documents is to analyze environmental impacts so that these environmental analyses can be considered in concert with economic and other factors as part of the decision-making process. NPS is committed to seeking funding for implementing the selected alternative. Analyzing and disclosing the cost of implementing different

alternatives is not a requirement under either Council on Environmental Quality (CEQ) or NEPA regulations. Therefore, costs were not included in the EA. Park management acknowledges the challenges of operating and maintaining a new recreation area and recognizes the need to implement an operational strategy that achieves and sustains desired conditions as described in chapter 2 of the Revised EA.

Concern ID 4: One commenter asked if the Park had discussed the project with local mountain bike clubs and inquired if local clubs could serve as partners.

NPS Response: Substantial comments from biking stakeholders and organizations were received during the civic engagement, scoping, EA, and Revised EA public comment periods. This input was considered during the planning process. As noted in chapter 2 of the EA, the Park could implement multiple options for operations and maintenance that could include partnerships with biking organizations.

Concern ID 5: One commenter recommended that the Park implement alternative 4 as phase 1 of the project to allow the Park to develop and implement the management of the site. The commenter noted the system could be expanded once any management issues are resolved to avoid over-developing the site.

NPS Response: The Park selected alternative 3 for the reasons discussed in the Finding of No Significant Impact (FONSI). Park management may consider a phased approach for trail construction under alternative 3 during the design and business analysis for the operational strategy.

Concern ID 6: One commenter provided additional recommendations for sustained removal of invasive species within the project area, including converting the current hayfields to a meadow with native species. The commenter noted this would reduce Park maintenance/mowing needs, increase native biodiversity, increase wildlife viewing opportunities, and enhance habitat for declining species.

NPS Response: Suggestions for long-term management of open areas will be considered in future planning efforts as part of the Park's Vegetation Management Program.

TABLE 3. AE5000 – NEW ALTERNATIVES AND ELEMENTS

Concern ID 7: One commenter suggested that the boundary of the project area along Mattox Cemetery Road be allowed to re-forest from current open field conditions, which would reduce the potential for visual impacts and create a wildlife corridor.

NPS Response: The Park will identify areas for passive reforestation during the design process to function as visual buffers and provide wildlife habitat value.

Concern ID 8: Commenters suggested NPS include horseback riding trails in addition to mountain bike and pedestrian trails.

NPS Response: A full range of recreational activities were explored during project planning, including horse trails, but were dismissed from analysis because existing facilities for these recreational activities already exist in the Park. Approximately 550 miles of trails are open to horseback riding within the Park. Potential visitor use conflicts could also occur by permitting bicycle and horse use within the same trail

system; however, additional horseback riding opportunities could be considered during future planning and design efforts along the Foothills Parkway.

TABLE 4. AE6000 – ALTERNATIVES CONSIDERED BUT DISMISSED

Concern ID 9: One commenter requested NPS consider alternate locations for development of a mountain bike trail system within the Park at locations without known karst features.

NPS Response: As discussed in chapter 2 in the EA, other locations within the Park were dismissed as potential options for development because the project need was derived from previous planning efforts that recommended the development of recreational opportunities within the Wears Valley portion of Section 8D of the Foothills Parkway. As outlined in the Revised EA and FONSI, NPS analyzed potential impacts on karst resources and will implement mitigation measures to avoid and minimize impacts.

Concern ID 10: One commenter requested that a centralized pump track be included as part of the proposed action.

NPS Response: As described in chapter 2 of the EA, various mountain bike facility elements, including pump tracks and highly built skill challenges, were considered during development of the feasibility study in 2020. Such elements were later dismissed because they are more focused on intensity of experience versus enjoyment and appreciation of Park resources.

TABLE 5. AL4000 - ALTERNATIVE 4

Concern ID 11: One commenter recommended creating a bicycle access point off Mattox Cemetery Road to provide a direct connection to the residential community.

NPS Response: The feasibility of creating a bicycle-only access point and associated spur trail off the public right-of-way of Mattox Cemetery Road will be considered during the design process. Any future proposals for such an access will require coordination with state and local authorities and may necessitate additional environmental compliance review.

TABLE 6. CU1000 – CUMULATIVE IMPACTS

Concern ID 12: One commenter requested that any proposed expansion of the mountain bike trail system, such as expanding it farther along Foothills Parkway Section 8D, be analyzed as a cumulative impact in the EA.

NPS Response: As stated in appendix B of the Revised EA, expansion of the mountain bike trail system will only be considered as part of a future planning and compliance effort if monitoring indicates that visitor use management thresholds are exceeded and other management strategies are unable to adequately address crowding, congestion, visitor conflicts, and safety concerns. Currently, any expansion of the trail system is speculative and is therefore not a reasonably foreseeable action and not analyzed under cumulative impacts.

Concern ID 13: One commenter questioned how the proposed action would be compatible with the proposed Foothills Parkway Section 8D roadway, including any change to the visitor experience.

NPS Response: The EA analyzed Foothills Parkway Section 8D as part of the cumulative impacts analysis, and the proposed layout of the trail system takes into consideration if the road is constructed in the future. As noted in chapter 2 of the Revised EA, the bike trail will cross under the access road through a box tunnel crossing. If Foothills Parkway Section 8D is constructed in the future, trail crossings would also be located beneath the roadway to avoid having users cross the Parkway. The proposed action considered recreation as originally envisioned by the Foothills Master Plan.

TABLE 7. IS1000 – ISSUES DISMISSED FROM DETAILED ANALYSIS

Concern ID 14: Commenters were concerned about potential impacts on traffic and requested a traffic study be completed to study increasing traffic and congestion in Wears Valley.

NPS Response: Access to the project area will be via Foothills Parkway only. The NPS project team considered potential traffic and transportation issues associated with the proposed action as part of the internal scoping process and determined that environmental impacts associated with the issue were not central to the proposal or of critical importance. Furthermore, it was determined that a detailed analysis of environmental impacts related to the issue was not necessary to make a reasoned choice between alternatives and that there were no potentially significant impacts on biophysical resources associated with the issue. Appendix E of the Revised EA provides the rationale for dismissing traffic and transportation issues from further analysis in the EA.

TABLE 8. IS6000 – ISSUES: VISITOR USE AND EXPERIENCE

Concern ID 15: Commenters raised concerns regarding the proximity of the expert mountain biking trails to the hiking trails at Little Brier Gap, noting that some mountain bikers may use hiking trails even if that use is not authorized.

NPS Response: Park management acknowledges the potential concerns related to the proximity of mountain bike trails and pedestrian-only trails. This concern will be addressed during final design by increasing the separation between the expert mountain bike trail and the pedestrian trails in the vicinity of Little Brier Gap.

Concern ID 16: One commenter questioned the visitor use and experience analysis in the EA. The commenter disagreed that the proposed trail system could reduce visitation pressure in other areas of the park because it will attract a different user group. Similarly, the commenter felt it is incorrect to assume all park users will obey the rules and regulations and remain on appropriately designated trails. Finally, the commenter disagreed with the overall beneficial impact on visitor use and experience, noting the beneficial impact would be on mountain bikers and not hikers or birders.

NPS Response: As discussed in the EA, the estimated annual visitation for the mountain bike trail system is approximately 75,000 under alternative 3 based on an average of 15 bikers per mile and other assumptions provided in chapter 3 of the EA. The EA points out that the estimated visitation would likely be composed of new and existing visitors, and acknowledges that the specific mix of visitors is unknown at this time. Comments received from individuals who currently bicycle in the Park state that they would also use the proposed mountain bike trails, indicating that existing users groups are likely to use the proposed facility. This could reduce visitation pressure in other areas of the Park. The selected alternative will also benefit hikers because it includes a designated pedestrian trail. Birders that currently

use an existing roadbed that is in the alignment of the proposed access road will be affected. However, the adjacent wetland and other areas will continue to provide opportunities for birding.

TABLE 9. IS6000 – ISSUES: OTHER RESOURCES

Concern ID 17: One commenter requested NPS complete the geotechnical analysis prior to completing the NEPA process, noting that it may be difficult to stop the construction process if karst resources are discovered and earthmoving has already started.

NPS Response: Conceptual designs were prepared in support of the analysis completed in the EA. Detailed designs and geotechnical and geophysical investigations will be prepared after the completion of the NEPA process. As noted in the “Mitigation Measures” section of the Revised EA, geotechnical and geophysical investigations will be performed to inform the design process, not after the design is completed or once construction begins. The EA details specifically how these studies will inform further design and compliance, which range from continuing forward if underground karst features are not present to modifying the site plan to avoid and minimize impacts. It is standard industry practice for designs to be modified following geotechnical and geophysical investigations. Should substantial modifications to the selected alternative be needed, the Park will be required to complete additional NEPA compliance. No construction activities will begin prior to completion of these supporting studies and further design.

TABLE 10. ON1000 – OTHER NEPA ISSUES

Concern ID 18: One commenter questioned why an Appropriate Use analysis has not been completed for the proposed action.

NPS Response: NPS has completed the environmental planning and compliance process for the proposed action, including a feasibility study, civic engagement, development and refinement of conceptual designs, public scoping, preparation of an EA and Revised EA, public review of the EAs, and analysis of public comments. Approval of the FONSI by NPS completes the process. A separate appropriate use analysis is not required.

Concern ID 19: One commenter raised concern regarding the potential precedent the project could set within the national park system, stating there are no other purpose-built backcountry mountain bike trails within the park system.

NPS Response: The proposed action and selected alternative do not establish a precedent for future actions. Authorization of bicycle use in other areas of the Park and other units of the national park system will require separate decision-making processes, including location-specific NEPA analyses and compliance with the NPS Bicycle Rule. Future decisions will be Park-specific and depend on Park resources, community interest, and various other factors. Additionally, the proposed trail system is not located in a backcountry area of the Park. Mountain bike trails exist at other national park units, including a system developed at New River Gorge in 2011. Dedicated mountain bike trails also exist at Big South Fork and Cuyahoga Valley National Park.

TABLE 11. PI1000 – PUBLIC INVOLVEMENT

Concern ID 20: One commenter raised concerns regarding Park participation in three meetings between October 2018 and October 2019, as noted in the purpose and need for taking action. The commenter questioned if Park participation in these meetings violated the Federal Advisory Commission Act.

NPS Response: Considering various stakeholder interests in how park lands can best be used for recreation is an important part of the NPS planning process. Accordingly, stakeholder input was considered in the decision to reinstate the recreational planning process for the Wears Valley portion of Parkway Section 8D. At the request of stakeholders, Park managers participated in three meetings from October 2018 through October 2019 with elected officials, community leaders, and a non-governmental organization, where they expressed their interest regarding potential recreational opportunities along the Parkway. The Park does not believe NPS staff attending these meetings with the community and stakeholders constitutes a de facto advisory committee that is subject to the Federal Advisory Commission Act. NPS regularly takes meetings from interested constituents and is not selective with respect to group type.

TABLE 12 PN2000 – PURPOSE AND NEED

Concern ID 21: Commenters questioned the need for the proposed action because several other mountain biking areas exist on private and public lands in the region. Commenters requested specific data to support the purpose and need for the project.

NPS Response: As described in appendix D of the Revised EA, the need for the proposed action is discussed in chapter 1 of the EA, which, in part, states that:

- The proposed action is needed to take advantage of new and unique recreational opportunities that exist within the Wears Valley portion of Parkway Section 8D.
- Mountain biking is an underserved recreational use in the Park and there has been strong community interest in establishing a network of trails specifically designed for mountain bike use.

