

Chapter 2

ALTERNATIVES



The Pinnacle Overlook

Cumberland Gap National Historical Park
Final General Management Plan/
Environmental Impact Statement

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CHAPTER 2 ALTERNATIVES

This chapter presents three alternatives, including the preferred alternative, for future management of Cumberland Gap National Historical Park. The alternatives were developed based on input from public and NPS scoping meetings, coordination with other agencies, stakeholders, and other organizations, as described in Chapter 6, Summary of Public Involvement. The three alternatives, each of which is consistent with the park's purpose, significance, and fundamental resources and values, are Alternative A – the no action alternative, and action alternatives B and C. Alternative A is included as a baseline for comparing the environmental consequences of implementing each “action” alternative.

This chapter also presents sections on management zones, prescriptions, user capacity, a comparative cost analysis, a summary table of the impacts associated with each alternative, mitigative measures common to both action alternatives, the environmentally preferred alternative, as well as other alternatives or actions considered but dismissed from further analysis.

MANAGEMENT ZONES

Management zones prescribe how different areas of the Cumberland Gap National Historical Park would be managed. Each management zone specifies cultural resource and natural resource desired future conditions, opportunities for visitor experiences, and appropriate facilities, and combines these into a possible management strategy applied to locations (or mapped) within the park. Each management zone defines how different areas of the park would be managed. In every management zone the park would preserve and protect cultural and natural resources to the greatest extent possible given available funding.

Four management zones and a set of prescriptions for each zone were created: Cultural Resource Zone, Natural Zone, Recommended Wilderness Zone, and Developed Zone. The management prescriptions, or kinds and levels of visitor use as well as the types of facilities that are appropriate by zone, are listed on Table 4. These types and levels of use and facilities are based on the input gathered during the scoping process. An overview of the management zones is provided in the pages that follow.

CULTURAL RESOURCE ZONE

The Cultural Resource Zone represents areas that focus on education, outreach, and restoring and preserving cultural resource conditions. This zone would include the two Historic Districts, Cumberland Gap and Hensley Settlement, and would allow for protection of these historic structures and landscapes as well as appropriate uses by visitors.

Visitor Experience

Visitors would have the opportunity to step back in time and experience life as it was years ago in the region. The primary visitor experience would be seeing and visiting historic structures and landscapes indicative of the region's cultural heritage. The visitor's experience would be diverse. The visitor could experience life in the 1900s in the Hensley Settlement or could follow Daniel Boone's path through the Cumberland Gap along the restored Wilderness Road. Guided tours would be available to provide the visitor with additional information about the area. There would be a moderate to high degree of education and outreach activity in this zone as visitors enjoy and learn about historic activities, buildings, and landscapes. Self sufficiency and knowledge of outdoor skills are not expected to be highly necessary in historic districts; however, hiking skills would be preferred in some areas. The level of encounters with other visitors and park staff would be expected to be moderate to high. However, the opportunities to experience solitude, quiet and a sense of isolation, in particular for the Hensley Settlement, would be expected.

Table 4. Management Prescriptions for Cumberland Gap National Historical Park

Category	Cultural Resource Zone	Natural Zone	Recommended Wilderness Zone	Developed Zone
Appropriate Kinds and Levels of Visitor Use				
Hiking	Yes	Yes	Yes	Yes
Biking		Yes – In designated areas only		Yes – In designated areas only
Camping		Yes - In designated areas only	Yes - In designated areas only	Yes
R/V Camping				Yes
Picnicking and nature observation	Yes	Yes	Yes	Yes
Scientific research/restoration by outside organizations	Yes – Pending approval by the Superintendent	Yes – Pending approval by the Superintendent	Yes – Pending approval by the Superintendent	Yes – Pending approval by the Superintendent
Interpretive programs	Yes	Yes	Yes	Yes
Special events	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent
Rock Climbing and Rappelling		Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent		

Table 4. Management Prescriptions for Cumberland Gap National Historical Park (Continued)

Category	Cultural Resource Zone	Natural Zone	Recommended Wilderness Zone	Developed Zone
Cave Tours	Yes	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes
Cave Exploration	Yes	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent
Cave Research		Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent	
Horseback Riding	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only
Fishing, non-motorized boating, electric trolling motors		Yes - In designated areas only		Yes
Wagon Rides	Yes			
Appropriate Types of Facilities				
Hiking Trails	Yes	Yes	Yes	Yes
Horse Trails	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only
Bicycle Trails		Yes, in designated areas only		Yes, in designated areas only

Table 4. Management Prescriptions for Cumberland Gap National Historical Park (Continued)

Category	Cultural Resource Zone	Natural Zone	Recommended Wilderness Zone	Developed Zone
Parking areas, picnic facilities, concession facilities, maintenance facilities, visitor centers and contact stations.				Yes
Administrative Facilities	Yes		Yes – Must meet minimum requirements	Yes
Cabins	Yes –existing only			Yes
Backcountry Camp Sites/ Shelters		Yes - In designated areas only	Yes - In designated areas only must meet minimum requirements	
Campground				Yes
Playgrounds				Yes
Signage	Yes	Yes - In designated areas only	Yes – In context; where necessary for visitor safety and resource protection	Yes
Comfort Stations	Yes - Primitive (waterless) facilities only	Yes - Primitive (waterless) facilities only		Yes
Paved Roads		Yes – existing only		Yes
Bridges	Yes – In context	Yes - In designated areas only		Yes
Wagon Trail	Yes			

Note: Wild caving refers to ranger-led exploration of caves that are completely underground, and that occur in areas of the cave system that are not normally open to the general public. Wild caving also presents an increased level of physical and psychological challenge for visitors interested in this type of activity.

Resource Condition or Character

Resource protection, restoration, research, and interpretation are key elements of the Cultural Resource Zone. Cultural resource management would emphasize preservation of cultural landscape values, focusing on the setting, feeling, and physical features that convey the historic or cultural character of the Historic Districts. Restoring and preserving cultural landscape values, as well as education and outreach, would be the primary management emphasis in this zone. A high level of resource and visitor management would be required to protect resources in this zone, and there would be low tolerance for resource degradation.

Appropriate Kinds of Activities or Facilities

The types of experiences that would be appropriate in the Cultural Resource Zone would include sightseeing, hiking, picnicking, observing nature, cave research, habitat restoration, scientific research, and enjoying interpretive programs. Horseback riding would be appropriate in designated areas. Facilities that would be appropriate in the zone include restored structures, signs, administrative facilities, hiking trails, horse trails, primitive comfort stations, bridges, and wagon trails. Facilities would be unobtrusive and fit within the historical context.

NATURAL ZONE

The Natural Zone focuses on preserving the natural environment to allow visitors more diverse experiences within the park. The Natural Zone incorporates increased visitor activities while preserving the natural experience. This zone would encompass the majority of the Fern Lake watershed and areas near the Hensley Settlement and Civic Park.

Visitor Experience

In the Natural Zone, the visitor would be given a high diversity of experiences in more undeveloped areas of the park. Visitors would be able to choose a level of challenge or risk for his/her level of experience. This zone includes important natural features, including White Rocks, Sand Cave, and the Fern Lake Watershed. There is a sense of being in a natural landscape and visitors enjoying their natural surroundings on foot or by horseback in some designated trails. Opportunities for solitude are plentiful.

Resource Condition or Character

The character of this zone is natural overall; alterations are minimal and designed to blend with the natural environment. Restoring and preserving natural resources, scientific research, as well as education and outreach are the primary management emphasis in the Natural Zone. A moderate level of resource and visitor management would be required to protect resources in this zone, and there would be low tolerance for resource degradation.

Appropriate Kinds of Activities or Facilities

The types of appropriate experiences in this zone would include hiking, biking, camping in designated areas, picnicking, habitat restoration, scientific research, interpretive programs, and special events. In designated areas, the following types of visitor use are appropriate: rock climbing and rappelling, cave tours, cave exploration, cave research, horseback riding, fishing, non-motorized boating, and electric trolling motor boating.

Facilities that would be considered appropriate in certain areas of this zone would include hiking and horse trails, backcountry camping in designated areas, signs, primitive comfort stations, existing roads, and bridges. Other facilities would be unobtrusive and fit within the natural environment using sustainable practices.

RECOMMENDED WILDERNESS ZONE

The Recommended Wilderness Zone focuses on preserving the natural environment to allow visitors to experience the area the way our ancestors did hundreds of years ago. This zone would encompass

the majority of the park (14,091 acres) and provide visitors with an opportunity to experience nature where human impact is largely unnoticeable and natural forces are the primary influence on the landscape. Visitors may enjoy primitive recreation on foot or horseback. The Recommended Wilderness Zone is the same for Alternatives B and C.

Visitor Experience

There would be a high degree of opportunity to experience solitude and tranquility, and a high degree of opportunity to feel close to nature. The sights and sounds of nature would prevail in this zone. The level of encounters with other visitors and park staff would be low compared to other management zones in the park. The amount of time, outdoor skill, and degree of self-reliance needed in this zone would be high, and greater than other zones.

Resource Condition or Character

This zone's character is natural overall; alterations are minimal and designed to blend with the natural landscape. Protecting and preserving natural resources is a very high priority. The Recommended Wilderness Zone provides the opportunity to allow the existing forest to reach its climax stage of growth, and the wildlife to exist in an undisturbed habitat. Natural resources may be modified to provide safe visitor access or reduce the overall level of resource impacts. Cultural resources within the zone would be preserved, but may be modified to preserve or restore natural resources. Cultural resources would be protected and maintained according to the pertinent laws and policies governing cultural resources.

Appropriate Kinds of Activities or Facilities

This zone provides a variety of experiences that allow visitors to enjoy nature and solitude. Recreational uses of this zone are to be of a type and nature that enable the areas to retain their undeveloped primeval character and influence, protect and preserve natural conditions, leave the imprint of man's work substantially unnoticeable, provide outstanding opportunities for solitude or primitive types of recreation, and preserve wilderness in an unimpaired condition. Appropriate activities include hiking, backpacking, camping, picnicking, nature observation, and habitat restoration; scientific research would be appropriate pending park approval. Cave tours, cave exploration, cave research, and horseback riding would be appropriate in designated areas. These activities are subject to limitation based on further study and analysis, and approval from the Superintendent.

Facilities are limited to those necessary for protecting resources and/or visitor safety. Appropriate facilities must meet minimum requirements for wilderness areas as defined by NPS Management Policies 2006 and could include trails, backcountry campsites, primitive comfort stations, and limited signage. Signage would only be constructed in context of the natural environment and for purposes of visitor safety and/or resource protection. Permanent roads are not appropriate in this zone.

Travel in this zone would be by foot or by horseback on designated trails. Operating a motor vehicle or possessing a bicycle in the Recommended Wilderness Zone is prohibited. The use of a wheelchair, as defined by the Americans with Disabilities Act of 1990, is appropriate. Service animals accompanying persons with disabilities are also appropriate in the Recommended Wilderness Zone.

