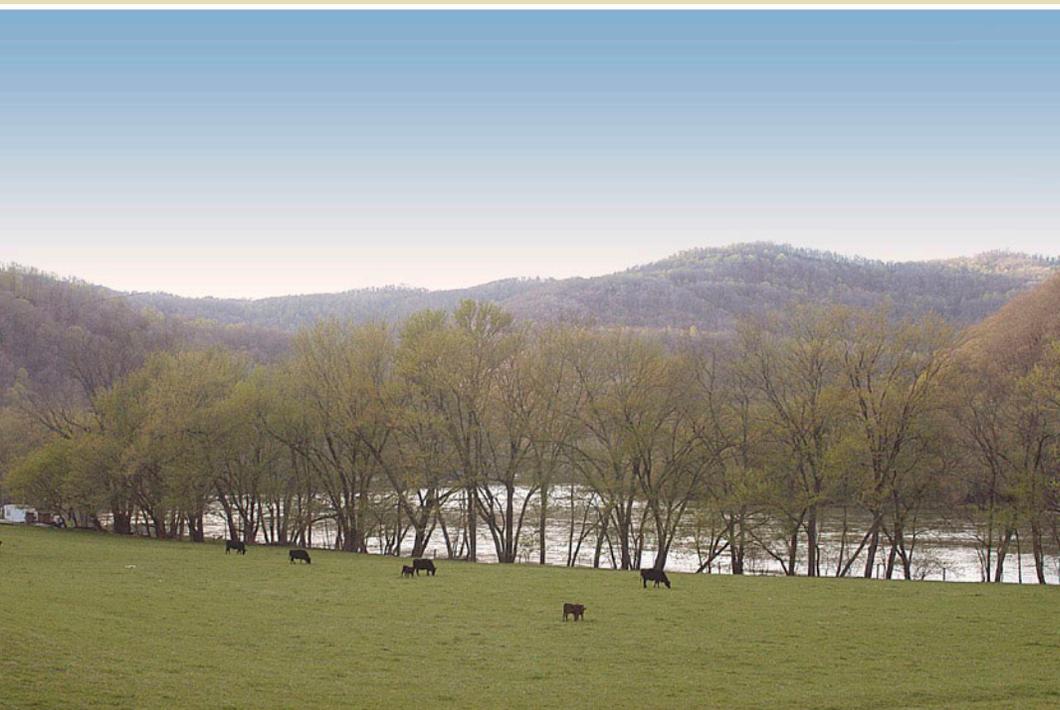


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4 Environmental Consequences



Rare surviving examples of the 19th century subsistence farms.



New River Gorge National River contains a large, outstanding, and representative group of historic places that testify to the experiences of those diverse people who settled and developed this part of Appalachia between the 19th and mid-20th centuries.



Historic structures and ruins associated with more than 50 company-owned towns.

4.0 Environmental Consequences

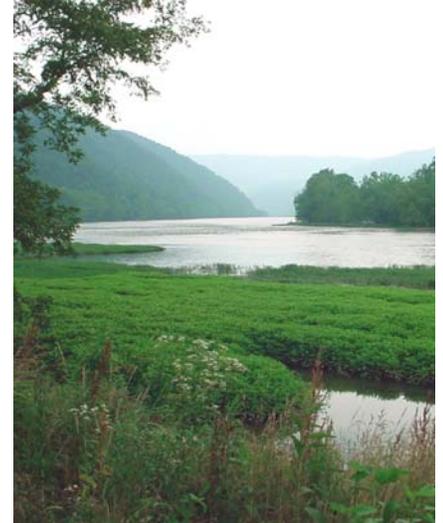
4.1 Introduction

The National Environmental Policy Act (NEPA) requires the National Park Service (NPS) to analyze the beneficial, adverse, and unavoidable adverse environmental impacts associated with implementing the five long-term management alternatives under consideration for New River Gorge National River. The analysis of impacts provides the basis for comparing the alternatives. The impact topics considered reflect the issues and concerns raised during the GMP/EIS project scoping process – as described above in Section 1.9 (see Table 4.1). As required by the National Historic Preservation Act (NHPA) the impact topics must include consideration of the effects on cultural resources.

Because general management plan alternatives are long-range management strategies that are programmatic and long-term in nature, the analysis of impacts is qualitative. Impacts are assessed by identifying and evaluating the general types of actions required to move from existing conditions toward desired resource conditions and visitor opportunity conditions in specific areas of the park. For the purposes of this analysis in the GMP/EIS, it is assumed that all of the actions proposed in the alternatives (as described in Sections 2.3 through 2.9 above) would occur during the life of the plan. Since this is a programmatic analysis of impacts, if and when specific development projects or other actions are proposed subsequent to this GMP/EIS, appropriate detailed environmental and cultural resource compliance documentation will be prepared in accordance with NEPA and NHPA.

The impacts of the action alternatives describe the *difference between* the continuation of current management (Alternative 1) and the implementation of the action alternatives (Alternatives 2, 3, 4, and 5). To understand the complete nature of the impacts of implementing any of the action alternatives, the reader must therefore also take into consideration the impacts that would occur under Alternative 1: Continuation of Existing Management. The analysis of impacts associated with Alternative 1 does not include an analysis of impacts of future actions associated with funded projects in the park, that have not yet been implemented, but for which NEPA compliance has been completed, including the Nuttallburg Visitor Use Area, the Burnwood Center, and New River Parkway.¹

This chapter begins with a description of the methods and assumptions for each impact topic. Impact analysis discussions are organized by alternative and then by impact topic under each alternative. Each alternative discussion also addresses cumulative impacts and presents a Section 106 summary (for cultural resources), a conclusion, and an impairment determination.



New River viewed from Brooks Falls ▲

Table 4.1

**New River Gorge National River
Impact Topics Retained for
Further Analysis**

Topics

- Physiography, Geology and Soils
- Floodplains
- Water Quality
- Vegetation
- Aquatic Wildlife
- Terrestrial Wildlife
- Rare, Threatened, and Endangered Species
- Scenic Resources
- Archeological Resources
- Cultural Landscapes
- Historic Structures
- Ethnographic Resources
- Regional and Local Economy
- Communities
- Visitor Use and Visitor Experience
- Park Access
- Park Operations

¹ NEPA compliance activities for the Nuttallburg Visitor Use Area, the Burnwood Center, and New River Parkway have previously resulted in Findings of No Significant Impact or a Record of Decision (NPS 2008c; NPS 1988a; USDOT FHWA and WV DOH 2004).

At the end of each alternative there is a brief discussion of unavoidable adverse impacts; irreversible and irretrievable commitments of resources; and the relationship or short-term uses of the environment and the maintenance and enhancement of long-term productivity. Table 2.38 briefly summarizes the impacts of each alternative.

4.2 Methods and Assumptions for Analyzing Impacts

4.2.1 Impact Indicators

Impacts for each topic are identified and characterized based on impact type, context, duration, and intensity, as summarized in Table 4.2.

4.2.2 Mitigation Measures

Mitigation measures would be taken during implementation of all the alternatives. All impacts are assessed assuming that mitigating measures have already been implemented.

4.2.3 Methods for Analyzing Impacts and Impact Thresholds

The GMP Planning Team has based the impact analysis and the conclusions in this chapter primarily on review of existing literature and studies, information provided by experts in the NPS and other agencies, and staff insights and professional judgment. For each impact topic the analysis focused on describing the consequences of management actions related to:

- natural and scenic resources
- cultural resources
- public use, enjoyment, and experience
- park operations
- land protection
- partnership and community collaboration

Where impacts do not occur for a management action category in a given topic, the category is not addressed in the discussion for that topic.

Further explanation of the analysis methodology used for each impact topic is presented below.

Table 4.2 Impact Indicators and Impact Indicator Definitions

Impact Indicator	Impact Indicator Definition
<p>■ Type</p>	<p>Impact types include beneficial or adverse:</p> <p>Beneficial – A beneficial impact would be a positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.</p> <p>Adverse – An adverse impact would be a change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.</p> <p>Direct - Direct impacts on the resource actually caused by the proposed action, generally at the same time and place of the proposed action. Direct impacts can extend into the future and are often permanent, but can be temporary. An example of a direct impact would be clearing second growth forest, which would immediately cause habitat loss at that location.</p> <p>Indirect - Indirect impacts generally occur as a result of a “side-effect” of a direct impact, but occur removed in time or space from the proposed action. An indirect impact could result from silt flowing downstream, creating turbid conditions, and adversely affecting water quality.</p>
<p>■ Context</p>	<p>Context is the affected environment within which an impact would occur, such as the affected region or locality. Context is variable and depends on the circumstances involved with each impact topic. In this document, natural and cultural resource impacts are:</p> <p>Site Specific – the impact would affect the project site</p> <p>Local – the impact would affect the park (except for economic impacts where local is defined as encompassing Fayette, Raleigh, Summers, and Nicholas Counties)</p> <p>Regional – the impact would affect the nine-county Southern West Virginia region</p>
<p>■ Duration</p>	<p>Duration is the time period for which the impacts are evident. The planning horizon for this GMP/EIS is 15 to 20 years. Unless otherwise specified, the following terms are used to described impact durations:</p> <p>Short-term – The impact would be temporary, lasting a year or less, such as impacts associated with construction. For purposes of the socio-economic analysis, short-term impacts would last less than one year.</p> <p>Long-term – The impact would last more than one year and could be permanent in nature (although an impact may only occur for a short duration at one time, if it occurs regularly over time the impact may be considered to a long-term impact). For purposes of the socioeconomic analysis, long-term impacts would last more than one year and may be permanent.</p>
<p>■ Intensity</p>	<p>Intensity is a measure of the severity of an impact. The intensity of an impact may be negligible, minor, moderate, or major. Impact intensity definitions are defined for each impact topic in Table 4.2. Because this is a programmatic document, the intensities are expressed qualitatively.</p>

■ **Physiography, Geology, and Soils**

General categories of resource management actions that would seek to protect the park’s physiography, geology, and soils are identified and qualitatively evaluated for their impact. Likely cultural resource management actions and improvements to visitor use facilities are evaluated for their potential soil disturbance and ensuing erosion and sedimentation; for this analysis it is assumed that during final design best management practices (BMPs) for erosion and sedimentation control would be identified and that use of BMPs at all construction and restoration sites would maintain erosion and sedimentation at rates close to existing conditions. Land protection actions and partnership actions that would potentially affect physiography, geology, and soils are identified and qualitatively evaluated.

New River Gorge National River Regulations and Guidelines Related to Physiography, Geology, and Soils

- Clean Water Act of 1977, as amended
- Federal Farmland Protection Act of 1980 and 1995
- Analysis of Impacts of Prime and Unique Agricultural Lands in Implementing NEPA
- Surface Mining Control and Reclamation Act of 1977, as amended
- Federal Cave Resources Protection Act
- ...add Director's Order
- NPS 2006 Management Policies

**New River Gorge National River
Regulations and Guidelines
Related to Floodplains**

- Executive Order 11988 – Protection of Floodplains
- Watershed Protection and Flood Prevention Act
- Director's Order 72-2 – Floodplain Management
- NPS 2006 Management Policies

■ **Floodplains**

General categories of resource management actions that would seek to protect, preserve, and restore the natural resources and functions of floodplains are identified and qualitatively evaluated for their impact. Likely cultural resource management actions and improvements to visitor use facilities are identified that would be in close proximity to or within the 100-year floodplain of the New River; for this analysis it is assumed that during final design the NPS would complete necessary studies to accurately determine the extent of the floodplain and that facilities would be located outside of the floodplain where they are not functionally dependent on proximity to water. Park operations, land protection actions, and partnership actions that would potentially affect floodplains are identified and qualitatively evaluated.

**New River Gorge National River
Regulations and Guidelines
Related to Water Quality**

- Clean Water Act of 1977, as amended
- Federal Water Pollution Control Act of 1972, as amended
- Fish and Wildlife Coordination Act of 1934, as amended
- Safe Drinking Water Act
- Water Resources Planning Act of 1965
- Watershed Protection and Flood Prevention Act
- Executive Order 12088 – Federal Compliance with Pollution Control Standards

■ **Water Quality**

General categories of resource management actions that would seek to maintain water quality in the park in its natural condition free of pollutants are identified and qualitatively evaluated for their impact. Likely cultural resource management actions and improvements to visitor use facilities are evaluated for their potential water quality impacts due to potential soil disturbance and ensuing erosion and sedimentation; for this analysis it is assumed that during final design best management practices (BMPs) for erosion and sedimentation control would be identified and that use of BMPs at all construction and restoration sites would maintain erosion and sedimentation at rates close to existing conditions. Impervious surface removal and resulting benefits to water quality are qualitatively assessed. Potential impacts to water quality associated with leasing fields at early settlement farm sites for agricultural use are qualitatively assessed. Land protection actions and partnership actions that would potentially affect water quality are identified and qualitatively evaluated.

**New River Gorge National River
Regulations and Guidelines
Related to Vegetation**

- Executive Order 13112 – Invasive Plants
- Endangered Species Act of 1973, as amended
- NPS 2006 Management Policies

■ **Vegetation**

General categories of resource management actions that would seek to maintain the park's native plants and natural landscapes are identified and qualitatively evaluated for their impact. Likely cultural resource management actions and improvements to visitor use facilities are evaluated for their potential disturbance to existing vegetation. Actions to protect sensitive, rare, or significant vegetation communities from visitor use impacts are identified and qualitatively evaluated. The impacts of a shift in management of wildland fire on ecosystem health and native vegetation diversity in fire-dependent forest communities is generally assessed. Land protection actions and partnership actions that would potentially affect vegetation are identified and qualitatively evaluated.

■ **Aquatic Wildlife**

General categories of resource management actions that would seek to maintain and restore natural stream ecosystems with hydrologic features supporting a full range of natural aquatic organisms are identified and qualitatively evaluated for their impact. Potential impacts to water quality associated with leasing fields at early settlement farm sites for agricultural use are qualitatively assessed. Likely improvements to visitor use facilities are evaluated for potential physical disturbance to aquatic habitats in the near shore area of the New River and in tributary streams as a result of facility development and ongoing visitor use; for this analysis it is assumed that during final design field studies would confirm the presence of sensitive or rare aquatic habitat and dependent species and that mitigation measures would be identified and implemented as appropriate to avoid or mitigate adverse impacts to those species. Land protection actions and partnership actions that would potentially affect aquatic wildlife are identified and qualitatively evaluated.

New River Gorge National River
**Regulations and Guidelines
Related to Aquatic Wildlife**

- Endangered Species Act of 1973, as amended
- NPS 2006 Management Policies

■ **Terrestrial Wildlife**

General categories of resource management actions that would seek to maintain the park's native animals are identified and qualitatively evaluated for their impact. Likely cultural resource management actions and improvements to visitor use facilities are evaluated for potential physical disturbance to terrestrial wildlife as a result of facility development and ongoing visitor use; for this analysis it is assumed that during final design field studies would confirm the presence of sensitive or rare terrestrial habitat and dependent species and that mitigation measures would be identified and implemented as appropriate to avoid or mitigate adverse impacts to those species. Potential impacts to terrestrial wildlife associated with leasing fields at early settlement farm sites for agricultural use are qualitatively assessed. Land protection actions and partnership actions that would potentially affect terrestrial wildlife are identified and qualitatively evaluated.

New River Gorge National River
**Regulations and Guidelines
Related to Terrestrial Wildlife**

- Endangered Species Act of 1973, as amended
- NPS 2006 Management Policies

■ **Rare, Threatened, or Endangered Species and Their Habitats**

General categories of resource management actions that would seek to generally increase populations of rare, threatened, or endangered species in the park are identified and qualitatively evaluated for their impact. Likely cultural resource management actions and improvements to visitor use facilities are identified that could potentially affect rare, threatened, or endangered species if they are present on a site; for this analysis it is assumed that during final design field studies would confirm the presence of rare, threatened, or endangered species and dependent species and that mitigation measures would be identified and implemented as appropriate to avoid or mitigate adverse impacts to those species, including Section 7 Consultation and coordination with the WV DNR, as appropriate. Park operations actions, land protection actions, and partnership actions that would potentially

New River Gorge National River
**Regulations and Guidelines
Related to Rare, Threatened, or
Endangered Species and Their
Habitats**

- Endangered Species Act of 1973, as amended
- NPS 2006 Management Policies

affect rare, threatened, or endangered species are identified and qualitatively evaluated.

■ **Scenic Resources**

Resource management actions are described in terms of the extent to which management zoning and related management prescriptions would protect a range of views in all areas of the park, allowing visitors to experience the extent of the gorge, the river, the forest, and the rim. Impacts of cultural resource management actions are summarized on the basis of how they would protect and/or enhance views of cultural landscapes that are fundamental to the park. Public use management actions are evaluated with respect to how development of new or improved visitor use facilities would alter the park setting and potentially affect scenic resources. Park operations actions, land protection actions, and cooperative efforts with partners are qualitatively considered in terms of how they would generally protect scenic resources.

■ **Cultural Resources (Archeological Resources, Cultural Landscapes, Historic Structures and Ethnographic Resources)**

In accordance with the Advisory Council on Historic Preservation’s regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), effects to cultural resources are identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected National Register-eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council’s regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected National Register-eligible or listed cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

■ **Regional and Local Economy**

Regional and local economic impacts are described in terms of the direct and indirect impacts that result from increased park visitation and from development of visitor facilities and on-going operation and management of park resources. Direct economic impacts are generally those that occur when the NPS purchases goods

New River Gorge National River
**Regulations and Guidelines
Related to Scenic Resources**

- NPS 2006 Management Policies

New River Gorge National River
**Regulations and Guidelines
Related to Archeological
Resources**

- 36 CFR 79 – Curation of Federally-Owned and Administered Archaeological Collections
- Advisory Council on Historic Preservation implementing regulations regarding the “Protection of Historic Properties” (36 CFR Part 800)
- Archaeological Resources Protection Act of 1979, as amended
- National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990
- Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation (1966)
- Executive Order 13007 – American Indian Sacred Sites
- Director’s Order 28 – Cultural Resources Management Guidelines
- Director’s Order 28a – Cultural Resources Management Guidelines
- NPS-28 – Cultural Resource Management Guideline Release No. 5
- NPS 2006 Management Policies

and services and park visitors from outside the region spend money in the regional and local economies. They are measured in terms of NPS spending, visitor spending, and earnings from new jobs that are created. Indirect economic impacts occur from the multiple cycles of circulation of the direct impacts (visitor spending, NPS spending, and new earnings) through the area's economy; these are measured through the use of economic multipliers obtained from the U.S. Bureau of Economic Analysis. For purposes of the analysis the local area is defined as Fayette, Raleigh, Summers, and Nicholas Counties and the regional area is defined as the Southern West Virginia region.

■ **Communities**

Management actions that would potentially affect communities within the park and the park's gateway communities are assessed for a variety of potential impacts. Natural resource management actions considered include those related to wildland fire management and maintenance of natural flooding management. Cultural resource management actions considered include those related to restoration and rehabilitation of cultural resources in the vicinity of communities that could attract visitors to an area or otherwise impact local residents. The analysis of public use impacts addresses the potential impacts of developing new visitor facilities in or near communities as well as the impacts of providing new or enhanced linkages between communities and the park. Park operations actions considered relate primarily to wastewater management. The analysis of land protection impacts addresses NPS land acquisition policies and the potential impacts of an enhanced stewardship program. Partnerships and community collaboration considers numerous actions related to local appreciation and understanding of the park, sustaining communities in the park, working with gateway communities, and working with regional tourism partnerships.

■ **Visitor Experience and Visitor Use**

Management actions are generally assessed in terms of how they enhance or detract from the potential for visitors to experience the "classic" park experiences and the experiences that visitors "should have" in the park. Resource management actions are described in terms of the extent to which management zoning and related management prescriptions would preserve the wild character of the park and enhance visitor perception of the park's wildness. Cultural resource management actions are described in terms of the opportunities they provide for visitors to appreciate the human history story of life in the gorge. Public use management actions are evaluated with respect to how they would help orient visitors to the park and enable them to experience the power of the river, the park's scenic beauty, and its wildness. Also evaluated is how well improvements to visitor facilities would address existing visitor experience and visitor use management issues. Park operations actions, land protection actions, and cooperative efforts

New River Gorge National River Regulations and Guidelines Related to Cultural Landscapes and Ethnographic Resources

- Advisory Council on Historic Preservation implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Antiquities Act of 1906
- National Historic Preservation Act of 1966, as amended
- Executive Order 11593 – Protection and Enhancement of Cultural Environment
- Director's Order 28 – Cultural Resources Management Guidelines
- NPS 2006 Management Policies

New River Gorge National River Regulations and Guidelines Related to Historic Structures

- Advisory Council on Historic Preservation implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Antiquities Act of 1906
- Historic Sites, Buildings, and Antiquities Act of 1935, as amended
- National Historic Preservation Act of 1966, as amended
- Secretary of the Interior's Standards for Treatment of Historic Properties (1966)
- Executive Order 11593 – Protection and Enhancement of Cultural Environment
- Director's Order 28 – Cultural Resources Management Guidelines
- NPS 2006 Management Policies

New River Gorge National River Regulations and Guidelines Related to Visitor Experience and Visitor Use

- NPS 2006 Management Policies

with partners are qualitatively considered in terms of how they would generally enhance visitor use and visitor experience.

■ **Park Access**

Impacts associated with resource management actions are described in terms of the extent to which management zoning and related management prescriptions would affect the location of roads, trails, and parking facilities in the park.

Impacts associated with public use, enjoyment, and experience management actions are evaluated qualitatively in terms of 1) anticipated changes to existing vehicle trips on local state roads and park roads that provide access to the park, 3) the extent to which new trail development would enhance access to interior portions of the park; 4) where and how river access would be improved; and 5) the extent to which existing parking problems would be addressed and future parking demand would be met at visitor use areas, trailheads, and river accesses.

Park operations actions, land protection actions, and cooperative efforts with partners are qualitatively evaluated in terms of how they would potentially enhance or limit access to and within the park.

■ **Park Operations**

Impacts associated with park operations and facilities are described in terms of the extent to which they would be noticeable to staff and visitors. During public meetings and planning workshops, the range of public comments included the numbers and types of visitor facilities, a desire for increased educational and volunteer programs, and the desire for greater communication and physical connection between NPS and other agencies, groups, organizations and the public. The effects of each alternative on these and other issues were estimated by comparing the anticipated park operation for each alternative to the existing condition.

Although increased staffing and funding are proposed, it should be noted that implementation of the approved plan will depend on future funding and servicewide priorities. The approval of a general management plan does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Funding for capital improvements is not currently shown in the National Park Service Construction Programs, and it is not likely that all potential capital improvements arising from an approved plan will be implemented during the life of this general management plan. Larger capital improvements may be phased over several years, and the full implementation of the general management plan could be many years in the future.

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
<p>Physiography, Geology, and Soils</p>	<p>Management actions would result in impacts on geologic features, geologic processes, or soils that would not be detectable or would be at the lowest level of detection.</p>	<p>Adverse impact – Management actions would result in a detectable change in geologic features, geologic processes, or soils, but the change would be slight and localized. There could be changes in a soil’s profile in a relatively small area, but the change would not increase the potential for erosion or mass movement. If mitigation were needed to offset adverse impacts, it would be relatively simple to implement and would likely be successful.</p>	<p>Adverse impact – Management actions would result in a clearly detectable change in geologic features, geologic processes, or soils. There could be a loss or alteration of the topsoil in small areas, or the potential for erosion or mass movement to remove small quantities of additional soil or rock would increase. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.</p>	<p>Adverse impact – Management actions would result in the permanent loss or alteration of geologic features, geologic processes, or soils in relatively large areas, or there would be a strong likelihood for erosion or mass movement to remove large quantities of additional soil or rock as a result of the action. Mitigation measures to offset adverse effects would be necessary, extensive, and their success could not be guaranteed.</p>
		<p>Beneficial impact – Management actions would preserve or restore geologic features, geologic processes, or soil resources in a small area.</p>	<p>Beneficial impact – Management actions would preserve or restore geologic features, geologic processes, or soil resources in moderately sized areas.</p>	<p>Beneficial impact – Management actions would preserve or restore geologic features, geologic processes, or soil resources in relatively large areas.</p>
<p>Floodplains</p>	<p>Management actions would have no measurable or perceptible consequences on the use of the floodplain, risks to human health and property, and/or natural floodplain values.</p>	<p>Adverse impact – Management actions would include use of the floodplain, increase risks to human health and property, and/or adversely affect natural floodplain values; the impact would be slight and localized with few measurable adverse consequences.</p>	<p>Adverse impact – Management actions would increase use of the floodplain, increase risks to human health and property, and/or adversely affect natural floodplain values; the impact would be readily apparent with measurable adverse consequences.</p>	<p>Adverse impact – Management actions would increase use of the floodplain, increase risks to human health and property, and/or adversely affect natural floodplain values; the impact would be readily apparent with severe measurable adverse consequences.</p>
		<p>Beneficial impact – Management actions would reduce use of the floodplain, reduce risks to human health and property, and/or enhance natural floodplain values; the impact would be slight and localized with few measurable benefits.</p>	<p>Beneficial impact – Management actions would reduce use of the floodplain, reduce risks to human health and property, and/or enhance natural floodplain values; the impact would be readily apparent with measurable benefits.</p>	<p>Beneficial impact – Management actions would reduce use of the floodplain, reduce risks to human health and property, and/or enhance natural floodplain values; the impact would be readily apparent with significant measurable benefits.</p>
<p>Water Quality</p>	<p>Management actions would result in impacts on water quality that would not be detectable or if detected, would have effects that would be considered slight, local, and short-term.</p>	<p>Adverse impact – Management actions would result in water quality impacts that would be measurable and adverse, but the change would be slight, localized with few measurable consequences; if</p>	<p>Adverse impact – Management actions would result in water quality impacts that would be readily measurable, adverse, and relatively localized with measurable consequences; mitigation</p>	<p>Adverse impact – Management actions would result in water quality impacts that would be readily measurable, would have substantial consequences, and noticed on a regional scale; extensive</p>

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
		<p>mitigation measures would be necessary to offset adverse impacts it would likely be successful. Water quality impacts could include increased loads of sediment, debris, chemical, or toxic substances, or pathogenic organisms.</p> <p>Beneficial impact – Management actions would include implementation of restoration projects and/or best management practices that would slightly to significantly improve water quality in one of more of the park’s tributaries.</p>	<p>measures would be necessary to offset adverse impacts, and would likely be successful. Water quality impacts could include increased loads of sediment, debris, chemical, or toxic substances, or pathogenic organisms. The impact could be visible to visitors.</p> <p>Beneficial impact – Management actions would include implementation of restoration projects and best management practices that would slightly to significantly improve local water quality in several tributaries in the park; overall effect would be clearly detectable.</p>	<p>mitigation measures would be necessary to offset adverse impacts and their success would not be assured. Water quality impacts could include increased loads of sediment, debris, chemical, or toxic substances, or pathogenic organisms. The impact could be easily visible to visitors.</p> <p>Beneficial impact – Management actions would include implementation of restoration projects and best management practices that would slightly to significantly improve water quality in most tributaries in the park, as well as the New River; overall effect would be clearly detectable.</p>
Vegetation	<p>Management actions would result in impacts on vegetation that would not be detectable or would be at the lowest level of detection. The abundance, distribution of individuals, or extent of fragmenting features would not be affected or would be slightly affected. Ecological processes and biological productivity would not be affected.</p>	<p>Adverse impact – Management actions would result in a detectable change in a vegetation community, but the change would be slight and have only a local effect on the community. This would include changes in the abundance, distribution, fragmenting features, or composition of individual species in a local area, but not include changes that would affect the viability of local or regional populations or communities. Changes to local ecological processes would be minimal.</p> <p>Beneficial impact – Management actions would restore or preserve vegetation and/or unfragmented forest blocks in a small portion of the park.</p>	<p>Adverse impact – Management actions would result in a clearly detectable change in a vegetation community that could have an appreciable adverse effect on the community. This could include changes to a local population sufficient to cause a change in the abundance, distribution, fragmenting features, or composition of local vegetation communities, but not changes that would affect the viability of regional populations or communities. Changes to local ecological processes would be of limited extent.</p> <p>Beneficial impact – Management actions would restore or preserve vegetation and/or unfragmented forest blocks in many areas of the park.</p>	<p>Adverse impact – Management actions would result in a clearly detectable change in a vegetation community that could have severely adverse effect on the community. The impacts would be substantial and highly noticeable and could result in widespread change. This could include changes in the abundance, fragmenting features, distribution, or composition of a local vegetation community or regional plant population to the extent that it would not be likely to recover. Significant ecological processes would be altered, and r changes would be expected.</p> <p>Beneficial impact – Management actions would restore or preserve vegetation and/or unfragmented forest blocks throughout much of the park.</p>

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
<p>Aquatic Wildlife</p>	<p>Management actions would result in impacts on aquatic wildlife that would be short-term, and the changes would be so slight that they would not be or any measurable of perceptible consequence to the species' population.</p>	<p>Adverse impact – Management actions would result in a detectable effect that would be localized, small, and of little consequence to the species' population. Mitigation measures, if needed to offset adverse effects, would be simple and successful.</p>	<p>Adverse impact – Management actions would result in a clearly detectable effect that would be localized, with consequences at the population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.</p>	<p>Adverse impact – Management actions would result in an obvious detectable effect that would have substantial consequences to aquatic wildlife populations at the regional level. The change could result in a severely adverse and possible permanent consequence upon the species. Extensive mitigation would be needed to offset any adverse effects, and their success would not be guaranteed.</p>
		<p>Beneficial impact – Management actions would help to restore or preserve aquatic wildlife populations in a relatively small area. This could include changes in the abundance, distribution, or composition of a local aquatic wildlife population.</p>	<p>Beneficial impact – Management actions would help to restore or preserve aquatic wildlife populations in a substantial area of the park. This could include changes in the abundance, distribution, or composition of a local aquatic wildlife population.</p>	<p>Beneficial impact – Management actions would restore or preserve aquatic wildlife populations in large portions of the park, This could include changes in the abundance, distribution, or composition of local aquatic wildlife populations</p>
<p>Terrestrial Wildlife</p>	<p>Management actions would result in impacts on terrestrial wildlife that would be short-term, and the changes would be so slight that they would not be or any measurable of perceptible consequence to the species' population.</p>	<p>Adverse impact – Management actions would result in a detectable effect that would be localized, small, and of little consequence to the species' population. Mitigation measures, if needed to offset adverse effects, would be simple and successful.</p>	<p>Adverse impact – Management actions would result in a clearly detectable effect that would be localized, with consequences at the population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.</p>	<p>Adverse impact – Management actions would result in an obvious detectable effect that would have substantial consequences to terrestrial wildlife populations at the regional level. The change could result in severely adverse and possible permanent consequence upon the species. Extensive mitigation would be needed to offset adverse effects, and their success would not be guaranteed.</p>
		<p>Beneficial impact – Management actions would help to restore or preserve terrestrial wildlife populations in a relatively small area. This could include changes in the abundance, distribution, or composition of a local terrestrial wildlife population.</p>	<p>Beneficial impact – Management actions would help to restore or preserve terrestrial wildlife populations in a substantial area of the park. This could include changes in the abundance, distribution, or composition of a local terrestrial wildlife population.</p>	<p>Beneficial impact – Management actions would restore or preserve aquatic wildlife populations in large portions of the park, This could include changes in the abundance, distribution, or composition of local terrestrial wildlife populations</p>

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
<p>Rare, Threatened, and Endangered Species</p>	<p>Management actions could result in a change to a population or individuals of a listed or protected species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence. The change would result in a <i>no effect</i> opinion from the U.S. Fish and Wildlife Service.</p>	<p>Adverse impact – Management actions could result in a change to a population or individuals of a listed or protected species or designated critical habitat. The change would be discountable, insignificant, and of little consequence, and would result in a <i>not likely to adversely affect</i> opinion from the U.S. Fish and Wildlife Service.</p>	<p>Adverse impact – Management actions could result in some change to a population or individuals of a listed or protected species or designated critical habitat. The change would be meaningfully measured, detected or evaluated, and of consequence, but would most likely result in a <i>not likely to adversely affect</i> opinion from the U.S. Fish and Wildlife Service.</p>	<p>Adverse impact – Management actions could result in a noticeable change to a population or individuals of a listed or protected species or designated critical habitat. The change would be substantial and highly noticeable and would most likely result in a <i>likely to adversely affect</i> opinion from the U.S. Fish and Wildlife Service.</p>
		<p>Beneficial impact – Management actions would protect a population or individuals of a listed or protected species or enhance designated critical habitat. The level of protection would be measurable but small, localized, and of little consequence.</p>	<p>Beneficial impact – Management actions would protect a population or individuals of a listed or protected species or enhance designated critical habitat. The level of protection would be measurable and of consequence.</p>	<p>Beneficial impact – Management actions would protect a population or individuals of a listed or protected species or enhance designated critical habitat. The level of protection would be of significant consequence.</p>
<p>Scenic Resources</p>	<p>Management actions would result in impacts that would be either barely detectable or would have impacts that would be considered slight and localized.</p>	<p>Adverse impact – Management actions would have measurable impacts on scenic resources. Small changes would occur to the park’s cultural and natural landscapes that would contribute to the deterioration of scenic resources.</p>	<p>Adverse impact – Management actions would have clearly detectable impacts on scenic resources. Noticeable changes could occur to the park’s cultural and natural landscapes that would deteriorate scenic resources and could be detected by visitors.</p>	<p>Adverse impact – Management actions would have substantial impacts on scenic resources. Highly noticeable changes could occur to the park’s cultural and natural landscapes that would result in the loss of fundamental scenic resources that could be easily detected by visitors.</p>
		<p>Beneficial impact – Management actions would have measurable impacts that would maintain or preserve scenic resources.</p>	<p>Beneficial impact – Management actions would have clearly detectable impacts that would maintain, enhance, or preserve scenic resources.</p>	<p>Beneficial impact – Management actions would have substantial impacts that would preserve and/or enhance the park’s scenic resources.</p>
<p>Archeological Resources</p>	<p>Impact is at the lowest level of detection, barely measurable, with no perceptible consequences, either adverse or beneficial. The Section 106 determination would be <i>no adverse effect</i>.</p>	<p>Adverse impact – Management actions would have a measurable or perceptible effect, but it would be slight and affect a limited area of a site or group of sites. Slight alteration(s) to any of the characteristics that qualify the site(s) for</p>	<p>Adverse impact – Management actions would have a measurable or perceptible effect on a site or group of sites. The effect would change one or more of the characteristics that qualify the site(s) for inclusion in the National Register and</p>	<p>Adverse impact – Management actions would have a substantial, noticeable, and permanent effect on a site or group of sites. The action would severely change one or more characteristics that qualify the site(s) for inclusion in</p>

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
		inclusion in the National Register may diminish the integrity of the site(s). For purposes of Section 106, the determination of effect would be <i>adverse effect</i> .	would diminish the integrity of the site(s), but would not jeopardize the National Register eligibility of the site(s). For purposes of Section 106, the determination of effect would be <i>adverse effect</i> .	the National Register, diminishing the integrity of the site(s) to such an extent that it would no longer be eligible for listing in the National Register. For purposes of Section 106, the determination of effect would be <i>adverse effect</i> .
		Beneficial impact – Management actions would result preservation of small areas of the site or group of sites.	Beneficial impact – Management actions would noticeably enhance the preservation and protection of the site or group of sites.	Beneficial impact – Management actions would substantially enhance the protection and preservation of the site or group of sites.
Cultural Landscapes	Management actions would result in impacts at the lowest levels of detection, barely measurable, with no perceptible consequences, either adverse or beneficial. The Section 106 determination would be no adverse effect.	Adverse impact – Management actions would result in an effect that is measurable or perceptible, but would be slight and affect a limited area of the landscape or few of its patterns or features. Slight alteration(s) to any of the characteristics that qualify the landscape for inclusion in the National Register may diminish the integrity of the site. For purposes of Section 106, the determination of effect would be <i>adverse effect</i> .	Adverse impact – Management actions would result in an effect on the patterns and features of the landscape that would be measurable and perceptible. The effect would change one or more of the characteristics that qualify the landscape for inclusion in the National Register and would diminish the integrity of the landscape, but would not jeopardize the landscape’s National Register eligibility. For purposes of Section 106, the determination of effect would be <i>adverse effect</i> .	Adverse impact – Management actions would result in an effect on the cultural landscape, its patterns and features that would be substantial, noticeable, and permanent. The action would severely change one or more characteristics that qualify the landscape for inclusion in the National Register, diminishing the landscape’s integrity to such an extent that it would no longer be eligible for listing in the National Register. For purposes of Section 106, the determination of effect would be <i>adverse effect</i> .
		Beneficial impact – Management actions would result in preservation of small areas of the cultural landscape.	Beneficial impact – Management actions would noticeably enhance the preservation and protection of the landscape as a cohesive entity.	Beneficial impact – Management actions would substantially enhance the protection and preservation of the landscape.
Historic Structures	Management actions would result in impacts at the lowest levels of detection, barely measurable, with no perceptible consequences, either adverse or beneficial, to the resources. The Section 106 determination would be no adverse effect.	Adverse impact – Management actions would result in an effect that would be measurable or perceptible, but it would be slight and affect a limited area of a structure or group of structures. Slight alteration(s) to any of the characteristics that would qualify the structure(s) for inclusion in the National Register	Adverse impact – Management actions would result in an effect that would be measurable and perceptible. The effect would change one or more of the characteristics that qualify the structure(s) for inclusion in the National Register and would diminish the integrity of the	Adverse impact – Management actions would result in an effect on the structure(s) that is substantial, noticeable, and permanent. The action would severely change one or more characteristics that qualify the structure(s) for inclusion in the National Register, diminishing the integrity of the site(s) to

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
		<p>may diminish the integrity of the structure(s). For purposes of Section 106, the determination of effect would be <i>adverse effect</i>.</p> <p>Beneficial impact – Management actions would result in preservation of small areas of the structure(s).</p>	<p>structure(s), but would not jeopardize the National Register eligibility of the structure(s). For purposes of Section 106, the determination of effect would be <i>adverse effect</i>.</p> <p>Beneficial impact – Management actions would noticeably enhance the preservation and protection of the structure(s).</p>	<p>such an extent that it would no longer be eligible for the National Register. For purposes of Section 106, the determination of effect would be <i>adverse effect</i>.</p> <p>Beneficial impact – Management actions would substantially enhance the protection and preservation of the structure(s).</p>
Ethnographic Resources	<p>Management actions would result in impacts that would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs. The determination for Section 106 would be <i>no adverse effect</i>.</p>	<p>Adverse impact – Management actions would result in slight but noticeable impacts that would not appreciably alter resource conditions, such as traditional access or site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs. The determination for Section 106 would be <i>no adverse effect</i>.</p> <p>Beneficial impact – Management actions would allow access to and/or accommodate a group's traditional practices or beliefs.</p>	<p>Adverse impact – Management actions would result in apparent impacts and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive. The determination for Section 106 would be <i>adverse effect</i>.</p> <p>Beneficial impact – Management actions would facilitate traditional access and/or accommodate a group's practices or beliefs.</p>	<p>Adverse impact – Management actions would result in apparent impacts and would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs, to the extent that the survival of a group's practices and/or beliefs would be jeopardized. The determination for Section 106 would be <i>adverse effect</i>.</p> <p>Beneficial impact – Management actions would encourage traditional access and/or accommodate a group's practices or beliefs.</p>
Visitor Use and Visitor Experience	<p>Management actions would result in impacts that would be barely detectable, or would occasionally affect the experience of few visitors in the applicable setting.</p>	<p>Adverse impact – Management actions would result in impacts that would be slight but detectable; could be perceived as negative by visitors or would inhibit visitor experience. Impacts would negatively affect the experience of some visitors in the applicable setting.</p> <p>Beneficial impact – Management actions would positively affect the experience of some visitors in the applicable setting.</p>	<p>Adverse impact – Management actions would result in impacts that would be readily apparent and perceived as somewhat negative. Impacts would negatively affect the experience of many visitors in the applicable setting.</p> <p>Beneficial impact – Management actions would positively affect the experience of many visitors in the applicable setting.</p>	<p>Adverse impact – Management actions would result in impacts that would be highly negative, affecting the experience of a majority of visitors in the applicable setting.</p> <p>Beneficial impact – Management actions would positively affect the experience of a majority of visitors in the applicable setting.</p>

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
<p>Regional and Local Economy</p> <p>The action would produce no measurable impacts on the area's economy, employment base, labor force, or housing market.</p>		<p>Adverse impact – The action would result in small, but detectable, changes to economic conditions. Only a small number of businesses and/or a small portion of the population would be affected. The impact would be slight and not detectable outside of one or more gateway communities</p>	<p>Adverse impact - The action would result in readily apparent changes to economic conditions. Any impacts would be localized within the three-county area.</p>	<p>Adverse impact – The action would result in readily apparent changes to economic conditions. Measurable changes in social or economic conditions at the regional level would occur. The impact would be severely adverse or within the region.</p>
		<p>Beneficial impact - The action would result in small, but detectable, positive changes to economic conditions. Only one or more gateway communities would be affected.</p>	<p>Beneficial impact - The action would result in readily apparent, positive changes to economic conditions. Impacts would be confined to the three-county area.</p>	<p>Beneficial impact – The action would result in readily apparent, positive changes to economic conditions. Impacts would occur throughout the region.</p>
<p>Communities</p> <p>Management actions would result in impacts on adjacent landowners, neighbors, communities, businesses, agencies, etc., which would be nonexistent, barely detectable, or detectable only through indirect means and with no discernible impact on local social conditions.</p>		<p>Adverse impact – Management actions would result in impacts on adjacent landowners, neighbors, businesses, agencies, etc., that would be small but detectable, localized in terms of geographic area, affect a small number of people, comparable in scale to typical year-to-year or seasonal variations, and would not be expected to substantially alter established social structure over the long-term.</p> <p>Most people or groups would accept or generally recognize the above-described conditions as diminishing social welfare either in general or for a specific group of people, businesses, organizations, or institutions.</p>	<p>Adverse impact – Management actions would result in impacts on adjacent landowners, neighbors, businesses, agencies, etc., which would be readily apparent or observable across a large geographic area, affect many people, and could have noticeable effects on the established social structure over the long-term.</p> <p>Most people or groups would accept or generally recognize the above-described conditions as diminishing social welfare either in general or for a specific group of people, businesses, organizations, or institutions.</p>	<p>Adverse impact – Management actions would result in impacts on adjacent landowners, neighbors, businesses, agencies, etc., that would be readily detectable or observable, affect a large segment of the population, extend across a community or region, and have a substantial influence on the established social structure over the long-term.</p> <p>Most people or groups would accept or generally recognize the above-described conditions as diminishing social welfare either in general or for a specific group of people, businesses, organizations, or institutions.</p>
<p>Beneficial impact – Most people or groups would accept or generally recognize the above-described conditions as improving social welfare either in general or for a specific group of people, businesses, organizations,</p>		<p>Beneficial impact – Most people or groups would accept or generally recognize the above-described conditions as improving social welfare either in general or for a specific group of people, businesses, organizations,</p>	<p>Beneficial impact – Most people or groups would accept or generally recognize the above-described conditions as improving social welfare either in general or for a specific group of people, businesses, organizations,</p>	

Table 4.3 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
<p>Park Access</p> <p>Management actions would result in impacts on park access that would be barely detectable to visitors and to park staff.</p>		<p>or institutions.</p> <p>Adverse impact – Management actions would result in impacts that would be slight but detectable; could be perceived as negative by visitors because they could inhibit the achievement of visitor experience by making access to some park resources and experiences slightly more difficult.</p>	<p>or institutions.</p> <p>Adverse impact – Management actions would result in impacts that would be readily apparent; would likely be perceived as negative by visitors because they would inhibit the achievement of visitor experience by making access to many park resources and experiences more difficult.</p>	<p>or institutions.</p> <p>Adverse impact – Management actions would result in impacts that would be readily apparent; would likely be perceived as highly negative by visitors because they would seriously inhibit the achievement of visitor experience by making access to most park resources and experiences very difficult.</p>
		<p>Beneficial impact – Management actions would result in impacts that would be slight but detectable; likely to be perceived as positive by visitors because they could enhance the visitor experience by making access to some park resources and experiences slightly easier.</p>	<p>Beneficial impact – Management actions would result in impacts that would be readily apparent; would likely be perceived as positive by visitors because they would enhance the visitor experience by making access to many park resources and experiences much easier.</p>	<p>Beneficial impact – Management actions would result in impacts that would be readily apparent; would likely be perceived as highly positive by visitors because they would obviously enhance the visitor experience by making access to most park resources and experiences very easy.</p>
<p>Park Operations</p> <p>Management actions would result in impacts on park operations and park facilities that would be barely detectable to park staff and visitors.</p>		<p>Adverse impact – Management actions would result in adverse impacts to park operations and facilities that would be small, but would be noticeable to staff, but probably not to visitors.</p>	<p>Adverse impact – Management actions would result in adverse impacts to park operations and facilities that would be readily apparent to staff and possibly to visitors.</p>	<p>Adverse impact – Management actions would result in adverse impacts to park operations and facilities that would be readily apparent to staff and visitors, and would result in substantial, widespread changes.</p>
		<p>Beneficial impact – Management actions would result in beneficial impacts to park operations and facilities that would be small, but would be noticeable to staff, but probably not to visitors.</p>	<p>Beneficial impact – Management actions would result in beneficial impacts to park operations and facilities that would be readily apparent to staff and possibly to visitors.</p>	<p>Beneficial impact – Management actions would result in beneficial impacts to park operations and facilities that would be readily apparent to staff and visitors, and would result in substantial, widespread changes.</p>

4.2.4 Cumulative Impact Analysis

Assessment of cumulative impacts is required in the decision-making process for all federal projects. Cumulative impacts are defined as follows (40 CFR 1508.7):

Cumulative impacts are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively moderate or major actions that take place over a period of time.

Cumulative impacts were considered for each alternative for all impact topics. These impacts were determined by combining the impacts of the alternatives with the impacts of other past, present, and reasonably foreseeable future actions. To do this, the NPS GMP Planning Team identified other such projects or actions at New River Gorge National River and in the surrounding Fayette, Raleigh, and Summers Counties (see Table 4.4). The geographic area of interest for the cumulative impact analysis varied, depending on the impact topic (see Table 4.5). The timeframe of the analysis was within approximately 5 to 7 years of 2009.

In defining the contribution of each alternative to cumulative impacts, the following terminology is used:

- **Imperceptible.** The incremental effect contributed by the alternative to overall cumulative impacts is such a small increment that it is impossible or extremely difficult to discern.

TABLE 4.4 Actions Included in the Cumulative Impact Scenario

Actions	Summary Description
NPS Projects	<ul style="list-style-type: none"> ■ Sandstone Visitor Center (2003) - Visitor Center for New River Gorge National River, located near the I-64/ WV 20 interchange (Summers County) ■ Burnwood Center (future) – Multi-use facility composed of an environmental education center and a maintenance and operations facility, located on US 19 just north of the New River Bridge (Fayette County)
Development	<ul style="list-style-type: none"> ■ Hinton Technology Center (2006) – two-story 38,000 square feet technology center in downtown Hinton (Summers County) ■ Beckley Higher Education Center (2007) – 67,000 square feet of building on 33-acre campus (Fayette County) ■ Harper Road/I-77 Interchange Area (ongoing) – Lodging, restaurant, and other commercial services development in the vicinity (Raleigh County) ■ US 19 Commercial Corridor (ongoing) – various commercial developments in the US 19 between Oak Hill and Fayetteville, recently including Wal-Mart Supercenter, Lowes, and other retailers (Fayette County) ■ Woodlands Business Park (ongoing) – 1,000-acre industrial park (Raleigh County) ■ Raleigh County Airport Industrial Park (Phase II ongoing since 2005) – two phase industrial park (Phase 1 – 214 acres; Phase II – 300 acres) (Raleigh County)

TABLE 4.4 Actions Included in the Cumulative Impact Scenario

Actions	Summary Description
Development (continued)	<ul style="list-style-type: none"> ■ Pinecrest Business and Technology Park (ongoing since 2004) – 1000-acre industrial park (Raleigh County) ■ Wolf Creek Park (ongoing since 2005) – mixed use development on 300 acres, including 21 manufacturing sites, 5 acres of commercial development and 100 residences, located on US 19 near Appalachian Drive (Fayette County) ■ Fayetteville Area Residential Development (ongoing) – anticipated development of recently approved residential developments, including approximately 2,830 single-family residential units at River Edge Estates, Roaring River, and Bridgeview Estates (Fayette County)
Transportation System Improvements	<ul style="list-style-type: none"> ■ US 19 Loghelly Interchange (2007) – grade-separated interchange near Appalachian Drive (Fayette County) ■ Beckley Inter-Modal Project (future) – joint transportation and economic development improvement project in downtown Beckley, including a new city hall, cultural center, and inter-modal facilities (with a 3-level underground parking) ■ East Beckley Bypass (future) – partially controlled access five-lane facility from Eisenhower Drive in Beckley to US 19 in Bradley (Raleigh County) ■ WV Turnpike (I-77) Widening (future) – addition of one lane in each direction between I-64 and US 19 (Raleigh County) ■ Shady Springs Interchange and Connector (future) – new 3-mile roadway connection from I-77 to US 19 at WV 3 (Raleigh County) ■ Bridge Replacements (future) – Lilly Bridge (WV 20) (Summers County), Big Bridge (WV 121 (Raleigh County), Mill Creek Bridge (Fayette County), Kanawha Falls Bridge (Fayette County); Thomas Burford Pugh Memorial Bridge (WV 41) (Raleigh and Fayette Counties); Thurmond Bridge (WV 25/2) (Fayette County) ■ Shawnee Parkway (future) – 18-mile reconstruction of WV 48 (Raleigh County) ■ Beckley Z-Way (future) – 10.3 mile new roadway connection from Shade Springs to Van Kirk Drive (Raleigh County) ■ New River Parkway (future) – reconstruction of River Road near Hinton as a 10-mile parkway through New River Gorge National River in the vicinity of Hinton to WV 20, including a new bridge crossing of the New River (Raleigh and Summers Counties)
Municipal Utilities and Infrastructure	<ul style="list-style-type: none"> ■ Fayette County Regional Water and Distribution System (ongoing since 1995) – regional water plant and distribution system (Fayette County)
Mined Land Reclamation	<ul style="list-style-type: none"> ■ Claremont Reclamation Project – 80-acre reclamation project within the park including destruction and burial of concrete structures, recontouring of existing gradient, reestablishing and stabilizing drainageways, revegetation, and treatment of acid mine drainage ■ Other Reclamation Projects – numerous mined land reclamation projects in Raleigh and Fayette County including a variety of activities similar to those for the Claremont Reclamation Project (see above)

- **Noticeable.** The incremental effect contributed by the alternative, while evident and observable, is still relatively small in proportion to the overall cumulative impacts.
- **Appreciable.** The incremental effect contributed by the alternative constitutes a large portion of the overall cumulative impact. Because some of these actions are in the early planning stages, the evaluation of the cumulative impact is based on a general description of the project. The cumulative impact is considered for all alternatives and is presented at the end of each impact topic discussion.

4.2.5 Impairment Determinations

The *NPS Management Policies* (NPS 2006a) and *Director's Order 12: Conservation Planning, Environmental Impacts Analysis, and Decision-Making* (NPS 2001a), also require analysis of potential impacts to determine if actions would impair resources and values at New River Gorge National River. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park resources and values. However, these laws give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress gives NPS discretion to allow certain impacts in parks, discretion is limited by statutory requirement that the NPS must leave park resources and values unimpaired, unless a law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. Impairment may result from NPS park management activities, as well as from visitor activities or activities undertaken by concessionaires, contractors, and others operating in the park. Whether an impact meets the definition of impairment depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the New River Gorge National River, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of New River Gorge National River, or

Table 4.5

New River Gorge National River
Cumulative Impact Analysis – Area of Impact

Topic	Impact Area
<ul style="list-style-type: none"> ■ physiography, geology and soils ■ floodplains ■ vegetation ■ water quality ■ aquatic wildlife ■ terrestrial wildlife ■ rare, threatened and endangered species 	watershed of the New River in Fayette, Raleigh and Summers Counties
<ul style="list-style-type: none"> ■ scenic resources 	the park viewshed in Fayette, Raleigh, and Summers Counties
<ul style="list-style-type: none"> ■ archeological resources ■ cultural landscapes ■ historic structures ■ ethnographic resources 	New River Gorge National River
<ul style="list-style-type: none"> ■ economy ■ communities 	Fayette, Raleigh, and Summers Counties
<ul style="list-style-type: none"> ■ park access 	area within three miles of the park boundary
<ul style="list-style-type: none"> ■ visitor use and visitor experience 	New River Gorge National River
<ul style="list-style-type: none"> ■ park operations 	New River Gorge National River

- identified in the park's general management plan or other relevant NPS planning documents as being of significance

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

In this GMP/EIS an impairment determination is made in the conclusion section under most impact topics selected for detailed analysis. When it is determined that an action(s) would have a moderate to major adverse effect, a justification for nonimpairment is made. Impacts of only negligible or minor intensity would by definition not result in impairment. An impairment determination is not made for the regional and local economy, communities, park access, and park operations topics because impairment findings relate back to park resources and values and these impact topics are not generally considered to be a park resource or value. An impairment determination is not made for the visitor use and visitor experience topic because, according to the Organic Act, enjoyment cannot be impaired in the same way that an action can impair park resources and values.

4.3 Environmental Consequences of Alternative 1 (Continuation of Current Management)

4.3.1 Physiography, Geology, and Soils (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to protect the park's physiography, geology, and soil resources by:

- generally allowing physiography, geology, and soil resources that are disturbed by natural phenomena – such as landslides – to recover naturally
- restoring/reclaiming physiography, geology, and soil resources altered by human activity – such as mining (in cooperation with WV DEP)
- protecting park resources from potential impacts associated with natural gas/oil production or mining activities that are permitted by valid oil, gas, and mineral rights (and that may be conducted within the park in compliance with appropriate state permits and Section 9b Regulations pursuant to the Surface Mining Control and Reclamation Act) (in cooperation with WVDEP)
- reducing soil erosion and sedimentation by restoring disturbed areas (such as areas disturbed by ATVs), as funding permits

Impacts of natural resource management actions on physiography, geology, and soil resources would be local long-term minor and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact soil resources. Conceptual planning suggests that treatment actions at cultural resource sites would disturb approximately four acres of previously disturbed soils.

Disturbances would be associated with removal of modern structures at two early settlement farms (see Table 4.6). During the treatment period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Soil loss would be at or near current levels. Following the treatment period disturbed areas would be revegetated with native species. Impacts on soil resources would be local short-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact physiography, geology, and soil resources. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately three acres of previously disturbed soils. Disturbances would be associated with improvements to Turkey Spur Road at Grandview and installation of water and wastewater facilities at Thurmond. During the construction period

erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Soil loss would be at or near current conditions. Short-term impacts on soil resources would be negligible.

Following construction approximately 1.5 acres would be replanted with native grass species and 1.5 acres would be permanently developed (Turkey Spur Road paving). Potential soil loss from these areas would be minimal. Impacts on soil resources would be negligible.

Visitor use at existing facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails, leading to increased potential for soil erosion. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on soils would be local long-term minor and adverse.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources. The lease would specify use of farming methods that would minimize soil exposure and the potential for conveyance of sediment-laden stormwater to waterways. It would also restrict use of fertilizers, herbicides, and pesticides consistent with NPS objectives reflected in the park's *Integrated Pest Management Plan* (NPS 2003a). Impacts on soils would be local long-term minor and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on physiographic and geologic resources would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. NPS would continue to work collaboratively with WV DEP to facilitate reclamation of areas disturbed by mining and to protect park resources from the potential impacts of mineral resource extraction on lands adjoining or near the park. Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

NPS would continue to work with communities and others on an as-needed basis to address erosion and sedimentation issues impacting the park as a result of stormwater discharges originating beyond the park boundary. Impacts on physiography, geology, and soil resources would be negligible.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on physiography, geology, and soil resources are identified in Section 4.2.4 (see Table 4.4). Throughout the watershed, land development and road building in mountainous terrain generally involves clearing forest followed by cutting, filling, and site grading. Large areas of exposed soils characterize many development sites. Rock excavation and blasting is commonly used to remove road at or near the surface that interferes with site leveling. In the past, few controls over these construction activities have existed, resulting in high historic rates of erosion and sedimentation. Recently, through the National Pollutant Discharge Elimination System (NPDES) program the state of West Virginia has begun regulating stormwater containing sediment flowing from construction sites into the state's waters. This has and will continue to reduce erosion and sedimentation losses from construction sites throughout the watershed. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on physiography, geology, and soil resources. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in negligible to local long-term minor beneficial impacts and local long-term minor adverse impacts on physiography, geology, and soil resources. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on physiography, geology, and soil resources. There would be no impairment of park resources or values related to physiography, geology, and soil resources.

4.3.2 Floodplains¹ (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to protect, preserve and restore the natural resources and functions of floodplains by:

- maintaining natural floodplain vegetation (assuming continued lack of periodic maximum floods on the New River)
- removing debris from floodplains following flooding events

¹ Floodplains with a recurrence interval of 100 years

- restoring natural drainage patterns on lands disturbed by mining (in cooperation with WV DEP as part of mined land reclamation projects)

Impacts on floodplains would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Use of the floodplain would continue as it is today. Water-dependent uses including river access launching facilities and some related day-use facilities would remain in the floodplain. In addition, existing campgrounds located within the floodplain would remain at Hellems Beach, Stone Cliff, and Dun Glen. Impacts on floodplains as a result of continuing these uses would be local long-term minor and adverse.

Park Operations Actions. Data describing floodplains and natural flow regimes in the New River and its tributaries within the park would continue to be generalized or not available. Lacking adequate information it would continue to be difficult to protect and/or restore floodplain values, reduce use of the floodplain, and eliminate flood risks to human health and property. Impacts on floodplains would be local long-term minor and adverse.

The park headquarters and operations facilities at Glen Jean would remain within the floodplain of Dunloup Creek. If and when the facility is flooded and the buildings rendered unserviceable, the NPS would review options for relocating the park headquarters complex to an alternative site. Until such time the existing local long-term minor and adverse impact on the floodplain would continue.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on floodplains would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. The NPS would continue to seek to prevent actions by others that would place new structures within the New River channel that would obstruct flood flows. As is in the past, the NPS would not collaborate with transportation planning, permitting, and resource management agencies to reduce existing obstructions to flood flows within the river channel that no longer provide functional benefits to others. Impacts to floodplains would be local long-term minor and beneficial and local long-term minor and adverse.

NPS would continue to work collaboratively with communities and others on an as-needed basis to address stormwater management issues in the park and in

watersheds draining into the park that result in alterations to natural rainfall-runoff dynamics. The impact on floodplains would be local long-term minor and beneficial.

As in the past the NPS and the US Army Corps of Engineers would not coordinate to evaluate the feasibility and desirability of permitting periodic maximum floods to help maintain natural floodplain vegetation. Potential benefits to floodplain vegetation of restoring periodic maximum floods would not occur. Impacts to floodplains would likely be local long-term moderate and adverse.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on floodplains are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements involving placement of fill or structures in floodplains resulting in increased risks to human health and safety, and/or disturbance or removal of natural floodplain vegetation resulting in loss of floodplain values. Flooding is a problem for property owners throughout the watershed. Until recent years, few regulations existed that limited construction in floodplains. As a result considerable private development occurred historically within the watershed involving placement of fill and structural development within the 100-year floodplain. These actions resulted in loss of floodplain values, increased flood levels, and risks to human health and property along the New River and its tributaries. Today Summers, Raleigh, and Fayette Counties have regulations of some type that require development to be located outside the 100-year floodplain or to elevate the first habitable floor of structures above the 100-year flood elevation and demonstrate that downstream flood elevations would not be increased. As a result the extent of new impacts to floodplains has declined. In the future regulations are likely to further regulate new development once results of recent detailed floodplain mapping becomes available for public use and the three counties are encouraged by the state to adopt its more protective model floodplain ordinance. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on floodplains. Alternative 1 would contribute an imperceptible beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor beneficial impacts and local long-term minor to moderate adverse impacts on floodplains. Alternative 1 would contribute an imperceptible beneficial impact and a minor adverse impact to the total cumulative long-term moderate adverse impact on floodplains. There would be no impairment of park resources or values related to floodplains.

4.3.3 Water Quality (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain water quality in its natural condition free of pollutants generated by human activity by:

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions

Impacts on water quality would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact water quality. Conceptual planning suggests that treatment actions at cultural resource sites would disturb approximately three acres of previously disturbed soils (Table 4.6). During the treatment period use of best management practices (BMPs) would mitigate water quality impacts associated with potential sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Following the treatment period sites would be revegetated with native species. Impacts on water quality would be negligible.

Permanent removal of impervious surfaces associated with modern structures at two early settlement farms would enhance on-site infiltration of stormwater and reduce site runoff. Impacts on water quality would be negligible.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact water quality. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately three acres of previously disturbed soils. During the construction period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Impacts on water quality would be negligible.

Following construction approximately 1.5 acres would be replanted with native grass species and 1.5 acres would be paved (Turkey Spur Road). Permanent stormwater management measures would be used to reduce pollutants in stormwater discharged from the reconstructed Turkey Spur Road. Impacts on water quality would be negligible.

Visitor use at existing facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails, leading to increased potential for erosion and subsequent sedimentation in streams and the river. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on water quality would be local long-term minor and adverse.

Park Operations Actions. The park's existing monitoring program would continue to provide ambient water quality data for the New River and many of its tributaries. These data would document existing conditions, help identify probable sources of contamination, and assist with determining appropriate management actions. Impacts on water quality would be local long-term moderate and beneficial.

Adequate sewage treatment and disposal would be provided in most areas of the park:

- Safe and clean restroom facilities would be available where visitor use would be concentrated including visitor contact facilities, educational facilities, major and minor river accesses, developed day-use areas, and developed and primitive campgrounds. Facilities would include a combination of conventional restrooms, comfort stations, and vault toilets, with some use of portable toilets. Impacts on water quality would be local long-term moderate and beneficial.
- River rest stops and other sites in remote areas would continue to have few or no sanitary facilities. Impacts on water quality would be local long-term moderate and adverse.
- At Thurmond, wastewater collection and treatment would be provided for existing visitor facilities and currently occupied houses. Impacts on water quality would be local long-term minor and beneficial.

The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). Impacts on water quality would be local long-term minor and adverse.

Land Protection Actions. There would continue to be no stewardship program to provide public education or technical assistance to owners of private land within the park. Residential landowners in areas where fecal coliform counts are high – and the suspected source is malfunctioning on-site wastewater disposal systems (OSDSs) – would not receive information and assistance related to OSDS maintenance. Impacts on water quality would be local long-term minor and adverse.

Partnership and Community Collaboration Actions. NPS would continue to work with communities and others on an as-needed basis to address stormwater management and water quality issues impacting the park as a result of stormwater discharges and pollutants originating on private lands within the park and beyond the park boundary. Impacts on water quality would be negligible.

NPS would seek to protect the upper reaches of high quality streams that extend beyond the boundary of the park. Efforts would focus on working with landowners to mitigate potential impacts of land use activities on water quality. Efforts would also focus on working with local governments to seek to involve NPS as an interested party early on in the development review process when lands near upper reaches of high quality streams are proposed for development. Assuming these collaborative efforts would be effective, impacts on water quality would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on water quality are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in discharge of pollutants to waterways. Primary sources of pollutants from these activities have historically included urban runoff, erosion and sedimentation, combined sewer overflows, and improperly functioning on-site disposal systems (OSDS). In the future pollutant loading from these sources will continue, although at reduced levels when compared to the past. OSDSs and sewer overflows will decrease somewhat as municipal sewers are installed and combined sewers are eliminated. This benefit will be somewhat offset by new development in the watershed that occurs outside of sewer service areas, requiring use of OSDSs that have historically provided inadequate treatment due to poor maintenance. Future stormwater runoff and erosion and sedimentation from construction sites greater than one acre would be reduced by mitigation measures required pursuant to water pollution control permits of the WV NPDES Stormwater Program. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on water quality. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on water quality. Alternative 1 would contribute a minor beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on water quality. There would be no impairment of park resources or values related to water quality.