Considering various stakeholder interests in how park lands can best be used for recreation is an important part of the NPS planning process. Accordingly, stakeholder input was considered in the decision to reinstate the recreational planning process for the Wears Valley portion of Parkway Section 8D. Several factors, including stakeholder interest and the fact that no purpose-built mountain bike trails exist in the Park, were also considered in the decision to propose mountain bike trails. However, providing unique opportunities for visitors to enjoy the Park, gain appreciation of Park resources, and derive inspiration from the resources was the primary consideration.

While existing and possible future trails outside the Park provide for mountain biking, they do not address the need to provide opportunities for visitors to enjoy the Park, gain appreciation of Park resources, and derive inspiration from Park resources.

Concern ID 22: One commenter felt that the current proposed action was inconsistent with the previous planning documents for this section of the Foothills Parkway and that introduction of mechanized recreation into a “backcountry area” is problematic.

NPS Response: The project area is zoned for development within the Park’s *General Management Plan*, and the proposed action is consistent with the purpose of the Foothills Parkway that provides a form of mechanized recreation. The project area is not located in a backcountry area of the Park where

mechanized recreation is restricted. Currently, the Park manages 464,544 acres as wilderness where mechanized recreation is not authorized.

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TABLE 13. AE1000 – ALTERNATIVES AND ELEMENTS – TRAILS/AMENITIES

Concern ID 1: One commenter expressed concern that visitor amenities included in the proposed action would not be adequate given the anticipated high use of the mountain bike trail.

NPS Response: Trail design and capacity are based on available space at the Wears Valley site and the Park's desire to build a sustainable mountain bike trail system that provides a high-quality visitor experience. Amenities such as trailhead parking and restrooms are intended to accommodate the trail capacity stated in the EA. The visitor use management information provided in appendix B of the EA outlines how NPS will manage visitor use to achieve desired conditions and help ensure that use does not exceed visitor capacity.

TABLE 14. AL3000 – ALTERNATIVE 3- SUBSTANTIVE

Concern ID 2: One commenter stated that alternative 3 would not best achieve the desired conditions for natural resources and Park operations.

NPS Response: As noted in appendix B of the EA, desired conditions are aspirational statements that articulate what areas of the Park would look, feel, sound, and function like in the future. NPS Management Policies 2006 define desired conditions as “a park’s natural and cultural resource conditions that NPS aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources” (NPS 2006). Desired conditions also provide basic criteria to evaluate the appropriate types and levels of management, development, and access needed to achieve those conditions. In this planning process, desired conditions guide the development of alternatives and provide indicators for monitoring and managing the designated mountain bike trails. Appendix B provides management strategies, indicators, and thresholds the Park will use to manage visitor use and ideally achieve desired conditions under all of the action alternatives, including alternative 3.

National Park Service, US Department of the Interior (NPS)

2006 *Management Policies*. US Department of the Interior, National Park Service, Washington, DC. https://www.nps.gov/policy/MP_2006.pdf

TABLE 15. IS2000 – ISSUES: WATER RESOURCES

Concern ID 3: One commenter expressed concern that NPS has not yet applied for applicable permits from regulatory agencies.

NPS Response: NPS will apply for all applicable permits after a decision has been made and the design process has been completed to the extent necessary to support a complete application. NPS will obtain all required permits prior to starting construction, but it would be inappropriate for NPS to apply for permits prior to considering alternatives and their impacts and issuing a decision document for the proposed action.

TABLE 16. IS3000 – ISSUES: WILDLIFE

Concern ID 4: One commenter was concerned about increased development in the surrounding areas and the potential encroachment on wildlife habitat, which could be increased by the action alternatives.

NPS Response: Increased development in Wears Valley was included in the cumulative impact analysis for all the action alternatives under the wildlife impact topic as well as for surface water, vegetation, and karst resources to ensure the potential impacts were analyzed within a broader context beyond the project area.

Concern ID 5: Commenters questioned why only three groups of species were analyzed and noted that high-quality habitat exists in the area based on Tennessee State Wildlife Action Plan (TN SWAP) maps. Commenters noted that the TN SWAP maps consider the area as high-priority habitat and requested a broader assessment of wildlife impacts in the EA, including nesting birds, amphibians, reptiles, bears, coyotes, and small mammals.

NPS Response: As noted in appendix E “The NPS National Environmental Policy Act (NEPA) Handbook (NPS 2015) provides specific guidance for determining whether to retain issues for detailed analysis. Issues should be retained for consideration and discussed in detail if:

- the environmental impacts associated with the issue are central to the proposal or of critical importance;
- a detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives;
- the environmental impacts associated with the issue are a big point of contention among the public or other agencies; or
- there are potentially significant impacts to resources associated with the issue.

If none of the considerations above apply to an issue, it can be dismissed from detailed analysis.”

Similarly, the Council of Environmental Quality (CEQ) states that an EA or environmental impact statement (EIS) should focus on pivotal issues or issues of critical importance and only discuss insignificant issues briefly (1502.2(b)).

With that guidance, the NPS planning team considered potential impacts of the project during the internal scoping process. During that process, the team reviewed the potential impacts on amphibians, small mammals, and coyotes. To help inform the amphibians discussion, the team reviewed a February 2020 survey for both reptiles and amphibians within the project area. The initial project design focused on avoiding wetlands and reducing stream crossings. The team recognized while there was not a direct connection between two wetlands, the placement of an access road could potentially affect travel between two larger wetlands. In this location, the team added a wildlife tunnel under the roadway to reduce the potential for impacts. As a result, potential impacts on amphibians were reviewed and minimized through design, and the impact topic was dismissed from full EA analysis. Similarly, the proposed alternatives could affect small mammals and coyotes, effects would be minor and did not rise to full EA analysis within the CEQ criteria.

Regarding the TN SWAP maps, the project area contains very low-, low-, and high-priority habitat according to the terrestrial TN SWAP map and a wide range of habitat from very low to high on the Combined Conservation Priorities map. Specifically, the high-quality habitat is focused on the streams in the project area. As noted in chapter 2, streams and wetlands will have a 60-foot average buffer from surface waters and wetlands. Overall, the TN SWAP and associated maps are intended to assess potential

wildlife and habitats but are not based on site-specific survey or data. To support the impacts analysis for this EA, NPS completed amphibian, botany, bat, wetlands and surface waters, and bird surveys specific to the project area, in addition to previously documented site-specific NPS data. Compared to the TN SWAP maps, the data used to assess impacts in the EA provided for a more robust, site-specific analysis.

National Park Service, US Department of the Interior (NPS)

- 2015 *National Park Service NEPA Handbook*.
<http://www.nps.gov/applications/npspolicy/DOrders.cfm>

Concern ID 6: Commenters felt the trails would cause excessive wildlife habitat fragmentation.

NPS Response: The “Wildlife” section in chapter 3 of the EA considered wildlife habitat fragmentation. NPS disagrees that the project will result in excessive habitat fragmentation.

Concern ID 7: One commenter questioned the EA analysis that daytime use of bicycles on trails would not affect roosting bats.

NPS Response: NPS has completed informal consultation with the US Fish and Wildlife Service (USFWS) pursuant to section 7 of the Endangered Species Act. On October 9, 2020, NPS submitted a biological evaluation (BE) to USFWS and requested concurrence on findings of “not likely to adversely affect” for the Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), and little brown bat (*Myotis lucifugus*). In a letter dated October 29, 2020, USFWS concurred with the Park’s findings of not likely to adversely affect for these species.

The EA and BE analyzed potential impacts on roosting bats from noise and visual disturbance during construction and operational periods of the proposed action. The BE and EA noted that bats may tolerate substantial levels of noise and visual disturbance, as determined in previous biological opinions issued by USFWS (2008, 2002). The BE concludes “Overall, it is anticipated that noise or visual disturbance from visitor use of the trail system could initially result in behavioral responses to these stressors, potentially including avoidance of potential roosting sites directly adjacent to trails, particularly given that the action area currently does not currently experience high levels of visitor use. However, given the relatively minimal intensity of these impacts, compared to impacts associated with a major transportation corridor, it is reasonable to expect that bats would become habituated to visitor use of the trail system, and impacts would be insignificant over the long term.”

US Fish and Wildlife Service (USFWS)

- 2002 *Biological Opinion on the Application for an Incidental Take Permit for the Federally Endangered Indiana bat (Myotis sodalis) for the Six Points Road Interchange and Associated Development*. US Fish and Wildlife Service, Bloomington, IN.
- 2008 *Biological Opinion on the Proposed Construction, Operation, and Maintenance of the Fort Drum Connector Project (NYSDOT PIN 7804.26) for the Federally Endangered Indiana Bat (Myotis sodalis)*. US. Fish and Wildlife Service, Cortland, NY.

Concern ID 8: One commenter requested additional details regarding the proposed wildlife tunnel, including the effectiveness, size, and design considerations for predator avoidance.

NPS Response: Previous studies have indicated tunnels are successful in allowing amphibians to cross roadways, which can present a threat to amphibian populations when roads separate breeding ponds from upland, non-breeding habitat (Jackson 1996). Specific requirements for appropriate siting and

composition, including predator avoidance, will be included as part of the design process moving forward.

Jackson, S. D.

- 1996 “Underpass systems for amphibians.” 4 pp. In: G.L. Evink, P. Garrett, D. Zeigler and J. Berry (eds.) *Trends in Addressing Transportation Related Wildlife Mortality, Proceedings of the Transportation Related Wildlife Mortality Seminar*. State of Florida Department of Transportation, Tallahassee, FL. FL-ER-58-96.

TABLE 17. IS8000 – ISSUES: OTHER RESOURCES

Concern ID 9: Two commenters expressed concern that impacts from electric bicycles (e-bikes) were not adequately analyzed; the commenters specifically noted potential impacts on wildlife and noise impacts. One of the commenters requested only non-motorized mountain bikes be authorized to avoid collisions with black bears.

NPS Response: NPS considered potential impacts of e-bikes during internal scoping and did not identify any environmental issues specific to e-bikes that warranted detail analysis in the EA. This conclusion was based on a review of resources in the project area and previous analysis of potential impacts of e-bikes in the Park. As noted in chapter 2 of the EA, like other Park trails where bicycles are allowed, non-motorized bicycles and Class 1 and Class 2 e-bikes will be authorized on the mountain bike trails. The use of Class 3 electric bikes will be prohibited. On September 28, 2021, the Park confirmed and redesignated the continued use of Class 1 and 2 e-bikes on Park areas where bikes are currently authorized under the Superintendent’s Compendium. During that review process, the Park did not identify any potentially significant impacts associated with e-bikes. On pages 56 through 59 of the EA, potential impacts on wildlife from the presence of mountain bikers, including noise, are discussed. Similarly, potential impacts from the noise from e-bikes are discussed in the visitor use and experience section beginning on page 49. For both projects, USFWS concurred with the overall Park findings that the action is not likely to adversely affect listed species.

Wildlife collisions are analyzed in the EA, with a focus on the potential for vehicle collisions along the access road. While the potential for wildlife collisions exist for e-bikes and other types of bikes, the probability of these collisions occurring is very low. Therefore, this issue was not carried forward for detailed analysis in the EA based on internal NPS scoping.

TABLE 18. MM1000 – MITIGATION MEASURES

Concern ID 10: One commenter noted that the EA does not mention what will happen if a threatened or endangered bat species is observed during surveys conducted prior to hazardous tree removals.

