

well as its convenience, many European settlements were developed along this former American Indian trail.

From the beginning, the Great Wagon Road and Valley Pike served as the transportation spine through the Shenandoah Valley. Eventually, roads would branch from it to form a network of transportation corridors, connecting settlements with individual farms, industry, towns, and major cities. In 1918 the Valley Pike was incorporated into the first Virginia state highway system. Designated initially as State Route 3 and later changed to State Route 11 in 1926, the road, which was realigned and widened in 1929, remained the regional north-south thoroughfare through the Lower Shenandoah until the completion, in 1971, of I-81 (which generally followed State 11). While I-81 became the major transportation corridor through the valley, subsequent construction of I-66, which connected the Washington, D.C., metropolitan area with I-81 between Middletown and Strasburg, led to increasing population growth in the Lower Shenandoah during the late 20th and early 21st centuries. Thereafter, State Route 11 was realigned as a secondary transportation route.

Most railroads built in Virginia before the Civil War were located east of the Blue Ridge Mountains and designed to connect the Piedmont with the Tidewater cities of eastern Virginia. Even with the construction of the Baltimore and Ohio Railroad in 1834 and the Manassas Gap Railroad in 1854, the majority of the Shenandoah Valley remained underserved by railroads until after the Civil War. In 1867, the Winchester and Strasburg Railroad connected Harpers Ferry to the rail line stretching south to Harrisonburg. The rail line, which was constructed west of the Valley Pike in the park area, eventually became part of the Baltimore and Ohio Railroad network, and its location contributed to establishment of the community of Meadow Mills and its nearby limestone quarries.

■ **Building and Settlement Patterns**

Prior to European settlement, the Shenandoah Valley was occupied by various American Indian groups. Used as a central corridor for travel, migration, hunting, and planting, American Indian occupation was apparent throughout the valley based on the landscape features found by early European settlers. These features included fields, mounds, graves, and fire-cleared forests. Following American Indian precedents, European settlers located their dwellings in open areas near rivers and streams. In several instances, Europeans located their farmsteads, plantations, and settlements on abandoned American Indian sites.

Typical dwellings built in North America by early Scots-Irish and German settlers were rectangular and relatively small wooden structures located near adjoining fields containing gardens and crops. Many of the larger dwellings, such as plantation homes, were constructed of limestone.

Prior to the Civil War the cultural geography of the park lands and contiguous areas was shaped by the emergence of highly profitable plantations and family farms. Dispersed along the turnpike between Middletown on the north and Strasburg on the south was Belle Grove Plantation, the Solomon Heater farm, and the Daniel Stickley Mill complex. East of the Valley Pike, roads physically connected settlements and towns, mills, and dispersed farmsteads. Adjoining these settlement clusters were open areas used for grain and livestock production. West of the Valley Pike, Belle Grove Lane, Hite Road, and two unnamed farm roads connected family farms and the Hottle Mill with the surrounding settlements and towns.

During the late 19th and early 20th centuries the Lower Shenandoah was the scene of a tremendous building boom. In addition to new construction, older structures were often enlarged and renovated using modern building techniques and styles. New communities, such as Meadow Mills, were established as a result of limestone quarrying and other economic activities, and towns such as Middletown and Strasburg grew in population as a result of railroad expansion and connections and the rise of the automobile era.

As a result of substantial growth and the construction of I-81 and I-66, the number of people moving to the Shenandoah Valley from the Washington, D.C. metropolitan area and adjacent regions of West Virginia and western Maryland has increased significantly during the past several decades. During the post-World War II era, growth has occurred in many parts of the park area, especially along State Route 11 and Hite Mill Road. Currently, growth has affected the area west of I-81 more than the area to the east. The majority of recent development has occurred adjacent to Middletown, along State Route 11 and feeder roads that connect to Route 11. East of I-81, the primary growth pattern is widely scattered and found along Long Meadow and Bowman Mill roads. Development pressure is slowly occurring from Strasburg in the lower southeast portion of the park area.

■ Views and Vistas

Historic scenes as well as contemporary perceptual qualities also contribute to the significance of the landscape. These views, which are based on character-defining features of the cultural landscape, can be treated as tangible resources.

The complex landforms, natural and cultural landscapes, and pastoral views within and adjacent to the park, as well as the scenic mountain views and vistas that one obtains from the park, are among the most beautiful in the Lower Shenandoah Valley. While the region's scenic beauty is something to be celebrated, it also provides context and meaning to the park because virtually all human activities in the region have been inseparable from the lands on which they evolved. Although American Indians and subsequent European settlers were attracted to the region by its abundance of resources, the Lower Shenandoah's scenic beauty also may have likely served as an inducement for settlement. Thus, the views and vistas

associated with the Lower Shenandoah are significant for the role they played in the region's developmental history. Many of these landscapes and viewsheds, particularly along major highways and near nodes of settlement such as Strasburg and Middletown, are being altered by increasing modern development, thus threatening the continued existence of significant features that contribute to the region's beauty and historical context.

■ **Small-Scale Features**

A variety of small-scale features found in the park add character and texture to the cultural landscape. Many of these features are associated with the Belle Grove Plantation as well as other plantations, homes, and farmsteads. Stonewall remnants associated with the Valley Pike, historic gates and fences, remnant orchards, hedgerows, building ruins, historic and commemorative monuments, such as the Ramseur Monument, and individual grave markers in cemeteries collectively give richness to the cultural landscape of the park.

By 1864 small family cemeteries were located on the Harmony Hall (Bowman Cemetery) and Long Meadow (Hite Cemetery) properties. A Hite family cemetery was located on the C.I. Hite (Whitham) property, and a slave cemetery was sited north of the Belle Grove manor house overlooking Meadow Brook. In addition, two other identified cemeteries were located within the legislated park boundaries in 1864. These were the Middletown Cemetery (referred to as Mt. Carmel), located in the northeast section of the park, and an unidentified cemetery along Belle Grove/Long Meadow Lane. Although Civil War soldiers were buried in both cemeteries, the unidentified site along Belle Grove/Long Meadow Lane may have been used solely for that purpose. By 1937 the Mt. Carmel Cemetery, which had been expanded in size, was the only burial ground within the present-day park boundaries other than the small family cemeteries.

3.2.8 Museum Collections

Although the NPS currently does not possess any object, artifact, or archival collections relating to Cedar Creek and Belle Grove NHP, it is anticipated that archeological research will be conducted on NPS-administered lands in the future. Artifacts collected during that research, as well as associated materials, will result in park collections that require curation and preservation. A survey of the contents of the structures on the Whitham property should be conducted to identify potential government-owned artifacts. Additionally, during the life of the plan, the park may acquire lands that will likely generate collections that require management.

The park's Key Partners currently have collections of cultural resource objects, artifacts, and archives relating to the lands they own that have been compiled as a result of various archeological, historical, and architectural studies. The Cedar Creek Battlefield Foundation operates a small visitor contact facility, with

interpretive exhibits and a bookstore, in a commercial building on the heights along the Valley Pike overlooking the Cedar Creek Battlefield. The Shenandoah Valley Battlefields Foundation provides financial assistance to its partners for developing and expanding their interpretive, museum, and educational programs throughout the Shenandoah Valley Battlefields National Historic District.

The Belle Grove Manor House and surrounding grounds—owned by the National Trust for Historic Preservation and funded and operated by Belle Grove, Inc.—provide visitors with opportunities to experience a well-preserved 18th-century plantation, working farm, and architectural gem of the Lower Shenandoah Valley. All rooms in the manor house, which is operated as a historic house museum, contain objects and furnishings that are historically relevant to the Hite family or were characteristic of the Shenandoah Valley during the manor house's period of significance. In addition, Belle Grove maintains an extensive collection of research files, technical reports, and published works relating to historical development of the plantation. Belle Grove serves the Shenandoah Valley and Virginia as an educational center through the many interpretive programs it offers, and folkways demonstrations maintain the presence of both the ethnic and Lower Shenandoah crafts heritage.

3.3 Natural Environment

As noted earlier, this chapter includes information on all natural resources and values for the park for the purpose of compiling this information for this first GMP. However, not all of the natural resources described here will be analyzed in the EIS portion of this document. The following resources and values may potentially be affected by the GMP alternatives: Soils, Groundwater, Surface Water Quality, Vegetation, and Scenic/Visual Resources/Viewsheds. The information presented here for these topics serves as the description of the Affected Environment in accordance with the requirements of the National Environmental Policy Act (NEPA). All other topics and information included in this section are presented as background but have been dismissed from further analysis in the EIS.

The park is mostly rural, but does contain incorporated, developed areas of Middletown and is influenced by adjacent development in Strasburg. The park consists of diverse biological communities, including forested uplands, open grasslands, and river valley bottoms. The park contains many streams and creeks and is bordered to the south by the North Fork of the Shenandoah River. In general, the park's landscapes are more natural and less disturbed to the south. The park's landscape features and natural setting have been identified as fundamental resources and values (NPS 2006a).

3.3.1 Topography

The topography of the area consists of long, parallel, narrow, even-crested ridges rising above intervening valleys of varying size. These elongated geologic structures produce a trellis (branching) drainage system, resulting in a relatively large number of streams occurring in the area. The park is situated in a valley that contains rolling uplands that are flanked by discontinuous ridges, bluffs, and foothills aligned in a northeasterly direction. Elevations in the park range between 500 and 700 feet (Donaldson 2005). The geography, topography, and landscape features of the region have been identified as fundamental values (NPS 2006a).

3.3.2 Climate

Considerable topographic heterogeneity in western Virginia induces a diversity of local weather conditions and microclimates. The climate of the Ridge and Valley province is moderate, being significantly warmer and drier than that of both the Blue Ridge and the mountains to the west. The average temperature in January is 32 degrees Fahrenheit (with an average low of 21 degrees), while summertime temperatures rise to an average of 75 degrees in July (with an average high of 88 degrees) (Weatherbase 2006). Prevailing westerly air masses are forced upward over the Appalachians and release most of their moisture on the windward side of the mountains, leaving the area in a "rain shadow" of the higher Alleghany ridges to the west. Annual precipitation averages about 35 inches. Of this, about 22 inches, or 63 percent, usually falls in April through September (USDA 1987). The growing season for most crops falls within this period. Average seasonal snowfall is just less than 30 inches (USDA 1984, 1987).

3.3.3 Air Quality

The park is a Class II area under the Clean Air Act. The park's air quality met Environmental Protection Agency (EPA) standards in 2003 for airborne particulate matter (PM₁₀) and sulfur dioxide; however, ozone standards were exceeded that same year (Donaldson 2005). Currently, the area still is not in compliance with EPA standards for 8-hour ozone concentrations, but is in compliance for all other criteria pollutants (VDEQ 2006).

About 55 percent of the park's total land area is in Frederick County, which participates in the EPA's Early Action Compact (EAC) program that is designed to reduce ground-level ozone pollution. Communities with Early Action Compacts will start reducing air pollution one to at least two years earlier than required by the Clean Air Act. As long as EAC Areas meet agreed upon milestones, the impact of not being in compliance with EPA standards is deferred. Frederick County is required to meet ozone attainment standards no later than December 31, 2007 (EPA 2006).

3.3.4 Lightscape Management

As our cities and towns grow, the places where the public can find and enjoy clear views of our nighttime celestial skies are becoming fewer in number. Lightscape, or night sky, is an often overlooked part of the environment.

Light pollution is the visible intrusion of light into our nighttime environment. The source of much of this pollution can be attributed to poorly designed outdoor light fixtures that allow light to stray beyond the intended purpose. The impacts of poor nighttime lighting include urban sky glow (the brightening of nighttime skies and the decreased visibility at night), glare, the trespass of light, and wasted energy (International Dark Sky Association 2006). Light pollution can adversely affect night-flying migratory birds and other wildlife, and can impact visitor experience. The primary sources of light pollution are poorly designed building and roadway light fixtures and vehicle lights.

There are several sources of light that affect the park's lightscape, or night sky conditions. I-81 and U.S. 11 contribute unnatural light due to vehicle headlights. Trains contribute unnatural light as well. The Chemstone Plant, adjacent to park lands, is a significant source of light pollution. Nearby residential developments, industrial parks, and the towns of Middletown and Strasburg also contribute additional light that is visible from the park and disrupts night sky viewing. Facilities in the park also contribute minimal light. Nearly all of the park is affected by non-natural sources of light; however, night sky conditions in portions of the interior of the southern half of the park are less disturbed.

3.3.5 Soundscape Management

Soundscapes include both natural and human components. Natural soundscapes include all naturally occurring sounds such as waves on the shoreline, running water, bird calls, wind blowing through trees, or thunder. It also includes "natural quiet" that occurs in the absence of natural or human-caused sound. The opportunity to experience natural sounds or natural quiet is an enjoyable part of some visitor experiences at the park.

Noise is generally defined as unwanted or intrusive sound. Sounds are described as noise if they interfere with an activity or disturb the person hearing them. Many factors affect how an individual responds to noise. In most cases, when noise is present in a park, it is considered a mild aggravation but in other cases that noise can disrupt the quality of a visitor's experience. Through the study of acoustic ecology, it has been determined that noise also has the potential to alter wildlife behavior and is important to species survival. Noise can also detract from the portrayal of historical events and in some circumstances alter the physical condition of park resources.

Nearly all of the park is affected by non-natural sounds. Several sources of intrusive sounds exist within and around the park. The major source of noise is attributed to vehicles on roads that pass through the park. I-81 and U.S. 11 bisect the park and contribute erratic, but permanent, sounds from highway traffic that can be heard from many areas of the park. Noise intrusions are greatest at sites that are immediately adjacent to the I-81 corridor, such as Harmony Hall. The expansion of I-81 through the park would contribute additional noise pollution during construction. In addition, trains that pass through the park can be heard throughout the park. The limestone quarry that is adjacent to the park probably also affects conditions for natural quiet within the park due to blasting and the operation of heavy equipment.

Maintenance activities, such as lawn mowing and leaf blowing, can produce noise and disrupt natural quiet in the park. Other sound disruptions could be created by visitors talking and shouting, primarily around developed areas like visitor contact facilities and popular interpretive sites; sounds generated during reenactments such as the firing of cannons and guns, and cavalry activities could be disruptive, as well. The presence of natural quiet and the natural soundscape is probably greatest in portions of the interior of the southern half of the park.

3.3.6 Scenic/Visual Resources/Viewsheds

Scenic resources and viewsheds are important elements of visitor experience. Natural landscapes and panoramic views, particularly of Massanutten Mountain, the Blue Ridge Mountains, and the Allegheny Mountains that flank the Shenandoah Valley, have been identified as fundamental to the park's purpose and significance (NPS 2006A). Scenic resources define the park's contextual setting and contribute to the integrity of the park's battlefields and other cultural resources. The once predominantly agrarian and rural landscape of the area is changing and rural and suburban development is slowly claiming the pastoral landscape.

The park's scenery is defined by a rural, pastoral landscape that is punctuated by elements of the built environment, such as plantation homes, farmsteads, church spires, and small town streetscapes. Interesting patterns of agricultural fields and woodlots add to the charm and quality of the area, while views of the many creeks and streams that flow through the park display its rich natural heritage. These natural features and vegetative patterns have been identified as fundamental values and other important values, respectively (NPS 2006A). In the southern portion of the park, views of Signal Knob and other prominent ridges and natural features typify the open landscape that was instrumental in the battles that took place there.

The park's scenic qualities are affected by a variety of permanent structures and land use activities within and adjacent to the park. Some of these structures, such as historic plantation homes and farm buildings, contribute to the pastoral landscape and scenic views. Others, like the towering Burger King sign along I-81

and the backdrop that the Chemstone Quarry and recent commercial developments provide, negatively impact the park's viewshed. Also impacting the park's scenic views are I-81, I-66 and other roadways, a railroad, an industrial business park, and expanding residential and commercial developments. In some areas, forested buffers help to block intrusive views; however, many of the permanent structures and activities are visible from the battlefield and other areas of the park (Lowe 1995). The section of the park south of I-81 probably has the highest visual integrity due to minimal access (Lowe 1995).

The expansion of transportation corridors in the park and in the region, in particular I-81, will affect the scenic qualities of the park. Increasing commercial and residential development in the area will also impact viewsheds in the park over time.

3.3.7 Geologic Resources

The park is located within the Ridge and Valley physiographic province. This province is characterized by folded beds of sedimentary rock that were deposited in the Iapetus Ocean during the Paleozoic Era and form long, narrow, parallel ridges and valleys (Scotese 2003). Generally, sandstones compose the ridge tops and carbonate rocks such as limestone form the valleys. The park is located in the Valley of Virginia, one of two subregions of the Ridge and Valley province. The Valley of Virginia is a regional name for the larger Great Valley, which stretches from New York to Alabama (Woodward 1997).

The park includes six main geologic formations, most of which were deposited in the shallow, tropical, Iapetus Ocean that existed for at least 70 million years (Roberts 2003). Some of these formations are fossiliferous, and others produce high calcium limestone that is quarried in the area. The younger alluvium and terrace deposits occur along the floodplains of streams and rivers, particularly in the southern portion of the park, and consist of deposits of sand, silt, and clay with minor amounts of rounded gravel. The limestone geologic system of the region has been identified as an important park value (NPS 2006A).

■ Karst Features

The dissolving of the carbonate rocks that underlie the park results in karst topography (Woodward 1997). Karst topography is typically identified on the ground surface by features such as cave openings, sinkholes, sinking streams, and springs. Caves in the area have the potential to host rare invertebrates and vertebrates.

Karst features are more commonly found outside the park boundary; however, there are a few examples inside the park. Panther Cave, located along the banks of Cedar Creek, is a prominent feature in the park and is a representative example of karst topography. Panther Cave has been designated a "Significant Cave" by the

Virginia Cave Board due to its archaeological significance. Panther Cave is located on a steep stream embankment and is accessible only from Cedar Creek.

Sinkholes increase in size and become more abundant near incised (entrenched) streams. This is evident along Cedar Creek and the North Fork of the Shenandoah River. The greater development of sinkholes near streams has been attributed to the steepened hydraulic gradient and increased rate of ground water flow in these areas (Orndorff 2002). The difference in elevation between the surface of the ground and the stream level causes this phenomenon. Sinkholes are unique features that provide niche habitats and affect drainage networks in the area. A sinkhole complex located along the western boundary of the park near the Meadow Mills area is considered significant and has the potential to host rare natural resources (Orndorff 2006). One of the sinkholes is within the park; two others are located to the northwest just outside of the park boundary. There are no cave openings at these sites. Ogdens Cave, located about one mile north of this area, was recently acquired and protected by the state of Virginia because of its rare fauna. The Meadow Mills sinkhole complex is believed to have similar geologic and hydrologic conditions and, therefore, has the potential to host rare and endemic species (Orndorff 2006). Endemic species are those that are restricted to, or native, to one particular region.