4.3.4 Vegetation (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native plants and natural landscapes by:

- generally allowing natural landscapes that are disturbed by natural phenomena – such as landslides, floods, and fire – to recover naturally
- implementing a full suppression response to wildland fire
- using prescribed fire on a very limited basis to promote ecosystem health and native vegetation diversity in fire-dependent forest communities
- restoring natural landscapes altered by human activity, such as logging, mining, agriculture, transportation, and utilities
- preserving and restoring native plant populations and the communities in which they occur (particularly rare or significant plant communities)
- aggressively treating invasive exotic plant and insect pest species

Impacts of natural resource management actions on vegetation resources would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact native plants and plant communities. Conceptual planning suggests that cultural resource management actions would affect approximately 3 acres of previously disturbed land where historic buildings would be rehabilitated and/or modern buildings would be removed from potentially significant cultural landscapes. Affected vegetation would generally include a mix of ornamental trees and shrubs, non-native plants, and old field successional species. Following the treatment period, building sites would be revegetated with native grasses and other plants. The remaining 2.5 acres would be converted to agricultural production, along with existing adjoining fields. Impacts on vegetation would be negligible.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact native plants and plant communities. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately three acres of previously disturbed land. Affected ground cover would include asphalt (Turkey Spur Road) and vegetation composed primarily of grasses with some ornamental trees and shrubs and non-native plants in the vicinity of historic buildings at Thurmond. Following construction approximately 1.5 acres would be replanted with native grass species and 1.5 acres finished with asphalt (Turkey Spur Road). Impacts on vegetation would be negligible.

Visitor use throughout the park would have the potential to impact native plants and plant communities – particularly sensitive, rare, or significant vegetation communities. Visitor use in sensitive, rare, or significant vegetation communities would continue as is, with few restrictions on fires, camping, hiking access, and day-use of river rest stops. Existing impacts on vegetation in riparian areas, river bars, cliff-top communities, and flatrock communities would continue. Impacts on vegetation would be local long-term moderate and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on vegetation resources would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. NPS and its partners that share concurrent jurisdiction for fire-fighting within the park would continue to collaborate regarding responses to wildfires in the park. In general full suppression would be the primary response to wildfire. Impacts to fire-dependent vegetation communities would be local long-term moderate and adverse.

NPS would continue to seek to protect significant unfragmented forest blocks on privately-owned lands in and around the gorge that are outside but near the park boundary. Efforts would continue to focus on working with landowners to mitigate potential impacts of new development projects on forest resources. Efforts would also continue to focus on working with local governments to seek to involve NPS as an interested party early on in the development review process when lands with outstanding forest resources are proposed for development. Assuming these collaborative efforts would be effective, the impact on vegetation would be local long-term minor and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in loss of vegetation or general degradation of vegetation communities. Loss of vegetation has occurred through clearing and grading and subsequent conversion of natural lands to developed uses. Fragmentation, non-native species introduction, drainage alterations, erosion and sedimentation, introduction of contaminants from

urban runoff, and loss due to herbicide drift, have adversely impacted remaining areas of natural vegetation adjoining developed lands. Historically high impacts on vegetation have occurred because in the past there were few controls over land development intended to protect vegetation. Reasonably foreseeable actions that would have impacts on vegetation would be subject to recently adopted local community and state regulations requiring stormwater management, erosion and sedimentation control, and replanting with native species. Compliance with these regulations would reduce the extent of impacts of foreseeable actions on vegetation, although impacts would continue to occur at a reduced level. Impacts of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on water quality. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate and beneficial impacts and local long-term moderate adverse impacts on vegetation. Alternative 1 would contribute a minor beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on vegetation. There would be no impairment of park resources or values related to vegetation.

4.3.5 Aquatic Wildlife (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain and restore natural stream ecosystems with hydrologic features supporting a full range of natural aquatic organisms by:

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- maintaining natural floodplain vegetation (assuming continued lack of periodic maximum floods on the New River)
- removing debris from floodplains following flooding events
- restoring natural drainage patterns on lands disturbed by mining (in cooperation with WV DEP as part of mined land reclamation projects)

Impacts on aquatic habitat and dependent wildlife would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would continue to seek to avoid or minimize direct and indirect impacts on aquatic habitat and dependent wildlife associated with existing visitor use facilities and visitor use.

Existing physical modifications to aquatic habitat caused by development of visitor use facilities would remain where they support water-dependent visitor use. These have occurred where water-dependent uses required location of facilities along the river bank and in the near-shore area making some degree of past physical modification to aquatic habitat unavoidable. Previously impacted areas include existing river accesses where river launches provide boater access to the river, historically requiring limited site grading and some degree of bottom hardening to provide a safe surface for walking and to protect the bank and river bottom from erosion due to visitor use. In general, launch areas have been previously confined to the smallest possible area needed to accommodate average daily visitor demand. Impacts of visitor facilities on aquatic habitat and dependent wildlife would be continue to be local long-term minor and adverse.

Visitor use impacts on aquatic habitat and dependent wildlife would continue to occur throughout the park where visitors have uncontrolled access to the New River, tributary streams, and special aquatic habitat and dependent wildlife. Indirect impacts would continue to result from trampling of riparian vegetation, subsequent soil exposure, erosion, and sedimentation. Direct impacts would continue to occur where visitors cross streams while hiking, walk in streams or the river while fishing, or disturb the river bottom while swimming, launching boats, or stopping at river rest stops. Impacts on aquatic habitat and dependent wildlife would continue to be local long-term minor and adverse.

Park Operations Actions. Data identifying, locating, and describing aquatic habitats and dependent wildlife would continue to be incomplete. Lacking adequate information it would continue to be difficult to develop best management practices and individual protection plans for aquatic resources. Impacts on aquatic habitat and dependent wildlife would be local long-term moderate and adverse.

Adequate sewage treatment and disposal at most public use and administrative facilities would reduce human-induced nutrient loading and associated impacts on aquatic habitat and dependent wildlife, although river rest stops and other sites in remote areas of the park would continue to have few or no sanitary facilities (see Section 4.3.3 Water Quality (Alternative 1) above). Impacts on aquatic habitat and dependent wildlife would be local long-term moderate and beneficial and local long-term moderate and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous

acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on aquatic habitat and dependent wildlife would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. NPS would continue to minimally collaborate with the CSX Corporation, utility companies, and WVDOH regarding use of pesticides and herbicides to maintain rights-of-way within the park where such use could be conveyed in stormwater runoff to surface waters and damage aquatic habitat and dependent wildlife. Existing treatments by others within the park would generally continue as they do today. Impacts on aquatic habitat and dependent wildlife would be local long-term minor and adverse.

NPS would continue to work collaboratively with communities and others on an as-needed basis to address stormwater management issues in the park and in watersheds draining into the park that result in alterations to natural rainfall-runoff dynamics and associated adverse impacts to aquatic habitat and dependent wildlife. The impact on aquatic habitat and dependent wildlife would be local long-term minor and beneficial.

As in the past the NPS and the US Army Corps of Engineers would not coordinate to evaluate the feasibility and desirability of permitting periodic maximum floods to help maintain natural floodplain vegetation and aquatic habitat and dependent wildlife. Potential benefits to aquatic habitat and dependent wildlife of restoring periodic maximum floods would not occur. Impacts to aquatic habitat and dependent wildlife would be local long-term moderate and adverse.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on aquatic habitats and dependent wildlife are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in construction in waterways or discharge of pollutants and sedimentation to waterways that could adversely impact aquatic habitats and dependent wildlife. Primary sources of pollutants from these activities have historically included urban runoff, erosion and sedimentation, combined sewer overflows, and improperly functioning on-site disposal systems (OSDS). In the future pollutant loading from these sources will continue, although at reduced levels when compared to the past. OSDS and sewer overflows will decrease somewhat as municipal sewers are installed and combined sewers are eliminated. This benefit will be somewhat offset by new development in the watershed that occurs outside

of sewer service areas, requiring use of OSDs that have historically provided inadequate treatment due to poor maintenance. Future stormwater runoff and erosion and sedimentation from construction sites greater than one acre would be reduced by mitigation measures required pursuant to water pollution control permits of the WV NPDES Stormwater Program. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on aquatic habitats and dependent wildlife. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor beneficial impacts and local long-term minor to moderate adverse impacts on aquatic habitat and dependent wildlife. Alternative 1 would contribute an imperceptible beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on aquatic wildlife. There would be no impairment of park resources or values related to aquatic habitat and dependent wildlife.

4.3.6 Terrestrial Wildlife (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park’s native animals. Actions would generally focus on the following:

- perpetuating native animal life as part of the park’s natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible

Impacts on terrestrial habitat and dependent species would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact terrestrial habitat and dependent species. Conceptual planning suggests that cultural resource management actions would likely disturb approximately four acres of previously disturbed land at six sites. Field survey prior to treatment actions would determine species present in the vicinity of each site and appropriate protection measures. Following the treatment period cover conditions on 1.5 acre would be returned to the pre-treatment condition, likely resulting in a negligible impact on terrestrial habitat and dependent species. The remaining 2.5 acres would be converted from non-native grasses, ornamentals, and modern buildings to agricultural production.

Public Use, Enjoyment, and Experience Management Actions. Development of new facilities – and visitor use of those facilities – would have the potential to disturb or displace wildlife or cause areas to be avoided by wildlife. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately three acres of previously disturbed land. Affected ground cover would include asphalt (Turkey Spur Road) and vegetation composed primarily of grasses with some ornamental trees and shrubs and non-native plants in the vicinity of historic buildings at Thurmond. Following construction approximately 1.5 acres would be replanted with native grass species and 1.5 acres finished with asphalt (Turkey Spur Road). During the treatment period wildlife would be expected to migrate into adjacent habitat areas; following the treatment period they would likely migrate back to restored sites, although there would be some loss of habitat due to road widening. Impacts on terrestrial habitat and dependent species would likely be local short-term minor and adverse.

Hunting within the park would continue as it occurs today on most NPS-owned land in the park in accordance with the hunting and fishing regulations of the state of West Virginia. Recent study of the impacts of hunting in the park indicates that hunting in accordance with applicable state regulations has not caused adverse effects on any of the species of mammals or birds which are or may be hunted and that currently occur within the park boundaries (Hooper et al 2006). Recent study further indicates that no evidence exists to support the position that any other species found within the park boundaries have been affected adversely by hunting (Hooper et al 2006). Continuation of hunting in the park would therefore continue to have a negligible impact on terrestrial habitat and dependent species.

The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 above). Maintenance of open fields and forest edge along their perimeter would enhance wildlife habitat diversity locally in the park. The impact on terrestrial habitat and dependent species would be local long-term minor and beneficial.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on terrestrial habitat and dependent species would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

There would continue to be no stewardship program to provide public education or technical assistance to owners of private land within the park. Owners of lands with significant terrestrial habitat and dependent species that are fundamental or otherwise important to the park – particularly owners of sites along the river that are heavily used as river rest stops – would not receive information and assistance with identifying significant habitats and with implementing best management practices to generally protect those habitats and avoid, minimize, and/or mitigate visitor use impacts on them. Impacts on terrestrial habitat and dependent species would be local long-term minor and adverse.

Partnership and Community Collaboration Actions. NPS would continue to cooperate with the WV DNR regarding regulation of hunting on NPS-owned property within the park boundary in accordance with applicable regulations and policies. Cooperation would not include development of a cooperative game management plan for designated hunt units within the park. Impacts on terrestrial habitat and dependent species would be negligible.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on terrestrial wildlife are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in loss of terrestrial habitat or general degradation of terrestrial habitat. Loss of terrestrial habitat and dependent species has occurred as a result of clearing and grading and subsequent conversion of natural lands to developed uses. Fragmentation, non-native species introduction, drainage alterations, erosion and sedimentation, introduction of contaminants from urban runoff, and loss due to herbicide and pesticide drift, have adversely impacted remaining areas of natural vegetation adjoining developed lands. Increased human activity and addition of traffic to roadways has resulted in movement of wildlife out of the area and loss of wildlife due to death caused by vehicles, domestic animals, and other disturbances. Historically high impacts on habitats have occurred because in the past there were few controls over land development intended to protect vegetation. Reasonably foreseeable actions that would have impacts on terrestrial habitat and dependent species would be subject to recently adopted local community and state regulations requiring stormwater management, erosion and sedimentation control, and replanting with native species. Compliance with these regulations would reduce the extent of impacts of foreseeable actions on terrestrial habitat and dependent species, although impacts would continue to occur at a reduced level. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on terrestrial wildlife. Alternative 1 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts, local short-term minor adverse impacts, and local long-term minor adverse impacts on terrestrial wildlife. Alternative 1 would contribute a minor beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on terrestrial wildlife. There would be no impairment of park resources or values related to terrestrial wildlife.

4.3.7 Rare, Threatened, and Endangered Species (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to generally increase the populations of rare, threatened, or endangered species in the park and to secure sufficient, suitable habitat to “recover” species designated as threatened or endangered. Actions would generally focus on the following:

- managing habitat of threatened and endangered species to maintain their value for species recovery
- managing habitat of state-listed species to maintain their value for species maintenance to the greatest extent possible
- managing other native species of special management concern to the park to maintain their natural abundance and distribution
- controlling detrimental non-native species impacts on rare, threatened, or endangered species

Impacts on rare, threatened, and endangered species would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Conceptual planning suggests that cultural resource management actions would likely disturb approximately four acres of previously disturbed land at six sites. One site is known to have occurrences of the federally-designated species of concern Allegheny woodrat (*Neotoma magister*). Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Public Use, Enjoyment, and Experience Management Actions. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately three acres of previously disturbed land. Affected ground cover would include asphalt (Turkey Spur Road) and vegetation composed primarily of grasses with some ornamental trees and shrubs and non-native plants in the vicinity of historic buildings at Thurmond. Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

The ongoing program to stabilize and gate mine portals where rare, threatened, and endangered species are present would continue. Gates would block human access to mines eliminating potential disturbances to rare, threatened, or endangered species. Gates would not interfere with daily and seasonal movements of species inhabiting mine portals and mines. Impacts on rare, threatened or endangered species would be local long-term moderate and beneficial.

No additional areas within the park would be limited to day-use only in order to protect rare, threatened, or endangered species.¹ As a result designated species in the Rush Run, Sewell, Beauty Mountain, Endless Wall, Sunshine Buttress, and Ames areas would continue to be subject to potential nighttime disturbances. Impacts on rare, threatened, or endangered species would be local long-term moderate and adverse.

Park Operations Actions. Data describing the occurrences of many of the park's rare, threatened, or endangered species would continue to be generalized or not available. Lacking adequate information it would continue to be difficult to protect, restore, and maintain habitats of rare, threatened, or endangered species in the park. Impacts on rare, threatened, and endangered species would be local long-term moderate and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their

¹ Visitor use in the Nuttallburg Visitor Use Area would also be limited to day-use only pursuant to the Nuttallburg Visitor Use Area DCP/EA (NPS 2008c)

significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on rare, threatened, or endangered species would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

There would continue to be no stewardship program to provide public education or technical assistance to owners of private land within the park. Owners of lands with rare, threatened, or endangered species habitat that are fundamental or otherwise important to the park would not receive information and assistance with identifying significant species and their habitats and with implementing best management practices to generally protect them and to avoid, minimize, and/or mitigate visitor use impacts on them. Impacts on rare, threatened, and endangered species would be local long-term moderate and adverse.

Partnership and Community Collaboration Actions. NPS would continue to seek to protect rare, threatened, and endangered species and their habitat on privately-owned lands in and around the gorge that are outside but near the park boundary. Efforts would continue to focus on working with landowners to mitigate potential impacts of new development projects on designated species habitat. Efforts would also continue to focus on working with local governments to seek to involve NPS as an interested party early on in the development review process when lands with designated species habitat are proposed for development. Assuming these collaborative efforts would be effective, the impact on rare, threatened, or endangered species would be local long-term minor and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on rare, threatened, and endangered species are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in loss or general degradation of terrestrial or aquatic habitats that are used by rare, threatened, and endangered species.

Loss of terrestrial habitats and dependent species including threatened, rare, or endangered species has occurred as a result of clearing and grading and subsequent conversion of natural lands to developed uses. Fragmentation, non-native species introduction, drainage alterations, erosion and sedimentation, introduction of contaminants from urban runoff, and loss due to herbicide and pesticide drift, have adversely impacted remaining areas of natural vegetation adjoining developed lands. Increased human activity and addition of traffic to roadways has resulted in movement of wildlife out of the area and loss of wildlife due to death caused by vehicles, domestic animals, and other disturbances. Historically high impacts on

habitats have occurred because in the past there were few controls over land development intended to protect vegetation at development sites. Reasonably foreseeable actions that would have impacts on terrestrial habitat and dependent species including rare, threatened, and endangered species would be subject to recently adopted local community and state regulations requiring stormwater management, erosion and sedimentation control, replanting with native species, and depending on the designated species potentially affected specific mitigation measures to reduce or avoid impacts. Compliance with these regulations would reduce the extent of impacts of foreseeable actions on rare, threatened, and endangered species, although impacts would continue to occur at a reduced level.

Adverse impacts to aquatic habitats and dependent species including threatened, rare, or endangered species has occurred as a result of development projects that have resulted in or could result in construction in waterways or in discharge of pollutants and sedimentation to waterways that could adversely impact aquatic habitats and dependent wildlife. Primary sources of pollutants from these activities have historically included urban runoff, erosion and sedimentation, combined sewer overflows, and improperly functioning on-site disposal systems (OSDS). In the future pollutant loading from these sources will continue, although at reduced levels when compared to the past. OSDSs and sewer overflows will decrease somewhat as municipal sewers are installed and combined sewers are eliminated. This benefit will be somewhat offset by new development in the watershed that occurs outside of sewer service areas, requiring use of OSDSs that have historically provided inadequate treatment due to poor maintenance. Future stormwater runoff and erosion and sedimentation from construction sites greater than one acre would be reduced by mitigation measures required pursuant to water pollution control permits of the WV NPDES Stormwater Program.

In addition, recent past and future lead agencies for projects using state and federal funds (including most transportation system improvements) have been or would be required to complete Section 7 Consultation with the U.S. Fish and Wildlife Service and/or with the WV DNR, resulting in specific mitigation measures to avoid or mitigate adverse impacts on rare, threatened, or endangered species.

Alternative 1 in conjunction with the impacts of these past, present, and reasonably foreseeable actions would result in a cumulative long-term moderate adverse impact on rare, threatened, and endangered species. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

- **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on rare, threatened, and endangered species. Alternative 1 would contribute a minor beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on rare, threatened, and endangered species. There would be no impairment of park resources or values related to rare, threatened, and endangered species.

4.3.8 Scenic Resources (Alternative 1)

- **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Resource management actions would seek to protect a range of views in all areas of the park, allowing visitors to experience the extent of the gorge, the river, the forest, and the rim by:

- removing non-native plants at sites where they cause a major scenic or aesthetic intrusion
- reclaiming abandoned mine lands at sites throughout the park (in cooperation with the WV DEP)

Impacts on scenic resources would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Removal of modern structures at three sites would enhance the scenic quality of potentially significant early settlement cultural landscapes that are scenic resources fundamental to the park (see Section 4.3.10 Cultural Landscapes (Alternative 1) above). Impacts on scenic resources would be local long-term moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New facilities would include installation of subsurface water and wastewater lines at Thurmond and minor widening and repaving of Turkey Spur Road. Impacts on scenic resources would be negligible.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on scenic resources would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. NPS would continue to seek to protect scenic resources on privately-owned lands in and around the gorge that are outside but near the park boundary. Efforts would continue to focus on working with landowners to mitigate potential impacts of new development projects on scenic resources. Efforts would also continue to focus on working with local governments to seek to involve NPS as an interested party early on in the development review process when lands with outstanding scenic values are proposed for development. Assuming these collaborative efforts would be effective, impacts on scenic resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on scenic resources are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property, transportation system improvements, and mining and mined land reclamation. Land development and road construction in the mountainous terrain generally involves clearing forest followed by cutting, filling, and site grading. Rock excavation and blasting is commonly used to remove rock at or near the surface that interferes with site leveling. In the past few controls over clearing, excavating and grading have existed resulting in adverse effects to scenic resources. In recent years state policies and regulations have mitigated some of the impacts of land development and transportation system improvements on scenic resources, although major terrain-altering activities continue to occur. Mining at sites throughout the three counties has historically adversely impacted the scenic character of the landscape; a number mined land reclamation projects have in recent years mitigated some of the adverse impacts. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on scenic resources. Alternative 1 would contribute an imperceptible beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts on scenic resources. Alternative 1 would contribute an imperceptible beneficial impact to the total cumulative long-term moderate adverse impact on scenic resources. There would be no impairment of park resources or values related to scenic resources.

4.3.9 Archeological Resources (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect and preserve archeological

resources against natural destruction wherever practicable by eliminating and avoiding natural resource impacts, stabilizing sites and structures, and monitoring conditions. Management actions including removal of vegetative overgrowth at areas of known or potential archeological resources would be preceded by research sufficient to identify and evaluate such resources. The impact on archeological resources receiving stewardship actions would be local long-term minor and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to identify and evaluate park archeological resources and to assess their condition and threats to them. Eligible archeological resources would continue to be nominated for listing in the National Register, as appropriate. Archeological resources would generally continue to be left undisturbed except where intervention could be justified based on compelling needs for research, interpretation, site protection, or park development.

Specific management actions at cultural resource sites that could potentially disturb archeological resources would include (see Table 4.6):

- maintenance or stabilization of historic structures
- removal of modern structures from two early settlement sites

All ground-disturbing activities associated with these actions would be preceded by site-specific archeological surveys and, where appropriate, subsurface testing to determine the existence of archeological resources and how best to preserve them. If National Register-listed or National Register-eligible archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the West Virginia State Historic Preservation Officer. If during construction or treatment previously undiscovered archeological resources are uncovered, then all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy could be developed in consultation with the West Virginia State Historic Preservation Officer. The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Public Use, Enjoyment, and Experience Management Actions. Ground disturbance would be associated with construction of circulation improvements at Grandview and other minor improvements to existing facilities throughout the park. Strategies to protect archeological resources would be implemented as described above for cultural resource management actions under Alternative 1. The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Table 4.6

New River Gorge National River
Alternative 1 – Site-Specific Cultural Resource Management Actions

Actions

- **Historic Structures Maintained in Period Condition**
 - Richmond-Hamilton Farm (outbuildings)
 - Vallandingham Farm (outbuildings)
 - Cochran Farm (outbuildings)
 - Trump-Lilly Farm (outbuildings)
- **Stabilization**
 - Trump-Lilly Farm (farmhouse)
 - Richmond-Hamilton Farm (farmhouse)
 - Vallandingham Farm (farmhouse)
 - Phillips Farm (all structures)
 - Prince Brothers General Store
 - Thurmond Commercial Row (including remediation of lead paint and asbestos contamination)
 - Thurmond Houses
 - Camp Brookside
- **Modern Structure Removal** (if and when acquired by NPS from a willing seller)
 - Westfall Farm
 - Richmond Bottom
- **Leasing Existing Farm Fields at Cultural Resource Sites**
 - Richmond-Hamilton Farm
 - Vallandingham Farm
 - Cochran Farm
 - Trump-Lilly Farm
 - Westfall Farm (if and when acquired by NPS from a willing seller)
 - Richmond Bottom (if and when acquired by NPS from a willing seller)

Visitor use in most areas of the park would remain largely as it is today, except at the Nuttallburg Visitor Use Area and in the Burnwood area. The impact on archeological resources at all visitor use areas would continue to generally include increased vulnerability of archeological resources to surface disturbance, inadvertent damage, and vandalism, as well as loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence. NPS staff presence would continue to discourage vandalism and inadvertent destruction of cultural remains. The impact on archeological resources would range from negligible to local long-term minor and adverse.

Park Operations Actions. Ground disturbance would be associated with construction of water supply/distribution and wastewater collection/treatment to serve occupied structures at Thurmond. Strategies to protect archeological resources from ground disturbance would be implemented as described above for cultural resource management actions under Alternative 1. The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on archeological resources would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have an impact on archeological resources are identified in Section 4.24 Cumulative Impact Analysis (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements. No local public policies or regulations are in place to protect archeological resources on private land during the land development process. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to archeological resources in accordance with Section 106 of the NHPA. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ Section 106 Summary

The Section 106 determination of effect would be no adverse effect to archeological resources.

■ Conclusion

Management actions in Alternative 1 would result in local long-term minor beneficial impacts and local long-term minor adverse impacts on archeological resources. Alternative 1 would contribute an imperceptible beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of park resources or values related to archeological resources.

4.3.10 Cultural Landscapes (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to focus on removal of non-native plants at Thurmond and at the Nuttallburg Mining Complex and Nuttallburg Town Site as well as mowing fields at early settlement farm sites and Camp Brookside. Other cultural landscapes would continue to be at risk due to vegetation overgrowth, poor drainage, and/or landslide susceptibility. The impacts on cultural landscapes would be local long-term minor to moderate and adverse.

Cultural Resource Management Actions. Efforts would continue to include all cultural landscapes in the park's *Cultural Landscapes Inventory* (NPS 2005a), to identify and nominate eligible landscapes to the National Register, and to prepare cultural landscape reports for all cultural landscapes. Specific management actions affecting cultural landscapes would include removal of modern structures (with revegetation of demolition sites) at two early settlement sites with potentially significant cultural landscapes in the south end of the park (see Table 4.6). These actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on cultural landscapes would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Visitor use throughout the park would continue to impact cultural landscapes where they are present, particularly in remote areas where ranger patrols and NPS staff are not routinely present. Visitor use impacts would generally include inadvertent disturbance and vandalism. Impacts on cultural landscapes would be local long-term minor to moderate and adverse.

Park Operations Actions. At Thurmond new water supply/distribution and wastewater collection/treatment facilities would be provided to the Thurmond Depot Visitor Center and to structures currently used for park housing and as private

residences. Engineering design of the facilities would protect the character-defining features of the cultural landscape. Site restoration would return the cultural landscape to its preconstruction condition. During construction ground disturbance would result in a local short-term minor to moderate adverse impact to the cultural landscape. The long-term impact on the cultural landscape would be negligible to local minor and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on cultural landscapes would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscapes are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property and public development and transportation system improvements. No local public policies or regulations are in place to protect cultural landscapes on private land during the land development process. As a result past development on private land within the park boundary has occurred without consideration of cultural landscapes, resulting in adverse impacts. This could change on a site-specific basis in the future where the NPS is able to successfully cooperate with owners of remaining private land within the park boundary whose properties include significant cultural landscapes. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to cultural landscapes in accordance with Section 106 of the NHPA. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscapes. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to cultural landscapes.

■ Conclusion

Management actions in Alternative 1 would result in local long-term minor beneficial impacts and local long-term minor to moderate adverse impacts on cultural landscapes. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on cultural landscapes. There would be no impairment of park resources or values related to cultural landscapes.

4.3.11 Historic Structures (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b). Stewardship would generally include removal of non-native plants and improvements to drainage in the vicinity of historic structures. Impacts on historic structures receiving stewardship actions would be local long-term minor and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) and to obtain determinations of their eligibility for the National Register. Stewardship would generally include building stabilization to provide protection from weather and vandalism. Maintenance of previously stabilized structures would continue. Impacts on historic structures receiving stabilization and ongoing maintenance would be local long-term minor and beneficial.

Stewardship of historic structures would focus on maintenance and treatment of structures that are nominated to, determined eligible for, or are considered potentially eligible for the National Register. Management actions would include the following (see Table 4.6):

- Historic outbuildings at early settlement farms would be maintained in period condition.
- Historic structures not previously stabilized would be stabilized at settlement farms and at Thurmond Commercial Row (with remediation of asbestos and lead contamination).

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would generally be local long-term minor to moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Visitor use throughout the park would continue to impact historic structures where they are

present, particularly in remote areas where ranger patrols and NPS staff are not routinely present. Visitor use impacts would generally include inadvertent disturbance and vandalism. Impacts on historic structures would be local long-term minor to moderate and adverse.

Park Operations Actions. At Thurmond water supply and wastewater treatment would be provided to the Thurmond Depot Visitor Center and to all occupied structures currently used for park housing and as private residences. Many of the affected structures are resources that contribute to the significance of the Thurmond Historic District. All improvements would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would be negligible to local long-term minor and adverse.

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on historic structures would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. NPS would continue to provide technical assistance to the city of Hinton to assess treatment options for rehabilitation and adaptive reuse of the city-owned Hinton Depot and to assist with implementation of treatment by helping to identify funding options and to develop grant applications. Impacts on historic structures would be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic structures are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property and public development and transportation system improvements. No local public policies or regulations are in place to protect historic structures on private land during the land development process. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to historic structures in accordance with Section 106 of the NHPA. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on historic

structures. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

- **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to historic structures.

- **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on historic structures. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on historic structures. There would be no impairment of park resources or values related to historic structures.

4.3.12 Ethnographic Resources (Alternative 1)

- **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect specific natural and cultural resources found within the park's mixed mesophytic forest that are important to the park's traditionally associated people, such as plants, animals, and sites of former towns, settlement areas, and industrial sites. These actions would protect the forest and its associated watershed which is the ethnographic resource identified as vital to the park's traditionally associated people and groups (Hufford et al 2006). Impacts on ethnographic resources would be local long-term minor to moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to include appropriate studies and consultations to further document ethnographic resources and uses, traditionally associated people, and other affected groups, and cultural affiliations to park resources. Eligible ethnographic resources would continue to be nominated for listing in the National Register, as appropriate.

Cultural resource treatment at historic structures and cultural landscapes would stabilize resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.6 and Sections 4.3.10 Cultural Landscapes and 4.3.11 Historic Structures above). Impacts on ethnographic resources would be local long-term minor to moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities at historic structures and cultural landscapes would impact resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.8 and Sections 4.3.10 Cultural Landscapes and 4.3.11

Historic Buildings above). Impacts on ethnographic resources, if determined to be present, would be local long-term minor and adverse.

Impacts associated with increased visitor use on ethnographic resources elsewhere in the park, if determined to be present, would be local long-term minor to moderate and adverse, particularly in remote areas where ranger patrols and NPS staff are not routinely present (see Sections 4.3.10 Cultural Landscapes and 4.3.11 Historic Buildings above).

Land Protection Actions. The NPS would continue to protect land within the park boundary as funding allows through acquisition of land or conservation easements from willing sellers, responding to opportunities as they arise. Under the previous acquisition program, NPS typically acquired parcels without regard to their significance or recreational potential. NPS has refocused its acquisition efforts to target limited acquisition funds to those parcels that have significant natural or cultural resources or that are needed for recreational purposes. Impacts of the acquisition program on ethnographic resources would be negligible to local long-term minor and beneficial, depending upon which properties become available in the marketplace.

Partnership and Community Collaboration Actions. The NPS would continue to consult with traditionally associated groups and Indian tribes, including those already identified and those to be identified through further studies. Consultation would assist with identifying, learning about, and developing strategies for preserving and providing access to ethnographic resources. The impact on ethnographic resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property and public development and transportation system improvements. No local public policies or regulations are in place to protect ethnographic resources on private land during the land development process. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to ethnographic resources in accordance with Section 106 of the NHPA. Impacts of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to ethnographic resources.

■ Conclusion

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on ethnographic resources. Alternative 1 would contribute an imperceptible beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of park resources or values related to ethnographic resources.

4.3.13 Regional and Local Economy (Alternative 1)

In Alternative 1 – Continuation of Current Park Management – the park would continue to attract visitors at existing visitation levels from outside the region to the local area and to the Southern West Virginia region. Many visitors would also continue to come from the local area and the region itself.

Fayetteville would continue to be the gateway community for the area's whitewater rafting industry. Beckley would continue its current function as a primary lodging, dining and visitor service area in support of tourism to New River Gorge. Communities along the US 19 corridor – such as Oak Hill, Mount Hope, Bradley and North Beckley – would continue to provide limited visitor support services.

Development of New River Parkway and related recreation sites would have the single greatest impact on the region's overall socioeconomic condition. New River Parkway would be anchored by the Sandstone Visitor Center at one end and the city of Hinton at the other end. These sites plus recreation attractions along the Parkway – including the new bridge across the New River, Sandstone Falls, and various day-use areas along the New River – would attract a moderate number of visitors already traveling through the area on I-64 to take side trips along the New River to Hinton. Recreation sites along the New River Parkway – especially "the classic park experience" at Sandstone Falls – would attract visitors from the local area and elsewhere in the park, as well as those traveling through the area on I-64.

Several smaller new visitor use facilities and other management actions would induce minor increases in economic activity within local areas, but would have negligible effects on overall economic activities in the region. These would include rehabilitation of Prince Brothers General Store, development of recreational and interpretive facilities at the Nuttallburg Visitor Use Area, construction of the Burnwood Environmental Education Center, and rehabilitation and leasing of early settlement farmhouses in the New River Parkway corridor.

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Active management of the park's natural resources would continue to require expenditures by the park, its partners, and others. Some projects by others – such as reclamation of mined

lands by the WV DEP – would result in significant investment. Impacts of these investments on the economy would be regional long-term minor and beneficial.

Cultural Resource Management Actions. Stabilization and ongoing maintenance of historic structures would result in expenditures by the NPS for labor and materials. Impacts on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would continue to encourage economic activity in areas with active visitor use facilities and support services.

The total annual number of recreational visits to the New River Gorge National River would increase by 124,600 from the current (2007) level of 1,178,000, a 10.6 percent growth rate. Table 4.7 displays projected direct and indirect economic impacts resulting from this increased level of visitor activity. Visitation in the Upper Gorge would increase mainly due to construction of New River Parkway between I-64 and Hinton. Minor increases would occur in the Lower Gorge from development

TABLE 4.7 Alternative 1 – Continuation of Current Management – Annual Direct and Indirect Economic Impacts (\$2007)

Impact Type	2005	Added as a Result of Alternative 1	2025
Visitation			
Visitors	1,178,000	124,600	1,302,600
Direct Impacts			
Jobs	2,000	217	2,217
Earnings	\$28,317,960	\$3,063,500	\$31,381,460
NPS Spending	\$7,208,400	\$1,2229,400	\$8,437,800
Visitor Spending	\$67,910,000	\$7,346,800	\$75,256,800
Indirect Impacts			
Jobs	850	92	942
Earnings	\$7,870,810	\$851,500	\$8,722,310
NPS Spending	\$4,159,970	\$709,530	\$4,869,500
Visitor Spending	\$33,568,090	\$3,631,500	\$37,199,590
Total Impacts			
Jobs	2,850	309	3,159
Earnings	\$36,188,770	\$3,915,000	\$40,103,770
NPS Spending	\$11,368,370	\$1,938,930	\$13,307,300
Visitor Spending	\$101,478,090	\$10,978,300	\$112,456,390

2005 baseline and Impact factors per recreational visit are adapted from Versel 2006

of the visitor use area at Nuttallburg. All other visitor use areas in the park would experience very small visitation increases.

Several industries that benefit from NPS stewardship of New River Gorge, including outfitting, lodging, dining, and convenience goods, would continue to support significant levels of employment. Businesses in these industries are mostly concentrated along the US 19 corridor, particularly in Fayetteville and Beckley.

Industries that have jobs supported by NPS-related activities at New River Gorge would also continue to realize significant impacts on earnings and the housing market.

Impacts on the regional and local economy would be regional long-term minor and beneficial.

Park Operations Actions. Total recurring costs by NPS would be about \$13.4 million annually, while total one-time costs would be about \$16.2 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have Impacts on the regional and local economy are identified in Section 4.2.4 (see Table 4.4). These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in changes in the intensity of economic activity. This ongoing activity will continue to produce moderate long-term growth in the overall regional economy as it shifts from the traditional mining and transportation sectors to the services (particularly leisure and recreation), construction, and real estate sectors. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate beneficial impact on the regional and local economy. Alternative 1 would contribute an imperceptible beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in regional short-term minor beneficial impacts and regional long-term minor beneficial impacts on the regional and local economy. Alternative 1 would contribute an imperceptible beneficial impact to the total cumulative long-term moderate beneficial impact on the regional and local economy.

4.3.14 Communities (Alternative 1)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Natural resource management actions implemented within the park have the potential to affect natural resource conditions in communities within or near the park. These primarily include management actions that seek to protect water quality, floodplains, forest, and aquatic and terrestrial habitats and dependent species, by:

- maintaining natural flows and hydropatterns
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- perpetuating native animal life as part of the park's natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible
- aggressively treating invasive exotic plant and insect pest species
- allowing select introduced species that may alter some process and interactions (e.g. continue WV State black fly treatments)

The impact of these management actions on natural resources in communities within and near the park would be local long-term moderate and beneficial.

Cultural Resource Management Actions. In Alternative 2, cultural resource management actions with the potential to affect resources of potential significance to residents of communities within or near the park include:

- NPS would continue to identify and evaluate park archeological resources and to assess their condition and threats to them. Archeological resources would generally continue to be left undisturbed except where intervention could be justified based on compelling needs for research, interpretation, site protection, or park development.
- NPS would continue to include all cultural landscapes in the park's *Cultural Landscapes Inventory* (NPS 2005a). Specific management actions affecting cultural landscapes would include removal of modern structures (with revegetation of demolition sites) at two early settlement sites with potentially significant cultural landscapes in the south end of the park (see Table 4.11).
- NPS would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b). Stewardship would generally include building stabilization to provide protection from weather and vandalism. Maintenance of previously stabilized structures would continue.

- NPS would continue to include appropriate studies and consultations to further document ethnographic resources and uses, traditionally associated people, and other affected groups, and cultural affiliations to park resources.

The impact of these management actions on cultural resources of potential significance to residents of communities within or near the park would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Existing opportunities for visitors – including residents of communities within or near the park – would continue as they are today. Local area residents would continue to have the classic park experiences at Sandstone Falls, Sandstone Visitor Center, Grandview, Thurmond, Nuttallburg/Kaymoor, Endless Wall, Canyon Rim, and Fayette Station Road. Other important experiences that visitors “should have” in the park would remain largely as they are today, focused on existing attractions and visitor facilities. Existing visitor experience issues would continue related to crowding at some river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on residents of communities within or near the park who use the park for recreation would be local long-term minor to moderate and adverse.

Improvements at the Nuttallburg Visitor Use Area would enhance opportunities for visitors to appreciate the human history story of life in the gorge. Improvements associated with the future New River Parkway¹ would greatly enhance access, visitor facilities, and the experiences visitors have in the south end of the park. A new environmental education center at Burnwood¹ would facilitate operation and enhancement of the park’s educational programs. Impacts on residents of communities within or near the park who use the park for recreation would be local long-term minor to moderate and beneficial.

Hunting within the park would continue as it occurs today on most NPS-owned land, in the park in accordance with the hunting and fishing regulations of the state of West Virginia. During hunting season safety hazards would continue to exist in areas of the park where other visitor use is high and hunting is permitted. Impacts on residents of communities within or near the park who hunt would be local long-term moderate and beneficial. Continued safety hazards would result in a local long-term minor and adverse impact on residents of communities within and near the park.

¹ *NEPA compliance activities for the Nuttallburg Visitor Use Area, the Burnwood Center, and New River Parkway have previously resulted in Findings of No Significant Impact or a Record of Decision (NPS 2008c; NPS 1988a; USDOT FHWA and WV DOH 2004).*

Park Operations Actions. Total recurring costs by NPS would be about \$13.4 million annually, while total one-time costs would be about \$16.2 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

At Thurmond, wastewater collection and treatment would be provided for existing visitor facilities and currently occupied houses. Impacts on the community of Thurmond would be local long-term moderate and beneficial.

Land Protection Actions. As funding permits, land protection would continue until most land remaining within the current park boundary is protected through voluntary sale of property to the NPS or through voluntary conveyance of conservation easements to the NPS or to a qualified non-profit land trust. The NPS land protection staff would continue to respond to all opportunities for negotiation with willing sellers as they arise, subject to staff capacity and availability of acquisition funds. The NPS would not take actions specifically designed to sustain the continued presence of communities that still remain in the park in the vicinity of Meadow Creek, Backus, Prince/Quinnimont, Highland, Terry, and Thayer. The NPS would continue to acquire property within these communities as they become available from willing sellers, typically removing modern structures once properties have been purchased. Acquisition of properties with demolition of structures would continue to reduce the housing stock, to contribute to population loss, and to disrupt the social fabric. The impact on communities within the park would be local long-term moderate and adverse.

There would continue to be no stewardship program to provide technical assistance to owners of private land, including those owning land within the communities that remain within the park. Owners of lands with significant natural, cultural, and scenic resources would continue to not receive information and technical assistance regarding protection and management of resources on their properties. Where landowners lack understanding of the significance of their properties there would be potential for degradation of resources of value to the broader community. The impact on communities within the park would be local long-term minor to moderate and adverse.

Partnership and Community Collaboration Actions. Actions currently implemented by the park to enhance local appreciation and understanding of the park would continue.

The NPS would continue to provide technical assistance to the city of Hinton with rehabilitation and adaptive reuse of the Hinton Depot and would continue to work cooperatively with the city to accomplish mutual goals regarding management and use of the New River waterfront area.

The small enclave of occupied private residences at Thurmond would remain as “a community within a park attraction”. The level of visitor use at Thurmond would remain low and generally confined to the visitor center at the Thurmond Depot, the Commercial Row area, and the lower areas of the town where the NPS owns most of the property and houses. The NPS would continue to work cooperatively with residents to address issues associated with living in the historic town. The NPS would also develop a community water system and wastewater management system at Thurmond for NPS use; water and wastewater service would be extended to private residences in the town on a fee basis.

The NPS would continue to work cooperatively with local governments in Summers, Raleigh, and Fayette Counties, as well as the nearby communities that are the park’s gateways – Hinton, Sandstone, Meadow Bridge, Beckley, Mount Hope, Glen Jean, Oak Hill, Minden, Cunard, Fayetteville, Winona, and Ansted. These relationships would remain informal, involving provision of relatively narrowly defined technical assistance with land use planning and geographic database (GIS) management, planning and design of trail connections, treatment of cultural resources, and assistance with hosting special events.

The NPS would continue to work cooperatively on many initiatives with local chambers of commerce, convention bureaus, visitors’ bureaus, economic development interests, the Coal Heritage Area, and the Tamarack Foundation. These initiatives would focus on improving awareness of the park as a unit of the national park system, attracting visitors to the region, providing information to visitors, improving wayfinding from local communities to the park, developing visitor support services in gateway communities, and promoting public understanding of the positive impacts of the park on the quality of life in local communities.

The NPS would continue to collaborate with Hawks Nest State Park to protect scenic resources in and around the gorge and to make information available to visitors about each park. Babcock State Park would continue to operate independent of collaboration with the NPS.

The NPS would continue to collaborate with state and federal agencies to address specific resource management needs at the park related to treatment of cultural resources, water quality monitoring, hunting, rare and endangered species protection, fishing access, maintenance of flows in the New River, maintenance of public roads in the park, and management of whitewater use of the river.

The NPS would continue to seek input from visitor user groups with identifying visitor use issues and identification of potential solutions for consideration.

Collectively the impact of these actions on communities within and near the park would be local long-term moderate and beneficial.

New River Gorge National River
Desired Visitor Experiences

Desired Visitor Experiences

- **Important Park Experiences that Visitor should have:**
 - Appreciate life in the gorge – the human history story
 - Appreciate/experience the wildness of the landscape
 - Experience the power of the river
 - Experience scenic beauty
- **Classic Park Experiences**
 - Paddling the New River
 - Sandstone Falls
 - Grandview
 - Thurmond
 - Endless Wall
 - Canyon Rim
 - Fayette Station Road

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on communities are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property, public infrastructure projects, and transportation system improvements. Collectively these actions have improved the quality of life in communities within and near the park. They have generally enhanced opportunities for education, attracted new employers to the area thereby providing new jobs, provided locations for needed commercial services, generally enhanced regional and local access, and protected public health and environmental quality by making available clean water, wastewater treatment, and other public services. Impacts of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on communities within or near the park. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate and adverse impacts on communities within or near the park. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative long-term major beneficial impact on communities within or near the park.

4.3.15 Visitor Use and Visitor Experience (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. The park’s forest would continue to be managed to maintain its native plants and natural landscapes, with an emphasis on restoring disturbed areas and eliminating non-native plants. Much of the park would retain a primitive character enjoyed by visitors from the river, from a variety of trails, and developed visitor facilities dispersed throughout the forest. Existing fragmenting features would remain. Impacts on visitor use and visitor experience would be negligible.

Cultural Resource Management Actions. Places in the park where visitors have opportunities to appreciate the human history story of life in the gorge would continue to be dispersed throughout the park at a few locations, such as Thurmond and Nuttallburg. Most stories would continue to be told through visitor center exhibits, ranger walks and talks, waysides along park roads and trails, and special programs. Cultural resource management actions that would expand visitor opportunities to appreciate the human history story of life in the gorge would be limited to those planned at the Nuttallburg Visitor Use Area.¹ The impact of cultural

¹ NEPA compliance activities for the Nuttallburg Visitor Use Area, the Burnwood Center, and New River Parkway have previously resulted in Findings of No Significant Impact or a Record of Decision (NPS 2008c; NPS 1988a; USDOT FHWA and WV DOH 2004).

Table 4.8

New River Gorge National River
Alternative 1 – New Visitor Use Facilities (funded)

Actions

- **Nuttallburg Visitor Use Area**
 - trails (with four trailheads)
 - interpretive media and programs
- **Burnwood Visitor Use Area**
 - Burnwood Environmental Education Center
 - Laing Loop Nature Trail Extension
 - New picnic pavilions
- **Visitor Use Enhancements to be made as part of the New River Parkway Project (by WVDOH in cooperation with the NPS):**
 - Helles Beach River Access improvements
 - Mermaid Beach improvements
 - Fall Branch Access improvements
 - Long Bottom Overlook improvements
 - Richmond Bottom improvements
 - ✓ Richmond-Hamilton Farm
 - ✓ Cochran Farm
 - ✓ Vallandigham Farm

resource management actions and related interpretive programs on visitor use and visitor experience would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Visitors would continue to have the classic park experiences at Sandstone Falls, Sandstone Visitor Center, Grandview, Thurmond, Nuttallburg/Kaymoor, Endless Wall, Canyon Rim, and Fayette Station Road. Other important experiences that visitors “should have” in the park would remain largely as they are today, focused on existing attractions and visitor facilities. Existing visitor experience issues would continue related to crowding at some river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience would be local long-term minor to moderate and adverse.

Improvements at the Nuttallburg Visitor Use Area would enhance opportunities for visitors to appreciate the human history story of life in the gorge.¹ Improvements associated with the future New River Parkway¹ would greatly enhance access, visitor facilities, and the experiences visitors have in the south end of the park. A new environmental education center at Burnwood¹ would facilitate operation and enhancement of the park’s educational programs. Impacts on visitor use and visitor experience would be local long-term moderate and beneficial.

Hunting within the park would continue as it occurs today on most NPS-owned land, in the park in accordance with the hunting and fishing regulations of the state of West Virginia. During hunting season safety hazards would continue to exist in areas of the park where other visitor use is high and hunting is permitted. Impacts on visitor use and visitor experience would continue to be local long-term moderate and beneficial and local long-term minor and adverse.

Land Protection Actions. The park’s boundary would continue as it is today. Land would not be acquired from willing sellers needed to provide parking for visitor access at the Nuttallburg Visitor Use Area, at the Cunard River Access, in the Dowdy Bluff hunting area, the upper Glade Creek area, and the Ambassador Buttress and Junkyard climbing areas. Impacts on visitor use and visitor experience would be local long-term moderate and adverse.

Partnership and Community Collaboration Actions. Collaboration with WVDOH would seek to accomplish improvements to New River Parkway (existing River Road), Thurmond Bridge, and Fayette Station Road (WV 82). Improvements would address visitor safety concerns, reduce congestion by enhancing roadway capacity, and/or provide transportation-related enhancements where visitors could better experience park resources. Impacts on visitor use and visitor experience would be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property and transportation system improvements. New development and new roads in the park vicinity would detract from the visitor experience and visitor enjoyment of the park by altering the natural setting, increasing the number of people in the area, increasing traffic, increasing ambient noise, and generally reducing the wildness of the area. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on visitor use and visitor experience. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term moderate adverse impacts on visitor use and visitor experience. Alternative 1 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative long-term moderate adverse impact on visitor use and visitor experience. There would be no impairment of park resources or values related to visitor use and visitor experience.

4.3.16 Park Access (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Continuation of current natural resource management would continue to permit development of park roads, trails, and parking facilities in accordance with *NPS Management Policies* (NPS 2006a) and transportation-related director's orders as needed throughout the park to meet management needs or to provide for visitor use and enjoyment.

Public Use, Enjoyment, and Experience Management Actions. Growth in park visitation over the fifteen year GMP planning period would minimally increase traffic in and around the park during both peak and off-peak visitation periods. Most state roads and park roads used by visitors would experience local long-term negligible or minor adverse impacts. Only two roads would experience local long-term moderate adverse impacts during peak periods (see Table 4.9). None would experience beneficial impacts.

Improvements to Turkey Spur Road at Grandview would enhance access to visitor use facilities at the Turkey Spur Overlook. The impact on park access would be local long-term minor and beneficial.

A few new hiking and equestrian trails, and trails providing access to climbing areas, would be developed in the park (see Table 4.10). Trailhead parking would be

provided for all new trails. The impact of these trail additions (along with trailhead parking) on park access would be local long-term minor and beneficial.

Enhancements to parking at the Stone Cliff river access would occur in conjunction with relocation of existing day-use and campground facilities at Stone Cliff to a site above the New River floodplain. The impact of these actions on access to the river would be local long-term moderate and beneficial.

TABLE 4.9 Alternative 1 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
South End of the Park			
Sandstone Falls and Visitor Attractions on River Left Future New River Parkway (under development by WVDOH)	<ul style="list-style-type: none"> ▪ paved two-lane road with shoulders ▪ lane width adequate for safe two-way travel ▪ 8% maximum gradient ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of the New River Parkway (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term negligible impact ▪ Off-Peak Period – local long-term negligible impact
Various Visitor Facilities on River Right below Hinton WV 20 (I-64 to Hinton)	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with minimal shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of the New River Parkway (most non-truck traffic on WV 20 will be diverted to New River Parkway) (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term negligible impact ▪ Off-Peak Period – local long-term negligible impact
Sandstone Falls Visitor Center WV 7 (from I-64)	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with shoulders) ▪ 8% maximum gradient ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term negligible impact ▪ Off-Peak Period – local long-term negligible impact
Middle of the Park			
Grandview WV 9 (primarily from I-64)	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with shoulders) ▪ 8% maximum gradient ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
McCreery, Lower Glade Creek Area, Terry Beach, Army Camp WV 41 (primarily from the west)	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with minimal shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies (pedestrian safety deficiencies exist in vicinity of McCreery river access) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term negligible impact ▪ Off-Peak Period – local long-term negligible impact

TABLE 4.9 Alternative 1 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
Lower Glade Creek Area Glade Creek Road (Park Road) (state scenic backway)	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> very poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
Thayer WV 25 (access primarily from the north, beginning at Stone Cliff New River Bridge)	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> very poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term negligible impact Off-Peak Period – local long-term negligible impact
North End of the Park			
Thurmond, Dun Glen, and Stone Cliff WV 25 (from Glen Jean)	<ul style="list-style-type: none"> paved two-lane road roadway lane width not adequate for safe two-way travel due to nine one-lane bridges (minimal to no shoulders) tight curves short stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies for small vehicles road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
Thurmond Town Site various state roads	<ul style="list-style-type: none"> one-lane Thurmond Bridge needs replacement (due to structural, capacity and safety issues) numerous one-lane paved roads constrained two-way travel (minimal to no shoulders) steep gradients tight turns short stopping distances 	<ul style="list-style-type: none"> very poor capacity numerous roadway capacity and safety deficiencies future Thurmond Bridge replacement would address bridge deficiencies and likely include visitor parking (as mitigation) near the Thurmond Depot Visitor Center 	<ul style="list-style-type: none"> Peak Period – local long-term negligible impact Off-Peak Period – local long-term negligible impact
Cunard Cunard Access Road (park road)	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (some pull-offs; minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
Nuttallburg Visitor Use Area Keeney Creek Road (WV 85/2)	<ul style="list-style-type: none"> one-lane paved road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of new trailheads at the Nuttallburg Visitor Use Area (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
Canyon Rim Visitor Center and Burnwood Complex US 19	<ul style="list-style-type: none"> four-lane divided highway (with shoulders) safe maximum gradients safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies in vicinity 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
Fayette Station Fayette Station Road (WV 82)	<ul style="list-style-type: none"> paved two-lane road roadway lane width not adequate for safe two-way travel (some pull-offs; minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> poor existing, especially on peak visitation days access constrained due to road geometry for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact

At Thurmond visitors would continue to be encouraged to park in the lot at Southside Junction and walk to Thurmond via the Thurmond Bridge. Additional parking would likely be developed in the future in conjunction with the planned WVDOH project to replace the Thurmond Bridge.

Partnership and Community Collaboration Actions. The NPS would continue to work with WVDOH on several projects (see Table 4.9) and with the city of Hinton to secure safe and legal access to the New River waterfront within the city. The NPS would also continue to work with the CSX Corporation and other property owners to acquire wherever possible legal access to popular visitor use sites. Priorities would be to secure legal crossings of CSX rights-of-way where visitors frequently illegally cross tracks at Hinton, Southside Junction, Piney Creek, Dowdy Creek, Nuttallburg, Keeney Creek, Kaymoor, and Fayette Station.

Assuming these collaborative efforts would be effective, the impact on park access would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on park access are identified in Section 4.2.4 (see Table 4.4). Growth and development in the three counties would generate additional traffic on roads providing access to the park, resulting in long-term minor to moderate adverse impacts on park access. Planned transportation system improvements would provide additional capacity to efficiently and safely accommodate much of the traffic generated by new development, resulting in long-term minor to moderate beneficial impacts on park access. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term minor to moderate beneficial impact and a cumulative long-term minor to moderate adverse impact on park access. Alternative 1 would contribute negligibly to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on park access. Alternative 1 would contribute negligibly to the total cumulative long-term minor to moderate beneficial impacts and to the cumulative long-term minor to moderate adverse impacts on park access.

4.3.17 Park Operations (Alternative 1)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. In Alternative 1 the level of natural resource management activities would generally be maintained, including actions to protect endangered species, monitor water quality, protect geology and soil resources, and maintain other biological resources. Currently, park staffing is

Table 4.10

New River Gorge National River
Alternative 1 – Access Changes Needed to Achieve Desired Conditions in Visitor Use Areas

Actions

- **Internal Park Road System**
 - Turkey Spur Road Improvements
- **State Road System** (NPS and WVDOH collaboration to design and implement)
 - New River Parkway
 - Thurmond Bridge Replacement
 - Fayette Station Road Improvements (WV 82)
 - wayfinding signage along state roads
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Stone Cliff
- **Parking**
 - at Thurmond (parking to be added by WVDOH in conjunction with Thurmond Bridge Replacement)
- **New Trails (with trailheads)**
 - new trails
 - ✓ Nuttallburg Visitor Use Area trails
 - ✓ Bucklick Branch Equestrian Loop Trail
 - ✓ Laing Loop Nature Trail (no new trailhead)
 - ✓ climbing access trails (Endless Wall, Sunshine Buttress, Bubba City, and Junkyard areas)

not adequate to meet minimum needs for natural resource management. The park would continue its program to manage existing scenic views and resources, without providing for any additions or opening of newly acquired sites for scenic purposes. NPS would continue to have difficulty adequately protecting natural and scenic resources due to limitations in the numbers of park staff. The impact on park operations would local long-term moderate and adverse.

Cultural Resource Management Actions. As recommended in the regional *Collections Management Plan* (NPS 2004a) some less frequently used items in the park's collection would be transferred to a new regional storage facility. NPS would also build a research room that meets NPS standards at the new Burnwood Operations Facility for storage of the core unexhibited collection. This would improve management of the collections, resulting in a local long-term major beneficial impact on park operations.

In Alternative 1 NPS would continue to maintain the exteriors of structures (about 100 historic buildings and several thousand coke ovens, industrial ruins and foundations) that are listed or eligible for listing on the National Register of Historic Places. Currently these structures are maintained using line item or annual funds; part of the park's staffing deficit is in permanent and seasonal staff needed to maintain these structures. In addition, the park does not have uses for many of the buildings. In Alternative 1 no partnerships with the private sector for use and maintenance of these structures would be sought. NPS would continue to house its collections and archives in the Glen Jean Bank, a structure within the 25-year flood plain, placing these items at risk. NPS would continue managing its history, ethnography, and collections programs as collateral duties, which means that little improvement in these areas can be expected. Overall, park staffing would continue to be inadequate to meet minimum needs for cultural resource management. NPS would continue to have difficulty adequately protecting cultural resources due to limitations in the numbers of park staff. Overall the impact on park operations would be local long-term major and adverse.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 1 the existing level of programming, activities, enforcement and facilities would be maintained and used, with limited construction of new facilities and addition of a few new programs, especially related to children, as funds allow. Several significant facilities are included in Alternative 1, such as completion of the New River Parkway within the park, new operational and educational facilities in the northern part of the park, improved parking and access at Turkey Spur in Grandview, and visitor use facilities at Nuttallburg. The park would not provide additional hiking, biking or equestrian trails, additional river access or other facilities requested by the public as a part of the scoping for this plan. Overall new facilities would support efficient park management, resulting in a local long-term major beneficial impact on park operations.

Park Operations Actions. The park is currently functioning under a staffing deficit, and would require an additional 46 full time equivalents to fulfill enforcement, resource management, interpretation, maintenance and administrative needs. These positions are included in the park's approved organizational chart, but cannot currently be filled at existing funding levels. (The park is currently undergoing a Core Operations Plan; it is hoped that by finding efficiencies in operations this deficit in needed park staff can be reduced.) Park staffing would continue to decline as employment costs rise, while the park budget stays flat or even declines. It would become increasingly difficult to meet the park mission. There would be no new sources of funds, such as from friends groups, donations, or volunteers beyond what currently exists. Overall, the impact of these actions on park operations would be local long-term moderate and adverse.

Land Protection Actions. NPS continues to acquire land within the authorized park boundary usually without funding to provide for adequate natural and cultural resource management and law enforcement. Without adequate park zoning, park operations would continue to be hampered because there is no clear direction for the management of land currently owned and recently acquired. In addition, the current boundary is insufficient and does not provide for adequate parking for popular climbing, hunting, and camping areas within the park; this creates difficulties for neighbors who are discommoded by park user parking and concerns for law enforcement staff. The impact of continued land protection actions on park operations would be local long-term moderate and adverse.

Partnership and Community Collaboration Actions. The current level of partnerships and cooperation with local governments and private organizations would continue. However, there is an ever-increasing demand for park staff to address a variety of partnership and community relations issues which are difficult to achieve with existing staffing levels. Currently, opportunities to enhance park funding through partnerships, grants, and other sources are limited by a lack of staff to pursue them. Together, these factors and the others discussed above create a situation in which NPS is not relevant to its closest neighbors. The impacts of continuing with current partnership actions on park operations would be local long-term moderate and adverse.

■ Cumulative Impacts

Other past, present and reasonably foreseeable actions that have had or would have impacts on park operations and facilities include the completion of the New River Parkway, continued minimum maintenance of state roads to and within the park, other transportation improvements, and continued private ownership of lands within the park, particularly in communities. The building of the New River Parkway would mean that law enforcement patrol and maintenance of the River Road area would be greatly improved; other transportation improvements might make remote areas of the park more accessible. The minimum maintenance of state roads such as

McCreery Road would continue to complicate park management efforts. Private ownership of land within the park boundaries, particularly in communities, also creates law enforcement issues and conflicts between private owners and visitors. Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact to park operations. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 1 would result in local long-term major beneficial impacts and local long-term moderate to major adverse impacts on park operations. Alternative 1 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the cumulative long-term minor adverse impact on park operations.

4.3.18 Unavoidable Adverse Impacts (Alternative 1)

Unavoidable adverse impacts are major adverse impacts that cannot be fully mitigated or avoided. Alternative 1 would result in local long-term major adverse impacts on park operations.

4.3.19 Irreversible and Irretrievable Commitments of Resources (Alternative 1)

An irreversible commitment of resources is one that cannot be reclaimed, restored, or otherwise returned to its condition prior to disturbance. An irretrievable commitment of resources is a loss of something that once gone, cannot be replaced.

Proposed management actions would generally contribute to resource protection and preservation and would be expected to minimize the occurrence of irreversible or irretrievable impacts. Nevertheless some irretrievable impacts would occur:

- construction projects and park operations would use limited amounts of nonrenewable resources, including materials and energy; once these resources are committed they would be irretrievable
- negligible amounts of soil would be permanently lost as a result of soil erosion and sedimentation from areas (approximately 6 acres) disturbed by cultural resource management actions, development of new visitor use facilities, and restoration actions
- potential exists at cultural resource sites undergoing rehabilitation for an irretrievable commitment of resources as a result of any loss of undiscovered below ground resources

Surveys, avoidance through design, documentation, and other mitigation would occur before any restoration or rehabilitation begins, thereby minimizing irretrievable impacts to cultural resources.

4.3.20 Relationship between Short-Term Uses of the Environment and Long-Term Productivity (Alternative 1)

In Alternative 1 most of the park would continue to be protected in a largely natural state. The NPS would continue to manage the park to maintain ecological processes and native and biological communities, and to provide for appropriate recreational activities consistent with the preservation of natural and cultural resources.

Previously disturbed areas would be restored to return these areas to productivity, as funding permits. Any actions the NPS takes in the park would be taken with consideration to ensure that uses do not adversely affect the productivity of biotic communities.

4.4 Environmental Consequences of Alternative 2

4.4.1 Physiography, Geology, and Soils (Alternative 2)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to protect the park's physiography, geology, and soil resources (as in Alternative 1) by:

- generally allowing physiography, geology, and soil resources that are disturbed by natural phenomena – such as landslides – to recover naturally
- restoring/reclaiming physiography, geology, and soil resources altered by human activity – such as mining (in cooperation with WV DEP)
- protecting park resources from potential impacts associated with natural gas/oil production or mining activities that are permitted by valid oil, gas, and mineral rights (and that may be conducted within the park in compliance with appropriate state permits and Section 9b Regulations pursuant to the Surface Mining Control and Reclamation Act) (in cooperation with WVDEP)
- reducing soil erosion and sedimentation by restoring disturbed areas (such as areas disturbed by ATVs), as funding permits

In addition, in Alternative 2 management actions affecting physiography, geology, and soils would focus on the following:

- managing approximately two-thirds (68.5%) of the park as backcountry and one-tenth (7.7%) of the park as river corridor, with implementation of related management prescriptions that would maintain natural geologic processes and features to persist largely unaltered by further human-induced impacts
- managing the remainder of the park (23.8%) as frontcountry, historic resource, and park development zones, with implementation of related

management prescriptions that would allow natural geologic processes and features to persist with minimal human-induced impacts

- reducing threats to geologic and soil resources by identifying areas prone to landslides and locating visitor and park operations facilities outside of areas where construction would increase the potential for mass movement

Impacts of natural resource management actions on physiography, geology, and soil resources would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact soil resources. Conceptual planning suggests that management actions would likely disturb approximately 125 acres in the vicinity of cultural resource sites¹. Most disturbances would be associated with restoration of cultural landscapes involving restoring or rehabilitating farm fields at early settlement sites, as well as with stabilization and vegetation removal at discovery sites (30 to 35 sites) (see Table 4.11). During the treatment period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Following the treatment period sites would be planted with native species or appropriately revegetated where cultural landscapes are restored. Impacts on soil resources would be local short-term minor to moderate and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact physiography, geology, and soil resources. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 60 acres.² Approximately 65 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Impacts on soil resources would be local short-term minor to moderate and adverse.

Following construction approximately 25 acres would be replanted with native species and 30 acres would be stabilized through placement of crushed stone or other surface treatment for roads, parking facilities, and some trails. Minimal areas of existing undisturbed soils would be permanently developed, primarily including the sites of small visitor facilities such as vault toilets and changing stations. Impacts on soil resources would be local long-term minor and adverse.

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 5 acres within the tread of reestablished or new trails), leading to increased potential for soil erosion. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on soils would be local long-term minor and adverse.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 2, an additional 190 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Impacts on soils would be negligible to local long-term minor and adverse.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant physiographic or geologic features. The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with significant physiographic or geologic features that are fundamental or otherwise important to the park. Impacts of land protection actions on physiographic and geologic resources would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. NPS would continue to work collaboratively with WV DEP to facilitate reclamation of areas disturbed by mining and to protect park resources from the potential impacts of mineral resource extraction on lands adjoining or near the park (as in Alternative 1). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

NPS would provide ongoing technical assistance to communities within the park and others engaged in resource management activities beyond the park boundary that have the potential to positively impact the park's geologic and soil resources (common to Alternatives 2 to 5). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on physiography, geology, and soils are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the

same as those described for Alternative 1 (see Section 4.3.1 Physiography, Geology, and Soils (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on physiography, geology, and soil resources. Alternative 2 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term moderate to major beneficial impacts, local short-term minor to moderate adverse impacts, and local long-term minor adverse impacts on physiography, geology, and soil resources. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on physiography, geology, and soil resources. There would be no impairment of park resources or values related to physiography, geology, and soil resources.