NPS Response: The “Mitigation Measures” section of the Revised EA has been updated as follows to include additional information on removal of hazard trees that have bat roost tree characteristics. “Remove hazard trees only in consideration of bat protection requirements. If removal of a hazard tree with bat roost tree characteristics were needed between April 1 and November 14, NPS would have a qualified individual observe for bats for 30 minutes before and after sunset. The tree would be removed the following morning if bats were not observed. If bats were observed, the tree would be re-surveyed later and the tree would not be cut until survey confirms that bats are no longer roosting in the tree. In cases where imminent harm to life and property exists, hazard tree removal could be completed year-

round in accordance with take exemptions under the 4(d) rule for the northern long-eared bat or the Park may temporarily close the area near the hazard tree until bats are no longer roosting in the tree.”

Concern ID 11: One commenter stated that ongoing monitoring and control for invasive plant species should occur beyond the one-to-three-year period identified in the EA, since seeds can be spread from bike tires and hiking boots.

NPS Response: The “Mitigation Measures” section of the FONSI has been updated to include the following additional information about long-term invasive plant management: “Treat priority invasive plant infestations in areas subject to ground disturbance prior to construction. Monitor and re-treat for one to three years post-construction. After the initial post-construction monitoring and control period, invasive plant management would be integrated with the parkwide invasive plant management program based on observed conditions and management priorities.”

Concern ID 12: One commenter stated that traffic on Wear Cove Road/Line Springs Road has increased significantly in the last couple of years and that the EA needs to address this issue directly.

NPS Response: Access to the project area will be via Foothills Parkway only. The NPS project team considered potential traffic and transportation issues associated with the proposed action as part of the internal scoping process and determined that environmental impacts associated with the issue were not central to the proposal or of critical importance. Furthermore, it was determined that detailed analysis of environmental impacts related to the issue was not necessary to make a reasoned choice between alternatives and that there were no potentially significant impacts to biophysical resources associated with the issue. Appendix E of the Revised EA provides the rationale for dismissing traffic and transportation issues from further analysis in the EA.

Concern ID 13: One commenter suggested that wildlife could be relocated to other areas in the Park to mitigate impacts or that more plants and vegetation could be planted somewhere else in the Park.

NPS Response: As documented in the Revised EA beginning on page 21, NPS has committed to several mitigation measures aimed at reducing potential impacts on wildlife, wildlife habitat, and plants. Additionally, only 4% of the project area/existing habitat will be permanently disturbed under the selected alternative, limiting the potential impacts on wildlife and available habitat. Based on the analysis presented in the EA, NPS determined that additional mitigation measures such as relocating wildlife to other areas of the Park is not appropriate or warranted.

TABLE 19. ON1000 – OTHER NEPA ISSUES

Concern ID 14: One commenter stated that karst geology should not be excluded from analysis in the EA and noted that the point of NEPA is to analyze potential environmental impacts prior to deciding whether and how to proceed with a project.

NPS Response: After considering this comment, Park managers determined that additional information about karst resources would aid in the planning and decision-making process for the project. A dedicated study was conducted in 2021 to obtain additional information about karst resources in the project area and to inform the environmental analysis. The Revised EA includes additional information about karst resources, additional analysis of potential impacts, and additional measures to protect karst resources.

Concern ID 15: One commenter expressed concern about the timing of the public meeting and noted that it was days before the national election and on the last day of early voting. The commenter also noted that a link should be provided for people to watch the recorded meeting, and a transcript of the meeting should be made available to the public.

NPS Response: Thank you for your feedback on the public involvement process. The Park was not able to provide a recording or transcript of the meeting because of logistical and contractual constraints. Park management strives for continuous improvement in the ways we communicate with our stakeholders and will take this request into consideration for future public meetings.

TABLE 20. PN2000 – PURPOSE AND NEED: PARK PURPOSE AND SIGNIFICANCE

Concern ID 16: One commenter stated that alternative 3 is inconsistent with the main purposes of the Park.

NPS Response: The Park’s *Foundation Document* (NPS 2016) contains the following purpose statement, which is based on the Park’s enabling legislation and the legislative history that influenced its development:

Great Smoky Mountains National Park preserves a vast expanse of the southern Appalachian Mountains ecosystem including its scenic beauty, extraordinary diversity of natural resources, and rich human history, and provides opportunities for the enjoyment and inspiration of present and future generations (NPS 2016).

As outlined in the *Foothills Parkway Master Plan* (NPS 1968) and stated in appendix A of the EA, the Parkway, which is part of the Park, serves two purposes: (1) to provide an appropriate view of the Park, and (2) to afford recreational and access opportunities for pleasure driving, sightseeing, and other local activities. Objectives of the plan include maintaining and expanding the Parkway while preserving scenic lands, providing adequate recreational facilities, and assuring the Parkway can be accessed from major roads. Previous NPS planning efforts completed between 1968 and 1984 (see appendix A of the EA for a summary of previous planning efforts) indicate that the Wears Valley portion of Section 8D should be one of the most highly developed along the Parkway based on its central location and other factors.

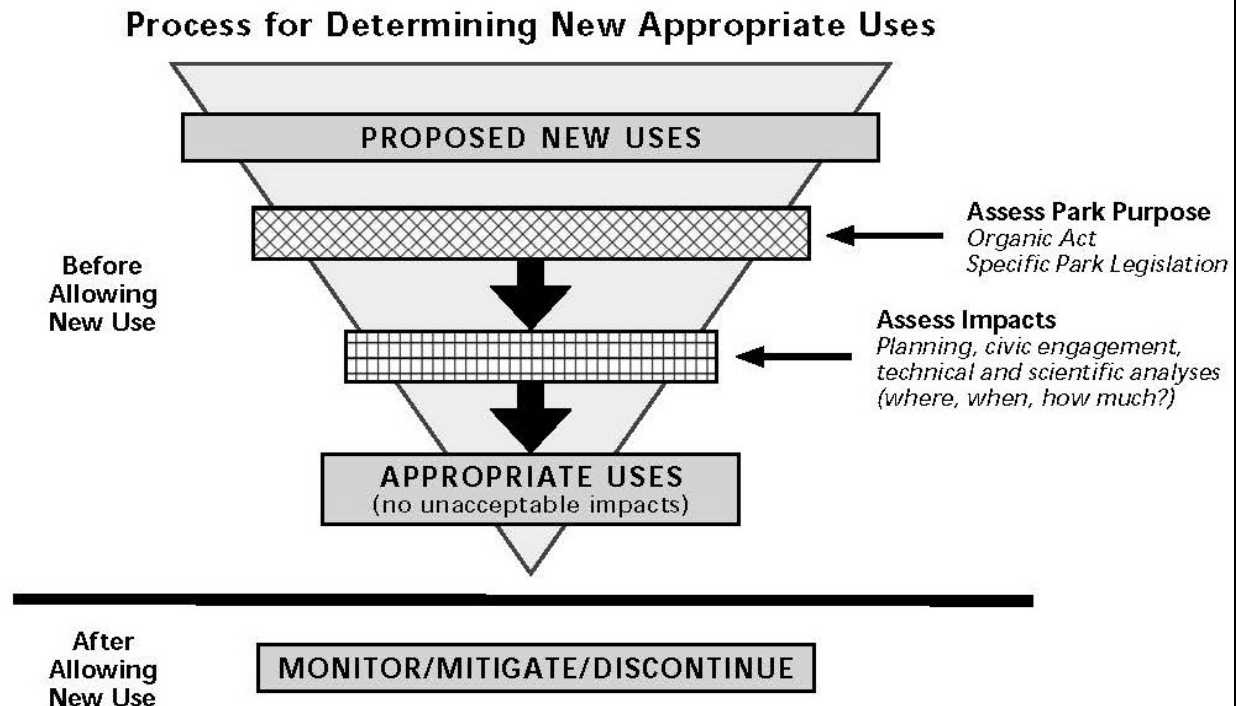
As outlined above, recreational use is an integral component of the Park’s purpose, and recreational use of the Wears Valley portion of Parkway Section 8D has been planned since at least 1968. The framework for making management decisions regarding appropriate recreational and other park uses is provided in *NPS Management Policies 2006* (NPS 2006):

The National Park Service embraces appropriate use of the parks because these uses are key to the enjoyment of the parks and the appreciation and inspiration derived from the resources. Park resources have profound effects on those who experience them through appropriate park uses. An “appropriate use” is a use that is suitable, proper, or fitting for a particular park, or to a particular location within a park. Not all uses are appropriate or allowable in units of the national park system, and what is appropriate may vary from one park to another and from one location to another within a park.

In its role as steward of park resources, the National Park Service must ensure that park uses that are allowed will not cause impairment of, or unacceptable impacts on, park resources and values. When proposed park uses and the protection of park resources and values come into conflict, the protection of resources and values must be predominant. A new form of park use may be allowed within a park only after a determination has been made in the professional judgment of the superintendent that it will not result in unacceptable impacts. The National

Park Service will always consider allowing activities that are appropriate to the parks, although conditions may preclude certain activities or require that limitations be placed on them.

The below figure shows the process by which potential uses are evaluated for appropriateness.



Park managers believe that the proposed mountain bike trails will provide opportunities for visitors to enjoy the Park, gain appreciation of Park resources, and derive inspiration from the resources. However, the proposed Wears Valley Mountain Bike Trail System project is currently in the “Assess Impacts” stage of the decision-making process. Therefore, a decision regarding the appropriateness of the proposed use is pending completion of the NEPA process and issuance of a decision document as well as the dissemination of a written determination consistent with the NPS Bike Rule.

National Park Service, US Department of the Interior (NPS)

- 1968 *Foothills Parkway Master Plan*. Great Smoky Mountains Foothills Parkway.
- 2006 *Management Policies*. US Department of the Interior, National Park Service, Washington, DC. https://www.nps.gov/policy/MP_2006.pdf
- 2016 *Foundation Document*. Great Smoky Mountains National Park, North Carolina and Tennessee. US Department of the Interior, National Park Service. October.

Concern ID 17: One commenter felt that a mountain bike trail system would threaten the wilderness qualities of the Park.

NPS Response: The project area is included in the General Park Development / Transportation zone in the Park’s *General Management Plan*, not within the Natural Environment Type 1 zone, which the Park manages as wilderness. NPS determined the action will not affect the wilderness qualities in areas managed as wilderness.

Concern ID 18: A commenter questioned the need for the proposed action because several other mountain biking areas exist on private and public lands in the region. The commenter also stated that NPS has assumed that unmet demand for off-road biking exists in or near the Park and that NPS thinks it must meet that demand.

NPS Response: The need for the proposed action is discussed in chapter 1 of the EA, which, in part, states that:

- The proposed action is needed to take advantage of new and unique recreational opportunities that exist within the Wears Valley portion of Parkway Section 8D.
- Mountain biking is an underserved recreational use in the Park and there has been strong community interest in establishing a network of trails specifically designed for mountain bike use.

Considering stakeholder interests in how park lands can best be used for recreation is an important part of the NPS planning process. Accordingly, stakeholder input was considered in the decision to reinitiate the recreational planning process for the Wears Valley portion of Parkway Section 8D. Several factors, including stakeholder interest and the fact that no purpose-built mountain bike trails exist in the Park, were also considered in the decision to propose mountain bike trails. However, providing unique opportunities for visitors to enjoy the Park, gain appreciation of Park resources, and derive inspiration from the resources was the primary consideration. Park managers feel no obligation to meet any perceived or actual unmet demand for mountain biking in the region.