3.3.8 Paleontological Resources

Geologic formations in the park are composed of parent material that contains paleontological resources. No formal resource inventories have been conducted in the park; however, the Valley and Ridge province is known to be fossiliferous. These fossils are typically well below the surface; however, some fossils in the area are exposed where road cuts and rock outcrops occur. Preliminary research indicates that the greatest potential for paleontological resources is on private property within the authorized park boundary or just outside of the park.

3.3.9 Soils

A variety of soil types exist in the park. Soils in the northern portion of the park were weathered from limestones and dolomites, which have high calcium carbonate content. These soils have a much higher capacity to buffer acidic water than those in the southern half of the park. The southern soils are weathered from sandstones, siltstones, and acidic shales, which have low calcium carbonate content.

In Frederick County, the soils were formed in material weathered from limestone; are located on terrain that ranges from gently sloping to steep; and are deep and well drained with fine textured subsoil. The major soil associations found in the park in Frederick County are Oaklet-Carbo-Chilhowie and Frederick-Poplimento-Oaklet. These soils occur in valley uplands that are dissected by drainages. The majority of the areas where these soils can be found have been cleared for

agriculture use (USDA 1987). Those areas that have not been cleared generally are steep and rocky and have remained in mixed hardwoods.

In Shenandoah County, the major soil associations found in the park are Chilhowie-Carbo-Endcav, Weikert-Berks-Laidig, and Lehew-Gainesboro, Unison-Moomaw-Braddock. These soils are found in varying topographic environments with varying parent materials, including limestone-shale uplands, colluvial shale or sandstone found on uplands and mountain side slopes, and alluvial materials found on river terraces (USDA 1991). These soils range from gently sloping to steep; and are mostly deep and well drained with a loamy or clayey subsoil.

In Warren County, the soils were formed in residuum of shale and sandstone on uplands. They range from gently sloping to very steep; are shallow to deep; and are somewhat well drained with a loamy or clayey subsoil (USDA 1984). The major soil associations found in the park in Warren County are Berks-Blairton-Weikert and Berks-Weikert-Sequoia. Areas with these soils consist of hills and ridges with short to medium, smooth slopes that are highly dissected by small streams.

The park's valley soils are considered to be highly fertile and productive. The rich soils and natural resources of the area were what attracted early European settlers to the region, and allowed the Shenandoah Valley to be used for farming since the early 1700s (Heritage Partners, Inc. 2000).

Some areas of the park also contain hydric soils that may support wetlands. Hydric soil is defined as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA 1991). Though the individual soil series within the park are not considered hydric, those series with flooding could have hydric soils in areas that are saturated.

Highly erodible soils as well as potentially highly erodible soils appear to be scattered throughout the park. Soils that are not highly erodible are located mainly along floodplains of streams and rivers where slopes are minimal.

Many of the soils in the park have been disturbed and altered. The causes of these changes include changes in vegetation, cultivation practices, grazing by non-native animals, and the construction of roads, residences, and other structures. Natural and human-caused soil erosion also has likely affected the park's soils.

Most of the soils in the park have limitations for building and recreational development. In general, limitations on building site development range from moderate to severe due to issues with depth to bedrock, slope, clay content, wetness, shrink-swell potential, low strength, and the presence of large stones (USDA 1991, 1987, 1984). Limitations on picnic areas range from moderate to severe due to slope, slow percolation, wetness, and the presence of small stones. Limitations for paths

and trails range from slight to severe due to slope, the potential for erosion, and the presence of large stones (USDA 1991, 1987, 1984).

3.3.10 Prime and Unique Farmlands

Prime farmlands are defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. Prime farmlands have the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. Prime farmlands are based on mapped soil types and are scattered throughout the park, primarily in floodplains. They represent approximately 15 percent of the park (Figure 3.5).

Unique farmlands are lands other than prime farmland that are used for the production of specific high value food and fiber crops. No unique farmlands have been identified in the park.

The park also contains farmland of statewide importance, which represents about 40 percent of the park (Figure 3.5). Farmland of statewide importance includes soils defined by the state that are nearly prime and produce high crop yields when treated and managed according to acceptable farming methods.

Prime farmland and farmland of statewide importance generally occur in the northern portion of the park and appear to exist over more alkaline soils created from Pinesburg Station Dolomite and the Rockdale Run Formation (undivided) and the Edinburg Formation, Lincolnshire Limestone, and New Market Limestone (undivided).

3.3.11 Water Resources

The park is located within the watershed of the North Fork of the Shenandoah River, which drains approximately 3,000 square miles. The North Fork of the Shenandoah River drains into the Potomac River, which is part of the larger 64,000 square mile Chesapeake Bay watershed. The park contains over 19 miles of streams and rivers, including several major ones like Meadow Brook, Stickley Run, Cedar Creek, and the North Fork of the Shenandoah River (Figure 3.6). The park also contains numerous intermittent streams that are scattered throughout the park, many of which are unnamed. Surface water is limited to the waterways mentioned above, along with a few ponds or impoundments created for agricultural purposes. Subsurface water resources include groundwater and the Conococheague aquifer that underlies the park. Water resources are vital to plant and animal life, contribute to recreational opportunities, and provide water for agricultural production and domestic water

supply. Hydrology, water quantity, and water quality are important parameters to be considered for both the park and the region.

■ **Groundwater**

Subsurface waters include groundwater and the carbonate aquifer system of the northern Shenandoah Valley. The aquifer that underlies that park is referred to as the Conococheague aquifer, probably because it is partly located within the Conococheague geologic formation. The hydrogeology of the Conococheague aquifer is complex. The movement of groundwater through the aquifer is determined by a large number of variables, including rates of surface recharge, topography of the land surface, and the thickness and conductivity of rock layers within the aquifer. Movement of groundwater also is affected by numerous faults and folds in the aquifer.

The primary source of recharge to the Conococheague aquifer is precipitation that infiltrates the land surface. Some recharge also occurs through streambeds. The depth to water in the aquifer varies with location and season. Depth to the high water table ranges from 30 to 450 feet (USDA 1987). Discharge from the aquifer occurs as spring flows, base flow to streams, artesian well flow, and evapotranspiration. In places where limestone dominates in the Valley and Ridge province, ground water yields can be as high as 3,000 gallons per minute (Virginia Water Resources Research Center 2002).

Groundwater is a major source of water supply for the area - over half of Frederick County residents rely on it as their sole source of domestic water (Frederick County 2003). Groundwater emerges as seeps or springs where the folded and faulted Risking Formation or other permeable bedrock comes into contact with less permeable strata such as the Marcellus shales (Bousquet *et al.* 2004). The flows of springs in the park have naturally fluctuated over time. Groundwater levels and spring flows vary in response to changes in precipitation. Currently, existing water sources and ground water barely meet the demands for water by area residents and farmers (Heritage Partners, Inc. 2000). Water supplies are under great pressure, and population growth in the region is exacerbating the problem. The future availability of water is a concern for area residents. The susceptibility of the area's groundwater, and thus the aquifer, to contamination due to the geologic conditions of the area further contributes to the concern about groundwater quality impacts.

■ **Surface Water Quantity**

Surface water quantity in the area is measured by the United States Geologic Survey (USGS). They have three gauging stations in place on streams and rivers near the park: two on Cedar Creek (one in Frederick County and one in Warren County), and one on the North Fork of the Shenandoah River in Warren County. Flow measurements on Cedar Creek indicate that the highest discharges generally

Figure 3.5

Prime Farmland and Farmland of Statewide Importance



occur from February to June, when flows exceed 100 and even 200 cubic feet per second (Donaldson 2005). The lowest flows on Cedar Creek generally occur from July to December, when discharges do not exceed 100 cubic feet per second. Flow measurements on the North Fork of the Shenandoah River indicate that the highest discharges generally occur from February to April, when flows exceed 1,000 cubic feet per second (Donaldson 2005). The lowest flows on the North Fork generally occur from July to September, when discharges rarely exceed 400 cubic feet per second.

■ Surface Water Quality

Water quality plays a major role in the importance of the area's water resources; water quality is essential for public health and the protection of the natural environment. Streams within the park are located within the North Fork of the Shenandoah River watershed, which is a part of the larger Chesapeake Bay watershed. The Chesapeake Bay watershed's biggest water quality problem is nutrient pollution from nitrogen and phosphorous, primarily from nonpoint sources. Two monitoring stations used to assess impairment of waters are located near the park: one is on Cedar Creek about seven miles upstream of the park boundary, and the other is on the North Fork of the Shenandoah River about ¾ mile from the southwest corner of the park.

Impaired waters, as defined by Section 303(d) of the federal Clean Water Act, are those waters that are not meeting the state's water quality standards (quantitative, numeric criteria or qualitative criteria including use designations). Every two years, states are required to submit a list of impaired waters to EPA for approval. The state of Virginia's list of impaired waters for the year 2004 did not include any stream reaches located in the park. Portions of Cedar Creek (upstream of the park) and the North Fork of the Shenandoah River (downstream of the park) are classified as impaired due to problems with PCBs, fecal coliform, elevated water temperature, organic enrichment, and other factors (VDEQ 2004).

Inside the park, Meadow Brook, a tributary to Cedar Creek, is considered to be of poor water quality (Bousquet 2004). According to fish sampling and field inspection that took place during the summer 2004, water quality was considered to be severely degraded; this was attributed to suburban and agricultural influences (Bousquet 2004). The Cedar Creek watershed has been identified as a fundamental resource that is essential to maintaining the significance of the park (NPS 2006A). It is valued for its important riparian areas and high-quality stream habitat. Periodic chemical and physical sampling of Cedar Creek indicated that it is one of the two cleanest streams in Shenandoah County (Friends of Shenandoah River 2003). Fish sampling in the park on Cedar Creek near Hupp's Hill (approximately two miles upstream of the junction with the North Fork of the Shenandoah River) in the summer 2004 confirmed that water quality is good and is comparable to

reference streams that are considered to be minimally degraded (Bousquet 2004). Several species of freshwater mussels are present in waters of the park and the region, which is indicative of good water quality (VDCR 2006).

Potential sources of water pollution in the area include both point and nonpoint sources, such as runoff and spills of fuel, oil, or other hazardous materials on the roads, railroads, and highways that pass through the park; leaks from commercial and domestic sewer lines and septic systems in the area, as well as regulated storage tanks; disposal of household hazardous waste; runoff from adjacent lands that have commercial and agricultural activities; and runoff from adjacent residential areas that use lawn chemicals (e.g., fertilizer, pesticides, and herbicides). The likelihood of polluting water sources in a karst landscape is increased because sinkholes and other karst features have direct connections to subsurface waters.

■ **Wetlands**

Wetlands are scattered throughout the park, with the highest concentration occurring in the southern third of the park (Figure 3.6). Figure 3.6 displays National Wetlands Inventory (NWI) data according to the Cowardin classification system. There are four categories of wetlands in the park: freshwater emergent, freshwater forested/shrub, freshwater pond, and riverine (Donaldson 2005). According to digitized NWI data, there are approximately 76.4 acres of wetlands in the park, with the majority (52.7 acres) being riverine wetlands (Donaldson 2005). Wetlands in the park are generally restricted to fringe wetlands around farm ponds, emergent wetlands near springs and seeps, and forested wetlands along floodplains. Much of the wetland vegetation in the park has been altered by livestock, agricultural, and flood control activities.

■ **Floodplains**

The park contains several streams and rivers that have floodplains. It is believed that certain areas of the park are within 100-year flood zones. Due to the limitations of available floodplain data for the three-county area, and the inconsistencies in the level of detail and accuracy of the floodplain data that exists, the location and extent of floodplains is not known. The park's streams and rivers are subject to flooding following major storms and/or rapid snow melt. The floodplains of these drainages have been substantially modified by past agricultural and flood control activities, but the streams and rivers still contain important habitat for fish and wildlife, as well as for recreational uses. Efforts have been underway in the area to protect native riparian vegetation and to allow natural processes to occur.

■ **Wild and Scenic Rivers**

Virginia contains no federally designated Wild and Scenic Rivers; however, a segment of Cedar Creek (at milepost 300 on I-81 at the Shenandoah and Frederick

County line) is on the Nationwide Rivers Inventory (NRI), a national listing of river segments potentially eligible for inclusion in the National Wild and Scenic River System (FHWA 2005). The state of Virginia has also indicated that the U.S. Forest Service identified Cedar Creek and the North Fork of the Shenandoah River as eligible for study for federal Wild and Scenic River designation (VDCR 2007).

The state of Virginia has considered both Cedar Creek and the North Fork of the Shenandoah River for inclusion in the Virginia Scenic Rivers Program. Neither of these streams has been designated as a “Scenic River”. Cedar Creek is described as “Worthy of Further Study” and designated a “Potential Component”. The North Fork of the Shenandoah River, down to the confluence with Cedar Creek, is described as “Qualified, but Not Yet Joined” and is designated as a “Qualified Component”. The North Fork of the Shenandoah River downstream of the confluence with Cedar Creek is described as “Worthy of Further Study” and is designated as a “Potential Component”.

3.3.12 Vegetation

The vegetation and land use of the Lower Shenandoah Valley has changed over time, moving from heavily forested land to an open, agricultural setting and then back again to a mostly forested environment. Figures 3.2, 3.3, and 3.4 illustrate the changes in vegetative composition that have occurred over the last 150 years.

The natural vegetation of Virginia’s Appalachian region was formerly characterized by various mixtures of oaks (*Quercus* sp.) and American chestnut (*Castanea dentata*), with smaller inclusions of mixed mesophytic forest in coves, ravines, and other fertile sites (Braun 1950). During the 18th century, the landscape was heavily forested, consisting mostly of oaks and hickories in fertile areas with scattered pines and conifers in sandy and stony soils.

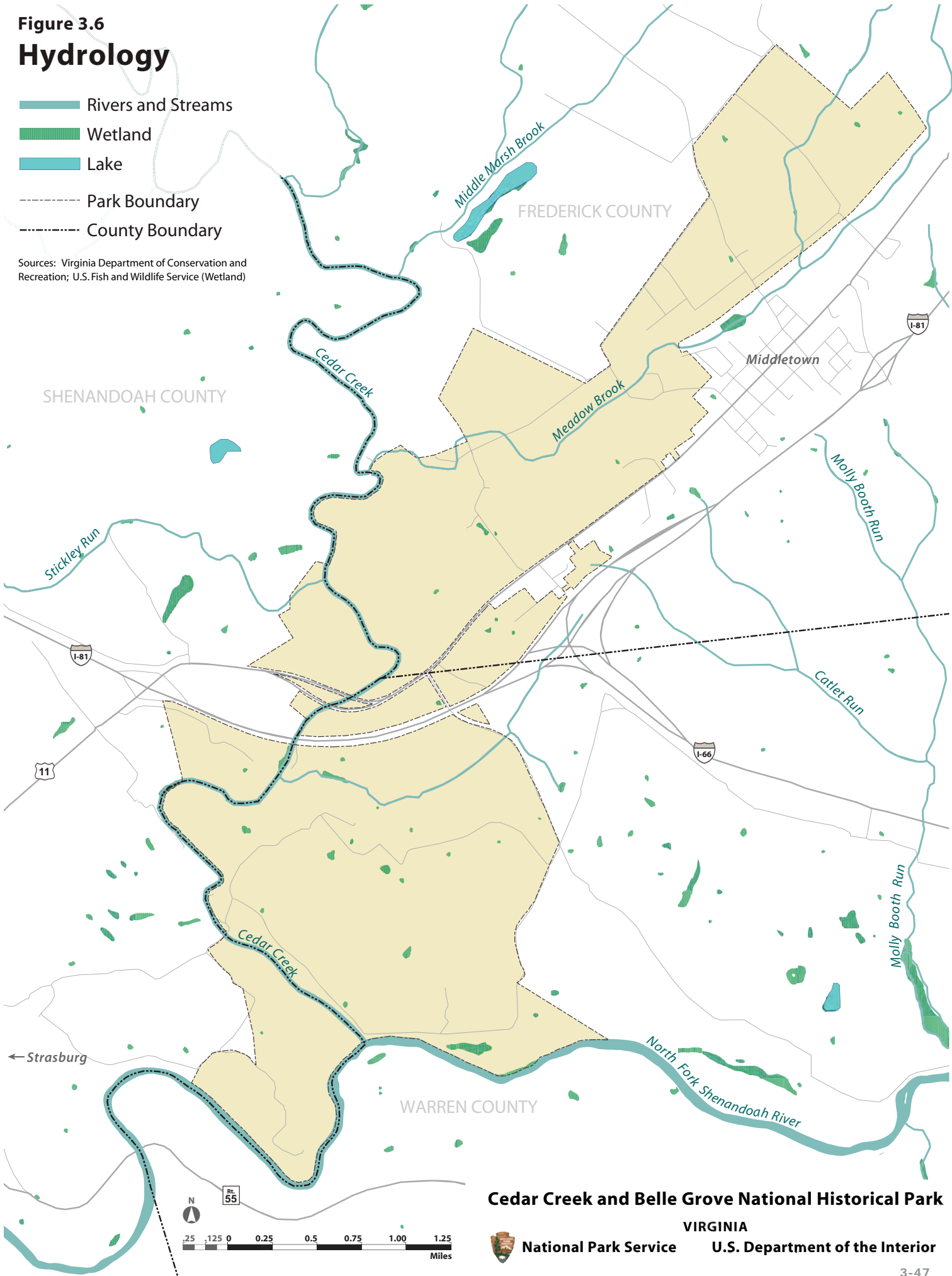
By the late 19th and early 20th centuries, forest cover declined due to extensive clearing for pasture and agricultural use. Fields were enlarged and apple orchards were developed in the area. Following the elimination of the American chestnut due to an introduced fungal blight in the 1930s, the region has been mostly described as mixed oak forest. There is little evidence that chestnut was important in forests typical of the carbonate (limestone and dolomite) substrates of the region, and the general vegetation of limestone or dolomitic valley slopes in Virginia may be closer to an oak-hickory forest community.

By the late 20th century, agricultural activity had declined, resulting in a substantial decrease of farmland and a corresponding increase of reforestation in many areas. Today, the park supports a variety of vegetative communities, including forests and

Figure 3.6
Hydrology

- Rivers and Streams
- Wetland
- Lake
- Park Boundary
- County Boundary

Sources: Virginia Department of Conservation and Recreation; U.S. Fish and Wildlife Service (Wetland)



woodlands, grasslands, and riparian and wetland areas (Figure 3.7). A modest amount of the park is in agricultural production. Common row crops in the area include corn, wheat, oats, and barley. Orchards in the area typically grow apples and peaches. Pastures in the area produce grass hay crops or are used for grazing. Most of the farm acreage in the park today is used for hay production and pasture. Crops grown in the region over time have been identified as an important park value (NPS 2006A).