4.4.2 Floodplains¹ (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would seek to protect, preserve and restore the natural resources and functions of floodplains (common to Alternatives 2 to 5) by:

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- removing debris from floodplains following flooding events
- preventing placement of additional obstructions in the New River and, wherever possible, removing structures in the New River that are no longer in use – such as abandoned bridge piers

¹ *Floodplains with a recurrence interval of 100 years*

Impacts on floodplains would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In the future visitor use facilities within the floodplain would be limited to facilities that are dependent upon locations in proximity to water and for which non-floodplain sites would not be a practicable alternative. Existing facilities to remain within the floodplain would generally include river accesses, picnic facilities, trails, and river rest stops. Improvements to existing facilities and new facilities in the floodplain would include addition expansion of the Sandstone Falls boardwalk, and addition of disabled boater access at some river accesses.

Construction of improvements in the floodplain at existing and new visitor use sites would generally occur in areas that have experienced prior disturbance and would involve minimal placement of impervious surfaces within the floodplain. Mitigation measures would minimize potential for flooding or for other adverse impacts on floodplain values associated with these improvements.

Collectively these new visitor use facilities would minimally affect natural floodplain values and minimally increase the use of the floodplain, resulting in a local long-term minor and adverse impact on floodplains.

Existing campgrounds in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen would be eliminated and natural floodplain vegetation would be restored (common to Alternatives 2 to 5). Impacts on floodplains would be local long-term minor and beneficial.

Park Operations Actions. Future studies would include development of floodplain maps for lower reaches of the New River main stem and tributaries, studies of tributary stream flood characteristics, and determination of natural flow regimes for the New River (common to Alternatives 2 to 5). Findings would provide information needed to protect and/or restore floodplain values, reduce use of the floodplain, and eliminate flood risks to human health and property. Impacts on floodplains would be local long-term minor and beneficial.

Impacts of maintaining the existing park headquarters and operations facilities at Glen Jean within the 100-year floodplain would continue to be local long-term minor and adverse (common to Alternatives 1 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties encompassing floodplains with sensitive riparian areas and that provide access to the river, and/or that include sites heavily used for river rest stops or backcountry camping. The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with floodplain resources that are fundamental or otherwise important to the park.

Impacts of land protection actions on floodplains would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. The NPS would continue to seek to prevent actions by others that would place new structures within the New River channel that would obstruct flood flows (as in Alternative 1). In the future, the NPS would also collaborate with transportation planning, permitting, and resource management agencies to reduce existing obstructions to flood flows within the river channel that no longer provide functional benefits to others (common to Alternatives 2 to 5). If coordination leads to a reduction in the number of piers in the river, the impacts on floodplains would be local long-term minor and beneficial.

NPS would provide technical assistance to local governments and others with maintenance of natural rainfall-runoff dynamics in watersheds draining into the park. This would focus on use of best management practices to control stormwater runoff from developed and undeveloped land (common to Alternatives 2 to 5). If technical assistance enables communities to better maintain natural runoff rates, the impacts on floodplains would be local long-term moderate and beneficial.

Coordination with the US Army Corps of Engineers would evaluate the feasibility and desirability of permitting periodic maximum floods to help maintain natural floodplain vegetation and aquatic habitat (common to Alternatives 2 to 5). If periodic maximum floods could be restored, the impacts on aquatic habitat would likely be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on floodplains are identified in Section 4.2.4 (see Table 4.4). The impacts of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.2 Floodplains (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on floodplains. Alternative 2 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on floodplains. Alternative 2 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on floodplains. There would be no impairment of park resources or values related to floodplains.

4.4.3 Water Quality (Alternative 2)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain water quality in the New River and its tributaries in its natural condition free of pollutants generated by human activity (as in Alternative 1) by:

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions

In addition, in Alternative 2 management actions affecting water quality would focus on the following:

- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact the river (common to Alternatives 2 to 5)
- managing approximately two-thirds (68.5%) of the park as backcountry, with implementation of related management prescriptions that would generally eliminate further forest fragmentation and the potential for human-induced impacts to water quality
- managing approximately one-quarter (22.3%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce further forest fragmentation and the potential for human-induced impacts to water quality

Collectively these actions would protect natural vegetation and reduce soil disturbance and subsequent erosion and sedimentation potentially associated with forest disturbances and visitor use. Impacts on water quality would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact water quality. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 125 acres of previously disturbed soils (see Table 4.11).¹ During the treatment period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas in accordance with requirements of the

¹ In addition to the approximate three acres disturbed for cultural resource treatments in Alternative 1

WV NPDES Stormwater Program. Following the treatment period sites would be planted with native species or appropriately revegetated where cultural landscapes are restored. When restoring cultural landscapes at early settlement sites adjoining the New River, a 50- to 100-foot buffer of native riparian habitat would be maintained. Impacts on water quality would be local short-term minor to moderate and adverse.

Permanent removal of impervious surfaces associated with modern structures at two early settlement farms would enhance on-site infiltration of stormwater and reduce site runoff (as in Alternative 1). Impacts on water quality would be negligible.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact water quality. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 60 acres.¹ Approximately 65 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Impacts on water quality would be local short-term minor to moderate and adverse.

Following construction approximately 25 acres would be replanted with native species and 30 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Over the long-term unpaved roads and parking areas would be subject to compaction and would have the potential to generate increased runoff and to convey pollutants from parking areas and roads to streams and the river. Permanent stormwater management measures would be used in accordance with requirements of the WV NPDES Stormwater Program to reduce pollutants in stormwater discharged from developed sites. Impacts on water quality would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 5 acres within the tread of reestablished trails), leading to increased potential for erosion and subsequent sedimentation in streams and the river. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on water quality would be local long-term minor and adverse.

¹ In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

Park Operations Actions. Expanded water quality monitoring would provide information needed to better address management concerns (common to Alternatives 2 to 5). Sampling would occur in the New River and all of its tributaries in the park. As funding permits, the NPS would also increase the frequency and numbers of samples taken at each monitoring site – particularly for fecal coliform - as well as increase monitoring during high flows. These data would document existing conditions, help identify probable sources of contamination, and assist with determining appropriate management actions. Impacts on water quality would be local long-term major and beneficial.

Adequate sewage treatment and disposal would be provided for all public use and administrative facilities:

- In all management zones, safe and clean restroom facilities would be available where visitor use would be concentrated, including visitor contact facilities, educational facilities, major and minor river accesses, developed day-use areas, popular river rest stops, many trailheads, developed and primitive campgrounds, and designated backcountry campsite groups. Facilities would include a combination of conventional restrooms, comfort stations, and vault toilets, with some use of portable toilets (common to Alternatives 2 to 5). Facilities in remote areas would likely be prefabricated waterless units with solar-powered waste evaporation and reduction capabilities; the stable end product would be dried solids that would be removed annually, pretreated, and disposed in a municipal wastewater treatment facility. Impacts on water quality would be local long-term major and beneficial impact.
- At Thurmond, wastewater collection and treatment would be provided for existing visitor facilities and currently occupied houses (as in Alternative 1). Impacts on water quality would be local long-term minor and beneficial.
- Where practicable, the NPS would make excess capacity in park wastewater treatment facilities available for treatment of wastewater flows from private lands in adjoining neighborhoods (common to Alternatives 2 to 5). This would likely reduce contamination of surface waters from malfunctioning on-site wastewater disposal systems in areas adjoining the park. Impacts on water quality would be local long-term minor and beneficial.

The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 2, an additional 190 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Impacts on water quality would be local long-term minor and adverse.

Land Protection Actions. The park’s new program of working with owners of private land within the park boundary would seek to provide public education and technical assistance regarding the importance of maintaining on-site wastewater disposal systems (OSDSs) (common to Alternatives 2 to 5). It would target landowners along the New River and its tributaries where fecal coliform counts are high and the suspected source is malfunctioning OSDSs. Impacts on water quality would be local long-term moderate and beneficial.

In addition, future collaboration with owners of private lands along the river that are heavily used as river rest stops – particularly where they are owned by commercial outfitters – would seek to provide and maintain adequate sanitation facilities for visitors (common to Alternatives 2 to 5). Where this collaboration is successful, impacts on water quality would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. Expanded technical assistance to agencies, organizations, and communities involved in water quality planning and management in the park vicinity would generally assist the regional effort to improve water quality in the New River and its tributaries (common to Alternatives 2 to 5). Impacts on water quality would be local long-term moderate and beneficial.

NPS would provide technical assistance to local governments and others with maintenance of natural rainfall-runoff dynamics in watersheds draining into the park. This would focus on use of best management practices to control stormwater runoff from developed and undeveloped land (common to Alternatives 2 to 5). If technical assistance enables communities to better maintain natural runoff rates, the impacts on floodplains would be local long-term moderate and beneficial.

NPS would seek to protect the upper reaches of high quality streams that extend beyond the boundary of the park (as in Alternative 1) (see Section 4.3.3 Water Quality (Alternative 1) above). Efforts would be expanded to focus on working proactively with landowners – and their professional advisors – to provide information about the importance of high quality streams on their property, the public interest in protecting those resources, conservation options for landowners, and sustainable design for new development on properties with high quality streams (common to Alternatives 2 to 5). Impacts on water quality would be local long-term minor to moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on water quality are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.3 Water Quality (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a

cumulative long-term moderate adverse impact on water quality. Alternative 2 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts, local short-term minor to moderate adverse impacts, and local long-term minor adverse impacts on water quality. Alternative 2 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on water quality. There would be no impairment of park resources or values related to water quality.

4.4.4 Vegetation (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native plants and natural landscapes (as in Alternative 1) (exclusive of wildland fire management) by:

- generally allowing natural landscapes that are disturbed by natural phenomena – such as landslides, floods, and fire – to recover naturally
- restoring natural landscapes altered by human activity, such as logging, mining, agriculture, transportation, utilities, and exclusion of natural fire
- preserving and restoring native plant populations and the communities in which they occur (particularly rare or significant plant communities)
- aggressively treating invasive exotic plant and insect pest species

In addition, in Alternative 2 management actions affecting vegetation would focus on the following:

- managing approximately two-thirds (68.5%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing approximately one-quarter (22.3%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact riparian communities, particularly cobble and flatrock communities (common to Alternatives 2 to 5)

- removing non-water-dependent uses from the floodplain and restoring native floodplain vegetation (common to Alternatives 2 to 5)
- managing wildland fire to diminish the risk and consequences of severe wildland fires and, to the extent possible, to restore and protect the natural biological diversity and natural disturbance regime of the park (common to Alternatives 2 to 5)
- using planned ignitions to promote ecosystem health and native vegetation diversity in fire-dependent forest communities, such as rimrock pine communities and xeric oak-hickory forests (common to Alternatives 2 to 5)

Impacts of natural resource management actions on vegetation would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact native plants and plant communities. Conceptual planning suggests that cultural resource management actions would affect approximately 125 acres of previously disturbed land in the vicinity of cultural resource sites¹.

Rehabilitation of buildings and restoration of cultural landscapes would require disturbance to approximately 115 acres of previously disturbed land. Affected vegetation would generally include a mix of ornamental trees and shrubs, non-native plants, old field successional species, and forested land characterized by mixed-age stands of tulip poplar, maple, oak, and ash. Following the treatment period sites would be appropriately revegetated where cultural landscapes are restored. Where restored cultural landscapes adjoin the New River, a 50- to 100-foot buffer of native riparian habitat would be maintained. Impacts on vegetation would be local long-term minor to moderate and adverse.

Disturbance would also occur in conjunction with stabilization and protection at approximately 10 discovery sites, along with development of visitor use improvements and installation of interpretative media. The typical discovery site would encompass an area of ruins in the park's mixed mesophytic forest – approximately one acre in size or less – overgrown by a mix of variable-age trees, shrubs, and grasses, with many sites dominated by kudzu and other non-native plants. Treatment would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that fragmentation would be minimized or would not occur. Cleared areas would be revegetated with native grasses. Impacts on vegetation would be local long-term minor and adverse.

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact vegetation. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 60 acres (see Table 4.13).¹ Approximately 65 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly where existing unmaintained trails are improved to provide official park trails. Following construction approximately 25 acres would be replanted with native species and 30 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 5 acres would be within the tread of reestablished or new trails. Impacts on vegetation would be local long-term minor to moderate and adverse.

Visitor use throughout the park would have the potential to impact native plants and plant communities – particularly sensitive, rare, or significant vegetation communities. Management actions would protect sensitive, rare, or significant vegetation communities from visitor use impacts, as needed, generally including (common to Alternatives 2 to 5):

- in riparian areas (especially cobble and flatrock communities) – eliminate fires and overnight camping in all riparian areas; designate day-use river reststops downstream of Cunard
- on river bars – eliminate fires on most bars and close to visitor use bars with sensitive resources that are impacted by camping and day-use
- in clifftop communities – provide designated routes to climbing areas and limit access seasonally to critical cliff natural areas
- in flatrock communities – control visitor access; extend or add boardwalks to protect areas where visitor use occurs, such as at Sandstone Falls

Impacts on vegetation would be local long-term moderate and beneficial.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with sensitive riparian areas and rare vegetation communities. The park’s new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with significant vegetation resources that are fundamental or otherwise important to the park. Impacts of land protection actions on vegetation resources would be local long-term moderate and beneficial.

¹ In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

Partnership and Community Collaboration Actions. A community-based approach to wildland fire issues would involve close collaboration and cooperation between the NPS, local volunteer fire departments, and the WV Division of Forestry that have a vested interest in wildland fire issues, particularly where wildland fires have the potential to damage communities or threaten the safety of private residents remaining in the park. If cooperation enables future use of prescribed fire as a management action to safely promote native vegetation diversity in fire-dependent communities, the impact on vegetation would be local long-term moderate and beneficial.

NPS would seek to protect significant unfragmented forest blocks on privately-owned lands in and around the gorge that are outside but near the park boundary (as in Alternative 1) (see Section 4.3.4 Vegetation (Alternative 1) above). Efforts would be expanded to focus on working proactively with landowners – and their professional advisors – to provide information about the importance of forest resources on their property, the public interest in protecting those resources, conservation options for landowners, and sustainable design for new development on properties with significant forest resources (common to Alternatives 2 to 5). Impacts on vegetation would be local long-term minor to major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.4 Vegetation (Alternative 1) above). Alternative 2 in conjunction with the impacts of other past, present, and reasonably foreseeable actions would result in a cumulative long-term moderate adverse impact on vegetation. Alternative 2 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term moderate to major beneficial impacts and local long-term minor to moderate adverse impacts on vegetation. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on vegetation. There would be no impairment of park resources or values related to vegetation.

4.4.5 Aquatic Wildlife (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain and restore natural stream ecosystems with

hydrologic features supporting a full range of natural aquatic organisms by (as in Alternative 1):

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- removing debris from floodplains following flooding events

In addition, in Alternative 2 management actions affecting aquatic habitats and dependent wildlife would focus on the following (common to Alternatives 2 to 5):

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- protecting upland wetlands and their processes
- eliminating introduction of non-native species to aquatic ecosystems
- eliminating actions to supplement or maintain selective non-native species in aquatic ecosystems (as appropriate, based on further study of non-native species impacts)
- allowing select introduced species that may alter some process and interactions (e.g. continue WV State black fly treatments)

Impacts on aquatic habitat and dependent wildlife would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would seek to avoid or minimize direct and indirect impacts on aquatic habitat and

dependent wildlife associated with improvements to visitor use facilities or addition of new visitor use facilities and new related visitor use.

Potential visitor use impacts on aquatic habitat and dependent wildlife would continue to occur throughout the park where visitors have uncontrolled access to the New River, tributary streams, and special aquatic habitat and dependent wildlife. Indirect impacts would include those resulting from trampling of riparian vegetation, subsequent soil exposure, soil erosion, and sedimentation. Direct impacts would occur where visitors cross streams while hiking, walk in streams or the river while fishing, or disturb the river bottom while swimming, launching boats, or stopping at river rest stops. Future additional impacts associated with development of new park trails (approximately 25 miles) would be mitigated by trail planning and design that minimizes the number of tributary stream crossings. Where crossings could not be avoided, footbridges would be used to avoid hiker impacts, as funding permits. In the future sensitive aquatic habitat and dependent wildlife at and in the vicinity of popular backcountry river rest stops would be closed to day-use. At river launches visitor access to the river would be restricted to the minimum area possible and riparian areas adjoining launch sites would be closed. Educational efforts would help deter visitor impacts through signage, informational materials, and interpretive programs that explain ecological values and sensitivity to disturbance of riparian areas, aquatic habitats, and dependent wildlife. Impacts on aquatic habitat and dependent wildlife would be local long-term minor and adverse.

Park Operations Actions. Future studies would expand knowledge and understanding of the range of aquatic habitat and dependent wildlife present in the park (common to Alternatives 2 to 5). These studies would identify, locate, and describe special aquatic habitat and dependent wildlife, and provide the basis for development of best management practices and individual protection plans. They would also include an assessment of the impact of non-native trout stocking on native stream ecosystems. Impacts on aquatic habitat and dependent wildlife would be local long-term major and beneficial.

Adequate sewage treatment and disposal at all public use and administrative facilities would reduce human-induced nutrient loading and associated impacts on aquatic habitat and dependent wildlife (see Section 4.4.3 Water Quality (Alternative 2) above) (common to Alternatives 2 to 5). Impacts on aquatic habitat and dependent wildlife would be local long-term major and beneficial.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant aquatic habitat and dependent wildlife (common to Alternatives 2 to 5). Impacts of land protection actions on aquatic habitat and dependent wildlife would be local long-term moderate and beneficial.

The park's new private land stewardship program would seek to enhance stewardship of lands with significant aquatic habitat and dependent wildlife that are fundamental or otherwise important to the park (common to Alternatives 2 to 5). It would emphasize collaboration with owners of private lands along the river that are heavily used as river rest stops – particularly where they are owned by commercial outfitters. Education would focus on describing the sensitivity of aquatic habitat and dependent wildlife to visitor use impacts. Technical assistance would help identify where sensitive aquatic habitat and dependent wildlife occur and describe best management practices to avoid, minimize, and/or mitigate visitor use impacts on those habitats. Where these actions enable landowners to enhance stewardship of riparian areas and river rest stops, impacts on aquatic habitat and dependent wildlife would be local long-term minor and beneficial.

Partnership and Community Collaboration Actions. Future collaboration with the CSX Corporation, utility companies, and WVDOH would address use of pesticides and herbicides to maintain rights-of-way within the park where such use could be conveyed in stormwater runoff to surface waters and damage aquatic habitat and dependent wildlife (common to Alternatives 2 to 5). Collaboration would address appropriate treatments, where treatment should be administered, when it should be applied, and what strategies should be integrated for immediate and long-term results. If collaboration supports more effective integrated pest management, the impacts on aquatic habitat and dependent wildlife would be local long-term minor and beneficial.

NPS would provide technical assistance to local governments and others with maintenance of natural rainfall-runoff dynamics in watersheds draining into the park. Assistance would focus on use of best management practices to control stormwater runoff from developed and undeveloped land (common to Alternatives 2 to 5). If technical assistance enables communities to better maintain natural runoff rates the impacts on aquatic habitat and dependent wildlife would be local long-term moderate and beneficial.

Coordination with the US Army Corps of Engineers would evaluate the feasibility and desirability of permitting periodic maximum floods to help maintain natural floodplain vegetation and aquatic habitat and dependent wildlife (common to Alternatives 2 to 5). If periodic maximum floods could be restored the impacts on aquatic habitat and dependent wildlife would likely be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on aquatic habitat and dependent wildlife are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.5 Aquatic Wildlife

(Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. Alternative 2 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on aquatic habitat and dependent wildlife. Alternative 2 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. There would be no impairment of park resources or values related to aquatic habitats and dependent wildlife.

4.4.6 Terrestrial Wildlife (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park’s native animals (as in Alternative 1) by:

- perpetuating native animal life as part of the park’s natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible

In addition, in Alternative 2 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing approximately two-thirds (68.5%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and better support a habitat mosaic supporting a diversity and abundance of native wildlife species
- managing approximately one-quarter (22.3%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and better support a habitat mosaic supporting a diversity and abundance of native wildlife species
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on terrestrial habitat and dependent species would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact terrestrial habitat and dependent species. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 125 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.11). Field survey prior to treatment actions would determine terrestrial wildlife species present in the vicinity of each site and appropriate protection measures needed. Treatment would generally be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season.

Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at seven sites and affect approximately 20 acres. Pre-treatment and post-treatment habitat conditions would be quite similar, characterized by a mix of native grasses and ornamental plantings, although non-native plants would be removed where they are currently present at some sites. Affected wildlife would generally include habitat generalists that live in close association with human habitation. During the treatment period wildlife would be expected to migrate into adjacent habitat areas; following the treatment period they would likely migrate back to restored sites. Impacts on terrestrial habitat and dependent species would likely be local short-term minor and adverse.

At six sites where the larger cultural landscape of early settlement farms would be restored or the historic extent of fields restored or rehabilitated, a total of 95 acres of successional old field vegetation and some areas of mixed-age forest would be cleared or otherwise altered. During the treatment period wildlife would be expected to migrate into adjacent habitat areas. Impacts would be negligible for species that live in close association with human habitation and agriculture. Impacts would be local long-term minor and adverse for species previously inhabiting successional old field or forest habitat that could not tolerate living in close association with human habitation and agriculture. Impacts for open grassland, pasture, meadows, and brush lands species – particularly some birds – would be local long-term minor and beneficial.

At approximately 10 discovery sites potential habitat impacts would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources. Most sites would encompass approximately one acre or less. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not

¹ *In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1*

occur. Wildlife in the vicinity of each site would be expected to migrate to adjacent habitat areas. Impacts on terrestrial habitat and dependent species would likely be local long-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Development of new facilities – and visitor use of those facilities – would have the potential to disturb or displace wildlife or cause areas to be avoided by wildlife. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 60 acres, dispersed among 15 sites and 20 miles of trails (primarily existing unmaintained trails that would be improved).¹ Approximately 65 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. Field survey prior to treatment actions would determine terrestrial wildlife species present in the vicinity of each visitor use site and the appropriate protection measures needed. Future site planning would seek to locate new facilities to avoid or mitigate impacts to wildlife, particularly when converting existing unmaintained trails to improved official park trails and developing new trail segments where they are needed. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not occur. Construction would generally be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season. Following construction approximately 25 acres would be replanted with native plant species and 30 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 5 acres would be within the tread of reestablished or new trails. Wildlife would be expected to avoid sites during construction or would only travel through sites construction activity has abated, resulting in a local short-term minor adverse impact on wildlife and dependent species. Following construction, the permanent loss of habitat combined with disturbance, injury, or death associated with long-term visitor use and management of visitor use sites would result in a local long-term minor to moderate adverse impact on terrestrial habitat and dependent species.

Continuation of hunting in the park in accordance with all applicable regulations and policies adopted by the responsible management agencies would continue to have negligible impacts on terrestrial habitat and dependent species (as in Alternatives 1 and 3) (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above).

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 2, an

¹ In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

additional 190 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Maintenance of open fields and forest edge along their perimeter would enhance wildlife habitat diversity locally in the park. Impacts on terrestrial habitat and dependent species would be local long-term minor and beneficial.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant terrestrial habitat and dependent species (common to Alternatives 2 to 5). Impacts of land protection actions on terrestrial habitat and dependent species would likely be local long-term moderate and beneficial.

The park's new private land stewardship program would seek to enhance stewardship of lands with terrestrial habitat and dependent species that are fundamental or otherwise important to the park (common to Alternatives 2 to 5). It would emphasize collaboration with owners of private lands to monitor and manage wildlife populations and specific species of concern, including elimination of activities that adversely affect terrestrial habitat and dependent species. Technical assistance would help identify where sensitive terrestrial habitat and dependent species occur and describe best management practices to avoid, minimize, and/or mitigate impacts on those habitats. Where these actions enable landowners to enhance stewardship, impacts on terrestrial habitat and dependent species would be local long-term minor and beneficial.

Partnership and Community Collaboration Actions. NPS would continue to cooperate with the WV DNR regarding regulation of hunting. The focus would shift to management of hunting on private land within the park boundary and its impacts on game species that utilize habitat on both private and NPS-owned land (where hunting would no longer be permitted). Impacts on terrestrial habitat and dependent species would be negligible.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on terrestrial habitat and dependent species are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on terrestrial habitat and dependent species. Alternative 2 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts, local short-term minor adverse, and local long-term minor to moderate adverse impacts on terrestrial wildlife. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on terrestrial wildlife. There would be no impairment of park resources or values related to terrestrial wildlife.

4.4.7 Rare, Threatened, and Endangered Species (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to generally increase the populations of rare, threatened, or endangered species in the park and to secure sufficient, suitable habitat to “recover” species designated as threatened or endangered (as in Alternative 1). Actions would generally focus on the following:

- managing habitat of threatened and endangered species to maintain their value for species recovery
- managing habitat of state-listed species to maintain their value for species maintenance to the greatest extent possible
- managing other native species of special management concern to the park to maintain their natural abundance and distribution
- controlling detrimental non-native species impacts on rare, threatened, or endangered species

In addition, in Alternative 2 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing approximately two-thirds (68.5%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and better support a habitat mosaic supporting a diversity and abundance of native wildlife species, including rare species and communities
- managing approximately one-quarter (22.3%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and better support a habitat mosaic supporting a diversity and abundance of native wildlife species, including rare species and communities
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)

- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on rare, threatened, and endangered species would be local long-term major and beneficial.

Cultural Resource Management Actions. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 125 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.11). Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at seven sites and affect approximately 20 acres. At six sites where the larger cultural landscape of early settlement farms would be restored or the historic extent of fields reestablished, a total of 95 acres of successional old field vegetation and some areas of mixed-age forest would be cleared or otherwise altered. At approximately 10 discovery sites potential habitat impacts would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining structures on sites typically one acre in size or less.

One site is known to have occurrences of the federally-designated species of concern Allegheny woodrat (*Neotoma magister*). Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Public Use, Enjoyment, and Experience Management Actions. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 60 acres, dispersed among 15 sites and 20 miles of trails (primarily existing unmaintained trails that would be improved).² Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Visitor use facilities at the Sandstone Falls Island day-use area would be improved, likely leading to increased visitation to Sandstone Falls. To address existing visitor use impacts to rare plants of the Appalachian flatrock community found in the Sandstone Falls vicinity – and to prevent expansion of the impacted area – the existing boardwalk trail would be expanded. The area impacted during construction would be limited to the minimum possible size. Following construction impacts on rare species would be local long-term minor and adverse.

Impacts of the ongoing program to stabilize and gate mine portals where rare, threatened, and endangered species are present would continue. Gates in abandoned mine openings throughout the park would continue to be local long-term moderate and beneficial (common to Alternatives 1 to 5) (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above).

To protect designated species visitor use in certain areas of the park would be limited to day-use only, including Rush Run, Sewell, Beauty Mountain, Endless Wall, Sunshine Buttress, and Ames (common to Alternatives 2 to 5).¹ Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Additional protections in climbing areas – including Endless Wall, Sunshine Buttress, Alabama, and Ames – would include provision of designated trails to climbing routes that would reduce the current proliferation of social trails that potentially disturb habitat of designated species (common to Alternatives 2 to 5). Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Park Operations Actions. Future studies would include research to determine the occurrences of rare, threatened, and endangered species throughout the park, with emphasis on those occurring in cobble and flatrock communities, riparian habitat, abandoned mine portals, cliff communities, and rimrock communities. Critical habitats would be identified and plans implemented to monitor, restore, and maintain species as necessary. Designated threatened or endangered species

¹ Visitor use in the Nuttallburg Visitor Use Area would also be limited to day-use only pursuant to the Nuttallburg Visitor Use Area DCP/EA (NPS 2008c)

would receive priority for these actions. To the greatest extent possible, these actions would also be completed to manage state-listed species. Impacts on rare, threatened or endangered species would be local long-term major and beneficial.

Future landscaping at development sites throughout the park would be designed and managed to promote rare grassland bird species, where practicable (common to Alternatives 2 to 5). Impacts on rare, threatened, or endangered species would be local long-term minor and beneficial.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with rare, threatened, or endangered species habitat (common to Alternatives 2 to 5). Impacts of land protection actions on rare, threatened, or endangered species would be local long-term moderate and beneficial.

The park's new private land stewardship program would seek to enhance stewardship of lands with rare, threatened or endangered species habitat that is fundamental or otherwise important to the park (common to Alternatives 2 to 5). Education would focus on describing the sensitivity of designated species to habitat disruption and visitor use impacts. Technical assistance would help identify where designated species habitat occurs and describe best management practices to avoid, minimize, and/or mitigate disruptions to or visitor use impacts on those habitats. Where these actions enable landowners to enhance stewardship of lands with designated species habitat, impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. NPS would seek to protect rare, threatened, and endangered species and their habitat on privately-owned lands in and around the gorge that are outside but near the park boundary (as in Alternative 1) (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above). Efforts would be expanded to focus on working proactively with landowners – and their professional advisors – to provide information about the importance of habitat maintenance on their property, the public interest in protecting those habitats, conservation options for landowners, and sustainable design for new development on properties with designated species habitat (common to Alternatives 2 to 5). Impacts on rare, threatened, or endangered species would be local long-term minor to major and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on rare, threatened, and endangered species are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above). Alternative 2 in conjunction with

the impacts of these actions would result in a cumulative long-term moderate adverse impact on rare, threatened, and endangered species. Alternative 2 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on rare, threatened, and endangered species. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on rare, threatened, and endangered species. There would be no impairment of park resources or values related to rare, threatened, and endangered species.

4.4.8 Scenic Resources (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Resource management actions would seek to protect a range of views in all areas of the park, allowing visitors to experience the extent of the gorge, the river, the forest, and the rim by (as in Alternative 1):

- removing non-native plants at sites where they cause a major scenic or aesthetic intrusion
- reclaiming abandoned mine lands at sites throughout the park (in cooperation with the WV DEP)

In addition, in Alternative 2 management actions affecting scenic resources would focus on the following:

- managing approximately two-thirds (68.5%) of the park as backcountry with implementation of related management prescriptions that would protect unfragmented forest blocks and natural scenic qualities from human-induced impacts
- managing approximately one-quarter (22.3%) of the park as frontcountry with implementation of related management prescriptions that would protect natural scenic qualities by reducing human-induced disturbance
- maintaining a nearly continuous strip of natural riparian habitat along the New River, thereby also preserving its natural scenic qualities (common to Alternatives 2 to 5)
- removing non-native plants at cultural resource sites to be restored, rehabilitated, or stabilized (see below)

Impacts on scenic resources would be local long-term minor to major and beneficial.

Cultural Resource Management Actions. Restoration of cultural landscapes at six historic farms, removal of modern structures at three sites where potentially significant early settlement cultural landscapes exist (as in Alternative 1), and treatments at approximately 10 cultural resource sites (to be managed as discovery sites) would enhance scenic resources fundamental to the park (see Section 4.4.10 Cultural Landscapes (Alternative 2) above). Impacts on scenic resources would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities and expansion of existing facilities would alter the park setting in the vicinity of improvements:

- approximately 20 miles of new park trails would be developed, mostly by improving existing unmaintained trails to single-track trails approximately 24 inches in width, requiring minor alteration to the park setting
- approximately 19 small parking areas would be developed to provide trailheads for hikers, climbers, and horseback riders, mostly along existing roads on forest block perimeters, and on previously disturbed sites
- approximately 4 existing day-use facilities would be improved through minor additions or expansions, most of which would enhance the existing setting, although there could be some minimal impacts to vegetation at some sites
- approximately 5 parking areas at existing river accesses would be expanded, with minimal changes to the park setting
- one new parking area would be developed near U.S. Route 19 for satellite parking in support of a visitor shuttle system
- one new river access and related day-use area (in conjunction with a new developed campground) would be developed, requiring clearing and alteration of the riparian zone at the river edge where the river launch would be located (other facilities would be placed in an existing open field)
- two new developed campgrounds would be developed on open sites, requiring conversion of early successional old field vegetation on previously disturbed sites to developed visitor uses
- an existing primitive campground and day-use area in the floodplain would be relocated to a new site in an area of mixed vegetation where some minor clearing of trees would be required

- a new park road on the Highland-Backus Plateau would be developed through expansion of an existing unmaintained road

Overall the impacts of visitor use facilities on scenic resources would be local long-term minor and adverse.

Existing campgrounds and park operations facilities in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen (campground and park operations sites) would be eliminated and natural floodplain vegetation would be restored. Impacts on scenic resources would be local long-term minor and beneficial.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture. In Alternative 2, an additional 190 acres of restored, red, or new fields at historic sites (see Table 4.11) would be leased for agriculture, subject to leasing terms that would mitigate potential farming impacts to cultural landscapes and other resources (see Section 4.3.10 Cultural Landscapes (Alternative 2) below). Farming would maintain the extent of restored or rehabilitated fields that are significant features of the park's cultural landscapes, protecting them from succession to mixed mesophytic forest. These landscapes are scenic resources considered fundamental to the park. Impacts on scenic resources would be local long-term moderate and beneficial.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant scenic resources (common to Alternatives 2 to 5). The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with significant scenic resources that are fundamental or otherwise important to the park. Impacts on scenic resources would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. NPS would seek to protect scenic resources on privately-owned lands in and around the gorge that are outside but near the park boundary (as in Alternative 1). Efforts would be expanded to focus on working proactively with landowners – and their professional advisors – to provide information about the importance of scenic resources on their property, the public interest in protecting those resources, conservation options for landowners, and sustainable design for new development on properties with scenic resources (common to Alternatives 2 to 5). Impacts on scenic resources would be local long-term minor to major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on scenic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.8 Scenic Resources (Alternative 1))

above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on scenic resources.

Alternative 2 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor impacts on scenic resources.

Alternative 2 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on scenic resources. There would be no impairment of park resources or values related to scenic resources.

4.4.9 Archeological Resources (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect and preserve archeological resources against natural destruction wherever practicable by eliminating and avoiding natural resource impacts, stabilizing sites and structures, and monitoring conditions. Management actions including removal of vegetative overgrowth at areas of known or potential archeological resources would be preceded by research sufficient to identify and evaluate such resources. The impact on archeological resources receiving stewardship actions would be local long-term minor and beneficial.

Backcountry zoning would apply to two-thirds (68.5%) of the park. In backcountry zones potential disturbance to archeological resources resulting from park development could occur only along zone perimeters and new trails and at a few designated backcountry camping sites (Figure 2.4). The impact on archeological resources would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to identify and evaluate park archeological resources and to assess their condition and threats to them. Eligible archeological resources would continue to be nominated for listing in the National Register, as appropriate. Archeological resources would generally continue to be left undisturbed except where intervention could be justified based on compelling needs for research, interpretation, site protection, or park development.

Specific management actions at cultural resource sites that could potentially disturb archeological resources would include (see Table 4.11):

- restoration and rehabilitation of structures at numerous cultural resource sites

Table 4.11

**New River Gorge National River
Alternative 2 – Site-Specific
Cultural Resource Management
Actions**

Actions (in addition to Alternative 1 – see Table 4.6 above)

- **Historic Structure Restoration**
 - Richmond-Hamilton Farm (farmhouse and outbuildings)
 - Vallandingham Farm (farmhouse)
 - Phillips Farm (log cabin and outbuildings)
 - Trump-Lilly Farm (farmhouse and outbuildings)
 - Thurmond Houses (some restored throughout and some restored on exterior only)
- **Historic Structure Rehabilitation** (with reuse through the park leasing program)
 - Camp Brookside (original camp structures)
 - Thurmond Commercial Row
 - Other Thurmond Houses (those not restored in some way)
- **Cultural Landscape Restoration** (with agricultural leasing)
 - Richmond-Hamilton Farm
 - Vallandingham Farm
 - Phillips Farm (no leasing)
 - Trump-Lilly Farm
 - Cochran Farm
 - Westfall Farm Westfall Farm (if and when acquired by NPS from a willing seller)
- **Rehabilitation of the Historic Extent of Fields at Cultural Resource Sites**
 - Richmond Bottom (if and when acquired by NPS from a willing seller) (with leasing)
 - Harrah Homestead (no leasing)
- **Discovery Site Stabilization and/or Maintenance**
 - treatment actions – at approximately 10 discovery sites – as needed to stabilize resources and/or to protect resources from potential visitor use impacts

- cultural landscape restoration or rehabilitation of farm fields at 8 early settlement farm sites
- stabilization and protection actions at approximately 10 discovery sites

Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Public Use, Enjoyment, and Experience Management Actions. Ground disturbance associated with development of new facilities and enhancement of existing facilities could affect archeological resources at sites throughout the park. Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Expanded visitor use in historic resource zones, along trails, in the vicinity of recreation sites, and at discovery sites (approximately 10 sites) would increase vulnerability of archeological resources to surface disturbance, inadvertent damage, and vandalism. Loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. NPS staff or volunteer presence and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains. Because expanded visitor use would be concentrated in the north and south ends of the park – with the middle of the park managed for primitive outdoor recreation where visitation would be low – the potential for The impact on archeological sites would be fairly concentrated along a relatively small number of trails and at a relatively small number of sites. This would facilitate resource protection by NPS staff and volunteers. The impact on archeological resources would range from negligible to local long-term minor and adverse.

Increased use of archeological sites and resources for public education and interpretation at early settlement sites in the south end of the park and at industrial sites in the north end of the park, as well as at discovery sites, would increase awareness and appreciation of resources, thereby increasing support for their preservation, and resulting in a local long-term minor beneficial impact on archeological resources.

Park Operations Actions. Ground disturbance would be associated with construction of water supply/distribution and wastewater collection/treatment facilities to serve the Thurmond Depot Visitor Center, Commercial Row, a few newly rehabilitated houses, and structures currently used for park housing and as private residences. Strategies to protect archeological resources from ground disturbance

would be implemented as described above for cultural resource management actions under Alternative 1 (see Section 4.2.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse.

Farming would occur through an agricultural leasing program on fields at six early settlement cultural resource sites affecting approximately 190 acres (see Table 4.11). Prior to execution of a lease, an archeological survey would be undertaken as necessary to ensure that modern farming techniques would not destroy subsurface archeological resources. Leases would limit discing to the depth of historic disturbance and stipulate use of low-till or no-till methods, if practicable, to protect archeological resources. Collectively these actions would ensure that agricultural practices would result in a negligible to local long-term minor adverse impact on archeological resources, depending on the site.

Private use of rehabilitated historic structures (see Table 4.11) would occur through lease or cooperative agreement. Prior to execution of a lease and agreement, an archeological survey of lands adjoining the historic building would be undertaken as necessary to ensure that use of the property would not destroy subsurface archeological resources. Maintenance and all improvements to a property by the lessee or cooperator would be executed in accordance with applicable Secretary of the Interior's standards and guidelines and other NPS policies. The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with a known or suspected high occurrence for intact archeological resources (common to Alternatives 2 to 5). The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with potential archeological resources that are fundamental or otherwise important to the park. Impacts of land protection actions on archeological resources would be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.9 Archeological Resources (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 2 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to archeological resources.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to moderate beneficial impacts and local long-term minor adverse impacts on archeological resources. Alternative 2 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of park resources or values related to archeological resources.

4.4.10 Cultural Landscapes (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions in the park would be expanded to include managing vegetation at restored cultural landscapes, rehabilitated farm fields, and discovery sites. Management would seek to control invasive plants at each site on an ongoing basis. Pruning or removal of natural forest vegetation would occur regularly where it threatens to overtake cultural landscapes or jeopardizes the integrity of landscape features. Areas to remain open would be periodically mowed or leased for agriculture. Stormwater management would seek to protect landscapes from impacts of flooding, erosion, sedimentation, and landslides. Impacts on cultural landscapes would be local long-term moderate and beneficial.

Cultural landscape sites where natural resource management actions would not be implemented would continue to be at risk due to vegetation overgrowth, poor drainage, and/or landslide susceptibility (common to Alternatives 2 to 5). Impacts on cultural landscapes would be local long-term minor to moderate and adverse.

Cultural Resource Management Actions. Efforts would continue to include all cultural landscapes in the park's *Cultural Landscapes Inventory* (NPS 2005a), to identify and nominate eligible landscapes to the National Register, and to prepare cultural landscape reports for all cultural landscapes (as in Alternative 1).

Specific management actions affecting cultural landscapes would include (see Table 4.11):

- Six early settlement sites would be restored in the south end of the park. Restored landscapes would depict the features and character of the farm landscapes as they appeared in the late 19th to early 20th century. Cultural landscape restoration would occur in conjunction with restoration or rehabilitation of structures where they are present. It would generally entail removal of modern structures from one property and field restoration,

requiring some forest clearing (of varying age and condition) at all six properties. Research and preparation of a cultural landscape report would precede work on each site and would serve as the principal document used to guide restoration decisions.

- Approximately 10 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along existing and new trails in the north end of the park. Many of these sites would be ruins of historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve cultural landscapes, maintenance activities would mitigate deterioration of the cultural landscape components by protecting their condition; stabilization would reestablish the stability of unsafe damaged or deteriorated cultural landscape components while maintaining their existing character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on cultural landscapes would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Impacts of new visitor facilities on cultural landscapes would include:

- New visitor use facilities would be added at the six early settlement farms in the south end of the park where the cultural landscapes would be restored to enable visitors to access the sites for interpretive experiences. Facilities at each site would include parking, paths, other structures to facilitate access, and interpretive media. A new farm loop trail would connect the farms. Design and location of contemporary facilities and structures would be considered within the context of the significance of the landscape and would minimize adverse impacts on the character and features of each cultural landscape to the maximum extent practicable. During construction ground disturbance would result in local short-term minor to moderate adverse impacts on cultural landscapes. The long-term impact on cultural landscapes would be local long-term minor and adverse.
- Where historic structures would be rehabilitated for educational use, visitor services, or housing at Camp Brookside, Prince Brothers General Store, Thurmond Commercial Row, and numerous houses at Thurmond, use modifications such as development of parking facilities and walkways, could result in local long-term minor to moderate and adverse impacts on the cultural landscape.
- Circulation system improvements at Grandview would affect the cultural landscape (common to Alternatives 2 to 5). Engineering design of the

improvements would be considered within the context of the significance of the landscape. The design would seek to avoid adversely impacting historically significant components of the circulation system and to accommodate health and safety codes in ways that minimize impacts on character-defining features of the landscape. During construction ground disturbance would result in a local short-term minor to moderate adverse impact to the cultural landscape. Following construction the impact on the cultural landscape would be local long-term minor and adverse.

- Parking improvements at Thurmond in the vicinity of Commercial Row and in the upper residential area would affect the cultural landscape. Mitigating actions and impacts would be similar to those implemented for circulation improvements at Grandview (see preceding section).
- At discovery sites (approximately 10 sites), management actions would include installation of contemporary facilities and structures to control visitor access to cultural landscape components (if present) that would be vulnerable to damage from visitor use. Design considerations would reflect considerations similar to those described above for visitor facilities in restored landscapes. During construction ground disturbance would result in local short-term minor adverse impacts on cultural landscapes. The long-term impacts on the cultural landscapes would be local long-term minor and adverse.
- Approximately 20 miles of new park trails would enhance visitor access to recreation sites and cultural resources sites in the park. Most new trails would use previously existing unmaintained trails, some of which might be determined historically significant upon further investigation and coordination with the WV SHPO. Future development of a park trail management plan would include Section 106 compliance with the WV SHPO during which historic significance would be assessed and mitigation measures incorporated into trail system design, as appropriate. The long-term impacts on cultural landscapes would be local long-term minor and adverse.

Impacts on cultural landscapes associated with increased visitor use would include:

- Restored cultural landscapes and associated structures opened to the public for interpretive experiences and programs would be susceptible to wear and tear from increased use. NPS staff or volunteer presence would reduce the potential for visitors to inadvertently damage or to vandalize resources. Impacts on cultural landscapes would be negligible to local long-term minor and adverse.

- Cultural landscapes associated with rehabilitated and leased historic structures opened to the public for educational use, visitor services, or commercial use would be susceptible to wear and tear from increased use. Lease holder or concessioner presence would reduce the potential for visitors to inadvertently damage or to vandalize resources. Impacts on cultural landscapes would be negligible to local long-term minor and adverse.
- Visitor use elsewhere in the park would continue to impact cultural landscapes, particularly in remote areas where ranger patrols and NPS staff are not routinely present. Visitor use impacts would generally include inadvertent disturbance and vandalism. Improved access to restored cultural landscapes in the south end of the park and to discovery sites (approximately 10 sites) in the north end of the park would increase the potential for visitor use impacts in those locations, although increased presence of NPS staff at these sites would help educate visitors about appropriate resource stewardship. Impacts on cultural landscapes would be local long-term minor and adverse.

Park Operations Actions. At Thurmond new water supply and wastewater treatment services would be provided to the Thurmond Depot Visitor Center, to Commercial Row, to a few newly rehabilitated houses, and to structures currently used for park housing and as private residences. During construction ground disturbance would result in a local short-term minor to moderate adverse impact to the cultural landscape. The long-term impact on the cultural landscape would be negligible to local minor and adverse.

Farming would occur through an agricultural leasing program at six early settlement cultural resource sites (190 acres) where known or potentially significant cultural landscapes exist (see Table 4.11). Management of leases would seek to protect the historic scene and significant features of the cultural landscape at each site, such as topography, field size, fences, walls, ditches, vegetation, wetlands, structures, and vistas. Leases would also protect significant landscape features and patterns from potential modifications prompted by modern farm machinery and practices, such as alteration of lanes, roads, fences, and gates, and introduction of non-historic crops, field patterns, and pruning techniques. Impacts on cultural landscapes would be negligible.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant cultural landscapes (common to Alternatives 2 to 5). The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with significant cultural

landscapes that are fundamental or otherwise important to the park. Impacts on cultural landscapes would local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscapes are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.10 Cultural Landscapes (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscapes. Alternative 2 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to cultural landscapes.

■ **Conclusion**

Management actions in Alternative 2 would result in local short-term minor to moderate adverse impacts, local long-term minor to major beneficial impacts, and local long-term minor to moderate adverse impacts on cultural landscapes. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on cultural landscapes. There would be no impairment of park resources or values related to cultural landscapes.

4.4.11 Historic Structures (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) (as in Alternative 1). Stewardship would generally include removal of non-native plants and improvements to drainage in the vicinity of historic structures. The impacts to historic structures receiving stewardship actions would be local long-term minor and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) and to obtain determinations of their eligibility for the National Register (as in Alternative 1). Stewardship would generally include building stabilization to provide protection from weather and vandalism. Maintenance of previously stabilized structures would continue. The impacts to historic structures receiving stabilization and ongoing maintenance would be local long-term minor and beneficial.

Further stewardship of historic structures beyond the actions included in Alternative 1 (see Table 4.6) would focus on maintenance and treatment of structures that are nominated to, determined eligible for, or are considered potentially eligible for the National Register. Specific management actions would include the following (see Table 4.11):

- Farmhouses and outbuildings at four historic farms would be restored in the early settlement and farming area in the south end of the park. Restored structures would accurately present the form, features, and character of the farms as they appeared in the late 19th to early 20th century. Building restoration would occur in conjunction with restoration of the cultural landscape.
- Several houses at Thurmond would be restored, accurately presenting the form, features, and character of the houses as they appeared in the early 20th century. Some houses would be restored throughout and some would be restored on the exterior only.
- Some individual structures already determined eligible for the National Register (those owned by the NPS) would be rehabilitated, including Camp Brookside, Thurmond Commercial Row (with remediation of asbestos and lead contamination), and other houses at Thurmond that would not be restored.
- Approximately 10 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along existing and new trails in the north end of the park. Some of these sites would be historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve an historic building, maintenance activities would mitigate building deterioration by protecting its condition; stabilization would reestablish the stability of unsafe damaged or deteriorated structural components while maintaining existing building character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would generally be local long-term minor to major and beneficial. Where structures are rehabilitated for leasing or visitor services, concession use modifications, such as those needed to accommodate accessibility and additional means of egress, could result in local long-term minor to moderate and adverse impacts.

Public Use, Enjoyment, and Experience Management Actions. Restored structures opened to the public for interpretive experiences and programs would be susceptible to wear and tear from increased use. NPS staff or volunteer presence would reduce the potential for visitors to inadvertently damage or to vandalize

resources. Impacts on historic structures would be negligible to local long-term minor and adverse.

Historic structures leased for visitor services, educational use, or commercial use at Camp Brookside, Prince Brothers General Store, Thurmond Commercial Row, and numerous houses at Thurmond would be susceptible to wear and tear from increased use, inadvertent damage, or vandalism. Leases and agreements would seek to reduce the potential for adverse impacts on historic structures associated with their adaptive reuse including maintenance requirements to avoid or mitigate adverse impacts of visitor use. Impacts on historic structures would be local long-term minor to moderate and adverse.

Park Operations Actions. At Thurmond new water supply and wastewater treatment services would be provided to the Thurmond Depot Visitor Center, to Commercial Row, to a few newly rehabilitated houses, and to structures currently used for park housing and as private residences. Many of the affected structures are resources that contribute to the significance of the Thurmond Historic District. All improvements would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would be negligible to local long-term minor and adverse.

Private use of rehabilitated historic structures (see Table 4.11) would occur through lease, cooperative agreement, or concession agreement. Leases or agreements would be structured to protect resources and defray the costs associated with building maintenance. They would include stipulations to ensure preservation of the property, to provide for its continued appreciation by the public, and to prevent any situation that would interfere with visitor use and enjoyment of the park. Maintenance and all improvements to the property by the lessee or cooperator would be executed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Rehabilitating Historic Buildings*, and other NPS policies, guidelines, and standards. The impact on historic buildings would range from local long term minor to moderate and beneficial to local long term minor to moderate and adverse.

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant historic structures (common to Alternatives 2 to 5). The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with significant historic structures that are fundamental or otherwise important to the park. Impacts on historic structures would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. NPS would continue to provide technical assistance to the city of Hinton to assess treatment options for

rehabilitation and adaptive reuse of the city-owned Hinton Depot and to assist with implementation of treatment by helping to identify funding options and to develop grant applications (as in Alternative 1). Impacts on historic structures would be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic structures are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.11 Historic Structures (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on historic structures. Alternative 2 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to historic structures.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on historic structures. Alternative 2 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on historic structures. There would be no impairment of park resources or values related to historic structures.

4.4.12 Ethnographic Resources (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Backcountry zoning would preserve unfragmented blocks of mixed mesophytic forest in 68.5 percent of the park, while frontcountry zoning where human-induced fragmentation would be decreased would apply to 22.3 percent of the park. This would protect the forest and its associated watershed which is the ethnographic resource identified as vital to the park's traditionally associated people and groups (Hufford et al 2006). Impacts on ethnographic resources would be local long-term moderate and beneficial.

Natural resource management actions would also protect specific natural and cultural resources found within the park's mixed mesophytic forest that are important to the park's traditionally associated people, such as plants, animals, and sites of former towns, settlement areas, and industrial sites (as in Alternative 1).

Impacts to ethnographic resources would be local long-term minor to moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to include appropriate studies and consultations to further document ethnographic resources and uses, traditionally associated people, and other affected groups, and cultural affiliations to park resources. Eligible ethnographic resources would continue to be nominated for listing in the National Register, as appropriate.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites (approximately 10 sites) would restore, rehabilitate, or stabilize resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.11 and Sections 4.4.10 Cultural Landscapes and 4.4.11 Historic Buildings above). Impacts on ethnographic resources would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities at historic structures, cultural landscapes, and discovery sites (approximately 10 sites) would impact resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.13 and Sections 4.4.10 Cultural Landscapes and 4.4.11 Historic Buildings above). Impacts on ethnographic resources if determined to be present would be local long-term minor to moderate and adverse.

Impacts associated with increased visitor use on ethnographic resources, if determined to be present, would include the following (see Sections 4.4.10 Cultural Landscapes and 4.4.11 Historic Buildings above):

- negligible to local long-term minor adverse impacts at sites where structures and associated cultural landscapes are restored
- local long-term minor to moderate and adverse impacts at sites where structures (with associated cultural landscapes) are rehabilitated and leased for visitor services, educational use, or commercial use
- local long-term minor to moderate and adverse impacts elsewhere in the park, particularly in remote areas and in the vicinity of discovery sites (approximately 10 sites) where ranger patrols and NPS staff are not routinely present

Land Protection Actions. Future land protection would focus on purchasing property within the park boundary that includes significant resources and values – such as properties with significant ethnographic resources (common to Alternatives 2 to 5). The park's new program of working with owners of private land within the park boundary would seek to enhance stewardship of lands with significant ethnographic resources that are fundamental or otherwise important to the park.

The impact on ethnographic resources would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. The NPS would continue to consult with traditionally associated groups and Indian tribes (as in Alternative 1) (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Impacts on ethnographic resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 2 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to ethnographic resources.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on ethnographic resources. Alternative 2 would contribute a minor beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of park resources or values related to ethnographic resources.

4.4.13 Regional and Local Economy (Alternative 2)

In Alternative 2 – Themed Gorge Segments – the NPS would expand the park’s contributions to the Southern West Virginia tourism industry and economic environment due to the appeal of each themed segment to varied visitor markets.

Fayetteville would continue to be the gateway community for the area’s whitewater rafting industry. Beckley would continue its current function as a primary lodging, dining and visitor service area in support of tourism to New River Gorge.

Communities along the US 19 corridor such as Oak Hill, Mount Hope, Bradley and North Beckley would continue to provide limited visitor support services.

Each of the three subareas would undergo improvements that would increase visitation and visitor spending:

- The Early Settlement and Farming subarea would experience a moderate increase in visitation along the New River Parkway. The restored farmsteads in this subarea would spur additional minor visitation increases
- The Primitive Outdoor Experiences subarea would experience minor increases from improved recreational and boating access. These increases would be offset by moderate decreases in visitation resulting from the ban of hunting activities in the park.
- The Industrial Gorge would experience major visitation increases at the Nuttallburg Visitor Use Area and at Thurmond, as well as a minor visitation increase from the improvements to Fayette Station Road.

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Enhanced management of the park’s natural resources would result in increased expenditures by the NPS on an ongoing and special project basis (common to Alternatives 2 to 5). Management expenditures by the park’s partners, and others would also likely increase (common to Alternatives 2 to 5). Impacts of these expenditures on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial.

Cultural Resource Management Actions. Restoration and ongoing maintenance of four early settlement farmhouses and several Thurmond houses, as well as rehabilitation of Camp Brookside structures, Prince Brothers General Store, Thurmond Commercial Row, and several additional Thurmond houses, would result in expenditures by the NPS for labor and materials. Impacts on the regional and local economy would be regional short-term minor and beneficial regional long-term minor and beneficial.

Adaptive reuse through the park’s leasing program of Camp Brookside, Prince Brothers General Store, Thurmond Commercial Row, and several Thurmond houses for visitor services, commercial use, or educational use would bring more visitors to the Hinton area and enhance the attractiveness of the Prince and Thurmond areas to visitors. Impacts on the regional and local economy would be regional long-term moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would continue to encourage economic activity in areas with active visitor use facilities and support services.

The total annual number of recreational visits to the New River Gorge National River is projected to increase by 224,900 from the current (2007) level of 1,178,000 in this alternative, a 19.1 percent growth rate. Table 4.12 displays projected direct and indirect economic impacts resulting from this increased level of visitor activity.

The Early Settlement and Farming subarea would benefit mainly from the construction of the New River Parkway, but also from the restoration of farmsteads. The Primitive Outdoor Experiences subarea would gain visitation in and around Thurmond. The Industrial Gorge would draw added visitation to Nuttallburg and along Fayette Station Road.

Several industries that benefit from NPS stewardship of New River Gorge, including outfitting, lodging, dining, and convenience goods, would continue to support significant levels of employment. Businesses in these industries are mostly concentrated along the US 19 corridor, particularly in Fayetteville and Beckley.

Industries that have jobs supported by NPS-related activities at New River Gorge would also continue to realize significant impacts on earnings and the housing market.

Impacts on the regional and local economy would be regional long-term minor and beneficial.

TABLE 4.12 Alternative 2 – Themed Gorge Segments – Annual Direct and Indirect Economic Impacts (\$2007)

Impact Type	2005	Added as a Result of Alternative 2	2025
Visitation			
Visitors	1,178,000	224,900	1,402,900 (+19.1%)
Direct Impacts			
Jobs	2,000	393	2,393
Earnings	\$28,317,960	\$5,532,300	\$33,850,260
NPS Spending	\$7,208,400	\$2,632,600	\$9,841,000
Visitor Spending	\$67,910,000	\$13,267,200	\$81,177,200
Indirect Impacts			
Jobs	850	165	1,015
Earnings	\$7,870,810	\$1,537,700	\$9,408,510
NPS Spending	\$4,159,970	\$1,519,230	\$5,679,200
Visitor Spending	\$33,568,090	\$6,558,000	\$40,126,090
Total Impacts			
Jobs	2,850	558	3,408
Earnings	\$36,188,770	\$7,070,000	\$43,258,770
NPS Spending	\$11,368,370	\$4,151,830	\$15,520,200
Visitor Spending	\$101,478,090	\$19,825,200	\$121,303,290

2005 baseline and Impact factors per recreational visit are adapted from Versel 2006

Park Operations Actions. Total recurring costs by NPS would be about \$15.6 million annually, while total one-time costs would be about \$27.4 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have Impacts on the regional and local economy are identified in Section 4.2.4 (see Table 4.4). These actions would generally be the same as those described for Alternative 1 (see Section 4.3.13 Regional and Local Economy (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate beneficial impact on the regional and local economy. Alternative 2 would contribute a minor beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in regional short-term minor to moderate beneficial and regional long-term minor to moderate beneficial impacts on the regional and local economy. Alternative 2 would contribute a minor beneficial impact to the total cumulative long-term moderate beneficial impact on the regional and local economy.

4.4.14 Communities (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions implemented within the park would have the potential to affect natural resource conditions in communities within or near the park. These primarily would include management actions that seek to protect water quality, floodplains, forest, and aquatic and terrestrial habitats and dependent species, by:

- maintaining natural flows and hydropatterns
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- perpetuating native animal life as part of the park's natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible
- aggressively treating invasive exotic plant and insect pest species

- allowing select introduced species that may alter some process and interactions (e.g. continue WV State black fly treatments)

In addition, in Alternative 2 several management actions would seek to:

- protect, preserve and restore the natural resources and functions of floodplains by (common to Alternatives 2 to 5):
 - restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
 - maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
 - maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- maintain and restore natural stream ecosystems supporting a full range of natural aquatic organisms by (common to Alternatives 2 to 5):
 - eliminating introduction of non-native species to aquatic ecosystems
 - eliminating actions to supplement or maintain selective non-native species in aquatic ecosystems (as appropriate, based on further study of non-native species impacts)
- maintain the park's native plants and natural landscapes by (common to Alternatives 2 to 5):
 - managing wildland fire to diminish the risk and consequences of severe wildland fires and, to the extent possible, to restore and protect the natural biological diversity and natural disturbance regime of the park
 - using planned ignitions to promote ecosystem health and native vegetation diversity in fire-dependent forest communities, such as rimrock pine communities and xeric oak-hickory forests

The impact of these management actions on natural resources in communities within and near the park would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternative 2, cultural resource management actions (in addition to those included in Alternative 1) with the

potential to affect resources of potential significance to residents of communities within or near the park include:

- Six early settlement sites would be restored in the south end of the park, accurately presenting the form, features, and character of the farm as it appeared in the late 19th to early 20th century. At two additional settlement sites – where no buildings remain – the cultural landscape would be restored.
- Several houses at Thurmond would be restored, accurately presenting the form, features, and character of the houses as they appeared in the early 20th century.
- Some individual historic structures would be rehabilitated, including the Camp Brookside building complex, Thurmond Commercial Row, and other houses at Thurmond that would not be restored.
- Approximately 10 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along existing and new trails in the north end of the park.

Cultural resource treatment at these historic structures, cultural landscapes, and discovery sites would restore, rehabilitate, or stabilize resources that are likely to be found through further research to include significant ethnographic resources of potential significance to residents of community within or near the park.

The impact of these actions on the residents of communities within or near the park would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 2, visitor facility improvements would address many of the visitor experience issues of concern to residents of communities within or near the park who use the park. These relate to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience for local residents as a result of these improvements (see Table 4.13) would be as follows:

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term moderate beneficial impact
- river access improvements would result in a local long-term moderate beneficial impact; some crowding would continue to occur at the Cunard

River access during peak visitation periods resulting in a local long-term moderate adverse impact

- trail improvements would result in a local long-term minor beneficial impact for hikers, bikers, and horseback riders; additional demand for biking and equestrian trails would not be satisfied resulting in a local long-term moderate adverse impact
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

As in Alternatives 1 and 3, hunting within the park would continue as it occurs today on most NPS-owned land, in the park in accordance with the hunting and fishing regulations of the state of West Virginia. During hunting season safety hazards would continue to exist in areas of the park where other visitor use is high and hunting is permitted. Impacts on residents of communities within or near the park who hunt would be local long-term moderate and beneficial. Continued safety hazards would result in a local long-term minor and adverse impact on residents of communities within and near the park.

Park Operations Actions. Total recurring costs by NPS would be about \$15.6 million annually, while total one-time costs would be about \$27.4 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

At Thurmond, rehabilitation and subsequent leasing of Commercial Row would generate a sustainable income stream for long-term maintenance of the buildings. The impact on the community of Thurmond would be local long-term moderate and beneficial.

Land Protection Actions. As funding permits, land protection would continue until most land remaining within the current park boundary is protected through voluntary sale of property to the NPS or through voluntary conveyance of conservation easements to the NPS or to a qualified non-profit land trust. Unlike Alternative 1, the NPS would generally no longer seek to acquire private property within the communities that remain in the park in the vicinity of Meadow Creek, Backus, Prince/Quinnimont, Highland, Terry, and Thayer. As a result acquisition of properties with associated demolition of structures – resulting in lost housing stock, population loss, and disruption to the social fabric – would no longer occur. The impact of the changed land acquisition strategy on communities within the park would be local long-term moderate and beneficial.

The NPS would seek to protect resources on lands remaining in private ownership by implementing a new stewardship program. Owners of lands with significant natural, cultural, and scenic resources would receive information and technical assistance regarding protection and management of resources on their properties. This would enhance stewardship of resources potentially important to the broader community. An additional focus of the technical assistance effort would be to provide information on the importance of maintaining on-site wastewater disposal systems (OSDSs); this effort would target landowners in communities along the New River and its tributaries where fecal coliform counts are high and the suspected source is malfunctioning OSDSs. The impact of the new stewardship program on communities within the park would be local long-term minor and beneficial.

Partnership and Community Collaboration Actions. NPS would implement a number of actions aimed at sustaining communities within the park, focused on Hinton, Thurmond, Meadow Creek, Backus, Highland, Prince/Quinnimont, Terry, and Thayer. The focus of the actions would be as described for the Alternative 2 – Themed Gorge Segments theme, described in Section 2.5.5 through 2.5.7 above. Actions would generally seek to strengthen the connection between gateway communities, their residents, and the mission of the NPS at New River Gorge National River.

- As the park's largest gateway community located partially in the park, Hinton would receive high priority in NPS's efforts to work cooperatively with its gateway community partners. In addition the NPS and the city of Hinton would work collaboratively on several specific initiatives. In general the NPS would not seek to acquire private land within the park boundary in Hinton although it would be interested in acquiring land owned by the CSX at the Hinton Yard, if and when it is no longer required for railroad operations. Similarly, the NPS would be interested in acquiring historically significant railroad-related structures in the vicinity of the Hinton Depot and the Hinton Yard.
- The small enclave of occupied private residences at Thurmond would remain as "a community within a park attraction". The NPS would continue to work cooperatively with residents to address issues associated with living in the historic town. As in Alternative 1, actions would be implemented by the NPS to provide safe drinking water and wastewater treatment via a community water system and a community wastewater collection and treatment system. In Alternative 2 these services would be extended to all new occupied visitor facilities, houses, and commercial uses.
- The NPS would work cooperatively with local leaders and landowners in the six other communities that remain within the park boundary to define shared goals and to implement strategies to accomplish shared goals. In the future, collaboration between the NPS and these communities would

generally seek to sustain community character, protect natural and cultural resources, and encourage, as appropriate, development of visitor amenities and interpretive media.