Park managers also recognize that numerous mountain biking trails exist in the region and that additional trails may be developed outside the Park on private and public land in the future. While existing and likely future trails outside the Park provide for mountain biking, they will not address the need to provide opportunities for visitors to enjoy the Park, gain appreciation of Park resources, and derive inspiration from park resources via mountain biking.

ATTACHMENT B – FINDING OF NON-IMPAIRMENT

NON-IMPAIRMENT DETERMINATION FOR THE WEARS VALLEY MOUNTAIN BIKE TRAIL SYSTEM

THE PROHIBITION ON IMPAIRMENT OF PARK RESOURCES AND VALUES

National Park Service (NPS) *Management Policies 2006*, section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given NPS the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the NPS must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the NPS. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

WHAT IS IMPAIRMENT?

NPS *Management Policies 2006*, section 1.4.5, What Constitutes Impairment of Park Resources and Values, and section 1.4.6, What Constitutes Park Resources and Values, provide an explanation of impairment.

Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values.

Section 1.4.5 of NPS *Management Policies 2006* states:

An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

Per section 1.4.6 of NPS *Management Policies 2006*, park resources and values that may be impaired include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural

landscapes; ethnographic resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park, but this would not be a violation of the Organic Act unless the NPS was in some way responsible for the action.

HOW IS AN IMPAIRMENT DETERMINATION MADE?

Section 1.4.7 of *NPS Management Policies 2006*, states, “[I]n making a determination of whether there would be an impairment, an NPS decision maker must use his or her professional judgment.” This means that the decision maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969; consultations required under section 106 of the National Historic Preservation Act; relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision.

NPS Management Policies 2006, further define “professional judgment” as “a decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision maker's education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities in relation to the decision.”

NON-IMPAIRMENT DETERMINATION FOR THE SELECTED ALTERNATIVE

This determination on impairment has been prepared for the selected alternative (alternative 3) described starting on page 17 of the *Wears Valley Mountain Bike Trail System Revised Environmental Assessment*, February 2022. A non-impairment determination is made for all resource impact topics analyzed in detail for the selected alternative with the exception of visitor use and experience because impairment findings relate back to park resources and values. Visitor use and experience is not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

Non-Impairment Findings for Soils

Productive soils are fundamental to the Park's purpose because they contribute to the ecological health and diversity of the Park's natural resources. While the selected alternative will disturb soils in the project area, fewer than 1% of soils in the project area will be permanently affected. In areas with exposed soils, like trails, trail design and regular maintenance will ensure limited impacts on soils. Because the area of permanent impacts on soils under the selected alternative will be small relative to the project area and will not impede the purpose of the Park to protect the diversity of natural resources, no impairment on soils will occur.

Non-Impairment Findings for Surface Water

Clean streams are fundamental to the Park's purpose because they contribute to ecological health and are critical to maintaining high quality visitor experiences (NPS 2016). While the construction and operation of the selected alternative may increase turbidity and sedimentation, sustainable design, mitigation measures, and implementation of a sediment and erosion control plan will minimize these impacts. Because the selected alternative will maintain surface water quality in the project area and not result in water quality levels outside the limits of designated uses for surface water resources in Wears Valley, no impairment on surface waters will occur.

Non-Impairment Findings for Vegetation

When the Great Smoky Mountains became a national park unit in 1934, up to 80% of the landscape had been clearcut. Creation of the Park allowed forest cover to rebound dramatically through natural processes. The scenic beauty and biodiversity experienced throughout much of the Park by today's visitors is attributable, in large part, to these recovering forests. Healthy forests are fundamental to the Park's purpose.

Construction and operation of the mountain bike trail system under the selected alternative will remove up to 14.4 acres of natural forest vegetation and 9.9 acres of open field. However, the vegetation communities that will be affected make up a small percentage of the project area (6%), are not rare, and can be found in abundance in the project area and other areas of the Park. In addition, mitigation measures will be implemented to control invasive plants. Therefore, no impairment of vegetation will occur under the selected alternative.

Non-Impairment Findings for Wildlife

The wildlife and habitat that currently exist in the project area contribute to the Park's outstanding biodiversity, which is recognized as a fundamental resource and value of the Park (NPS 2016). Opportunities to view wildlife are an important part of the visitor experience at the Park.

No long-term, population-level impacts are expected to any species; no federally listed species or critical habitat will be adversely affected; and any habitat changes are not expected to result in population-level impacts; therefore, the selected alternative will not result in the impairment of wildlife.

Non-Impairment Findings for Karst Resources

Karst resources occur in a landscape where dissolving bedrock creates features such as sinkholes, sinking streams, caves, or springs. As a result, surface water, soils, geology, and groundwater can affect karst resources. Clean streams, including surface water that becomes groundwater and groundwater that becomes surface water in karst landscapes, are fundamental to the Park's purpose because they contribute to ecological health and are critical to maintaining high quality visitor experiences (NPS 2016). Because karst features will be avoided and buffered and stormwater management mitigation measures will maintain the existing volume and existing drainage, the selected alternative will not result in the impairment of karst resources.

CONCLUSION

NPS has determined that implementation of the selected alternative will not constitute an impairment of the resources or values of the Park. This conclusion is based on consideration of the Park's purpose and significance; a thorough analysis of the environmental impacts described in the Revised EA; comments provided by the public and other agencies; and the professional judgment of the decision maker guided by the direction of NPS *Management Policies 2006*. The analysis presented in this non-impairment determination also supports that mountain biking is an appropriate use of the Wears Valley portion of Foothill Parkway Section 8D and that any potential impacts are acceptable.

REFERENCES

National Park Service, US Department of the Interior (NPS)

- 2006 *Management Policies*. US Department of the Interior, National Park Service, Washington, DC. https://www.nps.gov/policy/MP_2006.pdf.
- 2016 *Foundation Document, Great Smoky Mountains National Park, North Carolina and Tennessee*. US Department of Interior, National Park Service, Gatlinburg, TN.

**ATTACHMENT C – WETLANDS FLOODPLAINS
STATEMENT OF FINDINGS**

**United States Department of the Interior
National Park Service
Great Smoky Mountains National Park**

Wears Valley Mountain Bike Trail System

**Statement of Findings for
Floodplains and Wetlands**

March 2022

Recommended:

ALAN
SUMERISKI

Digitally signed by ALAN SUMERISKI
Date: 2022.03.31 14:59:49 -04'00'

Superintendent,
Great Smoky Mountains National Park

Date

Certification of
Technical Adequacy and
Servicewide Consistency:

FORREST HARVEY

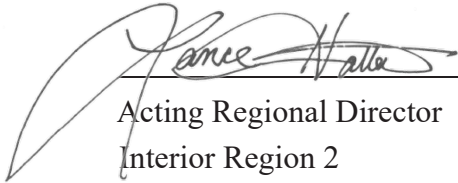
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Chief,
Water Resources Division

04/04/2022

Date

Approved:


Acting Regional Director
Interior Region 2

5/18/2022
Date

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STATEMENT OF FINDINGS

INTRODUCTION

The National Park Service (NPS) is proposing to develop a mountain bike trail system in a portion of the Foothills Parkway (Parkway) in Wears Valley, Tennessee. The Parkway is part of Great Smoky Mountains National Park. Collectively the Foothills Parkway and Great Smoky Mountains National Park are referred to as “the Park” in this document.

The purpose of this combined Statement of Findings document is to comply with NPS wetland protection and floodplain management procedures. Executive Orders 11988, “Floodplain Management,” and 11990, “Protection of Wetlands,” require NPS and other federal agencies to evaluate the likely impacts of actions in floodplains and wetlands. NPS Director’s Order #77-1: *Wetland Protection* and NPS *Procedural Manual 77-1* (NPS 2016) provide NPS policies and procedures to comply with Executive Order 11990, and NPS *Procedural Manual 77-2* (NPS 2002) provides procedures to comply with Executive Order 11988. The Draft Statement of Findings will be published and made available for public review with the environmental assessment (EA).

PROJECT DESCRIPTION

PROPOSED ACTION (PREFERRED ALTERNATIVE)

The proposed action (the preferred alternative in the EA, alternative 3) would include 11.8 miles of mountain bike trails and 2.3 miles of pedestrian-only trails in the project area. To access the trail system, 0.93 miles of road would be constructed along the proposed Parkway Section 8D road alignment to access the mountain bike trail system and trailhead. This access road would be approximately 24-feet wide with 4-foot shoulders and 15 feet of maintained roadside clearance on each side. A 318-foot-long bridge would be built over Cove Creek. The access road would also include a wildlife tunnel to allow amphibians, reptiles, and small mammals to continue to travel between the two wetland areas on opposite sides of the road. Additional amenities would include a trailhead with up to 145 parking spaces; possible concession/retail space; a bike wash and repair station; comfort station (restrooms); picnic tables; and an informational kiosk for orientation, trail etiquette, and rules for mountain biking. Figure 1 provides the proposed layout.

Construction

The purpose-built mountain bike trails would be approximately 4-feet wide. Sustainable design concepts and construction techniques would be used to quickly eliminate water from the trail system after a rain event, which would reduce erosion, standing water, and long-term trail maintenance needs. The trail system would be constructed to avoid removing large diameter trees wherever possible. Additional information about sustainable design concepts and construction techniques is included in the EA for this project.

The access road on the north side of Cove Creek and the bridge over Cove Creek would be designed and constructed to minimize impacts on wetlands and floodplains. The access road in this area would follow an existing unpaved, maintained roadbed that was built in the 1980s. Wetlands exist on either side of the existing roadbed. The bridge would span the 100-year floodplain of Cove Creek. The road/bridge footprint and potential impacts on wetlands in this area would be minimized by using relatively steep side slopes, engineered fill, or other structural design elements.