All travel and management efforts in the Recommended Wilderness Zone would be accomplished by unmechanized means. For example, routine patrols for maintenance and protection would be accomplished by foot or horseback rather than by automotive or off-road vehicle. Use of hand tools for trail maintenance or other activities would be appropriate rather than the use of power tools.

DEVELOPED ZONE

The Developed Zone focuses on providing visitor access, information, structured activities, and other visitor services. This zone would include the visitor center and visitor contact stations in the park, and also supports the park's main administrative and operational facilities.

Visitor Experience

In the Developed Zone, visitors could expect a high diversity of experiences in areas of the park that feature basic facilities. There would be a high degree of education and outreach activity and information would be expected to be readily available. Visitors could expect more of the built environment in this zone, with buildings such as a visitor center or contact station, comfort stations, and parking facilities. All facilities would be readily accessible and most facilities would be compliant with Americans with Disabilities Act requirements. The level of encounters with other visitors and park staff would be high. The visitor would face a low level of challenge or risk in the Developed Zone.

Resource Condition or Character

Accessibility, visitor services, education, and outreach activities are the primary management emphasis in the Developed Zone. A high level of resource and visitor management would be required in this zone. In this zone, natural resources could be moderately to highly modified to accommodate facilities, operations, visitor services, and staff needs. Cultural resources may be modified to accommodate NPS operational facilities or high levels of visitor use.

Appropriate Kinds of Activities or Facilities

The types of appropriate activities in this zone would include hiking, picnicking, observing nature, fishing, non-motorized and electric trolling motor boating, habitat restoration, scientific research, and enjoying interpretive programs. Other activities that would be appropriate in designated areas in this zone include biking, camping, recreational vehicle camping, and horseback riding. Rock climbing is considered an appropriate activity in designated areas, and/or pending further study and consultation with regard to public health and safety, threatened and endangered species, resource sensitivity, or visitor experience. Facilities that would be considered appropriate in this zone would include hiking and horse trails, administrative facilities, maintenance facilities, parking areas, picnic areas, concessioner facilities, visitor centers and contact stations, campground, cabins, signs, comfort stations, paved roads, playgrounds (subject to additional study), and bridges.

USER CAPACITY

User capacity defines the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park. The 1978 National Parks and Recreation Act (16 U.S. Code, §1a-7) requires public land planning efforts to address user capacities to ensure adequate protection of the park's natural and cultural resources and quality of visitor experience.

The user capacity management process requires developing a set of indicators and standards for resource protection. Indicators are defined so that existing conditions can be compared to desired conditions within the park. Indicators serve as measurable variables that can be used to track changes in resource and social conditions related to human activity. Standards provide the thresholds against which indicators are measured and define if/when management action should be taken. Indicators and standards for the park's user capacity management program were developed based on issues raised during public scoping in combination with visitor use data, and staff observations. The park's indicators that measure whether or not desired resource conditions and visitor experiences are being achieved as well as standards that provide limits of acceptable change for the indicators are listed in Table 5. The management zones for which each indicator is likely to be most relevant are identified in Table 5 as well as the potential management actions to address resource and/or visitor experience concerns.

Table 5. List of Potential Indicators, Standards, and Park Management Strategies for Cumberland Gap National Historical Park

Issue	Potential Indicator	Management Zone	Recommended Standard	Potential Management Strategies
Need for increased interpretive (education, communication, outreach) activities at Hensley Settlement and Fern Lake surrounding lands	Visitor Use Survey Results Number of visitor complaints or requests Emailed comments / tracking of responses provided	Cultural Resource Zone Natural Zone	Visitor Use Survey results show a 10% decrease in visitor satisfaction over a five-year period. The satisfaction rate ranged from 96% to 100% over the past five years.	Add concessioners Increase number of volunteers Conduct surveys Redistribution of interpretive staff to peak days/seasons
Impacts from backcountry camping	Proliferation of user created campsites Number of incidents of resource damage (case incident reports) Damage to trails Number of complaints	Recommended Wilderness Zone Natural Zone	Increased size of campsite measured by photo documentation on an annual basis; asset condition assessments at least bi-annually; tree damage, and/or signs of improper human waste disposal. Incident case report increase from 5 per year to 10 per year or more. Facility condition index degraded by 10%.	Maintain permit system for back country sites, per the Compendium. Enforce limits: number per tour group/ number of groups Track work orders (coordination between maintenance and enforcement). Increase public outreach Encourage Leave No Trace
Protect water quality; Fern Lake – protect drinking water supply/watershed	Degradation of water quality; Increased erosion, sedimentation, turbidity	Natural Zone Developed Zone	Water Quality Standards are exceeded.	Maintain water quality sampling efforts.

Table 5. List of Potential Indicators, Standards, and Park Management Strategies for Cumberland Gap National Historical Park (Continued)

Issue	Potential Indicator	Management Zone	Recommended Standard	Potential Management Strategies
Unauthorized trails	Any increase over existing conditions. Number of visitor complaints Number of incidents of resource damage (case incident reports / work orders). Damage to trails	All zones	Standard is exceeded when 2009 existing conditions are exceeded. Track complaints for increase of greater than 5% compared to last five years of information. Number of repeated incident report/work order for same area of concern is more than three.	Increase education regarding conditions and need for certain restrictions. Increased use of volunteers in the park. Educate, provide safety information through signs and interpretive displays. Use of barriers and other restrictive measures. Increased staff presence. Continue to address unauthorized trails immediately, as they are discovered.
Degree of impact to sensitive plants at White Rocks	Total area of loss in any one area of plant cover increased compared to 2007 Study (Dr. Gary Walker, Appalachian State). Number of incidents of resource damage	Recommended Wilderness Zone	No loss of vegetative cover.	Develop long-term monitoring strategy. Increase efforts towards public education of park regulations and awareness of sensitive resources Increased enforcement Installation of barriers
Provide for visitor enjoyment at the Hensley Settlement	Number of registered complaints Number of case incident reports (vandalism, and unintentional damage to historic structures) Decrease in the number of visitors	Cultural Resource Zone	10 % decrease in visitor satisfaction levels over five year period. 10 % increase in case incident reports. Any increase in maintenance requests.	Provide more information on the sensitivity and value of Hensley Settlement Increase staff presence Direct use away from particularly vulnerable sites or structures Provide shuttle service for special events

User capacity is addressed in the following ways for Cumberland Gap National Historical Park:

- The management zones described earlier in this chapter provide the basis for managing user capacity. Each zone prescribes desired resource conditions, visitor experiences, and recreational opportunities for different areas of the park. The zones also identify the types and levels of developments necessary to support these conditions, experiences, and opportunities. This element of the framework is the most important to long-term user capacity management in that it directs the NPS on how to best protect resources and visitor experiences while offering a diversity of visitor experience opportunities.
- The park's most pressing use-related resources and visitor experience concerns, existing and potential are described, given the park's purpose, related desired conditions, and the vulnerability of specific resources and values. This helps NPS managers focus limited resources on the most significant indicators.
- Indicators and standards are identified that would be monitored in the future to determine if desired conditions are not being met due to unacceptable impacts from visitor use.
- Potential management strategies that may be used to avoid or minimize unacceptable impacts from visitor use are outlined.

The NPS would monitor the established indicators and take management action as needed to meet the standards. As park management gains knowledge from applying and testing the indicators and standards in the field, revision and refinement may be required, creating a continuous user capacity decision making process. If new use-related resource or visitor experience concerns occur in the future, additional indicators and standards would be identified as needed to address these concerns. Final selection of indicators and standards for monitoring purposes and implementation of management actions that affect use would comply with the National Environmental Policy Act (1969), Section 106 of the National Historic Preservation Act, and other laws and NPS management policies as appropriate.

FORMULATION OF THE ALTERNATIVES

This general management plan presents three management alternatives, including the NPS's preferred alternative for future management of Cumberland Gap National Historical Park. Each of the alternatives features an overall management concept and a description of how different areas of the park would be managed in the future (management prescriptions, zones, and related actions). The concept provides a basis for summarizing the main features of each alternative.

Alternative A, the No Action Alternative, would be a continuation of existing management practices. The NPS is required under the National Environmental Policy Act to include Alternative A to provide a baseline for comparing the consequences of implementing each of the other alternatives. The two other "action" alternatives are identified as Alternatives B and C. The action alternatives present two different ways to manage resources and visitor use and improve facilities at the park within the context of the Cumberland Gap National Historical Park's purpose, significance, and special mandates. The two alternatives embody the range of what the public and the NPS staff would like to see accomplished with regard to management and natural resource conditions, cultural resource conditions, and visitor use and experience at Cumberland Gap National Historical Park.

Each management alternative takes into consideration NPS mandates, laws and policies, and provides for appropriate levels of protection of the resources in accordance with these laws and policies. Each alternative is consistent with maintaining the park's purpose, significance, and fundamental resources and values. The planning team followed this premise during the development of each of the alternatives. The following is a summary of the steps used to develop the alternatives.

- Comments were received at public meetings held in Cumberland Gap, Tennessee; Pineville, Kentucky; and Duffield, Virginia on August 10-12, 2004. All public meetings were announced via

newspaper, radio, television, and through public service announcements, postings in public places, and flier distribution. A total of 63 persons attended the meetings and 60 persons provided comments at the meetings.

- Comments were reviewed by the NPS planning team, and then further sorted into the following categories as per the requirements of NPS planning guidelines: (1) issues that can't be addressed because they are inconsistent with existing NPS laws or policies; (2) actions that must be done because they are mandated by existing laws, regulations, policies or mandates; (3) interests or concerns that have been raised and that are appropriate to consider in a general management plan; and (4) actions that are more appropriately addressed by other types of plans, such as an implementation plan.
- Based on the issues identified, the planning team developed two preliminary action alternatives within the framework of the park's purpose, significance, and special mandates. The No Action Alternative, continuation of current management practices, was also summarized.
- The preliminary alternatives were presented during four public meetings held at the Cumberland Gap National Historical Park visitor center in November, 2005. All public meetings were announced via newspaper, radio, television, and through public service announcements, postings in public places, and flier distribution. A total of 40 persons attended the meetings and 21 persons provided comments at the meetings. Many of the comments were in the form of questions answered during the meeting and through dialogue with the planning team.
- Comments received and input from park staff during the meetings on the preliminary alternatives were carefully reviewed and incorporated into this plan.

As required by the NPS guidelines and policies, the alternatives focus on the general resource conditions and visitor uses and experiences/opportunities that should occur at the national park, rather than on details of how these conditions and uses/experiences should be achieved. The alternatives, therefore, do not include many details on resource or visitor use management. As a result, more detailed plans or studies would be required before most conditions proposed in the alternatives are achieved. Implementation of any alternative also depends on future funding and completion of the environmental compliance process. This general management plan, therefore, does not guarantee that funding for projects or programs will be forthcoming. Instead, the purpose of the plan is to establish a vision of the future that would guide the year-to-year management of the park; full implementation of the plan could take many years. For each action or project, an environmental assessment would also be prepared that would specify site specific impacts and mitigation needed for that project. These environmental assessments also allow opportunity for public input.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

Development of a preferred alternative involves evaluating the alternatives with the use of a rational analysis process called "choosing by advantages." Choosing by advantages is a decision-making system based on determining the advantages of different alternatives for a variety of factors or goals.