In the future the NPS would also implement actions aimed at strengthening the connection between the public and the mission of the NPS at New River Gorge National River. By strengthening this connection, the public's sense of ownership and pride in the park should increase as should its commitment to the stewardship of the park and its resources and values. Management actions aimed at communicating the NPS mission would generally include expansion of programs already underway at the park. The NPS would aggressively build the capacity of the recently created Friends of New River Gorge group by identifying, recruiting, and providing technical support to energetic and talented local leaders with the capacity to grow the organization. The NPS would implement a new program designed to provide community leaders, businesses owners, and leaders of major stakeholder groups an inside look and greater understanding of how the park is operated, how its resources are managed, and the issues facing the park. The NPS would expand the scope and frequency of its environmental education programs to reach the local youth who will be the future stewards of the park. The NPS would seek to sponsor or cosponsor special events in communities within the park and within its gateway communities on an annual or more frequent basis. The NPS would expand public awareness of the park by producing and distributing more widely a greater variety of informational materials describing the park's significance, resources and opportunities. The NPS would seek to expand coverage of park events and issues in newspapers and on television by developing relationships with editors and managers of local media outlets and by providing stories of interest. The NPS would seek to establish information kiosks at prominent locations in communities within the park and in its gateway communities.

In the future the NPS would expand efforts to work cooperatively with the park's gateway communities – Hinton, Sandstone, Meadow Bridge, Beckley, Mount Hope, Glen Jean, Oak Hill, Minden, Cunard, Fayetteville, Winona, and Ansted. The NPS would make available technical assistance to the three counties and the park's gateway communities, as appropriate, to address issues of mutual concern. This could include innovative community planning, computer mapping and database management using ArcGIS software (in support of community planning efforts), regional planning designed to provide a seamless network of parks), watershed-based water quality management planning, transportation system planning, including assistance with enhancement of road and trail connections between gateway communities and the park and design of alternative transportation systems where they would enhance park access, documenting the significance of related cultural resources adjoining or outside the park, and securing grants for projects and/or programs that would jointly benefit the park's neighboring communities and the park itself.

In the future the NPS would expand its participation in regional economic development planning efforts underway by the various regional planning agencies and organizations in southern West Virginia. The primary goal of the NPS in these efforts will be to assist with development of a seamless network of regional parks, open spaces, trails, and heritage sites within southern West Virginia that would increase protection and enhancement of biodiversity and create a greater array of educational and appropriate recreational opportunities. Other goals of the NPS would be to generally promote sustainable and informed tourism that incorporates socioeconomic and ecological concerns and to encourage and showcase environmental leadership by the NPS and the tourism industry.

In the future the NPS would expand its collaboration with Hawks Nest State Park and Babcock State Park. Collaboration would focus on developing shared strategies for dealing with common resource management issues (e.g., invasive species control, wildfire management, water quality management, etc.). The NPS would also expand its collaboration with state and county resource management and regulatory agencies. Collaboration would focus on resource management programs, such as those pertaining to water quality management, wildlife management, air quality management, and cultural resource management. Collaboration would also focus on making state resource management programs and assistance available to owners of private land in the park and on local enforcement of state and county environmental regulations.

Collaborative partnerships with non-profit and private partners would expand the park's capacity to protect park resources and provide high quality visitor interpretation and experiences. Opportunities exist associated with restoration/rehabilitation of cultural resources where there is a potential for commercial adaptive reuse that would generate funds to support long-term sustainability of resources

In the future the NPS would expand its collaboration with organized park stakeholder groups – particularly those that are representative of major park visitor groups and that have expertise and resources to assist the NPS with providing appropriate visitor facilities, with protecting resources from adverse visitor use impacts, and with enhancing visitor safety.

Collectively the impact of these actions on communities within and near the park would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on communities are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.14

Communities (Alternative 1) above). Impacts of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on communities within or near the park. Alternative 2 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major and beneficial impacts and a local long-term moderate and adverse impact on communities within or near the park. Alternative 1 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative long-term moderate beneficial impact on communities within or near the park.

4.4.15 Visitor Use and Visitor Experience (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. In Alternative 2 the Primitive Outdoor Experience Area composing most of the middle of the park would be managed as backcountry forest, preserving its wild character and enhancing the perception of the park’s wildness as visitors experience the park. Overall, backcountry forest blocks would compose approximately 68.5 percent of the park. Impacts on visitor use and visitor experience would be local long-term minor to major and beneficial, depending upon individual visitor reasons for visiting the park and preferences for backcountry versus frontcountry experiences.

Cultural Resource Management Actions. Treatment of cultural resources at sites in the park would provide numerous new opportunities for visitors to appreciate the human history story of life in the gorge (see Table 4.11).

In the Early Settlement and Farming Themed Area, visitors would learn about early Appalachian settlement by visiting historic farms where interpretive programs and exhibits would be available. The farmhouses would be restored to period condition and set within restored cultural landscapes.

In the Industrial Gorge Themed Area visitors would learn about the park’s industrial history related to mining, railroading, and lumbering:

- rehabilitated, restored, and stabilized commercial and residential structures at Thurmond would enable visitors to learn about life in the gorge’s historic railroading towns (see Classic Experiences above)
- stabilized mining structures and town ruins at Nuttallburg Mining Complex and the Nuttallburg town site would tell stories about life in the gorge’s historic coal mining towns (as in Alternative 1)

New River Gorge National River
Desired Visitor Experiences

Desired Visitor Experiences

- **Important Park Experiences that Visitor should have:**
 - Appreciate life in the gorge – the human history story
 - Appreciate/experience the wildness of the landscape
 - Experience the power of the river
 - Experience scenic beauty
- **Classic Park Experiences**
 - Paddling the New River
 - Sandstone Falls
 - Grandview
 - Thurmond
 - Endless Wall
 - Canyon Rim
 - Fayette Station Road

Table 4.13

**New River Gorge National River
Alternative 2 – New Visitor Use
Facilities**

Actions (in addition to Alternative 1)

- **Cultural Resource Attractions**
 - restored properties
 - ✓ Richmond-Hamilton Farm
 - ✓ Vallandingham Farm
 - ✓ Phillips Farm
 - ✓ Trump-Lilly Farm
 - ✓ Thurmond Houses (some)
 - rehabilitated properties (with non-residential adaptive reuse through leasing or other agreements)
 - ✓ Camp Brookside
 - ✓ Thurmond Commercial Row
 - discovery sites (approximately 10)
- **Day-Use Facilities**
 - improvements to existing facilities
 - ✓ Brooks Falls
 - ✓ Sandstone Falls
 - ✓ Dun Glen
 - ✓ Grandview (circulation system)
 - new day-use facilities
 - ✓ Stone Cliff (relocated)
- **Camping Facilities**
 - improvements to existing primitive campgrounds
 - ✓ Stone Cliff (relocated)
 - new developed campgrounds
 - ✓ Burnwood
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Brooks Falls
 - ✓ Dun Glen
 - ✓ Cunard (two areas)
 - ✓ Fayette Station
 - alternative transportation system (shuttle during peak periods of visitor use with satellite parking)
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
- **Parking for Climbers and Hunters**
 - in climbing areas
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas
 - ✓ Dowdy Bluff
 - ✓ Polls
- **New Trails (with trailheads)**
 - climbing access trails
 - ✓ Endless Wall
 - ✓ Sunshine Buttress
 - ✓ Bubba City
 - ✓ Junkyard
 - Fayette Mine Trail
 - Stone Cliff Mine Trail
 - Stone Cliff Coke
 - Ovens to Stone Cliff Mine Trail
 - Thurmond to Sewell Rail Trail
 - Farm Loop Trail
 - Craig Branch Equestrian Loop Trail
 - Sandstone Falls Boardwalk Expansion

- new trails would provide visitors with access to mining resource areas where they would learn about the park’s mining history
- visitors would also learn about the history of life in the gorge when they come upon and find cultural resource discovery sites along trails (approximately 10 sites)

The impact of cultural resource management actions and related interpretive programs on visitor use and visitor experience would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. The central theme underlying Alternative 2 would help visitors better understand how the park is organized, the opportunities that are available, and how to travel in the complicated network of local roads and trails in the rugged terrain. Facilities and interpretive programs would support experiences in three areas of the park (see Figure 2.3 and Table 4.13):

- the **Early Settlement and Farming Themed Area** in the south where significant cultural resources would tell the stories of early settlement and farming in the Appalachians
- the **Primitive Outdoor Experience Area** in the middle of the park where the expanse of backcountry forest would remain wild and largely unfragmented
- the **Industrial Gorge Themed Area** in the north where significant cultural resources would tell the stories of America’s industrialization related to coal mining, lumbering, and railroading in the late 19th and early 20th centuries

New visitor use facilities included in Alternative 2 – consistent with its overall management concept – would enable visitors to better and more easily enjoy the experiences that they “should have” at the park. Visitors would also continue to enjoy the “classic park experiences” at Sandstone Falls, Grandview, Thurmond, Endless Wall, Canyon Rim, and Fayette Station Road. New management actions consistent with the overall management concept for Alternative 2 would enhance the visitor experience at Sandstone Falls in the south and at Thurmond in the north. The impact of these actions and related interpretive programs on visitor use and visitor experience would generally be local long-term major and beneficial.

Specific visitor facility improvements would address many of the visitor experience issues related to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few

opportunities for biking and equestrian use). Impacts on visitor use and visitor experience as a result of these improvements (see Table 4.13) would be as follows:

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term moderate beneficial impact
- river access improvements would result in a local long-term moderate beneficial impact; some crowding would continue to occur at the Cunard River access during peak visitation periods resulting in a local long-term moderate adverse impact
- trail improvements would result in a local long-term minor beneficial impact for hikers, bikers, and horseback riders; additional demand for biking and equestrian trails would not be satisfied resulting in a local long-term moderate adverse impact
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

Hunting as it occurs today on most NPS-owned land in the park, in accordance with the hunting and fishing regulations of the state of West Virginia, would continue to have long-term moderate beneficial impacts and local long-term minor adverse impacts on visitor use and visitor experience (as in Alternatives 1 and 3) (see Section 4.3.15 Visitor Use and Visitor Experience (Alternative 1) above).

Park Operations Actions. Private use of rehabilitated historic buildings at Camp Brookside, Prince Brothers General Store, Thurmond Commercial Row, and numerous houses at Thurmond would occur through lease, cooperative agreement, or concession agreement. Educational use of Camp Brookside would provide opportunities for a large number of visitors to participate in a variety of educational programs. Residential use of houses at Thurmond for park staff or private rental housing would not provide opportunities for visitors. Potential commercial use of Prince Brothers General Store and at Thurmond Commercial Row could provide visitor services in parts of the park where they are currently not available. Impacts on visitor use and visitor experience would be negligible to local long-term major and beneficial.

Land Protection Actions. Adjustments to the park boundary and subsequent acquisition of properties from willing sellers would provide sites for development of parking facilities needed for visitor access to the Nuttallburg Visitor Use Area, for expansions to private paddler parking at Cunard, for access to the Dowdy Bluff hunting area, for access to the upper Glade Creek area, and for access to the Ambassador Buttress and Junkyard climbing areas (common to Alternatives 2 to 5).

The impact of providing sites for these facilities on visitor use and visitor experience would be local long-term moderate and beneficial.

Partnership and Community Collaboration Actions. Collaboration with WVDOH would seek to accomplish improvements to New River Parkway (existing River Road), WV 25 (from Glen Jean to Southside Junction), Thurmond Bridge, and Fayette Station Road (WV 82). Improvements would address visitor safety concerns, reduce congestion by enhancing roadway capacity, and/or provide pull-outs where visitors could better experience park resources. NPS would also collaborate with WVDOH to design and install signage to enhance visitor orientation to the park and to facilitate wayfinding to park facilities. Impacts on visitor use and visitor experience would be local long-term major and beneficial.

Partnerships between the NPS and the park's gateway communities would seek to enhance the visitor experience by improving availability of information about the park in local communities and by enhancing wayfinding to the park. Impacts on visitor use and visitor experience would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.15 Visitor Use and Visitor Experience (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on visitor use and visitor experience. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term moderate adverse impacts on visitor use and visitor experience. Alternative 2 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on visitor use and visitor experience. There would be no impairment of park resources or values related to visitor use and visitor experience.

4.4.16 Park Access (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Park management zoning would provide the framework for decision-making as to where motorized and non-motorized access would be appropriate for visitors and administrative use (common to Alternatives 2 to 5) (see Table 4.14). The nature of permitted access would be common to Alternatives 2 to 5 in park development, historic resource, and river

corridor zones because these zones are the same for each action alternative. Differences would occur in the remainder of the park where areas are allocated to either backcountry or frontcountry zones. When considering access to the park, areas of frontcountry would have greater potential access because roads and parking facilities would be permitted in interior areas of zones. In contrast, in backcountry areas roads and parking would be limited to the perimeter of the forest blocks defined by the park's subareas (see Figure 2.4).

In Alternative 2 the impact of management zone allocations and related management prescriptions on park access would be local long-term minor and beneficial. Management actions would generally maintain existing patterns of motorized access within the park, while permitting expansion of motorized access for visitors and/or administrative use in park development zones, historic resource zones, river corridor zones, and frontcountry zones. Approximately two-thirds (68.5%) of the park would be zoned backcountry where roads and parking would be limited to zone perimeters (see Figure 2.4) and where only non-motorized access could occur in the zone interior.

Public Use, Enjoyment, and Experience Management Actions. By the year 2025 approximately 1.40 million people are projected to visit the park annually, representing a 19.1 percent increase in visitation when compared to 2007 (see Section 4.4.13 above). Most visitation would occur from June through September, with peak use happening during weekends in July and August. Most park visitors are expected to travel to many sites of the classic park experiences and to seek out the various important park experiences that visitor should have, as emphasized consistent with the overall management concept in Alternative 2 (see Table 2.14 above).

Park visitation associated with management actions would slightly increase traffic in and around the park during both peak and off-peak visitation periods (see Table 4.15). Most state roads and park roads used by visitors would experience negligible to local long-term minor adverse impacts. Six would experience local long-term moderate adverse impacts during peak periods. One would experience local long-term moderate beneficial impacts during peak periods.

As in Alternative 1, improvements to Turkey Spur Road at Grandview would enhance access to visitor use facilities at the Turkey Spur Overlook. In Alternatives 2 to 5, a number of additional improvements at Grandview would address site-specific vehicular and pedestrian circulation issues. The impact of these actions on park access at Grandview would be local long-term major and beneficial.

Table 4.14

New River Gorge National River
**Backcountry, Frontcountry, and
River Corridor Zones – Access
Management Prescriptions**
(common to Alternatives 2 to 5)

■ **In Backcountry Zones**

Motorized Access. Very limited motorized access for visitors and administrative use (restricted to established state roads, administrative roads, and park roads); parking located along zone perimeters

Non-Motorized Access. Non-motorized access for visitors and administrative use via established trails and new singletrack trails (to be primarily located on existing unmaintained trails); bikes permitted only on singletrack trails; horses permitted in some upland areas in the Highland-Backus and Dowdy Creek areas; trailhead parking located along zone perimeters

■ **In Frontcountry Zones**

Motorized Access. Motorized visitor and administrative access and parking in zone interiors (largely utilizing established state roads, administrative roads, and park roads); new road development to serve new visitor use areas

Non-Motorized Access. Non-motorized access via established trails and new trails of a variety of types (to be primarily located on existing unmaintained trails); bikes permitted on a variety of trail types; horses permitted in some upland areas in the Bucklick Branch and Craig Branch areas

■ **In River Corridor Zones**

Motorized Access. Very limited motorized access (via established state roads, administrative roads, and park roads); new road development to serve new visitor use areas

Non-Motorized Access. Non-motorized access for hikers and bikers via existing and new trails of a variety of types (to be primarily located on existing unmaintained trails); horses not permitted

■ **In Historic Resource Zones**

Motorized Access. Motorized access via state roads and park roads

Non-Motorized Access. Non-motorized access for hikers and bikers via existing and new trails of a variety of types (to be primarily located on existing unmaintained trails); horses not permitted

■ **In Park Development Zones**

Motorized Access. Motorized access via state roads and park roads; motorized access via shuttle might occur in congested areas

Non-Motorized Access. Non-motorized access for hikers and bikers via existing and new trails of a variety of types (to be primarily located on existing unmaintained trails); horses not permitted

TABLE 4.15 Alternative 2 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
South End of the Park			
<p>Sandstone Falls and Visitor Attractions on River Left</p> <p>Future New River Parkway (under development by WVDOH)</p>	<ul style="list-style-type: none"> paved two-lane road with shoulders lane width adequate for safe two-way travel 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of the New River Parkway (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Various Visitor Facilities on River Right below Hinton</p> <p>WV 20 (I-64 to Hinton)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with minimal shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of the New River Parkway (most non-truck traffic on WV 20 will be diverted to New River Parkway) (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term negligible impact Off-Peak Period – local long-term negligible impact
<p>Sandstone Falls Visitor Center</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with shoulders) 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
Middle of the Park			
<p>Grandview</p> <p>WV 9 (primarily from I-64)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with shoulders) 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>McCreery, Lower Glade Creek Area, Terry Beach, Army Camp</p> <p>WV 41 (primarily from the west)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with minimal shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies (pedestrian safety deficiencies exist in vicinity of McCreery river access) 	<ul style="list-style-type: none"> Peak Period – local long-term negligible impact Off-Peak Period – local long-term negligible impact
<p>Lower Glade Creek Area</p> <p>Glade Creek Road (Park Road) (state scenic backway)</p>	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> very poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Thayer</p> <p>WV 25 (access primarily from the north, beginning at Stone Cliff New River Bridge)</p>	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> very poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term negligible impact Off-Peak Period – local long-term negligible impact
North End of the Park			
<p>Thurmond, Dun Glen, and Stone Cliff</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width not adequate for safe two-way 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies for small 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact

TABLE 4.15 Alternative 2 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
WV 25 (from Glen Jean)	<ul style="list-style-type: none"> travel due to nine one-lane bridges (minimal to no shoulders) tight curves short stopping distances 	<ul style="list-style-type: none"> vehicles road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Off-Peak Period – local long-term minor adverse impact
Thurmond Town Site various state roads	<ul style="list-style-type: none"> one-lane Thurmond Bridge needs replacement (due to structural, capacity and safety issues) numerous one-lane paved roads constrained two-way travel (minimal to no shoulders) steep gradients tight turns short stopping distances 	<ul style="list-style-type: none"> very poor capacity numerous roadway capacity and safety deficiencies future Thurmond Bridge replacement would address bridge deficiencies and likely include visitor parking (as mitigation) near the Thurmond Depot Visitor Center 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact (assuming roadway improvements by the state) Off-Peak Period – local long-term minor adverse impact (assuming roadway improvements by the state)
Cunard Cunard Access Road (park road)	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (some pull-offs; minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
Nuttallburg Visitor Use Area Keeney Creek Road (WV 85/2)	<ul style="list-style-type: none"> one-lane paved road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of new trailheads at the Nuttallburg Visitor Use Area (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
Canyon Rim Visitor Center and Burnwood Complex US 19	<ul style="list-style-type: none"> four-lane divided highway (with shoulders) safe maximum gradients safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies in vicinity 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
Fayette Station Fayette Station Road (WV 82)	<ul style="list-style-type: none"> paved one-way road some pull-offs minimal to no shoulders steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> poor existing capacity, especially on peak visitation days access constrained due to road geometry for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term moderate beneficial impact (assuming implementation of peak period shuttle service from a new parking area at Fayette Station top) Off-Peak Period – local long-term moderate adverse impact

As in Alternative 1, a few new hiking and equestrian trails, and trails providing access to climbing areas, would be developed in the park (see Table 4.16). In addition, in Alternative 2 new trails would be added in the north and south ends of the park to enhance park access to cultural resource sites telling the park’s early settlement and industrial history stories. Trailhead parking would be provided for all new trails. The impact of these trail additions (along with trailhead parking) on park access would be local long-term moderate and beneficial.

In Alternative 2 enhancements to parking at the Stone Cliff river access would occur in conjunction with relocation of existing day-use and campground facilities at Stone Cliff to a site above the New River floodplain. Parking would also be expanded at

Table 4.16

**New River Gorge National River
Alternative 2 – Access Changes
Needed to Achieve Desired
Conditions in Visitor Use Areas**

Actions

- **Internal Park Road System**
 - Turkey Spur Road improvements (as in Alternative 1)
 - Grandview circulation and parking improvements (common)
- **State Road System** (NPS and WVDOH collaboration to design and implement)
 - New River Parkway (as in Alt. 1)
 - Thurmond Bridge Replacement (as in Alt. 1)
 - WV 25 improvements (Glen Jean to Southside Junction) (common)
 - Fayette Station Road (WV 82) improvements (as in Alt. 1)
 - wayfinding signage along state roads (as in Alt. 1)
- **Parking**
 - at Thurmond
 - ✓ parking to be added by WVDOH in conjunction with Thurmond Bridge Replacement) (more spaces than in Alternative 1)
 - ✓ new parking at Commercial Row
 - in climbing areas (new)
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas (new)
 - ✓ Dowdy Bluff
 - ✓ Polls
 - at cultural resource sites (new)
 - ✓ Richmond-Hamilton Farm
 - ✓ Cochran Farm
 - ✓ Vallandigham Farm
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Brooks Falls
 - ✓ Stone Cliff
 - ✓ Dun Glen
 - ✓ Cunard
 - ✓ Fayette Station
 - alternative transportation system (shuttle during peak periods of visitor use)
 - ✓ Fayette Station
- **New Trails (with trailheads)**
 - new trails (as in Alternative 1)
 - ✓ Nuttallburg Visitor Use Area trails
 - ✓ Bucklick Branch Equestrian Loop Trail
 - ✓ Laing Loop Nature Trail (no new trailhead)
 - ✓ climbing access trails (Endless Wall, Sunshine Buttress, Bubba City, and Junkyard areas)
 - new trails
 - ✓ Fayette Mine Trail
 - ✓ Stone Cliff Mine Trail
 - ✓ Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - ✓ Thurmond to Sewell Rail Trail
 - ✓ Farm Loop Trail
 - ✓ Craig Branch Equestrian Loop Trail
 - ✓ Sandstone Falls Boardwalk Expansion

four other river access sites in the south and north ends of the park (see Table 4.16). A shuttle system would be used during peak visitation periods to alleviate crowding at the Fayette Station river access and on Fayette Station Road (WV 82). The impact of these actions on river access would be local long-term moderate and beneficial.

At Thurmond roadway, parking, and alternative transportation system improvements would enhance access. Working collaboratively with WVDOH, improvements would be made to WV Route 25 from Glen Jean to Southside Junction. Visitors would continue to be encouraged to park in the lot at Southside Junction and walk to Thurmond via the Thurmond Bridge. New parking would be provided in Thurmond at a small lot adjacent to Commercial Row. In the future additional parking would likely be developed in conjunction with the planned WVDOH project to replace the Thurmond Bridge (see Partnership and Community Collaboration Actions below).

As in Alternative 1, improvements at Nuttallburg Mining Complex and Nuttallburg would provide parking (where none is currently available) for visitors at four trailheads from which they would access trails leading to cultural resource sites at the former Nuttallburg Mining Complex and Nuttallburg town site. In Alternatives 2 to 5, parking would be added in locations where visitors now park along roads near popular climbing and hunting areas (see Table 4.16). In Alternative 2, parking would also be provided at cultural resource in the south end of the park. At Thurmond, parking would be added in conjunction with replacement of the Thurmond Bridge (as in Alternative 1) and at Commercial Row. The impact of these actions on park access would be local long-term major and beneficial.

Partnership and Community Collaboration Actions. The NPS would continue to work with WVDOH on several projects (see Table 4.16).

As in Alternative 1, the NPS would continue to work collaboratively with the city of Hinton to secure safe and legal access to the New River waterfront within the city.

As in Alternative 1, the NPS would continue to work with the CSX Corporation and other property owners to acquire wherever possible legal access to popular visitor use sites.

The NPS would also work collaboratively with its gateway community partners, state agencies, railroad companies, and private landowners to develop trail connections from the park to nearby communities and other visitor attractions, such as Hawks Nest State Park, Babcock State Park, the Gauley River National Recreation Area, Ansted, Oak Hill, Mount Hope, Beckley, and Meadow Bridge (common to Alternatives 2 to 5).

Assuming these collaborative efforts would be effective, the impact on park access would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on park access are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 2 would generally be the same as those described for Alternative 1 (see Section 4.3.16 Park Access (Alternative 1) above). Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term minor to moderate beneficial impact and a cumulative long-term minor to moderate adverse impact on park access. Alternative 2 would contribute negligibly to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on park access. Alternative 2 would contribute negligibly to the total cumulative long-term minor to moderate beneficial impacts and to the cumulative long-term minor to moderate adverse impacts on park access.

4.4.17 Park Operations (Alternative 2)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of natural and scenic resource protection and would guide development of targeted strategies to protect and improve nationally significant resources. Planning and research would greatly facilitate adequate resource management. Improvements to the park water quality program would help park managers better meet their responsibilities and develop the partnerships necessary to improve park water quality, the public's number one park management issue. Active management of natural resources as well as strategic use of partner organizations, grants, universities, scholars, interns, and volunteers would allow park staff to better meet the park mission and goals for natural resources. Staffing would be redirected to areas most likely to create beneficial impacts on natural and scenic resources resulting in a local long-term major beneficial impact on park operations.

In Alternative 2 much of the center portion of the park would be managed as backcountry. Law enforcement patrols and maintenance staff would rely less upon vehicles for patrol and maintenance, as existing logging and mining roads gradually recover. This would cause a minor need for additional staff, resulting in a local short-term minor adverse effect on the park budget. Overall the impact on park operations would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of cultural resource protection and would guide development of targeted strategies to

protect and improve nationally significant resources. Planning and research would greatly facilitate adequate resource management. Active management of cultural resources as well as strategic use of partner organizations, grants, universities, scholars, interns, and volunteers would allow park staff to better meet the park mission and goals for cultural resources. Staffing would be redirected to the areas most likely to create beneficial impacts on cultural resources. As in Alternative 1, some less frequently used items in the park's collection would be transferred to a new regional storage facility and NPS would build a new small facility outside the floodplain for items that are needed at the park. This would improve management of the collections. Taken together these actions would result in a local long-term major beneficial impact on park operations.

In Alternative 2 historic farm structures would be restored and used as exhibits and associated cultural landscapes would be rehabilitated. At Thurmond some buildings would be restored to use as exhibits; others would be leased through the historic leasing program. Restoration of structures and maintaining them as exhibits in good condition would likely require additional park maintenance staff. Leasing some of the buildings would result in less need for park maintenance staff to maintain those buildings, freeing them to keep restored historic structures in good condition. Additional NPS project management staff might be needed as structures are restored. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Public Use, Enjoyment, and Experience Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of interpretive and education programs in the park. Programs would be redirected to reach target and underserved audiences, particularly young people. Wastewater management improvements at public sites would limit the need for port-a-potties and the maintenance and law enforcement staff necessary to manage them, while also improving water quality. New hiking, biking and equestrian trails would improve user satisfaction with park facilities with only a minor need for additional staff. Staffing would be redirected to the areas most likely to create beneficial impacts for park audiences. These actions would result in a local long-term major beneficial impact on park operations.

Alternative 2 proposes that new trails connecting historic and cultural sites be developed, requiring minor additions to park maintenance staff. Volunteers from user groups would be encouraged to help maintain trails, creating a need for staff trained to manage volunteer services. This would be accomplished by retraining and reorganizing existing trails staff. New programs for children and adults at Camp Brookside would create the need for new staff and partnership actions. Interpretation would be focused in the Early Settlement and Farming Themed Area and the Industrial Gorge Themed Area; this would be accomplished through a

realignment of existing staff. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Park Operations Actions. In Alternatives 2 to 5 new sources of funding would become available as NPS works with users and visitors to create partnerships, friends groups, and other mechanisms to support park purposes. Better partnership management and better land use management in adjacent communities would create more opportunities for beneficial working relationships between the park, the local counties and communities, and park neighbors. Enhancing the volunteer program would expand NPS' ability to maintain trails, climbing areas, cultural and natural resources. These actions would result in a local long-term major beneficial impact on park operations.

Alternative 2 calls for leasing some historic structures. Depending on the physical condition of historic structures, terms of the lease, and other factors, it is possible that leasing could provide a minor income stream for the park. This would result in a local long-term minor beneficial impact on park operations.

Land Protection Actions. In Alternatives 2 to 5 the addition of six areas and 212.5 acres to the park to provide for parking and access would improve the ability of rangers to manage these uses within the park. The park would work with neighbors to promote better stewardship of privately-owned lands within the boundary and to reduce impacts on them from park use. This would result in a local long-term moderate beneficial impact on park operations.

Alternative 2 provides for new management zoning for the park. This will make it easier for park employees to monitor and enforce use, and manage newly acquired sites. These actions will result in a local long-term minor beneficial impact to park operations.

Partnership and Community Collaboration Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would lead NPS to implement actions making to make the park more relevant to local users and park neighbors. Working with local gateway communities in collaborative and innovative ways will improve NPS' ability to serve visitors and meet natural and cultural resource protection needs. Development of friends groups, improved relationships with user groups, and working with local governments will enhance the park's ability to meet its mission. These actions are urgently needed to improve the relationships between the park and its neighbors. To better provide for partnership and community collaboration, more staff would be required. While these actions would result in a local short-term minor adverse impact to the park budget, they would also result in a local long-term major beneficial impact on park operations.

■ **Cumulative Impacts**

Other past, present and reasonably foreseeable actions that have had or would have impacts on park operations and facilities include the completion of the New River Parkway, continued minimum maintenance of state roads to and within the park, other transportation improvements, and continued private ownership of lands within the park, particularly in communities. The building of the New River Parkway would mean that law enforcement patrol and maintenance of the River Road area would be greatly improved; other transportation improvements might make remote areas of the park more accessible. The minimum maintenance of state roads such as McCreery Road would continue to complicate park management efforts. Private ownership of land within the park boundaries, particularly in communities, also creates law enforcement issues and conflicts between private owners and visitors. Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact to park operations. Alternative 2 would contribute an imperceptible beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 2 would result in local short-term minor adverse impacts on the park budget and local long-term minor to major beneficial impacts on park operations. Alternative 2 would contribute an imperceptible beneficial impact to the cumulative long-term minor adverse impact on park operations.

4.4.18 Unavoidable Adverse Impacts (Alternative 2)

Unavoidable adverse impacts are major adverse impacts that cannot be fully mitigated or avoided. Alternative 2 would not result in any major adverse impacts.

4.4.19 Irreversible and Irretrievable Commitments of Resources (Alternative 2)

An irreversible commitment of resources is one that cannot be reclaimed, restored, or otherwise returned to its condition prior to disturbance. An irretrievable commitment of resources is a loss of something that once gone, cannot be replaced.

Proposed management actions would generally contribute to resource protection and preservation and would be expected to minimize the occurrence of irreversible or irretrievable impacts. Nevertheless some irretrievable impacts would occur:

- construction projects, landscape restoration and reestablishment, and park operations would use limited amounts of nonrenewable resources, including materials and energy; once these resources are committed they would be irretrievable
- minor amounts of soil would be permanently lost as a result of soil erosion and sedimentation from areas (approximately 190 acres) disturbed by cultural resource management actions, development of new visitor use facilities, and restoration actions

- potential exists at cultural resource sites undergoing restoration or rehabilitation for an irretrievable commitment of resources as a result of any loss of undiscovered below ground resources
- irretrievable commitments of resources could also occur at cultural resource sites undergoing restoration to a specific time period if material from subsequent periods is lost

Surveys, avoidance through design, documentation, and other mitigation would occur before any restoration or rehabilitation begins, thereby minimizing irretrievable impacts to cultural resources.

4.4.20 Relationship between Short-Term Uses of the Environment and Long-Term Productivity (Alternative 2)

In Alternative 2 most of the park would be protected in a natural state with an emphasis on reducing existing forest fragmentation and avoiding future forest fragmentation. Approximately 68.5 percent of the park would be managed as backcountry largely unaltered by future human-induced impacts. Approximately 22.3 percent of the park would be managed as frontcountry forest with minimal future human-induced impacts. The NPS would continue to manage the park to maintain ecological processes and native and biological communities, and to provide for appropriate recreational activities consistent with the preservation of natural and cultural resources. Previously disturbed areas would be restored to return them to productivity, as funding permits. Any actions the NPS takes in the park would be taken with consideration to ensure that uses do not adversely affect the productivity of biotic communities.

Disturbance of the park's soils, water quality, vegetation, and wildlife, due to visitor use and the construction of new facilities would reduce the long-term productivity of the park in localized areas; however, overall there would likely be only a small effect on the park's long-term productivity.

4.5 Environmental Consequences of Alternative 3

4.5.1 Physiography, Geology, and Soils (Alternative 3)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to protect the park's physiography, geology, and soil resources (as in Alternative 1) by:

- generally allowing physiography, geology, and soil resources that are disturbed by natural phenomena – such as landslides – to recover naturally
- restoring/reclaiming physiography, geology, and soil resources altered by human activity – such as mining (in cooperation with WV DEP)
- protecting park resources from potential impacts associated with natural gas/oil production or mining activities that are permitted by valid oil, gas, and mineral rights (and that may be conducted within the park in compliance with appropriate state permits and Section 9b Regulations pursuant to the Surface Mining Control and Reclamation Act) (in cooperation with WVDEP)
- reducing soil erosion and sedimentation by restoring disturbed areas (such as areas disturbed by ATVs), as funding permits

In addition, in Alternative 3 management actions affecting physiography, geology, and soils would focus on the following:

- managing approximately one-half (43.0%) of the park as backcountry and one-tenth (7.7%) of the park as river corridor, with implementation of related management prescriptions that would maintain natural geologic processes and features to persist largely unaltered by further human-induced impacts
- managing the remainder of the park (49.3%) as frontcountry, historic resource, and park development zones, with implementation of related management prescriptions that would allow natural geologic processes and features to persist with minimal human-induced impacts
- reducing threats to geologic and soil resources by identifying areas prone to landslides and locating visitor and park operations facilities outside of areas where construction would increase the potential for mass movement

Impacts of natural resource management actions on physiography, geology, and soil resources would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact soil

resources. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 31 acres of previously disturbed soils.¹ Most disturbances would be associated with stabilization and vegetation removal at discovery sites (30 to 35 sites); minor disturbance would occur in conjunction with rehabilitation of two historic structures (see Table 4.17). During the treatment period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Following the treatment period sites would be revegetated with native grass species. Impacts on soil resources would be local short-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact physiography, geology, and soil resources. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 175 acres.² Approximately 70 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Most disturbances would occur as a result of developments of new camping facilities and trails. During the construction period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Impacts on soil resources would be local short-term minor to moderate and adverse.

Following construction approximately 80 acres would be replanted with native species and 80 acres would be stabilized through placement of crushed stone or other surface treatment for roads, parking facilities, and some trails. Minimal areas of existing undisturbed soils would be permanently developed, primarily including the sites of small visitor facilities such as vault toilets and changing stations. Impacts on soil resources would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 15 acres within the tread of reestablished or new trails), leading to increased potential for soil erosion. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on soils would be local long-term minor and adverse.

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

Land Protection Actions. Impacts of future land protection actions on physiography, geology, and soil resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.1 Physiography, geology, and soil resources (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to work collaboratively with WV DEP to facilitate reclamation of areas disturbed by mining and to protect park resources from the potential impacts of mineral resource extraction on lands adjoining or near the park (as in Alternative 1). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

NPS would provide ongoing technical assistance to communities within the park and others engaged in resource management activities beyond the park boundary that have the potential to positively impact the park's geologic and soil resources (common to Alternatives 2 to 5). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on physiography, geology, and soils are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.1 Physiography, Geology, and Soils (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on physiography, geology, and soil resources. Alternative 3 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term moderate to major beneficial impacts, local short-term minor adverse impacts, and local long-term minor to moderate and adverse impacts on physiography, geology, and soil resources. Alternative 3 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on physiography, geology, and soil resources. There would be no impairment of park resources or values related to physiography, geology, and soil resources.

4.5.2 Floodplains¹ (Alternative 3)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would seek to protect, preserve and restore the natural resources and functions of floodplains (common to Alternatives 2 to 5) by:

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- removing debris from floodplains following flooding events
- preventing placement of additional obstructions in the New River and, wherever possible, removing structures in the New River that are no longer in use – such as abandoned bridge piers

Impacts on floodplains would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In the future visitor use facilities within the floodplain would be limited to facilities that are dependent upon locations in proximity to water and for which non-floodplain sites would not be a practicable alternative. Existing facilities to remain within the floodplain would generally include river accesses, picnic facilities, trails, and river rest stops. Improvements to existing facilities and new facilities in the floodplain would include: improvements to the existing Mermaid Beach river access; addition of river launches at Meadow Creek West, Bass Lake and Surprise; and addition of disabled boater access at some river accesses.

Construction of improvements in the floodplain at existing and new visitor use sites would occur in areas that have experienced recent prior disturbance and would involve minimal placement of impervious surfaces within the floodplain. Mitigation measures would minimize potential for flooding or for other adverse impacts on

¹ Floodplains with a recurrence interval of 100 years

floodplain values associated with these improvements. At the new Meadow Creek West, Bass Lake, and Surprise river accesses, mitigation measures would include the following:

- during final design, the NPS would complete topographic surveys and flood elevation studies, and a floodplain statement of findings, as appropriate
- all facilities within the floodplain would be designed to meet standards and criteria of the National Flood Insurance Program (44 CFR Part 60)
- all park roads, trails, and parking areas in the floodplain would be designed with unpaved surfaces
- all facilities not functionally dependent on proximity to water – such as toilets and overnight camping facilities – would be located above the floodplain; parking would also be located above the floodplain to the maximum extent possible
- all existing previously disturbed areas within the floodplain on the site (not needed for new facilities) would be restored

At Surprise construction of new river access facilities would impact a mature oak-tulip poplar silverbell floodplain forest on Red Ash Island. Impacts on the floodplain forest would be mitigated by limiting visitor use facilities in the floodplain to the minimum possible, including an access road, an access trail, small drop-off area, disabled river access, and launch site; the primary drop-off area, parking, staging areas, visitor changing/comfort stations, and picnic facilities would be located above Red Ash Island and outside of the floodplain at the base of the gorge wall. Collectively these new visitor use facilities would moderately affect natural floodplain values and minimally increase the use of the floodplain, resulting in a local long-term moderate adverse impact on floodplains.

Existing campgrounds in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen would be eliminated and natural floodplain vegetation would be restored (common to Alternatives 2 to 5). Impacts on floodplains would be local long-term minor and beneficial.

Park Operations Actions. Impacts of floodplain management informed through findings of detailed floodplain studies would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Impacts of maintaining the existing park headquarters and operations facilities at Glen Jean within the 100-year floodplain would continue to be local long-term minor and adverse (common to Alternatives 1 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Land Protection Actions. Impacts of future land protection actions on floodplains would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.2 Floodplains (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of partnership and community collaboration actions on floodplains would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.2 Floodplains (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on floodplains are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.2 Floodplains (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on floodplains. Alternative 3 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on floodplains. Alternative 3 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on floodplains. There would be no impairment of park resources or values related to floodplains.

4.5.3 Water Quality (Alternative 3)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain water quality in the New River and its tributaries in its natural condition free of pollutants generated by human activity (as in Alternative 1) by:

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions

In addition, in Alternative 3 management actions affecting water quality would focus on:

- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact the river (common to Alternatives 2 to 5)
- managing almost one-half (43.0%) of the park as backcountry, with implementation of related management prescriptions that would generally eliminate further forest fragmentation and the potential for human-induced impacts to water quality
- managing almost one-half (47.8%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce further forest fragmentation and the potential for human-induced impacts to water quality

Collectively these actions would protect natural vegetation and reduce soil disturbance and subsequent erosion and sedimentation potentially associated with forest disturbances and visitor use. Impacts on water quality would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact water quality. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 31 acres of previously disturbed soils (see Table 4.17).¹ During the treatment period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Following the treatment period sites would be revegetated with native species. Impacts on water quality would be local short-term minor to moderate and adverse.

Permanent removal of impervious surfaces associated with modern structures at two early settlement farms would enhance on-site infiltration of stormwater and reduce site runoff (as in Alternative 1). Impacts on water quality would be negligible.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact water quality. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 175 acres.² Approximately 70 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period use of best management practices (BMPs) would mitigate potential water quality impacts

¹ In addition to the approximate three acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Impacts on water quality would be local short-term minor to moderate and adverse.

Following construction approximately 80 acres would be replanted with native species and 80 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Over the long-term unpaved roads and parking areas would be subject to compaction and would have the potential to generate increased runoff and to convey pollutants from parking areas and roads to streams and the river. Permanent stormwater management measures would be used in accordance with requirements of the WV NPDES Stormwater Program to reduce pollutants in stormwater discharged from developed sites. Impacts on water quality would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 15 acres within the tread of reestablished trails), leading to increased potential for erosion and subsequent sedimentation in streams and the river. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on water quality would be local long-term minor and adverse.

Park Operations Actions. Impacts of future park operations on water quality would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on water quality would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future partnerships and collaboration on water quality would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on water quality are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.3 Water Quality (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on water quality. Alternative 3

would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts, local short-term minor to moderate adverse impacts, and local long-term minor adverse impacts on water quality. Alternative 3 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on water quality. There would be no impairment of park resources or values related to water quality.

4.5.4 Vegetation (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native plants and natural landscapes (as in Alternative 1) (exclusive of wildland fire management). Actions would generally focus on the following:

- generally allowing natural landscapes that are disturbed by natural phenomena – such as landslides, floods, and fire – to recover naturally
- restoring natural landscapes altered by human activity, such as logging, mining, agriculture, transportation, utilities, and exclusion of natural fire
- preserving and restoring native plant populations and the communities in which they occur (particularly rare or significant plant communities)
- aggressively treating invasive exotic plant and insect pest species

In addition, in Alternative 3 management actions affecting vegetation would include the following:

- managing almost one-half (43.0%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing almost one-half (47.8%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact riparian communities, particularly cobble and flatrock communities

- removing non-water-dependent uses from the floodplain and restoring native floodplain vegetation (common to Alternatives 2 to 5)
- managing wildland fire to diminish the risk and consequences of severe wildland fires and, to the extent possible, to restore and protect the natural biological diversity and natural disturbance regime of the park (common to Alternatives 2 to 5)
- using prescribed fire to promote ecosystem health and native vegetation diversity in fire-dependent forest communities, such as rimrock pine communities and xeric oak-hickory forests (common to Alternatives 2 to 5)

Impacts of natural resource management actions on vegetation would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact native plants and plant communities. Conceptual planning suggests that cultural resource management actions would affect approximately 31 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.17).

Rehabilitation of two buildings would require disturbance to approximately 1 acre of previously disturbed land. Affected vegetation would generally include a mix of ornamental trees and shrubs, non-native plants, and old field successional species. Following the treatment period sites would be appropriately revegetated where cultural landscapes are restored. Impacts on vegetation would be local long-term minor to minor and adverse.

Disturbance would also occur in conjunction with stabilization and protection at approximately 30 to 35 discovery sites, along with development of visitor use improvements and installation of interpretative media. The typical discovery site would encompass an area of ruins in the park's mixed mesophytic forest – approximately one acre in size or less – overgrown by a mix of variable-age trees, shrubs, and grasses, with many sites dominated by kudzu and other non-native plants. Treatment would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that fragmentation would be minimized or would not occur. Cleared areas would be revegetated with native grasses. Impacts on vegetation would be local long-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact vegetation. Conceptual planning suggests that development of

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

new or improved visitor use facilities would disturb approximately 175 acres.¹ Approximately 70 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. However, development of a new river access at Surprise would require limited clearing on Red Ash Island where a significant mature floodplain forest is present (dominant forest on the island is oak-tulip poplar/silverbell, with subdominant sycamore-ash floodplain forest and sycamore-river birch riverscour woodland). Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly on Red Ash Island and where existing unmaintained trails are improved to provide official park trails. Following construction approximately 80 acres would be replanted with native species and 80 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 15 acres would be within the tread of reestablished or new trails. Impacts on vegetation would be local long-term minor to moderate and adverse.

Visitor use throughout the park would have the potential to impact native plants and plant communities – particularly sensitive, rare, or significant vegetation communities. Management actions would protect sensitive, rare, or significant vegetation communities from visitor use impacts, as needed, generally including (common to Alternatives 2 to 5):

- in riparian areas (especially cobble and flatrock communities) – eliminate fires and overnight camping in all riparian areas; designate day-use river reststops downstream of Cunard
- on river bars – eliminate fires on most bars and close to visitor use bars with sensitive resources that are impacted by camping and day-use
- in clifftop communities – provide designated routes to climbing areas and limit access seasonally to critical cliff natural areas
- in flatrock communities – control visitor access; extend or add boardwalks to protect areas where visitor use occurs, such as at Sandstone Falls

Impacts on vegetation would be local long-term moderate and beneficial.

Land Protection Actions. Impacts of future land protection actions on vegetation resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of implementing a community-based approach to managing wildland fire on vegetation would be local

¹ In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation Resources (Alternative 2) above).

Impacts of future collaborative management actions on significant unfragmented forest blocks that are outside but near the boundary of the park would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.4 Vegetation (Alternative 1) above). Alternative 3 in conjunction with the impacts of other past, present, and reasonably foreseeable actions would result in a cumulative long-term moderate adverse impact on vegetation. Alternative 3 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term moderate to major beneficial impacts and local long-term minor to moderate adverse impacts on vegetation. Alternative 3 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on vegetation. There would be no impairment of park resources or values related to vegetation.

4.5.5 Aquatic Wildlife (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain and restore natural stream ecosystems with hydrologic features supporting a full range of natural aquatic organisms by (as in Alternative 1):

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- removing debris from floodplains following flooding events

In addition, in Alternative 2 management actions affecting aquatic habitats and dependent wildlife would focus on the following (common to Alternatives 2 to 5):

- maintaining natural flows and hydro patterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- protecting upland wetlands and their processes
- eliminating introduction of non-native species to aquatic ecosystems
- eliminating actions to supplement or maintain selective non-native species in aquatic ecosystems (as appropriate, based on further study of non-native species impacts)
- allowing select introduced species that may alter some process and interactions (e.g. continue WV State black fly treatments)

Impacts on aquatic habitat and dependent wildlife would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would seek to avoid or minimize direct and indirect impacts on aquatic habitat and dependent wildlife associated with visitor use facilities and visitor use.

Physical modifications to aquatic habitat and dependent wildlife caused by development of visitor use facilities would generally not occur except where they could not be avoided because a facility is water-dependent. Where water-dependent uses require location of new facilities along the river bank and in the near-shore area, some degree of physical modification to aquatic habitat and dependent wildlife would be unavoidable. This would occur at the new Meadow Creek West, Terry Beach, and Surprise river accesses where new river launches would be developed, requiring limited site grading and some degree of bottom hardening to provide a safe surface for walking and to protect the bank and river bottom from erosion due to visitor use. Launch areas would be confined to the smallest possible area needed to accommodate average daily visitor demand.

Impacts of new or improved visitor uses on aquatic habitat and dependent wildlife would be local short-term minor and adverse during construction and local long term minor and adverse following construction.

Potential visitor use impacts on aquatic habitat and dependent wildlife would continue to occur throughout the park where visitors have uncontrolled access to the New River, tributary streams, and special aquatic habitat and dependent wildlife. Indirect impacts would include those resulting from trampling of riparian vegetation, subsequent soil exposure, soil erosion, and sedimentation. Direct impacts would occur where visitors cross streams while hiking, walk in streams or the river while fishing, or disturb the river bottom while swimming, launching boats, or stopping at river rest stops. These impacts would be mitigated by designing new trails (approximately 93 miles) with the minimum number of tributary stream crossings and – where crossings could not be avoided – placement of footbridges to avoid hiker impacts, as funding permits. In the future sensitive aquatic habitat and dependent wildlife at and in the vicinity of popular backcountry river rest stops would be closed to day-use. At river launches visitor access to the river would be restricted to the minimum area possible and riparian areas adjoining launch sites would be closed. Educational efforts would help deter visitor impacts through signage, informational materials, and interpretive programs that explain ecological values and sensitivity to disturbance of riparian areas and special aquatic habitat and dependent wildlife. Impacts on aquatic habitat and dependent wildlife would be local long-term minor and adverse.

Park Operations Actions. Impacts of future park operations actions on aquatic habitat and dependent wildlife would be local long-term major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on aquatic habitat and dependent wildlife would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future partnership and community collaboration actions on aquatic habitat and dependent wildlife would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on aquatic habitat and dependent wildlife are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.5 Aquatic Wildlife

(Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. Alternative 3 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on aquatic habitat and dependent wildlife. Alternative 3 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. There would be no impairment of park resources or values related to aquatic habitats and dependent wildlife.

4.5.6 Terrestrial Wildlife (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native animals (as in Alternative 1) by:

- perpetuating native animal life as part of the park's natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible

In addition, in Alternative 3 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing almost one-half (43.0%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing almost one-half (47.8%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on terrestrial habitat and dependent species would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact terrestrial habitat and dependent species. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 31 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.17).

Habitat impacts at approximately 30 to 35 discovery sites would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources on sites typically one acre in size or less. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not occur. Field survey prior to treatment actions would determine species present in the vicinity of each site and appropriate protection measures. Treatment would be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season. Wildlife in the vicinity of each site would be expected to migrate to adjacent habitat areas. Impacts on terrestrial habitat and dependent species would likely be local long-term minor and adverse.

Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at two sites and affect approximately one acre. Pre-treatment and post-treatment habitat conditions would be quite similar, characterized by a mix of native grasses and ornamental plantings, although non-native plants would be removed where they are currently present at some sites. Affected wildlife would generally include habitat generalists that live in close association with human habitation. During the treatment period wildlife would be expected to migrate into adjacent habitat areas; following the treatment period they would likely migrate back to restored sites. Impacts on terrestrial habitat and dependent species would likely be local short-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Development of new facilities – and visitor use of those facilities – would have the potential to disturb or displace wildlife or cause areas to be avoided by wildlife. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 175 acres, dispersed among 33 sites and 81 miles of trails (primarily existing unmaintained trails that would be improved).² Approximately 70 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds,

¹ *In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1*

² *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

successional old field species, and non-native plants. However, development of a new river access at Surprise would require limited clearing on Red Ash Island where a significant mature floodplain forest is present. Field survey prior to treatment actions would determine terrestrial wildlife species present in the vicinity of each visitor use site and the appropriate protection measures needed. Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly on Red Ash Island and where existing unmaintained trails are improved to provide official park trails. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not occur. Construction would generally be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season. Following construction approximately 80 acres would be replanted with native species and 80 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 15 acres would be within the tread of reestablished or new trails. Wildlife would be expected to avoid sites during construction or would only travel through sites construction activity has abated, resulting in a local short-term minor adverse impact on wildlife and dependent species. Following construction, the permanent loss of habitat combined with disturbance, injury, or death associated with long-term visitor use and management of visitor use sites would result in a local long-term minor to moderate adverse impact on terrestrial habitat and dependent species.

Continuation of hunting in the park in accordance with all applicable regulations and policies adopted by the responsible management agencies would continue to have negligible impacts on terrestrial habitat and dependent species (as in Alternative 1) (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above).

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 above). Maintenance of open fields and forest edge along their perimeter would enhance wildlife habitat diversity locally in the park. The impact on terrestrial habitat and dependent species would be local long-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on terrestrial habitat and dependent species would likely be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.6 Terrestrial Wildlife (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of cooperation regarding hunting and game management between the NPS and the WV DNR on terrestrial habitat and dependent species would be negligible (as in Alternative 1) (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on terrestrial habitat and dependent species are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on terrestrial habitat and dependent species. Alternative 3 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts, local short-term minor adverse, and local long-term minor to moderate adverse impacts on terrestrial wildlife. Alternative 3 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on terrestrial wildlife. There would be no impairment of park resources or values related to terrestrial wildlife.

4.5.7 Rare, Threatened, and Endangered Species (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to generally increase the populations of rare, threatened, or endangered species in the park and to secure sufficient, suitable habitat to “recover” species designated as threatened or endangered (as in Alternative 1). Actions would generally focus on the following:

- managing habitat of threatened and endangered species to maintain their value for species recovery
- managing habitat of state-listed species to maintain their value for species maintenance to the greatest extent possible
- managing other native species of special management concern to the park to maintain their natural abundance and distribution
- controlling detrimental non-native species impacts on rare, threatened, or endangered species

In addition, in Alternative 3 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing almost one-half (43.0%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated

impacts to diversity and vertical understory structure, including rare species and communities

- managing almost one-half (47.8%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure, including rare species and communities
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on rare, threatened, and endangered species would be local long-term major and beneficial.

Cultural Resource Management Actions. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 31 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.17). Restoration or rehabilitation of historic structures in the immediate vicinity of buildings would occur at two sites and affect approximately 1 acre. At approximately 30 to 35 discovery sites potential habitat impacts would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining structures on sites typically one acre in size or less. Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Public Use, Enjoyment, and Experience Management Actions. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 175 acres, dispersed among 33 sites and 81 miles of trails

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

(primarily existing unmaintained trails that would be improved).¹ Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Impacts of the ongoing program to stabilize and gate mine portals where rare, threatened, and endangered species are present would continue. Gates in abandoned mine openings throughout the park would continue to be local long-term moderate and beneficial (common to Alternatives 1 to 5) (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above).

To protect designated species visitor use in certain areas of the park would be limited to day-use only, including Rush Run, Sewell, Beauty Mountain, Endless Wall, Sunshine Buttress, and Ames (common to Alternatives 2 to 5).² Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Additional protections in climbing areas – including Endless Wall, Sunshine Buttress, Alabama, and Ames – would include provision of designated trails to climbing routes that would reduce the current proliferation of social trails that potentially disturb habitat of designated species (common to Alternatives 2 to 5). Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Park Operations Actions. Impacts of future park operations actions on rare, threatened or endangered species would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on rare, threatened or endangered species would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

¹ *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

² *Visitor use in the Nuttallburg Visitor Use Area would also be limited to day-use only pursuant to the Nuttallburg Visitor Use Area DCP/EA (NPS 2008c)*

Partnership and Community Collaboration Actions. Impacts of future collaborative management actions on rare, threatened, and endangered species and their habitats that are outside but near the boundary of the park would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on rare, threatened, and endangered species are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on rare, threatened, and endangered species. Alternative 3 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on rare, threatened, and endangered species. Alternative 3 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on rare, threatened, and endangered species. There would be no impairment of park resources or values related to rare, threatened, and endangered species.

4.5.8 Scenic Resources (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Resource management actions would seek to protect a range of views in all areas of the park, allowing visitors to experience the extent of the gorge, the river, the forest, and the rim by (as in Alternative 1):

- removing non-native plants at sites where they cause a major scenic or aesthetic intrusion
- reclaiming abandoned mine lands at sites throughout the park (in cooperation with the WV DEP)

In addition, in Alternative 3 management actions affecting scenic resources would focus on the following:

- managing approximately almost one-half (43.0%) of the park as backcountry with implementation of related management prescriptions that

would protect unfragmented forest blocks and natural scenic qualities from human-induced impacts

- managing approximately almost one-half (47.8%) of the park as frontcountry with implementation of related management prescriptions that would protect natural scenic qualities by reducing human-induced disturbance
- maintaining a nearly continuous strip of natural riparian habitat along the New River, thereby also preserving its natural scenic qualities (common to Alternatives 2 to 5)

Impacts on scenic resources would be local long-term minor to major and beneficial.

Cultural Resource Management Actions. Removal of modern structures at three sites where potentially significant early settlement cultural landscapes exist (as in Alternative 1) and treatments at approximately 30 to 35 cultural resource sites (to be managed as discovery sites) would enhance the quality of scenic resources fundamental to the park (see Section 4.5.10 Cultural Landscapes (Alternative 3) above). Impacts on scenic resources would be local long-term minor to moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities and expansion of existing facilities would alter the park setting in the vicinity of improvements:

- approximately 81 miles of new park trails would be developed, mostly by improving existing unmaintained trails to single-track trails approximately 24 inches in width, requiring minor alteration to the park setting
- approximately 22 small parking areas would be developed to provide trailheads for hikers, climbers, and horseback riders, mostly along existing roads on forest block perimeters, and on previously disturbed sites
- one existing day-use facility would be improved through minor additions or expansions, most of which would enhance the existing setting, although there could be some minimal impacts to vegetation at some sites
- approximately 5 parking areas at existing river accesses would be expanded, with minimal changes to the park setting
- one new parking area would be developed near U.S. Route 19 for satellite parking in support of a visitor shuttle system
- three new river accesses and related day-use areas would be developed requiring clearing and alteration of the riparian zone at the river edge where the river launch would be located; two would be developed in

conjunction with new developed campgrounds in areas that have been previously disturbed generally converting old successional field areas to developed uses; at Surprise development of related parking facilities on the bench above the New River would alter the wooded natural setting

- four new developed campgrounds would be developed on open sites, requiring conversion of early successional old field vegetation on previously disturbed sites to developed visitor uses
- five existing primitive campgrounds would be expanded, requiring small areas of clearing for development of new campsites and road access that would slightly alter the park setting
- an existing primitive campground and day-use area in the floodplain would be relocated to a new site in an area of mixed vegetation where some minor clearing of trees would be required
- approximately ten new groups of backcountry campsites would require small clearings for campsites in clusters along park trails in the backcountry and frontcountry
- a new park road on the Highland-Backus Plateau would be developed through expansion of an existing unmaintained road and minor improvements to the existing administrative road to Surprise

Overall the impacts of visitor use facilities on scenic resources would be local long-term minor and adverse.

Existing campgrounds in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen would be eliminated and natural floodplain vegetation would be restored. Impacts on scenic resources would be local long-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on scenic resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.8 Scenic Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future collaborative management actions on scenic resources that are outside but near the park boundary would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.8 Scenic Resources (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on scenic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.8 Scenic Resources (Alternative 1))

above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on scenic resources.

Alternative 3 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term minor impacts on scenic resources.

Alternative 3 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on scenic resources. There would be no impairment of park resources or values related to scenic resources.

4.5.9 Archeological Resources (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect and preserve archeological resources against natural destruction wherever practicable by eliminating and avoiding natural resource impacts, stabilizing sites and structures, and monitoring conditions. Management actions including removal of vegetative overgrowth at areas of known or potential archeological resources would be preceded by research sufficient to identify and evaluate such resources. The impact on archeological resources receiving stewardship actions would be local long-term minor and beneficial.

Backcountry zoning would apply to almost one-half (43.0%) of the park. In backcountry zones potential disturbance to archeological resources resulting from park development could occur only along zone perimeters and new trails and at a few designated backcountry camping sites (Figure 2.4). The impact on archeological resources would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to identify and evaluate park archeological resources and to assess their condition and threats to them. Eligible archeological resources would continue to be nominated for listing in the National Register, as appropriate. Archeological resources would generally continue to be left undisturbed except where intervention could be justified based on compelling needs for research, interpretation, site protection, or park development.

Specific management actions at cultural resource sites that could potentially disturb archeological resources would include (see Table 4.17):

- historic building rehabilitation at three cultural resource sites

Table 4.17

**New River Gorge National River
Alternative 3 – Site-Specific
Cultural Resource Management
Actions**

Actions *(In addition to Alternative 1 see Table 4.6 above)*

- **Historic Structure Rehabilitation** (with reuse through the park leasing program)
 - Trump-Lilly Farm (farmhouse)
 - Richmond-Hamilton Farm (farmhouse)
 - Vallandingham Farm (farmhouse)
- **Discovery Site Stabilization and/or Maintenance**
 - treatment actions – at approximately 30 to 35 discovery sites – as needed to stabilize resources and/or to protect resources from potential visitor use impacts

- stabilization and protection actions at approximately 30 to 35 discovery sites

Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Public Use, Enjoyment, and Experience Management Actions. Ground disturbance associated with development of new facilities and enhancement of existing facilities could affect archeological resources at sites throughout the park. Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Expanded visitor use in historic resource zones, along trails, in the vicinity of recreation sites, and at discovery sites (approximately 30 to 35 sites) would increase vulnerability of archeological resources to surface disturbance, inadvertent damage, and vandalism. Loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. NPS staff or volunteer presence and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains. Because expanded visitor use would be spread throughout the park, along the new through park trail and several other new trails, at numerous new camping facilities, and at a large number of discovery sites at or near these new facilities, the potential for the impact on archeological sites would be dispersed. This would make resource protection more difficult for NPS staff and volunteers. The impact on archeological resources would be local long-term minor and adverse.

Increased use of archeological sites and resources for public education and interpretation at discovery sites throughout the park would increase awareness and appreciation of resources, thereby increasing support for their preservation, and resulting in a negligible to local long-term minor beneficial impact on archeological resources.

Park Operations Actions. Impacts of future provision of water supply and wastewater treatment services at Thurmond on archeological resources would be negligible to local long-term minor and adverse (as in Alternative 1) (see Section 4.3.9 Archeological Resources (Alternative 1) below).

Land Protection Actions. Impacts of future land protection actions on archeological resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.9 Archeological Resources (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.9 Archeological Resources (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 3 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to archeological resources.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to moderate beneficial impacts and local long-term minor adverse impacts on archeological resources. Alternative 3 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of park resources or values related to archeological resources.

4.5.10 Cultural Landscapes (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions in the park would be expanded to include managing vegetation at discovery sites. Management would seek to control invasive plants at each site on an ongoing basis. Pruning or removal of natural forest vegetation would occur regularly where it threatens to overtake cultural landscapes or jeopardizes the integrity of landscape features. Stormwater management would seek to protect landscapes from impacts of flooding, erosion, sedimentation, and landslides. Impacts on cultural landscapes would be local long-term moderate and beneficial.

Cultural landscape sites where natural resource management actions would not be implemented would continue to be at risk due to vegetation overgrowth, poor drainage, and/or landslide susceptibility (common to Alternatives 2 to 5). Impacts on cultural landscapes would be local long-term minor to moderate and adverse.

Cultural Resource Management Actions. Efforts would continue to include all cultural landscapes in the park's *Cultural Landscapes Inventory* (NPS 2005a), to identify and nominate eligible landscapes to the National Register, and to prepare cultural landscape reports for all cultural landscapes (as in Alternative 1).

Specific management actions affecting cultural landscapes would include (see Table 4.17):

- Approximately 30 to 35 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along the Through Park Trail. Many of these sites would be early settlement farms and ruins of historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve cultural landscape components, maintenance activities would mitigate deterioration of cultural landscape components by protecting their condition; stabilization would reestablish the stability of unsafe damaged or deteriorated cultural landscape components while maintaining their existing character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on cultural landscapes would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Impacts of new visitor facilities on cultural landscapes would include:

- Where historic structures would be rehabilitated for housing at three early settlement farmhouses, use modifications such as development of parking and walkways, could result in local long-term minor and adverse impacts on the cultural landscape.
- Circulation system improvements at Grandview would potentially affect the cultural landscape (common to Alternatives 2 to 5) (see Section 4.4.16 Visitor Access above). During construction ground disturbance would result in a local short-term minor to moderate adverse impact to the cultural landscape. Following construction the impact on the cultural landscape would be local long-term minor and adverse.
- Parking improvements at Thurmond in the vicinity of Commercial Row would affect the cultural landscape (see Section 4.5.16 Visitor Access below). Mitigating actions and impacts would be similar to those implemented for circulation improvements at Grandview (see preceding section).
- At discovery sites (approximately 30 to 35 sites), management actions would include installation of contemporary facilities and structures to control visitor access to cultural landscape components (if present) that would be vulnerable to damage from visitor use. Design and location of contemporary facilities and structures, as needed, would be considered within the context of the significance of the landscape and would minimize

adverse impacts on the character and features of each cultural landscape to the maximum extent practicable. During construction ground disturbance would result in local short-term minor adverse impacts on cultural landscapes. The long-term impacts on the cultural landscapes would be local long-term minor and adverse.

- Approximately 81 miles of new park trails would enhance visitor access to recreation sites and cultural resources sites in the park. Most new trails would use previously existing unmaintained trails, some of which might be determined historically significant upon further investigation and coordination with the WV SHPO. Future development of a park trail management plan would include Section 106 compliance with the WV SHPO during which historic significance would be assessed and mitigation measures incorporated into trail system design, as appropriate. The long-term impacts on cultural landscapes would be local long-term minor and adverse.