Great Smoky Mountains National Park Tennessee

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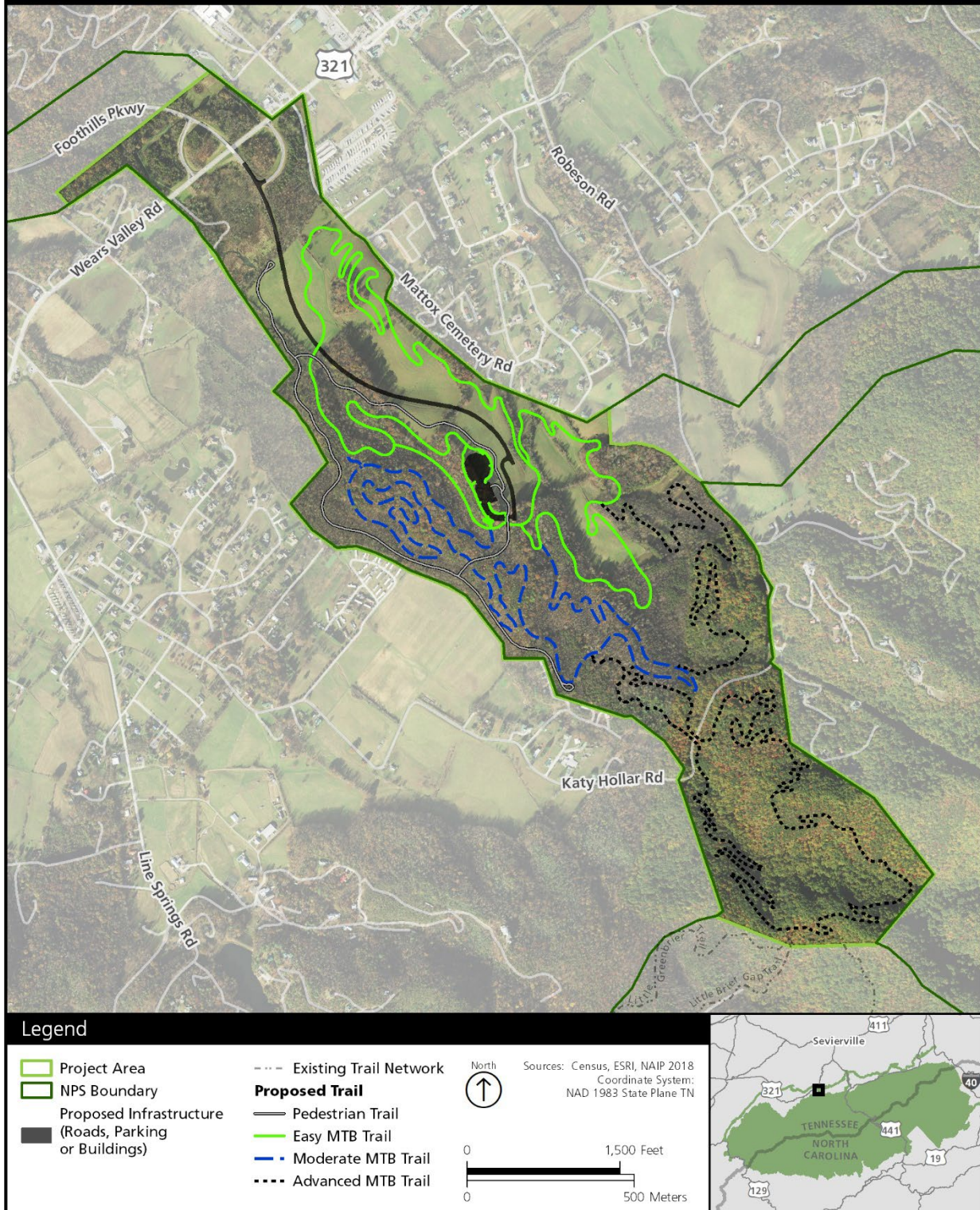


FIGURE 1. PROPOSED ACTION

Overall, the proposed action would require 25.4 acres of disturbance during the construction period. Of these 25.4 acres, 5.7 acres would be impervious surfaces for buildings, road, and parking areas and 11.8 acres would be pervious trail improvements, including areas adjacent to the 4-foot-wide trail surface that may need to be cleared and contoured or shaped to achieve proper drainage. An additional 0.2 acres would be for the elevated bridge. The remaining 7.7 acres would be areas disturbed by earthmoving activities during construction that would be revegetated with species in accordance with a project-specific restoration plan once construction is complete.

Because the area contains no sanitary sewer lines, a subsurface sewage disposal system (i.e., septic system) would be required at the trailhead to treat wastewater from the comfort station. The subsurface sewage disposal system would be situated near the trailhead in open, non-forested areas and outside floodplains and buffers for wetlands and streams. Based on the estimated number of bathroom stalls, the septic field would be less than 5,000 square feet, or approximately 0.11 acres. The system would be sited and designed following Tennessee Code: Title 68 Health, Safety and Environmental Protection: Chapter 221 Water and Sewerage: Part 4 Subsurface Sewage Disposal Systems in consultation with the Tennessee Department of Environment and Conservation. The remaining utilities would be within the access road corridor and would require no additional ground disturbance.

SITE DESCRIPTION

The project area is located within the Foothills Parkway corridor in Wears Valley, Tennessee. The entire length of the Parkway has not been constructed, including Section 8D (approximately 9.8 miles)—the corridor from Wears Valley to the Gatlinburg Spur. The project area is located in the western portion of Section 8D. The 425-acre project area includes 67 acres of open field, 6 acres of wetlands, and 352 acres of forested habitat (see figure 2).



FIGURE 2. PHOTO OF THE PROJECT AREA

FLOODPLAINS

Executive Order 11988, “Floodplain Management,” requires federal agencies to evaluate the likely impacts of actions in floodplains, avoid “adverse impacts associated with the occupancy and modification of floodplains, and avoid direct and indirect support of floodplain development wherever there is a practicable alternative.” If federal actions must take place in a floodplain, the agency is required to minimize potential impacts on human, safety, health and welfare, and the risk of flood losses, and to protect and restore natural, beneficial floodplain values.

Floodplains are defined by the *Procedural Manual* 77-2 as “the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood” (NPS 2002).

The project area is located within the Lower French Broad River (06010107) Hydrologic Unit Code (HUC)-8 watershed (509,776 acres). At a finer scale, the project area is within the Cove Creek subwatershed of the Waldens Creek watershed (12-digit HUC 060101070205), which flows northeast into the West Prong of the Little Pigeon River, and then flows to the French Broad River. Wears Valley is in the upper portion of the watershed with the majority of its waterways classified as headwater streams. The Federal Emergency Management Agency (FEMA) classifies 97% of the project area as Zone X. These areas have minimal flood hazard and are above the 500-year flood level (FEMA 2019). A small portion of the Cove Creek floodplain, approximately 12 acres, is included in the project area and is currently classified as Zone A (figures 2 and 4). Zone A floodplains are defined as areas with a 1% annual chance of flooding (i.e., located within the 100-year floodplain) but lack detailed analyses defining base flood elevations (FEMA 2020). However, Cove Creek can overflow its bank during localized high flow events. Floodplain values include the ability of the floodplain to absorb increased water flows, recharge groundwater, and provide floodplain habitat. Floodplain values in the project area include providing wildlife habitat for wetland and riparian species, allowing for flood storage, and facilitating conveyance.

WETLANDS

Wetland delineators conducted mapping in June 2020. Prior to conducting field surveys, the delineators performed a desktop review to determine the general location, extent, and character of potential wetlands that could occur within the project area. Wetland scientists reviewed existing maps and databases, which included aerial photography, US Geological Survey 7.5-minute topographic maps, county soil surveys (USDA-NRCS 2020a), the Web Soil Survey (USDA-NRCS 2020b), the National Wetlands Inventory (USFWS 2020), and the National Hydrography Dataset (USGS 2020). Project area wetlands were delineated through field reviews and geographic information system (GIS) analysis and then additionally assessed for function and value in the field in September 2020. Delineation procedures followed the protocols of NPS Director’s Order #77-1. The classification of all waters, wetlands, and uplands were based on field observations and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). As part of the wetland delineation effort, the delineators recorded vegetative community types, inventoried dominant plant species, and described the wetlands and open waters that were delineated. Additionally, they documented soil profiles and hydrologic indicators.

Based on the field investigation, four classes of wetlands and two riverine designations were identified in the project area using the Cowardin classification system (Cowardin et al. 1979). These wetlands are listed in table 1 and comprise palustrine forested wetland (PFO), palustrine scrub-shrub wetland (PSS), palustrine emergent wetland (PEM), and palustrine unconsolidated bottom (PUB). The project area included 5,286 linear feet of ephemeral streams, 3,726 linear feet of intermittent streams, and 7,921 linear feet of perennial streams. The riverine wetlands within the project are intermittent, upper perennial, and lower perennial streams. Observed stream bed substrates include mud, cobble-gravel, and rubble.

Table 1 provides the details on the 6.80 acres of delineated wetlands, and table 2 provides the length of the riverine wetlands in the project area. Figure 3 displays the overall wetlands in the project area with detailed maps of each wetland provided in figures 4 through 9. In general, smaller wetlands are located in multiple locations across the project area with the largest wetland (4.90 acres) occurring adjacent to Cove Creek (figures 2 and 3). Qualifications of the delineators are provided at the end of this document.

TABLE 1. ACRES OF WETLANDS IN THE PROJECT AREA

Wetland Number	Cowardin Classification	Code	Acres
1	Palustrine Emergent, Persistent, Seasonally Flooded	PEM1C	4.90
2	Palustrine Forested, Broad-Leaved Deciduous, Seasonally Saturated	PFO1B	0.45
3	Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Temporarily Flooded/Seasonally Flooded	PSS1A/C	0.86
4	Palustrine Emergent, Nonpersistent, Temporally Flooded/Seasonally Flooded	PEM2A/C	0.04
5	Palustrine Emergent, Persistent, Seasonally Flooded, Farmed	PEM1Bf	0.05
6	Palustrine Emergent, Persistent, Semipermanently Flooded and Palustrine Unconsolidated Bottom, Mud, Semipermanently Flooded/Permanently Flooded, Excavated	PEM1F and PUB3F/Hx	0.27
7	Palustrine Emergent, Persistent, Seasonally Flooded/Saturated and Palustrine Unconsolidated Bottom, Mud, Seasonally Flooded/Semipermanently Flooded, Excavated	PEM1E and PUB3C/Fx	0.13
8	Palustrine Emergent, Persistent, Seasonally Saturated	PEM1B	0.01
9	Palustrine Emergent, Nonpersistent, Seasonally Saturated	PEM2B	0.01
10	Palustrine Emergent, Persistent, Seasonally Flooded/Saturated and Palustrine Unconsolidated Bottom, Mud, Semipermanently Flooded/Permanently Flooded, Excavated	PEM1E and PUB3F/Hx	0.06
Total			6.78

TABLE 2. LENGTH OF STREAMS IN THE PROJECT AREA

Stream Type	Feet	Miles
Ephemeral	5,286	1.0
Intermittent	3,726	0.7
Perennial	7,921	1.5

Great Smoky Mountains National Park Tennessee

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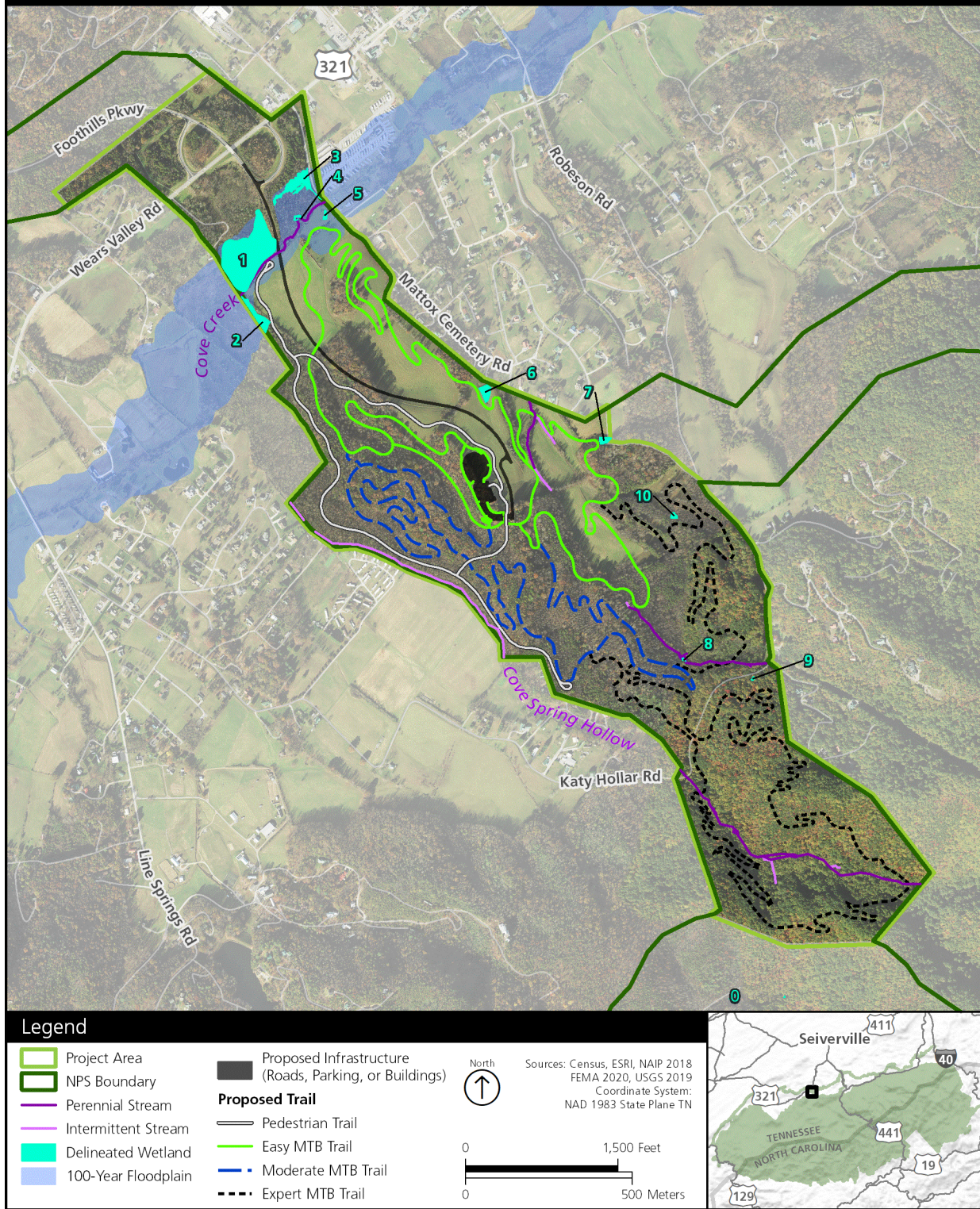