Vegetation is important because it provides wildlife habitat, protects riparian corridors that minimize flooding and improve water quality, and buffers air quality. The recent exclusion or suppression of fire has affected some of the vegetative communities of the region. In particular, the xeric woodlands are currently undergoing structural and compositional alterations (Virginia Division of Natural Heritage 2006).

Factors that have affected natural communities in the area include logging and cattle grazing, and the expansion of exotic and invasive plants and forest pests. The effects of land fragmentation due to population growth and increased development, including the expansion of transportation corridors, continues today and has compromised the richness and integrity of the park's biological communities.

■ Forests and Woodlands

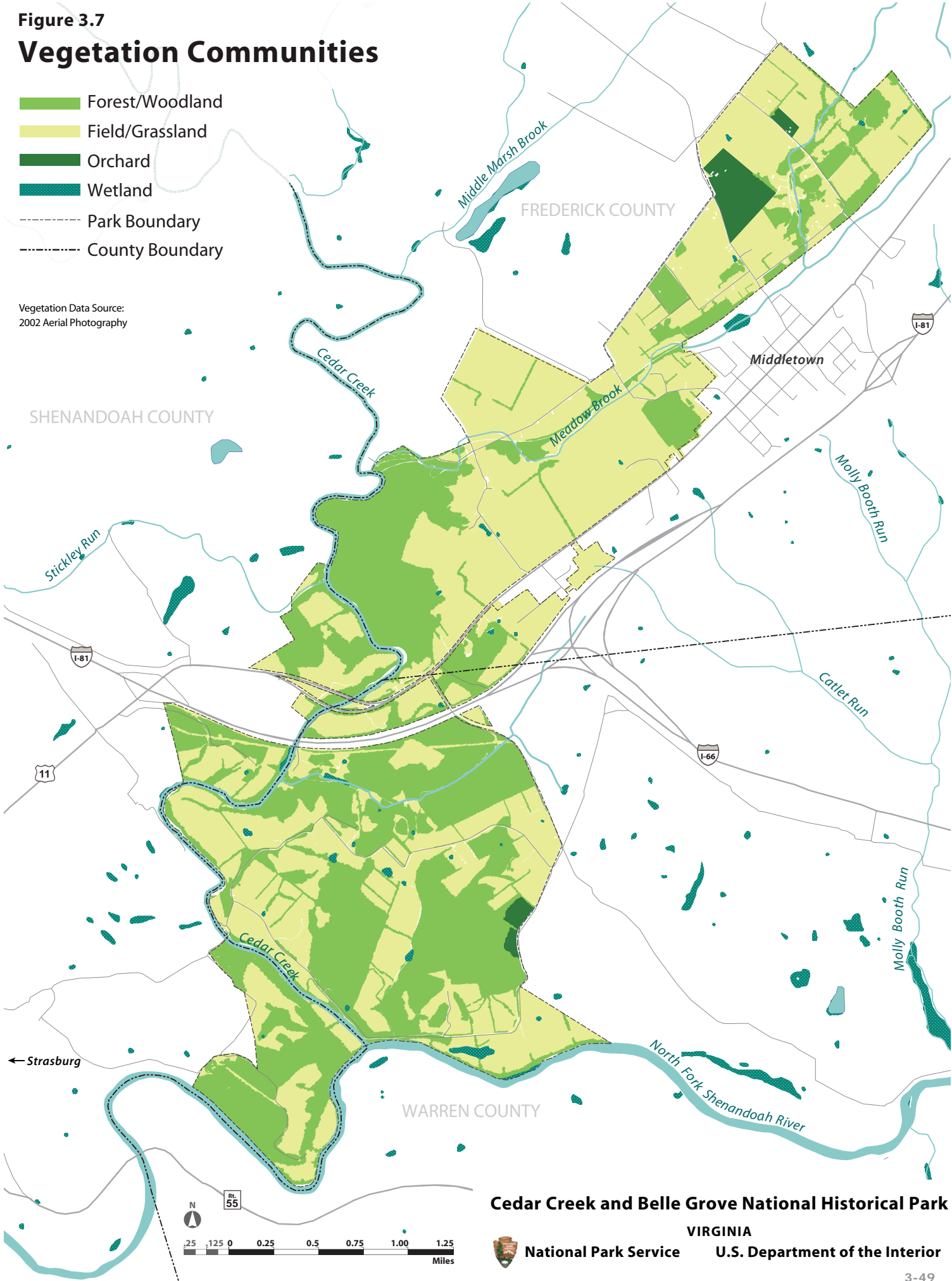
Forests and woodlands comprise approximately 40 percent of the park, with the majority occurring in the southern half of the park. The park's forests and woodlands are dominated by mixed deciduous hardwoods, with occasional conifers adding to the forest canopy. At least 46 deciduous and angiosperm tree species may exist within the park (Donaldson 2005). Major forest communities include upland forests (both mesic and xeric) and bottomland forests that are found in floodplains.

Upland mesic forest is comprised of tree species such as white oak (*Quercus alba*), red oak (*Quercus coccinea*), red hickory (*Carya ovalis*), pignut hickory (*Carya glabra*), bitternut hickory (*Carya cordiformis*), white ash (*Fraxinus americana*), chinquapin oak (*Quercus muhlenbergii*), and redbud (*Cercis Canadensis*). The shrub layer is comprised of species like fragrant sumac (*Rhus aromatica*), dogwood (*Cornus florida*), hop hornbeam (*Ostrya virginiana*), and downy serviceberry (*Amelanchier arborea*). The herb layer includes such species as Enchanter's nightshade (*Circaea quadrisulcata*), wild ginger (*Asarum canadense*), shining bedstraw (*Galium concinnum*); woody vines such as Virginia creeper (*Parthenocissus quinquefolia*) and poison ivy (*Toxicodendron radicans*); and woody seedlings of common forest trees. Upland mesic forests are uncommon in the region and in the park today because so much of the Shenandoah Valley has been settled and farmed.

Figure 3.7
Vegetation Communities

- Forest/Woodland
- Field/Grassland
- Orchard
- Wetland
- Park Boundary
- County Boundary

Vegetation Data Source:
 2002 Aerial Photography



Upland xeric forest is comprised of tree species such as red oak, shumard oak (*Quercus shumardii*), Virginia pine (*Pinus virginiana*), white ash, eastern red-cedar, and dogwood. The shrub layer is comprised of species like fragrant sumac, hop hornbeam, and fringe tree (*Chionanthus virginicus*). The herb layer includes such species as shale barren golden rod (*Solidago harrissii*), nodding onion (*Allium cernuum*), golden star (*Chrysogonum virginianum*), pearly everlasting (*Antennaria plantaginifolia*), and round-leaved ragwort (*Senecio obovatus*). Upland xeric forests can contain rock outcrops and limestone bluffs that support unique ecological communities.

Historically, forested bottomlands were much more common in the area, but have been dramatically reduced due to clearing and conversion to farms. Bottomland forest is comprised of tree species such as red oak, tulip poplar (*Liriodendron tulipifera*), American sycamore (*Platanus occidentalis*), chinquapin oak, bitternut hickory, and the uncommon shumard oak. The shrub layer is comprised of species like spicebush (*Lindera benzoin*), wineberry (*Rubus phoenicolasius*), Japanese honeysuckle (*Lonicera japonica*), and pawpaw (*Asimina triloba*). The herb layer is typically dense and diverse, including such species as wild ginger (*Asarum canadense*), scotchmist (*Galium sylvaticum*), and seedlings of common forest trees. Spring ephemerals, or wildflowers, are also a major component of the forest floor, including species such as Virginia bluebells (*Mertensia virginica*), toad trillium (*Trillium sessile*), bloodroot (*Sanguinaria canadensis*), early meadow rue (*Thalictrum dioicum*), and Canada violet (*Viola canadensis*). The southern portion of the park, near the junction of Cedar Creek and the North Fork of the Shenandoah River, contains a representative example of this productive forest community.

Forest and woodlands in the park have been logged and the present day forest canopy is thought to be at least third generation. Most of the forest and woodland cover is less than 24 inches dbh (diameter at breast height). There are no active logging operations in the park. In general, the steeper slopes in the park contain the larger and presumably older trees. The forested riparian corridors contain large, mature trees, but their extent is limited.

Forest pest threats include the fall cankerworm, gypsy moth, and hemlock woolly adelgids, all of which have impacted forests in the nearby region (VDOF 2002). Although impacts to forest cover in the park have not been documented, there are documented defoliations as near as four miles from the park.

Forest fire risk in the park is generally considered to be medium (VDOF 2003). The Virginia Department of Forestry used GIS to map residential communities, distance to fire stations, and high risk forest areas to arrive at this determination. The central part of the park and the northern boundary were considered low risk, while the southern boundary and parts of the northern portion of the park were considered high risk.

■ Grasslands

Grasslands account for about 50 percent of the park and include pastures, old fields, and meadows that are used primarily for cattle grazing and hay production. Dominant plants include fescue grass (*Festuca* sp.), thistle (*Carduus* sp.), black-eyed Susan (*Rudbeckia heliopsisidis*), blackberry (*Rubus* sp.), goldenrod (*Solidago* sp.), sheep-sorrel (*Rumex acetosella*), plantain (*Plantago* sp.), broome straw (*Andropogon* sp.), and vetch (*Vicia* sp.) (FHWA 2005). Primary grasses and legumes found in improved agricultural areas (for pasture and haying) include fescue, orchardgrass (*Dactylis glomerata*), Kentucky bluegrass (*Poa pretensis*), clover (*Trifolium* sp.), and alfalfa (*Medicago sativa*) (USDA 1991, 1987). Fence rows and abandoned fields often contain high concentrations of eastern red-cedar trees. Although native, these shrubby trees are invasive and often colonize open grasslands.

Nearly all of the park's grasslands are used for agriculture. Fields in the park are also used as orchards for growing fruit crops, and to a lesser extent for growing row crops such as corn for silage. Although actively cultivated and/or manipulated, these areas provide wildlife habitat when managed properly. Current management of grasslands in the park is variable since they are privately owned and managed. Prescribed fire would not likely be a tool for grassland management since most grasslands are privately owned, are often utilized for year-round grazing, and are situated in a residential interface. Grasslands north of I-81 owned by the park partners present the best opportunities for addressing grassland related preservation objectives.

■ Riparian and Wetland Areas

Riparian and wetland areas make up less than 10 percent of the park, but are essential resources that contribute to the area's biological diversity. A large number of streams occur in the park, providing ribbons of riparian vegetation. These riparian areas contain trees, shrubs, and grasses that are water tolerant. Approximately 76 acres of wetlands exist in the park (Donaldson 2005). Wetlands are scattered and are generally restricted to fringe wetlands around farm ponds, emergent wetlands near springs and seeps, and forested wetlands along floodplains (Figure 3.6). Close to 60 percent of the park's wetlands are riverine wetlands that occur along the banks and in the floodplains of streams and rivers (Donaldson 2005). The highest concentration of wetlands occurs in the southern third of the park. Typical wetland plants include smartweed (*Polygonum amphibium*), arrowhead (*Sagittaria latifolia*), pickerel weed (*Pontederia cordata*), wild millet (*Pennisetum* sp.), wild rice (*Zizania aquatica*), saltgrass (*Distichlis spicata*), cordgrass (*Spartina* sp.), skunk cabbage (*Symplocarpus foetidus*), spotted jewelweed (*Impatiens capensis*), and various rushes (*Juncus* sp.), sedges (*Carex* sp.), and reeds (USDA 1984, 1987). Much of the wetland vegetation in the park has been altered by livestock, agricultural, and flood control activities. In recent

times, there has been increased focus on riparian area preservation and enhancement.

■ Rare Plants

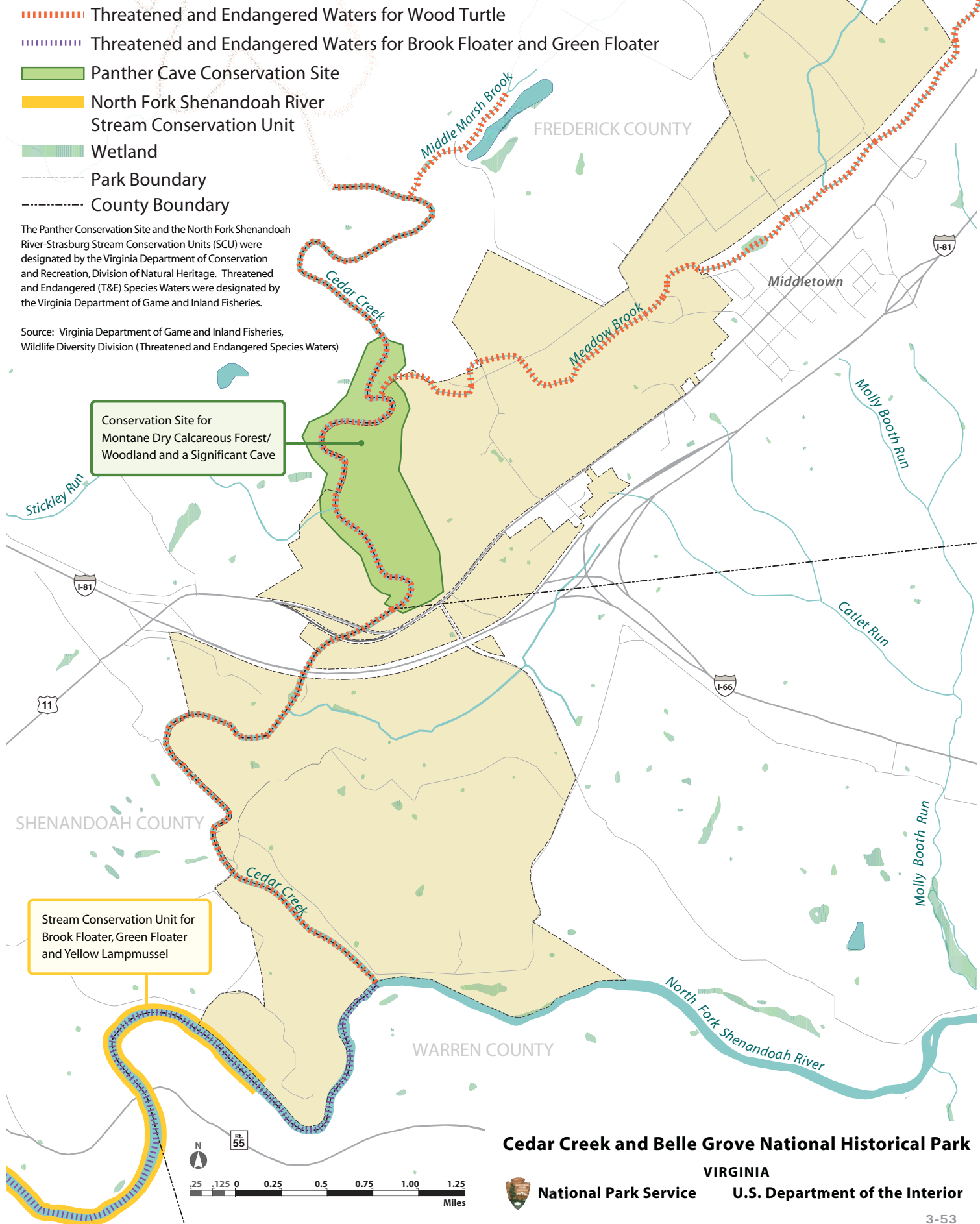
The geology of the area supports rare plants. The term “rare plant” is not synonymous with classification as a threatened and endangered species and does not confer any special regulatory protection; however, rare plants require special attention in resource planning and protection efforts.

Dry, south- or west-facing shale slopes in the rain-deprived Ridge and Valley province can support several types of xerophilic vegetation, including the well known, but rare, shale barren communities. Shale barrens contain exposed rock outcrops that can host endemic plants such as bent milkvetch (*Astragalus distortus*), which has been documented in the area (Orndorff 2006). Seeps and cold spring runs in the area can support relict species from the glacial period. Areas of limestone bedrock (unexposed) can host distinctive species such as the prairie ragwort (*Senecio plattensis*) and rare species such as the pubescent sedge (*Carex hirtifolia*).

Field work was conducted in the Cedar Creek watershed during the summer 2004 by Shenandoah University and the Virginia Division of Natural Heritage. Several of their survey plots were within the park boundary and produced documentation of sensitive plants as well as new records for plants previously thought not to exist in the local area. The globally rare Canby's Mountain-lover (*Paxistima canbyi*) was perhaps the best find – occurring on a limestone bluff just west of Middletown. Canby's Mountain-lover is a creeping evergreen shrub that grows in small clumps at the brow of partly shaded limestone cliffs. Canby's Mountain-lover is listed as a federal species of concern (USFWS 2005). Three plants that appear on the state of Virginia's Rare Vascular Plant List were also found in the course of Shenandoah University's field work within the park: lance-leaved buckthorn (*Rhamnia lamnceolata*), balsam ragwort (*Senecio pauperculus*), and pubescent sedge. The Rare Vascular Plant List is the equivalent of a watch-list for rare and declining plant species.

Within the same general area that the Canby's Mountain-lover was discovered, Virginia has designated a conservation interest area known as the Panther Conservation Site (VDCR 2006) (Figure 3.8). According to the state, conservation sites represent key areas of the landscape that warrant further review for possible conservation action due to the natural resources and habitat that they support. The Panther Conservation Site contains unique montane dry calcareous forest/woodland and is considered to be of “high biodiversity significance” (VDCR 2006).

Figure 3.8 Significant Natural Resources



■ Exotic and Invasive Species

The park contains a number of exotic and invasive species. The invasion into natural landscapes by exotic and invasive plant species is one of the most serious threats that parks face today. Exotic and invasive species are usually non-native plant species that disrupt complex native ecological communities, jeopardize endangered native plants and animals, degrade native habitats, and reduce plant diversity. Hybridization with exotics can also alter the genetic integrity of native species. Exotic and invasive species that could be found within the park include tree of heaven (*Ailanthus altissima*), autumn olive (*Elaeagnus umbellata*), garlic mustard (*Alliaria petiolata*), Japanese honeysuckle (*Lonicera japonica*), Japanese stilt grass (*Microstegium vimineum*), Japanese knotweed (*Polygonum cuspidatum*), mile-a-minute (*Polygonum perfoliatum*), kudzu vine (*Pueraria Montana*), multiflora rose (*Rosa multiflora*), and Johnson-grass (*Sorghum halepense*). Some exotic and invasive plant species may be important elements of a cultural landscape. No formal inventory or mapping of exotic plant species in the park has been conducted. To date, no exotic and invasive plant control has been performed by the NPS in the park.