Through this process, the planning team identifies and compares the relative benefits or advantages of each alternative according to the following factors:

- Prevent loss of cultural and natural resources and wilderness values.
- Maintain and improve the condition of cultural and natural resources.
- Provide educational and recreational visitor services.
- Provide for public health, safety, and welfare.
- Improve operational efficiency and sustainability.

- Provide for employee health, safety, and welfare.
- Connectivity to other state and local managed lands.

The advantages are scored in relation to their satisfaction of each factor and summed to help identify the preferred alternative. This process is a systematic way to perform a complicated task, provides a way to engage participants, and assists in the consensus building process. It also leads to documented and consistent decision making.

The NPS's preferred alternative for this draft general management plan/environmental impact statement is Alternative C.

ACTIONS COMMON TO ALL ALTERNATIVES

Each of the alternatives provides for the protection of natural and cultural resources within the park, while providing recreational opportunities. Based on comments received from the public and park staff recommendations, many people expressed the desire for park activities to remain the same. Therefore, many of the existing features of the park are maintained across all alternatives, including the following elements:

- The tunnel would continue to operate as it does presently under all three alternatives.
- The renovated visitor center in Middlesboro, Kentucky would remain unchanged as would the newly constructed Daniel Boone Wilderness Road Visitor Contact facility.
- Visitor use and experiences at Cumberland Gap Historic District are expected to remain unchanged.
- No changes in the facilities at the 15-acre Civic Park Area would be made, since this area is newly renovated, and include a parking lot, picnic tables, picnic shelter, and comfort stations. The civic park provides access to the Sand Cave and White Rocks area and is donated/ leased to the park under a 50-year agreement with the Civic Park Association.
- Museum collections would be preserved and maintained under all three alternatives. These collections include both cultural and natural history collections and are described in Appendix D.
- The boat house and two residences at Fern Lake would be stabilized and maintained for public use.
- Acquisition of Fern Lake and all existing facilities near the lake, is assumed under all alternatives. Because Fern Lake is a drinking water supply reservoir, a limited range of visitor activities (hiking, fishing, electric trolling motor boating, and non-motorized boating) and only minor, park facilities would be appropriate in the future. A composting comfort station is proposed at Fern Lake under each alternative. As a public water supply, Fern Lake falls under the State of Kentucky Administrative Regulation (401 KAR8:020), and therefore swimming and gasoline motor- driven water craft and other human contact is prohibited.
- The Recommended Wilderness, 14,091 acres, would be managed as wilderness under all three alternatives while awaiting final classification as designated Wilderness from the Department of the Interior or congressional action.
- Opportunities for hang gliding are addressed by individual permit only.

DESCRIPTION OF THE ALTERNATIVES

This section provides a description of the No Action Alternative and the two action alternatives. For each alternative, a discussion of the following is included: management concept, appropriate kinds and levels of visitor use, facilities, outreach/education and partnering, desired resource condition or character, and the management zones and uses. The number of acres mapped for each zone and

relevant sub-features are summarized by alternative in Table 6. For the No Action Alternative, the zones from the previous general management park plan are presented. Note that the prior general management plan included subzones, a different manner of mapping zones in the park, and therefore not all acreages presented are directly comparable. For example, under Alternative A, the wilderness area is mapped as a subzone of the Natural Zone. Under Alternatives B and C, a new, separate Recommended Wilderness Zone was created. The zone name is indicated where these differences occur. Table blanks indicate the zone does not occur.

Table 6. Acreages of Management Zones by Alternative

Zone	Alternative A - No Action ¹	Alternative B	Alternative C – Preferred Alternative
Natural Zone			
Natural Environmental Features Subzone ¹	4,710		
Natural Zone	4,544	8,533	8,483
Total Natural Zone Acreage	9,254	8,533	8,483
Recommended Wilderness Zone	Wilderness Area (Included under Natural Zone)	Recommended Wilderness Zone	Recommended Wilderness Zone
Recommended Wilderness	12,191	12,191	12,191
Potential Wilderness	1,900	1,900	1,900
Total Recommended Wilderness Zone Acreage	14,091	14,091	14,091
Developed Zone	Development Zone	Developed Zone	Developed Zone
Park Headquarters and Visitor Center Area	212	255	255
Wilderness Road Campground Area	344	689	689
Sugar Run	32	66	66
West of Hensley	7	111	127
East of Hensley	3	131	131
Fern Lake Area		32	82
Civic Park Area	15	15	15
Total Developed Zone Acreage	613	1,299	1,365
Historic Zone			
Gap Area	434		
Hensley Settlement	139		
Total Historic Zone Acreage	573		
Cultural Resource Zone			
Gap Area		434	434
Hensley Settlement		174	158
Total Cultural Resource Zone Acreage		608	592
Total	24,531	24,531	24,531

¹The 1979 Master Plan included subzones.

Note: Acreages are approximate. Acreages under Alternative A are not directly comparable because zoning practices were different and did not include roads, nor encompass as large an area.

ALTERNATIVE A

Management Concept

Alternative A, the No Action Alternative, is included in the general management plan in compliance with the Council on Environmental Quality (CEQ 1978) *Guidelines for Implementing the National Environmental Policy Act and Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001b). Alternative A consists of a continuation of current management practices, directions, and trends at Cumberland Gap National Historical Park into the future. Projects and plans approved, but not yet constructed, are included under this alternative. This alternative is used as a basis for evaluation and comparison of the effects of the other two management alternatives.

Appropriate Kinds and Levels of Visitor Use

The kinds and levels of visitor use would continue to be the same as present, except visitors would be able to visit Fern Lake when its acquisition is complete. The main types of visitor activities and experiences in the majority of the park would remain the same and would include auto touring, guided tours, guided cave tours, backpacking, biking, bird watching, camping, hiking, exercising, horseback riding in designated areas, interpretive programs, nature walks, exploring the wilderness area, and wildlife viewing. Recreational rock climbing, free climbing or bouldering is not considered an appropriate activity under Alternative A. Rappelling is prohibited within 0.5 mile of the Pinnacle, Sand Cave, and White Rocks. Rappelling outside these areas requires a permit. Because Fern Lake is a drinking water supply reservoir, a limited range of visitor activities (hiking, fishing, electric trolling motor boating, non-motorized boating, and horseback riding at a distance greater than 100 feet from the lake) and only minor park facilities would be appropriate for Fern Lake and surrounding area under Alternative A. Under Alternative A, these types of future, limited uses would be possible at the time Fern Lake becomes accessible to the public.

Visitors would continue to visit and utilize the major attractions in the park, including the renovated visitor center/auditorium, Pinnacle Overlook, Hensley Settlement the Daniel Boone Wilderness Road Visitor Contact Station/Wilderness Road, Wilderness Road Trail, Iron Furnace, Gap Cave, Wilderness Road campground, Martin's Fork cabin, backcountry camping (by permit), hiking trails and trail heads, the Civic Park Area near Sand Cave and the White Rocks, and picnic/recreation areas such as Bartlett Park and Sugar Run. NPS guided tours of Hensley Settlement and Gap Cave would be expected to continue into the future.

Visitor Experience

Visitors would continue to have a wide variety of experiences in the park. Visitor orientation services would continue at the NPS visitor center, and at the Daniel Boone Wilderness Road Visitor Contact Station. Interpretive activities would continue throughout the park, with special emphasis at Hensley Settlement, the Daniel Boone Wilderness Road Contact Station, guided walks, and guided cave tours. A variety of popular interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would continue. Opportunities to enjoy recreational activities would continue to exist in a variety of settings. Roads, trails, campgrounds, and primitive campsites would all remain essentially the same. Access to the Hensley Settlement would continue via NPS guided tour vans using the gated Shillalah Creek Road. Access to trails would be expected to remain the same. Bicycle use would continue to be allowed on roads used by motor vehicles. Visitors would be able to continue to enjoy the facilities currently offered, as well as the visitor services provided as described below. No new programs, activities, trails, or uses would be expected.

Facilities

The main facilities include the Visitor Center, the newly constructed Daniel Boone Wilderness Road Visitor Contact Station, the Wilderness Road Campground, the Hensley Settlement, Gap Cave, picnic areas and trail heads, and all roads and parking areas. The facilities at Fern Lake include a boat house

and two residences that would be acquired in the future. These facilities would be stabilized and maintained by the NPS under Alternative A. In addition, a composting comfort station would be installed at Fern Lake for use by visitors. No other major new facilities would be constructed.

Outreach/Education and Partnering Programs

The park has a wide variety of interpretive or outreach/education programs that have been a key element in its success over the years. These programs include Heritage Fairs, Nature Fairs, and a large number of educational programs. In addition, numerous partnering programs with local and regional organizations have been developed, including a formal caving partnership program. Under Alternative A, the numbers and types of these programs would continue at their present levels as funding allows.

Resource Condition or Character

Under Alternative A, there would be no major changes in the condition or character of natural and cultural resources in the majority of the park. These resources would continue to be managed as they are at the present time or updated based on research efforts in the park. The park would be responsible for maintaining the character and condition of Fern Lake in the future on completion of acquisition. Archeological sites inventories are proposed for completion, along with cultural landscape inventories and reports, historic structures preservation guides for Hensley Settlement. Museum collection management and emergency planning efforts would be conducted as well as other continued resource management efforts for natural and cultural resources.

Management Zones and Uses

Under the No Action Alternative, the existing management zones, as specified in the 1979 Master Plan, would continue to be used. There are currently three zones at the park with a variety of sub-zones. The existing zoning includes Development Zone, Natural Zone, and Historical Zone (Figure 6).

In addition to the zones presented in the original plan, Fern Lake and the surrounding 4,500 acre watershed would also be included as part of the park. However, no desired future conditions for this area are defined in the existing management plan. The lake and surrounding watershed are designated as the “Fern Lake watershed” (Figure 6). Some of the major features for zones under Alternative A are described as follows. Acreages are summarized in Table 6.

Development Zone

Visitor experiences in this zone would include camping, hiking, biking on paved surfaces, special events, and interpretive walks and talks. Appropriate facilities would include parking lots, roads, trails, a visitor center and contact stations. Management emphasis would be on providing visitor access, education, and outreach. The following features would remain unchanged:

- **Visitor center.** The redesigned visitor center and surrounding grounds would continue to be used for interpretive programs, trails, and other related services. Administration and maintenance offices are also located in this area.
- **Sugar Run.** The small picnic area at Sugar Run would continue to be used for picnicking and as a trail head. Sugar Run would continue to be connected to the central Gap area by Kentucky State Road 988.
- **Wilderness Road Campground and Picnic Area.** This is the only developed campground in the park. It would continue to be managed and operated in the same way and would not be expanded or otherwise modified.