Visitor use throughout in the park would continue to impact cultural landscapes, particularly in remote areas where ranger patrols and NPS staff are not routinely present. Visitor use impacts would generally include inadvertent disturbance and vandalism. Improved access to cultural landscapes at discovery sites along the Through Park Trail would increase the potential for visitor use impacts in those locations, although increased presence of NPS staff along popular trails would help educate visitors about appropriate resource stewardship. Impacts on cultural landscapes would be local long-term minor and adverse.

Park Operations Actions. Impacts of future provision of water supply and wastewater treatment services at Thurmond on cultural landscapes would be negligible to local long-term minor and adverse (as in Alternative 1) (see Section 4.3.10 Cultural Landscapes (Alternative 1) above).

Land Protection Actions. Impacts of future land protection actions on cultural landscapes would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.10 Cultural Landscapes (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscapes are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.10 Cultural Landscapes (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscapes. Alternative 3 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

- **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to cultural landscapes.

- **Conclusion**

Management actions in Alternative 3 would result in local short-term minor to moderate adverse impacts, local long-term minor to moderate beneficial impacts, and local long-term minor to moderate adverse impacts on cultural landscapes. Alternative 3 would contribute a minor beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on cultural landscapes. There would be no impairment of park resources or values related to cultural landscapes.

4.5.11 Historic Structures (Alternative 3)

- **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) (as in Alternative 1). Stewardship would generally include removal of non-native plants and improvements to drainage in the vicinity of historic structures. The impacts to historic structures receiving stewardship actions would be local long-term minor and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) and to obtain determinations of their eligibility for the National Register (as in Alternative 1). Stewardship would generally include building stabilization to provide protection from weather and vandalism. Maintenance of previously stabilized structures would continue. The impacts to historic structures receiving stabilization and ongoing maintenance would be local long-term minor and beneficial.

Further stewardship of historic structures beyond the actions included in Alternative 1 (see Table 4.6) would include the following (see Table 4.17):

- Some individual structures already determined eligible for the National Register (those owned by the NPS) would be rehabilitated, including three early settlement farms.
- Approximately 30 to 35 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along the Through Park Trail. Some of these sites would be early settlement farms and historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve an historic building, maintenance activities would mitigate building deterioration by protecting its condition; stabilization would reestablish the stability of unsafe damaged or

deteriorated structural components while maintaining existing building character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would generally be local long-term minor to moderate and beneficial. Where structures are rehabilitated for leasing or visitor services, concession use modifications, such as those needed to accommodate accessibility and additional means of egress, could result in local long-term minor to moderate and adverse impacts.

Public Use, Enjoyment, and Experience Management Actions. Historic structures leased for commercial use or housing at Prince Brothers General Store and three early settlement farmhouses would be susceptible to wear and tear from increased use, inadvertent damage, or vandalism. Leases and agreements would seek to reduce the potential for adverse impacts on historic structures associated with their adaptive reuse including maintenance requirements to avoid or mitigate adverse impacts of visitor use. Impacts on historic structures would be local long-term minor to moderate and adverse.

Park Operations Actions. Impacts of future provision of water supply and wastewater treatment services at Thurmond on historic structures would be negligible to local long-term minor and adverse (as in Alternative 1) (see Section 4.3.17 Historic Structures (Alternative 1) above).

Land Protection Actions. Impacts of future land protection actions on historic structures would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.11 Historic Structures (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to provide technical assistance to the city of Hinton to assess treatment options for rehabilitation and adaptive reuse of the city-owned Hinton Depot and to assist with implementation of treatment by helping to identify funding options and to develop grant applications (as in Alternative 1). Impacts on historic structures would be local long-term moderate and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic structures are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.11 Historic Structures (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on historic structures. Alternative 3 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to historic structures.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on historic structures. Alternative 3 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on historic structures. There would be no impairment of park resources or values related to historic structures.

4.5.12 Ethnographic Resources (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Backcountry zoning would preserve unfragmented blocks of mixed mesophytic forest in 43.0 percent of the park, while frontcountry zoning where human-induced fragmentation would be decreased would apply to 47.8 percent of the park. This would protect the forest and its associated watershed which is the ethnographic resource identified as vital to the park's traditionally associated people and groups (Hufford et al 2006). Impacts on ethnographic resources would be local long-term major and beneficial.

Natural resource management actions would also protect specific natural and cultural resources found within the park's mixed mesophytic forest that are important to the park's traditionally associated people, such as plants, animals, and sites of former towns, settlement areas, and industrial sites (as in Alternative 1). Impacts to ethnographic resources would be local long-term minor to moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to include appropriate studies and consultations to further document ethnographic resources and uses, traditionally associated people, and other affected groups, and cultural affiliations to park resources. Eligible ethnographic resources would continue to be nominated for listing in the National Register, as appropriate.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites would rehabilitate or stabilize resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.17 and Sections 4.5.10 Cultural Landscapes and 4.5.11 Historic Buildings above). Impacts on ethnographic resources would be local long-term minor to moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities at historic structures, cultural landscapes, and discovery sites

(approximately 30 to 35 sites) would impact resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.19 and Sections 4.5.10 Cultural Landscapes and 4.5.11 Historic Buildings above). Impacts on ethnographic resources if determined to be present would be local long-term minor and adverse.

Impacts associated with increased visitor use on ethnographic resources, if determined to be present, would include the following (see Sections 4.5.10 Cultural Landscapes and 4.5.11 Historic Buildings above):

- local long-term minor to moderate and adverse impacts at sites where structures (with associated cultural landscapes) are rehabilitated and leased for commercial use or housing
- local long-term minor to moderate and adverse impacts elsewhere in the park, particularly in remote areas and in the vicinity of discovery sites (approximately 30 to 35 sites) where ranger patrols and NPS staff are not routinely present

Land Protection Actions. Impacts of future land protection actions on ethnographic resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.12 Ethnographic Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. The NPS would continue to consult with traditionally associated groups and Indian tribes (as in Alternative 1) (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Impacts on ethnographic resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 3 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to ethnographic resources.

■ Conclusion

Management actions in Alternative 3 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on ethnographic resources. Alternative 3 would contribute a minor beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of park resources or values related to ethnographic resources.

4.5.13 Regional and Local Economy (Alternative 3)

In Alternative 3 – Through Park Trail – the NPS would expand the park's contributions to the Southern West Virginia's tourism industry and economic environment by offering a broader variety of recreational and interpretive experiences to visitors and residents.

The development the of a north-south trail system through the entire New River Gorge would positively impact the New River Gorge's appeal as a recreational destination for hikers and bikers. The trail system would be supported by the expansion of access point and camping facilities in several locations along the river. Most of the visitation increase in this alternative would occur in the middle section of the park, between the Sandstone Visitor Center and Thurmond.

The park would expand its contributions to Southern West Virginia's tourism industry and socioeconomic environment. Fayetteville would continue to be the gateway community for the area's whitewater rafting industry, Beckley would continue its current function as a primary lodging, dining and visitor service area in support of tourism to New River Gorge, and communities along the US 19 corridor such as Oak Hill, Mount Hope, Bradley and North Beckley would continue to provide limited visitor support services.

Improvements in the middle section of the park related to the through park trail, the upgrading of McKendree Road, and side trails would produce moderate visitation increases in this area. The junction of I-64 and the New River Parkway at Sandstone Visitor Center would also experience a moderate visitation increase in this alternative.

In the south end of the park, moderate visitation increases would occur along the New River Parkway, particularly in and around the restored Hinton Depot. In the park's north end a major visitation increase would occur at the restored Nuttallburg town site, and minor visitation increases would result from the through park trail and its related side trails.

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Impacts of these expenditures on the regional and local economy would be regional short-term minor

and beneficial and regional long-term minor and beneficial (common to Alternatives 2 to 5) (see Section 4.4.13 Regional and Local Economy (Alternative 2) above).

Cultural Resource Management Actions. Rehabilitation and ongoing maintenance of Trump-Lilly Farm and Prince Brothers General Store would result in expenditures by the NPS for labor and materials. These initiatives would enhance the attractiveness of these sites to visitors. Impacts on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial.

Adaptive reuse through the park's leasing program of the Prince Brothers General Store for visitor services or commercial use would potentially enhance attractiveness of the Prince area to visitors and contribute to local visitor spending (as in Alternative 1). Impacts on the regional and local economy would be regional long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would continue to encourage economic activity in areas with active visitor use facilities and support services.

The total annual number of recreational visits to the New River Gorge National River is projected to increase by 282,900 from the current (2007) level of 1,178,000 in this alternative, a 24.0 percent growth rate. Table 4.18 displays projected direct and indirect economic impacts resulting from this increased level of visitor activity. The middle of the park would gain visitation from recreational use on the through park trail and its side trails, scenic touring along McKendree Road, and the New River Parkway. The south end of the park would attract visitors from the New River Parkway as well. The north end of the park would add visitors at Nuttallburg and along Fayette Station Road.

Several industries that benefit from NPS stewardship of New River Gorge, including outfitting, lodging, dining, and convenience goods, would continue to support significant levels of employment. Businesses in these industries are mostly concentrated along the US 19 corridor, particularly in Fayetteville and Beckley.

Industries that have jobs supported by NPS-related activities at New River Gorge would also continue to realize significant impacts on earnings and the housing market.

Impacts on the regional and local economy would be regional long-term minor and beneficial.

Park Operations Actions. Total recurring costs by NPS would be about \$15.7 million annually, while total one-time costs would be about \$28.7 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional

TABLE 4.18 Alternative 3 – Through Park Trail – Annual Direct and Indirect Economic Impacts (\$2007)

Impact Type	2005	Added as a Result of Alternative 3	2025
Visitation			
Visitors	1,178,000	282,900	1,460,900 (+24%)
Direct Impacts			
Jobs	2,000	494	2,494
Earnings	\$28,317,960	\$6,958,500	\$35,276,460
NPS Spending	\$7,208,400	\$2,740,000	\$9,948,400
Visitor Spending	\$67,910,000	\$16,687,300	\$84,597,300
Indirect Impacts			
Jobs	850	208	1,058
Earnings	\$7,870,810	\$1,934,100	\$9,804,910
NPS Spending	\$4,159,970	\$1,581,230	\$5,741,200
Visitor Spending	\$33,568,090	\$8,248,600	\$41,816,690
Total Impacts			
Jobs	2,850	702	3,552
Earnings	\$36,188,770	\$8,892,600	\$45,081,370
NPS Spending	\$11,368,370	\$4,321,230	\$15,689,600
Visitor Spending	\$101,478,090	\$24,935,900	\$126,413,990

2005 baseline and Impact factors per recreational visit are adapted from Versel 2006

long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have Impacts on the regional and local economy are identified in Section 4.2.4 (see Table 4.4). These actions would generally be the same as those described for Alternative 1 (see Section 4.3.13 Regional and Local Economy (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate beneficial impact on the regional and local economy. Alternative 3 would contribute a minor beneficial impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 3 would result in regional short-term minor to moderate beneficial and regional long-term minor to moderate beneficial impacts on the regional and local economy. Alternative 3 would contribute a minor beneficial impact to the total cumulative long-term moderate beneficial impact on the regional and local economy.

4.5.14 Communities (Alternative 3)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Natural resource management actions implemented within the park would have the potential to affect natural resource conditions in communities within or near the park. As in Alternative 1, these primarily include management actions that would seek to protect water quality, floodplains, forest, and aquatic and terrestrial habitats and dependent species (see Section 4.4.14 Communities (Alternative 2) above). In addition, in Alternative 3 several management actions (common to Alternatives 2 to 5) would seek to:

- protect, preserve and restore the natural resources and functions of floodplains
- maintain and restore natural stream ecosystems supporting a full range of natural aquatic organisms
- maintain the park's native plants and natural landscapes

Collectively the impact of these management actions on natural resources in communities within and near the park would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternative 3, cultural resource management actions (in addition to those included in Alternative 1) with the potential to affect resources of potential significance to residents of communities within or near the park include:

- Three early settlement farms in the south end of the park would be rehabilitated.
- Approximately 30 to 35 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along the Through Park Trail.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites would rehabilitate or stabilize resources that are likely to be found through further research to include significant ethnographic resources.

The impact of these actions on the residents of communities within or near the park would be local long-term minor and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 3, visitor facility improvements would address many of the visitor experience issues of concern to residents of communities within or near the park who use the park. These relate to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience as a result of these improvements (see Table 4.19) would be as follows:

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term major beneficial impact
- river access improvements would result in a local long-term major beneficial impact
- trail improvements would result in a local long-term major beneficial impact for hikers, bikers, and horseback riders; additional demand for biking and equestrian trails would not be satisfied resulting in a local long-term moderate adverse impact
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

As in Alternative 1, hunting within the park would continue as it occurs today on most NPS-owned land, in the park in accordance with the hunting and fishing regulations of the state of West Virginia. During hunting season safety hazards would continue to exist in areas of the park where other visitor use is high and hunting is permitted. Impacts on residents of communities within or near the park who hunt would be local long-term moderate and beneficial. Continued safety hazards would result in a local long-term minor and adverse impact on residents of communities within and near the park.

Park Operations Actions. Total recurring costs by NPS would be about \$15.7 million annually, while total one-time costs would be about \$28.7 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on communities would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.14 Communities (Alternative 2) above).

Partnership and Community Collaboration Actions. As in Alternative 2, the NPS would implement a number of actions aimed at sustaining communities within the park, focused on Hinton, Thurmond, Meadow Creek, Backus, Highland, Prince/Quinnimont, Terry, and Thayer. Partnership actions would also be focused on building relationships with gateway communities, other government agencies, economic development entities, user groups, and the park's "friends". The types of collaborative actions would be similar to those in Alternative 2 (see Section 4.4.14 Communities (Alternative 2) above), although the focus of the actions would differ with the Alternative 3 Through Park Trail theme, described in Section 2.6.5 through 2.6.7 above. Collectively the impact of these actions on communities within and near the park would be local long-term major and beneficial.

■ **Cumulative Impact**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on communities are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property, public infrastructure projects, and transportation system improvements. Collectively these actions have improved the quality of life in communities within and near the park. They have generally enhanced opportunities for education, attracted new employers to the area thereby providing new jobs, provided locations for needed commercial services, generally enhanced regional and local access, and protected public health and environmental quality by making available clean water, wastewater treatment, and other public services. Impacts of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on communities within or near the park. Alternative 3 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on communities within or near the park. Alternative 3 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative long-term major beneficial impact on communities within or near the park.

New River Gorge National River
Desired Visitor Experiences

Desired Visitor Experiences

- **Important Park Experiences that Visitor should have:**
 - Appreciate life in the gorge – the human history story
 - Appreciate/experience the wildness of the landscape
 - Experience the power of the river
 - Experience scenic beauty
- **Classic Park Experiences**
 - Paddling the New River
 - Sandstone Falls
 - Grandview
 - Thurmond
 - Endless Wall
 - Canyon Rim
 - Fayette Station Road

4.5.15 Visitor Use and Visitor Experience (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. The park’s most intact unfragmented forest blocks would be managed as backcountry forest preserving their wild character and enhancing the perception of the park’s wildness as visitors experience the park. Overall, backcountry forest blocks would compose approximately 43 percent of the park. Impacts on visitor use and visitor experience would be local long-term minor to major and beneficial, depending upon individual visitor reasons for visiting the park and preferences for backcountry versus frontcountry experiences.

Cultural Resource Management Actions. Treatment of cultural resources at sites in the park would provide numerous new opportunities for visitors to appreciate the human history story of life in the gorge (see Table 4.17):

- visitors would learn about the history of life in the gorge when they come upon and find cultural resource discovery sites located along the through park trail, other new and existing trails, and to a lesser extent along roads (approximately 30 to 35 sites)
- life in a railroading town during the park’s industrial era would continue to be exemplified at Thurmond
- stabilized mining structures and town ruins at Nuttallburg Mining Complex and the Nuttallburg town site would tell stories about life in the gorge’s historic coal mining towns (as in Alternative 1)

The impact of cultural resource management actions and related interpretive programs on visitor use and visitor experience would be local long-term moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. The central theme underlying Alternative 3 would help visitors better understand how the park is organized, the opportunities that are available, and how to travel in the complicated network of local roads and trails in the rugged terrain. Facilities and interpretive programs would support diverse opportunities for visitor experiences throughout the park (see Figure 2.5 and Table 4.19). A new Through Park Trail would enable visitors to explore the park from end-to-end, providing expanded access to cultural resource sites, scenic vistas, and natural features. Opportunities for recreation, scenic resource, and interpretive experiences would be expanded in the middle of the park – where few visitor facilities now exist – by addition of new trails and camping facilities at the river level and on the plateau. In cooperation with the WV Division of Highways, improvements to the McKendree Road – along with its designation as a state scenic backway – would dramatically enhance access in the middle of the park making possible a variety of new visitor experiences, including those for visitors not

physically able to explore the park by foot, bicycle, or boat. Throughout the park visitors would learn about the park’s history as they explore the park on an expanded trail network and come upon cultural resource “discovery sites” where interpretive media would tell the park’s stories.

New visitor use facilities included in Alternative 3 – consistent with its overall management concept – would enable visitors to better and more easily enjoy the experiences that they “should have” at the park. Visitors would also continue to enjoy the classic New River Gorge experiences at Sandstone Falls, Grandview, Thurmond, Endless Wall, Canyon Rim, and Fayette Station Road; new management actions consistent with the overall concept for Alternative 3 would enhance the visitor experience only at Thurmond. The impact of these actions and related interpretive programs on visitor use and visitor experience would generally be local long-term major and beneficial.

Specific visitor facility improvements would address many of the visitor experience issues related to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience as a result of these improvements (see Table 4.19) would be as follows:

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term major beneficial impact
- river access improvements would result in a local long-term major beneficial impact
- trail improvements would result in a local long-term major beneficial impact for hikers, bikers, and horseback riders; additional demand for biking and equestrian trails would not be satisfied resulting in a local long-term moderate adverse impact
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

Hunting as it occurs today on most NPS-owned land in the park, in accordance with the hunting and fishing regulations of the state of West Virginia, would continue to have long-term moderate beneficial impacts and local long-term minor adverse impacts on visitor use and visitor experience (as in Alternatives 1 and 2) (see Section 4.3.15 Visitor Use and Visitor Experience (Alternative 1) above).

Park Operations Actions. Private use of three early settlement farmhouses would occur through lease, cooperative agreement, or concession agreement. Residential

Table 4.19

**New River Gorge National River
Alternative 3 – New Visitor Use
Facilities**

Actions (in addition to Alternative 1)

- **Cultural Resource Attractions**
 - discovery sites (30 to 35)
- **Day-Use Facilities**
 - improvements to existing facilities
 - ✓ Grandview (circulation system)
 - new day-use facilities
 - ✓ J&G Site
 - ✓ Stone Cliff (relocated)
- **Camping Facilities**
 - improvements to existing primitive campgrounds
 - ✓ Glade Creek
 - ✓ Grandview Sandbar
 - ✓ Mill Creek
 - ✓ Army Camp
 - ✓ Thayer
 - ✓ Stone Cliff (relocated)
 - new developed campgrounds
 - ✓ Bass Lake
 - ✓ J&G Site
 - ✓ Terry Beach
 - ✓ Highland-Backus Plateau
 - new designated backcountry campsite groups
 - ✓ along Through Park Trail
 - ✓ in Highland-Backus Plateau area
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ McCreery
 - ✓ Thayer
 - ✓ Cunard (two areas)
 - ✓ Fayette Station
 - alternative transportation system (shuttle during peak periods of visitor use with satellite parking)
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
 - ✓ Bass Lake
 - ✓ Surprise
- **Parking for Climbers and Hunters**
 - in climbing areas
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas
 - ✓ Dowdy Bluff
 - ✓ Polls
- **New Trails (with trailheads)**
 - climbing access trails
 - ✓ Endless Wall
 - ✓ Sunshine Buttress
 - ✓ Bubba City
 - ✓ Junkyard
 - Fayette Mine Trail
 - Stone Cliff Mine Trail
 - Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - Thurmond to Sewell Rail Trail
 - Farm Loop Trail
 - Craig Branch Equestrian Loop Trail
 - Bucklick Branch Equestrian Loop Trail

use of farmhouses for park staff or private rental housing would not provide opportunities for visitors. Impacts on visitor use and visitor experience would be negligible to local long-term minor and beneficial.

Land Protection Actions. The impact of land protection actions on visitor use and visitor experience would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.15 Visitor Use and Visitor Experience (Alternative 2) above).

Partnership and Community Collaboration Actions. Collaboration with WVDOH would seek to accomplish improvements to New River Parkway (existing River Road), WV 25 (from Glen Jean to Southside Junction), Thurmond Bridge, McKendree Road (WV 25) (from Stone Cliff to Prince), and Fayette Station Road (WV 82). Improvements would address visitor safety concerns, reduce congestion by enhancing roadway capacity, and/or provide pull-outs where visitors could better experience park resources. NPS would also collaborate with WVDOH to design and install signage to enhance visitor orientation to the park and to facilitate wayfinding to park facilities. Impacts on visitor use and visitor experience would be local long-term major and beneficial.

Partnerships between the NPS and the park's gateway communities would seek to enhance the visitor experience by improving availability of information about the park in local communities and by enhancing wayfinding to the park. Impacts on visitor use and visitor experience would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.15 Visitor Use and Visitor Experience (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on visitor use and visitor experience. Alternative 3 would contribute a moderate beneficial and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term moderate adverse impacts on visitor use and visitor experience. Alternative 3 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on visitor use and visitor experience. There would be no impairment of park resources or values related to visitor use and visitor experience.

4.5.16 Park Access (Alternative 3)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Park management zoning would provide the framework for decision-making as to where motorized and non-motorized access would be appropriate for visitors and administrative use (common to Alternatives 2 to 5) (see Table 4.14). The nature of permitted access would be common to Alternatives 2 to 5 in park development, historic resource, and river corridor zones because these zones are the same for each action alternative. Differences would occur in the remainder of the park where areas are allocated to either backcountry or frontcountry zones. When considering access to the park, areas of frontcountry would have greater potential access because roads and parking facilities would be permitted in interior areas of zones. In contrast, in backcountry areas roads and parking would be limited to the perimeter of the forest blocks defined by the park's subareas (see Figure 2.6).

In Alternative 3 the impact of management zone allocations and related management prescriptions on park access would be local long-term moderate and beneficial. Management actions would generally maintain existing patterns of motorized access within the park, while permitting expansion of motorized access for visitors and/or administrative use in park development zones, historic resource zones, river corridor zones, and frontcountry zones. Almost one-half (43.0%) of the park would be zoned backcountry where roads and parking would be limited to zone perimeters (see Figure 2.6) and where only non-motorized access could occur in the zone interior.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 3, by the year 2025 approximately 1.46 million people are projected to visit the park annually, representing a 24 percent increase in visitation when compared to 2007. Most visitation would occur from June through September, with peak use happening during weekends in July and August. Most park visitors are expected to travel to many sites of the classic park experiences and to seek out the various important park experiences that visitor should have, as emphasized consistent with the overall management concept in Alternative 3 (see Table 2.19 above).

Park visitation associated with management actions in Alternative 3 would slightly increase traffic in and around the park during both peak and off-peak visitation periods (see Table 4.20). Most state roads and park roads used by visitors would experience local long-term negligible or minor adverse impacts. Five would experience local long-term moderate adverse impacts during peak periods. One would experience local long-term moderate beneficial impacts during peak periods.

As in Alternative 1, improvements to Turkey Spur Road at Grandview would enhance access to visitor use facilities at the Turkey Spur Overlook. In Alternatives 2 to 5, a number of additional improvements at Grandview would address site-

TABLE 4.20 Alternative 3 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
South End of the Park			
<p>Sandstone Falls and Visitor Attractions on River Left (including a possible campground – if not at Bass Lake)</p> <p>Future New River Parkway (under development by WVDOH)</p>	<ul style="list-style-type: none"> paved two-lane road with shoulders lane width adequate for safe two-way travel 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of the New River Parkway (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term negligible impact Off-Peak Period – local long-term negligible impact
<p>Various Visitor Facilities on River Right below Hinton (including a possible campground at Bass Lake – if not in New River Parkway corridor)</p> <p>WV 20 (I-64 to Hinton)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with minimal shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of the New River Parkway (most non-truck traffic on WV 20 will be diverted to New River Parkway) (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Sandstone Falls Visitor Center</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with shoulders) 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Developed Campground (Meadow Creek West)</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> paved one-lane road restricted two-way traffic safe maximum curves poor stopping distances 	<ul style="list-style-type: none"> poor capacity to accommodate visitor traffic generated by new campground development 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
Middle of the Park			
<p>Grandview</p> <p>WV 9 (primarily from I-64)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with shoulders) 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>McCreery, Lower Glade Creek Area, Terry Beach, Army Camp</p> <p>WV 41 (primarily from the west)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with minimal shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies (pedestrian safety deficiencies exist in vicinity of McCreery river access) 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor impact
<p>Lower Glade Creek Area</p> <p>Glade Creek Road (Park Road) (state scenic backway)</p>	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> very poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
<p>Highland-Backus Area (developed campground and new trail network)</p> <p>WV41 (primarily from the west)</p>	<ul style="list-style-type: none"> same as for McCreery and Glade Creek (see above) 	<ul style="list-style-type: none"> same as for McCreery and Glade Creek (see above) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact

TABLE 4.20 Alternative 3 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
Thayer WV 25 (access primarily from the north, beginning at Stone Cliff New River Bridge)	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
North End of the Park			
Thurmond, Dun Glen, and Stone Cliff WV 25 (from Glen Jean)	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width not adequate for safe two-way travel due to nine one-lane bridges (minimal to no shoulders) ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies for small vehicles ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
Thurmond Town Site various state roads	<ul style="list-style-type: none"> ▪ one-lane Thurmond Bridge needs replacement (due to structural, capacity and safety issues) ▪ numerous one-lane paved roads ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight turns ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ numerous roadway capacity and safety deficiencies ▪ future Thurmond Bridge replacement would address bridge deficiencies and likely include visitor parking (as mitigation) near the Thurmond Depot Visitor Center 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
Cunard and Surprise Cunard Road (park road)	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (some pull-offs; minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
Nuttallburg Visitor Use Area Keeney Creek Road (WV 85/2)	<ul style="list-style-type: none"> ▪ one-lane paved road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of new trailheads at the Nuttallburg Visitor Use Area (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
Canyon Rim Visitor Center and Burnwood Complex US 19	<ul style="list-style-type: none"> ▪ four-lane divided highway (with shoulders) ▪ safe maximum gradients ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies in vicinity 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
Fayette Station Fayette Station Road (WV 82)	<ul style="list-style-type: none"> ▪ paved one-way road ▪ some pull-offs ▪ minimal to no shoulders ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ poor existing capacity, especially on peak visitation days ▪ access constrained due to road geometry for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate beneficial impact (assuming implementation of peak period shuttle service from a new parking area at Fayette Station top) ▪ Off-Peak Period – local long-term moderate adverse impact

Table 4.21

**New River Gorge National River
Alternative 3 – Access Changes
Needed to Achieve Desired
Conditions in Visitor Use Areas**

Actions

- **Internal Park Road System**
 - Turkey Spur Road improvements (as in Alternative 1)
 - Grandview circulation and parking improvements (common)
 - new park road in Highland-Backus area
 - extension/improvement of Cunard Access Road to Surprise
- **State Road System** (NPS and WVDOH collaboration to design and implement)
 - New River Parkway (as in Alt. 1)
 - Thurmond Bridge Replacement (as in Alt. 1)
 - Fayette Station Road (WV 82) improvements (as in Alt. 1)
 - WV 25 improvements (Glen Jean to Southside Junction) (common)
 - McKendree Road Improvements (WV 25) from Stone Cliff Bridge to Prince
 - wayfinding signage along state roads (as in Alt. 1)
- **Parking**
 - at Thurmond (parking to be added by WVDOH in conjunction with Thurmond Bridge Replacement) (as in Alternative 1)
 - in climbing areas (new)
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas (new)
 - ✓ Dowdy Bluff
 - ✓ Polls
 - at existing trailheads
 - ✓ Glade Creek Trail
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Stone Cliff
 - ✓ McCreery
 - ✓ Thayer
 - ✓ Cunard
 - alternative transportation system (shuttle during peak periods of visitor use)
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
 - ✓ Bass Lake
 - ✓ Surprise
- **New Trails (with trailheads)**
 - new trails (as in Alternative 1)
 - ✓ Nuttallburg Visitor Use Area trails
 - ✓ Bucklick Branch Equestrian Loop Trail
 - ✓ Laing Loop Nature Trail (no new trailhead)
 - ✓ climbing access trails (Endless Wall, Sunshine Buttress, Bubba City, and Junkyard areas)
 - new trails
 - ✓ Through Park Trail
 - ✓ Sandstone Visitor Center to Prince Trail
 - ✓ Davis Branch Trail
 - ✓ Highland-Backus area trails
 - ✓ Dowdy Creek to Highland Mountain Trail
 - ✓ Highland-Backus area mountain biking trail

specific vehicular and pedestrian circulation issues. In Alternative 3, a new park road would be added in the Highland-Backus area to provide access to a new developed campground and new trails; the Cunard Access Road would also be extended to a new river access at Surprise. The impact of these actions on park access would be local long-term major and beneficial.

As in Alternative 1, a few new hiking and equestrian trails, and trails providing access to climbing areas, would be developed in the park (see Table 4.21). In addition, in Alternative 3 a new through park trail would provide continuous hiker/biker access from end to end of the park and numerous new trails would be added in the middle of the park to generally improve access. Trailhead parking would be provided for all new trails. The impact of these trail additions (along with trailhead parking) on park access would be local long-term major and beneficial.

In Alternative 1, a new river access – designed primarily for use by private paddlers and fishermen – would be developed at Meadow Creek West in conjunction with construction of a new developed campground. In addition, enhancements to parking at the Stone Cliff river access would occur in conjunction with relocation of existing day-use and campground facilities at Stone Cliff to a site above the New River floodplain. In Alternative 3, two additional new river accesses would be provided and parking would be expanded at four other river access sites (see Table 4.21). A shuttle system would be used during peak visitation periods to alleviate crowding at the Fayette Station river access and on Fayette Station Road (WV 82). The impact of these actions on park access would be local long-term major and beneficial.

At Thurmond visitors would continue to be encouraged to park in the lot at Southside Junction and walk to Thurmond via the Thurmond Bridge. In the future additional parking would likely be developed in conjunction with the planned WVDOH project to replace the Thurmond Bridge (see Partnership and Community Collaboration Actions below).

As in Alternative 1, improvements at Nuttallburg Mining Complex and Nuttallburg would provide parking (where none is currently available) for visitors at four trailheads from which they would access trails leading to cultural resource sites at the former Nuttallburg Mining Complex and Nuttallburg town site. In Alternatives 2 to 5, parking would be added in locations where visitors now park along roads near popular climbing and hunting

areas (see Table 4.21). In Alternative 3, the Glade Creek Trail Trailhead – which chronically suffers from overuse – would also be expanded to meet existing and projected demand. The impact of these actions on park access would be local long-term major and beneficial.

Partnership and Community Collaboration Actions. The NPS would continue to work with WVDOH on several projects (see Table 4.21).

As in Alternative 1, the NPS would continue to work collaboratively with the city of Hinton to secure safe and legal access to the New River waterfront within the city.

As in Alternative 1, the NPS would continue to work with the CSX Corporation and other property owners to acquire wherever possible legal access to popular visitor use sites.

The NPS would also work collaboratively with its gateway community partners, state agencies, railroad companies, and private landowners to develop trail connections from the park to nearby communities and other visitor attractions, such as Hawks Nest State Park, Babcock State Park, the Gauley River National Recreation Area, Ansted, Oak Hill, Mount Hope, Beckley, and Meadow Bridge (common to Alternatives 2 to 5).

Assuming these collaborative efforts would be effective, the impact on park access would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on park access are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 3 would generally be the same as those described for Alternative 1 (see Section 4.3.16 Park Access (Alternative 1) above). Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term minor to moderate beneficial impact and a cumulative long-term minor to moderate adverse impact on park access. Alternative 3 would contribute negligibly to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on park access. Alternative 3 would contribute negligibly to the total cumulative long-term minor to moderate beneficial impacts and to the cumulative long-term minor to moderate adverse impacts on park access.

4.5.17 Park Operations (Alternative 3)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of natural and scenic resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Staffing would be redirected to

areas most likely to create beneficial impacts on natural and scenic resources resulting in a local long-term major beneficial impact on park operations.

In Alternative 3 areas dispersed throughout the park would be managed as backcountry. Law enforcement patrols and maintenance staff would rely less upon vehicles for patrol and maintenance, as existing logging and mining roads gradually recover. This would cause a minor need for additional staff, resulting in a local short-term minor adverse effect on the park budget. Overall the impact on park operations would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of cultural resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Collectively the common management actions would result in a local long-term major beneficial impact on park operations.

In Alternative 3 historic resources would largely be managed as discovery sites along trails. At Thurmond buildings would be maintained as exhibits with exteriors only being maintained by park staff. Some structures in the southern portion of the park would be made available to the public through the historic leasing program. Restoration of structures and maintaining them as exhibits in good condition would likely require additional park maintenance staff. Leasing some of the buildings would result in less need for park maintenance staff to maintain those buildings, freeing them to keep restored historic structures in good condition. Additional NPS project management staff might also be needed as structures are restored. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Public Use, Enjoyment, and Experience Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of interpretive and education programs in the park (see Section 4.4.17 Park Operations (Alternative 2) above). These actions would result in a local long-term major beneficial impact on park operations.

Alternative 3 proposes that new trails connecting the park end to end be developed, requiring minor additions to park maintenance staff. Volunteers from user groups would be encouraged to help maintain trails, creating a need for staff trained to manage volunteer services. This would be accomplished by retraining and reorganizing existing trails staff. New programs for children and adults at Camp Brookside would create the need for new staff and partnership actions. Interpretation would be focused at sites along the through the park trail where visitors would congregate. This would be accomplished through a realignment of existing staff. Collectively these actions would result in a local short-term minor

adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Park Operations Actions. In Alternatives 2 to 5 new sources of funding would become available as NPS works with users and visitors to create partnerships, friends groups, and other mechanisms to support park purposes (see Section 4.4.17 Park Operations (Alternative 2) above). These actions would result in a local long-term major beneficial impact on park operations.

Alternative 3 calls for leasing a few historic structures. Depending on the physical condition of historic structures, terms of the lease, and other factors, it is possible that leasing could provide a minor income stream for the park. This would result in a local long-term minor beneficial impact on park operations.

Land Protection Actions. In Alternatives 2 to 5 the addition of six areas and 212.5 acres to the park to provide for parking and access would improve the ability of rangers to manage these uses within the park. The park would work with neighbors to promote better stewardship of privately-owned lands within the boundary and to reduce impacts on them from park use. This would result in a local long-term moderate beneficial impact on park operations.

Alternative 3 provides for new management zoning for the park. This will make it easier for park employees to monitor and enforce use, and manage newly acquired sites. These actions will result in a local long-term minor beneficial impact to park operations.

Partnership and Community Collaboration Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would lead NPS to implement actions making the park more relevant to local users and park neighbors (see Section 4.4.17 Park Operations (Alternative 2) above). As in Alternative 2, while these actions would result in a local short-term minor adverse impact to the park budget, they would also result in a local long-term major beneficial impact on park operations.

■ Cumulative Impacts

Other past, present and reasonably foreseeable actions that have had or would have impacts on park operations and facilities include the completion of the New River Parkway, continued minimum maintenance of state roads to and within the park, other transportation improvements, and continued private ownership of lands within the park, particularly in communities. The building of the New River Parkway would mean that law enforcement patrol and maintenance of the River Road area would be greatly improved; other transportation improvements might make remote areas of the park more accessible. The minimum maintenance of state roads such as McCreery Road would continue to complicate park management efforts. Private ownership of land within the park boundaries, particularly in communities, also

creates law enforcement issues and conflicts between private owners and visitors. Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact to park operations. Alternative 3 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 3 would result in local short-term minor adverse impacts on the park budget and local long-term minor to major beneficial impacts on park operations. Alternative 3 would contribute an imperceptible beneficial impact to the cumulative long-term minor adverse impact on park operations.

4.5.18 Unavoidable Adverse Impacts (Alternative 3)

Unavoidable adverse impacts are major adverse impacts that cannot be fully mitigated or avoided. Alternative 3 would not result in any major adverse impacts.

4.5.19 Irreversible and Irretrievable Commitments of Resources (Alternative 3)

An irreversible commitment of resources is one that cannot be reclaimed, restored, or otherwise returned to its condition prior to disturbance. An irretrievable commitment of resources is a loss of something that once gone, cannot be replaced.

Proposed management actions would generally contribute to resource protection and preservation and would be expected to minimize the occurrence of irreversible or irretrievable impacts. Nevertheless some irretrievable impacts would occur:

- construction projects, landscape restoration and rehabilitation, and park operations would use limited amounts of nonrenewable resources, including materials and energy; once these resources are committed they would be irretrievable
- minor amounts of soil would be permanently lost as a result of soil erosion and sedimentation from areas (approximately 210 acres) disturbed by cultural resource management actions, development of new visitor use facilities, and restoration actions
- potential exists at cultural resource sites undergoing restoration or rehabilitation for an irretrievable commitment of resources as a result of any loss of undiscovered below ground resources

Surveys, avoidance through design, documentation, and other mitigation would occur before any restoration or rehabilitation begins, thereby minimizing irretrievable impacts to cultural resources.

4.5.20 Relationship between Short-Term Uses of the Environment and Long-Term Productivity (Alternative 3)

In Alternative 3 most of the park would be protected in a natural state with an emphasis on reducing existing forest fragmentation and avoiding future forest fragmentation. Approximately 43.0 percent of the park would be managed as backcountry largely unaltered by future human-induced impacts. Approximately 47.8 percent of the park would be managed as frontcountry forest with minimal future human-induced impacts. The NPS would continue to manage the park to maintain ecological processes and native and biological communities, and to provide for appropriate recreational activities consistent with the preservation of natural and cultural resources. Previously disturbed areas would be restored to return them to productivity, as funding permits. Any actions the NPS takes in the park would be taken with consideration to ensure that uses do not adversely affect the productivity of biotic communities.

Disturbance of the park's soils, water quality, vegetation, and wildlife, due to visitor use and the construction of new facilities would reduce the long-term productivity of the park in localized areas; however, overall there would likely be only a small effect on the park's long-term productivity.

4.6 Environmental Consequences of Alternative 4

4.6.1 Physiography, Geology, and Soils (Alternative 4)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to protect the park's physiography, geology, and soil resources (as in Alternative 1) by:

- generally allowing physiography, geology, and soil resources that are disturbed by natural phenomena – such as landslides – to recover naturally
- restoring/reclaiming physiography, geology, and soil resources altered by human activity – such as mining (in cooperation with WV DEP)
- protecting park resources from potential impacts associated with natural gas/oil production or mining activities that are permitted by valid oil, gas, and mineral rights (and that may be conducted within the park in compliance with appropriate state permits and Section 9b Regulations pursuant to the Surface Mining Control and Reclamation Act) (in cooperation with WVDEP)
- reducing soil erosion and sedimentation by restoring disturbed areas (such as areas disturbed by ATVs), as funding permits

In addition, in Alternative 4 management actions affecting physiography, geology, and soils would focus on the following:

- managing almost two-thirds (60.8%) of the park as backcountry and one-tenth (7.7%) of the park as river corridor, with implementation of related management prescriptions that would maintain natural geologic processes and features to persist largely unaltered by further human-induced impacts
- managing the remainder of the park (31.5%) as frontcountry, historic resource, and park development zones, with implementation of related management prescriptions that would allow natural geologic processes and features to persist with minimal human-induced impacts

Impacts of natural resource management actions on physiography, geology, and soil resources would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact soil resources. Physical disturbance associated with cultural resource management actions would impact soil resources. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 25 acres of

previously disturbed soils.¹ Most disturbances would be associated with stabilization and vegetation removal at discovery sites (20 to 25 sites); minor disturbances would also occur in conjunction with restoration and rehabilitation of historic structures (see Table 4.22). During the treatment period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Following the treatment period sites would be revegetated with native grass species. Impacts on soil resources would be local short-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact physiography, geology, and soil resources. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 145 acres.² Approximately 90 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Impacts on soil resources would be local short-term minor to moderate and adverse.

Following construction approximately 75 acres would be replanted with native species and 60 acres would be stabilized through placement of crushed stone or other surface treatment for roads, parking facilities, and some trails. Minimal areas of existing undisturbed soils would be permanently developed, primarily including the sites of small visitor facilities such as vault toilets and changing stations. Impacts on soil resources would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 10 acres within the tread of reestablished or new trails), leading to increased potential for soil erosion. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on soils would be local long-term minor and adverse.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 4, an

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

additional 95 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Impacts on soils would be negligible to local long-term minor and adverse.

Land Protection Actions. Impacts of future land protection actions on physiography, geology, and soil resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.1 Physiography, geology, and soil resources (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to work collaboratively with WV DEP to facilitate reclamation of areas disturbed by mining and to protect park resources from the potential impacts of mineral resource extraction on lands adjoining or near the park (as in Alternative 1). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

NPS would provide ongoing technical assistance to communities within the park and others engaged in resource management activities beyond the park boundary that have the potential to positively impact the park's geologic and soil resources (common to Alternatives 2 to 5). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on physiography, geology, and soils are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.1 Physiography, Geology, and Soils (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on physiography, geology, and soil resources. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 4 would result in local long-term moderate to major beneficial impacts, local short-term minor adverse impacts, and local long-term minor to moderate and adverse impacts on physiography, geology, and soil resources. Alternative 4 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on physiography, geology, and soil resources. There would be no impairment of park resources or values related to physiography, geology, and soil resources.

4.6.2 Floodplains¹ (Alternative 4)

Natural and Scenic Resource Management Actions. Management actions would seek to protect, preserve and restore the natural resources and functions of floodplains (common to Alternatives 2 to 5) by:

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- removing debris from floodplains following flooding events
- preventing placement of additional obstructions in the New River and, wherever possible, removing structures in the New River that are no longer in use – such as abandoned bridge piers

Impacts on floodplains would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In the future visitor use facilities within the floodplain would be limited to facilities that are dependent upon locations in proximity to water and for which non-floodplain sites would not be a practicable alternative. Existing facilities to remain within the floodplain would generally include river accesses, picnic facilities, trails, and river rest stops. Improvements to existing facilities and new facilities in the floodplain would include: improvements to the existing Mermaid Beach river access; addition of a river launch at Meadow Creek West and at Terry Beach; and addition of disabled boater access at some river accesses.

Construction of improvements in the floodplain at existing and new visitor use facilities would occur in areas that have experienced recent prior disturbance and would involve minimal placement of impervious surfaces within the floodplain. Mitigation measures would minimize potential for flooding or for other adverse impacts on floodplain values associated with these improvements. At the new

¹ Floodplains with a recurrence interval of 100 years

Meadow Creek West and Terry Beach river accesses, mitigation measures would include the following:

- during final design, the NPS would complete topographic surveys and flood elevation studies, and a floodplain statement of findings, as appropriate
- all facilities within the floodplain would be designed to meet standards and criteria of the National Flood Insurance Program (44 CFR Part 60)
- all park roads, trails, and parking areas in the floodplain would be designed with unpaved surfaces
- all facilities not functionally dependent on proximity to water – such as toilets and overnight camping facilities – would be located above the floodplain; parking would also be located above the floodplain to the maximum extent possible
- all existing previously disturbed areas within the floodplain on the site (not needed for new facilities) would be restored

Collectively these new visitor use facilities would minimally affect natural floodplain values and minimally increase the use of the floodplain, resulting in a local long-term minor adverse impact on floodplains.

Existing campgrounds in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen would be eliminated and natural floodplain vegetation would be restored (common to Alternatives 2 to 5). Impacts on floodplains would be local long-term minor and beneficial.

Park Operations Actions. Impacts of floodplain management informed through findings of detailed floodplain studies would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Impacts of maintaining the existing park headquarters and operations facilities at Glen Jean within the 100-year floodplain would continue to be local long-term minor and adverse (common to Alternatives 1 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Land Protection Actions. Impacts of future land protection actions on floodplains would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.2 Floodplains (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of partnership and community collaboration actions on floodplains would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.2 Floodplains (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on floodplains are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.2 Floodplains (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on floodplains. Alternative 4 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on floodplains. Alternative 4 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on floodplains. There would be no impairment of park resources or values related to floodplains.

4.6.3 Water Quality (Alternative 4)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain water quality in the New River and its tributaries in its natural condition free of pollutants generated by human activity (as in Alternative 1) by:

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with all natural and scenic resource management actions

In addition, in Alternative 4 management actions affecting water quality would focus on:

- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact the river (common to Alternatives 2 to 5)
- managing almost two-thirds (60.8%) of the park as backcountry, with implementation of related management prescriptions that would generally eliminate further forest fragmentation and the potential for human-induced impacts to water quality

- managing almost one-third (30.0%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce further forest fragmentation and the potential for human-induced impacts to water quality

Collectively these actions would protect natural vegetation and reduce soil disturbance and subsequent erosion and sedimentation potentially associated with forest disturbances and visitor use. Impacts on water quality would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact water quality. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 25 acres of previously disturbed soils (see Table 4.22).¹ During the treatment period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Following the treatment period sites would be revegetated with native species. Impacts on water quality would be local short-term minor to moderate and adverse.

Permanent removal of impervious surfaces associated with modern structures at two early settlement farms would enhance on-site infiltration of stormwater and reduce site runoff (as in Alternative 1). Impacts on water quality would be negligible.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact water quality. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 145 acres.² Approximately 90 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Impacts on water quality would be local short-term minor to moderate and adverse.

Following construction approximately 75 would be replanted with native species and 60 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Over the long-term unpaved roads and parking areas would be subject to compaction and would have the potential to generate increased runoff and to convey pollutants from parking areas and roads to streams and the river. Permanent stormwater management measures would be

¹ In addition to the approximate three acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

used in accordance with requirements of the WV NPDES Stormwater Program to reduce pollutants in stormwater discharged from developed sites. Impacts on water quality would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 10 acres within the tread of reestablished trails), leading to increased potential for erosion and subsequent sedimentation in streams and the river. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on water quality would be local long-term minor and adverse.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 4, an additional 95 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Impacts on soils would be negligible to local long-term minor and adverse.

Impacts of other future park operations on water quality would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on water quality would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future partnerships and collaboration on water quality would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on water quality are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.3 Water Quality (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on water quality. Alternative 4 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

- **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts, local short-term minor to moderate adverse impacts, and local long-term minor adverse impacts on water quality. Alternative 4 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on water quality. There would be no impairment of park resources or values related to water quality.

4.6.4 Vegetation (Alternative 4)

- **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native plants and natural landscapes (as in Alternative 1) (exclusive of wildland fire management). Actions would generally focus on the following:

- generally allowing natural landscapes that are disturbed by natural phenomena – such as landslides, floods, and fire – to recover naturally
- restoring natural landscapes altered by human activity, such as logging, mining, agriculture, transportation, utilities, and exclusion of natural fire
- preserving and restoring native plant populations and the communities in which they occur (particularly rare or significant plant communities)
- aggressively treating invasive exotic plant and insect pest species

In addition, in Alternative 4 management actions affecting vegetation would include the following:

- managing almost two-thirds (60.8%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing almost one-third (30.0%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact riparian communities, particularly cobble and flatrock communities
- removing non-water-dependent uses from the floodplain and restoring native floodplain vegetation (common to Alternatives 2 to 5)

- managing wildland fire to diminish the risk and consequences of severe wildland fires and, to the extent possible, to restore and protect the natural biological diversity and natural disturbance regime of the park (common to Alternatives 2 to 5)
- using prescribed fire to promote ecosystem health and native vegetation diversity in fire-dependent forest communities, such as rimrock pine communities and xeric oak-hickory forests (common to Alternatives 2 to 5)

Impacts of natural resource management actions on vegetation would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact native plants and plant communities. Conceptual planning suggests that cultural resource management actions would affect approximately 25 acres or previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.22).

Rehabilitation of buildings would require disturbance to approximately 5 acres of previously disturbed land. Affected vegetation would generally include a mix of ornamental trees and shrubs, non-native plants, and old field successional species. Following the treatment period sites would be appropriately revegetated where cultural landscapes are restored. Impacts on vegetation would be local long-term minor to moderate and adverse.

Disturbance would also occur in conjunction with stabilization and protection at approximately 20 to 25 discovery sites, along with development of visitor use improvements and installation of interpretative media. The typical discovery site would encompass an area of ruins in the park's mixed mesophytic forest – approximately one acre in size or less – overgrown by a mix of variable-age trees, shrubs, and grasses, with many sites dominated by kudzu and other non-native plants. Treatment would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that fragmentation would be minimized or would not occur. Cleared areas would be revegetated with native grasses. Impacts on vegetation would be local long-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact vegetation. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 145 acres.² Approximately 90 percent of the area likely to be disturbed has experienced some

¹ *In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1*

² *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly where existing unmaintained trails are improved to provide official park trails. Following construction approximately 75 acres would be replanted with native species and 60 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 10 acres would be within the tread of reestablished or new trails. Impacts on vegetation would be local long-term minor to moderate and adverse.

Visitor use throughout the park would have the potential to impact native plants and plant communities – particularly sensitive, rare, or significant vegetation communities. Management actions would protect sensitive, rare, or significant vegetation communities from visitor use impacts, as needed, generally including (common to Alternatives 2 to 5):

- in riparian areas (especially cobble and flatrock communities) – eliminate fires and overnight camping in all riparian areas; designate day-use river reststops downstream of Cunard
- on river bars – eliminate fires on most bars and close to visitor use bars with sensitive resources that are impacted by camping and day-use
- in clifftop communities – provide designated routes to climbing areas and limit access seasonally to critical cliff natural areas
- in flatrock communities – control visitor access; extend or add boardwalks to protect areas where visitor use occurs, such as at Sandstone Falls

Impacts on vegetation would be local long-term moderate and beneficial.

Land Protection Actions. Impacts of future land protection actions on vegetation resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of implementing a community-based approach to managing wildland fire on vegetation would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation Resources (Alternative 2) above).

Impacts of future collaborative management actions on significant unfragmented forest blocks that are outside but near the boundary of the park would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.4 Vegetation (Alternative 1) above). Alternative 4 in conjunction with the impacts of other past, present, and reasonably foreseeable actions would result in a cumulative long-term moderate adverse impact on vegetation. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term moderate to major beneficial impacts and local long-term minor to moderate adverse impacts on vegetation. Alternative 4 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on vegetation. There would be no impairment of park resources or values related to vegetation.

4.6.5 Aquatic Wildlife (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain and restore natural stream ecosystems with hydrologic features supporting a full range of natural aquatic organisms by (as in Alternative 1):

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- removing debris from floodplains following flooding events

In addition, in Alternative 2 management actions affecting aquatic habitats and dependent wildlife would focus on the following (common to Alternatives 2 to 5):

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor

zones and at somewhat altered levels in cultural landscape and park development zones

- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- protecting upland wetlands and their processes
- eliminating introduction of non-native species to aquatic ecosystems
- eliminating actions to supplement or maintain selective non-native species in aquatic ecosystems (as appropriate, based on further study of non-native species impacts)
- allowing select introduced species that may alter some process and interactions (e.g. continue WV State black fly treatments)

Impacts on aquatic habitat and dependent wildlife would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would seek to avoid or minimize direct and indirect impacts on aquatic habitat and dependent wildlife associated with visitor use facilities and visitor use.

Physical modifications to aquatic habitat and dependent wildlife caused by development of visitor use facilities would generally not occur except where they could not be avoided because a facility is water-dependent. Where water-dependent uses require location of new facilities along the river bank and in the near-shore area, some degree of physical modification to aquatic habitat and dependent wildlife would be unavoidable. This would occur at the new Meadow Creek West and Terry Beach river accesses where new river launches would be developed, requiring limited site grading and some degree of bottom hardening to provide a safe surface for walking and to protect the bank and river bottom from erosion due to visitor use. Launch areas would be confined to the smallest possible area needed to accommodate average daily visitor demand. Impacts of new or improved visitor uses on aquatic habitat and dependent wildlife would be local short-term minor and adverse during construction and local long term minor and adverse following construction.

Potential visitor use impacts on aquatic habitat and dependent wildlife would continue to occur throughout the park where visitors have uncontrolled access to the New River, tributary streams, and special aquatic habitat and dependent wildlife.

Indirect impacts would include those resulting from trampling of riparian vegetation, subsequent soil exposure, soil erosion, and sedimentation. Direct impacts would occur where visitors cross streams while hiking, walk in streams or the river while fishing, or disturb the river bottom while swimming, launching boats, or stopping at river rest stops. These impacts would be mitigated by designing new trails (approximately 58 miles) with the minimum number of tributary stream crossings and – where crossings could not be avoided – placement of footbridges to avoid hiker impacts, as funding permits. In the future sensitive aquatic habitat and dependent wildlife at and in the vicinity of popular backcountry river rest stops would be closed to day-use. At river launches visitor access to the river would be restricted to the minimum area possible and riparian areas adjoining launch sites would be closed. Educational efforts would help deter visitor impacts through signage, informational materials, and interpretive programs that explain ecological values and sensitivity to disturbance of riparian areas and special aquatic habitat and dependent wildlife. Impacts on aquatic habitat and dependent wildlife would be local long-term minor and adverse.

Park Operations Actions. Impacts of future park operations actions on aquatic habitat and dependent wildlife would be local long-term major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on aquatic habitat and dependent wildlife would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future partnership and community collaboration actions on aquatic habitat and dependent wildlife would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on aquatic habitat and dependent wildlife are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.5 Aquatic Wildlife (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. Alternative 4 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on aquatic habitat and dependent wildlife. Alternative 4 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. There would be no impairment of park resources or values related to aquatic habitats and dependent wildlife.

4.6.6 Terrestrial Wildlife (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park’s native animals (as in Alternative 1) by:

- perpetuating native animal life as part of the park’s natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible

In addition, in Alternative 4 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing almost two-thirds (60.8%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing almost one-third (30.0%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on terrestrial habitat and dependent species would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact terrestrial habitat and dependent species. Conceptual planning suggests that cultural resource

management actions would affect approximately 25 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.22).

Habitat impacts at approximately 20 to 25 discovery sites would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources on sites typically one acre in size or less. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not occur. Field survey prior to treatment actions would determine species present in the vicinity of each site and appropriate protection measures. Treatment would be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season. Mammals, birds, amphibians, and reptiles in the vicinity of each site would be expected to migrate to adjacent habitat areas. Impacts on terrestrial habitat and dependent species would likely be local long-term minor and adverse.

Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at four sites and affect approximately 5 acres. Pre-treatment and post-treatment habitat conditions would be quite similar, characterized by a mix of native grasses and ornamental plantings, although non-native plants would be removed where they are currently present at some sites. Affected wildlife would generally include habitat generalists that live in close association with human habitation. During the treatment period wildlife would be expected to migrate into adjacent habitat areas; following the treatment period they would likely migrate back to restored sites. Impacts on terrestrial habitat and dependent species would likely be local short-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Development of new facilities – and visitor use of those facilities – would have the potential to disturb or displace wildlife or cause areas to be avoided by wildlife. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 145 acres, dispersed among 21 sites and 58 miles of trails (primarily existing unmaintained trails that would be improved).² Approximately 90 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. Field survey prior to treatment actions would determine terrestrial wildlife species present in the vicinity of each visitor use site and the appropriate protection measures needed. Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly where existing unmaintained trails are improved to provide official park trails. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be

¹ *In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1*

² *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

minimized or would not occur. Construction would generally be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season. Following construction approximately 75 acres would be replanted with native species and 60 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 10 acres would be within the tread of reestablished or new trails. Wildlife would be expected to avoid sites during construction or would only travel through sites construction activity has abated, resulting in a local short-term minor adverse impact on wildlife and dependent species. Following construction, the permanent loss of habitat combined with disturbance, injury, or death associated with long-term visitor use and management of visitor use sites would result in a local long-term minor to moderate adverse impact on terrestrial habitat and dependent species.

Continuation of hunting as it occurs today on most NPS-owned land in the park in accordance with the hunting and fishing regulations of the state of West Virginia would continue to have negligible impacts on terrestrial habitat and dependent species (as in Alternative 1) (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above). In addition, implementation of voluntary hunter registration and end-of-season questionnaires would increase information on harvest and hunter use levels facilitating development of game management plans, potentially resulting in a local long-term minor beneficial impact on terrestrial habitat and dependent species. Other actions that would protect specific species from hunting and that would restrict use of hunting dogs would have a local minor beneficial impact on wildlife habitat and dependent species.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 4, an additional 95 acres of restored, reestablished, or new fields at six early settlement farms would be leased for agriculture. Maintenance of open fields and forest edge along their perimeter would enhance wildlife habitat diversity locally in the park. Impacts on terrestrial habitat and dependent species would be local long-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on terrestrial habitat and dependent species would likely be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.6 Terrestrial Wildlife (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to cooperate with the WV DNR regarding regulation of hunting on NPS-owned property within the park boundary in accordance with applicable regulations and policies. Cooperation would be expanded to include joint development and implementation of

a voluntary hunter registration program and game management plans for specific hunt units within the park. Impacts on terrestrial habitat and dependent species would be local long-term moderate and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on terrestrial habitat and dependent species are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on terrestrial habitat and dependent species. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts, local short-term minor adverse, and local long-term minor to moderate adverse impacts on terrestrial wildlife. Alternative 4 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on terrestrial wildlife. There would be no impairment of park resources or values related to terrestrial wildlife.

4.6.7 Rare, Threatened, and Endangered Species (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to generally increase the populations of rare, threatened, or endangered species in the park and to secure sufficient, suitable habitat to “recover” species designated as threatened or endangered (as in Alternative 1).

Actions would generally focus on the following:

- managing habitat of threatened and endangered species to maintain their value for species recovery
- managing habitat of state-listed species to maintain their value for species maintenance to the greatest extent possible
- managing other native species of special management concern to the park to maintain their natural abundance and distribution
- controlling detrimental non-native species impacts on rare, threatened, or endangered species

In addition, in Alternative 4 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing almost two-thirds (60.8%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure, including rare species and communities
- managing almost one-third (30.0%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure, including rare species and communities
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on rare, threatened, and endangered species would be local long-term major and beneficial.

Cultural Resource Management Actions. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 25 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.22). Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at four sites and affect approximately 5 acres. At approximately 20 to 25 discovery sites potential habitat impacts would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining structures on sites typically one acre in size or less.

Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Public Use, Enjoyment, and Experience Management Actions. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 145 acres, dispersed among 21 sites and 58 miles of trails (primarily existing unmaintained trails that would be improved).¹ Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Impacts of the ongoing program to stabilize and gate mine portals where rare, threatened, and endangered species are present would continue. Gates in abandoned mine openings throughout the park would continue to be local long-term moderate and beneficial (common to Alternatives 1 to 5) (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above).

To protect designated species visitor use in certain areas of the park would be limited to day-use only, including Rush Run, Sewell, Beauty Mountain, Endless Wall, Sunshine Buttress, and Ames (common to Alternatives 2 to 5).² Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Additional protections in climbing areas – including Endless Wall, Sunshine Buttress, Alabama, and Ames – would include provision of designated trails to climbing routes that would reduce the current proliferation of social trails that potentially disturb habitat of designated species (common to Alternatives 2 to 5). Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Park Operations Actions. Impacts of future park operations actions on rare, threatened or endangered species would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

¹ In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

² Visitor use in the Nuttallburg Visitor Use Area would also be limited to day-use only pursuant to the Nuttallburg Visitor Use Area DCP/EA (NPS 2008c)

Land Protection Actions. Impacts of future land protection actions on rare, threatened or endangered species would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future collaborative management actions on rare, threatened, and endangered species and their habitats that are outside but near the boundary of the park would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on rare, threatened, and endangered species are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on rare, threatened, and endangered species. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on rare, threatened, and endangered species. Alternative 4 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on rare, threatened, and endangered species. There would be no impairment of park resources or values related to rare, threatened, and endangered species.

4.6.8 Scenic Resources (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Resource management actions would seek to protect a range of views in all areas of the park, allowing visitors to experience the extent of the gorge, the river, the forest, and the rim by (as in Alternative 1):

- removing non-native plants at sites where they cause a major scenic or aesthetic intrusion
- reclaiming abandoned mine lands at sites throughout the park (in cooperation with the WV DEP)

In addition, in Alternative 4 management actions affecting scenic resources would focus on the following:

- managing approximately almost two-thirds (60.8%) of the park as backcountry with implementation of related management prescriptions that would protect unfragmented forest blocks and natural scenic qualities from human-induced impacts
- managing approximately almost one-third (30.0%) of the park as frontcountry with implementation of related management prescriptions that would protect natural scenic qualities by reducing human-induced disturbance
- maintaining a nearly continuous strip of natural riparian habitat along the New River, thereby also preserving its natural scenic qualities (common to Alternatives 2 to 5)

Impacts on scenic resources would be local long-term minor to major and beneficial.

Cultural Resource Management Actions. Restoration of the cultural landscapes at Prince Brothers General Store, removal of modern structures at three sites where potentially significant early settlement cultural landscapes exist (as in Alternative 1), and treatments at approximately 20 to 25 cultural resource sites (to be managed as discovery sites) would enhance the quality of scenic resources fundamental to the park (see Section 4.6.10 Cultural Landscapes (Alternative 4) above). Impacts on scenic resources would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities and expansion of existing facilities would alter the park setting in the vicinity of improvements:

- approximately 58 miles of new park trails would be developed, mostly by improving existing unmaintained trails to single-track trails approximately 24 inches in width, requiring minor alteration to the park setting
- approximately 24 small parking areas would be developed to provide trailheads for hikers, climbers, and horseback riders, mostly along existing roads on forest block perimeters, and on previously disturbed sites
- approximately three existing day-use facilities would be improved through minor additions or expansions, most of which would enhance the existing setting, although there could be some minimal impacts to vegetation at some sites
- approximately 5 parking areas at existing river accesses would be expanded, with minimal changes to the park setting

- one new parking area would be developed near U.S. Route 19 for satellite parking in support of a visitor shuttle system
- development of two new river accesses and related day-use areas requiring clearing and alteration of the riparian zone at the river edge where the river launch would be located; both would be developed in conjunction with new developed campgrounds in areas that have been previously disturbed generally converting old successional field areas to developed uses
- four new developed campgrounds would be developed on open sites, requiring conversion of early successional old field vegetation on previously disturbed sites to developed visitor uses
- four existing primitive campgrounds would be expanded, requiring small areas of clearing for development of new campsites and road access that would slightly alter the park setting
- one existing primitive campground and day-use area in the floodplain would be relocated to a new site in an area of mixed vegetation where some minor clearing of trees would be required
- a new park road on the Highland-Backus Plateau would be developed through expansion of an existing unmaintained road

Overall the impacts of visitor use facilities on scenic resources would be local long-term minor to moderate and adverse.

Existing campgrounds and park operations facilities in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen (campground and park operations sites) would be eliminated and natural floodplain vegetation would be restored. The McCreery river access would also be closed and restored. Impacts on scenic resources would be local long-term minor and beneficial.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture. In Alternative 4, an additional 95 acres of restored, rehabilitated, or new fields at historic sites (see Table 4.22) would be leased for agriculture, subject to leasing terms that would mitigate potential farming impacts to cultural landscapes and other resources (see Section 4.3.10 Cultural Landscapes (Alternative 2) below). Farming would maintain the extent of restored or rehabilitated fields that are significant features of the park's cultural landscapes, protecting them from succession to mixed mesophytic forest. These landscapes are scenic resources considered fundamental to the park. Impacts on scenic resources would be local long-term moderate and beneficial.

Land Protection Actions. Impacts of future land protection actions on scenic resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.8 Scenic Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future collaborative management actions on scenic resources that are outside but near the park boundary would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.8 Scenic Resources (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on scenic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.8 Scenic Resources (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on scenic resources. Alternative 4 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor impacts on scenic resources. Alternative 4 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on scenic resources. There would be no impairment of park resources or values related to scenic resources.

4.6.9 Archeological Resources (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect and preserve archeological resources against natural destruction wherever practicable by eliminating and avoiding natural resource impacts, stabilizing sites and structures, and monitoring conditions. Management actions including removal of vegetative overgrowth at areas of known or potential archeological resources would be preceded by research sufficient to identify and evaluate such resources. The impact on archeological resources receiving stewardship actions would be local long-term minor and beneficial.