3.3.13 Wildlife

A variety of wildlife species occupy the park's diverse habitats. The habitat available to wildlife within the park consists of forest, patchy woodlands, agricultural areas, and riparian corridors. This habitat benefits species that prefer edge and early successional habitat. Wetland areas scattered throughout the park provide habitat for waterfowl and other birds. Streams and rivers in and around the park "are of particularly high ecological value" and contain significant biological diversity (VDGIF 2006, VDCR 2006).

Habitat loss and fragmentation in the region has caused displacement of wildlife; however, most of the common species are generalists and have adapted. Actions and activities outside of the park have probably affected wildlife more than NPS or partner uses. In many cases, lands within the park boundary have acted as a refuge for wildlife.

Wildlife using the park includes ungulates and other mammals, birds, reptiles, amphibians, and invertebrates. The most common species are white-tailed deer, rabbits, gray squirrels, chipmunks, bobcats, gray foxes, skunks, and raccoons, as well as numerous song birds, passerines, and raptors (Heritage Partners, Inc. 2000). Amphibians, reptiles, and numerous species of fish occur in forests, floodplains, rivers, and streams in the park.

The park's location in the Atlantic flyway makes it conducive to providing resting areas for migratory birds. It is possible that wetlands in the park could be utilized by migratory waterfowl such as the northern pintail (*Anas acuta*) and tundra swan

(*Cygnus columbianus*) (VGDIF 2004). The North Fork of the Shenandoah River, Cedar Creek, and other smaller waterways provide another type of habitat for species that require aquatic resources.

Hunting of game species, including white-tailed deer, wild turkey, squirrels, rabbits, and other species, occurs on private lands within the park. Hunting is regulated by the Virginia Department of Game and Inland Fisheries (VGDIF). Hunting on NPS-owned land within the park is prohibited. Harvest levels are not believed to have adversely affected the park's wildlife populations. The deer and wild turkey populations are believed to be robust (Stubbs 2006).

Exotic wildlife species, such as the European starling (*Sturnus vulgaris*), are present in the park and can affect native species and their habitats. Domestic pets and human-tolerant predators such as the striped skunk, raccoon, coyote, and red fox, are presumed to be present in the park as well. Domestic pets can pose a threat to wildlife. Human-tolerant species may present conflicts with humans and can proliferate with increasing development resulting in a decline in less tolerant species.

Overall, the effects of continued land fragmentation due to increased development and the expansion of transportation corridors in the area will likely have the most profound impact on wildlife in the area.

3.3.14 Fisheries and Aquatic Life

The park contains several perennial streams that contain a variety of native and non-native fish. Fisheries in the waters of the park are comprised mostly of warm water species. Common species in Meadow Brook include the longnose dace (*Rhinichthys cataractae*), a chub species (*Nocomis* sp.), green sunfish (*Lepomis cyanellus*), and rock bass (*Ambloplites rupestris*) (Bousquet 2004). The reach of Meadow Brook contained in the park is designated by the state as a Class V "Stockable Trout Water," which means that it could support stocked trout species (brook, brown, and rainbow trout) (Martin 2007). According to the state, Meadow Brook has not historically been stocked and there are currently no plans to initiate future fish stocking in this area (Martin 2007). Common species in Cedar Creek include Potomac sculpins (*Cottus girardi*), central stonerollers (*Camptostoma anomalum*), red-breasted sunfish (*Lepomis auritus*), and rock bass (*Ambloplites rupestris*) (Bousquet 2004). Recreational fishing in the park is regulated by the Virginia Department of Game and Inland Fisheries.

Several species of mussels reside in the watershed of the North Fork of the Shenandoah; however, their population and distribution are not well understood. The Virginia Natural Heritage Program is planning to conduct an invertebrate survey of the watershed in summer 2007 (Watson 2006). The waters of Cedar Creek and the North Fork of the Shenandoah River provide habitat for a number of sensitive invertebrates, including two mussels: the brook floater (*Alasmodonta varicosa*) and

green floater (*Lasmigona subviridis*). The state has designated a portion of the North Fork of the Shenandoah River near Strasburg as a “Stream Conservation Unit” (SCU) because it contains three sensitive mussels: the brook floater, yellow lampmussel, and green floater (VDCR 2006) (Figure 3.8). This SCU has been assigned a ranking of “general biodiversity significance.” Mussels are sensitive to changes in water quality and are often used as indicators of water quality. Maintaining riparian buffers and implementing erosion and sediment control practices are two of the best things that can be done to preserve water quality for these species (Watson 2006).

The Price’s Cave isopod (*Caecidotea pricei*) is a rare subterranean aquatic species that may also occur in the park (VDCR 2006).

3.3.15 Federally Listed Threatened and Endangered Species

Informal consultation on the effect that proposed actions in this plan would have on federally listed threatened and endangered species was conducted with the Virginia Field Office of the U.S. Fish and Wildlife Service (USFWS) pursuant to Sec. 7 of the Endangered Species Act. A letter from the USFWS dated December 20, 2006 stated that “no federally listed species are known to occur in the project area.” Data provided by the Virginia Department of Conservation and Recreation, Division of Natural Heritage also do not identify any known current or historical occurrences of any federally listed plant or animal species in the park.

■ Federally Listed Plants

Although there are no federally listed plants known to be present in the park, the three-county area where the park is located is home to several federally listed species (Table 3.1). No formal botanical surveys have been performed in the park by the NPS or the Key Partners. Three endangered species [shale barren rock cress (*Arabis serotina*), northeastern bulrush (*Scirpus ancistrochaetus*), harperella

Table 3.1 Potential Listed Plant Species for Cedar Creek and Belle Grove NHP¹

Common Name	Scientific Name	Designated Status ²	
		Federal	State
Canby's Mountain-lover	<i>Paxistima canbyi</i>	SC	
Harperella	<i>Ptilimnium nodosum</i>	E	
Northeast bulrush	<i>Scirpus ancistrochaetus</i>	E	
Shale barren rock cress	<i>Arabis serotina</i>	E	

¹ This table includes all listed species for Warren, Frederick, and Shenandoah Counties. It does not necessarily mean that they are present in the park.

² E = endangered T = threatened SC = species of concern (federal); species of special concern (state) [no regulatory authority]

Sources: USFWS 2005; Virginia Field Office 2005; Virginia Department of Conservation and Recreation, Natural Heritage Program 2006

(*Ptilimnium nodosum*)] are listed for Warren, Frederick, and Shenandoah counties. A brief description of each of these federally listed plants is provided below.

Shale barren rock cress occurs only in West Virginia and Virginia and grows on shale barrens, often above incised streams, of the Valley and Ridge Province of the mid-Appalachian Mountains. Threats to this species include destruction of habitat by road construction or by human activities; foraging by deer and insects, especially during dry conditions; and drought (USFWS 2002).

Northeastern bulrush is found in old mountain ponds. Threats include habitat loss and degradation caused by wetland drainage, dredging, and filling for residential development and agricultural use. Any modifications which reduce the water level or dry out a pond could eliminate all or most of the individuals in a population (USFWS 1999).

Harperella typically occurs in rocky or gravel shoals and margins of clear, swift-flowing stream sections. This plant tolerates and may actually require a very specific and unusual water regime, which includes moderately intense spring floods that reduce or eliminate competing vegetation. Threats include alterations of the water regime which result from impoundments, water withdrawal, and drainage or deepening of ponds (USFWS 1992). Other factors such as siltation, pollution, and shoreline development also threaten harperella populations. The Virginia Field Office of the USFWS lists this species as endangered; however, the Washington, D.C. office identifies the species as being federally listed, but not occurring in Virginia.

■ Federally Listed Animals

Although there are no federally listed animals known to be present in the park, the three-county area where the park is located is home to a number of federally listed species (Table 3.2). No formal wildlife surveys have been performed in the park by the NPS or the Key Partners. One endangered species [Indiana bat (*Myotis sodalis*)] and two threatened species [bald eagle (*Haliaeetus leucocephalus*) and Madison Cave isopod (*Antrolana lira*)] are listed for Warren, Frederick, and Shenandoah counties. According to discussions with VDGIF biologists, none of these species is likely to be present in the park (Reynolds 2006, Watson 2006). A brief description of each of these federally listed animals is provided below.

The Indiana bat is found in the western portion of Virginia during hibernation, but is seldom found in the state during summer. They hibernate from mid-October through April in large caves and abandoned mines that have stable, cold temperatures during the winter. These bats are sensitive to human disturbance; they are easily disturbed by activities such as vandalism, caving, and research during the hibernating months (USFWS 2000). Other threats are flooding of caves, blockage of cave entrances, and pesticide poisoning.

Table 3.2 Potential Listed Wildlife Species for Cedar Creek and Belle Grove NHP¹

		Designated Status ²	
Common Name	Scientific Name	Federal	State
Mammals			
Indiana bat	<i>Myotis sodalis</i>	E	E
Northern river otter	<i>Lontra Canadensis lataxina</i>		SC
Birds			
Alder flycatcher	<i>Empidonax alnorum</i>		SC
Bald eagle	<i>Haliaeetus leucocephaus</i>	T	T
Barn owl	<i>Tyto alba pratincola</i>		SC
Bewick’s wren	<i>Thryomanes bewickii</i>		E
Brown creeper	<i>Certhia americana</i>		SC
Common moorhen	<i>Gallinula chloropus cachinnans</i>		SC
Dickcissel	<i>Spiza americana</i>		SC
Golden-crowned kinglet	<i>Regulus satrapa</i>		SC
Golden-winged warbler	<i>Vermivora chrysoptera</i>		SC
Hermit thrush	<i>Catharus guttatus</i>		SC
Loggerhead shrike	<i>Lanius ludovicianus</i>		T
Magnolia warbler	<i>Dendroica magnolia</i>		SC
Migrant loggerhead shrike	<i>Lanius ludovicianus migrans</i>		T
Northern harrier	<i>Circus cyaneus</i>		SC
Peregrine falcon	<i>Falco peregrinus</i>		T
Purple finch	<i>Carpodacus purpureus</i>		SC
Red-breasted nuthatch	<i>Sitta canadensis</i>		SC
Upland sandpiper	<i>Bartramia longicauda</i>		T
Winter wren	<i>Troglodytes troglodytes</i>		SC
Amphibians			
Cow knob salamander	<i>Plethodon punctatus</i>		SC
Reptiles			
Wood turtle	<i>Glyptemys insculpta</i>		T
Invertebrates			
A cave amphipod	<i>Stygobromus</i> sp. 9	SC	
A cave pseudoscorpion	<i>Mundochthonius holsingeri</i>	SC	
A millipede	<i>Striaria columbiana</i>	SC	
Appalachian grizzled skipper	<i>Pyrgus wyandot</i>	SC	T
Appalachian springsnail	<i>Fontigens bottimeri</i>		E
Barrens tiger beetle	<i>Cicindella patruela</i>	SC	
Bigger's cave amphipod	<i>Stygobromus biggersi</i>	SC	
Brook floater	<i>Alasmidonta varicosa</i>		E
Green floater	<i>Lasmigona subviridis</i>		T
Madison cave isopod	<i>Antrolana lira</i>	T	T
Mud-dwelling cave beetle	<i>Pseudoanopthalmus limicola</i>	SC	

Table 3.2 Potential Listed Wildlife Species for Cedar Creek and Belle Grove NHP¹ (continued)

		Designated Status ²	
Common Name	Scientific Name	Federal	State
Invertebrates (continued)			
Petrunkevitch's cave beetle	<i>Pseudoanoptalmus petrunkevitchi</i>	SC	
Shenandoah Valley Cave Amphipod	<i>Stygobromus gracilipes</i>		SC
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	SC	
Thin-neck cave beetle	<i>Pseudoanopthalmus parvicollis</i>	SC	
Yellow lampmussel	<i>Lampsilis cariosa</i>		SC

¹ This table includes all listed species for Warren, Frederick, and Shenandoah Counties. It does not necessarily mean that they are present in the park.

² E = endangered T = threatened

SC = species of concern (federal); species of special concern (state) [no regulatory authority]

* = proposed for listing under the Virginia Endangered Plants and Insect Act

Sources: USFWS 2005; Virginia Field Office 2005; Virginia Department of Conservation and Recreation, Natural Heritage Program 2006; Virginia Department of Game and Inland Fisheries – Wildlife Information Service, Biota of Virginia (BOVA) database 2006

The bald eagle could use the project area as a wintering area. Wintering areas generally include roost sites along rivers or streams as well as areas that contain important foraging sites. Areas along Cedar Creek and the North Fork of the

Shenandoah River that contain mature riparian forest and plentiful foraging resources (primarily fish) are the most likely areas to potentially support bald eagles. Current visitor activities and park operations are based in the central portion of the park away from potential eagle use areas.

The Madison cave isopod inhabits flooded limestone caves beneath the Great Valley of Virginia. It spends much of its time swimming freely through calcite-saturated waters of deep karst aquifers (USFWS 2005). The species is sensitive to impacts from changes in water quality.

3.3.16 State Listed Threatened and Endangered Species

Scoping was conducted in 2006 with the several state of Virginia agencies that are responsible for environmental review and coordination with federal land management agencies, including the Department of Conservation and Recreation (VDCR) and the Department of Game and Inland Fisheries (VDGIF).

■ State Listed Plants

According to the letters and GIS data provided by the state, there are no known current or historical occurrences of any state threatened or endangered plants in the park (VDCR 2006, VDGIF 2006). No formal botanical surveys have been performed in the park by the NPS or the Key Partners.

■ State Listed Animals

State listed animals known to be present in the park include the brook floater, green floater, and wood turtle. The green floater and wood turtle are listed as state threatened, while the brook floater is listed as state endangered. The state has designated the North Fork of the Shenandoah River, Meadow Brook, Middle Marsh Brook, Buffalo Marsh Run, and Cedar Creek as “Threatened and Endangered Species Waters” due to the presence of the brook floater (*Alasmodonta varicosa*), green floater (*Lasmigona subviridis*), or wood turtle (*Glyptemys insculpta*) (VDGIF 2006, Martin 2007) (Figure 3.8).

Other state listed animals that are known to occur in the three-county area, but have not been documented in the park, include five threatened species and two endangered species. The threatened species are the peregrine falcon (*Falco peregrinus*), upland sandpiper (*Bartramia longicauda*), loggerhead shrike (*Lanius ludovicianus*), migrant loggerhead shrike (*Lanius ludovicianus migrans*), and Appalachian grizzled skipper (*Pyrgus wyandot*). The two endangered species are the Bewick’s wren (*Thryomanes bewickii*), Appalachian springsnail (*Fontigens bottimeri*). No formal wildlife surveys have been performed in the park by the NPS or the Key Partners.

A brief description of those state listed animals that are present in the park (or documented just outside of the park boundary) is provided below.

The brook floater and green floater, both mussels, reside in the watershed of the North Fork of the Shenandoah River. They are known to occur in the North Fork of the Shenandoah River within the park boundary. Mussels are sensitive to changes in water quality and are often used as indicators of water quality. Maintaining riparian buffers and implementing erosion and sediment control practices are two of the best things that can be done to preserve water quality for these species (Watson 2006).

The wood turtle is known to reside in the North Fork of the Shenandoah River watershed. Within the park, sections of Cedar Creek, Meadow Brook, Middle Marsh Brook, and Buffalo Marsh Run have been designated by the state as “Threatened and Endangered Species Waters” for the wood turtle (VDCR 2006) (Figure 3.8). Data provided by the Virginia Department of Conservation and Recreation, Division of Natural Heritage identify at least one relatively recent occurrence of the wood turtle in the park. Wood turtles are medium-sized and can be recognized by their sculpted shell with its distinctive pyramidal shapes and orange coloration on the legs and neck. They are semi-aquatic, living along forested rivers and streams. They utilize upland areas adjacent to streams during warmer weather for foraging and nesting (VDGIF 2006). They are active by day from April to November and hibernate over winter inside stream banks in large community burrows (Wisconsin DNR 2006). Threats to the wood turtle include impacts to water quality, stream

bank erosion, development within riparian areas, and illegal collection (Kleopfer 2006).

The Appalachian springsnail was recently discovered just outside of the park boundary about a mile north of the park at Ogden's Cave. This species was listed by the state as endangered on July 1, 2006 (Orndorff 2006). Very little is known about the species, other than it is endemic to the area. State karst biologists believe that the geologic and hydrologic conditions of the Ogden's Cave site are similar to what is found in the park; however, there are no cave openings in the park where these similar resources occur. Threats to the species include habitat destruction and water quality impacts.

Potentially suitable habitat for other state listed species may exist in the park. These areas include thickets, scrubby areas, open woodlands and farmlands, and streams that may be used by the Bewick's wren; open fields, pastures, and early successional grasslands that could provide habitat for the upland sandpiper and loggerhead shrike; and shale barrens and early successional habitat that could provide habitat for the Appalachian grizzled skipper.

3.4 Visitor Use and Experience

The park is enmeshed within the local community and there is no single entrance or tour route that visitors follow. Some visitors may stop at the Belle Grove Plantation, Cedar Creek Battlefield Foundation visitor contact facility, or the Cedar Creek and Belle Grove NHP office where they can interact with staff of the park or its partner site. Others may travel the back roads of the park to view Signal Knob, Bowman's Mill Ford, and Middletown Cemetery or drive through on one of the driving routes, and have no interaction with staff from the park or the Key Partners. The primary source of visitor contact and interpretation is Belle Grove Plantation and the foundation's visitor contact facility.

3.4.1 Types of Visitors

The park has a diverse group of visitor types, with varying interests and knowledge of local history, which reflect different ways of experiencing the park. The following visitor types were identified in the *Cedar Creek and Belle Grove NHP Transportation Synthesis*, May 2006.

■ Civil War Enthusiast

Visitors who are interested in Civil War history will likely have a basic understanding of the Civil War and may be combining a trip to the park with other nearby battlefield sites. Civil War enthusiasts are most likely to visit sites that provide passive interpretation of the civil war battlefield landscape. Exhibits, reenactments and other active interpretation are of interest to these visitors. Hiking or other recreational activities are probably of less interest unless they provide a greater

understanding of how and where the battle occurred. This group includes those participating in and attending reenactments.

■ **Visitors with Other Historic Interests**

This visitor type has specific interests in American settlement patterns, the antebellum period or historic architecture. Belle Grove Plantation, Harmony Hall, the Bowman-Long Meadow area, and nearby sites outside of the park boundary are likely attractions. These visitors are somewhat knowledgeable about their specific interest, but may not know about other aspects of the park's history. In addition to a historical overview of the park, access to buildings and interpretation of landscapes will likely be the focus for this group of visitors.