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Insert Figure 6. Alternative A (No Action)

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- **Development Zone west of Hensley Settlement.** The existing minimal facilities include a gravel parking area adjacent to Hensley Settlement for NPS use only; limited parking at the base of Brush Mountain; waterless comfort station near the parking area at Hensley Settlement; and the gated Shillalah Creek NPS access road would continue to be used to support the Hensley Settlement.
- **Development Zone east of Hensley Settlement.** This area consists of a gravel road, one backcountry campsite, and Martins Fork Cabin (which can be rented for overnight lodging by visitors). These areas and facilities would continue to be used as they are presently.

Natural Zone

Visitor experiences in this zone would include hiking, biking on designated trails, backcountry camping, and nature observation. Facilities would include existing parking lots, roads, and trails. Management emphasis would be on the restoration and preservation of natural and cultural resources, education, and outreach.

Wilderness subzones would continue to be managed as part of the Natural Zone, incorporated into two subzones: Wilderness Subzone and Potential Wilderness Subzone. There would be no changes to the amount of acreage (total of 14,091) or the manner in which the wilderness is managed. Both subzones would be managed as wilderness, and the park would continue to maintain their existing wilderness character into the future, as directed by Congress. The extent and use of the wilderness area would remain the same as under Alternative A.

The Natural Environment Sub-zone would continue to be managed for such uses as hiking and backcountry camping by permit. The NPS would continue to provide many opportunities for solitude, and natural experiences.

Historical Zone

Visitor experiences would continue to include guided tours and opportunities to learn about the two Historic Districts. Facilities located in the Historical Zone would include restored structures, trails, primitive comfort stations, and existing roads. Management emphasis would be on restoring and preserving cultural landscape values; education and outreach and interpretive activities. The following features would be included:

- **Hensley Settlement Historic District.** This Historic District would continue to be managed as a historic resource. Visitors would continue to have limited access, view historic structures, and enjoy interpretive programs on a seasonal basis.
- **Cumberland Gap Historic District.** This Historic District would continue to be managed as a historic resource. Visitors would continue to have limited access, view historic features, and enjoy interpretive programs on a seasonal basis.

ALTERNATIVE B

Management Concept

The concept of Alternative B is to increase opportunities for visitor access by providing additional park facilities as compared to Alternative A. This would expand visitor use of the park. Adverse effects on natural and cultural resources would be avoided by strategically locating and limiting the numbers and types of new facilities, primarily within the newly established Developed Zones at Fern Lake, selected areas in the vicinity of the Hensley Settlement, the Visitor Center area, and the Wilderness Road Campground.

Appropriate Kinds and Levels of Visitor Use

The kinds and levels of visitor use would be greater under Alternative B than under Alternative A. The following is a summary of the differences between these two alternatives.

- Under Alternative B, limited additional facilities would be provided at Fern Lake in a newly established Developed Zone, allowing visitors to have a wider variety of outdoor experiences in this newly established area of the park. A new Natural Zone would also be established to incorporate the rest of the Fern Lake watershed. Compared to Alternative A, there would be increased public access and additional recreational opportunities with defined management prescriptions.
- The visitor experience in Cumberland Gap would be changed as a result of the creation of a new Developed Zone that would connect the Wilderness Road Campground to the Wilderness Road and Gap. In comparison to Alternative A, visitors would experience increased connectivity between the campground and the Gap via enhanced biking and hiking trails. Although there is currently a hiking trail connection from the campground to the Gap and an off-road biking trail connection from the campground entrance road parking area to the Gap, additional hiking and biking trail connections could be provided within the Developed Zone under Alternative B. This would provide increased connectivity between the campground and the Cumberland Trail, Wilderness Road Trail, Pine Mountain Trail, and the Fern Lake area. In comparison with Alternative A, more park visitors would be able to visit and experience the unique resources in the town of Cumberland Gap as a result of greater connectivity between the campground and other areas of the park.
- Expansion of the Developed Zone to include Kentucky State Highway 988 from Sugar Run to the Gap area would allow greater visitor access to this part of the park. Facilities in this area have not yet been identified, but could include paved parking areas, additional picnic tables or shelters, trails, and a composting comfort station. Pinnacle Road has been included in the Developed Zone to allow for similar types of new facilities.
- Creation of Developed Zones adjacent to the east and west boundaries of the Hensley Settlement would increase the potential use of this important resource for a wider variety of visitor and concessioner activities such as wagon rides and guided tours as compared to Alternative A. The Developed Zones would also allow the addition of improved comfort stations, roads, and parking areas. Visitors would be provided with increased access from both the west and the east sides of the Hensley Settlement through the establishment of these Developed Zones. The numbers and types of new facilities in these areas would be constructed in the context of the Historic District, be unobtrusive, and would be limited to avoid potential adverse effects on resources.
 - Creation of a Developed Zone on the west side of the Hensley Settlement would allow for improvement of Shillalah Creek Road and creation of a new, improved, satellite parking area at the base of Brush Mountain, providing visitors with an opportunity to park, and then hike, bike, or ride horses to the Hensley Settlement. The parking area located on top of Brush Mountain immediately adjacent to the west side of the Hensley Settlement could also be paved and/or expanded to provide additional space for guided tour vans. Similar to Alternative A, visitors would continue to have the opportunity to participate in NPS guided tours of the Hensley Settlement. There would also be opportunities for concessioners to provide visitor services for Hensley Settlement.
 - Creation of a Developed Zone on the east side of the Hensley Settlement (adjacent to the existing Hensley Settlement Historic District) would provide visitors with an increased potential to access more facilities such as campsites, trails, and Martin's Fork Cabin as compared to Alternative A. In addition, visitors would be provided with increased access to the Shillalah Creek Wildlife Management area and the Kentucky Division of Water lands located adjacent to the park.

- Visitors would continue to use facilities at the Civic Park Area near Sand Cave and White Rocks. This area would be managed as a Developed Zone.

Visitor Experience

Under Alternative B, visitors would have greater access to the park as compared with Alternative A. This would be accomplished through construction and operation of a few limited new facilities at Fern Lake, the Wilderness Campground, and the Hensley Settlement. These facilities would be constructed within the newly defined Developed Zone. The goal would be to provide visitors with increased access while at the same time protecting resources through regulatory compliance, NPS policies, sustainable practices, and sensitivity to cultural and natural resources.

Visitor orientation services would continue at the NPS visitor center, and at the Daniel Boone Wilderness Road Visitor Contact Station. Interpretive activities would continue in selected areas of the park, with special emphasis at Hensley Settlement, the Daniel Boone Wilderness Road Contact Station, guided walks, and guided cave tours. A variety of popular interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would occur, similar to existing conditions/Alternative A. Opportunities to enjoy recreational activities would continue to exist, with increased opportunities for access in a variety of settings. Roads, trails, campgrounds, and primitive campsites would all remain essentially the same. Access to the Hensley Settlement would be expanded as well as access to Fern Lake. The trail system would be expected to be expanded with increased opportunities for connectivity. Bicycle use would continue to be allowed on roads used by motor vehicles, or in designated areas. Visitors would be able to continue to enjoy the facilities currently offered, as well as the new visitor services provided as described above.

Resource Condition or Character

Additional resource management effort would be required to maintain the condition and character of natural and cultural resources in the park, including the Fern Lake area. Additional resource management (four full-time equivalents) would also be required to maintain the condition and character of cultural resources at the Hensley Settlement and Cumberland Gap Historic District since increased numbers of visitors could potentially be using the facilities in the expanded Developed Zones on the west and east sides of this zone. Resource management efforts needed to maintain resource conditions and character in all other areas of the park would otherwise be similar to Alternative A.

Facilities

The existing facilities identified under Alternative A would remain and would be managed in the context of the zone in which they are located. Other future, additional facilities may be appropriate as prescribed by zone as well. Facilities proposed under Alternative B are described by zone in the text that follows, and include the following:

- A rustic rain shelter with interpretive exhibits would be constructed in the Developed Zone east of the Hensley Settlement.
- A 50'x25' picnic shelter with 4 tables (compliant with Americans with Disabilities Act) would be added in the Developed Zone at Fern Lake.
- A composting comfort station would be constructed in the Developed Zone at Fern Lake.
- A boat house and two residences that would be acquired in the future would be stabilized and maintained.
- New electrical hookups would be added to the existing sites in loop D at the Wilderness Road Campground.

- A new satellite parking area would be constructed at the base of Brush Mountain to allow increased access for hikers, bikers and horseback riders to the Hensley Settlement via the gated Shillalah Creek Road. However, access to Shillalah Creek Road would continue to be restricted to NPS guided tours, or potentially concessioner use in the future.
- The parking area located on top of Brush Mountain immediately adjacent to the west side of the Hensley Settlement could also be improved to provide additional space for guided tour vans. The road would continue to be gated, with additional limited access.

Outreach/Education and Partnering Programs

Under Alternative B, the level of public outreach, education and partnering would be the same as Alternative A. No additional staffing would be proposed.

Management Zones and Uses

Alternative B would include four new zones: the Cultural Resources Zone, the Natural Zone, the Recommended Wilderness Zone, and the Developed Zone (Figure 7). Developed zones would be established in the area around Fern Lake, the Gap, and Hensley Settlement for the purpose of providing increased access. A Cultural Resource Zone would be established next to the Developed Zone at the Gap as well as the Hensley Settlement. A Recommended Wilderness Zone would incorporate the areas identified as potential and recommended wilderness, encompassing the 14,091 acres. This zoning prescribes distinctive wilderness management efforts to maintain the wilderness characteristics into the future.

Some of the major features of each zone for Alternative B are described below. Site specific plans would be developed during future implementation.

Developed Zone

- **Park Headquarters and Visitor Center Area.** The Developed Zone designated for the park headquarters and visitor center area in Alternative B would be expanded to include Pinnacle Road. The visitor center and surrounding grounds would **continue** to be used as they are under Alternative A. This zoning would allow for more facilities to be constructed in a larger Developed Zone as compared with Alternative A. Specific facilities for this area have not yet been identified. The following types of facilities would be considered appropriate in this zone: paved parking areas, roads, additional picnic tables or shelters, composting comfort stations, maintenance facilities, and paved and unpaved trails.
- **Developed Zone at Fern Lake.** A Developed Zone would be designated at the eastern end of the lake to allow for more accessibility and to allow for limited visitor facilities at Fern Lake. These would include a new composting comfort station, a 50' x 25' picnic shelter with four picnic tables (compliant with the American with Disabilities Act), and stabilization and maintenance of the existing boat house and two residences that would be acquired in the future. Any new facility siting and design would address sensitivity to watershed management efforts and protect the water quality of Fern Lake.
- **Sugar Run.** This area would be designated as a Developed Zone under Alternative B (similar to Alternative A); however, the zone would be expanded to include Kentucky Route 988 from the Gap area to Sugar Run. Specific facilities for this area have not yet been identified, but could include paved parking areas, additional picnic tables or shelters, trails, and a composting comfort station. Pinnacle Road has been included in the Developed Zone to allow for similar types of new facilities.
- **Civic Park.** Visitors would continue to use facilities at the Civic Park Area near Sand Cave and White Rocks. This area would be managed as a Developed Zone, allowing for visitor support services such as road access, parking area, and comfort station.