FIGURE 3. OVERVIEW OF FLOODPLAINS AND WETLANDS IN THE PROJECT AREA

Wetland 1 (PEM1C) is a seasonally flooded wetland dominated by herbaceous vegetation and adjacent to Cove Creek, a perennial stream. Dominant shrub species include common buttonbush (*Cephalanthus occidentalis*) and black willow (*Salix nigra*). Dominant herbaceous species include reed canary grass (*Phalaris arundinacea*), nodding sedge (*Carex gynandra*), and limestone wild petunia (*Ruellia strepens*). The wetland performs a variety of functions such as storing surface and subsurface water, nutrient cycling, and particulate retention; it also provides wildlife habitat and breeding habitat for amphibians. This wetland is a unique wetland in the Park because of its size, hydrology/formation, and plant composition and diversity. It provides beaver habitat as well as breeding habitat for eastern red-spotted newts (*Notophthalmus viridescens*), green frogs (*Ana clamitans*), bull frogs (*Lithobates catesbeianus*), spotted salamanders (*Ambystoma maculatum*), and upland chorus frogs (*Pseudacris feriarum*). Visitors use the existing roadbed as a platform for viewing birds in this wetland.

Wetland 2 (PFO1B) is a seasonally saturated deciduous forest that directly drains to Cove Creek. Dominant plant species include red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), multiflora rose (*Rosa multiflora*), Canada goldenrod (*Solidago canadensis*), and American hog peanut (*Amphicarpaea bracteata*). The wetland contributes groundwater discharge and reduces downstream particulate loading to Cove Creek, which helps to maintain stream flow and improve water quality. It also provides breeding, nesting, and feeding habitat for an assortment of wildlife.

Wetland 3 (PSS1A/C) is a temporarily to seasonally flooded scrub shrub wetland dominated by woody vegetation less than 20 feet tall. Dominant species include boxelder (*Acer negundo*), American sycamore (*Platanus occidentalis*), silver maple (*Acer saccharinum*), creeping jenny (*Lysimachia nummularia*), and swamp dock (*Rumex verticillatus*). The wetland contributes surface and groundwater discharge and reduces downstream particulate loading to Cove Creek. Other functions include storing surface and subsurface water, nutrient cycling, and particulate retention. The wetland provides wildlife habitat as well as breeding habitat for amphibians.

Wetland 4 (PEM2A/C), in the bend of Cove Creek, is a temporarily to seasonally flooded wetland dominated by herbaceous vegetation. Plant species include boxelder, chairmaker's bulrush (*Schoenoplectus americanus*), jewelweed (*Impatiens capensis*), and crowned beggarticks (*Bidens coronata*). The concave wetland helps improve the water quality of Cove Creek by retaining particulates that would otherwise enter the stream. Other wetland functions include storing surface and subsurface water and nutrient cycling. The wetland provides wildlife breeding habitat for amphibians.

Wetland 5 (PEM1Bf, figure 4), located in an old farm field, is a seasonally saturated wetland dominated by herbaceous vegetation. Dominant species include common rush (*Juncus effusus*) and fox sedge (*Carex vulpinoidea*). The wetland functions include wildlife habitat, nutrient cycling, and subsurface water storage.

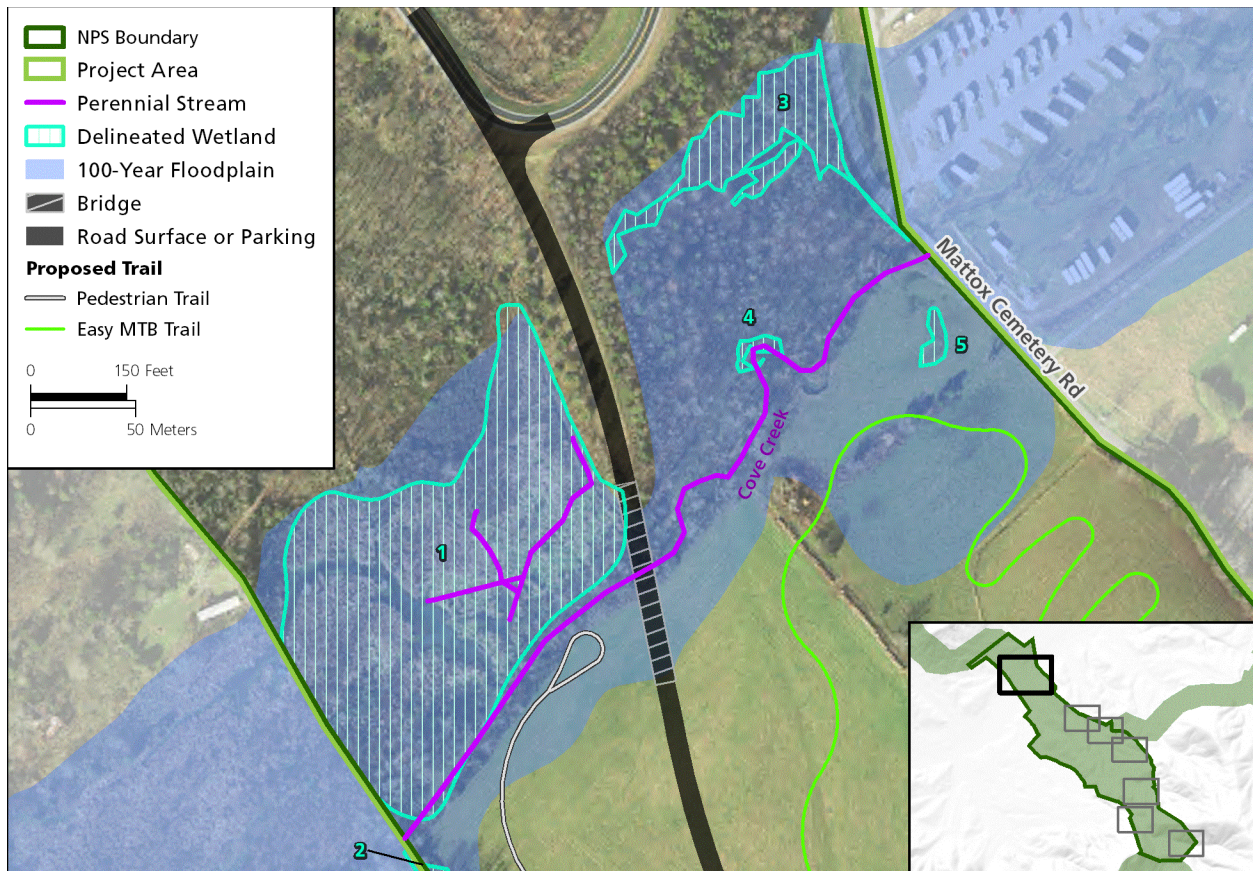


FIGURE 4. WETLANDS 1 THROUGH 5 AND STREAM CROSSING WITH ALTERNATIVES OVERLAY

Wetland 6 (PEM1F and PUB3F/Hx, figure 5) is a disused livestock pond comprising three distinct wetland habitats: unvegetated permanently flooded, sparsely vegetated semi-permanently flooded, and emergent wetland along the perimeter of the pond. Parrot feather (*Myriophyllum aquaticum*), an exotic invasive aquatic plant was observed during the delineation in the semi-permanently flooded habitat, and dead stems of parrot feather covered approximately 25% of the emergent wetland. Plant species within the emergent wetland include common rush, blunt spike rush (*Eleocharis obtusa*), and black willow (*Salix nigra*). The wetland provides wildlife habitat and breeding habitat for amphibians and aquatic invertebrates. Functions performed by the wetland include surface runoff storage, groundwater recharge, particulate retention, and nutrient cycling.