■ **National Park/National Historic Trust Property “Baggers”**

Some visitors may be drawn to the park because of its status as a national park, or to Belle Grove Plantation as a National Trust site. These visitors are often referred to as park ‘baggers’ and may have little background knowledge of the area. They are keenly interested in learning more and are usually receptive to a diverse set of experiences, including recreational activities, walking and driving through the landscape, touring buildings and other types of active interpretation. ‘Baggers’ generally represent a modest percentage of total visitation. For example, only 6 percent of visitors at Belle Grove Plantation are members of either the National Trust for Historic Preservation or Belle Grove Plantation.

■ **Recreationalists**

The park encompasses a diverse landscape with numerous opportunities for recreational activities and enjoyment of its natural resources for both locals and a wider audience. This visitor type may be drawn to the park for a wide variety of recreational uses but typically there is little overlapping among activities. Currently, recreationalists are considered to be largely local, as recreational use in the park is generally informal and dependent on local knowledge of site access.

■ **Visitors on Educational Tours**

Belle Grove Plantation currently attracts approximately 50 school groups and adult bus tours annually. Educational tours are likely to be focused on active interpretation and visitors unable to tour the entire park. Places visited need to be relatively close to parking, with access roads and parking areas able to accommodate larger tour vehicles. Open space for picnicking and space to play is of interest to school groups. College-level groups may have interest in archaeological and geologic research at the park.

■ **“Curious”**

“Curious” visitors do not necessarily plan for their visit to the park. They may notice a highway sign, find material about the park in their hotel room, a visitor center, or another local site of interest; they may be staying locally or on a multi-day drive. Regardless of the reason for their visit, they are likely to know little about the park or local history and will appreciate easily accessible information. The initial park experience is very important for this group. Some curious visitors have very little time to visit the park; others with more time may be able to fully explore the park if their interest is stimulated by their initial experience.

3.4.2 Park Partner Visitation and Facilities

While most of the sites within the park are not currently staffed, there is information on visitation patterns from Belle Grove Plantation and the Cedar Creek Battlefield Foundation. With approximately 25,000 visits to the park counted by park partners, it is reasonable to estimate that approximately 35,000 to 50,000 people visit the park annually.

■ **Cedar Creek and Belle Grove NHP**

Since 2004, the NPS has had an administrative office in a small strip of stores and offices on Route 11 in the town of Middletown. The NPS does not provide formal visitor services at this time, but the two-person staff provides visitor contact information. In 2006, about 350 mail or phone inquiries were received and 250 drop-in visitors recorded.

■ **Belle Grove Plantation**

Belle Grove Plantation is open daily from April through October and on weekends in November and December for special events. Almost 10,000 visitors were reported in 2005, down slightly from a high of 13,000 visitors in 2004. During the April-October period, approximately 4,000 visitors came independently, primarily for tours of the house, and 1,600 came as a part of a larger adult or student tour group. Over 4,000 came to participate in special events, including private rentals. Belle Grove’s Museum Shop, in the main house, reported gross sales of \$42,113 in 2006.

Belle Grove, Inc. owns Harmony Hall, and recently took full responsibility for management of the site from the life estate tenant. Harmony Hall will soon be open for public tours on a limited basis.

Special Events. The larger special events at Belle Grove are the annual “Of Ale and History” Microbrew and Imported Beer Tasting Festival, which drew 3,000 in May 2005; the Bluegrass Festival, drawing 500 in July 2005. The site hosts the Triennial Hite Family Reunion, which drew 270 visitors in July 2005. Other annual events include the Annual Easter Egg Hunt & Family Fun Day, 18th Century

Encampment, Living History Camp for Kids, Ice Cream Social, Antiques Appraisal Fair, and Living History Days.

■ Cedar Creek Battlefield Foundation

The Cedar Creek Battlefield contact facility, operated by the Cedar Creek Battlefield Foundation, is located on Route 11. It is open daily for much of the year. Daily records of visitation are not kept, however. There are interpretive displays, restrooms, and a small retail operation that carries mainly books and pamphlets. The book shop reported total sales of \$45,171 in 2006.

The Heater House, within the section of the Cedar Creek Battlefield owned by the foundation, is not open to the public. The foundation maintains the 135-acre wooded area known as the Bayliss Tract, which contains some of the few earthworks constructed during the war that are still in good condition. There is a half-mile walking trail with interpretive signs. The tract also provides more than a mile of frontage on Cedar Creek's northern bank and access to Panther Cave. No information is available on the number of users of the walking trail, as most groups do not check in with the foundation when visiting the Bayliss Tract. Student groups reportedly conduct archaeological research and caving within the park. Access to the tract is gained by a narrow road off Route 11. There is no signage identifying the site, which limits current use.

Special Events. The CCBF organizes an annual reenactment of the Battle of Cedar Creek, regularly held on the third weekend in October, which typically attracts approximately 12,000 people for the two-day event. An estimated 5,000 registered reenactors and 7,000 spectators attended in 2006. CCBF also hosted in 2006 a reenactment of the Battle of First Manassas in commemoration of its 145th anniversary, an event attended by 7,000 registered reenactors and 10,000 spectators. CCBF has scheduled the reenactment of Jackson's 1862 "Down the Valley" Campaign in 2007, in addition to the annual Battle of Cedar Creek reenactment.

The reenactments are held on battlefield lands off U.S. Hwy 11 owned by CCBF and the National Trust. The battlefield is also the location for reenactors camps; temporary facilities for merchants, food vendors, and emergency services; and portable toilets, garbage dumpsters, and information booths. Parking space for thousands of spectators is provided on the battlefield and spectators move around the battlefield freely to view the reenactments and use facilities. Ancillary off-site parking for both re-enactors and spectators is available, and buses provide shuttle service on a loop route between the battlefield and the parking areas.

Foundation staff work closely with the town of Middletown to orchestrate the event and the sheriff receives assistance from Frederick County to monitor and direct

traffic. There can be periods of heavy congestion over the reenactment weekend when traffic backs up through Middletown.

Middletown and Frederick County officials see the reenactments as a major economic boon, providing name recognition for the area, significant tax dollars, and substantial gross receipts for local merchants.

■ **Shenandoah Valley Battlefields Foundation**

The Shenandoah Valley Battlefields Foundation is dependent on collaboration among the Key Partners to achieve its goals in the Shenandoah Valley Battlefields National Historic District and does not operate visitor facilities. It is developing an interpretive plan to facilitate coordination of individual site interpretation in the district. Concurrently, a marketing plan for the district is being prepared for the foundation by the Heritage Tourism Program of the National Trust for Historic Preservation. The two plans will provide a framework for implementing coordinated interpretation and over time, a high quality visitor experience in the district.

The initial phase of the interpretive plan proposes a physical structure for the interpretive presentation of the Shenandoah Valley that would be established through four elements: historic driving routes based on three primary north-south highways, including Route 11 (the Valley Turnpike), and a series of east-west connections; major regional attractions with visitor facilities that are open full time, involved in marketing and programming, able to draw visitors to the Valley, and provide visitor experiences that are of national quality; battlefields; and valley towns and landscapes. The proposed valley-wide themes of the broad history of the valley, Civil War battles, and the civilian experience during the Civil War would be applied across all four elements.

The park has been identified as a key component in the proposed structure due to its location on the Valley Turnpike, battlefield resources, the presence of regional attractions, scenic landscapes, and adjacency to the towns of Middletown and Strasburg.

■ **Shenandoah County**

The Keister Tract is undeveloped and not open for visitor use. Subsequently, there are no records on visitor activities. The 2005 Master Plan for the 151-acre site proposes an interpretive center and comfort stations, walking and equestrian trails, tent camping, access to the North Fork of the Shenandoah River, an outdoor classroom and amphitheater, and an adventure course, as well as connections to regional trail systems. Once improvements are fully in place, annual visitation is projected to be between 50,000 to 100,000.

3.4.3 Other Visitor Use

■ Driving Tours

The Battle of Belle Grove or Cedar Creek. The driving tour covers 12 locations on routes within and in the vicinity of the park and entails about 20 miles of driving. Presented in the "Self Guided Tour: The Battle of Belle Grove or Cedar Creek" pamphlet, the tour was developed in conjunction with the CCBF foundation by Dr. Joseph Whitehorne, history professor at Lord Fairfax Community College. There is no signage identifying the tour route.

Valley Campaign of 1864 (Virginia Civil War Trails). The Virginia Tourism Corporation's Virginia Civil War Trails program establishes interpreted driving routes featuring campaigns of the Civil War and other themes throughout the state. Wayside exhibits are installed at the sites where interpreted events occurred, and wayfinding signage helps travelers navigate from site to site along the identified routes or trails. The Valley Campaigns of 1864 driving route, which links sites between Fort Collier in Winchester and the Frontier Culture Museum in Staunton, goes through the park on Route 11. There are three trail sites with wayside exhibits: the Cedar Creek Battlefield Foundation visitor contact facility, Belle Grove, and Valley Turnpike at Cedar Creek. The Valley Campaign of 1864 is one of three thematic trails in the "Shenandoah Valley Avenue of Invasion" presentation of the Civil War Trails program.

Apple Trail Driving Tour. The Frederick County Convention and Visitors Bureau in Winchester has developed the "Apple Trail," a 45-mile self-guided driving tour that takes visitors to scenic and historic sites throughout the area, including the park.

■ Civil War Monuments and Interpretive Waysides

Visitors may stop at roadside interpretive signs and the three monuments within the park as part of a driving route; other stops may be spurred by the sight of a state historic site marker or wayside along Route 11; or result from a planned visit to one of the monuments. The New York Monument is a short distance off Route 11 near the intersection of County Route 840, which leads to the Bayliss Tract. The monument and parking space for three to four cars are within the VDOT right-of-way. The Ramseuer Monument faces Route 11 at County Route 727 (Belle Grove Road). The intersection is narrow and heavily traveled, and the site has inadequate space for parking; cars tend to pull over along the highway at points north or south of the monument. The Vermont Monument is on privately owned land and is not readily accessible.

■ Camping, Hunting, and Fishing

The privately owned Battle of Cedar Creek Campground is the single camping facility in the park. There is some recreational fishing, regulated by the Virginia Department of Game and Inland Fisheries, in the park. Hunting of game species,

including white-tailed deer, wild turkey, squirrels, and rabbits occurs on private lands within the park.

■ **Regional Bike Network**

The Northern Shenandoah Valley Regional Commission adopted a report entitled “Walking and Wheeling the Northern Shenandoah” in 2004. Prepared with the support of the Shenandoah Valley Battlefields Foundation, the report identified a regional bike network and assessed biking conditions on existing roads. The network includes several routes to and through the park. The number of bicyclists using the network is not known, but organized biking groups in the Winchester area do make use of the network through the park.

3.4.4 Regional Sites and Attractions

■ **Civil War Sites**

Cedar Creek and other Civil War battlefields in the Shenandoah Valley are part of the Shenandoah Valley Battlefield National Historic District. Cedar Creek has been clustered with Fisher’s Hill and Tom’s Brook battlefields within the management framework of the district. Currently, the only connectivity between the battlefields is the Virginia Civil War Trails driving route and signs.

■ **George Washington National Forest**

The national forest is 1,064,562 acres managed by the U.S. Forest Service, part of the Department of Agriculture. It is close to the southern boundary of the park, across the North Fork of the Shenandoah River and U.S. Highway 55. Signal Knob, the high point at the northern end of the Massanutten Range, is a defining feature of the forest and visible from many areas within the park. Sweeping views of the Shenandoah Valley and a broad perspective of troop movements during the battle can be gained from the summit of Signal Knob. Adjacent to the trailhead that leads to it is the Elizabeth Furnace area, which contains individual and group campgrounds, hiking and equestrian trails, and the remains of an old iron furnace.

■ **Shenandoah National Park**

Within Shenandoah NP is Skyline Drive, the area’s most scenic roadway, which winds along the crest of the Blue Ridge Mountains. The drive offers vantage points of areas within Cedar Creek and Belle Grove NHP, and provides an overlook for Signal Knob. Also within the park is the Appalachian Trail, hiking trails, and wildlife viewing areas. Cedar Creek and Belle Grove NHP is accessible from the northern end of Skyline Drive.

■ **Trails**

The major cross-region trails in the vicinity of the park are the Appalachian Trail, within Shenandoah NP, and the Tuscarora Trail, within the national forest. The trails

connect in Shenandoah NP. A hiking trail between the Keister Tract and Signal Knob has been proposed. It would connect to the loop trail that leads to the top of Signal Knob from the loop trail to the Tuscarora Trail, providing linkage between the park and the regional trail system.

3.5 Socioeconomic Environment

As noted earlier, this chapter includes information on the various elements of the socioeconomic environment relating to the park for the purpose of compiling this information for this first GMP. However, not all of the socioeconomic environment described here will be analyzed in the EIS portion of this document. The following elements may potentially be affected by the GMP alternatives: Economic Impact of the Park - Local and Regional Economy. The information presented here for these topics serves as the description of the Affected Environment in accordance with the requirements of NEPA. All other topics and information included in this section are presented as background but have been dismissed from further analysis in the EIS.

3.5.1 Population

Throughout its history the three-county region has been predominantly rural in nature, with mostly farms and forests and a few towns scattered along the valley. The combined population of Frederick, Shenandoah, and Warren counties, and the City of Winchester was about 125,400 in 1990 (Table 3.3). This was about 2 percent of Virginia's total population at the time. During the last decade the region's population grew by more than 24,000 people, a 19 percent increase (Table 3.4). The region is still mostly rural, although development in the region is increasing. The 2000 regional population of nearly 149,500 was about 2.1 percent of the state's total.

All three counties and Winchester experienced an increase in population during the last decade. Frederick County had the largest numerical growth gaining about 13,500 new residents or nearly 30 percent. Its growth rate was twice that of the state as a whole. Shenandoah County's growth is less than that of the state; the county saw an 11 percent increase at an annual growth rate of nearly 1 percent. Warren County gained more than 5,400 new residents, a more than 20 percent increase. Winchester is the largest city in the three-county region. Winchester's 2000 population was about 23,600, an increase of 7.5 percent since 1990.

Population growth in different parts of the region has been varied. Middletown, the town closest to the park, had a slight decline in population in the 1990's (declining by 46 people or -4.6%), while Strasburg grew by less than 7 percent, only one-half the growth experienced by Virginia as whole.

Table 3.3 Population of the Park Region

Area	1990	% of State Population	2000	% of State Population	2005	% of State Population
Winchester ¹	21,947	0.4%	23,585	0.3%	25,119	0.3%
Frederick County	45,723	0.7%	59,209	0.8%	69,123	0.9%
Shenandoah County	31,636	0.5%	35,075	0.5%	39,184	0.5%
Warren County	26,142	0.4%	31,584	0.4%	35,556	0.5%
Virginia	6,187,358	100%	7,078,515	100%	7,567,465	100%
USA	248,709,873		281,421,906		299,398,484	

¹ Winchester is an independent city in Virginia and census data are collected and reported separately from Frederick County.

Source: U.S.D.C., U.S. Census Bureau 2000a, 1990a, 2006a and 2006b

Table 3.4 Population Growth of the Park Region

Area	Annual Rate of Growth 1990 to 2000	Total % Increase 1990 to 2000	Total % Increase 2000 to 2005
Winchester	0.7%	7.5%	6.5%
Frederick County	2.4%	29.5%	16.7%
Shenandoah County	0.9%	10.9%	11.7%
Warren County	1.7%	20.8%	12.6%
Virginia	1.2%	14.4%	6.9%
USA	1.1%	13.2%	6.4%

Source: U.S.D.C., U.S. Census Bureau 2000a, 1990a, 2006a and 2006b

From 2000 to 2005 populations continued to grow in the three counties and in Winchester. Winchester grew by more than 1,500 people, a 6.5 percent increase. Frederick County added more than 9,900 residents (16.7%), Shenandoah County increased by about 4,100 (11.7%), and Warren County's population expanded by nearly 4,000 (12.6%) (Table 3.3).

3.5.2 Race and Ethnicity

The racial and ethnic distribution of the three-county affected area (Frederick – including the City of Winchester, Shenandoah, and Warren counties), the state of Virginia, and the nation as a whole are displayed in Table 3.5. The percentages of population for seven racial groups (as determined by the U.S. Census Bureau) are shown. For the 2000 Census individuals were allowed to identify themselves as "Some other race" (not specified by the U.S. Census Bureau) or as belonging to "Two or more races." The total racial minority percentage figures are the sum of the other six non-white categories – Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, "Some other race," and "Two or more races." In addition, the Hispanic or Latino populations, a minority ethnic group, are displayed. These figures are not counted in the totals to

Table 3.5 Population, Race and Ethnicity, 2000

Area	Frederick County		Shenandoah County		Warren County		Virginia		USA	
Race	Number	% ¹	Number	% ¹	Number	% ¹	Number	% ¹	Number	% ¹
White	56,240	95.0%	33,533	96.5%	29,280	92.7%	5,120,110	72.3%	211,460,626	75.1%
Black or African American	1,550	2.6%	412	1.2%	1,526	4.8%	1,390,293	19.6%	34,658,190	12.3%
American Indian and Alaskan Native	92	0.2%	62	0.2%	84	0.3%	21,172	0.3%	2,475,956	0.9%
Asian	388	0.7%	122	0.3%	136	0.4%	261,025	3.7%	10,242,998	3.6%
Native Hawaiian and Other Pacific Islander	10	0.02%	6	0.02%	7	0.02%	3,946	0.1%	398,835	0.1%
Some Other Race	329	0.6%	628	1.8%	145	0.5%	138,900	2.0%	15,359,073	5.5%
Two or More Races	600	1.0%	312	0.9%	406	1.3%	143,069	2.0%	6,826,228	2.4%
Total Population	59,209	100%	35,075	100%	31,584	100%	7,078,515	100%	281,421,906	100%
Hispanic or Latino ²	1,004	1.7%	1,194	3.4%	494	1.6%	329,540	4.7%	35,305,818	12.5%

¹ Figures may not add to 100 percent due to rounding

² People of Hispanic or Latino ethnicity may be of any race. These figures are not counted in the totals to avoid duplicate counting.

Source: U.S.D.C., U.S. Census Bureau 2000a, 1990a, 2006a and 2006b

avoid duplicate counting since people of Hispanic or Latino ethnicity may be of any race.

Minorities made up about five percent of Frederick County's population, less than five percent of Shenandoah County's population, and about 7.3 percent of Warren County's population in 2000. In Frederick and Warren counties, the largest minority group was African Americans making up 2.6 percent and 4.8 percent, respectively, of the totals. Hispanic or Latino people, at 3.4 percent of the totals, were the largest minority group in Shenandoah County. White was by far the largest racial group in each of the three counties.