Insert Figure 7. Alternative B

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- **Wilderness Road Campground and Picnic Area.** The expanded Developed Zone in this area (compared to Alternative A) would allow for increased connectivity to the Gap, Cumberland Trail, Pine Mountain Trail, and the Wilderness Road Trail, as well as the town of Cumberland Gap. It would also allow for increased recreational vehicle capacity by adding electrical service to campground Loop D.
- **Developed Zone west of Hensley Settlement.** Alternative B would result in conversion of a portion of the Natural Environmental Feature Subzone under Alternative A on the west side of the Hensley Settlement south of Shillalah Creek Road to a Developed Zone. Construction and operation of additional visitor facilities in this new zone would provide increased access to the Hensley Settlement. New facilities in this area would include a satellite parking area at the base of Brush Mountain on Shillalah Creek Road, and improvement of the parking area adjacent to the west side of the Hensley Settlement south of Shillalah Creek Road. to accommodate additional vehicles,. The new satellite parking area at the base of Brush Mountain would provide visitors with an opportunity to park, and then hike, bike, or ride horses to the Hensley Settlement, or choose potential concession services for access in the future. Prior to construction of any new facilities, an environmental assessment would be completed to assure that potential adverse effects on natural and cultural resources are avoided or minimized.
- **Developed Zone east of Hensley Settlement.** Alternative B would result in conversion of a portion of the Natural Environmental Feature Subzone under Alternative A on the east side of the Hensley Settlement to a new Developed Zone. This would allow for increased access to the Shillalah Creek Wildlife Management Area and the Kentucky Water Division lands located adjacent to the park in this area. Limited new facilities would be provided, however, while maximizing resource protection.
- **Developed Zone at Fern Lake.** Alternative B would create a 32 acre Developed Zone at the southeastern end of the lake. This would allow for increased visitor access and the potential for additional facilities for visitors. New facilities would include a 50' x 25" picnic shelter with four picnic tables (compliant with the American with Disabilities Act), and a new composting comfort station. Stabilization and maintenance of a boat house and two residences that would be acquired in the future would also be proposed.

Natural Zone

- **Fern Lake.** The areas of Fern Lake and the surrounding watershed outside the area designated as a Developed Zone would be designated as part of the Natural Zone.
- **Other areas.** The area north of Cumberland Gap Historic District would be designated Natural Zone, in addition to the area surrounding Hensley Camp, the area north of Civic Park including Sand Cave and White Rocks, Chadwell Gap trailhead and areas along the southeastern border.

Recommended Wilderness Zone

- **Recommended Wilderness.** The 14,091-acre Recommended Wilderness Zone incorporates those areas identified as Recommended and Potential Wilderness. These areas would be managed as wilderness while awaiting final classification as designated Wilderness from the Department of the Interior or congressional action. The park would continue to maintain the existing wilderness character into the future, as directed by Congress. The extent of the wilderness area would remain the same as Alternative A.

Cultural Resource Zone

- **Hensley Settlement.** A portion of the Natural Environmental Feature Subzone under Alternative A on the west side of the Hensley Settlement north of Shillalah Creek Road would be converted to a Cultural Resource Zone. This would result in the creation of a 174 acre Cultural Resource Zone

in this area, as compared with the existing 139 acre Hensley Settlement Historic District under Alternative A.

- **Cumberland Gap Historic District.** The Cumberland Gap Historic District would continue to be designated as a Cultural Resource Zone and would be the same acreage as the historical zone designated under Alternative A (434 acres).

ALTERNATIVE C, THE PREFERRED ALTERNATIVE

Management Concept

The concept of Alternative C is to provide greater opportunities for visitor access and facilities in the park as compared to Alternatives A and B, as well as increased levels of education, outreach, and formalized partnering efforts. The numbers and types of new facilities would be limited, similar to Alternative B, to protect natural and cultural resources in the park. New facilities would be proposed within the context of their location within the management zone. Sustainable designs and practices would be implemented wherever possible, and new facilities would be unobtrusive.

Appropriate Kinds and Levels of Visitor Uses

There is the potential for more and different types of visitor uses under Alternative C as compared to Alternative A. This would be achieved primarily by having larger Developed Zones in Alternative C, increased potential for new facilities, education, and outreach programming than Alternative A, and an increase in formalized partnering programs. The following specific changes in kinds and levels of visitor use would be featured under Alternative C.

- Electrical hookups would be provided in the Wilderness Road campground, Loop D, which would allow increased recreational vehicle use.
- Facilities for horse use in the park would be increased by modifying two or three of the Wilderness Road Campground sites to accommodate horse trailers.
- Access to Fern Lake would be increased by creating a Developed Zone along the eastern end of the lake that would connect to the Developed Zone around the visitor center at the Gap. Additional park facilities, such as hiking trails or maintenance roads, could be constructed within this larger Developed Zone. A Natural Zone would also be established to incorporate the rest of the Fern Lake watershed.
- Creation of a Developed Zone on the west side of the Hensley Settlement would allow for improvement of Shillalah Creek Road by creation of a new parking area at the base of Brush Mountain and paved parking immediately adjacent to the Hensley Settlement. These changes would allow increased access to the Hensley Settlement, with a larger Developed Zone than Alternatives A and B.
- Creation of a Developed Zone on the east side of the Hensley Settlement (adjacent to the existing Hensley Settlement Historic District) would provide visitors with an increased potential to access more facilities such as campsites, trails, and Martin's Fork Cabin as compared to Alternative A. In addition, visitors would be provided with increased access to the Shillalah Creek Wildlife Management area and the Kentucky Division of Water lands located adjacent to the park.
- Education and outreach programs would be expanded under Alternative C.
- An increase in formalized partnering efforts would be instituted under Alternative C compared to Alternative A.

Other features of this alternative with regard to appropriate kinds and levels of visitor uses would be similar to Alternative B.

Visitor Experience

Under Alternative C, visitors would have greater access to the park as compared with Alternative A. This would be accomplished through the construction and operation of several new but limited numbers of facilities at Fern Lake, the Wilderness Campground, and in the vicinity of the Hensley Settlement. These facilities would be constructed within a newly designated Developed Zone. Because the Developed Zone is larger than the same zone under Alternative B, visitors would have greater access to the park as compared with Alternative B. However, the goal would still be to provide visitors with increased access while at the same time protecting resources through regulatory compliance and NPS policies. Visitors would also experience an increased level of education, outreach and formalized partnering efforts under Alternative C as compared with Alternative A.

Visitor orientation services would continue at the NPS visitor center, and at the Daniel Boone Wilderness Road Visitor Contact Station. Interpretive activities would continue in selected areas of the park, with special emphasis at Hensley Settlement, the Daniel Boone Wilderness Road Contact Station, guided walks, and guided cave tours. Opportunities for participating in interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would increase, compared to Alternative A. Opportunities to enjoy recreational activities would increase, with increased opportunities for access in a variety of settings, that may also increase opportunities for concession activity. Access to the Hensley Settlement would be expanded as well as access to Fern Lake. The trail system would be expected to be expanded with increased opportunities for connectivity. Bicycle use would continue to be allowed on roads used by motor vehicles, or in designated areas. Visitors would be able to continue to enjoy the facilities currently offered, as well as the new visitor services provided as described above.

Resource Condition or Character

Under Alternative C, the Developed Zone at Fern Lake and the Hensley Settlement would be larger than in Alternatives A or B, requiring additional efforts to manage cultural and natural resources to maintain resource conditions and character. Levels and types of resource management in the Natural Zone and Wilderness Zone would otherwise be similar to that required by Alternative B.

Facilities

The following facilities would be appropriate under Alternative C:

- A new composting comfort station would be constructed immediately to the east of the Hensley Settlement.
- A rustic rain shelter with interpretive exhibits would be constructed in the Developed Zone east of the Hensley Settlement.
- New electrical hookups would be added to the existing sites in loop D at the Wilderness Road Campground.
- The boat house and two residences at Fern Lake would be stabilized and maintained for public use.
- Two to four recreational vehicle sites would be modified for horse use at the Wilderness Road Campground.
- Road access to Fern Lake would be improved for park administration uses.
- The existing bridge connecting Fern Lake to the park maintenance area would be improved.
- A 50' x 25' picnic shelter with four tables (compliant with Americans with Disabilities Act) would be added in the Developed Zone at Fern Lake.
- A new composting comfort station would be constructed for visitors at the Fern Lake area.

- A new satellite parking area would be constructed at the base of Brush Mountain to allow increased access to the Hensley Settlement via Shillalah Creek Road.
- An enlarged parking area near the west side of the Hensley Settlement would be constructed to accommodate additional NPS tour vehicles.

These additional facilities would allow for increased access to the park by visitors, and would have a limited effect on park resources due to implementation of sustainable designs and practices and avoiding resource impacts with unobtrusive placement of facilities.

Outreach/Education and Partnering Programs

Under Alternative C, a formalized public outreach, education, and partnering program would be implemented. Alternative C would involve, for example, further expansion of the existing education programs and outreach programs, increased linkages with state and local park resources, and increasing the amount of educational information available to the public both via the Internet, published materials, and interpretive activities. In addition, Alternative C would feature expanded formalized partnering with organizations in the area and region. For example, under Alternative C, an expanded formalized caving partnering program would be possible.

Management Zones and Uses

Alternative C would include four new zones: the Cultural Resources Zone, the Natural Zone, the Recommended Wilderness Zone, and the Developed Zone (Figure 8). Developed zones would be established in the area around Fern Lake, the Gap, and the Hensley Settlement for the purpose of providing increased access. The Developed Zone at Fern Lake would be connected to the Developed Zone in the vicinity of the visitor's center to provide increased access. A Recommended Wilderness Zone would incorporate the areas identified as potential and recommended wilderness (14,091 acres).

A Cultural Resource Zone would be established next to the Developed Zone at the Gap. The total area of the Developed Zone in Alternative C would be over twice as large as the Development Zone in Alternative A, and slightly larger than the Developed Zone in Alternative B. The following is a summary of the features of the zones under Alternative C. Site-specific plans would be developed during future implementation.