Backcountry zoning would apply to almost two-thirds (60.8%) of the park. In backcountry zones potential disturbance to archeological resources resulting from park development could occur only along zone perimeters and new trails and at a

Table 4.22

New River Gorge National River
Alternative 4 – Site-Specific Cultural Resource Management Actions

Actions (in addition to Alternative 1 see Table 4.6 above)

- **Historic Structure Exterior Restoration**
 - Thurmond Houses (those not rehabilitated – see below – would be restored on exterior only)
- **Historic Structure Rehabilitation** (with reuse through the park leasing program)
 - Trump-Lilly Farm (farmhouse)
 - Richmond-Hamilton Farm (farmhouse)
 - Vallandingham Farm (farmhouse)
 - Prince Brothers General Store
 - Thurmond Commercial Row
 - Thurmond Houses (those that are in good condition would be rehabilitated for park housing or visitor lodging)
- **Cultural Landscape Restoration**
 - Prince Brothers Estate
- **Discovery Site Stabilization and/or Maintenance**
 - treatment actions – at approximately 20 to 25 discovery sites – as needed to stabilize resources and/or to protect resources from potential visitor use impacts

few designated backcountry camping sites (Figure 2.4). The impact on archeological resources would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to identify and evaluate park archeological resources and to assess their condition and threats to them. Eligible archeological resources would continue to be nominated for listing in the National Register, as appropriate. Archeological resources would generally continue to be left undisturbed except where intervention could be justified based on compelling needs for research, interpretation, site protection, or park development.

Specific management actions at cultural resource sites that could potentially disturb archeological resources would include (see 4.22):

- historic building restoration or rehabilitation at numerous cultural resource sites
- cultural landscape restoration at one site
- stabilization and protection actions at approximately 20 to 25 discovery sites

Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to long-term local minor and adverse, depending on the site and the type of activity.

Public Use, Enjoyment, and Experience Management Actions. Ground disturbance associated with development of new facilities and enhancement of existing facilities could affect archeological resources at sites throughout the park. Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Expanded visitor use in historic resource zones, along trails, in the vicinity of recreation sites, and at discovery sites (approximately 20 to 25 sites) would increase vulnerability of archeological resources to surface disturbance, inadvertent damage, and vandalism. Loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. NPS staff or volunteer presence and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains. Because expanded visitor use would be dispersed throughout the park at river gateways, at early settlement sites, at many discovery sites, along numerous new rim to river trails and a few new trails to attractions in the vicinity of gateways, the potential for The impact on archeological sites would be dispersed. This would make resource

protection more difficult for NPS staff and volunteers. The impact on archeological resources would be local long-term minor and adverse.

Increased use of archeological sites and resources for public education and interpretation in river gateways, at early settlement sites, and at discovery sites would increase awareness and appreciation of resources, thereby increasing support for their preservation, and resulting in a local long-term minor beneficial impact on archeological resources.

Park Operations Actions. Ground disturbance would be associated with construction of water supply/distribution and wastewater collection/treatment facilities to serve the Thurmond Depot Visitor Center, Commercial Row, a few newly rehabilitated houses (some potentially used for visitor lodging), and structures currently used for park housing and as private residences. Strategies to protect archeological resources from ground disturbance would be implemented as described above for cultural resource management actions under Alternative 1 (see Section 4.3.9 Archeological Resources (Alternative 1) above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse.

Farming would occur through an agricultural leasing program on fields at six early settlement cultural resource sites affecting approximately 95 acres (see Table 4.22). Leases would be structured to ensure that agricultural practices would result in a negligible to local long-term minor adverse impact on archeological resources, depending on the site (see Section 4.4.9 Archeological Resources (Alternative 2) above).

Private use of rehabilitated historic structures (see Table 4.22) would occur through lease or cooperative agreement. Leases would be structured to ensure that the impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity (see Section 4.4.9 Archeological Resources (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on archeological resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.9 Archeological Resources (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.9 Archeological Resources (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on

archeological resources. Alternative 4 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ Section 106 Summary

The Section 106 determination of effect would be no adverse effect to archeological resources.

■ Conclusion

Management actions in Alternative 4 would result in local long-term minor to moderate beneficial impacts and local long-term minor adverse impacts on archeological resources. Alternative 4 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the moderate total cumulative long-term adverse impact on archeological resources. There would be no impairment of park resources or values related to archeological resources.

4.6.10 Cultural Landscapes (Alternative 4)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Natural resource management actions in the park would be expanded to include managing vegetation at Thurmond, at Prince Brothers General Store, and at discovery sites. Management would seek to control invasive plants at each site on an ongoing basis. Pruning or removal of natural forest vegetation would occur regularly where it threatens to overtake cultural landscapes or jeopardizes the integrity of landscape features. Stormwater management would seek to protect landscapes from impacts of flooding, erosion, sedimentation, and landslides. Impacts on cultural landscapes would be local long-term moderate and beneficial.

Cultural landscape sites where natural resource management actions would not be implemented would continue to be at risk due to vegetation overgrowth, poor drainage, and/or landslide susceptibility (common to Alternatives 2 to 5). Impacts on cultural landscapes would be local long-term minor to moderate and adverse.

Cultural Resource Management Actions. Efforts would continue to include all cultural landscapes in the park's *Cultural Landscapes Inventory* (NPS 2005a), to identify and nominate eligible landscapes to the National Register, and to prepare cultural landscape reports for all cultural landscapes (as in Alternative 1).

Specific management actions affecting cultural landscapes would include (see Table 4.22):

- The cultural landscape would be restored at the Prince Brothers Estate in the Prince/Quinnimont river gateway. The restored landscape would depict the features and character of the landscape as it appeared at the turn of the 20th century. Research and preparation of a cultural landscape report

would precede work on the site and would serve as the principal document used to guide restoration decisions.

- Approximately 20 to 25 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along rim to river trails and along trails in the vicinity of river gateways. Many of these sites would be early settlement farms and ruins of historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve cultural landscape components, maintenance activities would mitigate deterioration of cultural landscape components by protecting their condition; stabilization would reestablish the stability of unsafe damaged or deteriorated cultural landscape components while maintaining their existing character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on cultural landscapes would be local long-term minor to moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Impacts of new visitor facilities on cultural landscapes would include:

- Where historic structures would be rehabilitated for commercial use, visitor services, or housing at three early settlement farmhouses, Thurmond Commercial Row, and numerous houses at Thurmond, use modifications such as development of parking facilities and walkways, could result in local long-term minor to moderate and adverse impacts on the cultural landscape. Circulation system improvements at Grandview would affect the cultural landscape (common to Alternatives 2 to 5) (see Section 4.4.16 Visitor Access above). During construction ground disturbance would result in a local short-term minor to moderate adverse impact to the cultural landscape. Following construction the impact on the cultural landscape would be local long-term minor and adverse.
- Parking improvements at Thurmond in the vicinity of Commercial Row, in the upper residential area, and at restored houses to be used for housing or visitor lodging would affect the cultural landscape (see Section 4.4.16 Visitor Access below). Mitigating actions and impacts would be similar to those implemented for circulation improvements at Grandview (see preceding section).
- At discovery sites (approximately 20 to 25 sites), management actions would include installation of contemporary facilities and structures to control visitor access to cultural landscape components (if present) that would be vulnerable to damage from visitor use. Design and location of

contemporary facilities and structures, as needed, would be considered within the context of the significance of the landscape and would minimize adverse impacts on the character and features of each cultural landscape to the maximum extent practicable. During construction ground disturbance would result in local short-term minor adverse impacts on cultural landscapes. The long-term impacts on the cultural landscapes would be local long-term minor and adverse.

Impacts on cultural landscapes associated with increased visitor use would include:

- Cultural landscapes associated with rehabilitated and leased historic structures opened to the public for commercial use, visitor services, or housing would be susceptible to wear and tear from increased use. Lease holder or concessioner presence would reduce the potential for visitors to inadvertently damage or to vandalize resources. Impacts on cultural landscapes would be negligible to local long-term minor and adverse.
- Visitor use elsewhere in the park would continue to impact cultural landscapes, particularly in remote areas where ranger patrols and NPS staff are not routinely present. Visitor use impacts would generally include inadvertent disturbance and vandalism. Improved access to cultural landscapes at discovery sites (approximately 20 to 25 sites) along rim to river trails and along trails in the vicinity of river gateways would increase the potential for visitor use impacts in those locations, although increased presence of NPS staff along popular trails would help educate visitors about appropriate resource stewardship. Impacts on cultural landscapes would be local long-term minor and adverse.
- Approximately 58 miles of new park trails would enhance visitor access to recreation sites and cultural resources sites in the park. Most new trails would use previously existing unmaintained trails, some of which might be determined historically significant upon further investigation and coordination with the WV SHPO. Future development of a park trail management plan would include Section 106 compliance with the WV SHPO during which historic significance would be assessed and mitigation measures incorporated into trail system design, as appropriate. The long-term impacts on cultural landscapes would be local long-term minor and adverse.

Park Operations Actions. At Thurmond new water supply and wastewater treatment services would be provided to the Thurmond Depot Visitor Center, to Commercial Row, to a few newly rehabilitated houses (some potentially used for visitor lodging), and to structures currently used for park housing and as private residences. During construction ground disturbance would result in a local short-

term minor to moderate adverse impact to the cultural landscape. The long-term impact on the cultural landscape would be negligible to local minor and adverse.

Farming would occur through an agricultural leasing program at six early settlement cultural resource sites (95 acres) where known or potentially significant cultural landscapes exist (see Table 4.22). Leases or agreements would be structured to protect the historic scene and significant features of the cultural landscape at each site (see Section 4.4.10 Cultural Landscapes (Alternative 2) above). Impacts on cultural landscapes would be negligible.

Land Protection Actions. Impacts of future land protection actions on cultural landscapes would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.10 Cultural Landscapes (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscapes are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.10 Cultural Landscapes (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscapes. Alternative 4 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to cultural landscapes.

■ **Conclusion**

Management actions in Alternative 4 would result in local short-term minor to moderate adverse impacts, local long-term moderate beneficial impacts, and local long-term minor to moderate adverse impacts on cultural landscapes. Alternative 4 would contribute a minor beneficial a minor adverse impact to the total cumulative long-term moderate adverse impact on cultural landscapes. There would be no impairment of park resources or values related to cultural landscapes.

4.6.11 Historic Structures (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) (as in Alternative 1). Stewardship would generally include removal of non-native plants and improvements to drainage in the

vicinity of historic structures. The impacts to historic structures receiving stewardship actions would be local long-term minor and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) and to obtain determinations of their eligibility for the National Register (as in Alternative 1). Stewardship would generally include building stabilization to provide protection from weather and vandalism. Maintenance of previously stabilized structures would continue. The impacts to historic structures receiving stabilization and ongoing maintenance would be local long-term minor and beneficial.

Further stewardship of historic structures beyond the actions included in Alternative 1 (see Table 4.6) would include the following (see Table 4.22):

- Several houses at Thurmond would be restored, accurately presenting the form, features, and character of the houses as they appeared in the early 20th century.
- Some individual structures already determined eligible for the National Register (those owned by the NPS) would be rehabilitated, including three early settlement farms, Prince Brothers General Store, Thurmond Commercial Row (including remediation of lead and asbestos contamination), and other houses at Thurmond that would not be restored. Houses at Thurmond would be rehabilitated for park housing and visitor lodging.
- Approximately 20 to 25 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along rim to river trails and along trails in the vicinity of river gateways. Some of these sites would be early settlement farms and historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve an historic building, maintenance activities would mitigate building deterioration by protecting its condition; stabilization would reestablish the stability of unsafe damaged or deteriorated structural components while maintaining existing building character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would generally be local long-term minor to major and beneficial. Where structures are rehabilitated for leasing or visitor services, concession use modifications, such as those needed to accommodate accessibility and additional means of egress, could result in local long-term minor to moderate and adverse impacts.

Public Use, Enjoyment, and Experience Management Actions. Historic structures leased for housing, visitor services, or commercial use (including visitor lodging) at three early settlement farmhouses, Prince Brothers General Store, Thurmond Commercial Row, and numerous houses at Thurmond would be susceptible to wear and tear from increased use, inadvertent damage, or vandalism. Leases and agreements would seek to reduce the potential for adverse impacts on historic structures associated with their adaptive reuse including maintenance requirements to avoid or mitigate adverse impacts of visitor use. Impacts on historic structures would be local long-term minor to moderate and adverse.

Park Operations Actions. At Thurmond new water supply and wastewater treatment services would be provided to the Thurmond Depot Visitor Center, to Commercial Row, to a few newly rehabilitated houses (some potentially used for visitor lodging), and to structures currently used for park housing and as private residences. Many of the affected structures are resources that contribute to the significance of the Thurmond Historic District. All improvements would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would be negligible to local long-term minor and adverse.

Private use of rehabilitated historic structures (see Table 4.22) would occur through lease, cooperative agreement, or concession agreement. Leases or agreements would be structured to protect resources and defray the costs associated with building maintenance (see Section 4.4.11 Historic Structures (Alternative 2) above). The impact on historic buildings would range from local long term minor to moderate and beneficial to local long term minor to moderate and adverse.

Land Protection Actions. Impacts of future land protection actions on historic structures would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.11 Historic Structures (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to provide technical assistance to the city of Hinton to assess treatment options for rehabilitation and adaptive reuse of the city-owned Hinton Depot and to assist with implementation of treatment by helping to identify funding options and to develop grant applications (as in Alternative 1). Impacts on historic structures would be local long-term moderate and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic structures are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.11 Historic Structures (Alternative 1)

above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on historic structures. Alternative 4 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to historic structures.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on historic structures. Alternative 4 would contribute an minor beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on historic structures. There would be no impairment of park resources or values related to historic structures.

4.6.12 Ethnographic Resources (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Backcountry zoning would preserve unfragmented blocks of mixed mesophytic forest in 60.8 percent of the park, while frontcountry zoning where human-induced fragmentation would be decreased would apply to 30.0 percent of the park. This would protect the forest and its associated watershed which is the ethnographic resource identified as vital to the park’s traditionally associated people and groups (Hufford et al 2006). Impacts on ethnographic resources would be local long-term major and beneficial.

Natural resource management actions would also protect specific natural and cultural resources found within the park’s mixed mesophytic forest that are important to the park’s traditionally associated people, such as plants, animals, and sites of former towns, settlement areas, and industrial sites (as in Alternative 1). Impacts to ethnographic resources would be local long-term minor to moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to include appropriate studies and consultations to further document ethnographic resources and uses, traditionally associated people, and other affected groups, and cultural affiliations to park resources. Eligible ethnographic resources would continue to be nominated for listing in the National Register, as appropriate.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites would rehabilitate or stabilize resources that are likely to be found through further research to include significant ethnographic resources see Table 4.22 and Sections 4.6.10 Cultural Landscapes and 4.6.11 Historic Buildings above).

Impacts on ethnographic resources would be local long-term minor to moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities at historic structures, cultural landscapes, and discovery sites (approximately 20 to 25 sites) would impact resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.24 and Sections 4.6.10 Cultural Landscapes and 4.6.11 Historic Buildings above). Impacts on ethnographic resources if determined to be present would be local long-term minor and adverse.

Impacts associated with increased visitor use on ethnographic resources, if determined to be present, would include the following (see Sections 4.6.10 Cultural Landscapes and 4.6.11 Historic Buildings above):

- local long-term minor to moderate and adverse impacts at sites where structures (with associated cultural landscapes) are rehabilitated and leased for housing, visitor services, or commercial use (including visitor lodging)
- local long-term minor to moderate and adverse impacts elsewhere in the park, particularly in remote areas and in the vicinity of discovery sites (approximately 20 to 25 sites) where ranger patrols and NPS staff are not routinely present

Land Protection Actions. Impacts of future land protection actions on ethnographic resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.12 Ethnographic Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. The NPS would continue to consult with traditionally associated groups and Indian tribes (as in Alternative 1) (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Impacts on ethnographic resources would be local long-term minor and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 4 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to ethnographic resources.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to moderate beneficial impacts and local long-term minor to moderate adverse impacts on ethnographic resources. Alternative 4 would contribute a minor beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of park resources or values related to ethnographic resources.

4.6.13 Regional and Local Economy (Alternative 4)

In Alternative 4 – River Gateways and Rim to River Experiences – the NPS would expand the park’s contributions to the Southern West Virginia’s tourism industry and economic environment by improving the visibility and accessibility of the park’s natural, recreational, and interpretive attractions from its gateway communities and the communities on the river.

Enhanced marketing, signage, and transportation would direct visitors from major regional transportation routes (I-64, US 19, US 60, and State Route 41) to river gateways. This would include a combination of road improvements, trail development with trailhead parking in high-traffic areas, shuttle service on Fayette Station Road and from Oak Hill to Cunard, and development of commercial and interpretive resources at Hinton, Prince, Thurmond, Nuttallburg and other key gateway locations.

The overall effect would be to greatly raise the visibility, profile and appeal of the New River Gorge National River to residents and visitors alike, producing increased visitor activity throughout the park, though the increases would not be uniformly distributed. Major visitation increases would occur in the gateway areas undergoing the most development: Hinton, Thurmond and Nuttallburg. Areas receiving significant access improvements (Sandstone, Prince/McCreery, and Cunard) would experience moderate increases. All other areas in the park would experience minor increases in visitation in this alternative.

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Impacts of these expenditures on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial (common to Alternatives 2 to 5) (see Section 4.4.13 Regional and Local Economy (Alternative 2) above).

Cultural Resource Management Actions. Restoration and ongoing maintenance of several Thurmond houses, as well as rehabilitation of three early settlement

farmhouses, Prince Brothers General Store, Thurmond Commercial Row, and several additional Thurmond houses, would result in expenditures by the NPS for labor and materials. These initiatives would enhance the attractiveness of these sites to visitors. Impacts on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial.

Adaptive reuse through the park's leasing program of the Prince Brothers General Store, Thurmond Commercial Row, and several Thurmond houses for visitor services, commercial use, or visitor lodging would enhance the attractiveness of the Prince and Thurmond areas to visitors. Impacts on the regional and local economy would be regional long-term moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would continue to encourage economic activity in areas with active visitor use facilities and support services.

The total annual number of recreational visits to the New River Gorge National River is projected to increase by 383,200 from the current (2007) level of 1,178,000, a 32.5 percent growth rate. Table 4.23 displays projected direct and indirect economic impacts resulting from this increased level of visitor activity. Significant visitation increases would occur at Hinton, Thurmond, and Nuttallburg, the three river gateways that are slated to undergo major commercial and/or interpretive improvements. There would be more modest increases at all other river gateways.

Several industries that benefit from NPS stewardship of the New River Gorge, including outfitting, lodging, dining, and convenience goods, would continue to support significant levels of employment. Businesses in these industries are mostly concentrated along the US 19 corridor, particularly in Fayetteville and Beckley. Since Alternative 4 emphasizes engaging visitors at key points along major transportation routes, additional business activity would be expected in the central area of US 19 between Mount Hope and Oak Hill, as well as around the Sandstone Visitor Center.

Industries that have jobs supported by NPS-related activities at New River Gorge would also continue to realize significant impacts on earnings and the housing market.

Impacts on the regional and local economy would be regional long-term moderate and beneficial.

Park Operations Actions. Total recurring costs by NPS would be about \$15.6 million annually, while total one-time costs would be about \$29.3 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional

TABLE 4.23 Alternative 4 – River Gateways and Rim to River Experiences – Annual Direct and Indirect Economic Impacts (\$2007)

Impact Type	2005	Added as a Result of Alternative 4	2025
Visitation			
Visitors	1,178,000	383,200	1,561,200 (+32.5%)
Direct Impacts			
Jobs	2,000	669	2,669
Earnings	\$28,317,960	\$9,422,400	\$37,740,360
NPS Spending	\$7,208,400	\$2,632,600	\$9,841,000
Visitor Spending	\$67,910,000	\$22,596,000	\$90,506,000
Indirect Impacts			
Jobs	850	282	1,132
Earnings	\$7,870,810	\$2,618,900	\$10,489,710
NPS Spending	\$4,159,970	\$1,519,230	\$5,679,200
Visitor Spending	\$33,568,090	\$11,169,300	\$44,737,390
Total Impacts			
Jobs	2,850	951	3,801
Earnings	\$36,188,770	\$12,041,300	\$48,230,070
NPS Spending	\$11,368,370	\$4,151,830	\$15,520,200
Visitor Spending	\$101,478,090	\$33,765,300	\$135,243,390

2005 baseline and Impact factors per recreational visit are adapted from Versel 2006

long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have Impacts on the regional and local economy are identified in Section 4.2.4 (see Table 4.4). These actions would generally be the same as those described for Alternative 1 (see Section 4.3.13 Regional and Local Economy (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on the regional and local economy. Alternative 4 would contribute a minor beneficial impact to the total cumulative impact.

- **Conclusion**

Management actions in Alternative 4 would result in regional short-term minor to moderate beneficial and regional long-term minor to moderate beneficial impacts on the regional and local economy. Alternative 4 would contribute a minor beneficial impact to the total cumulative long-term moderate beneficial impact on the regional and local economy.

4.6.14 Communities (Alternative 4)

- **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions implemented within the park would have the potential to affect natural resource conditions in communities within or near the park. As in Alternative 1, these primarily include management actions that would seek to protect water quality, floodplains, forest, and aquatic and terrestrial habitats and dependent species (see Section 4.4.14 Communities (Alternative 2) above). In addition, in Alternative 4 several management actions (common to Alternatives 2 to 5) would seek to:

- protect, preserve and restore the natural resources and functions of floodplains
- maintain and restore natural stream ecosystems supporting a full range of natural aquatic organisms
- maintain the park's native plants and natural landscapes

Collectively the impact of these management actions on natural resources in communities within and near the park would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternative 4, cultural resource management actions (in addition to those included in Alternative 1) with the potential to affect resources of potential significance to residents of communities within or near the park include:

- Several houses at Thurmond would be restored, accurately presenting the form, features, and character of the houses as they appeared in the early 20th century.
- Some individual structures already determined eligible for the National Register (those owned by the NPS) would be rehabilitated, including three early settlement farms, Prince Brothers General Store, Thurmond Commercial Row, and other houses at Thurmond that would not be restored.
- Approximately 20 to 25 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along rim to river trails and along trails in the vicinity of river gateways.

- The cultural landscape would be restored at the Prince Brothers Estate in the Prince/Quinnimont river gateway.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites would rehabilitate or stabilize resources that are likely to be found through further research to include significant ethnographic resources.

The impact of these actions on the residents of communities within or near the park would be local long-term moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 4, visitor facility improvements would address many of the visitor experience issues of concern to residents of communities within or near the park who use the park. These relate to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience for local residents as a result of these improvements (see Table 4.24) would be as follows:

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term major beneficial impact
- river access improvements would result in a local long-term moderate beneficial impact; some crowding would continue to occur at the Cunard River access during peak visitation periods resulting in a local long-term moderate adverse impact
- trail improvements would result in a local long-term major beneficial impact for hikers, bikers, and horseback riders; additional demand for biking and equestrian trails would not be satisfied resulting in a local long-term minor adverse impact
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

Hunting would continue as it occurs today on most NPS-owned land in the park in accordance with the hunting and fishing regulations of the state of West Virginia. Impacts on residents of communities within or near the park who hunt would be local long-term moderate and beneficial. Addition of a voluntary hunter registration and reporting system would have a negligible impact on local hunters. Assuming that cooperative game management planning between the NPS and WV DNR would enhance game populations in the park there would be a local long-term minor and

beneficial impact on the hunting experience for local residents. Continued safety hazards would result in a local long-term minor and adverse impact on residents of communities within and near the park.

Park Operations Actions. Total recurring costs by NPS would be about \$15.6 million annually, while total one-time costs would be about \$29.3 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

At Thurmond, rehabilitation and subsequent leasing of Commercial Row and houses that remain in good condition would generate a sustainable income stream for long-term maintenance of the buildings. The impact on the community of Thurmond would be local long-term moderate and beneficial.

At Prince, rehabilitation and subsequent leasing of Prince Brothers General Store would generate a sustainable income stream for long-term maintenance of the building. New commercial services would be available to residents of Prince and Quinnimont. The impact on the communities of Prince and Quinnimont would be local long-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on communities would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.14 Communities (Alternative 2) above).

Partnership and Community Collaboration Actions. As in Alternative 2, the NPS would implement a number of actions aimed at sustaining communities within the park, focused on Hinton, Thurmond, Meadow Creek, Backus, Highland, Prince/Quinnimont, Terry, and Thayer. Partnership actions would also be focused on building relationships with gateway communities, other government agencies, economic development entities, user groups, and the park's "friends". The types of actions collaborative would be similar to those in Alternative 2 (see Section 4.4.14 Communities (Alternative 2) above), although the focus of the actions would differ with the Alternative 4 River Gateways and Rim to River Experiences theme, described in Section 2.7.5 through 2.7.7 above. Also, in Alternative 4 additional effort would be focused on building gateway community partnerships and significantly expanding the relationships between gateway communities and the park. Collectively the impact of these actions on communities within and near the park would be local long-term major and beneficial.

■ Cumulative Impact

Other past, present, and reasonably foreseeable actions that have had or would have impacts on communities are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on

private property, public infrastructure projects, and transportation system improvements. Collectively these actions have improved the quality of life in communities within and near the park. They have generally enhanced opportunities for education, attracted new employers to the area thereby providing new jobs, provided locations for needed commercial services, generally enhanced regional and local access, and protected public health and environmental quality by making available clean water, wastewater treatment, and other public services. Impacts of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on communities within or near the park. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on communities within or near the park. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative long-term major beneficial impact on communities within or near the park.

4.6.15 Visitor Use and Visitor Experience (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Blocks of intact and unfragmented forest that are removed from river gateways and primary rim to river travel routes would be managed as backcountry forest, preserving their wild character and enhancing the perception of the park’s wildness as visitors experience the park. Overall, backcountry forest blocks would compose approximately 60.8 percent of the park. Impacts on visitor use and visitor experience would be local long-term minor to major and beneficial, depending upon individual visitor reasons for visiting the park and preferences for backcountry versus frontcountry experiences.

Cultural Resource Management Actions. Treatment of cultural resources at sites in the park would provide numerous new opportunities for visitors to appreciate the human history story of life in the gorge (see Table 4.22):

- visitors to the park’s river gateways and to the New River Parkway corridor (existing New River Parkway corridor) in the south end of the park would have opportunities to learn about life in the gorge by visiting rehabilitated cultural resources that are leased through the NPS historic leasing program
- life in a railroading town during the park’s industrial era would continue to be exemplified at the Thurmond River Gateway; it would also be represented at Prince/McCreery River Gateway where various sites would be rehabilitated and interpreted

New River Gorge National River
Desired Visitor Experiences

Desired Visitor Experiences

- **Important Park Experiences that Visitor should have:**
 - Appreciate life in the gorge – the human history story
 - Appreciate/experience the wildness of the landscape
 - Experience the power of the river
 - Experience scenic beauty
- **Classic Park Experiences**
 - Paddling the New River
 - Sandstone Falls
 - Grandview
 - Thurmond
 - Endless Wall
 - Canyon Rim
 - Fayette Station Road

- visitors would also learn about the history of life in the gorge when they come upon and find cultural resource discovery sites along trails at or near river gateways and along rim to river trails (approximately 20 to 25 sites)
- stabilized mining structures and town ruins at Nuttallburg Mining Complex and the Nuttallburg town site would tell stories about life in the gorge's historic coal mining towns (as in Alternative 1)

The impact of cultural resource management actions and related interpretive programs on visitor use and visitor experience would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. The central theme underlying Alternative 4 would help visitors better understand how the park is organized, the opportunities that are available, and how to travel in the complicated network of local roads and trails in the rugged terrain. Facilities and interpretive programs in Alternative 4 would connect visitors to the park through experiences that take them on roads and trails from gateway communities and other places on the plateau, over the rim, into the gorge, and down to the New River (see Figure 2.7 and Table 4.24). As they near the river, visitors would arrive at river gateways – located either within the park or at its edge – where they would learn about nearby park resources and recreation opportunities. Visitor use facilities would be clustered within or near river gateways offering a variety of interpretive and recreation experiences. From river gateways visitors would move out into the park on the water by boat, on trails by foot or bicycle, or on scenic roads. The park's stories would be told at rehabilitated cultural resources in river gateways – such as Hinton, Prince, and Thurmond – and at cultural resource “discovery sites” along rim to river trails and roads.

New visitor use facilities included in Alternative 4 – consistent with its overall management concept – would enable visitors to better and more easily enjoy the experiences that they “should have” at the park. Visitors would also continue to enjoy the classic park experiences at Sandstone Falls, Grandview, Thurmond, Endless Wall, Canyon Rim, and Fayette Station Road; new management actions consistent with the overall concept for Alternative 4 would enhance the visitor experience at Thurmond and at Fayette Station Road. The impact of these actions and related interpretive programs on visitor use and visitor experience would generally be local long-term major and beneficial.

Specific visitor facility improvements would address many of the visitor experience issues related to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience as a result of these improvements (see Table 4.24) would be as follows:

Table 4.24

**New River Gorge National River
Alternative 4 – New Visitor Use
Facilities**

Actions (in addition to Alternative 1)

- **Cultural Resource Attractions**
 - restored properties
 - ✓ Thurmond Houses (some)
 - rehabilitated properties (with non-residential adaptive reuse through leasing or other agreements)
 - ✓ Thurmond Commercial Row
 - ✓ Thurmond (some houses leased for visitor lodging)
 - discovery sites (20 to 25 sites)
- **Day-Use Facilities**
 - improvements to existing facilities
 - ✓ Grandview (circulation system)
 - ✓ Dun Glen
 - ✓ Brooklyn
 - new day-use facilities
 - ✓ J&G Site
 - ✓ Stone Cliff (relocated)
- **Camping Facilities**
 - improvements to existing primitive campgrounds
 - ✓ Glade Creek
 - ✓ Grandview Sandbar
 - ✓ Mill Creek
 - ✓ Army Camp
 - ✓ Stone Cliff (relocated)
 - new developed campgrounds
 - ✓ J&G Site
 - ✓ Terry Beach
 - ✓ Highland-Backus Plateau
 - ✓ Burnwood
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Dun Glen
 - ✓ Brooklyn
 - ✓ Cunard (two areas)
 - ✓ Fayette Station
 - alternative transportation system (shuttle during peak periods of visitor use with satellite parking)
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
 - ✓ Terry Beach
- **Parking for Climbers and Hunters**
 - in climbing areas
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas
 - ✓ Dowdy Bluff
 - ✓ Polls
 - Bridge Staging Area Trail
 - Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - Beauty Mountain Overlook Trail
 - Keeney Creek Beach Trail
 - Highland-Backus area mountain biking trail
 - Bucklick Branch Equestrian Loop Trail
- **New Trails (with Trailheads)**
(table continuation on next page)

Table 4.24 (continued)

New River Gorge National River
Alternative 4 – New Visitor Use Facilities

Actions *(in addition to Alternative 1)*

- **New Trails (with trailheads)**
 - climbing access trails
 - ✓ Endless Wall
 - ✓ Sunshine Buttress
 - ✓ Bubba City
 - ✓ Junkyard
 - Sandstone VC to Hump Mt.
 - Grandview to Mill Creek Trail
 - Army Camp to Pinnacle Rock Trail
 - Trump-Lilly Farm to Richmond-Hamilton Farm Trail
 - Cloverdale to the Upper Glade Creek Trail
 - Garden Ground to New River Trail
 - Mt. Hope to Southside Junction Rail Trail
 - GW Carver to Sewell to Caperton to Keeney Creek Trail
 - Fire Creek Trail
 - Army Camp to Stone Cliff Trail
 - Thurmond to Sewell Rail Trail
 - Highland-Backus area trails
 - Dowdy Creek to Highland Mountain Trail
 - New River Bridge Staging Area Trail
 - Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - Beauty Mountain Overlook Trail
 - Keeney Creek Beach Trail
 - Highland-Backus area mountain biking trail
 - Bucklick Branch Equestrian Loop Trail

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term major beneficial impact
- river access improvements would result in a local long-term moderate beneficial impact; some crowding would continue to occur at the Cunard River access during peak visitation periods resulting in a local long-term moderate adverse impact
- trail improvements would result in a local long-term major beneficial impact for hikers, bikers, and horseback riders; additional demand for biking and equestrian trails would not be satisfied resulting in a local long-term minor adverse impact
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

Continuation of hunting as it occurs today on most NPS-owned land in the park in accordance with the hunting and fishing regulations of the state of West Virginia would continue to have local long-term moderate beneficial and local long-term minor adverse impacts on terrestrial habitat and dependent species (as in Alternative 1) (see Section 4.315 Visitor Use and Visitor Experience (Alternative 1) above). Addition of a voluntary hunter registration and reporting system would have a negligible impact on visitor use and visitor experience. Assuming that cooperative game management planning between the NPS and WV DNR would enhance game populations in the park there would be a local long-term minor beneficial impact on visitor use and visitor experience.

Park Operations Actions. Private use of Prince Brothers General Store, three early settlement farmhouses, Thurmond Commercial Row, and numerous houses at Thurmond would occur through lease, cooperative agreement, or concession agreement. Potential commercial use of Prince Brothers General Store could provide visitor services in the middle of the park where they are currently not available. Residential use of houses at Thurmond for park staff or private rental housing would not provide opportunities for visitors. Impacts on visitor use and visitor experience would be negligible to local long-term major and beneficial.

Land Protection Actions. The impact of land protection actions on visitor use and visitor experience would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.15 Visitor Use and Visitor Experience (Alternative 2) above).

Partnership and Community Collaboration Actions. Collaboration with WVDOH would seek to accomplish improvements to New River Parkway (existing River

Road), WV 41 (from Stanaford to McCreery), WV 25 (from Glen Jean to Southside Junction), Thurmond Bridge, WV 25/2 in Thurmond, and Fayette Station Road (WV 82). Improvements would address visitor safety concerns, reduce congestion by enhancing roadway capacity, and/or provide pull-outs where visitors could better experience park resources. NPS would also collaborate with WVDOH to design and install signage to enhance visitor orientation to the park and to facilitate wayfinding to park facilities. Impacts on visitor use and visitor experience would be local long-term major and beneficial.

Partnerships between the NPS and the park's gateway communities would seek to enhance the visitor experience by providing better visitor orientation, by promoting services needed by visitors in gateway communities, by fostering improved wayfinding signage, and by promoting complementary interpretive and recreational experiences at other attractions in southern West Virginia. Impacts on visitor use and visitor experience would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.15 Visitor Use and Visitor Experience (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on visitor use and visitor experience. Alternative 4 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial and local long-term minor to moderate adverse impacts on visitor use and visitor experience. Alternative 4 would contribute an imperceptible beneficial and a major beneficial impact to the total cumulative long-term moderate adverse impact on visitor use and visitor experience. There would be no impairment of park resources or values related to visitor use and visitor experience.

4.6.16 Park Access (Alternative 4)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Park management zoning would provide the framework for decision-making as to where motorized and non-motorized access would be appropriate for visitors and administrative use (common to Alternatives 2 to 5) (see Table 4.14). The nature of permitted access would be common to Alternatives 2 to 5 in park development, historic resource, and river corridor zones because these zones are the same for each action alternative. Differences would occur in the remainder of the park where areas are allocated to either backcountry or frontcountry zones. When considering access to the park, areas of frontcountry would have greater potential access because roads and parking facilities would be permitted in interior areas of zones. In contrast, in backcountry areas roads and parking would be limited to the perimeter of the forest blocks defined by the park's subareas (see Figure 2.8).

In Alternative 4 the impact of management zone allocations and related management prescriptions on park access would be local long-term minor and beneficial. Management actions would generally maintain existing patterns of motorized access within the park, while permitting expansion of motorized access for visitors and/or administrative use in park development zones, historic resource zones, river corridor zones, and frontcountry zones. Almost two-thirds (60.8%) of the park would be zoned backcountry where roads and parking would be limited to zone perimeters (see Figure 2.8) and where only non-motorized access could occur in the zone interior.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 4, by the year 2025 approximately 1.56 million people are projected to visit the park annually, representing a 32.5 percent increase in visitation when compared to 2007. Most visitation would occur from June through September, with peak use happening during weekends in July and August. Most park visitors are expected to travel to many sites of the classic park experiences and to seek out the various important park experiences that visitor should have, as emphasized consistent with the overall management concept in Alternative 4 (see Table 2.24 above).

Park visitation associated with management actions in Alternative 4 would slightly increase traffic in and around the park during both peak and off-peak visitation periods (see Table 4.25). Most state roads and park roads used by visitors would experience local long-term negligible or minor adverse impacts. Eight would experience local long-term moderate adverse impacts during peak periods. Two would experience local long-term moderate beneficial impacts during peak periods.

As in Alternative 1, improvements to Turkey Spur Road at Grandview would enhance access to visitor use facilities at the Turkey Spur Overlook. In Alternatives

TABLE 4.25 Alternative 4 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
South End of the Park			
<p>Sandstone Falls and Visitor Attractions on River Left</p> <p>Future New River Parkway (under development by WVDOH)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road with shoulders ▪ lane width adequate for safe two-way travel ▪ 8% maximum gradient ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of the New River Parkway (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
<p>Various Visitor Facilities on River Right below Hinton</p> <p>WV 20 (I-64 to Hinton)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with minimal shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of the New River Parkway (most non-truck traffic on WV 20 will be diverted to New River Parkway) (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term negligible impact ▪ Off-Peak Period – local long-term negligible impact
<p>Sandstone Falls Visitor Center</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with shoulders) ▪ 8% maximum gradient ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
<p>Developed Campground (Meadow Creek West)</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> ▪ paved one-lane road ▪ restricted two-way traffic ▪ safe maximum curves ▪ poor stopping distances 	<ul style="list-style-type: none"> ▪ poor capacity to accommodate visitor traffic generated by new campground development 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
Middle of the Park			
<p>Grandview</p> <p>WV 9 (primarily from I-64)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with shoulders) ▪ 8% maximum gradient ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
<p>McCreery, Lower Glade Creek Area, Terry Beach, Army Camp</p> <p>WV 41 (primarily from the west)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width adequate for safe two-way travel (with minimal shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies (pedestrian safety deficiencies exist in vicinity of McCreery river access) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Lower Glade Creek Area</p> <p>Glade Creek Road (Park Road) (state scenic backway)</p>	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Highland-Backus Area (developed campground and new trail network)</p> <p>WV41 (primarily from the west)</p>	<ul style="list-style-type: none"> ▪ same as for McCreery and Glade Creek (see above) 	<ul style="list-style-type: none"> ▪ same as for McCreery and Glade Creek (see above) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact

TABLE 4.25 Alternative 4 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
<p>Thayer WV 25 (access primarily from the north, beginning at Stone Cliff New River Bridge)</p>	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term negligible impact ▪ Off-Peak Period – local long-term negligible impact
North End of the Park			
<p>Thurmond, Dun Glen, and Stone Cliff WV 25 (from Glen Jean)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width not adequate for safe two-way travel due to nine one-lane bridges (minimal to no shoulders) ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies for small vehicles ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Thurmond Town Site various state roads</p>	<ul style="list-style-type: none"> ▪ one-lane Thurmond Bridge needs replacement (due to structural, capacity and safety issues) ▪ numerous one-lane paved roads ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight turns ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ numerous roadway capacity and safety deficiencies ▪ future Thurmond Bridge replacement would address bridge deficiencies and likely include visitor parking (as mitigation) near the Thurmond Depot Visitor Center 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact (assuming roadway improvements by the state) ▪ Off-Peak Period – local long-term minor adverse impact (assuming roadway improvements by the state)
<p>Cunard Cunard Access Road (park road)</p>	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (some pull-offs; minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate beneficial impact (assuming implementation of peak period shuttle service from a new parking area at Cunard top) ▪ Off-Peak Period – local long-term minor adverse impact
<p>Nuttallburg Visitor Use Area Keeney Creek Road (WV 85/2)</p>	<ul style="list-style-type: none"> ▪ one-lane paved road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of new trailheads at the Nuttallburg Visitor Use Area (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Canyon Rim Visitor Center and Burnwood Complex US 19</p>	<ul style="list-style-type: none"> ▪ four-lane divided highway (with shoulders) ▪ safe maximum gradients ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies in vicinity 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Fayette Station Fayette Station Road (WV 82)</p>	<ul style="list-style-type: none"> ▪ paved one-way road ▪ some pull-offs ▪ minimal to no shoulders ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ poor existing capacity, especially on peak visitation days ▪ access constrained due to road geometry for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate beneficial impact (assuming implementation of peak period shuttle service from a new parking area at Fayette Station top) ▪ Off-Peak Period – local long-term moderate adverse impact

2 to 5, a number of additional improvements at Grandview would address site-specific vehicular and pedestrian circulation issues. The impact of these actions on park access at Grandview would be local long-term major and beneficial.

As in Alternative 1, a few new hiking and equestrian trails, and trails providing access to climbing areas, would be developed in the park (see Table 4.26). In addition, in Alternative 4 numerous new rim to river trails would be added throughout the park along with numerous trails to park attractions in and around river gateways. Trailhead parking would be provided for all new trails. The impact of these trail additions (along with trailhead parking) on park access would be local long-term major and beneficial.

In Alternative 1, a new river access – designed primarily for use by private paddlers and fishermen – would be developed at Meadow Creek West in conjunction with construction of a new developed campground. In addition, enhancements to parking at the Stone Cliff river access would occur in conjunction with relocation of existing day-use and campground facilities at Stone Cliff to a site above the New River floodplain. In Alternative 4, one additional new river access (Terry Beach) would be provided and parking would be expanded at five other river access sites (see Table 4.26). A shuttle system would be used during peak visitation periods to alleviate crowding at the Fayette Station river access and on Fayette Station Road (WV 82). The impact of these actions on park access would be local long-term major and beneficial.

At Thurmond roadway, parking, and alternative transportation system improvements would enhance access. Working collaboratively with WVDOH, improvements would be made to WV Route 25 from Glen Jean to Southside Junction and to WV Route 25/2 within the town itself. Visitors would continue to be encouraged to park in the lot at Southside Junction and walk to Thurmond via the Thurmond Bridge. New parking would be provided in Thurmond at a small lot adjacent to Commercial Row and at a small lot adjacent to WV 25/2 in the upper section of the town. All houses rehabilitated for park housing or for visitor lodging would have one to two parking spaces included as part of the rehabilitation project (generally utilizing previously existing spaces at existing houses). In the future additional parking would likely be developed in conjunction with the planned WVDOH project to replace the Thurmond Bridge (see Partnership and Community Collaboration Actions below).

As in Alternative 1, improvements at Nuttallburg Mining Complex and Nuttallburg would provide parking (where none is currently available) for visitors at four trailheads from which they would access trails leading to cultural resource sites at the former Nuttallburg Mining Complex and Nuttallburg town site. In Alternatives 2 to 5, parking would be added in locations where visitors now park along roads near

Table 4.26

**New River Gorge National River
Alternative 4 – Access Changes
Needed to Achieve Desired
Conditions in Visitor Use Areas**

Actions

- **Internal Park Road System**
 - Turkey Spur Road improvements (as in Alternative 1)
 - Grandview circulation and parking improvements (common)
- **State Road System** (NPS and WVDOH collaboration to design and implement)
 - New River Parkway (as in Alt. 1)
 - Thurmond Bridge Replacement (as in Alt. 1)
 - WV 41 pullouts (Stanaford to McCreery)
 - WV 25 improvements (Glen Jean to Southside Junction) (common)
 - WV 25/2 road improvements (in Thurmond)
 - Fayette Station Road (WV 82) improvements (as in Alt. 1)
 - wayfinding signage along state roads (as in Alt. 1)
- **Parking**
 - at Thurmond
 - ✓ parking to be added by WVDOH in conjunction with Thurmond Bridge Replacement) (more spaces than in Alternative 1)
 - ✓ new parking in upper level of the town along WV 25/2
 - ✓ parking maintained or added at rehabilitated houses to be used for park housing or visitor lodging (1 to 2 spaces/unit)
 - at cultural resource sites (new)
 - ✓ Richmond-Hamilton Farm
 - in climbing areas (new)
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas (new)
 - ✓ Dowdy Bluff
 - ✓ Polls
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Stone Cliff
 - ✓ Dun Glen
 - ✓ Brooklyn
 - ✓ Cunard
 - ✓ Fayette Station
 - alternative transportation system (shuttle during peak periods of visitor use)
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
 - ✓ Terry Beach
- **New Trails (with trailheads)**
(see table continuation on next page)

Table 4.26 (continued)

New River Gorge National River
**Alternative 4 – Access Changes
 Needed to Achieve Desired
 Conditions in Visitor Use Areas**

Actions

- **New Trails (with trailheads)**
 - new trails (as in Alternative 1)
 - ✓ Nuttallburg Visitor Use Area trails
 - ✓ Bucklick Branch Equestrian Loop Trail
 - ✓ Laing Loop Nature Trail (no new trailhead)
 - ✓ climbing access trails (Endless Wall, Sunshine Buttress, Bubba City, and Junkyard areas)
 - new trails
 - ✓ Sandstone VC to Hump Mt.
 - ✓ Grandview to Mill Creek Trail
 - ✓ Army Camp to Pinnacle Rock Trail
 - ✓ Trump-Lilly Farm to Richmond-Hamilton Farm Trail
 - ✓ Cloverdale to the Upper Glade Creek Trail
 - ✓ Garden Ground to New River Trail
 - ✓ Mt. Hope to Southside Junction Rail Trail
 - ✓ GW Carver to Sewell to Caperton to Keeney Creek Trail
 - ✓ Fire Creek Trail
 - ✓ Army Camp to Stone Cliff Trail
 - ✓ Thurmond to Sewell Rail Trail
 - ✓ Highland-Backus area trails
 - ✓ Dowdy Creek to Highland Mountain Trail
 - ✓ New River Bridge Staging Area Trail
 - ✓ Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - ✓ Beauty Mountain Overlook Trail
 - ✓ Keeney Creek Beach Trail
 - ✓ Highland-Backus area mountain biking trail

popular climbing and hunting areas (see Table 4.26). The impact of these actions on park access would be local long-term major and beneficial.

Partnership and Community Collaboration Actions. The NPS would continue to work with WVDOH on several projects (see Table 4.26).

As in Alternative 1, the NPS would continue to work collaboratively with the city of Hinton to secure safe and legal access to the New River waterfront within the city.

As in Alternative 1, the NPS would continue to work with the CSX Corporation and other property owners to acquire wherever possible legal access to popular visitor use sites.

The NPS would also work collaboratively with its gateway community partners, state agencies, railroad companies, and private landowners to develop trail connections from the park to nearby communities and other visitor attractions, such as Hawks Nest State Park, Babcock State Park, the Gauley River National Recreation Area, Ansted, Oak Hill, Mount Hope, Beckley, and Meadow Bridge (common to Alternatives 2 to 5).

Assuming these collaborative efforts would be effective, the impact on park access would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on park access are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 4 would generally be the same as those described for Alternative 1 (see Section 4.3.16 Park Access (Alternative 1) above). Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term minor to moderate beneficial impact and a cumulative long-term minor to moderate adverse impact on park access. Alternative 4 would contribute negligibly to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on park access. Alternative 4 would contribute negligibly to the total cumulative long-term minor to moderate beneficial impacts and to the cumulative long-term minor to moderate adverse impacts on park access.

4.6.17 Park Operations (Alternative 4)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals

of natural and scenic resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Staffing would be redirected to areas most likely to create beneficial impacts on natural and scenic resources resulting in a local long-term major beneficial impact on park operations.

In Alternative 4 areas dispersed through the park would be managed as backcountry. Law enforcement patrols and maintenance staff would rely less upon vehicles for patrol and maintenance, as existing logging and mining roads gradually recover. Law enforcement patrols and maintenance staff would rely less upon vehicles for patrol and maintenance, as existing logging and mining roads gradually recover. This would cause a minor need for additional staff, resulting in a local short-term minor adverse effect on the park budget. Overall the impact on park operations would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of cultural resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Collectively the common management actions would result in a local long-term major beneficial impact on park operations.

In Alternative 4 structures in or near river gateways would receive treatment and would be rehabilitated or adaptively reused. At Thurmond some buildings would be restored to use as exhibits; others would be leased through the historic leasing program. Restoration of structures and maintaining them as exhibits in good condition would likely require additional park maintenance staff. Leasing some of the buildings would result in less need for park maintenance staff to maintain those buildings, freeing them to keep restored historic structures in good condition. Additional NPS project management staff might also be needed as structures are restored. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Public Use, Enjoyment, and Experience Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of natural and scenic resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Staffing would be redirected to areas most likely to create beneficial impacts on natural and scenic resources resulting in a local long-term major beneficial impact on park operations.

Alternative 4 proposes that river gateways be developed and that partnerships with rim gateway communities be enhanced. New trails would be developed to provide

connections from gateways to the river, requiring minor additions to park maintenance staff. Volunteers from user groups would be encouraged to help maintain trails, creating a need for staff trained to manage volunteer services. This would be accomplished by retraining and reorganizing existing trails staff. New programs for children and adults at Camp Brookside would create the need for new staff and partnership actions. Interpretation would be focused at gateway sites where visitors would congregate. This would be accomplished through a realignment of existing staff. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Park Operations Actions. In Alternatives 2 to 5 new sources of funding would become available as NPS works with users and visitors to create partnerships, friends groups, and other mechanisms to support park purposes (see Section 4.4.17 Park Operations (Alternative 2) above). These actions would result in a local long-term major beneficial impact on park operations.

Alternative 4 calls for leasing some historic structures. Depending on the physical condition of historic structures, terms of the lease, and other factors, it is possible that leasing could provide a minor income stream for the park. This would result in a local long-term minor beneficial impact on park operations.

Land Protection Actions. In Alternatives 2 to 5 the addition of six areas and 212.5 acres to the park to provide for parking and access would improve the ability of rangers to manage these uses within the park. The park would work with neighbors to promote better stewardship of privately-owned lands within the boundary and to reduce impacts on them from park use. This would result in a local long-term moderate beneficial impact on park operations.

Alternative 4 provides for new management zoning for the park. This will make it easier for park employees to monitor and enforce use, and manage newly acquired sites. These actions will result in a local long-term minor beneficial impact to park operations.

Partnership and Community Collaboration Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would lead NPS to implement actions making the park more relevant to local users and park neighbors (see Section 4.4.17 Park Operations (Alternative 2) above). Alternative 4 calls for enhanced collaborative efforts with park gateway communities – the places that are often visitor’s initial contact with the park. Working with these communities to provide visitor information, limit conflicts with private owners, and provide new visitor services would lessen the impacts on law enforcement and interpretive staff. However, additional staff would be required to manage these collaborative efforts. While these actions would result in a local short-term minor adverse impact to the

park budget, they would also result in a local long-term moderate beneficial impact on park operations.

■ **Cumulative Impacts**

Other past, present and reasonably foreseeable actions that have had or would have impacts on park operations and facilities include the completion of the New River Parkway, continued minimum maintenance of state roads to and within the park, other transportation improvements, and continued private ownership of lands within the park, particularly in communities. The building of the New River Parkway would mean that law enforcement patrol and maintenance of the River Road area would be greatly improved; other transportation improvements might make remote areas of the park more accessible. The minimum maintenance of state roads such as McCreery Road would continue to complicate park management efforts. Private ownership of land within the park boundaries, particularly in communities, also creates law enforcement issues and conflicts between private owners and visitors, although efforts to work more closely with communities would mitigate this somewhat. Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact to park operations. Alternative 4 would contribute an imperceptible beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 4 would result in local short-term minor adverse impacts on the park budget and local long-term minor to major beneficial impacts on park operations. Alternative 4 would contribute an imperceptible beneficial impact to the cumulative long-term minor adverse impact on park operations.

4.6.18 Unavoidable Adverse Impacts (Alternative 4)

Unavoidable adverse impacts are major adverse impacts that cannot be fully mitigated or avoided. Alternative 4 would not result in any major adverse impacts.

4.6.19 Irreversible and Irretrievable Commitments of Resources (Alternative 4)

An irreversible commitment of resources is one that cannot be reclaimed, restored, or otherwise returned to its condition prior to disturbance. An irretrievable commitment of resources is a loss of something that once gone, cannot be replaced.

Proposed management actions would generally contribute to resource protection and preservation and would be expected to minimize the occurrence of irreversible or irretrievable impacts. Nevertheless some irretrievable impacts would occur:

- construction projects, landscape restoration and rehabilitation, and park operations would use limited amounts of nonrenewable resources,

including materials and energy; once these resources are committed they would be irretrievable

- minor amounts of soil would be permanently lost as a result of soil erosion and sedimentation from areas (approximately 180 acres) disturbed by cultural resource management actions, development of new visitor use facilities, and restoration actions
- potential exists at cultural resource sites undergoing restoration or rehabilitation for an irretrievable commitment of resources as a result of any loss of undiscovered below ground resources
- irretrievable commitments of resources could also occur at cultural resource sites undergoing restoration to a specific time period if material from subsequent periods is lost

Surveys, avoidance through design, documentation, and other mitigation would occur before any restoration or rehabilitation begins, thereby minimizing irretrievable impacts to cultural resources.

4.6.20 Relationship between Short-Term Uses of the Environment and Long-Term Productivity (Alternative 4)

In Alternative 4 most of the park would be protected in a natural state with an emphasis on reducing existing forest fragmentation and avoiding future forest fragmentation. Approximately 60.8 percent of the park would be managed as backcountry largely unaltered by future human-induced impacts. Approximately 30.0 percent of the park would be managed as frontcountry forest with minimal future human-induced impacts. The NPS would continue to manage the park to maintain ecological processes and native and biological communities, and to provide for appropriate recreational activities consistent with the preservation of natural and cultural resources. Previously disturbed areas would be restored to return them to productivity, as funding permits. Any actions the NPS takes in the park would be taken with consideration to ensure that uses do not adversely affect the productivity of biotic communities.

Disturbance of the park's soils, water quality, vegetation, and wildlife, due to visitor use and the construction of new facilities would reduce the long-term productivity of the park in localized areas; however, overall there would likely be only a small effect on the park's long-term productivity.

4.7 Environmental Consequences of Alternative 5

4.7.1 Physiography, Geology, and Soils (Alternative 5) (Preferred Alternative)

Natural and Scenic Resource Management Actions. Management actions would continue to seek to protect the park's physiography, geology, and soil resources (as in Alternative 1) by:

- generally allowing physiography, geology, and soil resources that are disturbed by natural phenomena – such as landslides – to recover naturally
- restoring/reclaiming physiography, geology, and soil resources altered by human activity – such as mining (in cooperation with WV DEP)
- protecting park resources from potential impacts associated with natural gas/oil production or mining activities that are permitted by valid oil, gas, and mineral rights (and that may be conducted within the park in compliance with appropriate state permits and Section 9b Regulations pursuant to the Surface Mining Control and Reclamation Act) (in cooperation with WVDEP)
- reducing soil erosion and sedimentation by restoring disturbed areas (such as areas disturbed by ATVs), as funding permits

In addition, in Alternative 5 management actions affecting physiography, geology, and soils would focus on the following:

- managing approximately two-thirds (66.4%) of the park as backcountry and one-tenth (7.7%) of the park as river corridor, with implementation of related management prescriptions that would maintain natural geologic processes and features to persist largely unaltered by further human-induced impacts
- managing the remainder of the park (25.9%) as frontcountry, historic resource, and park development zones, with implementation of related management prescriptions that would allow natural geologic processes and features to persist with minimal human-induced impacts

Impacts of natural resource management actions on physiography, geology, and soil resources would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact soil resources. Physical disturbance associated with cultural resource management actions would impact soil resources. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 105 acres of

previously disturbed soils.¹ Most disturbances would be associated with rehabilitation of the historic extent of fields at early settlement sites, as well as with stabilization and vegetation removal at discovery sites (30 to 35 sites) (see Table 4.27). During the treatment period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Following the treatment period sites would be planted with native species or appropriately revegetated where cultural landscapes are restored. Impacts on soil resources would be local short-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact physiography, geology, and soil resources. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 190 to 210 acres.² Approximately 75 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period erosion and sedimentation control measures would minimize soil exposure, control soil losses, trap sediment, and prevent sediment transport into adjoining waterways. Impacts on soil resources would be local short-term minor to moderate and adverse.

Following construction approximately 90 to 95 acres would be replanted with native species and 80 to 95 acres would be stabilized through placement of crushed stone or other surface treatment for roads, parking facilities, and some trails. Minimal areas of existing undisturbed soils would be permanently developed, primarily including the sites of small visitor facilities such as vault toilets and changing stations. Impacts on soil resources would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 20 acres within the tread of reestablished or new trails), leading to increased potential for soil erosion. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on soils would be local long-term minor and adverse.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

² In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

Physiography, Geology and Soils (Alternative 1) above). In Alternative 5, an additional 190 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Impacts on soils would be negligible to local long-term minor and adverse.

Land Protection Actions. Impacts of future land protection actions on physiography, geology, and soil resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.1 Physiography, geology, and soil resources (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to work collaboratively with WV DEP to facilitate reclamation of areas disturbed by mining and to protect park resources from the potential impacts of mineral resource extraction on lands adjoining or near the park (as in Alternative 1). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

NPS would provide ongoing technical assistance to communities within the park and others engaged in resource management activities beyond the park boundary that have the potential to positively impact the park's geologic and soil resources (common to Alternatives 2 to 5). Impacts on physiography, geology, and soil resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on physiography, geology, and soils are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.1 Physiography, Geology, and Soils (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on physiography, geology, and soil resources. Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term moderate to major beneficial impacts, local short-term minor to moderate adverse impacts, and local long-term minor to moderate and adverse impacts on physiography, geology, and soil resources. Alternative 5 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on physiography, geology, and soil resources. There would be no impairment of park resources or values related to physiography, geology, and soil resources.

4.7.2 Floodplains¹ (Alternative 5) (Preferred Alternative)

Natural and Scenic Resource Management Actions. Management actions would protect, preserve and restore the natural resources and functions of floodplains (common to Alternatives 2 to 5) by:

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- removing debris from floodplains following flooding events
- preventing placement of additional obstructions in the New River and, wherever possible, removing structures in the New River that are no longer in use – such as abandoned bridge piers

Impacts on floodplains would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In the future visitor use facilities within the floodplain would be limited to facilities that are dependent upon locations in proximity to water and for which non-floodplain sites would not be a practicable alternative. Existing facilities to remain within the floodplain would generally include river accesses, picnic facilities, trails, and river rest stops. Improvements to existing facilities and new facilities in the floodplain would include: improvements to the existing day-use areas and river launches at Mermaid Beach, Thayer, and Brooks Falls; addition of a river launch at Meadow Creek West, at Bass Lake, and at Terry Beach; and addition of disabled boater access at some river accesses. In addition if after making upland improvements at Cunard and Brooklyn, capacity issues remain on peak visitation day then a new river access would possibly be developed at Surprise.

Construction of improvements in the floodplain at existing and new visitor use facilities would occur in areas that have experienced recent prior disturbance and would involve minimal placement of impervious surfaces within the floodplain.

¹ *Floodplains with a recurrence interval of 100 years*

Mitigation measures would minimize potential for flooding or for other adverse impacts on floodplain values associated with these improvements. At the new Meadow Creek West river access, mitigation measures would include the following:

- during final design, the NPS would complete topographic surveys and flood elevation studies, and a floodplain statement of findings, as appropriate
- all facilities within the floodplain would be designed to meet standards and criteria of the National Flood Insurance Program (44 CFR Part 60)
- all park roads, trails, and parking areas in the floodplain would be designed with unpaved surfaces
- all facilities not functionally dependent on proximity to water – such as toilets and overnight camping facilities – would be located above the floodplain; parking would also be located above the floodplain to the maximum extent possible
- all existing previously disturbed areas within the floodplain on the site (not needed for new facilities) would be restored

If a new river access is developed at Surprise (as in Alternative 3), some facilities would be located in the floodplain and would impact a mature oak-tulip poplar silverbell floodplain forest on Red Ash Island. Impacts on the floodplain forest would be mitigated by limiting visitor use facilities in the floodplain to the minimum possible, including an access road, an access trail, small drop-off area, disabled river access, and launch site; the primary drop-off area, parking, staging areas, visitor changing/comfort stations, and picnic facilities would be located above Red Ash Island and outside of the floodplain at the base of the gorge wall. Collectively these new visitor use facilities would minimally to moderately affect natural floodplain values and minimally increase the use of the floodplain, resulting in either a local long-term minor adverse impact on the floodplain (without a new access at Surprise) or in a local long-term moderate adverse impact on the floodplain (with a new river access at Surprise).

Existing campgrounds in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen would be eliminated and natural floodplain vegetation would be restored (common to Alternatives 2 to 5). Impacts on floodplains would be local long-term minor and beneficial.

Park Operations Actions. Impacts of floodplain management informed through findings of detailed floodplain studies would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Impacts of maintaining the existing park headquarters and operations facilities at Glen Jean within the 100-year floodplain would continue to be local long-term minor

and adverse (common to Alternatives 1 to 5) (see Section 4.3.2 Floodplains (Alternative 1) above).

Land Protection Actions. Impacts of future land protection actions on floodplains would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.2 Floodplains (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of partnership and community collaboration actions on floodplains would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.2 Floodplains (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on floodplains are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.2 Floodplains (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on floodplains. Without a new river access at Surprise, Alternative 5 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on floodplains; alternatively, if a new river access is needed at Surprise, then Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative long-term moderate adverse impact on floodplains.

■ Conclusion

Management actions in Alternative 5 – without a new river access at Surprise – would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on floodplains. If a new river access is needed at Cunard, then the management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on floodplains. Without a new river access at Surprise, Alternative 5 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on floodplains; alternatively, if a new river access is needed at Surprise, then Alternative 5 would contribute a minor beneficial impact and a minor adverse impact to the total cumulative long-term moderate adverse impact on floodplains. Regardless of whether a new river access is developed at Surprise, in Alternative 5 there would be no impairment of park resources or values related to floodplains.

4.7.3 Water Quality (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain water quality in the New River and its tributaries in its natural condition free of pollutants generated by human activity (as in Alternative 1) by:

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions

In addition, in Alternative 5 management actions affecting water quality would focus on:

- maintaining a nearly continuous strip of natural riparian vegetation along the river where only low impact recreation would occur in locations and at levels that do not negatively impact the river (common to Alternatives 2 to 5)
- managing approximately two-thirds (66.4%) of the park as backcountry, with implementation of related management prescriptions that would generally eliminate further forest fragmentation and the potential for human-induced impacts to water quality
- managing approximately one-quarter (24.4%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce further forest fragmentation and the potential for human-induced impacts to water quality

Collectively these actions would protect natural vegetation and reduce soil disturbance and subsequent erosion and sedimentation potentially associated with forest disturbances and visitor use. Impacts on water quality would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact water quality. Conceptual planning suggests that treatment actions at cultural resource sites would likely disturb approximately 105 acres of previously disturbed soils (see Table 4.27).¹ During the treatment period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of

¹ In addition to the approximate three acres disturbed for cultural resource treatments in Alternative 1

the WV NPDES Stormwater Program. Following the treatment period sites would be planted with native species or appropriately revegetated where cultural landscapes are restored. When reestablishing the historic extent of fields or restoring cultural landscapes at early settlement sites adjoining the New River, a 50- to 100-foot buffer of native riparian habitat would be maintained. Impacts on water quality would be local short-term minor to moderate and adverse.

Permanent removal of impervious surfaces associated with modern structures at two early settlement farms would enhance on-site infiltration of stormwater and reduce site runoff (as in Alternative 1). Impacts on water quality would be negligible.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact water quality. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 190 to 210 acres.¹ Approximately 75 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. During the construction period use of best management practices (BMPs) would mitigate potential water quality impacts associated with sediment-laden stormwater discharges from disturbed areas, in accordance with requirements of the WV NPDES Stormwater Program. Impacts on water quality would be local short-term minor to moderate and adverse.

Following construction approximately 90 to 95 acres would be replanted with native species and 80 to 95 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Over the long-term unpaved roads and parking areas would be subject to compaction and would have the potential to generate increased runoff and to convey pollutants from parking areas and roads to streams and the river. Permanent stormwater management measures would be used in accordance with requirements of the WV NPDES Stormwater Program to reduce pollutants in stormwater discharged from developed sites. Impacts on water quality would be local long-term minor and adverse.

Visitor use at existing plus new or improved facilities over the long-term would have the potential to trample vegetation and expose soils in heavily used areas and along trails (including approximately 20 acres within the tread of reestablished trails), leading to increased potential for erosion and subsequent sedimentation in streams and the river. Where this occurs, management actions would stabilize soils and reestablish vegetation where possible. Trail maintenance could include placement of crushed stone or other surface material to stabilize the ground surface at impacted sites along trails. In some locations placement of pavement could be required to avert further resource damage. Impacts on water quality would be local long-term minor and adverse.