In Virginia, minorities made up 27.7 percent of the total population and African American or Black people comprised 19.6 percent of the total state population. Hispanic or Latino people made up 4.7 percent of Virginia's population. Nationally, racial minorities made up about one-fourth of the population and the ethnic minority Hispanic or Latino represented one-eighth of the total. The 2000 Census was the first time that Hispanics supplanted Black or African Americans as the largest minority group in the country.

3.5.3 Income

■ Per Capita Income

In both 1989 and 1999, Virginia's per capita personal income (PCPI) was actually higher than that of the national as a whole (Table 3.6). The PCPIs of the selected areas of the affected region were all lower than the national PCPI and some were much lower than the state PCPI. This is to be expected in a rural region with a relatively low population. A lower population results in lower demand for goods,

Table 3.6 Per Capita Personal Income (PCPI)

Area	1989	% of 1989 State PCPI	1999	% of 1999 State PCPI	2004	% of 2004 State PCPI
Winchester	\$14,214	90.5%	\$20,500	85.5%	Included with Frederick County	
Frederick County	\$13,671	87.0%	21,080	87.9%	30,686	84.9%
Shenandoah County	\$12,686	80.7%	19,755	82.4%	26,880	74.3%
Warren County	\$13,580	86.4%	19,841	82.8%	28,996	80.2%
Virginia	\$15,713	100.0%	23,975	100.0%	36,160	100.0%
USA	\$14,420	91.8%	21,587	90.0%	33,050	91.4%

Source: U.S.D.C., U.S. Census Bureau 1900d and 2000b

services, and labor than occurs where higher populations are concentrated in smaller geographic areas. Frederick County was closest to the 1999 national PCPI of \$21,587 with a PCPI of \$21,080. Its position relative to the state PCPI was about a percentage point better than it was in 1989. The average PCPI for all the selected areas did increase; however some areas improved relative to the state PCPI while others lost ground. Shenandoah County also increased relative to Virginia, but Warren County's percent of the state PCPI decreased.

In 2004, Frederick County and the City of Winchester had a PCPI of \$30,686, which was 85 percent of the state PCPI of \$36,160 and 93 percent of the national PCPI of \$33,050. In the same year Shenandoah County's PCPI was \$26,880, only 74 percent of the state figure and 81 percent of the national figure. At \$28,996, Warren County's PCPI fell between the other two counties. This PCPI was 80 percent of the state and 88 percent of the national figure. The growth rates for the three counties were 4.4 percent for Frederick County and the City of Winchester, 3.8 percent for Shenandoah County, and 4.3 percent for Warren County. The state wide growth rate was 4.5 percent and the national rate was 4.1 percent.

■ Median Income

Median household income is another measure of the economic condition of an area relative to other areas. The median income is the value at which one-half of the households have incomes above and one-half of the households have incomes below the median value. The state of Virginia's median income was about 111 percent of the national value in 1989 and 1999 (Table 3.7). In 1989 the selected area median incomes ranged from 78 percent to 98 percent of the state median. Frederick County nearly matched the state figure in 1989 and was actually slightly higher than the state in 1999. By 1999 the selected area median incomes ranged from nearly 74 percent to about 101 percent of the state median. While all median household incomes increased from 1989 to 1999, not all areas improved relative to the state. For the most part, the majority of the three-county area remained a less prosperous region than the state of Virginia as a whole.

Table 3.7 Median Household Income

Area	1989	% of 1989 State PCPI	1999	% of 1999 State PCPI	2004	% of 2004 State PCPI
Winchester	\$26,086	78.3%	\$34,335	73.6%	\$39,142	76.6%
Frederick County	\$32,806	98.4%	\$46,941	100.6%	\$49,193	96.3%
Shenandoah County	\$26,527	79.6%	\$39,173	83.9%	\$43,893	85.9%
Warren County	\$31,062	93.2%	\$42,422	90.9%	\$55,084	107.8%
Virginia	\$33,328	100.0%	\$46,677	100.0%	\$51,103	100.0%
USA	\$30,056	90.2%	\$41,994	90.0%	\$44,334	86.8%

Source: U.S.D.C., U.S. Census Bureau 1900d and 2000b

By 2004, Virginia state median income had increased to \$51,103 (Table 3.7). This was 115 percent of the national median of \$44,334. The median incomes for Winchester and the three counties also increased. The median income for Winchester increased by \$4,800 but this median income was only 77 percent of the 2004 state median. Shenandoah's median income increased by about \$4,700 and amounted to 86 percent of the 2004 state median. Frederick County's increase was about \$2,250 which was 96 percent of the Virginia median. Warren County experienced tremendous improvement; its median income rose to nearly \$55,100, an increase of more than \$12,660. This was nearly 108 percent of the 2004 state figure and 124 percent of the national median.

3.5.4 Low Income Populations

Data readily obtainable from the U.S. Census Bureau are used to identify low income populations. The characteristics used are income (per capita and median household), and percentage of the population living below the poverty level (all persons).

The information presented in Table 3.8 (income and poverty data) identifies Virginia as a state with higher than average per capita and median household incomes. The

Table 3.8 Income and Poverty, 2000

Area	Money Income				Number and Percent Living Below the Poverty Level	
	Per Capita	% of U.S. Per Capita	Median Household	% of U.S. Median	Individuals	Individuals
Frederick County	21,080	97.7%	46,941	111.8%	3,727	6.4%
Shenandoah County	19,775	91.5%	\$39,173	93.3%	2,837	8.2%
Warren County	19,841	91.9%	\$42,422	101.0%	2,631	8.5%
Virginia	23,975	111.1%	\$46,677	111.2%	656,641	9.6%
USA	21,587	100.0%	\$41,994	100.0%	22,899,812	12.4%

Source: U.S.D.C., U.S. Census Bureau 2000c

percentage of people living in poverty in Virginia was lower than the national average as well. All three counties also had poverty rates that were considerably lower than the state and national rates. The figures for income were somewhat more ambiguous for the counties. Frederick County was the only county where the median household income was higher than both the state and national median household incomes. However, its per capita income was far below that of Virginia. Per capita incomes for all three counties were lower than the state and national per capita incomes.

3.5.5 Earnings by Major Industries

All three counties have somewhat diversified economies, since they all have some earnings and employment in each of the major industrial sectors. But as shown in Table 3.9, certain industrial sectors were more important than others. In Frederick County including the City of Winchester for this analysis, the top three industry sectors by earnings (in 2004) were manufacturing (23.5% of total earnings), retail trade (10.0%), and local government (7.9%). Total earnings for the area were \$2.268 billion. These three sectors accounted for over 41 percent of the total. Two industry sectors are most closely associated with tourism—the arts, entertainment, and recreation sector and the accommodation and food services sector. Together these tourism sectors provided 3.1 percent of all earnings for the area,¹ and accounted for 3.0 percent of Virginia's total earnings of more than \$213.341 billion for 2004.

While the population of Shenandoah County was less than one-half that of Frederick County and Winchester, total earnings were slightly more than one-fourth of the total for earnings in Frederick County and Winchester. The major industries, by earnings, in Shenandoah County, in 2004, were manufacturing (37.4% of total earnings), local government (9.4%), and retail trade (8.3%). Total earnings for the area were about \$0.598 billion. These three sectors accounted for over 55 percent of the total. Tourism (the arts, entertainment, and recreation sector and the accommodation and food services sector) provided about 3.5 percent of all earnings.

With a population of about two-fifths the size of Frederick County and the City of Winchester, Warren County's total earnings in 2004 of approximately \$0.442 billion was one fifth that of Frederick County and Winchester. The largest sectors were construction (13.4% of the total), local government (12.3%), and transportation and warehousing (10.9%). These three sectors provided about 37 percent of the total earnings for the county. Tourism (the arts, entertainment, and recreation

¹ Not all of the earnings in these two industry segments are attributable to tourism as economic activity by locals and non-tourists will also contribute to earnings in these two sectors. It is also acknowledged that some spending by tourists in other sectors (e.g. retail trade and health care) will occur within the two-county region. However, the use of these two sectors as a proxy for tourism spending does provide a frame of reference for comparison.

Table 3.9 Earnings by Industry, 2004 (thousands of \$)

Industry	Frederick County and Winchester City	Shenandoah County	Warren County
Farming	\$5,928	\$14,350	\$1431
Forestry, fishing, etc. and other	(D)	\$2,010	(D)
Mining	(D)	\$176	\$176
Utilities	(D)	\$4,817	\$302
Construction	(D)	\$44,257	\$59,094
Manufacturing	\$532,352	\$223,702	(D)
Wholesale trade	\$111,174	\$12,989	(D)
Retail trade	\$227,815	\$49,524	\$40,045
Transportation and warehousing	(D)	\$22,282	\$48,235
Information	\$28,498	\$19,122	\$5,608
Finance and insurance	\$70,957	\$14,587	\$13,424
Real estate and rental and leasing	\$63,836	\$7,776	\$9,879
Professional and technical services	\$90,225	\$14,135	\$16,126
Management of companies and enterprises	\$58,740	\$2,733	\$5,490
Administrative and waste services	\$67,306	\$4,685	\$9,818
Educational services	(D)	(D)	\$11,428
Health care and social assistance	(D)	(D)	\$43,917
Arts, entertainment and recreation	\$12,707	\$1,266	\$4,965
Accommodation and food services	\$57,833	\$19,831	\$12,647
Other services, except public administration	\$66,047	\$21,570	\$29,295
Federal, civilian	\$44,795	\$9,355	\$14,592
Military	\$11,704	\$4,763	\$4,271
State government	\$24,235	\$7,553	\$2,846
Local government	\$178,145	\$55,907	\$54,491
Total	\$2,268,473	\$597,825	\$441,607

(D) = Not shown to avoid disclosure of confidential information. However, the estimates are included in the totals.

Source: U.S. Department of Labor, Bureau of Economic Analysis 2006b

sector and the accommodation and food services sector) provided about 4.0 percent of all earnings.

Total earnings for the entire region were nearly \$3.307 billion in 2004.

Approximately 4.2 percent of this total is estimated to be related to tourism in the region.

3.5.6 Employment by Major Industries

The major sources of employment in Frederick County and Winchester were manufacturing (15.7% of the total), retail trade (13.8%), and local government (7.1%). These industries provided over one-third of all the nearly 62,100 positions

Table 3.10 Total Full- and Part-Time Employment by Industry, 2004

Industry	Frederick County and Winchester City	Shenandoah County	Warren County
Farming	\$894	\$1,262	\$328
Forestry, fishing, etc. and other	(D)	\$97	(D)
Mining	(D)	\$10	10
Utilities	(D)	\$79	(D)
Construction	(D)	\$1,447	\$1,685
Manufacturing	\$9,733	\$4,678	(D)
Wholesale trade	\$2,402	\$373	(D)
Retail trade	\$8,560	\$2,346	\$1,963
Transportation and warehousing	(D)	\$570	\$1,263
Information	\$582	\$458	\$127
Finance and insurance	\$1,568	\$498	\$417
Real estate and rental and leasing	\$2,620	\$601	\$531
Professional and technical services	\$2,492	\$534	\$535
Management of companies and enterprises	\$562	\$41	\$182
Administrative and waste services	\$3,557	\$387	\$561
Educational services	(D)	(D)	\$575
Health care and social assistance	(D)	(D)	\$1,369
Arts, entertainment and recreation	\$999	\$209	\$359
Accommodation and food services	\$3,695	\$1,441	\$889
Other services, except public administration	\$3,037	\$1,219	\$1,208
Federal, civilian	\$477	\$145	\$167
Military	\$334	\$140	\$126
State government	\$730	\$186	\$74
Local government	\$4,389	\$1,567	\$1,405
Total	\$62,147	\$19,723	\$14,757

(D) = Not shown to avoid disclosure of confidential information. However, the estimates are included in the totals.

Source: U.S. Department of Labor, Bureau of Economic Analysis 2006b

in 2004 (Table 3.10.).² Tourism, including the arts, entertainment, and recreation sector, and the accommodation and food services sector provided 7.5 percent of the jobs in this county. These positions are often seasonal and/or part-time, rather than full-time, and can be relatively low paying. As a result, these sectors provide 7.5 percent of the jobs but only 3.1 percent of the earnings. The largest sources of jobs do not necessarily provide the largest earnings in a local economy.

² Not all of the jobs in these two industry segments are attributable to tourism because economic activity by local residents and non-tourists will also help support positions in these two sectors. It is also acknowledged that some spending by tourists in other sectors (e.g. retail trade and health care) will occur within the two-county region. However, the use of these two sectors as a proxy for tourism's economic impact does provide a frame of reference.

Again, while all three counties' economies are somewhat diversified, a few industry sectors account for most of the employment opportunities. Three of the 24 industrial sectors accounted for nearly 44 percent of the more than 19,700 jobs in Shenandoah County in 2004. The three major employers were manufacturing (15.7% of the total), retail trade (13.8%), and local government (7.1%). In this county tourism related positions in the arts, entertainment, and recreation sector and the accommodation and food services sector made up about 8.4 percent of the jobs.

The three sectors providing the most jobs in Warren County were retail trade (13.6% of the total), construction (11.7%), and local government (9.7%), accounting for 35 percent of the nearly 14,800 total jobs in the county.

The entire Virginia economy supported about 4,594,000 full- and part-time jobs in 2004. The total number of positions (about 97,000) in the region made up approximately 2.1 percent of this total. In the region, the two tourism sectors accounted for less than 0.2 percent of the total jobs in Virginia.

3.5.7 Unemployment

The unemployment situation in the region improved across the board between 1990 and 2000 (Tables 3.11 and 3.12). In 1990 unemployment in the three counties and the City of Winchester ranged from 3.8 percent in Shenandoah County to 5.1 percent in Warren County. Over 3,000 workers out of a labor force of about 66,700 were out of work (Table 3.11).³ The unemployment rate for the three-county region (including Winchester) was about 4.4 percent. Winchester's unemployment rate separately was 4.8 percent. Unemployment at the state level was 4.5 percent and nationally it was 6.3 percent.

The situation improved in 2000 as the national unemployment rate dropped to 5.8 percent and Virginia's rate fell to 4.2 percent (Table 3.12). The unemployment rates for the three counties also improved as they ranged from 2.5 percent in Frederick County to 3.4 percent in Warren County. Regionally the labor force increased to about 78,900 and yet only a little more than 2,400 workers were out of work, a 3.1 percent unemployment rate for the region. However, the City of Winchester's unemployment rate declined only slightly to 4.6 percent.

The employment situation in 2005 continued to improve for the state and the nation as the unemployment rate fell to 3.5 percent for Virginia, and fell to 5.1 percent for the nation as a whole (Table 3.13). The unemployment conditions improved for Winchester and Warren County as their rates fell to 3.0 percent and 2.9 percent. Frederick County's unemployment rate fell slightly to 2.9 percent while the rate for

³ Winchester is an independent city in Virginia and census data are collected and reported separate from Frederick County. The totals for the region include data for Frederick, Shenandoah, and Warren counties plus the data for the city of Winchester.

Table 3.11 Employment and Unemployment Status, 1990

Area	Civilian Labor Force	Employed	Unemployed	Percent of Civilian Labor Force Unemployed
Winchester	11,977	11,405	572	4.8%
Frederick County	24,925	23,845	1,080	4.3%
Shenandoah County	16,233	15,622	611	3.8%
Warren County	13,554	12,856	698	5.1%
Virginia	3,170,410	3,028,362	142,048	4.5%
USA	123,473,450	115,681,202	7,792,248	6.3%

Source: U.S.D.C., U.S. Census Bureau 1990b

Table 3.12 Employment and Unemployment Status, 2000

Area	Civilian Labor Force	Employed	Unemployed	Percent of Civilian Labor Force Unemployed
Winchester	12,732	12,147	585	4.6%
Frederick County	31,720	30,930	790	2.5%
Shenandoah County	18,204	17,710	494	2.7%
Warren County	16,245	15,687	558	3.4%
Virginia	3,563,772	3,412,647	151,125	4.2%
USA	137,668,798	129,721,512	7,947,286	5.8%

Source: U.S.D.C., U.S. Census Bureau 2000b

Table 3.13 Employment and Unemployment Status, 2005

Area	Civilian Labor Force	Employed	Unemployed	Percent of Civilian Labor Force Unemployed
Winchester	14,198	13,770	428	3.0%
Frederick County	38,558	37,584	974	2.5%
Shenandoah County	19,697	19,153	544	2.8%
Warren County	18,594	18,056	538	2.9%
Virginia	3,933,949	3,797,730	136,219	3.5%
USA	141,730,000	141,730,000	7,591,000	5.1%

Source: U.S.D.C., U.S. Census Bureau 2006a

Shenandoah County remained the same. By 2005 the regional labor force had grown to more than 91,000 while less than 2,500 persons were unemployed—creating an unemployment rate of just 2.7 percent.

3.5.8 Poverty

Both Frederick and Warren counties experienced lower poverty rates than the state or nation in 1989 and in 1999 (Table 3.14). In 1989 Shenandoah County had an unemployment rate of 11 percent, falling between the Virginia rate of 10.2 percent and the national rate of 13.1 percent. Winchester also had a higher than state average of 11.3 percent in 1989, with nearly 2,400 people living below the poverty level. In the three-county region (including Winchester) over 10,900 people were living with incomes below the poverty level, an 8.9 percent poverty rate.

Table 3.14 Poverty Status, 1989, 1999 and 2004

Area	1989 Number of Individuals below the Poverty Level	1989 Percent below the Poverty Level	1999 Number of Individuals below the Poverty Level 1989	1999 Percent below the Poverty Level	2004 Number of Individuals below the Poverty Level 1989	2004 Percent below the Poverty Level
Winchester	2,364	11.3%	2,991	13.2%	2,811	11.5%
Frederick County	3,197	7.1%	3,727	6.4%	3,989	5.8%
Shenandoah County	3,414	11.0%	2,837	8.2%	3,349	8.6%
Warren County	1,965	7.7%	2,631	8.5%	3,114	8.9%
Virginia	611,611	10.2%	656,641	9.6%	705,037	9.5%
USA	31,742,864	13.1%	33,899,812	12.4%	37,039,804	12.7%

Source: U.S.D.C., U.S. Census Bureau, 1990b and 2000b

In 1999, the national and state poverty rates declined even though the numbers of people living in poverty increased. Frederick County and Shenandoah County experienced the same situation. The poverty rate declined from 7.1 percent to 6.4 percent in Frederick County but the number of people in poverty increased from 3,200 to 3,700 people. For Shenandoah County the rate declined from 11.0 percent to 8.2 percent and the number of people living in poverty also declined by nearly 600 people. Unfortunately, in Warren County the poverty rate and the number of people living in poverty both increased, from 7.7 percent to 8.5 percent and from 1,965 to 2,631 respectively. Winchester had the highest poverty rate at 13.2 percent, with nearly 3,000 people living below the poverty level.