Developed Zone

- **Park Headquarters and Visitor Center Area.** The Development Zone under Alternative A that includes the park headquarters and the visitor center would be expanded to include Pinnacle Road. To provide increased access and connectivity, the Developed Zone at the park headquarters and visitor center area would be connected to the Developed Zone at Fern Lake. No structural changes to the existing visitor center would be made under Alternative C, however. The expanded Developed Zone would create additional opportunities for new facilities. Specific facilities for this area have not yet been identified, but could include paved parking areas, roads, additional picnic tables or shelters, composting comfort stations, maintenance facilities, and paved and unpaved trails.
- **Sugar Run.** This area would be designated as a Developed Zone under Alternative C and would be expanded to include Kentucky Route 988 from the Gap area to Sugar Run. Specific facilities for this area have not yet been identified, but could include paved parking areas, additional picnic tables or shelters, trails, and a composting comfort station. Pinnacle Road has been included in the Developed Zone to allow for similar types of new facilities.

Insert Figure 8. Alternative C (Preferred Alternative)

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- **Wilderness Road Campground and Picnic Area.** The expanded Developed Zone would provide increased connectivity to the Gap, Cumberland Trail, Pine Mountain Trail, and the Wilderness Road Trail, as well as the town of Cumberland Gap. Recreational vehicle capacity would be increased by adding electrical service to Wilderness Road campground Loop D. In addition, Alternative C would feature modification of two to four campground sites to accommodate horses.
- **Developed Zone west of Hensley Settlement.** Alternative C would result in conversion of a portion of the existing Natural Environmental Feature Subzone on the west side of the Hensley Settlement north of Shillalah Creek Road to a new 127-acre Developed Zone. Construction and operation of additional visitor facilities in this new zone would provide increased access to the Hensley Settlement. New facilities in this area would include a satellite parking area at the base of Brush Mountain on Shillalah Creek Road to accommodate additional tour vans, and improvement of the parking area on the west side of the Hensley Settlement, north of Shillalah Creek Road. Prior to construction, an environmental assessment of new facilities in this area would be completed to assure that potential adverse effects on natural and cultural resources are avoided or minimized.
- **Developed Zone east of Hensley Settlement.** Alternative C would convert a portion of the existing Natural Environmental Feature Subzone on the east side of the Hensley Settlement to a new 131-acre Developed Zone. New facilities would include a composting comfort station and a rustic rain shelter. New facilities in this area would provide increased access to the Shillalah Creek Wildlife Management Area and the Kentucky Water Division lands located adjacent to the park in this area, as well as to the Hensley Settlement. Prior to construction, an environmental assessment area would be completed to assure that potential adverse effects on natural and cultural resources are avoided or minimized.
- **Developed Zone at Fern Lake.** Alternative C would create an 82 acre Developed Zone at the southeastern end of the lake to provide increased access through construction of additional facilities. These would include improved road access, improvement of the existing bridge connecting Fern Lake to the park's maintenance area, a 50' x 25" picnic shelter with four picnic tables (compliant with the American with Disabilities Act), stabilization and maintenance of a boat house and two residences that would be acquired in the future, and a new composting comfort station.
- **Civic Park.** Visitors would continue to use facilities at the Civic Park Area near Sand Cave and White Rocks. This area would be managed as a Developed Zone, allowing for visitor support services such as road access, parking area, and comfort station.

Natural Zone

- **Fern Lake.** Fern Lake and the surrounding watershed would be designated as part of the Natural Zone.
- **Other areas.** The area north of Cumberland Gap Historic District would be designated Natural Zone, in addition to the area surrounding Hensley Camp, the area north of Civic Park including Sand Cave and White Rocks, Chadwell Gap trailhead and areas along the southeastern border.

Recommended Wilderness Zone

- **Recommended Wilderness.** The 14,091-acre Recommended Wilderness Zone incorporates those areas identified as Recommended and Potential Wilderness. These areas would be managed as wilderness while awaiting final classification as designated Wilderness from the Department of the Interior or congressional action. The park would continue to maintain the existing wilderness character into the future, as directed by Congress. The extent of the wilderness area would remain the same as Alternative A.

Cultural Resource Zone

- **Hensley Settlement.** The Hensley Settlement would be designated as a 158-acre Cultural Resource Zone as compared with a 139-acre historical zone designated at Hensley Settlement under Alternative A.
- **Cumberland Gap Historic District.** The Cumberland Gap Historic District would be designated as a Cultural Resource Zone and would be the same size as the existing historical zone designated under Alternative A (434 acres).

SUMMARY COMPARISON OF THE ALTERNATIVES

Table 7 provides a comparison of the major features of the alternatives. The comparison is based on the major issue categories developed during the public scoping of the general management plan. The alternatives have been designed to respond to these issues.

Table 7. Comparison of the Features of the Alternatives Based on Major Issue Categories Identified During the Public Scoping Process

Major Issue Category	Alternative A – Continue Present Management Practices	Alternative B	Alternative C
Increase Access	613 acre Development Zone (total)	1,299 acre Developed Zone	1,365 acre Developed Zone
	Fern Lake included in park but not zoned	32 acre Developed Zone at Fern Lake	82 acre Developed Zone at Fern Lake
	344 acre Development Zone at campground	689 acre Developed Zone at campground including connecting trails to outside of park	Same as Alternative B
	3 acre Development Zone east of Hensley	131 acre Developed Zone east of Hensley	Same as Alternative B
	7 acre Development Zone west of Hensley Settlement	111 acre Developed Zone west of Hensley Settlement	127 acre Developed Zone west of Hensley Settlement
	No campground sites for horses	Same as Alternative A	Allow horse trailer use in campground by modifying 2-3 campground sites
Increase Access (Continued)	212 acre Development Zone at visitor center	255 acre Developed Zone at visitor center	Same as Alternative B
	32 acre Development Zone at Sugar Run	66 acre Developed Zone at Sugar Run	Same as Alternative B
	433 acre Historical Zone at Gap	433 acre Cultural Resource Zone at Gap	Same as Alternative B
Protection of Resources	Addition of Fern Lake watershed and lands to the park provides protection of the lake, water supply, watershed, and the scenic vista from the Pinnacle. Hensley Settlement, the Gap, the Recommended Wilderness Area, and other park resources continue to be protected.	Addition of Fern Lake watershed and lands to the park provides augmented protection of the lake, water supply, watershed, and the scenic vista from the Pinnacle through a new zoning plan. Hensley Settlement, the Gap, the Recommended Wilderness Area, and other park resources continue to be protected.	Addition of Fern Lake watershed and lands to the park provides augmented protection of the lake, water supply, watershed, and the scenic vista from the Pinnacle through a new zoning plan. Additional protection of natural and cultural resources through expanded and more formalized education, outreach and partnering programs

Table 7. Comparison of the Features of the Alternatives Based on Major Issue Categories Identified During the Public Scoping Process (Continued)

Major Issue Category	Alternative A – Continue Present Management Practices	Alternative B	Alternative C
Increase Education And Outreach	Maintain current level of education and outreach	Same level of education and outreach as Alternative A	Expand education and outreach programs as compared with Alternative A (for example: additional events, programs; Fern Lake opportunities)
Increase Partnering	Maintain current level of partnering	Same level as Alternative A	Expand formalized partnering as compared with Alternative A (for example: Cave Research Foundation; states; trail organizations)
Socioeconomics	<p>The park will continue to benefit the local economy by bringing visitors to the area.</p> <p>Operation of the Southern Highland Craft Guild would continue to provide economic benefits.</p> <p>Continuation of existing education, outreach, and partnering programs would provide economic benefits to the area.</p> <p>There are no concessions operating in the park, and this would likely continue in the same manner.</p>	Similar to Alternative A, however, there would be increased opportunities for concession and commercial services.	Expand education, outreach and partnering programs as compared with Alternative A would provide additional opportunities for economic benefits for the area by potentially drawing more visitors as compared with Alternative A. Increased opportunities for concession and commercial services.
Staff Increase	4 Full Time Equivalent Staff added	4 Full Time Equivalent Staff added	7.2 Full Time Equivalent Staff added

Note: Acreages are approximate. Acreages under Alternative A are not directly comparable because zoning practices were different and did not include roads, nor encompass as large an area.

COMPARATIVE COST ANALYSIS

The actual cost of implementing the approved general management plan will ultimately depend on future funding and service wide priorities over the life of the plan, as well as the ability to partner with other agencies or groups. Approval of a general management plan does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Funding for capital construction improvements is not currently shown in NPS construction programs. It is not likely that all capital improvements will be totally implemented during the life of the plan. Larger capital improvements may be phased over several years.

Cost estimates were developed through an evaluation of capital and annual operating costs for each of the alternatives. The estimates in this section regarding the general costs of implementing the alternatives were developed based on fiscal year 2006 dollars using NPS and industry standards to the extent available. These estimates are not intended for budgeting purposes.

Range of Annual Costs

The range of annual costs includes personnel, maintenance, and operations costs. The park's operations costs for fiscal year 2006 were \$3,031,000. The existing staffing level is approximately 54 full time permanent employees and 22 temporary employees.

The costs for staffing for each of the alternatives have been adjusted to address the need for additional fulltime employees, or equivalents, for the proposed increase in interpretive and educational services and to provide essential protection, maintenance, and visitor services for the proposed new facilities at Fern Lake and Hensley Settlement. Additional personnel are also required to address deficiencies in trail maintenance. Due to the additional requirements associated with Fern Lake, it is estimated that an additional 4.0 fulltime equivalent employees would be required for Alternatives A and B. Under Alternative C, it is estimated that 7.2 additional fulltime equivalent staff would be required to address needs at Fern Lake and additional interpretation functions.

The annual costs for Alternative A would be approximately \$3,610,000, while the annual costs for Alternative B and Alternative C would be approximately \$3,610,000 and \$3,850,000, respectively. The actual cost of staffing each alternative would vary according to the government service rating, experience level, and education and professional certifications as well as the deployment of staff needed to provide minimum levels of satisfactory park services.

One-Time Costs

The range of initial one-time costs including construction, facility modifications, general improvements and natural and cultural resource studies and plans identified for each alternative are outlined on Table 8. Certain one-time costs are common to all the alternatives. For example, under Alternatives A, B, and C, composting comfort stations would be constructed at Fern Lake. Other one-time costs would be proposed for individual alternatives, such as roadway and bridge improvements near Fern Lake, which are only proposed under Alternative C.

Table 8. Cost Summary for Each Alternative

	Alternative A: No Action	Alternative B	Alternative C: The Preferred Alternative
Annual Costs (Includes personnel, maintenance, and operations) FY06 Operations Costs (\$3,031,000)	\$3,610,000 4.0 additional Full-Time Equivalents	\$3,610,000 4.0 additional Full-Time Equivalents	\$3,850,000 7.2 additional Full-Time Equivalents
Initial One - Time Costs (Includes construction, general improvements, plans and studies)	\$1,119,000 Projects include: <ul style="list-style-type: none"> • Install composting comfort station at Fern Lake • Resource plans and studies 	\$1,435,000 Projects include: <ul style="list-style-type: none"> • All projects, resource plans, and studies listed under Alternative A • Add electrical hookups in the RV campground • Construct rustic rain shelter with interpretive exhibits east of the Hensley Settlement • Construct picnic shelter at Fern Lake 	\$2,360,000 Projects include: <ul style="list-style-type: none"> • All projects, resource plans, and studies listed under Alternatives A and B • Install composting comfort station on east side of Hensley Settlement • Modify 2 to 3 RV campground sites for horse trailers • Improve road and bridge access to Fern Lake
Additional Assumptions: 1. The base year for all cost estimates is 2006. 2. The cost estimates have been developed using NPS and industry standards to the extent available, and are not intended for budgeting purposes. 3. Annual operating costs are inclusive of personnel, equipment, vehicles, materials and supplies, utilities, and other services. Cost and staffing estimates assume that the alternative is fully implemented as described in the narrative.			