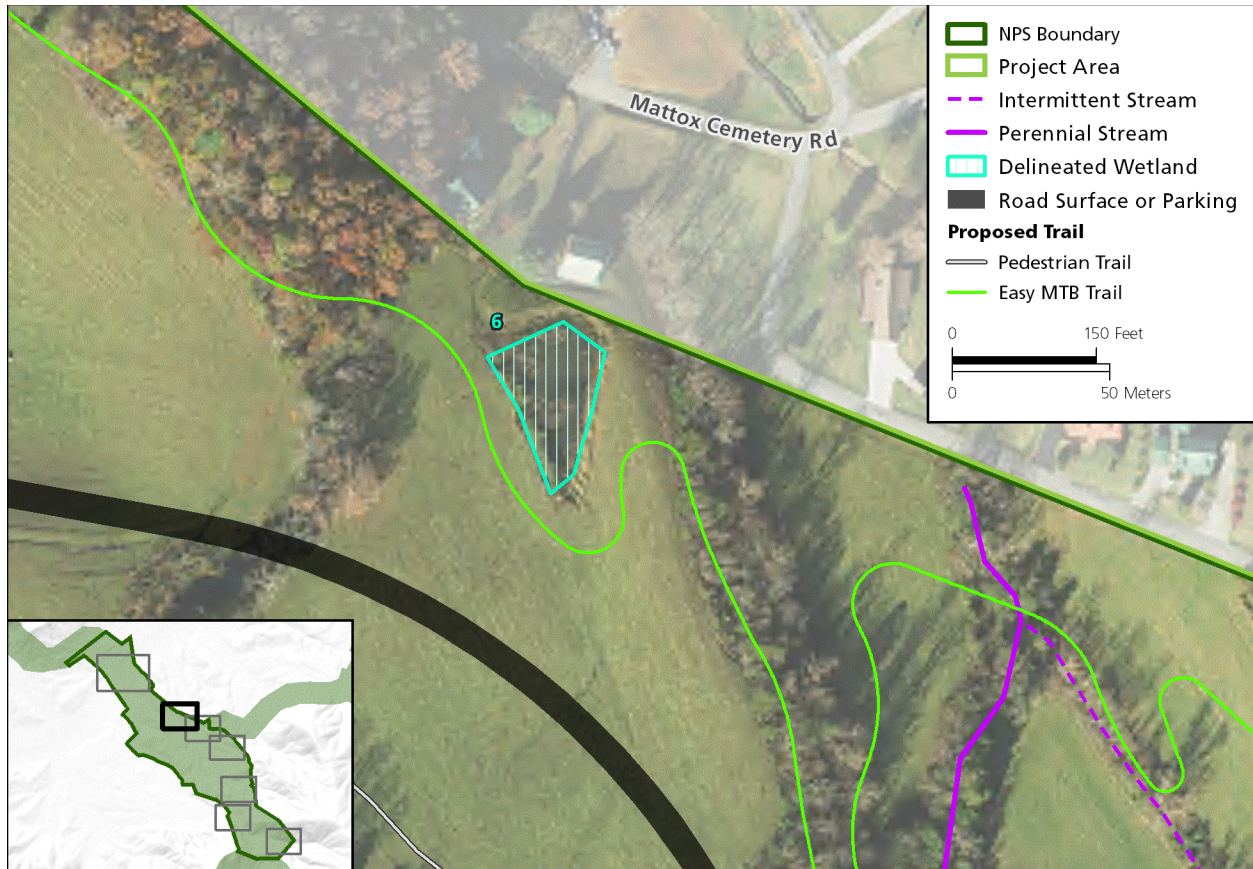


FIGURE 5. WETLAND 6 AND STREAM CROSSING WITH ALTERNATIVES OVERLAY

Wetland 7 (PEM1E and PUB3C/Fx, figure 6) is an old farm pond that is composed of sparsely vegetated to semi-permanently flooded habitats with an emergent wetland along the perimeter of the pond. The wettest areas contained sparsely vegetated concave surfaces and surface soil cracks. Plant species include common rush, Canadian clearweed (*Pilea pumila*), Pennsylvania smartweed (*Polygonum pensylvanicum*), giant ragweed (*Ambrosia trifida*), false daisy (*Eclipta prostrata*), and bluntleaf bedstraw (*Galium obtusum*). The wetland provides wildlife habitat and breeding habitat for amphibians and aquatic invertebrates. Functions performed by the wetland include surface runoff storage, groundwater recharge, particulate retention, and nutrient cycling.



**FIGURE 6. WETLAND 7 AND STREAM CROSSING WITH ALTERNATIVES OVERLAY
(SAME STREAM CROSSING AS FIGURE 5)**

Wetland 8 (PEM1B, figure 7) is a small point bar formed by the accumulation of alluvium in the bend of an incised perennial stream. It is a seasonal saturated wetland dominated by herbaceous vegetation with a partially closed canopy above. Plant species include jewelweed, Nepalese browntop (*Microstegium vimineum*), cutleaf coneflower (*Rudbeckia laciniata*), fowl mannagrass (*Glyceria striata*), with black gum (*Nyssa sylvatica*) and white ash (*Fraxinus Americana*) seedlings. The point bar wetland helps maintain the stream channel formation.

Wetland 9 (PEM2B, figure 7) is a seasonally saturated wetland dominated by herbaceous vegetation. Dominant plant species include wild hydrangea (*Hydrangea arborescens*), jewelweed, and Nepalese browntop. The wetland functions include wildlife habitat, nutrient cycling, and subsurface water storage.

Wetland 10 (PEM1E and PUB3F/Hx, figure 10) is an old farm pond composed of unvegetated permanently to semi-permanently flooded habitats with a seasonally flooded to saturated emergent wetland along the perimeter of the pond. Plant species include Canadian clearweed, Pennsylvania smartweed, Nepalese browntop, and Canadian woodnettle (*Laportea canadensis*). The wetland provides wildlife and breeding habitat for amphibians and aquatic invertebrates. Functions performed by the wetland include surface runoff storage, groundwater recharge, particulate retention, and nutrient cycling.