Overall, in 1999, the number of people in poverty in the region had increased to almost 12,200, an 8.3 percent rate. However, this was still better than the state rate of 9.6 percent or the national rate of 12.4 percent.

By 2004, the number of people living in poverty in Winchester had fallen by 180; resulting in a lower poverty rate of 11.5 percent. This was still higher than the state poverty rate of 9.5 percent but lower than the national rate which had increased to 12.7 percent. Frederick County's poverty rate declined to 5.8 percent but the total number of people living in poverty rose by 262 people. Both the

number of persons living in poverty and the poverty rate rose for Shenandoah (512 additional persons and an 8.6% rate) and Warren counties (483 additional persons and an 8.9% rate).

3.5.9 Economic Impact of the Park

■ Park Sites and Projected Park Visitation

About one-third of the area of the park is composed of a variety of sites that are owned and operated independently by the NPS and its five major partners: the National Trust for Historic Preservation, Belle Grove, Inc., the Cedar Creek Battlefield Foundation, the Shenandoah Valley Battlefields Foundation, and Shenandoah County Parks and Recreation. The remaining two-thirds of the park is privately owned.

Transportation planning conducted for the park projected that annual visitation to all parts of the park could reach between 50,000 and 250,000 as the park is developed over the next two decades (USDOT 2006).

Whitham Tract. The NPS owns an 8.0-acre site that, currently, is not open to the public. This property is relatively out of the way, is leased as a private residence, and currently contains no NPS operated facilities.

Belle Grove Plantation. Belle Grove Plantation, a 283-acre site, is owned by the National Trust for Historic Preservation. The property contains a manor house and gardens, outbuildings, an orchard, and agricultural fields. The manor house is open to the public from April to November. An admission fee is charged. The manor has been open to the public as a historic house museum since 1967. Visitation at Belle Grove Plantation is in the neighborhood of 10,000 annually (USDOT 2006). Belle Grove, Inc., a nonprofit corporation, operates and protects the historic resources and historic landscape on the property.

Harmony Hall. Historic Harmony Hall (Fort Bowman), located within the park on the Shenandoah River, is owned by Belle Grove, Inc. Belle Grove, Inc. is currently rehabilitating the house and will be making it available for small, infrequent tours in the near future. Larger, more frequent tours could occur depending on public interest. The enabling legislation of the park states as a goal that the site should be open to the public.

Cedar Creek Battlefield. Portions of the Cedar Creek Battlefield are owned by the Cedar Creek Battlefield Foundation and the Shenandoah Valley Battlefields Foundation, both nonprofit corporations. Within the park, Cedar Creek Battlefield Foundation owns 308.59 acres, and Shenandoah Valley Battlefields Foundation owns 460.3 acres and a 32-acre conservation easement. Portions of the battlefield that are owned by the Shenandoah Valley Battlefields Foundation are leased for agricultural use and are not open to the public.

The Cedar Creek Battlefield is visited by large numbers of re-enactors and visitors, especially during the battle reenactments. The Cedar Creek Battle reenactment is hosted annually by the Cedar Creek Battlefield Foundation in early October on part of the original battle site. Estimates place the visitation at about 5,000 re-enactors and 7,000 visitors during the last reenactment in October 2005 (USDOT 2006). The Foundation has also hosted the reenactment of First Manassas battle (First Bull Run) in late July. The Manassas reenactment in July 2006 attracted about 7,000 re-enactors and 10,000 spectators. Interest in these reenactments is strong as people have come to recognize the importance of the Civil War as a defining event that helped shape the character of the United States.

Battlefield Visitor Contact Station. Located in Middletown, the Cedar Creek Battlefield Foundation owns and operates a visitor contact station that is open to the public on a limited seasonal basis.

Keister Tract. The 151-acre Keister Tract is owned by Shenandoah County Parks and Recreation Department and is located in the park along the North Fork of the Shenandoah River. The county plans to develop the site as part of the national historical park. Currently, the site is not open to the public—it is leased for agricultural use. The master plan completed for the site includes the development of an interpretive center and comfort stations, walking and equestrian trails, tent camping, river access, an outdoor classroom and amphitheater, and an adventure course (Shenandoah County Parks and Recreation 2005). Regional trail connections are also planned to link the site to other local and regional visitor attractions. Visitation to the Keister Tract is expected to reach 50,000 to 100,000 annually when the property is fully developed (USDOT 2006).

■ Staffing and Budgets

National Park Service. NPS staffing is currently limited to two full-time equivalent (FTE) positions; the Park Superintendent and a Community Planner. NPS annual expenditures to support the park represent an input of federal funds into the regional economy. For the fiscal year 2007 the park budget was \$277,000. The park's recent annual budgets are displayed in Table 3.15. These funds are primarily used for park administration and planning at this time.

Partners. The total number of FTEs employed by the Key Partners that are specifically tied to land and facility administration in the park is estimated at six to seven. Several of the Key Partners have staff solely dedicated to park management issues, while other Key Partners have staff that divide their time between park issues and other lands outside of the park that are within their jurisdiction. The Key Partners also have volunteers that assist them with their work. Total annual budgets are not known, but annual operational expenses for the Key Partners are estimated at \$660,000 (Stubbs 2007).

Table 3.15 Annual Budgets for Cedar Creek and Belle Grove NHP

Fiscal Year	Total
2007	\$277,000
2006	\$275,000
2005	\$275,000
2004	\$233,000

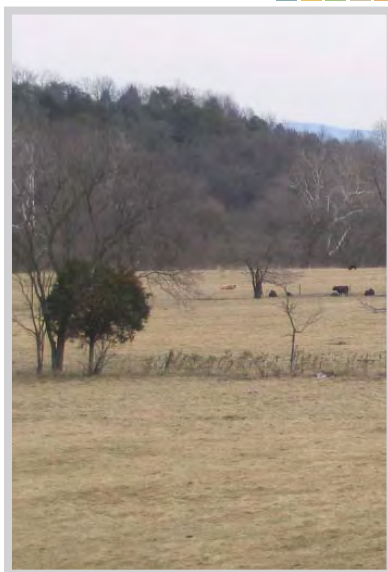
Source: National Park Service

■ Economic Impacts on the Local and Regional Economy

The current economic impacts of the park consist of NPS and partner activities and contributions. Expenditures in the area by the NPS and the Key Partners result in direct economic effects and their employees' expenditures of wage and salary income result in further indirect effects as the funds re-circulate within the regional economy, adding additional amounts to sales, income, and jobs. Expenditures in the region include such things as employee salaries and benefits, office rent and utilities, office supplies, etc. These expenditures are direct impacts resulting from the onsite presence of the NPS and the Key Partners. Indirect economic impacts occur as employees spend their salaries for food, housing, etc.

National Park Service. Current fiscal and employment impacts of the NPS are primarily limited to the two FTE positions currently filled and the park budget (\$277,000 in FY2007) used to support their work. Payments in Lieu of Taxes (PILT) are also made by the federal government (U.S. Treasury) to Warren County for the NPS-owned parcel. The law that mandates payments in lieu of taxes requires two types of payments: Section 6904 payments and Section 6902 payments. Section 6904 payments are based on a percentage of the fair market value of the land at the time of acquisition and are made annually for five years from the date of acquisition. The first Section 6902 payment of \$973.52 was made to Warren County in June 2004 (Leisz 2007). The last 6902 payment will be made in the year 2008. Section 6904 payments are based on the number of acres of "entitlement lands," or federal lands that exist in the county and are paid to the affected unit of government in perpetuity, subject to Congressional authorization. The first Section 6904 payment of approximately \$11 that is attributed to park acreage was made to Warren County in 2004 (Leisz 2007).

Partners. Current fiscal and employment impacts of the partners are limited to the roughly six to seven positions currently filled and the estimated \$660,000 annual operational expenditures used to support their work. The partner's activities represent the majority of any economic impacts that have occurred since the creation of the park.



CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



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4.0 Environmental Consequences

4.1 Introduction

The National Environmental Policy Act (NEPA) requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental impacts that cannot be avoided if a proposed action is implemented. In this case, the proposed federal action would be the adoption of a general management plan (GMP) for Cedar Creek and Belle Grove National Historical Park (NHP).

General management plans are programmatic, long-range documents and the actions described in the alternatives are often general in nature. Consequently, the impacts of these actions are analyzed in qualitative terms.

This “Environmental Consequences” chapter analyzes the environmental impacts of implementing the four alternatives on various topics related to cultural and natural resources, and the socioeconomic environment. The analysis is the basis for comparing the beneficial and adverse impacts of implementing the alternatives. For the purposes of analysis, in the environmental impact statement (EIS) it is assumed that all of the specific actions proposed in the alternatives would occur during the life of the plan. The effects of NPS and partner actions are addressed together. Private lands are analyzed separately as described below.

This EIS generally analyzes several actions, such as the development of a new visitor center, trails, and waysides; and the acquisition of parkland. Following the approval of the GMP, site-specific compliance will be required for any facility development actions included in the alternatives. Appropriate detailed environmental and cultural compliance documentation would be prepared in accordance with the National Environmental Policy Act of 1969 and the National Historic Preservation Act of 1966, both as amended, meeting requirements to identify and analyze each possible impact for the resources affected.

This EIS also generally addresses private lands within the park boundary. Over two-thirds of the park’s total acreage is privately owned land (not owned by the NPS or park partners). Private lands in the park contain important resources and contribute to the significance and integrity of the park. Consequently, impacts on resources on private lands are analyzed in two ways: 1) the potential impacts on private lands of private land use activities are analyzed, and 2) the impacts on private lands of actions contained in this plan, namely land acquisition/protection and technical assistance, are analyzed in detail. This analysis of private lands is included in each of the alternatives under each of the impact topics.

This chapter begins with a description of the methods and assumptions for analyzing impacts, including cumulative impacts and impairment of park resources.

Then, the impact analysis (or environmental consequences) of each alternative is presented. All of the impact topics are assessed for each alternative. The existing conditions for all of the impact topics that are analyzed in detail were identified in the “Affected Environment” chapter.

The analysis of Alternative A: Continuation of Current Management identifies future conditions if no major changes to facilities or park management occurred. The three action alternatives (Alternatives B, C, and D) were then compared to Alternative A to identify the incremental changes that would occur as a result of changes in park facilities, uses, and management. Impacts of recent decisions and/or other approved plans were not evaluated as part of this environmental analysis, except as part of the cumulative impact analysis described below. Although these actions would occur during the life of the general management plan/environmental impact statement, they have been (or would be) evaluated in other environmental documents.

The impacts of each alternative are briefly summarized at the end of Chapter 2 in Table 2.8.

4.2 Methods and Assumptions for Analyzing Impacts

The planning team based the impact analysis and the conclusions in this chapter primarily on the review of existing literature and studies, information provided by experts in the NPS and other agencies, and staff insights and professional judgment. The team’s method of analyzing impacts is further explained below. All impacts have been assessed assuming that mitigating measures have been implemented to minimize or avoid impacts.

The environmental consequences for each impact topic are identified and characterized based on impact type, intensity, context, and duration. Cumulative impacts also are identified.

Impact intensity refers to the degree or magnitude to which a resource would be beneficially or adversely affected. Each impact is identified as negligible, minor, moderate, or major in conformance with the definitions for these classifications provided in Table 4.1. Because this is a programmatic document, the intensities are expressed qualitatively.

Context refers to the setting within which an impact may occur, such as the affected region or locality. In this document, cultural and natural resource impacts are either localized (site-specific) or parkwide. Socioeconomic impacts are either local or regional. Local economic impacts affect businesses or individuals located mostly within or adjacent to the park’s boundary. Regional economic impacts affect businesses or individuals mostly within Frederick, Shenandoah, and Warren

counties, and the city of Winchester. Local economic impacts are also a part of the regional economic impacts.

Impact duration refers to how long an impact would last. The planning horizon for this general management plan/environmental impact statement is approximately 20 years. Unless otherwise specified, in this document the following terms are used to describe the duration of the impacts:

Short-term: The impact would be temporary in nature, lasting one year or less, such as impacts associated with construction. For the purposes of the socioeconomic analysis, short-term impacts would last less than three years.

Long-term: The impact would last more than one year and could be permanent in nature, such as the loss of soil due to the construction of a new facility. 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 be a long-term impact (e.g., the noise from a vehicle driving on a road would be heard for a short time and intermittently, but because vehicles would be driving the same road throughout the 20-year life of the plan, the impact to the natural soundscape would be considered to be long-term). For the purposes of the socioeconomic analysis, long-term impacts would last more than three years and may be permanent.

Impacts also can be direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by the action and occur later or farther away, but are still reasonably foreseeable. This document discloses and analyzes both direct and indirect impacts, but does not differentiate between them in the discussions.

The impacts of the action alternatives describe the *difference between* the continuation of current management (Alternative A) and the implementation of the action alternatives. To understand a complete “picture” of the impacts of implementing any of the action alternatives, the reader must also take into consideration the impacts that would occur under Alternative A (Continuation of Current Management), so an accurate comparison can be made.

4.2.1 Cultural Resources

■ Section 106 of the National Historic Preservation Act and Impacts on Cultural Resources

In this environmental impact statement, impacts on cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality (CEQ) that implement the National Environmental Policy Act (NEPA). These impact analyses are intended, however, to comply with the requirements of both NEPA and Sections 106 and 110

of the National Historic Preservation Act (NHPA), while considering the differences between NEPA and NHPA language. In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the NHPA (36 CFR Part 800, *Protection of Historic Properties*), impacts on cultural resources were also identified and evaluated by (1) determining the area of potential impacts; (2) identifying cultural resources present in the area of potential impacts 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 National Register-listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse impacts.

Under the Advisory Council's regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected cultural resources that are listed or eligible for listing in the National Register. 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, e.g., diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse impacts also include reasonably foreseeable impacts 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.

CEQ regulations and the NPS's *Conservation Planning, Environmental Impact Analysis and Decision Making* (Director's Order 12) also call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of impact as defined by Section 106 is similarly reduced. Cultural resources are non-renewable resources and adverse impacts generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resource that can never be recovered. Therefore, although actions determined to have an adverse impact under Section 106 may be mitigated, the impact remains adverse.

A Section 106 summary is included in the impact analysis sections. The Section 106 summary is an assessment of the effect of the undertaking (implementation of the alternative) on National Register-eligible or National Register-listed cultural resources only, based upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations. Museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history

specimens) are generally ineligible for listing in the National Register. As such, Section 106 determinations of effect are not provided.

The definitions of impact intensity for the selected impact topics (archeological resources, ethnographic resources, historic structures, cultural landscapes, and museum collections) are included in Table 4.1. Definitions for beneficial impacts for cultural resources that require Section 106 determinations of effect (archeological resources, historic structures, and cultural landscapes) are characterized by recognizing that although some actions may be beneficial under NEPA, they may still be technically categorized as an *adverse effect* under NHPA.

4.2.2 Natural Resources

Analysis of natural resources was based on research, knowledge of the area's resources, and the best professional judgment of planners and ecologists who have experience with similar types of projects. Information on the area's natural resources was gathered from several sources, including the U.S. Fish and Wildlife Service, Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, Virginia Department of Game and Inland Fisheries, and the park's *Data Review and Synthesis of Natural Resource Information* completed by the Pennsylvania State University (Donaldson 2005).

4.2.3 Visitor Use and Experience

Analysis of visitor use and experience was based on research and best professional judgment of planners and staff who have experience with similar types of projects. Information on park visitors and Shenandoah Valley tourists is based on the *Cedar Creek and Belle Grove National Historical Park Transportation Synthesis* (U.S. Dept. of Transportation, 2006); interviews with park staff, advisory commissioners, and Key Partners; and published sources on the internet.

4.2.4 Socioeconomic Environment

Determinations of socioeconomic impacts were based on professional expertise and judgment. The factors used to identify and discuss potential impacts were economic data, historic visitor use data, expected future visitor use, and future developments within the park by the NPS or the partners. A mostly qualitative analysis is sufficient to compare the impacts of alternatives for decision-making purposes. However, the estimated costs of development projects do provide basic quantitative measures of the direct economic impacts on the region. Estimated changes in the park's base budget and staffing levels also provide quantitative data to consider.

The socioeconomic impact analysis considers direct and indirect impacts within the local and regional economies. The focus of the analysis is on the direct impacts. Direct impacts are generally those that occur when 1) the NPS and its Key Partners purchase goods and services, and 2) park visitors from outside the region spend

money in the local and regional economies. Indirect impacts occur when funds spent by the NPS, its Key Partners, and visitors re-circulate within the economy – this is referred to as the multiplier effect. It is likely that these indirect impacts occur; however, they are not quantifiable with the currently available data and are not used for decision-making purposes.

4.2.5 Cumulative Impact Analysis

A cumulative impact is described in the Council on Environmental Quality's regulation 1508.7 as follows:

Cumulative impacts are incremental impacts of the action when added to other current and reasonably foreseeable actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.

To determine potential cumulative impacts, non-NPS projects within and surrounding Cedar Creek and Belle Grove NHP were identified. The area included Frederick, Shenandoah, and Warren counties, Virginia. Projects were identified by discussions with the NPS staff, park advisory commission, the park's Key Partners, and representatives of county and town governments. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented, or would be implemented in the future.

These actions are evaluated in conjunction with the impacts of each alternative to determine if they have any cumulative impacts on a particular cultural, natural, or socioeconomic resource. Because most of these cumulative actions are in the early planning stages, the qualitative evaluation of cumulative impacts was based on a general description of the project.

Potential cumulative impacts were considered in about a 10-mile area surrounding Cedar Creek and Belle Grove NHP. This area includes the communities of Winchester, Stephens City, Middletown, Strasburg, and Front Royal. Projects and actions that could contribute to cumulative impacts include ongoing and planned actions and projects in the park and on adjacent public and private lands, and activities in unincorporated areas of Frederick, Shenandoah, and Warren counties. These actions and projects are listed below.