Alternative C would require the highest initial one-time costs (approximately \$2.4 million) since the greatest amount of new facility construction and modification would be proposed under this alternative. One-time costs for Alternative B are estimated to be \$1.4 million. One-time costs for

Alternative A include resource management plans and studies as well as installing a composting comfort station at Fern Lake, and are estimated at \$1.1million.

The types of studies and plans proposed under all alternatives include: archeological inventories of the park, cultural landscape studies and reports, museum collection management and emergency plan, resource stewardship strategy, and other management plans and inventories.

All cost estimates are for recommended improvements and for education and visitor services; they do not reflect cost sharing anticipated from other federal, state, territory, or municipal agencies or from the private sector.

ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

Table 9 provides a summary of the environmental consequences of the implementation of each of the three alternatives. Chapter 4 provides a detailed assessment of the effects of each of the alternatives.

Table 9. Summary of Impacts of the Alternatives

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Natural Resources			
Geological – Cliffs, Caves and Karst	Long- and short-term, negligible and adverse Cumulative: Long- and short-term, negligible and adverse	Long- and short-term, negligible to minor and adverse Cumulative: Long- and short-term, negligible to minor and adverse	Same as Alternative B Cumulative: long- and short-term, negligible to minor and adverse
Soils	Long- and short-term, negligible and adverse Cumulative: Long- and short-term, minor and adverse	Long- and short-term, minor and adverse Cumulative: Long- and short-term, minor and adverse	Same as Alternative B Cumulative: Same as Alternative B
Water Quality	Short-term, negligible and adverse Cumulative: Long- and short-term, minor and adverse	Long- and short-term, minor adverse Cumulative: Same as Alternative A	Same as Alternative B Cumulative: Same as Alternative A
Fisheries/ Aquatic Resources	Long- and short-term, negligible and adverse Cumulative: Long- and short-term, minor and adverse	Long- and short-term, minor and adverse Cumulative: Same as Alternative A	Same as Alternative B Cumulative: Same as Alternative A
Wetlands	Long- term, negligible and beneficial Cumulative: Long- and short-term, negligible and beneficial	Long- and short-term, minor and adverse Cumulative: Long- and short-term, minor and adverse	Same as Alternative B Cumulative: Same as Alternative B

Table 9. Summary of Impacts of the Alternatives (Continued)

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Vegetation –Native Plant Communities	Long-term, moderate and beneficial Cumulative: Long-term, moderate and beneficial	Long- and short-term, minor and adverse Cumulative: Long- and short-term, moderate and beneficial	Same as Alternative B Cumulative: Long- and short-term, moderate and beneficial
Species of Special Concern	Long- and short-term negligible and adverse, this would equate with a “no effect” determination by the U.S. Fish and Wildlife Service Cumulative: Long- and short-term, minor and adverse, this would equate with a “may affect/not likely to adversely affect” determination by the U.S. Fish and Wildlife Service	Red cockaded woodpecker and the gray bat: long-term, negligible and adverse, which would equate to a “no effect” USFWS determination. Indiana bat: long-term, minor, adverse effect, which would equate to a “may affect, not likely to adversely affect” determination Blackside dace: long-and short-term, negligible, adverse effect which would equate with a “no effect” USFWS determination. Cumulative: Long-term, minor and adverse which would equate to a “may affect/not likely to adversely affect” USFWS determination	Same as Alternative B with the exception of the gray bat, which would have long-term, minor and adverse effects. This equates to “no effect” and/or “may affect/not likely to adversely affect.” Cumulative: Same as Alternative B
Soundscape			
Soundscape	Long- and short-term, negligible, and adverse Cumulative: Long- and short-term, minor, and adverse	Long- and short-term, minor, and adverse Cumulative: Long- and short-term minor, and adverse	Long- and Short-term, minor and adverse Cumulative: Same as Alternative A
Socioeconomics			
Socioeconomics	Long- and short-term, moderate and beneficial Cumulative: Long-and short-term, moderate and beneficial	Long- and short-term, moderate, and beneficial Cumulative: Same as Alternative A	Long- and short-term, negligible to moderate and beneficial Cumulative: Same as Alternative A

Table 9. Summary of Impacts of the Alternatives (Continued)

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Cultural Resources*			
Archeological Resources	Lack of updated management zoning and visitor use: Possible long-term, minor to moderate, adverse effects in selected areas Continuing NPS management and protection of sites: Possible long-term, minor to moderate benefits Cumulative: long-term, moderate and adverse	Potential long-term, negligible to minor, adverse effects on archeological resources from development of new access routes, parking, visitor use, and natural processes. Mitigating measures would help reduce the potential for effects from development proposed in the vicinity of the Hensley Settlement. Cumulative: Same as Alternative A	Educational, interpretive, outreach and management efforts: Possible long-term moderate beneficial effects Increased development and visitor use: Possible long-term, minor adverse effects on selected archeological resources Cumulative: Same as Alternative A
Cultural Landscapes, Including Historic Buildings, Structures, and Districts	Possible long-term, negligible to minor adverse effect resulting from lack of funding and staffing. Long- and short-term, minor to moderate benefit resulting from continuation of interpretive, outreach, education, and partnering programs. Cumulative: long-term, moderate, and adverse	Possible long- and short-term, minor adverse effects resulting from development of new Park facilities. Possible short-term minor adverse effects on landscape vegetation from facility improvements. Possible long-term, minor to moderate benefits from continuing existing management practices. Cumulative: Same as Alternative A	Possible long-term moderate benefit from increased and formalized public outreach, education, and partnering. Possible long-term minor, adverse effect of construction, operation, from use of new facilities Cumulative: Same as Alternative A
Ethnographic Resources, Traditional Cultural Properties, and Values	Possible long-term, minor, beneficial Cumulative: Long term, moderate adverse effects	Possible long- term, minor, adverse effects due to facility construction, operation, and use Long-term, moderate, and beneficial effects from providing access to remembered and valued places and by continuing interpretation of traditional cultural resources and practices. Cumulative: Long-term, moderate and adverse effects	Possible long-term, minor adverse, and moderate beneficial Cumulative: Long-term, moderate and adverse

* Impact intensities listed in this table are defined by National Environmental Policy Act criteria. All Section 106 impacts are defined as potentially having an adverse effect, since no specific project designs are not yet available.

Table 9. Summary of Impacts of the Alternatives (Continued)

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Visitor Use and Experience			
Visitor Use and Experience	Long-term, minor and beneficial effect for those visitors who do not wish to see any changes in the park Long-term, moderate, and adverse effect for those who prefer more opportunities for a variety of experiences, partnerships, and access Cumulative: Long-and short-term, moderate to major, and beneficial	Long-term, moderate to major, and beneficial to visitors who prefer more opportunities for a variety of experiences, partnerships, and access Long-term, moderate, and adverse for those visitors who do not wish to see any changes in the park Cumulative: long-and short-term, major, and beneficial	Same as Alternative B Cumulative: Same as Alternative B
Scenic Resources and Visual Quality			
Scenic Resources and Visual Quality	Long-and short-term, minor, beneficial Cumulative: Long-and short-term, major, beneficial	Long- and short-term, minor, and adverse Cumulative: long-and short-term, minor and adverse	Same as Alternative B Cumulative: Same as Alternative B
Transportation			
Transportation	Long-term, minor, and adverse Cumulative: Long- and short-term, major, and beneficial	Long-term, minor, and beneficial Cumulative: Same as Alternative A	Long-term, moderate, and beneficial Cumulative: Same as Alternative A
Park Operations			
Park Operations	Long-term, minor, and adverse Cumulative: Long- and short-term, moderate, and adverse	Same as Alternative A Cumulative: Same as Alternative A	Long-term, moderate, and beneficial Cumulative: Long- and short-term, minor, and adverse
Concessions and Commercial Services			
Concessions and Commercial Services	Long-term, moderate and adverse Cumulative: Long- and short-term, minor, and beneficial	Long-term, moderate, and beneficial Cumulative: Same as Alternative A	Same as Alternative B Cumulative: Same as Alternative A

MITIGATION MEASURES COMMON TO ALL ACTION ALTERNATIVES

Congress charged the NPS with managing the lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (National Park Service Organic Act, 16 U.S. Code, §1). As a result, the NPS routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives protects natural and cultural resources and the quality of the visitor experience, a set of mitigation measures would be applied to actions proposed in this plan. The NPS would prepare appropriate environmental review (i.e., those required by the National Environmental Policy Act, National Historic Preservation Act, and other relevant legislation) for these future actions. As part of the environmental review, the NPS would avoid, minimize, and mitigate adverse impacts when practicable. Table 10 summarizes the mitigation measures and best management practices that would apply to the two action alternatives.

In general, new facilities would be sited to minimize impacts on resources, including avoiding steep slopes and sensitive areas and placing new facilities as close to existing disturbances as feasible. Construction activities would implement standard soil erosion and stormwater runoff prevention methods. Standard noise abatement measures would be implemented during park operations and construction activities.

Table 10. Summary of Mitigation Measures and Best Management Practices

Impact Category	Mitigation Measure or Best Management Practice
Soils	Preparation of an environmental assessment, development of detailed mapping, and/or instituting best management practices for new construction activities would minimize impacts. For example, steep slopes would be avoided.
Water Quality	Protection of water quality from potential effects of soil erosion during project construction would be achieved by implementation of best management practices for design and construction.
Fisheries/Aquatic Resources	Protection of fisheries/aquatic resources would be achieved by implementation of best management practices, as specified under water quality. This would protect fisheries and aquatic resources from potential effects of soil erosion during project construction.
Wetlands	Wetlands would continue to be protected by conducting individual environmental assessments for any construction project directly or indirectly affecting wetlands and/or floodplains. Best management practices would also be employed. New facilities would be located to avoid, where possible, wetlands and “Waters of the United States.” All potential impacts on wetlands would require state and federal permits.
Vegetation –Native Plant Communities	Completing environmental assessments prior to construction, minimizing tree clearing, avoiding sensitive upland forested areas, and controlling the presence and distribution of invasive species would be practiced. Measures would include use of public education materials, re-vegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from trail erosion or unauthorized trails. Monitoring for invasive species would be conducted.
Species of Special Concern	Efforts to document and protect these species populations currently present in the park would be completed. Restoration and /or monitoring plans would be developed as warranted. Plans include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques. These issues would be addressed in environmental assessments prepared for each proposed project. Conservation measures would be undertaken to reduce potential impacts to federally listed species or candidate species as needed. These measure would be implemented in consultation with the U.S. Fish and Wildlife Service as appropriate.