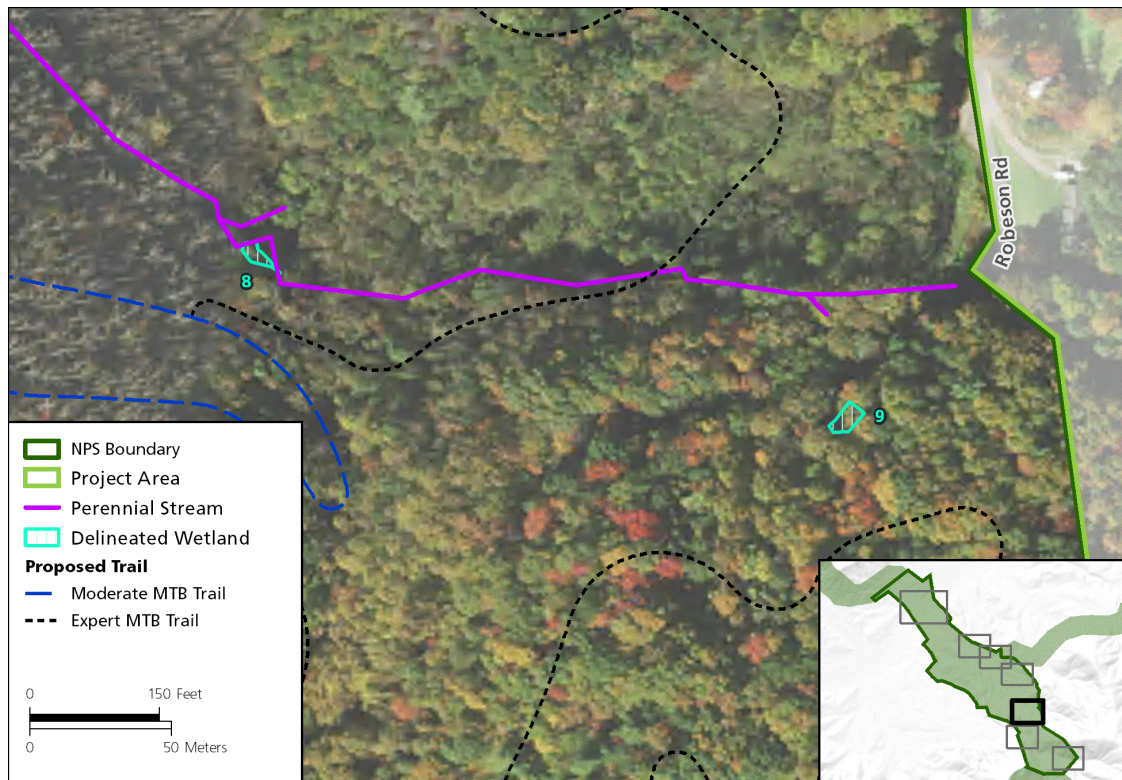


FIGURE 7. WETLANDS 8 AND 9 AND STREAM CROSSING WITH ALTERNATIVES OVERLAY

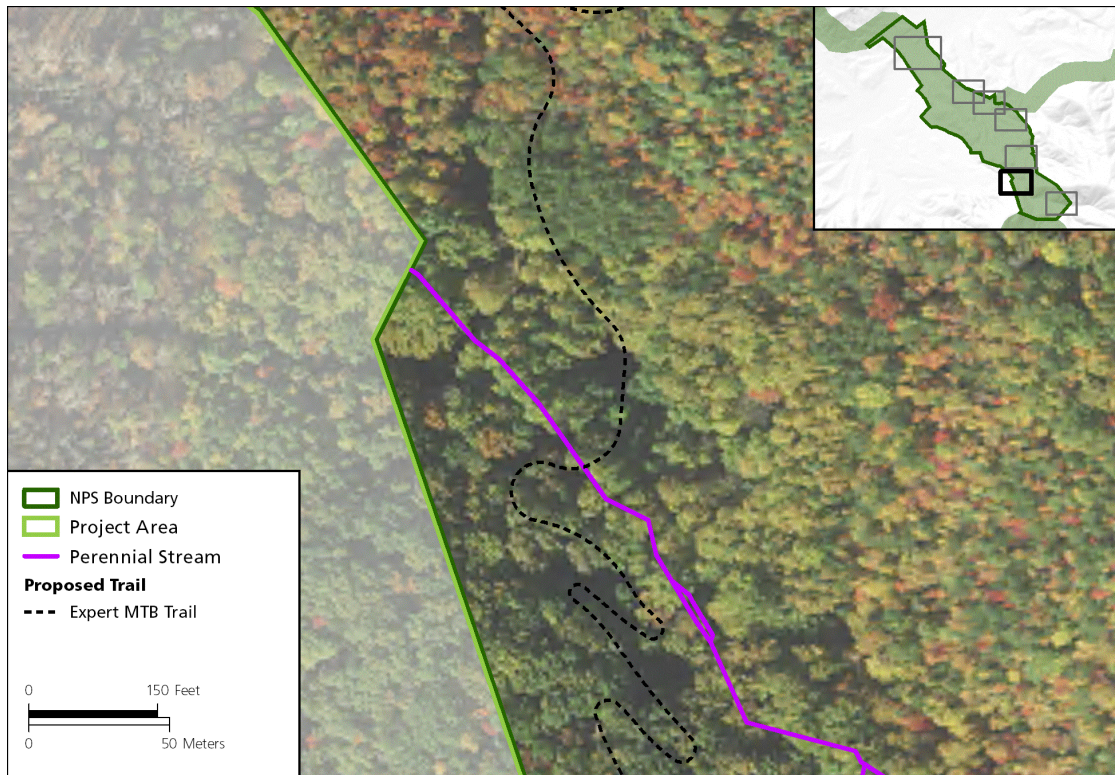


FIGURE 8. STREAM CROSSING LOCATION

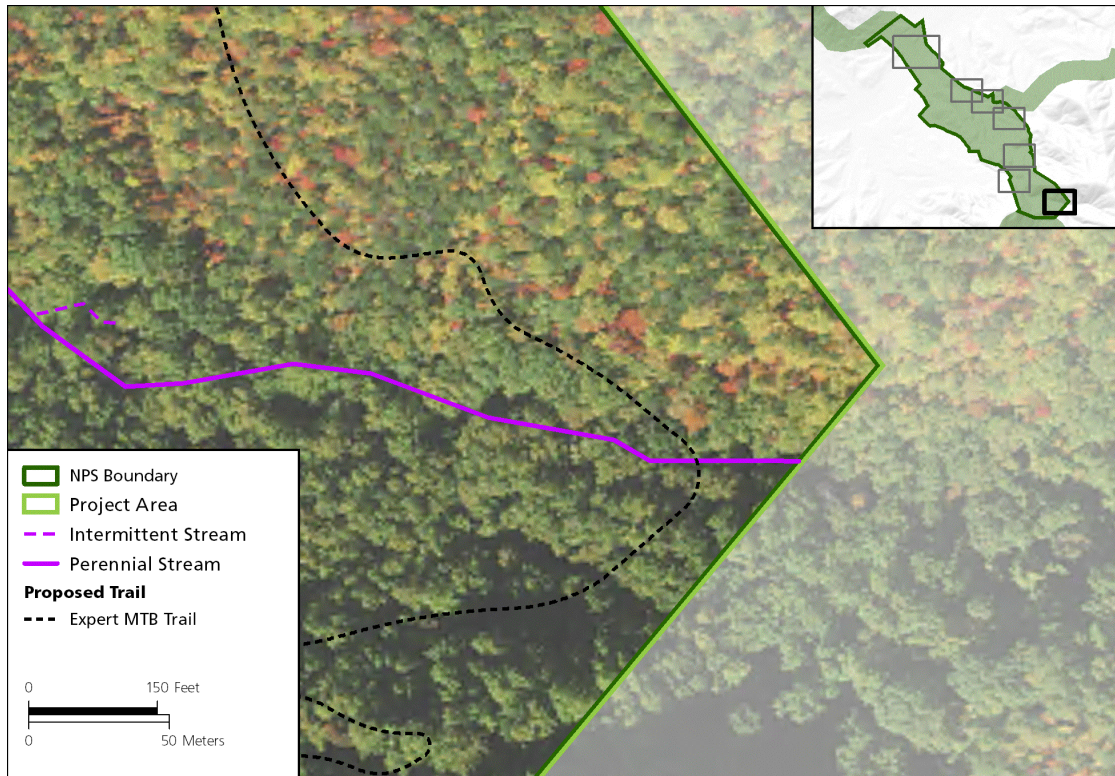


FIGURE 9. STREAM CROSSING LOCATION



FIGURE 10. WETLAND 10 WITH ALTERNATIVES OVERLAY

JUSTIFICATION FOR THE USE OF THE FLOODPLAIN AND WETLANDS

Construction of any access road along the alignment of Section 8D is not possible without the use of floodplains and wetlands because of the narrow transportation corridor and Parkway boundary. The portion of the Section 8D roadbed that already exists was constructed in the 1980s. The alignment of Section 8D was preliminarily designed in the 1980s, and NPS completed a draft environmental impact statement with an analysis of impacts in 1994. All alternatives for this project would use the same alignment described in the 1994 draft environmental impact statement to reduce the potential for additional impacts on natural resources; NPS would not construct an additional access road outside the proposed Section 8D alignment because construction in a different location would increase the potential for impervious surface and require additional vegetation clearing. For example, access into the project area from the Metcalf Bottoms portion of the Park is not feasible without an additional 18 acres of disturbance on forested habitat to construct a 3-mile road. Access from Mattox Cemetery Road and Katy Hollar Road would require use of narrow, residential roads. Establishing access points from these roads would be inconsistent with the *Foothill Parkway Master Plan*, which identified seven specific access points along the Parkway. Additionally, there are no flat areas near the project site adjacent to Katy Hollar Road, and the road has steep grade and winding turns that are not ideal for public access points. The potential impact on floodplains and wetlands under the proposed action is justified because none of the other proposed alternatives would eliminate impacts on floodplains or wetlands. Thus, impacts on floodplains and wetlands would occur but cannot be reduced with selection of an alternative that has fewer impacts. Impacts on wetlands and floodplains would be the same across all three alternatives.

ALTERNATIVES

The EA prepared for this project considered four alternatives, including the no action alternative (alternative 1), the proposed action described above and two other action alternatives. While the type and overall length of the trail system, the location and size of trailheads, and the length of the access road varied across the action alternatives, all of the action alternatives included the development of the access road along the proposed alignment for Section 8D. As a result, every action alternative would have the same potential impacts on wetlands and floodplains.

Under the no action alternative, there would be no change to the use of the transportation corridor for Section 8D in Wears Valley. Mountain bike trails would not be constructed within the project area, and there would be no support infrastructure, including amenities associated with mountain bike trails, pedestrian trails, or completion of up to 1 mile of Section 8D. A portion of the land in Wears Valley would continue to be used for hay production (approximately 66 acres) under a special use permit. Additional detail about the alternatives is included in the EA for this project.

PROJECT IMPACTS

Floodplain Impacts

Potential Risks to Human Health and Safety

The preferred alternative does not include construction of habitable structures in the floodplain. Human use of the floodplain would include motorists crossing the Cove Creek bridge and visitors using short segments (0.1 acres) of the mountain biking and hiking trails. The proposed bridge over Cove Creek would be designed to ensure it is not over-topped during the 100-year flood event. Other than the edge of the abutment on the south side of Cove Creek, the bridge would span the 100-year floodplain. Floods of potential consequence at Cove Creek are expected to occur with some warning. In general, a prolonged period of intense rain for about 12 to 24 hours could create extreme flood conditions. Gates along the Parkway would allow for closure of the area if warranted. Flood risks to human health and safety would be negligible under the preferred alternative.

Potential Risks to Property

In accordance with NPS Director's Order 77-2 and *Procedural Manual 77-2*, the construction of the proposed bridge over Cove Creek constitutes a Class I Action (location or construction of administrative, residential, warehouse, and maintenance buildings and non-excepted [overnight] parking lots, if they lie within the 100-year floodplain). Construction of trail segments in the floodplain are considered excepted actions under NPS Director's Order 77-2 and *Procedural Manual 77-2*. There are no Class II or Class III actions proposed under any of the alternatives. Specific new capital investments within the floodplain under the preferred alternative would be limited to the bridge abutment on the south side of Cove Creek. Risks to property would be minimized by following Federal Highway Administration *Design Standards for Highways in National Flood Insurance Program Mapped Floodplains* (FHWA 1986).

Potential Risks to Floodplain Values

Floodplains provide an array of natural and physical resource values within the Park, including natural flood control, erosion control, groundwater recharge, habitat for vegetation and wildlife, and recreational opportunities. Construction of the bridge across of Cove Creek would occur within and adjacent to an existing unpaved roadbed constructed in the 1980s. The surface of the existing roadbed is not in the floodplain, but the floodplain abuts the toe of the fill slope. The roadbed surface is routinely mowed, but successional forest vegetation has grown on the fill slopes. The proposed bridge would be above the floodplain, but vegetation clearing on the existing fill slope and addition of fill would be required. Using relatively steep side slopes, engineered fill, or other structural design elements for the road in this location would minimize the need to remove vegetation in the floodplain. As noted above, the bridge would be constructed above the no-rise level and would not block or alter flow.

Additionally, approximately 0.1 acres of mountain bike trails would be located within the floodplain. In this location, trail development would be limited to removing vegetation and grading a 4-foot-wide flat and permeable trail.

Habitat for vegetation and wildlife within the floodplain would be altered. While minimal habitat in the floodplain would be removed, the construction and operation of a road and bridge in this location would introduce additional noise and vehicles that could disturb wildlife. The project area is already in a developed area, so additional impacts from human presence would be minimal. The floodplain area is also used for birding, with visitors using the existing roadbed as a viewing platform. This opportunity would no longer exist with the construction of road. Birders would still be able to view the wetland from the trail on the south side of Cove Creek; however, the additional human and vehicular presence would likely degrade this experience.

As a result, the preferred alternative would not alter the floodplain functions. The bridge and trails would not alter or constrict flood waters and would not result in reduced infiltration. Increased flooding at the proposed bridge location, as a result of channel constriction, is not expected to occur because the bridge would be designed to ensure a "no-rise condition" in upstream water surface elevations. The proposed access bridge would be constructed using techniques outlined in applicable permits, including the US Army Corps of Engineers Section 404 Permit. Compliance with applicable standards, regulations, and policies to minimize impacts to floodplain resources and loss of property or human life would be strictly adhered to during and after the construction. The value of the wetland for recreation would be slightly degraded by the construction and operation of the roadway in an area currently used for birding.

Wetland Impacts

Construction of the vehicle bridge at the Cove Creek crossing would directly affect a small portion of Wetland 1. The bridge/road footprint and potential impacts on wetlands in this area would be minimized by using relatively steep side slopes, engineered fill, or other structural design elements. Preliminary design estimates approximately 21 square feet of permanent impacts on Wetland 1 from the toe slope of

the bridge abutment. During final design, these impacts may be completely avoidable. During construction, the wetland would be clearly marked to avoid temporary impacts from earthmoving equipment associated with road and bridge development, including vegetation removal. Road construction would include a wildlife tunnel beneath the roadway to allow for continued connection between the wetlands on either side of the access road. The unavoidable, permanent impacts on the wetland totaling 21 square feet would be limited to a small corner adjacent to Cove Creek and would have negligible impacts on the function and values. The biotic and hydrologic functions would not be altered, although the current birding experience would be degraded, as noted under “Floodplain Impacts.”

The six stream crossings would affect approximately 86 linear feet of riverine wetlands. In these locations, the stream crossing would avoid construction in the wetland by using elevated structures like a wooden deck ladder bridge. Assuming a 4-foot-wide stream crossing, approximately 344 square feet of riverine wetlands would be shaded by the elevated structures in these locations. In an effort to minimize sediment release to surface waters in the project area, sustainable design concepts, including grade reversal and the half slope criteria, would be used to quickly eliminate water from the trail system after a rain event, which would reduce erosion, standing water, and long-term trail maintenance needs. In addition, trails would be designed to maintain an average 60-foot buffer away from streams and wetlands to protect wetlands in the project area from additional impacts.

MITIGATION

FLOODPLAIN RISK MITIGATION

The following floodplain risk mitigation measures would be implemented under the preferred alternative:

- Potential risks to human health and safety would be mitigated with bridge design to help ensure that the bridge and access road are above the level of a 100-year flood event. In addition, gates along the Parkway would allow for closure of the area if warranted.
- Potential risks to property would be mitigated by following Federal Highway Administration *Design Standards for Highways in National Flood Insurance Program Mapped Floodplains* (FHWA 1986).

The proposed action would incorporate the described impact avoidance and minimization techniques to protect human health/life, minimize risk to capital investment, and preserve natural and beneficial floodplain values. The proposed action would not alter flood elevations and would not have permanent effects on floodplain functions and negligible effects on floodplain values; therefore, no additional floodplain mitigation would be required.

WETLAND MITIGATION

NPS *Procedural Manual 77-1* states that wetland compensation is required if adverse impacts on wetlands from the project total 0.1 acres or more (NPS 2016). Permanent impacts on the wetland area at the proposed Cove Creek bridge would less than 0.1 acres; therefore, no compensatory mitigation is required. To provide continued accessibility for animals between the two wetland areas, the design would include construction of a wildlife tunnel under the access road on the north side of Cove Creek to allow amphibians and small mammals to cross under the road.

COMPLIANCE

In addition to Executive Orders 11988 and 11990, applicable laws and regulations pertaining to wetland and floodplain impacts include Clean Water Act Section 401 and 404 and the National Environmental Policy Act of 1969.

CONCLUSIONS

The proposed action would include activities located within the regulatory 100-year floodplain of Cove Creek, which would not alter flood elevations or have permanent effects on floodplain functions or values. Protection of human health/life would be accomplished through closure and evacuation. Therefore, it has been determined that the proposed action would be consistent with Executive Order 11988.

The proposed action would also permanently impact approximately 21 square feet of wetland edge adjacent to Cove Creek from construction of the bridge and access road. An additional 344 square feet of riverine wetlands would be impacted by shading from elevated stream crossings. Although impacts on the wetland would occur, the impact would be on the eastern edge and would not bisect the wetland. If selected for implementation, final design would strive to avoid all permanent impacts. Continued wildlife connection between the two wetlands would be facilitated by the wildlife tunnel. Wetland values for birding would be degraded. Because less than 0.1 acres of wetlands would be impacted, no compensatory mitigation is required.

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ACRONYMS

EA	environmental assessment
FEMA	Federal Emergency Management Agency
GIS	geographic information systems
HUC	Hydrologic Unit Code
NPS	National Park Service
Park	Foothills Parkway and Great Smoky Mountains National Park
Parkway	Foothills Parkway