¹ In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 5, an additional 190 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Impacts on water quality would be negligible to local long-term minor and adverse.

Impacts of other future park operations on water quality would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on water quality would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future partnerships and collaboration on water quality would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.3 Water Quality (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on water quality are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.3 Water Quality (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on water quality. Alternative 5 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts, local short-term minor to moderate adverse impacts, and local long-term minor adverse impacts on water quality. Alternative 5 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on water quality. There would be no impairment of park resources or values related to water quality.

4.7.4 Vegetation (Alternative 5) (Preferred Alternative)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native plants and natural landscapes

(as in Alternative 1) (exclusive of wildland fire management). Actions would generally focus on the following:

- generally allowing natural landscapes that are disturbed by natural phenomena – such as landslides, floods, and fire – to recover naturally
- restoring natural landscapes altered by human activity, such as logging, mining, agriculture, transportation, utilities, and exclusion of natural fire
- preserving and restoring native plant populations and the communities in which they occur (particularly rare or significant plant communities)
- aggressively treating invasive exotic plant and insect pest species

In addition, in Alternative 5 management actions affecting vegetation would include the following:

- managing approximately two-thirds (66.4%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing approximately one-quarter (24.4%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- removing non-water-dependent uses from the floodplain and restoring native floodplain vegetation (common to Alternatives 2 to 5)
- managing wildland fire to diminish the risk and consequences of severe wildland fires and, to the extent possible, to restore and protect the natural biological diversity and natural disturbance regime of the park (common to Alternatives 2 to 5)
- using prescribed fire to promote ecosystem health and native vegetation diversity in fire-dependent forest communities, such as rimrock pine communities and xeric oak-hickory forests (common to Alternatives 2 to 5)

Impacts of natural resource management actions on vegetation would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact vegetation. Conceptual planning suggests that cultural resource management

actions would likely disturb approximately 105 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.27).

Rehabilitation of buildings, restoration of cultural landscapes, and reestablishment of the historic extent of fields at early settlement farm sites would require disturbance to approximately 75 acres of previously disturbed land. Affected vegetation would generally include a mix of ornamental trees and shrubs, non-native plants, old field successional species, and forested land characterized by mixed-age stands of tulip poplar, maple, oak, and ash. Following the treatment period sites would be appropriately revegetated where cultural landscapes are restored. Where restored cultural landscapes adjoin the New River, a 50- to 100-foot buffer of native riparian habitat would be maintained. Impacts on vegetation would be local long-term minor to moderate and adverse.

Disturbance would also occur in conjunction with stabilization and protection at approximately 30 to 35 discovery sites, along with development of visitor use improvements and installation of interpretative media. The typical discovery site would encompass an area of ruins in the park's mixed mesophytic forest – approximately one acre in size or less – overgrown by a mix of variable-age trees, shrubs, and grasses, with many sites dominated by kudzu and other non-native plants. Treatment would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that fragmentation would be minimized or would not occur. Cleared areas would be revegetated with native grasses. Impacts on vegetation would be local long-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Physical disturbance associated with development of visitor use facilities would have the potential to impact vegetation. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 190 to 210 acres.² Approximately 75 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. However, development of a new river access at Surprise (if needed to address visitor crowding) would require limited clearing on Red Ash Island where a significant mature floodplain forest currently is present (dominant forest on the island is oak-tulip poplar/silverbell, with subdominant sycamore-ash floodplain forest and sycamore-river birch riverscours woodland). Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly on Red Ash Island and where existing unmaintained trails are improved to provide official park trails. Following construction approximately 90 to 95 acres would be replanted

¹ *In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1*

² *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

with native species and 80 to 95 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 20 acres would be within the tread of reestablished or new trails. Impacts on vegetation would be local long-term minor to moderate and adverse.

Visitor use throughout the park would have the potential to impact native plants and plant communities – particularly sensitive, rare, or significant vegetation communities. Management actions would protect sensitive, rare, or significant vegetation communities from visitor use impacts, as needed, generally including (common to Alternatives 2 to 5):

- in riparian areas (especially cobble and flatrock communities) – eliminate fires and overnight camping in all riparian areas; designate day-use river reststops downstream of Cunard
- on river bars – eliminate fires on most bars and close to visitor use bars with sensitive resources that are impacted by camping and day-use
- in clifftop communities – provide designated routes to climbing areas and limit access seasonally to critical cliff natural areas
- in flatrock communities – control visitor access; extend or add boardwalks to protect areas where visitor use occurs, such as at Sandstone Falls

Impacts on vegetation would be local long-term moderate and beneficial.

Land Protection Actions. Impacts of future land protection actions on vegetation resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of implementing a community-based approach to managing wildland fire on vegetation would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.4 Vegetation Resources (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.4 Vegetation (Alternative 1) above). Alternative 5 in conjunction with the impacts of other past, present, and reasonably foreseeable actions would result in a cumulative long-term moderate adverse impact on vegetation. Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term moderate to major beneficial impacts and local long-term minor to moderate adverse impacts on vegetation. Alternative 5 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on vegetation. There would be no impairment of park resources or values related to vegetation.

4.7.5 Aquatic Wildlife (Alternative 5) (Preferred Alternative)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain and restore natural stream ecosystems with hydrologic features supporting a full range of natural aquatic organisms by (as in Alternative 1):

- reducing or eliminating existing non-point sources of water contamination within the park boundary associated with historic land uses and prior disturbance, as funding permits
- reducing water quality impacts due to potential soil exposure, increased runoff, and erosion and sedimentation associated with natural and scenic resource management actions
- removing debris from floodplains following flooding events

In addition, in Alternative 2 management actions affecting aquatic habitats and dependent wildlife would focus on the following (common to Alternatives 2 to 5):

- maintaining natural flows and hydropatterns
- restoring natural drainage patterns on all disturbed lands (in cooperation with WV DEP when part of mined land reclamation projects)
- maintaining rainfall-runoff dynamics and sediment delivery and transport processes at natural levels in backcountry, frontcountry, and river corridor zones and at somewhat altered levels in cultural landscape and park development zones
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- maintaining natural floodplain vegetation and – based on further feasibility study in coordination with the U.S. Army Corps of Engineers – promoting maintenance of natural floodplain vegetation through controlled releases from Bluestone Dam that provide periodic maximum floods
- protecting upland wetlands and their processes

- eliminating introduction of non-native species to aquatic ecosystems
- eliminating actions to supplement or maintain selective non-native species in aquatic ecosystems (as appropriate, based on further study of non-native species impacts)
- allowing select introduced species that may alter some process and interactions (e.g. continue WV State black fly treatments)

Impacts on aquatic habitat and dependent wildlife would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would seek to avoid or minimize direct and indirect impacts on aquatic habitat and dependent wildlife associated with visitor use facilities and visitor use.

Physical modifications to aquatic habitat and dependent wildlife caused by development of visitor use facilities would generally not occur except where they could not be avoided because a facility is water-dependent. Where water-dependent uses require location of new facilities along the river bank and in the near-shore area, some degree of physical modification to aquatic habitat and dependent wildlife would be unavoidable. This would occur at the new Meadow Creek West, Terry Beach, and Surprise (if determined necessary in the future) river accesses where a river launch would be developed, requiring limited site grading and some degree of bottom hardening to provide a safe surface for walking and to protect the bank and river bottom from erosion due to visitor use. Launch areas would be confined to the smallest possible area needed to accommodate average daily visitor demand. Impacts of new or improved visitor uses on aquatic habitat and dependent wildlife would be local short-term minor and adverse during construction and local long term minor and adverse following construction.

Potential visitor use impacts on aquatic habitat and dependent wildlife would continue to occur throughout the park where visitors have uncontrolled access to the New River, tributary streams, and special aquatic habitat and dependent wildlife. Indirect impacts would include those resulting from trampling of riparian vegetation, subsequent soil exposure, soil erosion, and sedimentation. Direct impacts would occur where visitors cross streams while hiking, walk in streams or the river while fishing, or disturb the river bottom while swimming, launching boats, or stopping at river rest stops. These impacts would be mitigated by designing new trails (approximately 25 miles) with the minimum number of tributary stream crossings and – where crossings could not be avoided – placement of footbridges to avoid hiker impacts, as funding permits. In the future sensitive aquatic habitat and dependent wildlife at and in the vicinity of popular backcountry river rest stops would be closed to day-use. At river launches visitor access to the river would be restricted to the minimum area possible and riparian areas adjoining launch sites

would be closed. Educational efforts would help deter visitor impacts through signage, informational materials, and interpretive programs that explain ecological values and sensitivity to disturbance of riparian areas and special aquatic habitat and dependent wildlife. Impacts on aquatic habitat and dependent wildlife would be local long-term minor and adverse.

Park Operations Actions. Impacts of future park operations actions on aquatic habitat and dependent wildlife would be local long-term major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on aquatic habitat and dependent wildlife would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future partnership and community collaboration actions on aquatic habitat and dependent wildlife would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.5 Aquatic Wildlife (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on aquatic habitat and dependent wildlife are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.5 Aquatic Wildlife (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. Alternative 5 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor adverse impacts on aquatic habitat and dependent wildlife. Alternative 5 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on aquatic habitat and dependent wildlife. There would be no impairment of park resources or values related to aquatic habitats and dependent wildlife.

4.7.6 Terrestrial Wildlife (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to maintain the park's native animals (as in Alternative 1) by:

- perpetuating native animal life as part of the park's natural ecosystem by maintaining or restoring natural processes to the extent practically feasible
- relying on natural processes to control populations and habitats of native species to the greatest extent possible

In addition, in Alternative 5 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing approximately two-thirds (66.4%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure
- managing approximately one-quarter (24.4%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on terrestrial habitat and dependent species would be local long-term major and beneficial.

Cultural Resource Management Actions. Physical disturbance associated with cultural resource management actions would have the potential to impact terrestrial habitat and dependent species. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 105 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see Table 4.27). Field survey prior to treatment actions would determine terrestrial wildlife species present in the vicinity of each site and appropriate protection measures needed. Treatment would generally be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season.

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at five sites and affect approximately 15 acres. Pre-treatment and post-treatment habitat conditions would be quite similar, characterized by a mix of native grasses and ornamental plantings, although non-native plants would be removed where they are currently present at some sites. Affected wildlife would generally include habitat generalists that live in close association with human habitation. During the treatment period wildlife would be expected to migrate into adjacent habitat areas; following the treatment period they would likely migrate back to restored sites. Impacts on terrestrial habitat and dependent species would likely be local short-term minor and adverse.

At six sites where the larger cultural landscape of early settlement farms would be restored or the historic extent of fields reestablished, a total of 60 acres of successional old field vegetation and some areas of mixed-age forest would be cleared or otherwise altered. During the treatment period wildlife would be expected to migrate into adjacent habitat areas. Impacts would be negligible for species that live in close association with human habitation and agriculture. Impacts would be local long-term minor and adverse for species previously inhabiting successional old field or forest habitat that could not tolerate living in close association with human habitation and agriculture. Impacts for open grassland, pasture, meadows, and brush lands species – particularly some birds – would be local long-term moderate and beneficial.

At approximately 30 to 35 discovery sites potential habitat impacts would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining resources. Most sites would encompass approximately one acre or less. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not occur. Wildlife in the vicinity of each site would be expected to migrate to adjacent habitat areas. Impacts on terrestrial habitat and dependent species would likely be local long-term minor and adverse.

Public Use, Enjoyment, and Experience Management Actions. Development of new facilities – and visitor use of those facilities – would have the potential to disturb or displace wildlife or cause areas to be avoided by wildlife. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 190 to 210 acres, dispersed among 30 to 31 sites and 104 miles of trails (primarily existing unmaintained trails that would be improved).¹ Approximately 75 percent of the area likely to be disturbed has experienced some degree of prior site disturbance. Affected vegetation would primarily include grasses, weeds, successional old field species, and non-native plants. However,

¹ *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

development of a new river access at Surprise (if needed to address visitor crowding) would require limited clearing on Red Ash Island where a significant mature floodplain forest currently is present. Field survey prior to treatment actions would determine terrestrial wildlife species present in the vicinity of each visitor use site and the appropriate protection measures needed. Future site planning and construction of new facilities would seek to minimize disturbance to forested land, particularly on Red Ash Island and where existing unmaintained trails are improved to provide official park trails. To the maximum extent practicable, native vegetation that could be retained would not be disturbed so that forest fragmentation would be minimized or would not occur. Construction would generally be scheduled so that it would occur during winter when wildlife are hibernating or during the non-breeding season. Following construction approximately 90 to 95 acres would be replanted with native species and 80 to 95 acres would be stabilized through placement of crushed stone or other surface treatment for roads and parking facilities. Approximately 20 acres would be within the tread of reestablished or new trails. Wildlife would be expected to avoid sites during construction or would only travel through sites construction activity has abated, resulting in a local short-term minor adverse impact on wildlife and dependent species. Following construction, the permanent loss of habitat combined with disturbance, injury, or death associated with long-term visitor use and management of visitor use sites would result in a local long-term minor to moderate adverse impact on terrestrial habitat and dependent species.

Continuation of hunting in the park largely as it is today in accordance with all applicable regulations and policies adopted by the responsible management agencies would continue to have negligible impacts on terrestrial habitat and dependent species (as in Alternative 1) (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above). In addition implementation of voluntary hunter registration and end-of-season questionnaires would increase information on harvest and hunter use levels facilitating development of game management plans, potentially resulting in a local long-term minor beneficial impact on terrestrial habitat and dependent species. Opening of Grandview to limited hunting would help to control the white-tailed deer population and reduce adverse impacts of over browsing on understory vegetation in that area of the park.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture, subject to leasing terms that would mitigate potential farming impacts to natural resources (see Section 4.3.1 Physiography, Geology and Soils (Alternative 1) above). In Alternative 5, an additional 190 acres of restored, rehabilitated, or new fields at six early settlement farms would be leased for agriculture. Maintenance of open fields and forest edge along their perimeter would enhance wildlife habitat diversity locally in the park. Impacts on terrestrial habitat and dependent species would be local long-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on terrestrial habitat and dependent species would likely be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.6 Terrestrial Wildlife (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of cooperation regarding hunting and game management between the NPS and the WV DNR on terrestrial habitat and dependent species would be local long-term moderate and beneficial (as in Alternative 4) (see Section 4.6.6 Terrestrial Wildlife (Alternative 4) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on terrestrial habitat and dependent species are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.6 Terrestrial Wildlife (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on terrestrial habitat and dependent species. Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts, local short-term minor adverse, and local long-term minor to moderate adverse impacts on terrestrial wildlife. Alternative 5 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on terrestrial wildlife. There would be no impairment of park resources or values related to terrestrial wildlife.

4.7.7 Rare, Threatened, and Endangered Species (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Management actions would continue to seek to generally increase the populations of rare, threatened, or endangered species in the park and to secure sufficient, suitable habitat to “recover” species designated as threatened or endangered (as in Alternative 1).

Actions would generally focus on the following:

- managing habitat of threatened and endangered species to maintain their value for species recovery
- managing habitat of state-listed species to maintain their value for species maintenance to the greatest extent possible

- managing other native species of special management concern to the park to maintain their natural abundance and distribution
- controlling detrimental non-native species impacts on rare, threatened, or endangered species

In addition, in Alternative 5 management actions affecting terrestrial habitat and dependent species would focus on the following:

- managing approximately two-thirds (66.4%) of the park as backcountry, with implementation of related management prescriptions that would largely eliminate further human-induced forest fragmentation and associated impacts to diversity and vertical understory structure, including rare species and communities
- managing approximately one-quarter (24.4%) of the park as frontcountry, with implementation of related management prescriptions that would significantly reduce the potential for further human-induced fragmentation and associated impacts to diversity and vertical understory structure, including rare species and communities
- maintaining a nearly continuous strip of natural riparian vegetation along the New River and its tributaries (to be implemented through river corridor management zoning and related management prescriptions)
- preserving the high diversity of native migratory species populations – particularly neotropical birds – and their habitats inside the park and cooperating with others to ensure preservation of their populations and habitats outside the park (common to Alternatives 2 to 5)

Impacts on rare, threatened, and endangered species would be local long-term major and beneficial.

Cultural Resource Management Actions. Conceptual planning suggests that cultural resource management actions would likely disturb approximately 105 acres of previously disturbed land in the vicinity of cultural resource sites¹ (see 4.27). Restoration or rehabilitation of historic structures and associated cultural landscapes in the immediate vicinity of buildings would occur at five sites and affect approximately 15 acres. At six sites where the larger cultural landscape of early settlement farms would be restored or the historic extent of fields reestablished, a total of 60 acres of successional old field vegetation and some areas of mixed-age forest would be cleared or otherwise altered. At approximately 30 to 35 discovery sites potential habitat impacts would include removal of non-native plants and native trees and shrubs that threaten the stability of remaining structures on sites typically one acre in size or less.

¹ In addition to the approximate four acres disturbed for cultural resource treatments in Alternative 1

Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Public Use, Enjoyment, and Experience Management Actions. Conceptual planning suggests that development of new or improved visitor use facilities would disturb approximately 190 to 210, dispersed among 30 to 31 sites and 104 miles of trails (primarily existing unmaintained trails that would be improved).¹ Field survey prior to treatment actions would determine if rare, threatened, or endangered species are present at or in the vicinity of other sites where treatment would occur. NPS would complete Section 7 Consultation with the U.S. Fish and Wildlife Service to determine necessary actions to avoid or mitigate adverse impacts to designated species where they are present. Assuming successful completion of Section 7 Consultation the determination would be that cultural resource management actions would not likely result in an adverse effect to designated species. For species that are state-listed the NPS would coordinate with WV DNR regarding potential impacts and mitigation measures needed to avoid or mitigate impacts. Impacts on rare, threatened, or endangered species would be negligible to local long-term minor to moderate and adverse.

Visitor use facilities at the Sandstone Falls Island day-use area would be improved, likely leading to increased visitation to Sandstone Falls. To address existing visitor use impacts to rare plants of the Appalachian flatrock community found in the Sandstone Falls vicinity – and to prevent expansion of the impacted area – the existing boardwalk trail would be expanded. The area impacted during construction would be limited to the minimum possible size. Following construction impacts on rare species would be local long-term minor and adverse.

Impacts of the ongoing program to stabilize and gate mine portals where rare, threatened, and endangered species are present would continue. Gates in abandoned mine openings throughout the park would continue to be local long-term moderate and beneficial (common to Alternatives 1 to 5) (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above).

¹ *In addition to the approximate three acres disturbed for new or improved visitor use facilities in Alternative 1*

To protect designated species visitor use in certain areas of the park would be limited to day-use only, including Rush Run, Sewell, Beauty Mountain, Endless Wall, Sunshine Buttress, and Ames (common to Alternatives 2 to 5).¹ Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Additional protections in climbing areas – including Endless Wall, Sunshine Buttress, Alabama, and Ames – would include provision of designated trails to climbing routes that would reduce the current proliferation of social trails that potentially disturb habitat of designated species (common to Alternatives 2 to 5). Impacts on rare, threatened, or endangered species would be local long-term moderate and beneficial.

Park Operations Actions. Impacts of future park operations actions on rare, threatened or endangered species would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on rare, threatened or endangered species would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future collaborative management actions on rare, threatened, and endangered species and their habitats that are outside but near the boundary of the park would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.7 Rare, Threatened, and Endangered Species (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on rare, threatened, and endangered species are identified in Section 4.2.4 (see Table 4.4). Impacts of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.7 Rare, Threatened, and Endangered Species (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on rare, threatened, and endangered species. Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on rare,

¹ Visitor use in the Nuttallburg Visitor Use Area would also be limited to day-use only pursuant to the Nuttallburg Visitor Use Area DCP/EA (NPS 2008c)

threatened, and endangered species. Alternative 5 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on rare, threatened, and endangered species. There would be no impairment of park resources or values related to rare, threatened, and endangered species.

4.7.8 Scenic Resources (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Resource management actions would seek to protect a range of views in all areas of the park, allowing visitors to experience the extent of the gorge, the river, the forest, and the rim by (as in Alternative 1):

- removing non-native plants at sites where they cause a major scenic or aesthetic intrusion
- reclaiming abandoned mine lands at sites throughout the park (in cooperation with the WV DEP)

In addition, in Alternative 5 management actions affecting scenic resources would focus on the following:

- managing approximately two-thirds (66.4%) of the park as backcountry with implementation of related management prescriptions that would protect unfragmented forest blocks and natural scenic qualities from human-induced impacts
- managing approximately almost one-quarter (24.4%) of the park as frontcountry with implementation of related management prescriptions that would protect natural scenic qualities by reducing human-induced disturbance
- maintaining a nearly continuous strip of natural riparian habitat along the New River, thereby also preserving its natural scenic qualities (common to Alternatives 2 to 5)

Impacts on scenic resources would be local long-term minor to major and beneficial.

Cultural Resource Management Actions. Restoration of cultural landscapes at one early settlement site and at the Prince Brothers General Store, removal of modern structures at three early settlement sites where potentially significant cultural landscapes exist (as in Alternative 1), rehabilitation of farm fields at seven early settlement sites, and treatments at approximately 30 to 35 cultural resource sites (to be managed as discovery sites) would enhance scenic resources fundamental to the park (see Section 4.7.10 Cultural Landscapes (Alternative 5))

above). Impacts on scenic resources would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities and expansion of existing facilities would alter the park setting in the vicinity of improvements:

- approximately 104 miles of new park trails would be developed, mostly by improving existing unmaintained trails to single-track trails approximately 24 inches in width, requiring minor alteration to the park setting
- approximately 34 small parking areas would be developed to provide trailheads for hikers, climbers, and horseback riders, mostly along existing roads on forest block perimeters, and on previously disturbed sites
- four existing day-use facilities would be improved through minor additions or expansions, most of which would enhance the existing setting, although there could be some minimal impacts to vegetation at some sites
- approximately 6 parking areas at existing river accesses would be expanded, with minimal changes to the park setting
- two new parking areas would be developed in support of a visitor shuttle system – one near U.S. Route 19 for satellite parking to serve the Fayette Station Road area and one at the top of the Cunard Road for satellite parking to serve the Cunard river access area
- three new river accesses and related day-use areas would be developed requiring clearing and alteration of the riparian zone at the river edge where the river launch would be located; two would be developed in conjunction with new developed campgrounds in areas that have been previously disturbed generally converting old successional field areas to developed uses; at Surprise development of related parking facilities on the bench above the New River would alter the wooded natural setting
- one new day-use facility at Fayette Station, utilizing a previously disturbed site in the riparian area
- four new developed campgrounds would be developed on open sites, requiring conversion of early successional old field vegetation on previously disturbed sites to developed visitor uses
- four existing primitive campgrounds would be expanded, requiring small areas of clearing for development of new campsites and road access that would slightly alter the park setting

- an existing primitive campground and day-use area in the floodplain would be relocated to a new site in an area of mixed vegetation where some minor clearing of trees would be required
- approximately five new groups of backcountry campsites would require small clearings for campsites in clusters along park trails in the backcountry and frontcountry
- a new park road on the Highland-Backus Plateau would be developed through expansion of an existing unmaintained road and minor improvements to the existing administrative road to Surprise

Overall the impacts of visitor use facilities on scenic resources would be local long-term minor and adverse.

Existing campgrounds in the floodplain at Hellems Beach, Stone Cliff, and Dun Glen would be eliminated and natural floodplain vegetation would be restored. The McCreery river access would also be closed and restored. Impacts on scenic resources would be local long-term minor and beneficial.

Park Operations Actions. The park would continue to lease approximately 38 acres of existing farm fields for agriculture. In Alternative 5, an additional 190 acres of restored, rehabilitated, or new fields at historic sites (see Table 4.27) would be leased for agriculture, subject to leasing terms that would mitigate potential farming impacts to cultural landscapes and other resources (see Section 4.3.10 Cultural Landscapes (Alternative 2) below). Farming would maintain the extent of restored or rehabilitated fields that are significant features of the park's cultural landscapes, protecting them from succession to mixed mesophytic forest. These landscapes are scenic resources considered fundamental to the park. Impacts on scenic resources would be local long-term moderate and beneficial.

Land Protection Actions. Impacts of future land protection actions on scenic resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.8 Scenic Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. Impacts of future collaborative management actions on scenic resources that are outside but near the park boundary would be local long-term minor to major and beneficial (common to Alternatives 2 to 5) (see Section 4.4.8 Scenic Resources (Alternative 2) above).

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on scenic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.8 Scenic Resources (Alternative 1))

Table 4.27

**New River Gorge National River
Alternative 5 – Site Specific
Cultural Resource Management
Actions**

Actions (in addition to Alternative 1 see Table 4.6 above)

- **Historic Structure Restoration**
 - Richmond-Hamilton Farm (farmhouse and outbuildings)
 - Thurmond Houses (those not rehabilitated – see below – would be restored on exterior only)
- **Historic Structure Rehabilitation** (with reuse through the park leasing program)
 - Trump Lilly Farm (farmhouse)
 - Vallandingham Farm (farmhouse)
 - Camp Brookside
 - Prince Brothers General Store
 - Thurmond Commercial Row
 - Thurmond Houses (those that are in good condition would be rehabilitated for park housing or visitor lodging)
- **Cultural Landscape Restoration**
 - Richmond-Hamilton Farm (with agricultural leasing)
 - Prince Brothers Estate
- **Discovery Site Stabilization and/or Maintenance**
 - treatment actions – at approximately 30 to 35 discovery sites – as needed to stabilize resources and/or to protect resources from potential visitor use impacts
- **Rehabilitation of the Historic Extent of Fields at Cultural Resource Sites** (with agricultural leasing)
 - Vallandingham Farm
 - Cochran Farm
 - Trump-Lilly Farm
 - Westfall Farm (if and when acquired by NPS from a willing seller)
 - Richmond Bottom (if and when acquired by NPS from a willing seller)
 - Harrah Homestead (no leasing)

above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on scenic resources.

Alternative 5 would contribute a moderate beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor impacts on scenic resources.

Alternative 5 would contribute a moderate beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on scenic resources. There would be no impairment of park resources or values related to scenic resources.

4.7.9 Archeological Resources (Alternative 5) (Preferred Alternative)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect and preserve archeological resources against natural destruction wherever practicable by eliminating and avoiding natural resource impacts, stabilizing sites and structures, and monitoring conditions. Management actions including removal of vegetative overgrowth at areas of known or potential archeological resources would be preceded by research sufficient to identify and evaluate such resources. The impact on archeological resources receiving stewardship actions would be local long-term minor and beneficial.

Backcountry zoning would apply to two-thirds (66.4%) of the park. In backcountry zones potential disturbance to archeological resources resulting from park development could occur only along zone perimeters and new trails and at a few designated backcountry camping sites (Figure 2.4). The impact on archeological resources would be local long-term moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to identify and evaluate park archeological resources and to assess their condition and threats to them. Eligible archeological resources would continue to be nominated for listing in the National Register, as appropriate. Archeological resources would generally continue to be left undisturbed except where intervention could be justified based on compelling needs for research, interpretation, site protection, or park development.

Specific management actions at cultural resource sites that could potentially disturb archeological resources would include (see Table 4.27):

- historic building restoration, rehabilitation, or maintenance/ stabilization at numerous cultural resource sites

- cultural landscape restoration at two sites
- rehabilitation of farm fields at seven early settlement farm sites
- stabilization and protection actions at approximately 30 to 35 discovery sites

Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Public Use, Enjoyment, and Experience Management Actions. Ground disturbance associated with development of new facilities and enhancement of existing facilities could affect archeological resources at sites throughout the park. Strategies to protect archeological resources would be implemented as for Alternative 1 (see Section 4.3.9 Archeological Resources above). The impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity.

Expanded visitor use in historic resource zones, along trails, in the vicinity of recreation sites, and at discovery sites (approximately 30 to 35 sites) would increase vulnerability of archeological resources to surface disturbance, inadvertent damage, and vandalism. Loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. NPS staff or volunteer presence and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains. Because expanded visitor use would be dispersed throughout the park in themed areas, at river gateways, at many discovery sites, along numerous new rim to river trails and numerous new trails to attractions in the vicinity of gateways, the potential for The impact on archeological sites would be dispersed. This would make resource protection more difficult for NPS staff and volunteers. The impact on archeological resources would be local long-term minor and adverse.

Increased use of archeological sites and resources for public education and interpretation in themed areas, in river gateways, and at discovery sites would increase awareness and appreciation of resources, thereby increasing support for their preservation, and resulting in a local long-term minor to moderate beneficial impact on archeological resources.

Park Operations Actions. Impacts of construction of water supply/distribution and wastewater collection/treatment facilities at Thurmond on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse (as in Alternative 4) (see Section 4.6.9 Archeological Resources (Alternative 4) above).

Farming would occur through an agricultural leasing program on fields at six early settlement cultural resource sites affecting approximately 190 acres (see Table 4.27). Leases would be structured to ensure that agricultural practices would result in a negligible to local long-term minor adverse impact on archeological resources, depending on the site (see Section 4.4.9 Archeological Resources (Alternative 2) above).

Private use of rehabilitated historic structures (see Table 4.27) would occur through lease or cooperative agreement. Leases would be structured to ensure that the impact on archeological resources would be site-specific and would range from negligible to local long-term minor and adverse, depending on the site and the type of activity (see Section 4.4.9 Archeological Resources (Alternative 2) above).

Land Protection Actions. Impacts of future land protection actions on archeological resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.9 Archeological Resources (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.9 Archeological Resources (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 5 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effects to archeological resources.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to moderate beneficial impacts and local long-term minor adverse impacts on archeological resources. Alternative 5 would contribute an imperceptible beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of park resources or values related to archeological resources.

4.7.10 Cultural Landscapes (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Natural resource management actions in the park would be expanded to include managing vegetation at restored cultural landscapes, rehabilitated farm fields, and discovery sites. Management would seek to control invasive plants at each site on an ongoing basis. Pruning or removal of natural forest vegetation would occur regularly where it threatens to overtake cultural landscapes or jeopardizes the integrity of landscape features. Areas to remain open would be periodically mowed or leased for agriculture. Stormwater management would seek to protect landscapes from impacts of flooding, erosion, sedimentation, and landslides. Impacts on cultural landscapes would be local long-term moderate and beneficial.

Cultural landscape sites where natural resource management actions would not be implemented would continue to be at risk due to vegetation overgrowth, poor drainage, and/or landslide susceptibility (common to Alternatives 2 to 5). Impacts on cultural landscapes would be local long-term minor to moderate and adverse.

Cultural Resource Management Actions. Efforts would continue to include all cultural landscapes in the park's *Cultural Landscapes Inventory* (NPS 2005a), to identify and nominate eligible landscapes to the National Register, and to prepare cultural landscape reports for all cultural landscapes (as in Alternative 1).

Specific management actions affecting cultural landscapes would include (see Table 4.27):

- Cultural resource management actions would include restoration of the cultural landscape at the Prince Brothers General Store in the Prince/Quinnimont river gateway and at the Richmond-Hamilton Farm in the Upper River Corridor Focal Area. The restored Prince Brothers Estate cultural landscape would depict the features and character of the landscape as it appeared at the turn of the 20th century. The restored Richmond-Hamilton Farm cultural landscape would depict the features and character of the landscape as it appeared in the pre-industrial period in the later part of the 19th century; Cultural landscape restoration would occur in conjunction with restoration of structures at Richmond-Hamilton Farm and with rehabilitation of the Prince Brothers General Store. Research and preparation of a cultural landscape report would precede work on each site and would serve as the principal document used to guide restoration decisions.
- Approximately 30 to 35 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along the Through Park Connector, along rim to river trails, and along trails within focal areas.

Many of these sites would be early settlement farms and ruins of historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve cultural landscape components, maintenance activities would mitigate deterioration of cultural landscape components by protecting their condition; stabilization would reestablish the stability of unsafe damaged or deteriorated cultural landscape components while maintaining their existing character.

- At six early settlement sites – where known or potentially significant cultural landscapes exist – management actions would include reestablishment of the historic extent of fields.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on cultural landscapes would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Impacts of new visitor facilities on cultural landscapes would include:

- New visitor use facilities would be added at the six early settlement farms in the south end of the park where the cultural landscape would be restored to access the site for interpretive experiences. Facilities would include parking, paths, other structures to facilitate access, and interpretive media. A farm loop trail would also link the restored landscape to other early settlement farms in the south end of the park. Design and location of contemporary facilities and structures would be considered within the context of the significance of the landscape and would minimize adverse impacts on the character and features of the cultural landscape to the maximum extent practicable. During construction ground disturbance would result in local short-term minor to moderate adverse impacts on the cultural landscape. The long-term impacts on the cultural landscape would be local long-term minor and adverse.
- Where historic structures would be rehabilitated for educational use, commercial use, housing, and visitor services (including lodging) at Camp Brookside, Prince Brothers General Store, two early settlement farmhouses, Thurmond Commercial Row, and numerous houses at Thurmond, use modifications such as development of parking facilities and walkways, could result in local long-term minor to moderate and adverse impacts on the cultural landscape. Circulation system improvements at Grandview would affect cultural landscape (common to Alternatives 2 to 5) (see Section 4.4.16 Visitor Access above). During construction ground disturbance would result in a local short-term minor to moderate adverse

impact to the cultural landscape. Following construction the impact on the cultural landscape would be local long-term minor and adverse.

- Parking improvements at Thurmond in the vicinity of Commercial Row, in the upper residential area, and at restored houses to be used for housing or visitor lodging would affect the cultural landscape (see Section 4.5.16 Visitor Access below). Mitigating actions and impacts would be similar to those implemented for circulation improvements at Grandview (see preceding section).
- At discovery sites (approximately 30 to 35 sites), management actions would include installation of contemporary facilities and structures to control visitor access to cultural landscape components (if present) that would be vulnerable to damage from visitor use. Design considerations would reflect considerations similar to those described above for visitor facilities in a restored landscape. During construction ground disturbance would result in local short-term minor adverse impacts on cultural landscapes. The long-term impacts on the cultural landscapes would be local long-term minor and adverse.

Impacts on cultural landscapes associated with increased visitor use would include:

- Restored cultural landscapes and associated structures opened to the public for interpretive experiences and programs would be susceptible to wear and tear from increased use. NPS staff or volunteer presence would reduce the potential for visitors to inadvertently damage or to vandalize resources. Impacts on cultural landscapes would be negligible to local long-term minor and adverse.
- Cultural landscapes associated with rehabilitated and leased historic structures opened to the public for educational use, commercial use, housing, and visitor services (including lodging) would be susceptible to wear and tear from increased use. Lease holder or concessioner presence would reduce the potential for visitors to inadvertently damage or to vandalize resources. Impacts on cultural landscapes would be negligible to local long-term minor and adverse.
- Visitor use elsewhere in the park would continue to impact cultural landscapes, particularly in remote areas where ranger patrols and NPS staff are not routinely present. Visitor use impacts would generally include inadvertent disturbance and vandalism. Improved access to restored cultural landscapes in the south end of the park and to discovery sites (approximately 30 to 35 sites) along the Through Park Connector, along rim to river trails, and along trails within focal areas would increase the potential for visitor use impacts in those locations, although increased

presence of NPS staff at these sites would help educate visitors about appropriate resource stewardship. Impacts on cultural landscapes would be local long-term minor and adverse.

- Approximately 104 miles of new park trails would enhance visitor access to recreation sites and cultural resources sites in the park. Most new trails would use previously existing unmaintained trails, some of which might be determined historically significant upon further investigation and coordination with the WV SHPO. Future development of a park trail management plan would include Section 106 compliance with the WV SHPO during which historic significance would be assessed and mitigation measures incorporated into trail system design, as appropriate. The long-term impacts on cultural landscapes would be local long-term minor and adverse.

Park Operations Actions. Impacts of future provision of water supply and wastewater treatment services at Thurmond on cultural landscapes would be negligible to local long-term minor and adverse (see Section 4.4.10 Cultural Landscapes (Alternative 2) above).

Farming would occur through an agricultural leasing program at six early settlement cultural resource sites (190 acres) where known or potentially significant cultural landscapes exist (see Table 4.27). Leases or agreements would be structured to protect the historic scene and significant features of the cultural landscape at each site (see Section 4.4.10 Cultural Landscapes (Alternative 2) above). Impacts on cultural landscapes would be negligible.

Land Protection Actions. Impacts of future land protection actions on cultural landscapes would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.10 Cultural Landscapes (Alternative 2) above).

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscapes are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.10 Cultural Landscapes (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscapes. Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to cultural landscapes.

■ Conclusion

Management actions in Alternative 5 would result in local short-term minor to moderate and adverse impacts, local long-term major and beneficial impacts, and local long-term minor to moderate and adverse impacts on cultural landscapes. Alternative 5 would contribute a moderate beneficial and a minor adverse impact to the total cumulative long-term moderate adverse impact on cultural landscapes. There would be no impairment of park resources or values related to cultural landscapes.

4.7.11 Historic Structures (Alternative 5) (Preferred Alternative)

Natural and Scenic Resource Management Actions. Natural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) (as in Alternative 1). Stewardship would generally include removal of non-native plants and improvements to drainage in the vicinity of historic structures. The impacts to historic structures receiving stewardship actions would be local long-term minor and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to protect structures included on the park's *List of Classified Structures* (NPS 2006b) and to obtain determinations of their eligibility for the National Register (as in Alternative 1). Stewardship would generally include building stabilization to provide protection from weather and vandalism. Maintenance of previously stabilized structures would continue. The impacts to historic structures receiving stabilization and ongoing maintenance would be local long-term minor and beneficial.

Further stewardship of historic structures beyond the actions included in Alternative 1 (see Table 4.6) would include the following (see Table 4.27):

- The farmhouses and outbuildings at one historic farm would be restored in the south end of the park, accurately presenting the form, features, and character of the farm as it appeared in the late 19th to early 20th century. Building restoration would occur in conjunction with restoration of the cultural landscape.
- Several houses at Thurmond would be restored, accurately presenting the form, features, and character of the houses as they appeared in the early 20th century.
- Some individual structures already determined eligible for the National Register (those owned by the NPS) would be rehabilitated, including Camp Brookside (all camp structures), two early settlement farms, Prince Brothers General Store, Thurmond Commercial Row (including remediation of lead and asbestos contamination), and other houses at Thurmond that would not be restored. Houses at Thurmond would be rehabilitated for park housing and visitor lodging.

- Approximately 30 to 35 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along rim to river trails, along trails in the vicinity of river gateways, and in focal areas. Some of these sites would be early settlement farms and historic structures at former sites of industrial activities or related settlements in the gorge. Where these sites involve an historic building, maintenance activities would mitigate building deterioration by protecting its condition; stabilization would reestablish the stability of unsafe damaged or deteriorated structural components while maintaining existing building character.

All management actions would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995e) and other NPS policies, guidelines, and standards. Impacts on historic structures would generally be local long-term minor to major and beneficial. Where structures are rehabilitated for leasing or visitor services, concession use modifications, such as those needed to accommodate accessibility and additional means of egress, could result in local long-term minor to moderate and adverse impacts.

Public Use, Enjoyment, and Experience Management Actions. Restored structures opened to the public for interpretive experiences and programs would be susceptible to wear and tear from increased use. NPS staff or volunteer presence would reduce the potential for visitors to inadvertently damage or to vandalize resources. Impacts on historic structures would be negligible to local long-term minor and adverse.

Historic structures leased for housing, educational use, visitor services, or commercial use (including visitor lodging) at two early settlement farmhouses, Camp Brookside, Prince Brothers General Store, Thurmond Commercial Row, and numerous houses at Thurmond would be susceptible to wear and tear from increased use, inadvertent damage, or vandalism. Leases and agreements would seek to reduce the potential for adverse impacts on historic structures associated with their adaptive reuse including maintenance requirements to avoid or mitigate adverse impacts of visitor use. Impacts on historic structures would be local long-term minor to moderate and adverse.

Park Operations Actions. Impacts of future provision of water supply and wastewater treatment services at Thurmond on historic structures would be negligible to local long-term minor and adverse (as in Alternative 4) (see Section 4.4.11 Historic Structures (Alternative 2) above).

Private use of rehabilitated historic structures (see Table 4.27) would occur through lease, cooperative agreement, or concession agreement. Leases or agreements would be structured to protect resources and defray the costs associated with building maintenance (see Section 4.4.11 Historic Structures (Alternative 2) above).

The impact on historic buildings would range from local long term minor to moderate and beneficial to local long term minor to moderate and adverse.

Land Protection Actions. Impacts of future land protection actions on historic structures would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.11 Historic Structures (Alternative 2) above).

Partnership and Community Collaboration Actions. NPS would continue to provide technical assistance to the city of Hinton to assess treatment options for rehabilitation and adaptive reuse of the city-owned Hinton Depot and to assist with implementation of treatment by helping to identify funding options and to develop grant applications (as in Alternative 1). Impacts on historic structures would be local long-term moderate and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic structures are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.11 Historic Structures (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on historic structures. Alternative 5 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ Section 106 Summary

The Section 106 determination of effect would be no adverse effect to historic structures.

■ Conclusion

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on historic structures. Alternative 5 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on historic structures. There would be no impairment of park resources or values related to historic structures.

4.7.12 Ethnographic Resources (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Backcountry zoning would preserve unfragmented blocks of mixed mesophytic forest in 66.4 percent of the park, while frontcountry zoning where human-induced fragmentation would be decreased would apply to 24.4 percent of the park. This would protect the forest and its associated watershed which is the ethnographic resource identified as vital

to the park's traditionally associated people and groups (Hufford et al 2006). Impacts on ethnographic resources would be local long-term major and beneficial.

Natural resource management actions would also protect specific natural and cultural resources found within the park's mixed mesophytic forest that are important to the park's traditionally associated people, such as plants, animals, and sites of former towns, settlement areas, and industrial sites (as in Alternative 1). Impacts to ethnographic resources would be local long-term minor to moderate and beneficial.

Cultural Resource Management Actions. Cultural resource management actions would continue to include appropriate studies and consultations to further document ethnographic resources and uses, traditionally associated people, and other affected groups, and cultural affiliations to park resources. Eligible ethnographic resources would continue to be nominated for listing in the National Register, as appropriate.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites would restore, rehabilitate, or stabilize resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.27 and Sections 4.7.10 and 4.7.11 above). Impacts on ethnographic resources would be local long-term minor to major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. New visitor use facilities at historic structures, cultural landscapes, and discovery sites (approximately 30 to 35 sites) would impact resources that are likely to be found through further research to include significant ethnographic resources (see Table 4.29 and Sections 4.7.10 Cultural Landscapes and 4.7.11 Historic Buildings above). Impacts on ethnographic resources if determined to be present would be local long-term minor to moderate and adverse.

Impacts associated with increased visitor use on ethnographic resources, if determined to be present, would include the following (see Sections 4.7.10 Cultural Landscapes and 4.7.11 Historic Buildings above):

- negligible to local long-term minor adverse impacts at sites where structures and associated cultural landscapes are restored
- local long-term minor to moderate and adverse impacts at sites where structures (with associated cultural landscapes) are rehabilitated and leased for housing, educational use, visitor services, or commercial use (including visitor lodging)
- local long-term minor to moderate and adverse impacts elsewhere in the park, particularly in remote areas and in the vicinity of discovery sites (approximately 30 to 35 sites) where ranger patrols and NPS staff are not routinely present

Land Protection Actions. Impacts of future land protection actions on ethnographic resources would be local long-term moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.12 Ethnographic Resources (Alternative 2) above).

Partnership and Community Collaboration Actions. The NPS would continue to consult with traditionally associated groups and Indian tribes (as in Alternative 1) (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Impacts on ethnographic resources would be local long-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.12 Ethnographic Resources (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 5 would contribute a minor beneficial impact and an imperceptible adverse impact to the total cumulative impact.

■ **Section 106 Summary**

The Section 106 determination of effect would be no adverse effect to ethnographic resources.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on ethnographic resources. Alternative 5 would contribute a minor beneficial and an imperceptible adverse impact to the total cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of park resources or values related to ethnographic resources.

4.7.13 Regional and Local Economy (Alternative 5) (Preferred Alternative)

In Alternative 5 – Exploration Experiences – the NPS would substantially expand the park’s contributions to the Southern West Virginia’s tourism industry and economic environment by implementing a comprehensive approach to enhancing the visitor experience, by expanding recreational and interpretive attractions. Alternative 5 represents the most aggressive alternative in terms of improving the park’s visibility and accessibility. Alternative 5 also recommends a stronger system of regional wayfinding and cooperative marketing than do the other alternatives. The changes proposed would produce major visitation impacts in the park’s focal areas while limiting the park’s backcountry areas to primitive recreational experiences.

The Upper River Corridor focal area would gain visitation from the New River Parkway, as well as from improvements at Sandstone Falls, river access/camping at Meadow Creek West, the restoration of the Richmond Hamilton farm, and better wayfinding.

The Grandview/Prince focal area would benefit from the McKendree Road byway, accessibility improvements, and better marketing.

The Thurmond focal area would realize strong visitor growth from the restoration of Commercial Row and residential buildings, as well as from the McKendree Road byway, and better accessibility, wayfinding and marketing.

The Lower Gorge focal area would add visitation in several locations, particularly Cunard, Nuttallburg, and Fayette Station Road, as a result of accessibility improvements, the development of new recreational/interpretive facilities, and better wayfinding/marketing.

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Impacts of these expenditures on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial (common to Alternatives 2 to 5) (see Section 4.4.13 Regional and Local Economy (Alternative 2) above).

Cultural Resource Management Actions. Restoration and ongoing maintenance of one early settlement farmhouse and several Thurmond houses, as well as rehabilitation of Camp Brookside structures, two early settlement farmhouses, Prince Brothers General Store, Thurmond Commercial Row, and several additional Thurmond houses, would result in expenditures by the NPS for labor and materials. These initiatives would enhance the attractiveness of these sites to visitors. Impacts on the regional and local economy would be regional short-term minor and beneficial and regional long-term minor and beneficial.

Adaptive reuse through the park's leasing program of Camp Brookside, two early settlement farmhouses, Prince Brothers General Store, Thurmond Commercial Row, and several Thurmond houses for visitor services, commercial use, or visitor lodging would bring more visitors to the Hinton area and would enhance the attractiveness of the Prince and Thurmond areas to visitors. Impacts on the regional and local economy would be regional long-term moderate and beneficial.

Public Use, Enjoyment, and Experience Management Actions. Management would continue to encourage economic activity in areas with active visitor use facilities and support services.

The total annual number of recreational visits to the New River Gorge National River is projected to increase by 498,500 from the current (2007) level of 1,178,000 in

this alternative, a 42.3 percent growth rate. Table 4.28 displays projected direct and indirect economic impacts resulting from this increased level of visitor activity. Substantial visitation increases would occur in the four themed areas (excluding Babcock State Park), as each of these areas would undergo dramatic improvements related to visibility, accessibility, recreation, and interpretation. Other areas throughout the entire park would benefit from the expanded trail network and region-wide wayfinding and marketing programs.

Several industries that benefit from NPS stewardship of the New River Gorge, including outfitting, lodging, dining, and convenience goods, would continue to support significant levels of employment, wages, and housing demand. Businesses in these industries are mostly concentrated along the US 19 corridor, particularly in Fayetteville and Beckley.

Industries that have jobs supported by NPS-related activities at New River Gorge would also continue to realize significant impacts on earnings and the housing market.

TABLE 4.28 Alternative 5 – Exploration Experiences – Annual Direct and Indirect Economic Impacts (\$2007)

Impact Type	2005	Added as a Result of Alternative 5	2025
Visitation			
Visitors	1,178,000	498,500	1,676,500 (+42.3%)
Direct Impacts			
Jobs	2,000	870	2,870
Earnings	\$28,317,960	\$12,257,500	\$40,575,460
NPS Spending	\$7,208,400	\$2,790,600	\$9,999,000
Visitor Spending	\$67,910,000	\$29,395,000	\$97,305,000
Indirect Impacts			
Jobs	850	367	1,217
Earnings	\$7,870,810	\$3,406,900	\$11,277,710
NPS Spending	\$4,159,970	\$1,610,430	\$5,770,400
Visitor Spending	\$33,568,090	\$14,530,000	\$48,098,090
Total Impacts			
Jobs	2,850	1,237	4,087
Earnings	\$36,188,770	\$15,664,400	\$51,853,170
NPS Spending	\$11,368,370	\$4,401,030	\$15,769,400
Visitor Spending	\$101,478,090	\$43,925,000	\$145,403,090

2005 baseline and Impact factors per recreational visit are adapted from Versel 2006

Impacts on the regional and local economy would be regional long-term moderate and beneficial.

Park Operations Actions. Total recurring costs by NPS would be about \$15.8 million annually, while total one-time costs would be about \$29.7 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have Impacts on the regional and local economy are identified in Section 4.2.4 (see Table 4.4). These actions would generally be the same as those described for Alternative 1 (see Section 4.3.13 Regional and Local Economy (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on the regional and local economy. Alternative 5 would contribute a minor beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in regional short-term minor to moderate beneficial and regional long-term minor to moderate beneficial impacts on the regional and local economy. Alternative 5 would contribute a minor beneficial impact to the total cumulative long-term moderate beneficial impact on the regional and local economy.

4.7.14 Communities (Alternative 5) (Preferred Alternative)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Natural resource management actions implemented within the park would have the potential to affect natural resource conditions in communities within or near the park. As in Alternative 1, these primarily include management actions that would seek to protect water quality, floodplains, forest, and aquatic and terrestrial habitats and dependent species (see Section 4.4.14 Communities (Alternative 2) above). In addition, in Alternative 5 several management actions (common to Alternatives 2 to 5) would seek to:

- protect, preserve and restore the natural resources and functions of floodplains
- maintain and restore natural stream ecosystems supporting a full range of natural aquatic organisms

- maintain the park's native plants and natural landscapes

Collectively the impact of these management actions on natural resources in communities within and near the park would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternative 2, cultural resource management actions (in addition to those included in Alternative 1) with the potential to affect resources of potential significance to residents of communities within or near the park include:

- The farmhouses and outbuildings at one historic farm would be restored in the south end of the park, accurately presenting the form, features, and character of the farm as it appeared in the late 19th to early 20th century.
- Several houses at Thurmond would be restored, accurately presenting the form, features, and character of the houses as they appeared in the early 20th century.
- Some individual structures already determined eligible for the National Register be rehabilitated, including Camp Brookside (all camp structures), two early settlement farms, Prince Brothers General Store, Thurmond Commercial Row and other houses at Thurmond that would not be restored.
- The cultural landscape would be restored at the Prince Brothers Estate in the Prince/Quinnimont river gateway and at the Richmond-Hamilton Farm in the Upper River Corridor Focal Area.
- Approximately 30 to 35 cultural resource sites would be stabilized and/or maintained as discovery sites, located primarily along rim to river trails, along trails in the vicinity of river gateways, and in focal areas.

Cultural resource treatment at historic structures, cultural landscapes, and discovery sites would restore, rehabilitate, or stabilize resources that are likely to be found through further research to include significant ethnographic resources.

The impact of these actions on the residents of communities within or near the park would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 4, visitor facility improvements would address many of the visitor experience issues of concern to residents of communities within or near the park who use the park. These relate to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience as a result of these improvements (see Table 4.27) would be as follows:

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term major beneficial impact
- river access improvements would result in a local long-term major beneficial impact
- trail improvements would result in a local long-term major beneficial impact for hikers, bikers, and horseback riders
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

Hunting would continue as it occurs today on most NPS-owned land in the park in accordance with the hunting and fishing regulations of the state of West Virginia. Impacts on residents of communities within or near the park who hunt would be local long-term moderate and beneficial. Opening Grandview to hunting on a limited basis and restoration of open land bird habitat in restored cultural landscapes would have a local long-term minor beneficial impact on hunting. Addition of a voluntary hunter registration and reporting system would have a negligible impact on local hunters. Assuming that cooperative game management planning between the NPS and WV DNR would enhance game populations in the park there would be a local long-term minor and beneficial impact on the hunting experience for local residents. Continued safety hazards would result in a local long-term minor and adverse impact on residents of communities within and near the park.

Park Operations Actions. Total recurring costs by NPS would be about \$15.8 million annually, while total one-time costs would be about \$29.7 million. This spending would continue to have a direct effect on only a few people, groups, and businesses. Impacts of spending as a result of recurring costs would be regional long-term minor and beneficial. Impacts of spending for one-time costs would be regional short-term minor and beneficial.

At Thurmond – as in Alternative 4 – rehabilitation and subsequent leasing of Commercial Row and houses that remain in good condition would generate a sustainable income stream for long-term maintenance of the buildings. The impact on the community of Thurmond would be local long-term moderate and beneficial.

At Prince – as in Alternative 4 – rehabilitation and subsequent leasing of Prince Brothers General Store would generate a sustainable income stream for long-term maintenance of the building. The impact on the communities of Prince would be local long-term minor and beneficial.

Land Protection Actions. Impacts of future land protection actions on communities would be local long-term minor to moderate and beneficial (common to Alternatives 2 to 5) (see Section 4.4.14 Communities (Alternative 2) above).

Partnership and Community Collaboration Actions. As in Alternative 2, the NPS would implement a number of actions aimed at sustaining communities within the park, focused on Hinton, Thurmond, Meadow Creek, Backus, Highland, Prince/Quinnimont, Terry, and Thayer. Partnership actions would also be focused on building relationships with gateway communities, other government agencies, economic development entities, user groups, and the park's "friends". The types of collaborative actions would be similar to those in Alternative 2 (see Section 4.4.14 Communities (Alternative 2) above) although the focus of the actions would differ with the Alternative 5 Exploration Experiences theme, described in Section 2.8.5 through 2.8.7 above. Also – as in Alternative 4 – in Alternative 5 additional effort would be focused on building gateway community partnerships and significantly expanding the relationships between gateway communities and the park. Collectively the impact of these actions on communities within and near the park would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on communities are identified in Section 4.2.4 Cumulative Impact Analysis (see Table 4.4). These generally include growth and development on private property, public infrastructure projects, and transportation system improvements. Collectively these actions have improved the quality of life in communities within and near the park. They have generally enhanced opportunities for education, attracted new employers to the area thereby providing new jobs, provided locations for needed commercial services, generally enhanced regional and local access, and protected public health and environmental quality by making available clean water, wastewater treatment, and other public services. Impacts of Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on communities within or near the park. Alternative 5 would contribute a moderate beneficial impact to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and a local long-term minor adverse impact on communities within or near the park. Alternative 5 would contribute a moderate beneficial impact to the total cumulative long-term major beneficial impact on communities within or near the park.

New River Gorge National River
Desired Visitor Experiences

Desired Visitor Experiences

- **Important Park Experiences that Visitor should have:**
 - Appreciate life in the gorge – the human history story
 - Appreciate/experience the wildness of the landscape
 - Experience the power of the river
 - Experience scenic beauty
- **Classic Park Experiences**
 - Paddling the New River
 - Sandstone Falls
 - Grandview
 - Thurmond
 - Endless Wall
 - Canyon Rim
 - Fayette Station Road

4.7.15 Visitor Use and Visitor Experience (Alternative 5) (Preferred Alternative)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. Blocks of intact and unfragmented forest along most of the length of the park on one or both sides of the river would be managed as backcountry forest, preserving their wild character and enhancing the perception of the park’s wildness as visitors experience the park. Overall, backcountry forest blocks would compose approximately 66.4 percent of the park. Impacts on visitor use and visitor experience would be local long-term minor to major and beneficial, depending upon individual visitor reasons for visiting the park and preferences for backcountry versus frontcountry experiences.

Cultural Resource Management Actions. Treatment of cultural resources at sites in the park would provide numerous new opportunities for visitors to appreciate the human history story of life in the gorge (see Table 4.27):

- visitors to the park’s river gateways and focal areas would have opportunities to learn about life in the gorge by visiting rehabilitated cultural resources that are leased through the NPS historic leasing program
- in the Upper River Corridor Focal Area visitors would learn about early Appalachian settlement by visiting historic farms where interpretive programs and exhibits would be available; the farmhouses would be restored to period condition and set within restored cultural landscapes
- in the Grandview/Prince Focal Area visitors would learn about life in a railroading and lumbering town at the rehabilitated Prince Brothers General Store and other nearby sites
- in the Lower Gorge Focal Area visitors would:
 - learn about life in a railroading town during the park’s industrial era at the Thurmond River Gateway
 - learn about life in a mining town during the park’s industrial era at the Nuttallburg River Gateway where mining structures and town ruins would be stabilized (as in Alternative 1)
- visitors would also learn about the history of life in the gorge when they come upon and find cultural resources discovery sites along the through park connector, along trails at or near river gateways, and along rim to river trails (approximately 30 to 35 sites)

The impact of cultural resource management actions and related interpretive programs on visitor use and visitor experience would be local long-term major and beneficial.

Public Use, Enjoyment, and Experience Management Actions. The central theme underlying Alternative 5 would help visitors better understand how the park is organized, the opportunities that are available, and how to travel in the complicated network of local roads and trails in the rugged terrain. Facilities and interpretive programs in Alternative 5 would emphasize a combination of primitive outdoor experiences in the park's forest complemented by diverse opportunities for visitors in and around specific focal areas (see Figure 2.9 and Table 4.29). Backcountry forest in much of the park would offer the most primitive outdoor experiences where visitors would be immersed in nature with few modern conveniences, while frontcountry forest would offer a broad variety of less primitive recreational experiences, such as family activities, mountain biking and equestrian use. In contrast, five focal areas would make available to visitors concentrated opportunities for cultural, natural, scenic, interpretive, and recreation experiences in specific areas of the park. The historic context for each focal area would define the stories that would be told, focusing as appropriate on the park's early settlement or industrial themes. A river gateway within each focal area would be the location where visitors would learn about the resources and recreation opportunities. From river gateways visitors would move out into the broader focal area and the park on the water by boat, on trails by foot or bicycle, or on scenic roads. The new Through Park Connector would enable visitors to explore the park from end-to-end. It would also connect focal areas and provide expanded access to cultural resources, scenic vistas, and natural features within the forest. As visitors explore the park on the Through Park Connector and other new trails they would learn about the park's history when they come upon cultural resource "discovery sites" where interpretive media would tell the park's stories.

New visitor use facilities included in Alternative 5 – consistent with its overall management concept – would enable visitors to better and more easily enjoy the experiences that they "should have" at the park. Visitors would also continue to enjoy the classic park experiences at Sandstone Falls, Grandview, Thurmond, Endless Wall, Canyon Rim, and Fayette Station Road; new management actions consistent with the overall concept for Alternative 5 would enhance the visitor experience at Sandstone Falls, Thurmond, and Fayette Station Road. The impact of these actions and related interpretive programs on visitor use and visitor experience would generally be local long-term major and beneficial.

Specific visitor facility improvements would address many of the visitor experience issues related to crowding at river accesses, availability and choice of camping facilities, availability of picnicking facilities, and the generally limited park trail system (with poor access to climbing areas, poor access to hunting areas, and few opportunities for biking and equestrian use). Impacts on visitor use and visitor experience as a result of these improvements (see Table 4.30) would be as follows:

Table 4.29

New River Gorge National River
Alternative 5 – New Visitor Use Facilities

Actions *(in addition to Alternative 1)*

- **Cultural Resource Attractions**
 - restored properties
 - ✓ Richmond-Hamilton Farm and Richmond Bottom Landscape
 - ✓ Thurmond Houses (some)
 - rehabilitated properties (with non-residential adaptive reuse through leasing or other agreements)
 - ✓ Camp Brookside
 - ✓ Thurmond Commercial Row
 - ✓ Thurmond (some houses leased for visitor lodging)
 - discovery sites (30 to 35 sites)
- **Day-Use Facilities**
 - improvements to existing facilities
 - ✓ Grandview (circulation system)
 - ✓ Dun Glen
 - ✓ Brooklyn
 - ✓ Fayette Station
 - new day-use facilities
 - ✓ J&G Site
 - ✓ Stone Cliff (relocated)
 - ✓ Fayette Station
- **Camping Facilities**
 - improvements to existing primitive campgrounds
 - ✓ Glade Creek
 - ✓ Grandview Sandbar
 - ✓ Mill Creek
 - ✓ Army Camp
 - ✓ Stone Cliff (relocated)
 - new developed campgrounds
 - ✓ J&G Site
 - ✓ Bass Lake or Richmond Campground
 - ✓ Terry Beach
 - ✓ Burnwood
 - new designated backcountry campsite groups
 - ✓ along Through Park Connector
 - ✓ along the Dowdy Creek Highland Mountain Trail
- **Excursion Train**
 - utilizing RJ Corman ROW from Mt. Hope to Southside Junction
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Thayer
 - ✓ Dun Glen
 - ✓ Brooklyn
 - ✓ Cunard (two areas)
 - ✓ Fayette Station
 - alternative transportation system (shuttle during peak periods of visitor use with satellite parking)
 - ✓ Cunard
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
 - ✓ Terry Beach
 - ✓ Surprise (if needed to address capacity issue after making other improvements)
- **Parking for Climbers and Hunters**
(continued on next page)

Table 4.29 (continued)

New River Gorge National River
Alternative 5 – New Visitor Use Facilities

Actions *(in addition to Alternative 1)*

- **Parking for Climbers and Hunters**
 - at climbing areas (new)
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas (new)
 - ✓ Dowdy Bluff
 - ✓ Polls
- **New Trails (with trailheads)**
 - climbing access trails
 - ✓ Endless Wall
 - ✓ Sunshine Buttress
 - ✓ Bubba City
 - ✓ Junkyard
 - Through Park Connector
 - Farm Loop Trail
 - Sandstone VC to Hump Mt. Trail
 - Grandview to Mill Creek Trail
 - Army Camp to Pinnacle Rock Trail
 - Cloverdale to the Upper Glade Creek Trail
 - Mt. Hope to Southside Junction Rail Trail
 - Meadow Bridge to Meadow Creek Rail Trail
 - Stanaford to Prince/Quinnimont Rail/Trail
 - GW Carver to Sewell to Caperton to Keeney Creek Trail
 - Fayette Mine Trail
 - Thurmond to Sewell Rail Trail
 - David Branch Trail
 - Dowdy Creek to Highland Mountain Trail
 - Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - Beauty Mountain Overlook Trail
 - Bucklick Branch Equestrian Loop Trail
 - Craig Branch Equestrian Loop Trail
 - Chestnut Mountain Equestrian Loop Trail
 - Sandstone Falls Boardwalk expansion
 - Bucklick Branch Stacked Loop Biking Trails
 - Garden Ground Stacked Loop Biking Trails
 - Craig Branch Stacked Loop Biking Trails

- day-use facility improvements would result in a local long-term minor beneficial impact
- camping improvements would result in a local long-term major beneficial impact
- river access improvements would result in a local long-term major beneficial impact
- trail improvements would result in a local long-term major beneficial impact for hikers, bikers, and horseback riders
- trailhead improvements would result in a local long-term moderate beneficial impact for climbers and hunters (made possible by boundary adjustments)

Continuation of hunting as it occurs today on most NPS-owned land in the park in accordance with the hunting and fishing regulations of the state of West Virginia would continue to have local long-term moderate beneficial and local long-term minor adverse impacts on terrestrial habitat and dependent species (as in Alternative 1) (see Section 4.315 Visitor Use and Visitor Experience (Alternative 1) above). Opening Grandview to hunting on a limited basis and restoration of open land bird habitat in restored cultural landscapes would have a local long-term minor beneficial impact on hunting. Addition of a voluntary hunter registration and reporting system would have a negligible impact on visitor use and visitor experience. Assuming that cooperative game management planning between the NPS and WV DNR would enhance game populations in the park there would be a local long-term minor beneficial impact on visitor use and visitor experience.

Park Operations Actions. Private use of rehabilitated historic buildings at rehabilitated historic buildings would occur at Camp Brookside, Prince Brothers General Store, two early settlement farmhouses, Thurmond Commercial Row, and numerous houses at Thurmond through lease, cooperative agreement, or concession agreement. Educational use of Camp Brookside would provide opportunities for a large number of visitors to participate in a variety of educational programs. Residential use of farmhouses and houses at Thurmond for park staff or private rental housing would not provide opportunities for visitors although use of some houses for visitor lodging would provide a new opportunity for visitors to stay in the park. Potential commercial use of Prince Brothers General Store and at Thurmond Commercial Row could provide visitor services in parts of the park where they are currently not available. Impacts on visitor use and visitor experience would be negligible to local long-term major and beneficial.

Land Protection Actions. The impact of land protection actions on visitor use and visitor experience would be local long-term moderate and beneficial (common to

Alternatives 2 to 5) (see Section 4.4.15 Visitor Use and Visitor Experience (Alternative 2) above).