Table 10. Summary of Mitigation Measures and Best Management Practices (Continued)

Impact Category	Mitigation Measure or Best Management Practice
Soundscape	Noise impacts from construction of new facilities (under Alternatives B and C) could be minimized by using quieter technology, scheduling park outreach programs around construction, locating stationary noise sources as far from sensitive uses as possible, and requiring that construction equipment not be left for idling any longer than necessary.
Cultural Resources: Archeological Resources	<p>Avoidance and minimization of potentially adverse effects on archeological resources would be achieved by identification, documentation, and evaluation of archeological resources prior to ground disturbing activities.</p> <p>Archeological inventory and evaluation studies would be conducted well in advance of initiating any undertakings and would comply with Sections 106 and 110 of NHPA, 36 Code of Federal Regulations 800, NPS Management Policies 2006, Director's Orders 28 and 28a, Cultural Resource Management, the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, data recovery, curation and conservation as directed in 36 Code of Federal Regulations 79, and Director's Order 12, Conservation Planning, Environmental Impact Analysis and Decision-Making.</p> <p>Ground-disturbing actions would be designed to avoid known archeological sites and historic features, and project-appropriate protective measures such as stop-work provisions and marking work limits would be implemented; the contractor would be apprised of the protective measures during the pre-construction conference.</p> <p>Resource sensitive areas would be identified in the construction operations plan without calling attention to the specific type of resource.</p> <p>Discovered resources would be evaluated for their significance, and if needed, mitigation measures would be developed in consultation with the Kentucky /Tennessee/ Virginia State Historic Preservation officers. Best management practices would emphasize changes in project design to avoid and protect sites and features, and/or could include archeological monitoring of the project and data recovery.</p> <p>All project documentation, including but not limited to plans, photographs, and notes, would be permanently retained in the park's museum collection.</p> <p>To reduce unauthorized collecting, construction personnel would be educated about cultural resources in general and the need to protect and report any cultural resources encountered. Work crews would be instructed regarding the illegality of collecting artifacts or damaging historic features on federal lands to avoid any potential Archeological Resources Protection Act violations.</p>
Cultural Resources: Cultural Landscapes, Historic Buildings, Structures, and Districts	<p>Historic resources would be managed to maintain their resource condition and character. All stabilization/preservation of historic features/structures/landscapes would be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and character, in accordance with relevant Cultural Landscape Report(s) and Historic Structure Report(s).</p> <p>Studies to identify historic properties and assess effects would be carried out in advance of undertakings and would comply with the requirements of Sections 106 and 110 of the NHPA, 36 Code of Federal Regulations 60, 36 Code of Federal Regulations 800, and NPS Director's Order 28. Mitigation measures may include documentation of built resources in accordance with Historic American Buildings Survey/Historic American Engineering Record standards.</p> <p>Historic structures in the historic districts would be maintained to prevent loss of integrity. To ensure compatibility with the historic scene and to reduce potential development impacts, numbers and types of new facilities would be limited and would be built in the context of the historic district. New structures would be non-intrusive, and would be compatible with the historic structures in their design, scale, massing, workmanship, association, and materials.</p>

Table 10. Summary of Mitigation Measures and Best Management Practices (Continued)

Impact Category	Mitigation Measure or Best Management Practice
	<p>Vegetation that is replaced or planted in the historic districts/cultural landscapes would be carefully chosen, and would accurately replicate the trees and other plants present during the period of significance for that landscape. Measures such as vegetation screening, soil berms, and natural-appearing materials would be used to reduce the intrusive nature of modern structures, trails, paths, and parking when they are developed in historic districts/cultural landscapes. Wherever possible, new trails and roadways would be engineered to follow, and be hidden by, natural landscape contours.</p> <p>Trails and other corridors would be constructed in a manner that would not detract from the cultural landscape or natural scenery, and would be compatible with the park's historic districts. Development of areas outside of the historic districts would be cognizant of the historic nature of the park, and materials, design, scale, massing, and workmanship.</p>
<p>Cultural Resources: Ethnographic Resources, Traditional Cultural Properties, and Values</p>	<p>Appropriate cultural anthropological research is conducted in cooperation with groups associated with Cumberland Gap National Historical Park.</p> <p>The NPS accommodates access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites.</p> <p>NPS general regulations on access to and use of natural and cultural resources in the park are applied in an informed and balanced manner consistent with Cumberland Gap National Historical Park purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in degradation of Cumberland Gap National Historical Park resources.</p> <p>American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on Cumberland Gap National Historical Park lands.</p> <p>Access to sacred sites and park resources by American Indians continues to be provided when the use is consistent with park purposes and the protection of resources.</p> <p>All ethnographic resources determined eligible for listing or listed on the national register are protected. If disturbance of such resources is unavoidable, formal consultation with the state historic preservation officer(s), with the Advisory Council for Historic Preservation (as appropriate), and with American Indian tribes is conducted. This consultation is in accordance with the National Historic Preservation Act and the Advisory Council for Historic Preservation implementing regulations (36 Code of Federal Regulations 800) and the November 14, 2008 programmatic agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.</p> <p>All agencies are required to consult with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals.</p> <p>The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential when research agreements or other circumstances warrant.</p>
<p>Geological - Caves and/or Karst</p>	<p>Cave Management Plan would be implemented; partnering with caving associations would continue to protect the life and water quality within caves in the park. Protective measures would be taken to avoid spread of viruses to sensitive bat species.</p>

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with Director's Order 12, the NPS is required to identify the "environmentally preferred alternative" in all environmental documents, including environmental impact statements (NPS 2001b). The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act, which is guided by the President's Council on Environmental Quality. The Council on Environmental Quality provides direction that the environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Each of the management alternatives would effectively manage the park and protect resources. In addition, each has environmental advantages compared to the other, as follows:

1. **Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations.** Alternative A would best protect the environment by limiting the level and intensity of use of the built environment. As the Developed Zone would be expanded to more than double in size for both action alternatives, Alternative A would best satisfy the criteria to "Fulfill the responsibilities as trustee of the environment." All other alternatives would fulfill this criterion to a lesser degree through protection of known natural and cultural resources located in the park. Alternative C would expand partnering, as well as education and outreach, which would broadcast information about the park to an expanded population. This would effectively increase park stewardship and build long term relationships that would benefit the park resources and protection.
2. **Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings.** Each of the alternatives would equally meet criterion 2 by providing visitors with safe, healthful, productive, esthetically and culturally pleasing surroundings. There would be very few discernable differences across Alternatives.
3. **Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.** Alternative C would provide the widest "range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences..." since this alternative provides for the greatest increase in visitor access, visitor use and enjoyment, and diversity of experience without degrading resources. The increase in park staff, increased opportunities for interpretive, educational and partnering provided under Alternative C also expands stewardship of the park and increases the potential for volunteerism and means to reach a more diverse, larger audience regarding the benefits of protecting park resources. Unintended or undesirable consequences would be managed by means of monitoring user capacity issues throughout the park and adapting to new or different impacts that may occur in the future. Increased staffing levels would provide personnel to manage the park and provide the desired future conditions and visitor experience within the parameters of the legal mandates.
4. **Preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice.** All alternatives preserve important resources in the park, provide for continued protection of cultural and natural resources and continue to manage over 14,000 acres of wilderness for future generations. Alternative C best meets this criterion because it also provides increased opportunities for access, thereby increasing the variety of choice to visit certain areas of the park that were previously more difficult to reach such as the Hensley Settlement, provides opportunities for those with horses to camp in the park, increases opportunity for those who choose to camp in a recreational vehicle, and provides additional opportunities to explore caves and other natural resources. With increased staffing levels, increased formalized partnering efforts, and increased educational programs, visitors would be allowed more activities to participate in, or may choose to prefer experiences of solitude in the

wilderness. Alternative C provides the most opportunity for individual choice, while preserving resources.

5. **Achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.** Alternative C would provide the best satisfaction of a "balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities." Alternative C contains the largest acreage of Developed Zone of the alternatives and has the highest potential for attracting visitors to the park. More visitors to the park could result in more business for commercial enterprises at the park and in the neighboring areas, as well as the potential for new concessions or other commercial operations in the park. Increased communication and partnering under Alternative C would improve educational opportunities to promote the benefits of sustainable practices, resource protection and increase park stewardship.
6. **Enhancing the quality of renewable resources and approaching the maximum attainable recycling of non-renewable resources (National Environmental Policy Act, 1969).** Alternative A would best meet this criterion because it would feature the least amount of construction of new facilities that could affect renewable resources such as drinking and groundwater supplies, surface water quality and natural vegetation. Alternative B and C would maintain existing conditions or result in localized reductions in the quality of renewable resources through construction and subsequent alteration or loss of habitat. Where new facilities would be constructed, sustainable design principles and practices would be used where applicable, thereby maximizing recycling of materials. None of the alternatives proposes a long-term change in the use of depletable resources.

Generally, these criteria mean the environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (NPS 2006b). Alternative C was identified as the environmentally preferred alternative, as it satisfies more of the criteria than the other alternatives. Alternative C is the environmentally preferred and the agency preferred alternative.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED EVALUATION

An alternatives workshop was held in April, 2005 to develop viable alternatives for the General Management Plan. A number of actions that were considered but dismissed are listed below:

- Mountain biking in off-road areas was considered (road biking is currently appropriate in designated paved areas, but not off-road unpaved areas). In accordance with 36 Code of Federal Regulations 4.30, bicycle use is allowed on park roads, in parking areas, and on routes designated for bicycle use. The designation of bicycle routes is allowed in developed areas and in special use zones based on a written determination that such use is (1) consistent with the protection of a park's natural, cultural, scenic, and esthetic values; (2) consistent with safety considerations; (3) consistent with management objectives; and (4) would not disturb wildlife or other park resources. A similar determination may be made to designate routes outside developed areas and special use zones; however, the designation must be made by promulgating a special regulation.
- A remote parking facility located approximately halfway up Brush Mountain on the road to the Hensley Settlement was considered. This action was dismissed due to the adverse environmental effects of constructing a parking facility on steeply sloped terrain, as well as the high cost of building this facility.

- Elimination of the small Developed Zone on the south side of Shillalah Creek Road on the west side of the Hensley Settlement was considered. However, this area is a practical location for comfort stations, a parking lot, and, if needed, future shelters for other facilities. Therefore, this feature was retained.
- Horseback riding at Civic Park was considered. This was determined to be an inappropriate use due to the potential for adverse effects from soil erosion on the steep trail at this location and was dismissed from further consideration.