Partnership and Community Collaboration Actions. Collaboration with WVDOH would seek to accomplish improvements to New River Parkway (existing River Road), WV 41 (from Stanaford to McCreery), WV 25 (from Glen Jean to Southside Junction), Thurmond Bridge, WV 25/2 in Thurmond, McKendree Road (WV 25) (from Stone Cliff Bridge to Prince), and Fayette Station Road (WV 82). Improvements would address visitor safety concerns, reduce congestion by enhancing roadway capacity, and/or provide pull-outs where visitors could better experience park resources. NPS would also collaborate with WVDOH to design and install signage to enhance visitor orientation to the park and to facilitate wayfinding to park facilities. Impacts on visitor use and visitor experience would be local long-term major and beneficial.

Partnerships between the NPS and the park's gateway communities would seek to enhance the visitor experience by providing better visitor orientation, by promoting services needed by visitors in gateway communities, by fostering improved wayfinding signage, and by promoting complementary interpretive and recreational experiences at other attractions in southern West Virginia. Small visitor contact facilities and/or information kiosks would provide information on recreation activities, visitor facilities, and interpretive programs at the park as well as other attractions in the region. Impacts on visitor use and visitor experience would be local long-term major and beneficial.

■ Cumulative Impacts

Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.15 Visitor Use and Visitor Experience (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on visitor use and visitor experience. Alternative 5 would contribute a moderate beneficial impact and a minor adverse impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts on visitor use and visitor experience. Alternative 5 would contribute a moderate beneficial impact to the total cumulative long-term moderate adverse impact on visitor use and visitor experience. There would be no impairment of park resources or values related to visitor use and visitor experience.

4.7.16 Park Access (Alternative 5) (Preferred Alternative)

■ Direct and Indirect Impacts

Natural and Scenic Resource Management Actions. Park management zoning would provide the framework for decision-making as to where motorized and non-motorized access would be appropriate for visitors and administrative use (common to Alternatives 2 to 5) (see Table 4.14). The nature of permitted access would be common to Alternatives 2 to 5 in park development, historic resource, and river corridor zones because these zones are the same for each action alternative. Differences would occur in the remainder of the park where areas are allocated to either backcountry or frontcountry zones. When considering access to the park, areas of frontcountry would have greater potential access because roads and parking facilities would be permitted in interior areas of zones. In contrast, in backcountry areas roads and parking would be limited to the perimeter of the forest blocks defined by the park's subareas (see Figure 2.10).

In Alternative 5 the impact of management zone allocations and related management prescriptions on park access would be local long-term minor and beneficial. Management actions would generally maintain existing patterns of motorized access within the park, while permitting expansion of motorized access for visitors and/or administrative use in park development zones, historic resource zones, river corridor zones, and frontcountry zones. Approximately two-thirds (66.4%) of the park would be zoned backcountry where roads and parking would be limited to zone perimeters (see Figure 2.10) and where only non-motorized access could occur in the zone interior.

Public Use, Enjoyment, and Experience Management Actions. In Alternative 5, by the year 2025 approximately 1.68 million people are projected to visit the park annually, representing a 42.3 percent increase in visitation when compared to 2007. Most visitation would occur from June through September, with peak use happening during weekends in July and August. Most park visitors are expected to travel to many sites of the classic park experiences and to seek out the various important park experiences that visitor should have, as emphasized consistent with the overall management concept in Alternative 5 (see Table 2.29 above).

Park visitation associated with management actions in Alternative 5 would slightly increase traffic in and around the park during both peak and off-peak visitation periods (see Table 4.30). Most state roads and park roads used by visitors would experience local long-term negligible or minor adverse impacts. Eight would experience local long-term moderate adverse impacts during peak periods. Two would experience local long-term moderate beneficial impacts during peak periods.

As in Alternative 1, improvements to Turkey Spur Road at Grandview would enhance access to visitor use facilities at the Turkey Spur Overlook. In Alternatives 2 to 5, a number of additional improvements at Grandview would address site-

specific vehicular and pedestrian circulation issues. The impact of these actions on park access would be local long-term major and beneficial.

As in Alternative 1, a few new hiking and equestrian trails, and trails providing access to climbing areas, would be developed in the park (see Table 4.29). In addition, in Alternative 5 a new through park connector would be developed providing continuous hiker/biker access from end to end of the park on a combination of trails and state or park roads. Other trail improvements in Alternative 5 would include a few new rim to river trails and numerous trails to cultural resource sites and other attractions in the park's five themed areas. Trailhead parking would be provided for all new trails. The impact of these trail additions (along with trailhead parking) on park access would be local long-term major and beneficial.

As in Alternative 1, a new river access – designed primarily for use by private paddlers and fishermen – would be developed at Meadow Creek West in conjunction with construction of a new developed campground. In addition, enhancements to parking at the Stone Cliff river access would occur in conjunction with relocation of existing day-use and campground facilities at Stone Cliff to a site above the New River floodplain. In Alternative 5, one additional new river access (Terry Beach) would be provided and parking would be expanded at five other river access sites (see Table 4.31). A shuttle system would be used during peak visitation periods to alleviate crowding and to satisfy parking demand at Cunard (in conjunction with private paddler parking expansions at the river level and at the Fisherman's Trail); in the event that these improvements do not adequately address management issues at Cunard, then a new river access would be developed at Surprise. A similar shuttle system would be used during peak visitation periods to alleviate crowding at the Fayette Station river access and on Fayette Station Road (WV 82). The impact of these actions on river access would be local long-term major and beneficial.

At Thurmond roadway, parking, and alternative transportation system improvements would enhance access. Working collaboratively with WVDOH, improvements would be made to WV Route 25 from Glen Jean to Southside Junction and to WV Route 25/2 within the town itself. Visitors would continue to be encouraged to park in the lot at Southside Junction and walk to Thurmond via the Thurmond Bridge. New parking would be provided in Thurmond at a small lot adjacent to Commercial Row and at a small lot adjacent to WV 25/2 in the upper section of the town. All houses rehabilitated for park housing or for visitor lodging would have one to two parking spaces included as part of the rehabilitation project (generally utilizing previously existing spaces at existing houses). In the future additional parking would likely be developed in conjunction with the planned WVDOH project to replace the Thurmond Bridge (see Partnership and Community Collaboration Actions below). In the future, the NPS would seek to establish an

TABLE 4.30 Alternative 5 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
South End of the Park			
<p>Sandstone Falls and Visitor Attractions on River Left</p> <p>Future New River Parkway (under development by WVDOH)</p>	<ul style="list-style-type: none"> roadway lane width adequate for safe two-way travel (with shoulders) 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of the New River Parkway (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Various Visitor Facilities on River Right below Hinton (including a possible campground at Bass Lake – if not in New River Parkway corridor)</p> <p>WV 20 (I-64 to Hinton)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with minimal shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> existing capacity and safety issues will be mitigated by construction of the New River Parkway (most non-truck traffic on WV 20 will be diverted to New River Parkway) (included in Alternative 1) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Sandstone Falls Visitor Center</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> paved two-lane road with shoulders lane width adequate for safe two-way travel 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>Developed Campground (Meadow Creek West)</p> <p>WV 7 (from I-64)</p>	<ul style="list-style-type: none"> paved one-lane road restricted two-way traffic safe maximum curves poor stopping distances 	<ul style="list-style-type: none"> poor capacity to accommodate visitor traffic generated by new campground development 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
Middle of the Park			
<p>Grandview</p> <p>WV 9 (primarily from I-64)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with shoulders) 8% maximum gradient safe maximum curves safe stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact
<p>McCreery, Lower Glade Creek Area, Terry Beach, Army Camp</p> <p>WV 41 (primarily from the west)</p>	<ul style="list-style-type: none"> paved two-lane road roadway lane width adequate for safe two-way travel (with minimal shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> no current or anticipated roadway capacity or safety deficiencies (pedestrian safety deficiencies exist in vicinity of McCreery river access) 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
<p>Lower Glade Creek Area</p> <p>Glade Creek Road (Park Road) (state scenic backway)</p>	<ul style="list-style-type: none"> one-lane gravel road constrained two-way travel (minimal to no shoulders) steep gradients tight curves short stopping distances 	<ul style="list-style-type: none"> very poor capacity road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> Peak Period – local long-term moderate adverse impact Off-Peak Period – local long-term minor adverse impact
<p>Highland-Backus Area (developed campground and new trail network)</p> <p>WV41 (primarily from the west)</p>	<ul style="list-style-type: none"> same as for McCreery and Glade Creek (see above) 	<ul style="list-style-type: none"> same as for McCreery and Glade Creek (see above) 	<ul style="list-style-type: none"> Peak Period – local long-term minor adverse impact Off-Peak Period – local long-term negligible impact

TABLE 4.30 Alternative 5 – Summary of Visitor-Generated Traffic Impacts on Local Road Capacity

Park Area/Primary Access	Existing Road Conditions	Capacity to Accommodate Projected Visitor Trips	Visitor Impact on Road Capacity
<p>Thayer WV 25 (access primarily from the north, beginning at Stone Cliff New River Bridge)</p>	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term minor adverse impact ▪ Off-Peak Period – local long-term negligible impact
North End of the Park			
<p>Thurmond, Dun Glen, and Stone Cliff WV 25 (from Glen Jean)</p>	<ul style="list-style-type: none"> ▪ paved two-lane road ▪ roadway lane width not adequate for safe two-way travel due to nine one-lane bridges (minimal to no shoulders) ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies for small vehicles ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Thurmond Town Site various state roads</p>	<ul style="list-style-type: none"> ▪ one-lane Thurmond Bridge needs replacement (due to structural, capacity and safety issues) ▪ numerous one-lane paved roads ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight turns ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ very poor capacity ▪ numerous roadway capacity and safety deficiencies ▪ future Thurmond Bridge replacement would address bridge deficiencies and likely include visitor parking (as mitigation) near the Thurmond Depot Visitor Center ▪ Excursion train from Mt. Hope would provide alternative access for visitors 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact (assuming roadway improvements by the state and excursion train from Mt. Hope) ▪ Off-Peak Period – local long-term minor adverse impact (assuming roadway improvements by the state)
<p>Cunard (and potentially Surprise) Cunard Road (park road)</p>	<ul style="list-style-type: none"> ▪ one-lane gravel road ▪ constrained two-way travel (some pull-offs; minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ poor capacity ▪ road geometry constrains access for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate beneficial impact (assuming implementation of peak period shuttle service from a new parking area at Cunard top) ▪ Off-Peak Period – local long-term minor adverse impact
<p>Nuttallburg Visitor Use Area Keeney Creek Road (WV 85/2)</p>	<ul style="list-style-type: none"> ▪ one-lane paved road ▪ constrained two-way travel (minimal to no shoulders) ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ existing capacity and safety issues will be mitigated by construction of new trailheads at the Nuttallburg Visitor Use Area (included in Alternative 1) 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Canyon Rim Visitor Center and Burnwood Complex US 19</p>	<ul style="list-style-type: none"> ▪ four-lane divided highway (with shoulders) ▪ safe maximum gradients ▪ safe maximum curves ▪ safe stopping distances 	<ul style="list-style-type: none"> ▪ no current or anticipated roadway capacity or safety deficiencies in vicinity 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate adverse impact ▪ Off-Peak Period – local long-term minor adverse impact
<p>Fayette Station Fayette Station Road (WV 82)</p>	<ul style="list-style-type: none"> ▪ paved one-way road ▪ some pull-offs ▪ minimal to no shoulders ▪ steep gradients ▪ tight curves ▪ short stopping distances 	<ul style="list-style-type: none"> ▪ poor existing capacity, especially on peak visitation days ▪ access constrained due to road geometry for large RVs, trucks, and buses 	<ul style="list-style-type: none"> ▪ Peak Period – local long-term moderate beneficial impact (assuming implementation of peak period shuttle service from a new parking area at Fayette Station top) ▪ Off-Peak Period – local long-term moderate adverse impact

Table 4.31

**New River Gorge National River
Alternative 5 – Access Changes
Needed to Achieve Desired
Conditions in Visitor Use Areas**

Actions

- **Internal Park Road System**
 - Turkey Spur Road improvements (as in Alternative 1)
 - Grandview circulation and parking improvements (common)
 - extension/improvement of Cunard Access Road to Surprise (if new access at Surprise is determined necessary after making other improvements first)
- **State Road System** (NPS and WVDOH collaboration to design and implement)
 - New River Parkway (as in Alt. 1)
 - Thurmond Bridge Replacement (as in Alt. 1)
 - WV 41 pullouts (Stanaford to McCreery)
 - McKendree Road improvements (WV 25) from Stone Cliff Bridge to Prince
 - WV 25 improvements (Glen Jean to Southside Junction) (common)
 - WV 25/2 road improvements (in Thurmond)
 - Fayette Station Road (WV 82) improvements (as in Alt. 1)
 - wayfinding signage along state roads (as in Alt. 1)
- **Excursion Train**
 - utilizing RJ Corman ROW from Mt. Hope to Southside Junction
- **Parking**
 - at Thurmond
 - ✓ parking to be added by WVDOH in conjunction with Thurmond Bridge Replacement) (more spaces than in Alternative 1)
 - ✓ new parking at Commercial Row
 - ✓ new parking in upper level of the town along WV 25/2
 - ✓ parking maintained or added at rehabilitated houses to be used for park housing or visitor lodging (1 to 2 spaces/unit)
 - at cultural resource sites (new)
 - ✓ Richmond-Hamilton Farm
 - ✓ Vallandingham Farm
 - ✓ Cochran Farm
 - in climbing areas (new)
 - ✓ Junkyard
 - ✓ Ambassador Buttress
 - ✓ Fern Buttress
 - in hunting areas (new)
 - ✓ Dowdy Bluff
 - ✓ Polls
 - at Sandstone Falls Visitor Use Area
 - at existing trailheads
 - ✓ Glade Creek Trail
 - ✓ Gwinn Ridge Trail
- **River Access Sites**
 - parking expansions at existing river access sites
 - ✓ Thayer
 - ✓ Stone Cliff
 - ✓ Dun Glen
 - ✓ Brooklyn
 - ✓ Cunard
 - ✓ Fayette Station

(see table continuation on next page)

excursion train from Mt. Hope to Southside Junction from which visitors would walk to Thurmond.

As in Alternative 1, improvements at Nuttallburg Mining Complex and Nuttallburg would provide parking (where none is currently available) for visitors at four trailheads from which they would access trails leading to cultural resource sites at the former Nuttallburg Mining Complex and Nuttallburg town site. In Alternatives 2 to 5, parking would be added in locations where visitors now park along roads near popular climbing and hunting areas (see Table 4.31). In Alternative 5, parking at the Sandstone Falls Visitor Use Area and trailheads for the Glade Creek and Gwinn Ridge Trails – which chronically suffer from overuse – would also be expanded to meet existing and projected demand. The impact of these actions on park access would be local long-term major and beneficial.

Partnership and Community Collaboration Actions. The NPS would continue to work with WVDOH on several projects (see Table 4.31).

As in Alternative 1, the NPS would continue to work collaboratively with the city of Hinton to secure safe and legal access to the New River waterfront within the city.

As in Alternative 1, the NPS would continue to work with the CSX Corporation and other property owners to acquire wherever possible legal access to popular visitor use sites.

The NPS would also work collaboratively with its gateway community partners, state agencies, railroad companies, and private landowners to develop trail connections from the park to nearby communities and other visitor attractions, such as Hawks Nest State Park, Babcock State Park, the Gauley River National Recreation Area, Ansted, Oak Hill, Mount Hope, Beckley, and Meadow Bridge (common to Alternatives 2 to 5).

Assuming these collaborative efforts would be effective, the impact on park access would be local long-term major and beneficial.

■ **Cumulative Impacts**

Other past, present, and reasonably foreseeable actions that have had or would have impacts on park access are identified in Section 4.2.4 (see Table 4.4). The impact of these actions in Alternative 5 would generally be the same as those described for Alternative 1 (see Section 4.3.16 Park Access (Alternative 1) above). Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term minor to moderate beneficial impact and a cumulative long-term minor to moderate adverse impact on park access. Alternative 5 would contribute negligibly to the total cumulative impact.

■ **Conclusion**

Management actions in Alternative 5 would result in local long-term minor to major beneficial impacts and local long-term minor to moderate adverse impacts on park access. Alternative 5 would contribute negligibly to the total cumulative long-term minor to moderate beneficial impacts and to the cumulative long-term minor to moderate adverse impacts on park access.

4.7.17 Park Operations (Alternative 5)

■ **Direct and Indirect Impacts**

Natural and Scenic Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of natural and scenic resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Staffing would be redirected to areas most likely to create beneficial impacts on natural and scenic resources resulting in a local long-term major beneficial impact on park operations.

In Alternative 5 more area than in any other alternative would be managed as backcountry. Law enforcement patrols and maintenance staff would rely less upon vehicles for patrol and maintenance, as existing logging and mining roads gradually recover. Law enforcement patrols and maintenance staff would rely less upon vehicles for patrol and maintenance, as existing logging and mining roads gradually recover. This would cause a minor need for additional staff, resulting in a local short-term minor adverse effect on the park budget. Overall the impact on park operations would be local long-term major and beneficial.

Cultural Resource Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of cultural resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Collectively the common management actions would result in a local long-term major beneficial impact on park operations.

In Alternative 5 structures in or near some river gateways would receive treatment and would be rehabilitated or adaptively reused. In addition, some sites are maintained as discovery sites along trails. At Thurmond some buildings would be restored to use as exhibits; others would be leased through the historic leasing program or used as park housing. Restoration of structures and maintaining them as exhibits in good condition would likely require additional park maintenance staff. Leasing some of the buildings would result in less need for park maintenance staff to maintain those buildings, freeing them to keep restored historic structures in good condition. Since in this alternative, maximum use of leasing is proposed, slightly fewer historic structures maintenance staff would be needed than in the

Table 4.31 (continued)

**New River Gorge National River
Alternative 5 – Access Changes
Needed to Achieve Desired
Conditions in Visitor Use Areas**

Actions

- **River Access Sites (continued from previous page)**
 - alternative transportation system (shuttle during peak periods of visitor use)
 - ✓ Cunard
 - ✓ Fayette Station
 - new river access sites
 - ✓ J&G Site
 - ✓ Terry Beach
 - ✓ Surprise (if needed to address capacity issue after making other improvements)
- **New Trails (with trailheads)**
 - new trails (as in Alternative 1)
 - ✓ Nuttallburg Visitor Use Area trails
 - ✓ Bucklick Branch Equestrian Loop Trail
 - ✓ Laing Loop Nature Trail (no new trailhead)
 - ✓ climbing access trails (Endless Wall, Sunshine Buttress, Bubba City, and Junkyard areas)
 - new trails
 - ✓ Through Park Connector
 - ✓ Farm Loop Trail
 - ✓ Sandstone VC to Hump Mt. Trail
 - ✓ Grandview to Mill Creek Trail
 - ✓ Army Camp to Pinnacle Rock Trail
 - ✓ Cloverdale to the Upper Glade Creek Trail
 - ✓ Mt. Hope to Southside Junction Rail Trail
 - ✓ Meadow Bridge to Meadow Creek Rail Trail
 - ✓ Stanaford to Prince/Quinnimont Rail/Trail
 - ✓ GW Carver to Sewell to Caperton to Keeney Creek Trail
 - ✓ Fayette Mine Trail
 - ✓ Thurmond to Sewell Rail Trail
 - ✓ David Branch Trail
 - ✓ Dowdy Creek to Highland Mountain Trail
 - ✓ Stone Cliff Coke Ovens to Stone Cliff Mine Trail
 - ✓ Beauty Mountain Overlook Trail
 - ✓ Craig Branch Equestrian Loop Trail
 - ✓ Chestnut Mountain Equestrian Loop Trail
 - ✓ Sandstone Falls Boardwalk expansion
 - ✓ Bucklick Branch Stacked Loop Biking Trails
 - ✓ Garden Ground Stacked Loop Biking Trails
 - ✓ Craig Branch Stacked Loop Biking Trails

other alternatives. Additional NPS project management staff might also be needed as structures are rehabilitated. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Public Use, Enjoyment, and Experience Management Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would better define for park staff the goals of natural and scenic resource protection and would guide development of targeted strategies to protect and improve nationally significant resources (see Section 4.4.17 Park Operations (Alternative 2) above). Staffing would be redirected to areas most likely to create beneficial impacts on natural and scenic resources resulting in a local long-term major beneficial impact on park operations.

Alternative 5 would implement a variety of actions to make the park accessible to the public in a largely primitive setting, including some river gateways, partnerships with rim gateway communities, a new through park connector, and four interpretive focal areas. New trails would include trails connecting the river and rim gateways, several new through park connecting trails, and other trails, requiring additions to park maintenance staff. Volunteers from user groups would be encouraged to help maintain trails, creating a need for staff trained to manage volunteer services. This would be accomplished by retraining and reorganizing existing trails staff. New programs for children and adults at Camp Brookside would create the need for new staff and partnership actions. Interpretation would be focused at the four focal sites where visitors would congregate, and in new river campgrounds. This would be accomplished through a realignment of existing staff. Collectively these actions would result in a local short-term minor adverse effect on the park budget and a local long-term moderate beneficial impact on park operations.

Park Operations Actions. In Alternatives 2 to 5 new sources of funding would become available as NPS works with users and visitors to create partnerships, friends groups, and other mechanisms to support park purposes (see Section 4.4.17 Park Operations (Alternative 2) above). These actions would result in a local long-term major beneficial impact on park operations.

Alternative 5 calls for leasing many historic structures. Depending on the physical condition of historic structures, terms of the lease, and other factors, it is possible that leasing could provide a minor income stream for the park. This would result in a local long-term minor beneficial impact on park operations.

Land Protection Actions. In Alternatives 2 to 5 the addition of six areas and 212.5 acres to the park to provide for parking and access would improve the ability of rangers to manage these uses within the park. The park would work with neighbors to promote better stewardship of privately-owned lands within the

boundary and to reduce impacts on them from park use. This would result in a local long-term moderate beneficial impact on park operations.

Alternative 5 provides for new management zoning for the park. This will make it easier for park employees to monitor and enforce use, and manage newly acquired sites. These actions will result in a local long-term minor beneficial impact to park operations.

Partnership and Community Collaboration Actions. In Alternatives 2 to 5 the desired future conditions (see Table 2.8) would lead NPS to implement actions making the park more relevant to local users and park neighbors (see Section 4.4.17 Park Operations (Alternative 2) above). Alternative 5 calls for enhanced collaborative efforts with park gateway communities – the places that are often visitor’s initial contact with the park. Working with these communities to provide visitor information, limit conflicts with private owners, and provide new visitor services would lessen the impacts on law enforcement and interpretive staff. However, additional staff would be required to manage these collaborative efforts. While these actions would result in a local short-term minor adverse impact to the park budget, they would also result in a local long-term moderate beneficial impact on park operations.

■ Cumulative Impacts

Other past, present and reasonably foreseeable actions that have had or would have impacts on park operations and facilities include the completion of the New River Parkway, continued minimum maintenance of state roads to and within the park, other transportation improvements, and continued private ownership of lands within the park, particularly in communities. The building of the New River Parkway would mean that law enforcement patrol and maintenance of the River Road area would be greatly improved; other transportation improvements might make remote areas of the park more accessible. The minimum maintenance of state roads such as McCreery Road would continue to complicate park management efforts. Private ownership of land within the park boundaries, particularly in communities, also creates law enforcement issues and conflicts between private owners and visitors, although efforts to work more closely with communities would mitigate this somewhat. Alternative 5 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact to park operations. Alternative 5 would contribute an imperceptible beneficial impact to the total cumulative impact.

■ Conclusion

Management actions in Alternative 5 would result in local short-term minor adverse impacts on the park budget and local long-term minor to major beneficial impacts on park operations. Alternative 5 would contribute an imperceptible beneficial impact to the cumulative long-term minor adverse impact on park operations.

4.7.18 Unavoidable Adverse Impacts (Alternative 5)

Unavoidable adverse impacts are major adverse impacts that cannot be fully mitigated or avoided. Alternative 5 would not result in any major adverse impacts.

4.7.19 Irreversible and Irretrievable Commitments of Resources

An irreversible commitment of resources is one that cannot be reclaimed, restored, or otherwise returned to its condition prior to disturbance. An irretrievable commitment of resources is a loss of something that once gone, cannot be replaced.

Proposed management actions would generally contribute to resource protection and preservation and would be expected to minimize the occurrence of irreversible or irretrievable impacts. Nevertheless some irretrievable impacts would occur:

- construction projects, landscape restoration and reestablishment, and park operations would use limited amounts of nonrenewable resources, including materials and energy; once these resources are committed they would be irretrievable
- minor amounts of soil would be permanently lost as a result of soil erosion and sedimentation from areas (approximately 285 to 305 acres) disturbed by cultural resource management actions, development of new visitor use facilities, and restoration actions
- potential exists at cultural resource sites undergoing restoration or rehabilitation for an irretrievable commitment of resources as a result of any loss of undiscovered below ground resources
- irretrievable commitments of resources could also occur at cultural resource sites undergoing restoration to a specific time period if material from subsequent periods is lost

Surveys, avoidance through design, documentation, and other mitigation would occur before any restoration or rehabilitation begins, thereby minimizing irretrievable impacts to cultural resources.

4.7.20 Relationship between Short-Term Uses of the Environment and Long-Term Productivity (Alternative 5)

In Alternative 5 most of the park would be protected in a natural state with an emphasis on reducing existing forest fragmentation and avoiding future forest fragmentation. Approximately 66.4 percent of the park would be managed as backcountry largely unaltered by future human-induced impacts. Approximately 24.4 percent of the park would be managed as frontcountry forest with minimal future human-induced impacts. The NPS would continue to manage the park to maintain ecological processes and native and biological communities, and to provide for appropriate recreational activities consistent with the preservation of natural and

cultural resources. Previously disturbed areas would be restored to return them to productivity, as funding permits. Any actions the NPS takes in the park would be taken with consideration to ensure that uses do not adversely affect the productivity of biotic communities.

Disturbance of the park's soils, water quality, vegetation, and wildlife, due to visitor use and the construction of new facilities would reduce the long-term productivity of the park in localized areas; however, overall there would likely be only a small effect on the park's long-term productivity.



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5 Consultation and Coordination





Rams Head – one of many landforms shaped by the New River as it cut through the Appalachian Plateau.

Broad views of unbroken forest, steep gorge walls, and a river both tranquil and turbulent are punctuated by pastoral landscapes and industrial ruins to produce dramatic and extraordinary views from the river, along trails and rural roads, and from rocky overlooks.

Opposite side: Panoramic views of the New River and its gorge.

5.0 Consultation and Coordination

5.1 Public Involvement and Agency Coordination

Since beginning the GMP planning process in the spring of 2005, the NPS has reached out to various members of the public on numerous occasions for input regarding management issues, the range of alternatives, and the types of impacts to be addressed in the park's new plan. This process – referred to as scoping – has involved the general public, interested people and groups, local governments, civic organizations, park user groups, and various federal, state, and local agencies. As the planning process has progressed the NPS has provided information and updates via newsletters, news releases, the park website, and briefings.

Table 5.1 below provides a running list of the consultations and public involvement activities. The key issues considered in the GMP planning process – developed through the analysis of issues and concerns related to park management – are discussed above in Section 1.8. Also Appendix D contains relevant correspondence with agencies and American Indian tribes.

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
February 2004	NPS staff developed project agreement and list of potential GMP issues.
June 27, 2005	NPS staff met with GMP Contractor at NPS HQ for project orientation and internal scoping.
June 28 – July 1, 2005	WRT and NPS staff initiated public scoping process. Conducted stakeholder meetings involving approximately 20 interviews with over 40 people. Stakeholders included recreational groups (whitewater outfitters, climbers, bikers, private boaters, hikers, birders, and commercial photographers), economic development groups (chambers of commerce, CVB, WV Planning and Development Councils, and Tamarack), federal and state agencies, local political contacts (mayors of Hinton and Fayetteville), and state and local water quality and watershed interest groups.
July 6, 2005	Park outdoor recreation planner attended WVPRO Guide/Trip Leader meeting at local outfitter and addressed group of approximately 21 people representing 6 outfitters.
July 26 – 28, 2005	NPS conducted GMP Planning Team Workshop 1 addressing park purpose, park significance, and fundamental resources and values. Workshop included approximately 30 people representing local and regional NPS employees, contractors, and university researchers.
October 17 – 18, 2005	NPS conducted GMP Planning Team Workshop 2 addressing GMP public involvement strategies, park purpose and significance, and interpretive themes.
October 19, 2005	NPS and consultants conducted Nuttallburg IP/EA Planning Workshop 1 discussing visitor experience, interpretation, recreation, and resource protection needs at Nuttallburg.
December 12 – 14, 2005	NPS conducted GMP Planning Team Workshop 3 discussing park purpose, significance, and fundamental resources, visitor experiences, and GMP public involvement strategies.
January 9, 2006	Park superintendent attended the regular monthly meeting of the New River Parkway Authority and reported the status and progress on the GMP, including dates and times of the first planned public meetings and encouraged their participation.
January 11, 2006	Park superintendent attended the quarterly meeting of the WV Whitewater Commission and provided a description of the GMP planning process and the dates of upcoming public meetings.

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
January 11, 12, 13, 2006	Park superintendent and deputy superintendents met with 43 park employees in three small groups to discuss the GMP and the significant resources identified, and to solicit employee feedback.
January 11, 2006	NPS mailed Newsletter #1 to approximately 515 people and groups, landowners, federal and state agencies, county, state, and local officials, and businesses on the park mailing list. NPS distributed a press release concerning public meetings (held January 24-27, 2006) to newspapers: in Summersville – <i>The Nicholas Chronicle</i> ; in Bluefield – <i>The Bluefield Daily Telegraph</i> ; in Charleston – <i>The Charleston Gazette</i> ; in Huntington and Beckley – <i>The Register-Herald</i> ; in Hinton – <i>The Hinton News</i> ; and in Fayetteville and Oak Hill – <i>The Fayette Tribune</i> . Press releases were also distributed to radio stations (National Public Radio, MetroNews Radio, WJLS, WTNJ, and WCIR) and TV stations (WOAY (CH 4), WVNS (Ch 59), and WVVA (CH 6)). Ads announcing the GMP Public Meetings were placed in the <i>Fayette Tribune</i> , <i>Register-Herald</i> , and <i>Hinton News</i> .
January 12, 2006	NPS made the New River Gorge National River GMP project available to the public for comment on the NPS Planning, Environment and Public Comment (PEPC) webpage. Links to the park webpage were provided as well as a planning schedule, meeting dates, and a means to comment electronically.
January 13, 2006	Park chief of visitor protection briefed members of the local climbing community, including representatives of the Access Fund, New River Alliance of Climbers (NRAC), and three local climbing guide services. Information concerning the GMP was discussed and feedback solicited.
January 24, 2006	Park superintendent telephoned the congressional delegates Senator Byrd and Congressman Nick Rahall at their Washington, DC offices, as well as Ann Barth (Senator Byrd's Charleston office) and Paul Gonzalez (Congressman Rahall's Beckley office) to discuss the public meetings for the GMP. He also telephoned Tom Acker of Forward Southern WV in Beckley and Erin Haddix of National Parks and Conservation Association.
January 24-27, 2006	NPS conducted GMP Planning Team Workshop 4 discussing the public involvement strategy, interpretive themes, ethnographic resources, how GMP alternatives are developed, and a vision for the New River Gorge, including its resources, experiences, and stories. Also analyzed the Nuttallburg resources and discussed the Nuttallburg site's opportunities and constraints.
January 24, 25, and 26, 2006	NPS conducted Public Meeting #1 to provide information on the GMP planning process and to gather comments, as follows: <ul style="list-style-type: none"> ▪ January 24 – Hinton (approximately 28 people attended) ▪ January 25 – Beckley (approximately 69 people attended) ▪ January 26 – Fayetteville (approximately 88 people attended)
January 30, 2006	Notice of Intent (NOI) to prepare a General Management Plan and Environmental Impact Statement for New River Gorge National River was printed in the <i>Federal Register</i> . The NOI also indicated that as part of the GMP planning process the NPS would assess the potential for wilderness designation in the park.
February 6, 2006	NPS requested consultation and information regarding federally listed threatened or endangered species, species of special concern, or critical habitat that may be affected by park management actions from WV Division of Natural Resources Non-game Wildlife and Natural Heritage Program and from the US Fish and Wildlife Service.
February 6, 2006	NPS initiated consultation with the WV State Historic Preservation Officer.
February 10, 2006	Park chief of interpretation attended a meeting of the West Virginia Sustainable Communities at their request and introduced the GMP planning goals to the group of about 50 people from the six southern West Virginia counties.
February 15, 2006	Park superintendent met with state Senators Russell Weeks, Shirley Love, and Randy White to share information on the GMP and the upcoming public meetings scheduled in March.
February 23, 2006	Representatives from the NPS and the GMP Contractor met in Philadelphia for an initial GMP alternative concepts work session.
February 28, 2006	NPS received a response from the WV Division of Natural Resources Non-game Wildlife and Natural Heritage Program concerning federally listed threatened or endangered species, species of special concern, or critical habitat. WV DNR provided a listing of rare, threatened, and endangered species and critical habitats within New River Gorge National River.

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
March 1, 2006	NPS mailed invitations to GMP Meeting #2 to approximately 642 people and groups, landowners, federal and state agencies, county, state, and local officials, and businesses.
March 2, 2006	Park public affairs specialist and fisheries biologist attended the monthly meeting of the Piney Creek Watershed Association and made a presentation at their request to a group of about 15 members and discussed the park's fundamental resources.
March 2, 2006	Park chief of interpretation at their request introduced GMP planning goals to a group of about 40 people from education, resource management, and nature center fields gathered to discuss Wolf Creek Park near Fayetteville.
March 3, 2006	NPS distributed a press release concerning public meetings (held March 14-16, 2006) to newspapers: in Summersville – <i>The Nicholas Chronicle</i> ; in Bluefield – <i>The Bluefield Daily Telegraph</i> ; in Charleston – <i>The Charleston Gazette</i> ; in Huntington and Beckley – <i>The Register-Herald</i> ; in Hinton – <i>The Hinton News</i> ; and in Fayetteville and Oak Hill – <i>The Fayette Tribune</i> . Press releases were also distributed to radio stations (National Public Radio, MetroNews Radio, WJLS, WTNJ, and WCIR) and TV stations (WOAY (CH 4), WVNS (Ch 59), and WVVA (CH 6)). Ads announcing the GMP Public Meetings were placed in the <i>Fayette Tribune</i> , <i>Register-Herald</i> , and <i>Hinton News</i> .
March 6, 2006	Park superintendent met with state Senators Jesse Guills and Donald Caruth, and Delegate David Perry to share information about the park and an update on the GMP planning process.
March 7-9, 2006	Park superintendent and deputy superintendents met with approximately 25 NERI employees in three small groups to solicit employee feedback and to discuss the major issues to be addressed in the GMP and their vision of the future for the park.
March 13, 2006	NPS provided community leaders with a presentation summarizing the economic impact assessment of New River Gorge National River. Invitations were mailed February 23, 2006 to 105 community leaders. 18 attended presentation by economist David E. Versel.
March 14-16, 2006	NPS conducted GMP Planning Team Workshop 5 discussing public involvement, interpretive themes, economic impact of the park, gateway community issues, analysis of resources, and initial GMP alternative concepts.
March 14-16, 2006	<p>WRT and NPS conducted Public Meeting #2 to discuss with the public what they consider to be the issues to be addressed in the GMP and their ideas for the future of the park.</p> <ul style="list-style-type: none"> ▪ March 14 – Hinton (approximately 15 people attended) ▪ March 15 – Beckley (approximately 19 people attended) ▪ March 16 – Fayetteville (approximately 41 people attended)
March 17, 2006	Park superintendent, deputy superintendent, and GMP contractor met with representatives of West Virginia Professional River Outfitters at their request to discuss their concerns and ideas for the GMP.
March 20, 2006	Park superintendent met with the three Summers County commissioners for the purpose of updating them on the GMP planning process and providing copies of the newsletter, the economic impact study, the 2004 visitor survey, and public comment sheets.
March 27, 2006	Park superintendent and park staff met with NPS National Wilderness Program representative to discuss the wilderness review process at New River Gorge as a requirement for preparing the GMP.
March 29, 2006	Park outdoor recreation planner met with the Roanoke Chapter of the Float Fishermen of Virginia at their request at their monthly meeting in Roanoke, Virginia. The 21 members that attended the meeting were shown the GMP Public Meeting #2 presentation and asked to provide comments identifying issues to be addressed in the plan and their ideas for the future of the park.
April 19, 2006	Since January 12, 2006, the NPS received 61 written comments from the public via several sources, including: 22 Comment Forms mailed back to the NPS (distributed at two public meetings and various presentations to groups), 1 E-mail to the Superintendent, 15 Letters to the Superintendent (10 from people, 4 from Whitewater Canoe Clubs representing 1900+ members, 1 from WV Professional River Outfitters representing 12 outfitters), and 23 comments via PEPC (22 from people, mostly private boaters, 1 from the Keelhauler Canoe Club representing 250+ members).
April 20, 2006	NPS mailed Newsletter #2 (in advance of Public Meeting #3) to approximately 708 people and groups.

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
April 29, 2006	Park public affairs specialist met with approximately 23 members of the Highlands Conservancy at their request at their annual spring review held in Lansing, WV. She provided a general briefing on the GMP planning process and provided newsletters and comment forms.
April 22, 2006	Park public affairs specialist attended the quarterly membership meeting of the Coastal Canoeists in Shipman, Virginia, at their request. Met with approximately 20 members to discuss what members valued about New River Gorge National River and what their vision of the park might be in the next 15 to 20 years.
May 3, 2006	NPS distributed a press release concerning public meetings (held May 9-11, 2006) to newspapers: in Summersville – <i>The Nicholas Chronicle</i> ; in Bluefield – <i>The Bluefield Daily Telegraph</i> ; in Charleston – <i>The Charleston Gazette</i> ; in Huntington and Beckley – <i>The Register-Herald</i> ; in Hinton – <i>The Hinton News</i> ; and in Fayetteville and Oak Hill – <i>The Fayette Tribune</i> . Press releases were also distributed to radio stations (National Public Radio, MetroNews Radio, WJLS, WTNJ, and WCIR) and TV stations (WOAY (CH 4), WVNS (Ch 59), and WVVA (CH 6)). Ads announcing the GMP Public Meetings were placed in the <i>Fayette Tribune</i> , <i>Register-Herald</i> , and <i>Hinton News</i> .
May 9-11, 2006	NPS conducted GMP Planning Team Workshop 6 reviewing the resource analysis and GMP interests, concerns, and decision points. Also examined potential management zones and zone allocations.
May 9-11, 2006	WRT and NPS conducted Public Meeting #3 to discuss with the public where they like to go for recreation in the park, what natural areas they like to visit, and what historic resource areas they most like to visit. <ul style="list-style-type: none"> ▪ May 9 – Sandstone Visitor Center (4 people attended) ▪ May 10 – Beckley (8 people attended) ▪ May 11 – Canyon Rim Visitor Center (29 people attended)
May 22, 2006	Park superintendent met with Mayor Stanley Adkins to share information about the park and an update on the GMP planning process.
May 30, 2006	Park superintendent met with Mayor Jim Akers of Fayetteville to share information about the park and an update on the GMP planning process.
June 6, 2006	Park superintendent met with the Raleigh County commissioners for the purpose of updating them on the GMP planning process and providing copies of the newsletter, the economic impact study, the 2004 visitor survey, and public comment sheets.
June 13, 2006	NPS mailed a letter to the Shawnee Tribe establishing consultation and requesting comments with respect to the General Management Plan/Environmental Impact Statement.
June 27-29, 2006	NPS conducted GMP Planning Team Workshop 7 discussing GMP alternatives, issues, and decision points, interpretive themes, management zones, boundary modifications, and Nuttallburg alternatives.
July 3, 2006	Park superintendent met with Mayor Pete Hobbs of Ansted to review the GMP planning process and provide information about the park, including recent GMP newsletters and comment forms.
July 6, 2006	Since April 20, 2006, the NPS received 23 additional written comments from the public via several sources, including: 2 Comment Forms mailed back to the NPS (distributed at one public meeting and various presentations to groups), 4 E-mails to the Superintendent, 3 Letters to the Superintendent (1 from an individual, 2 from groups), and 14 comments via PEPC (all from individual people, mostly mountain bikers).
July 10, 2006	Park superintendent and deputy superintendents met with NPS Regional Director to provide a Power Point briefing on the work accomplished to date on the GMP and to discuss potential alternative concepts, controversial issues, and potential boundary modifications.
July 12, 2006	NPS mailed invitations to GMP Public Meeting #4 to approximately 752 people and groups.
July 20, 2006	NPS distributed a press release concerning public meetings (held July 25-27, 2006) to newspapers: in Summersville – <i>The Nicholas Chronicle</i> ; in Bluefield – <i>The Bluefield Daily Telegraph</i> ; in Charleston – <i>The Charleston Gazette</i> ; in Huntington and Beckley – <i>The Register-Herald</i> ; in Hinton – <i>The Hinton News</i> ; and in Fayetteville and Oak Hill – <i>The Fayette Tribune</i> . Press releases were also distributed to radio stations (National Public Radio, MetroNews Radio, WJLS, WTNJ, and WCIR) and TV stations (WOAY (CH 4), WVNS (Ch 59), and WVVA (CH 6)). Ads announcing the GMP Public Meetings were placed in the <i>Fayette Tribune</i> , <i>Register-Herald</i> , and <i>Hinton News</i> .

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
July 25-27, 2006	NPS conducted GMP Planning Team Workshop 8 discussing area-specific desired conditions for the various management zones and indicators and standards.
July 25-27, 2006	<p>WRT and NPS conducted Public Meeting #4 to discuss with the public a range of preliminary alternative management concepts for the park. Six management zones were proposed and three zoning concepts presented.</p> <ul style="list-style-type: none"> ▪ July 25 – Hinton (approximately 17 people attended) ▪ July 26 – Beckley (approximately 24 people attended) ▪ July 27 – Fayetteville (approximately 37 people attended)
August 1, 2006	NPS mailed letters to the Cayuga Nation of Indians, Seneca-Cayuga Tribe of Oklahoma, and the Appalachian American Indians of West Virginia initiating consultation and requesting comments with respect to the GMP/EIS.
August 2, 2006	NPS mailed letters to the Onondaga Nation, Mohawk Nation, Tonawanda Seneca Nation, Monacan Indian Nation, Inc, Eastern Shawnee Tribe of Oklahoma, Absentee-Shawnee Tribe of Indians of Oklahoma, Tuscarora Nation, Tuscarora Tribe, Virginia Council on Indians, and the Shawnee Tribe initiating consultation and requesting comments with respect to the GMP/EIS.
August 15, 2006	Park deputy superintendent met with representatives of six river outfitters at their request to brief them on the preliminary alternative management concepts presented at the last public meetings and to answer questions and concerns with the GMP revision.
August 25, 2006	Park superintendent met with the Fayette County Commissioners for the purpose of updating them on the GMP and providing copies of Newsletter 2 and public comment forms.
September 7, 2006	Park superintendent responded by letter to questions from the Tribal Historic Preservation Officer of the Absentee-Shawnee Tribe of Indians of Oklahoma regarding management of archeological resources in New River Gorge received via email on August 30, 2006.
September 7, 2006	Park superintendent and deputy superintendents met with five representatives of West Virginia Professional River Outfitters at their request to answer questions and discuss their concerns with the GMP revision.
September 11, 2006	NPS receives letter from A Faithkeeper for the Onondaga Nation indicating an interest in consulting on the GMP and requesting a recent report giving an overview of the archeology of the area. The park superintendent responded by letter on September 26, 2006 and providing a copy of the <i>New River Gorge National River Archeological Overview and Assessment Report</i> .
September 11, 2006	Park deputy superintendent made a presentation on the GMP to the New River Parkway Authority Board and provided copies of the newsletter and public comment forms.
September 11, 2006	Park deputy superintendent met with members of the New River Parkway Authority at their request and provided a 30-minute presentation on the GMP and copies of the newsletter and comment forms.
September 14, 2006	Park deputy superintendent addressed approximately 80 NPS and WV-CCC employees at an all-employees meeting at park headquarters and gave a presentation describing the GMP planning process and alternative concepts.
September 19, 2006	Park chief of interpretation met with approximately 12 members of the Oak Hill Rotary Club at their request and provided an overview of the park and a discussion of the GMP alternative concepts and means by which to comment.
September 20-22, 2006	Park superintendent and deputy superintendents met with approximately 25 NERI employees in three small groups to discuss the alternative concepts that were developed through the GMP planning process and to ask them to identify a preferred alternative.
September 27, 2006	NPS GMP Planning Team met to discuss the four GMP alternative concepts and the need for development of a fifth alternative concept.
October 31, 2006	Since July 7, 2006, the NPS received 18 additional written comments from the public via several sources, including: 10 Comment Forms mailed back to the NPS, 4 Letters to the Superintendent (2 from individual people, 2 from groups), and 4 comments via PEPC.
November 15, 2006	Park superintendent and deputy superintendents met with planning team members to discuss the newly developed Concept 5: Themed and Connected Exploration Experiences.

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
December 6, 2006	NPS GMP Planning Team conducted Choosing By Advantages (CBA) Workshop.
January 1, 2007	Deputy Superintendent met with John Karish, NPS Northeast Region Chief Scientist, and provided a briefing on the GMP.
January 25, 2007	Superintendent and Deputy Superintendent met with the New River Working Group at their request to discuss the GMP planning issues, including potential boundary adjustments and lands important to the protection of park resources and values. The New River Working Group is comprised of representatives of the Plateau Action Network, WV Wildlife Federation, Trust for Public Land, WV Rivers Coalition, National Parks and Conservation Association, New River CVB, WV Wilderness Coalition, New River Alliance of Climbers, Southern WV CVB, WV Division of Culture and History, WV Professional River Outfitters, National Committee for the New River, WV Highlands Conservancy, National Wildlife Federation, and the WV BASS Federation.
April 18, 2007	Superintendent and NPS staff met with representatives of the WV Wilderness Coalition at their request to discuss the NPS process of wilderness studies as a component of the GMP.
May 18, 2007	Superintendent and NPS staff met with representatives of the New River Alliance of Climbers at their request to discuss climber access and potential campground developments.
May 23, 2007	Superintendent and NPS staff met with representatives of the river outfitters at their request to discuss issues at the park and the GMP.
May 29, 2007	Superintendent and NPS staff met with representatives of the International Mountain Biking Association (IMBA), the owner of a local bicycle shop, and several local enthusiasts at their request to discuss trail opportunities in the park.
May 30, 2007	Superintendent and NPS staff met with representatives of National Parks and Conservation Association and The Nature Conservancy at their request.
June 5, 2007	Deputy Superintendent and NPS staff met with the New River Working Group at their request and provided them with an update on the status and issues in the GMP.
June 13, 2007	Superintendent met with the Mayor of Beckley.
June 14, 2007	Superintendent and NPS staff met with representatives of the WV Wilderness Coalition at their request to discuss the areas identified for field inventory. The NPS staff and WV Wilderness Coalition representatives then completed a field reconnaissance of two of the three potential areas of interest.
June 14, 2007	Superintendent and NPS staff met with members of the WV Professional River Outfitters at their request to discuss outfitter and river related issues.
June 18, 2007	Superintendent and NPS staff met with Carl Frischkorn at his request to discuss a proposed residential development adjacent to the park in an area tentatively identified for a boundary expansion to provide for better hiker and climber access and camping.
June 19, 2007	Superintendent and NPS staff met with local land owner Robert Sayer at his request to discuss access and boundary issues.
June 20, 2007	NPS received the WV Wilderness Coalition's citizen's proposal for wilderness at New River Gorge. The proposal identified three areas for consideration including Glade Creek, Dowdy Creek, and Backus Mountain.
June 21, 2007	Superintendent and NPS staff met with members of the WV Whitewater Commission and briefs group on progress with the GMP.
June 27, 2007	NPS Planning Team met to discuss the alternative concepts and issues including wilderness, hunting, and boundary modifications.
July 24, 2007	Superintendent met with Tom Aker of Forward WV at his request to discuss economic development ideas which might be incorporated into the GMP.
August 11, 2007	Deputy Superintendent briefed John Latschar, Acting Regional Director of the NPS Northeast Regional Office, and provided a presentation and update on the GMP.

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
August 31, 2007	Deputy Superintendent and staff met with representatives of West Virginia Professional River Outfitters at their request for a new commercial river access located upstream of Surprise rapid.
September 6, 2007	At their request the Deputy Superintendent provided a GMP status update to the New River Working Group, which included core groups as well as representatives of the local SCA/Sustainable Communities Program, National Wild Turkey Federation, and Friends of New River. The group discussed the need for future public meetings, the re-designation of the New River Gorge National River as a National Park, and the potential for wilderness designation.
September 25, 2007	NPS receives a letter from the Executive Director of West Virginia Professional River Outfitters urging the inclusion in the GMP of an investigation of a new commercial access above Surprise rapid. The letter cites a 2007 strategy study which recommends that the whitewater industry adapt and evolve from an adrenalin sport to more of a family experience. The complete West Virginia Whitewater Industry Strategy project report is released in October 2007.
October 22, 2007	NPS mailed Newsletter #3 (for Public Meeting #5) to approximately 797 people and groups on the park mailing list. NPS distributed a press release concerning public meetings (held July 25-27, 2006) to newspapers: in Summersville – <i>The Nicholas Chronicle</i> ; in Bluefield – <i>The Bluefield Daily Telegraph</i> ; in Charleston – <i>The Charleston Gazette</i> ; in Huntington and Beckley – <i>The Register-Herald</i> ; in Hinton – <i>The Hinton News</i> ; and in Fayetteville and Oak Hill – <i>The Fayette Tribune</i> . Press releases were also distributed to radio stations (National Public Radio, MetroNews Radio, WJLS, WTNJ, and WCIR) and TV stations (WOAY (CH 4), WVNS (Ch 59), and WVVA (CH 6)). Ads announcing the GMP Public Meetings were placed in the <i>Fayette Tribune</i> , <i>Register-Herald</i> , and <i>Hinton News</i> .
November 6, 7, and 8, 2007	<p>WRT and NPS conducted Public Meeting #5 to discuss with the public five revised management alternatives and corresponding management zones for each alternative. Several specific management issues were also discussed including wilderness designation, water Quality management, biking in the park, hunting, and potential boundary adjustments.</p> <ul style="list-style-type: none"> ▪ November 6 – Hinton- approximately 46 people attended. ▪ November 7 – Beckley- approximately 67 people attended. ▪ November 8 – Fayetteville- approximately 179 people attended.
December 6, 2007	At their request the Superintendent and NPS staff met with the New River Working Group, which included core groups as well as representatives of the New River Mountain Guides/ Access Fund and Marathon Bicycle Company. NPS staff discussed the potential boundary expansions being considered in the GMP to address the definition of lands “in and around” the New River Gorge and ways to improve communication between the NPS and the community.
December 14, 2007	Superintendent met with representatives of West Virginia Professional River Outfitters at their request to discuss the development of additional river access.
December 17, 2007	NPS receives Resolution of the WV Natural Resources Commission opposing any efforts to prohibit hunting or fishing or to designate any areas as wilderness within the New River Gorge National River.
December 18, 2007	Superintendent met with Jim Summers of the WV Wildlife Federation Camo Coalition to discuss the hunting program options being considered in the GMP.
December 20, 2007	Superintendent and NPS staff met with a representative of the International Mountain Biking Association (IMBA), the owner of a local bicycle shop Marathon Bicycle Company, and a representative of the Raleigh County Cycling Club to discuss mountain bike access to various existing trails and to future new trails in the backcountry areas.
December 21, 2007	NPS receives letter from the West Virginia Division of Natural Resources providing comments regarding the GMP and strongly opposing any attempt to abolish hunting or to designate wilderness.
January 15, 2008	Superintendent met with regional director of Ducks Unlimited to discuss the hunting alternatives in the GMP.
February 8, 2008	Since October 15, 2007, the NPS received 702 written comments from the public via several sources, including: 345 GMP Comment Cards (10 received at the three public meetings in November, 135 with handwritten responses and 200 signed form letters mailed back to the NPS), 9 E-mail to the Superintendent, 52 Letters to the Superintendent, and 178 comments via PEPC. The NPS received 118 signed form letters seeking the continuation of the existing hunting program, as well as two similar petitions, one with 115 signatures and one with 2677 signatures. Most of the comments supported the continuation or enhancement of hunting, many comments supported the

Table 5.1 Running List of Consultation and Public Involvement

Date	Consultation or Public Involvement Activity
	development of mountain bike trails in frontcountry and backcountry zones, many of the continuation of hunting letters and comments were duplicates and opposed wilderness designation, however, some letters supported wilderness designation of two or three areas.
February 8, 2008	Since October 15, 2007, the NPS has received inquiries and comments on behalf of their constituents from US Senator Byrd, US Congressman Rahall, US Congresswoman Capito, and WV Senator Love.
March 7, 2008	Superintendent receives letter from the National Parks Conservation Association on behalf of its more than 340,000 members and in response to the issues raised at the November public meetings. The NPCA commented on Alternative 5, supports inclusion of three wilderness areas, expanding the water quality management efforts, expanded biking opportunities and the timely promulgation of a special rule for off-road biking, continued hunting in the park, and identifying lands critical to protect in an additional boundary adjustment.
March 11, 2008	Superintendent met with representatives of WV Bowhunters Association to discuss the hunting alternatives in the GMP.
April 10, 2008	NPS requested updated information regarding federally listed threatened or endangered species, species of special concern, or critical habitat that may be affected from WV Division of Natural Resources Non-game Wildlife & Natural Heritage Program and from the US Fish and Wildlife Service.
April 18, 2008	Fayette County Commission sends letter to US Senator Byrd requesting his support for a critical analysis of the lands that NPS has identified as "in and around" and critical to protecting park resources.
April 21, 2008	Superintendent receives letter from US Senator Byrd on behalf of several constituents concerned about the possible cessation of hunting in New River Gorge National River.
May 6, 2008	Superintendent and Deputy Superintendent met with representatives of West Virginia Professional River Outfitters at their request to brief them on the potential park boundary adjustments and how the park might address legislative requirements to "conserve resources in and around the New River Gorge".
May 27, 2008	NPS receives response from WV Division of Natural Resources Non-game Wildlife & Natural Heritage Program concerning requested consultation and information regarding federally listed threatened or endangered species, species of special concern, or critical habitat. WV DNR provided an updated listing of rare, threatened and endangered species and critical habitats within New River Gorge National River.
June 13, 2008	The Deputy Superintendent and NPS staff met with the New River Working Group at their request to discuss the potential boundary expansions being considered in the GMP.
July 9, 2008	The Deputy Superintendent and NPS staff again met with the New River Working Group at their request to discuss the potential boundary expansions being considered in the GMP.
July 10, 2008	Superintendent and NPS staff met with representatives of the WV Wilderness Coalition at their request to discuss potential boundary changes and wilderness eligibility.
August 28, 2008	The Superintendent, Deputy Superintendent, and NPS staff met with the New River Working Group at their request to brief them on the development of the GMP.
September 5, 2008	Superintendent and NPS staff met with a representative of the National Parks and Conservation Association and the owner of a local bicycle shop (also the local representative of the International Mountain Biking Association) at their request to discuss how mountain biking opportunities in the park might be retained and improved.
October 10, 2008	Superintendent and NPS staff met with representatives of the WV Wilderness Coalition at their request to discuss potential boundary changes and wilderness eligibility.

5.2 Tribal Coordination

Indian tribes with possible cultural associations with sites within New River Gorge National River were contacted via letter to initiate consultation regarding management planning for the park. The initial consultation letter provided tribes with copies of the park's purpose, significance, and fundamental resource statements. Letters inviting comments were sent to the following tribes and tribal organizations (see Appendix C for a representative example of the letter sent):

- Absentee-Shawnee Tribe of Indians of Oklahoma
- Appalachian American Indians of West Virginia
- Cayuga Nation
- Eastern Shawnee Tribe of Oklahoma
- Haudenosaunee Cultural Resource Center
- Haudenosaunee Standing Committee on Burial Rules and Regulations
- Monacan Indian Nation
- Onondaga Nation
- Seneca-Cayuga Tribe of Oklahoma
- Shawnee Tribe
- Tonawanda Seneca Nation
- Tuscarora Nation
- Tuscarora Tribe
- Virginia Council on Indians

Subsequent to sending these letters additional information was provided, as requested, to the Onondaga Nation and to the Absentee-Shawnee Tribe of Indians of Oklahoma (see Appendix C).

Consultation with tribes will continue during implementation of the GMP, as needed. This effort will also be continued throughout the Section 106 compliance process.

5.3 Section 106 Consultation

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, requires that federal agencies consider the effect of undertakings on properties listed on the National Register of Historic Places and allow the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) the opportunity to comment. On February 6, 2006 and April 11, 2007, New River Gorge National River sent letters to the West Virginia Deputy SHPO to initiate consultation for the GMP/EIS. The SHPO has indicated that comments will be provided after receiving and reviewing the Draft GMP/EIS.

The general nature of the management objectives and potential actions in the GMP has necessitated that the analysis of impacts to cultural resources and related Section 106 consultation also be general and programmatic. In the future Section 106 compliance will occur during design and construction of specific projects referenced in the GMP, if and when project funding becomes available.

5.4 Section 7 Consultation

Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. NPS management policies also require cooperation with appropriate state conservation agencies to protect state-listed and candidate species of special concern within park boundaries.

On April 10, 2008, New River Gorge National River sent a letter to the Wildlife Resources Section of the West Virginia Division of Natural Resources (WV DNR) and to the West Virginia Field Office of the U.S. Fish and Wildlife Service for consultation purposes and to request information about special status species within New River Gorge National River.

The U.S. Fish and Wildlife Service has indicated that comments will be provided after receiving and reviewing the Draft GMP/EIS.

WVDNR responded by letter on December 8, 2008. The responses included lists of the rare, threatened, and endangered species and critical habitats that could be present within the park. WVDNR requested that the NPS take these species into consideration when planning future projects for the park. As requested, the actions proposed in the GMP have been designed to avoid and/or minimize adverse impacts to these species and their habitats. As individual management actions are implemented in the future, the park will survey the specific area of potential impact and if species are encountered will coordinate with the WVDNR and other state agencies, as appropriate.

5.5 Draft GMP/EIS Document Review

The Draft GMP/EIS for New River Gorge National River will be on public and agency review for 60 days. During the review period, the park will solicit public and agency comments and will hold public meetings that will be advertised in local media outlets. Once comments are received and analyzed, a Final GMP/EIS (or Abbreviated Final GMP/EIS if comments are not substantive) will be prepared that will respond to and incorporate the public comments on the draft document. Thirty days of no action will follow release of the Final GMP/EIS. After that a Record of Decision (ROD) will be prepared to document the selected alternative and set forth any stipulations for implementation of the GMP. Preparation of the ROD will complete satisfaction of NEPA compliance requirements for the GMP.

As noted previously, the Draft GMP/EIS presents an overview of potential actions and impacts related to the management concepts for the park. More detailed plans would be developed for individual development and management projects in the

park, if and when funding becomes available. These plans would require and be subject to additional environmental compliance reviews, such as those required pursuant to the National Environmental Policy Act and Section 106 of the National Historic Preservation Act, as amended.

5.6 List of Draft GMP/EIS Recipients

Copies of the Draft GMP/EIS were distributed to the following government officials, government agencies, and non-governmental organizations and institutions. Copies were also distributed to over 550 people, groups, property owners, and businesses who requested the document or who are on the park's public involvement mailing list.

■ Congressional Delegation

West Virginia Senator Robert C. Byrd
 West Virginia Senator Jay Rockefeller
 West Virginia Representative Nick J. Rahall II

■ Federal Agencies

U.S. Army Corps of Engineers
 U.S. Environmental Protection Agency
 U.S. Department of Agriculture, Natural Resources Conservation Service
 U.S. Department of the Interior, Fish and Wildlife Service
 U.S. Department of the Interior, U.S. Geological Survey
 U.S. Department of the Interior, Office of Surface Mining
 Advisory Council on Historic Preservation, Office of Federal Agency Programs

■ West Virginia Legislative Delegation

Governor Joe Manchin III
 Senator Mike Green, District 9
 Senator Jesse O. Guills, District 10
 Senator James W McNeely, District 10
 Senator Randy C. White, District 11
 Senator William R. Laird, District 11
 Representative Virginia Mahan, District 27
 Representative Rick Moye, District 27
 Representative Linda Sumner, District 27
 Representative Sally Susman, District 27
 Representative Bill Wooton, District 27
 Representative Tom Louisos, District 29
 Representative David G. Perry, District 29
 Representative Margaret Anne Staggers, District 29
 Representative Sam J. Argento, District 35

■ **West Virginia State Agencies**

West Virginia Department of Agriculture

- West Virginia Conservation Agency

West Virginia Department of Commerce

- Division of Forestry
- Division of Natural Resources
- Division of Tourism
- Development Office

West Virginia Department of Education and the Arts

- Division of Culture and History

West Virginia Department of Environmental Protection

- Division of Air Quality
- Division of Land Restoration
- Division of Mining and Reclamation
- Division of Water and Waste Management

West Virginia Department of Transportation

- Division of Highways
- Parkways, Economic Development and Tourism Authority

■ **County and Local Governments**

Fayette County Commission

Nicholas County Commission

Raleigh County Commission

Summers County Commission

City of Beckley

City of Hinton

City of Mt. Hope

City of Oak Hill

City of Summersville

Town of Ansted

Town of Fayetteville

Town of Thurmond

Fayette County Planning Commission

Fayette County Transition Team

Raleigh County Planning & Zoning Commission

■ **Organizations and Institutions**

Absentee-Shawnee Tribe of Indians of Oklahoma

American Canoe Association

American Mountain Guides Association

American Outdoors

American Whitewater

Appalachian American Indians of WV

Appalachian Folklife Center
Beckley Area Foundation
Beckley/Raleigh County Chamber of Commerce
Carolina Canoe Club, Inc.
Canaan Valley Institute
Cayuga Nation of Indians
Coastal Canoeists, Inc.
Collis P. Huntington Society
Ducks Unlimited
Dunloup Creek Watershed Association
Eastern National – Southeast Region
Eastern Shawnee Tribe of Oklahoma
Fayette County Chamber of Commerce
Fayette County Water Quality Coalition
Fayetteville Convention and Visitors Bureau
Forward Southern West Virginia
Friends of Coal
Friends of the Rivers of Virginia
Glade-Pinch Trout Association
Greenbrier River Watershed Association
Haudenosaunee Cultural Resource Center
Hinton Chamber of Commerce
Humane Society of Raleigh County
Institute for History of Technology
International Mountain Bike Association
Izaak Walton League
Keelhauler Canoe Club
Lilly Reunion Association
Monacan Indian Nation, Inc.
Mountaineer Audubon Society
Muster Project
National Committee for the New River
National Railway Historical Society
National Park Foundation
National Parks and Conservation Association
National Wild Turkey Federation
New River Alliance of Climbers
New River Community Partners
New River Convention and Visitors Bureau
New River Land Trust
Nicholas County Chamber of Commerce
Onondaga Nation
Piney Creek Watershed Association

Plateau Action Network
Potomac Appalachian Trail Club
Public Employees for Environmental Responsibility (PEER)
Quality Deer Management Association
Rails-to-Trails Conservancy
Raleigh County Horsemen Association
Richwood Area Chamber of Commerce
River Management Society
Seneca-Cayuga Tribe of Oklahoma
Shawnee Tribe
Sierra Club – WV Chapter
Southern WV Convention and Visitors Bureau
Student Conservation Association, Inc
Summersville Convention and Visitors Bureau
The Access Fund
The Conservation Fund
The Nature Conservancy
Three Rivers Avian Center
Trout Unlimited
Trout Unlimited- Almost Heaven Chapter
Trust for Public Lands
Tuscarora Tribe
Virginia Council on Indians
Webster County Watershed Association
West Virginia Highlands Conservancy
West Virginia Rivers Coalition
West Virginia Wildwater Association
WV Bear Hunters Association
WV Bowhunters Association
WV Chapter- National Wild Turkey Federation
WV Council Trout Unlimited
WV Eco-Tourism Association
WV Mountain Bike Association
WV Professional River Outfitters
WV Rails-to-Trails Council
WV Scenic Trails Association
WV Sporting Dog Association
WV State Chapter of Quail Unlimited
WV Trappers Association
WV Trails Coalition
WV Wilderness Coalition
4C Economic Development Authority