■ I-81 Corridor Expansion

The Virginia Department of Transportation, in cooperation with the Federal Highway Administration, is planning to increase capacity on I-81 through the park. Approximately two miles of the interstate pass through the park. Various alternatives are being explored, including expansion of the number of lanes and

Table 4.1 Impact Threshold Definitions

Impact Topic	Negligible	Minor	Moderate	Major
CULTURAL RESOURCES				
Archeological Resources	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be <i>no adverse effect</i> .	<p>Adverse impact – Disturbance of a site(s) results in little, if any, loss of integrity. The determination of effect for Section 106 would be <i>no adverse effect</i>.</p> <p>Beneficial impact – Site would only be minimally disturbed. Action would contribute to maintenance or preservation of a site.</p>	<p>Adverse impact – Disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 would be <i>adverse effect</i>. A memorandum of agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the memorandum of agreement minimize or mitigate adverse impacts and reduce the intensity of impact under NEPA from major to moderate.</p> <p>Beneficial impact – Action would result in a mitigation procedure and a comprehensive site condition assessment and data recovery. Action would result in stabilization of a site.</p>	<p>Adverse impact – Disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 would be <i>adverse effect</i>. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).</p> <p>Beneficial impact – Action would result in a mitigation procedure and a comprehensive site condition assessment and data recovery. Action would result in active intervention to preserve a site(s).</p>
Ethnographic Resources	Impact(s) 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 of effect for Section 106 would be <i>no adverse effect</i> .	<p>Adverse impact – would be slight but noticeable but would neither appreciably 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 of effect for Section 106 would be <i>no adverse effect</i>.</p> <p>Beneficial impact – would allow access to and/or accommodate a group's traditional practices or beliefs.</p>	<p>Adverse impact – would be apparent 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 of effect for Section 106 would be <i>adverse effect</i>.</p> <p>Beneficial impact – would facilitate traditional access and/or accommodate a group's practices or beliefs.</p>	<p>Adverse impact – 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 of effect for Section 106 would be <i>adverse effect</i>.</p> <p>Beneficial impact – would encourage traditional access and/or accommodate a group's practices or beliefs.</p>

Table 4.1 **Impact Threshold Definitions** (continued)

Impact Topic	Negligible	Minor	Moderate	Major
Historic Structures	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be <i>no adverse effect</i> .	<p>Adverse impact – Alteration of a feature(s) would not diminish the overall integrity of the resource. The determination of effect for Section 106 would be <i>no adverse effect</i>.</p> <p>Beneficial impact – Structure is altered in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>. Integrity of a feature would be maintained.</p>	<p>Adverse impact – Alteration of a feature(s) would diminish the overall integrity of the resource. The determination of effect for Section 106 would be <i>adverse effect</i>. A memorandum of agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the memorandum of agreement minimize or mitigate adverse impacts and reduce the intensity of impact under NEPA from major to moderate.</p> <p>Beneficial impact – Action would result in the alteration of a structure; however, all mitigation measures would be accomplished in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>. Integrity of the structure would be enhanced.</p>	<p>Adverse impact – Alteration of a feature(s) would diminish the overall integrity of the resource. The determination of effect for Section 106 would be <i>adverse effect</i>. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).</p> <p>Beneficial impact – Action would result in the alteration of a structure; however, all mitigation measures would be accomplished in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>. Integrity and character of the structure would be restored.</p>
Cultural Landscapes	Impact(s) is(are) at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be <i>no adverse effect</i> .	Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the landscape. The determination of effect for Section 106 would be <i>no adverse effect</i> .	Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape. The determination of effect for Section 106 would be <i>adverse effect</i> . A memorandum of agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the memorandum of agreement minimize or mitigate adverse impacts and reduce the intensity of impact under NEPA from major to moderate.	Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape. The determination of effect for Section 106 would be <i>adverse effect</i> . Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Table 4.1 Impact Threshold Definitions (continued)

Impact Topic	Negligible	Minor	Moderate	Major
Cultural Landscapes (continued)		Beneficial impact – Action would result in slight alteration of landscape patterns and features in accordance with <i>the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i> .	Beneficial impact – Landscape patterns and features are altered; however, a treatment plan would be put in place in accordance with <i>the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i> . Integrity of the landscape would be enhanced.	Beneficial impact – Landscape patterns and features are altered; however, a treatment plan would be put in place in accordance with <i>the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i> . Integrity of the landscape would be restored.
Museum Collections	Impact on museum collections is at the lowest levels of detection – barely measurable, with no perceptible consequences, either adverse or beneficial.	Adverse impact – would affect the integrity of a few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation. Beneficial impact – would stabilize the current condition of the collection or its constituent components to minimize degradation.	Adverse impact – would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation. Beneficial impact – would improve the condition of the collection or protect its constituent parts from the threat of degradation.	Adverse impact – would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation. Beneficial impact – would secure the condition of the collection as a whole or its constituent components from the threat of further degradation.
NATURAL RESOURCES				
Scenic/Visual Resources/ Viewshed	Changes would be either barely detectable or would have impacts that would be considered slight and localized.	Adverse impact – would have measurable impacts on scenic resources. Small changes could occur to the park's cultural and natural landscapes that would contribute to the deterioration of scenic resources and viewsheds. Beneficial impact – would have measurable impacts that would maintain or preserve scenic resources and viewsheds.	Adverse impact – would have clearly detectable impacts on scenic resources. Noticeable changes could occur to the park's cultural and natural landscapes that would deteriorate scenic and visual resources and could be detected by visitors. Beneficial impact – would have clearly detectable impacts that would maintain, enhance, or preserve scenic resources and viewsheds.	Adverse impact – 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 and viewsheds that could be easily detected by visitors. Beneficial impact – would have substantial impacts that would preserve and/or enhance the park's fundamental scenic resources and viewsheds.
Soils	The action would result in a change in a soil, but the change would be at the lowest level of detection, or not measurable.	Adverse impact – would result in a detectable change, but the change would be slight and local. There could be changes in a soil's profile in a relatively small area, but the change would not increase the potential for erosion.	Adverse impact – would result in a clearly detectable change in a soil. There could be a loss or alteration of the topsoil in a small area, or the potential for erosion to remove small quantities of additional soil would increase.	Adverse impact – would result in the permanent loss or alteration of soils in a relatively large area, or there would be a strong likelihood for erosion to remove large quantities of additional soil as a result of the action.

Table 4.1 **Impact Threshold Definitions** (continued)

Impact Topic	Negligible	Minor	Moderate	Major
Soils (continued)		Beneficial impact – would preserve or restore soil resources in a small area.	Beneficial impact – would preserve or restore soil resources in a moderately sized area.	Beneficial impact – would preserve or restore soil resources in a relatively large area.
Groundwater	Impacts on groundwater levels and quality would be imperceptible or, if detected, would be considered slight and localized.	<p>Adverse impact – Measurable changes in groundwater levels and quality would occur, although the changes would be small and impacts would be localized.</p> <p>Beneficial impact – would preserve groundwater resources, but the impacts would be localized.</p>	<p>Adverse impact – Changes in groundwater levels and quality would be apparent, and have the potential to become larger, although the changes still would be fairly localized in area</p> <p>Beneficial impact – would preserve groundwater resources and the impacts would be widespread.</p>	<p>Adverse impact – Substantial changes in groundwater levels and quality would be evident, which could be regional in scope. Highly noticeable changes could occur to the area's aquifer.</p> <p>Beneficial impact – would preserve groundwater resources and the impacts would be realized by the region.</p>
Surface Water Quality	Changes would be either barely detectable or would have impacts that would be considered slight and localized.	<p>Adverse impact – would have measurable impacts on surface water quality. Water quality impacts could include increased loads of sediment, debris, chemical or toxic substances, or pathogenic organisms. The impacts would be localized and would not affect organisms outside the immediate area of influence.</p> <p>Beneficial impact – would include decreased loads of sediment, debris, chemical or toxic substances, or pathogenic organisms and the impacts would be localized.</p>	<p>Adverse impact – would have clearly detectable impacts on surface water quality and potentially would affect organisms or natural ecological processes. An impact could be visible to visitors.</p> <p>Beneficial impact – would improve or preserve surface water quality and the impacts would be widespread.</p>	<p>Adverse impact – would have substantial impacts on surface water quality and would affect organisms or natural ecological processes. An impact could be easily visible to visitors.</p> <p>Beneficial impact – would improve or preserve surface water quality and the impacts would extend beyond park boundaries and have implications to the watershed.</p>
Vegetation	The action might result in a change in vegetation, but the change would not be measurable or would be at the lowest level of detection.	Adverse impact – might result in a detectable change, but the change would be slight and have a local effect on a vegetation community. This could include changes in the abundance, distribution, or composition of individual species in a local area, but not changes that would affect the viability of vegetation communities. Changes to local ecological processes would be minimal.	Adverse impact – would result in a clearly detectable change in a vegetation community and could have an appreciable effect. This could include changes in the abundance, distribution, or composition of local vegetation communities, but not changes that would affect the viability of regional plant populations. Changes to local ecological processes would be of limited extent.	Adverse impact – would be severely adverse to a vegetation community. The impacts would be substantial and highly noticeable, and they could result in widespread change. This could include changes in the abundance, distribution, or composition of a local vegetation community or regional plant population to the extent that the population would not be likely to recover. Significant ecological processes would be altered, and “landscape-level” (regional) changes would be expected.

Table 4.1 Impact Threshold Definitions (continued)

Impact Topic	Negligible	Minor	Moderate	Major
Vegetation (continued)		Beneficial impact – would restore or preserve vegetation in a relatively small area.	Beneficial impact – would restore or preserve vegetation in a substantial portion of the park.	Beneficial impact – would restore or preserve vegetation in large portions of the park, This could include changes in the abundance, distribution, or composition of a local vegetation community or regional plant population to the extent that the population would return to a sustainable level and/or contribute to the protection and enhancement of the park’s fundamental natural and cultural landscapes.
VISITOR USE AND EXPERIENCE				
Visitor Use and Experience	Impacts would be barely detectable, or would occasionally affect the experience of few visitors in the applicable setting.	Adverse impact – Impacts would be slight but detectable; could be perceived as negative by visitors or would inhibit the achievement of visitor experience. Would negatively affect the experience of some visitors in the applicable setting. Beneficial impact – The action would positively affect the experience of some visitors in the applicable setting.	Adverse impact – Impacts would be readily apparent and perceived as somewhat negative. Would affect the experience of many visitors in the applicable setting. Beneficial impact – The action would positively affect the experience of many visitors in the applicable setting.	Adverse impact – Impacts would be highly negative, affecting the experience of a majority of visitors in the applicable setting. Beneficial impact – The action would positively affect the experience of a majority of visitors in the applicable setting.
SOCIOECONOMIC ENVIRONMENT				
Regional and Local Economy	The action would produce no impacts on socioeconomic conditions or it would be at or below the lowest level of detection.	Adverse impact – The action would result in small, but detectable, changes to socioeconomic conditions. Only a small number of firms and/or a small portion of the population would be affected. The impact is slight and not detectable outside the affected area. Beneficial impact - The action would result in small, but detectable, positive changes to socioeconomic conditions. Only a localized area would be affected.	Adverse impact - The action would result in readily apparent changes to socioeconomic conditions. Any impacts would be localized within the affected area, such as impacts on a gateway community. Beneficial impact - The action would result in readily apparent, positive changes to socioeconomic conditions. Impacts would be confined to the local area and gateway communities.	Adverse impact – The action would result in readily apparent changes to socioeconomic conditions. Measurable changes in social or economic conditions at the county or three-county regional level would occur. The impact is severely adverse or within the affected area. Beneficial impact - The action would result in readily apparent, positive changes to socioeconomic conditions. Impacts would occur throughout the three-county area.

reconfiguration of the I-81/I-66 interchange. The project could affect the park's natural, cultural, and scenic resources, as well as visitor experience.

■ **O-N Minerals (Chemstone) Quarry Expansion**

Much of the land that lies immediately adjacent to the park's western boundary is owned by O-N Minerals Company, operator of the Chemstone rock quarry. The company has submitted a rezoning and special use permit request to Frederick County in order to allow for a major expansion of its limestone quarry operation. Specifically, the request is to rezone 639 acres adjacent to the park from "Rural Area" (RA) to "Extractive Manufacturing" (EA) to allow for the operation of three new quarries. According to an analysis conducted by the NPS's Geologic Resources Division, the O-N Minerals proposal would result in potential impacts on air quality, groundwater and surface water, traffic conditions, public safety, rural character and the historical scene, and local property values (NPS 2006b). In June 2006, the Frederick County Planning Commission voted to deny the rezoning proposal, but the final decision makers are the Frederick County Board of Supervisors, who still have made no decision on the matter.

■ **Upgrades of Power Transmission Lines**

Upgrades of electric power transmission lines are planned for the project area. Two separate projects are currently in the planning stages, both of which will connect to the Meadow Brook power substation located near Middletown, about one mile north of the park's northern boundary. Dominion Virginia Power is planning to construct a new 500,000-volt electric transmission line to connect the Meadow Brook substation to the Loudon substation in Loudoun County. The Dominion line will be an overhead line that will use an existing power line corridor running southeast of the park.

Allegheny Power is planning to construct a new 500,000-volt electric transmission line from the Meadow Brook substation into southwestern Pennsylvania (known as the Trans-Allegheny Interstate Line). The selected route of the Allegheny line is not known at this time; however, the route alternatives run in a northwesterly direction from the Meadow Brook substation. Although the proposed routes in both of these projects neither cross the park nor intersect the park boundary, the transmission lines could impact the park's scenic viewshed and rural character.

■ **Encroaching Residential and Commercial Development**

Increased growth and development in the region is rapidly changing the look and feel of the area. The growth of surrounding towns and counties is changing the park's setting. The agrarian and rural landscapes of the park and its surroundings are giving way to increased residential and commercial development. Large lot development (single family homes on 1-acre lots), commercial development (chain restaurants), and development related to suburbanization (townhouses and lighted

baseball fields) has affected the park's resources and would likely continue to pose threats to the preservation of resources, particularly viewsheds.

4.2.6 Impairment of Park Resources

In addition to determining the environmental consequences of implementing the alternatives, *NPS Management Policies 2006* (section 1.4) requires analysis of potential impacts on determine whether proposed actions would impair the park's resources and values.

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 resources and values. Whether an impact meets this mandate 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. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on resources and values. However, the laws give the NPS the management discretion to allow impacts on resources and values when necessary and appropriate to fulfill the purposes of the area, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within a unit, that discretion is limited by the statutory requirement that the NPS must leave resources and values unimpaired unless a particular 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 resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (*NPS Management Policies 2006*, section 1.4.5). An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment if it

- affects a resource or value whose preservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- is key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- is identified in the park's general management plan or other relevant NPS planning documents as being of significance

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

An impact that may, but would not necessarily, lead to impairment may result from visitor activities; NPS administrative activities; or activities undertaken by concessionaires, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park.

A determination on impairment is made in the “Conclusion” section of the impact analysis for each impact topic related to the park’s resources and values. An impairment determination is not made for topics related to visitor use and experience, the socioeconomic environment, or park operations, because impairment determinations are resource-based. If, for example, visitor use was found to be impairing soils, the determination would be associated with “soils” and not with “visitor use.”

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

4.3.1 Cultural Resources

■ Archeological Resources

Direct and Indirect Impacts. Under Alternative A, archeological resources on NPS- and partner-owned lands would continue to be surveyed, inventoried, and evaluated under National Register of Historic Places criteria to determine their eligibility for listing in the National Register, a beneficial impact. This will be done as NPS and partner staffing and funding permit. All ground-disturbing activities 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. Known archeological resources would be avoided whenever possible and few, if any, adverse impacts would be anticipated. If, however, National Register-listed or National Register-eligible archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Virginia State Historic Preservation Officer (if the project was a federal undertaking). If previously undiscovered archeological resources were uncovered during construction (i.e., a federal undertaking), 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 developed in consultation with the Virginia State Historic Preservation Officer. Large special events would continue to have the potential to adversely impact archeological resources because visitors, vehicles, ground fires, and horses would likely continue to affect archeological resources. Thus, implementation of Alternative A would result in potentially adverse, minor to moderate, long-term impacts on archeological resources on NPS- and partner-owned lands.

Additionally, under Alternative A, the integrity of archeological resources on privately owned lands, which constitute approximately two-thirds of the park, would likely continue to be adversely impacted by increasing residential, commercial, and industrial development; agricultural operations and other human activities; inadvertent disturbance; and natural processes. Although the NPS and its Key Partners would encourage and promote the protection of archeological resources on private lands and technical assistance would be available to private landowners to help them protect their lands, archeological resource preservation efforts on private lands would ultimately be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of Alternative A would result in potential adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands.

Archeological resources adjacent to or easily accessible from trails, roads, and developed areas could be vulnerable to surface disturbance, inadvertent damage,

and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. However, visitor education would discourage vandalism and inadvertent destruction of cultural remains, and any adverse impacts, although long-term or permanent, would be expected to be minimal if they do occur.

Cumulative Impacts. In the past, human activities, lack of sufficient resource monitoring and protection programs, and climatic and natural processes have resulted in the loss or disturbance of archeological resources. Because much of the park was not surveyed and inventoried for archeological resources until recent years, some decisions about site development and permitted activities, such as large special events, have been made that, in hindsight, may have resulted in the loss or disturbance to an unknown number of archeological sites on lands in the park. Although ongoing and expanded archeological site monitoring programs would be initiated and efforts would be undertaken to minimize or mitigate potential impacts from human activities and natural causes, an unknown number of archeological sites on NPS- and partner-owned lands in the park would likely continue to be adversely impacted by current and ongoing human activities such as large special events; weather and climatic conditions; and natural processes such as erosion and the shifting and cutting of river channels.

Other recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as the expansion of the I-81 corridor through the park; encroaching residential, commercial, and industrial development on lands within the park boundaries resulting from regional growth; expansion of the O-N Minerals rock quarry adjacent to the park's western boundary; and construction of power transmission lines near the park, would likely contribute to disturbance or destruction of archeological resources. Thus, such undertakings would potentially have adverse impacts on archeological resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute adverse, minor to moderate, long-term impacts on any overall cumulative impact on archeological resources. The adverse impacts on such resources associated with Alternative A, however, would constitute a relatively small component of any overall cumulative impact.

Section 106 Summary. The Section 106 determination of effect on archeological resources on NPS- and partner-owned lands in the park would likely be *adverse effect*; the determination would be a potential *adverse effect* on archeological resources on privately owned lands.

Conclusion. Overall, implementation of Alternative A would result in potential adverse, minor to moderate, long-term impacts on archeological resources on NPS-

and partner-owned lands; and would result in potentially adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on archeological resources; however, this alternative's contribution to these impacts would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of archeological resources in the park.

■ Ethnographic Resources

Direct and Indirect Impacts. Comprehensive studies that identify ethnographic resources have not been completed in the park area. However, a draft *Ethnographic Overview and Assessment*, prepared for the NPS in 2006, indicated the likelihood of resources within the park boundaries that have "great significance" in association with American Indians, African-Americans, Germans, Scots-Irish, non-conformist religious practitioners, and commemorators of the South's Lost Cause. Thus, while it is not known at present if ethnographic resources exist in the park, it is likely that some will be identified as a result of further research and future studies.

Under Alternative A, the NPS and its Key Partners will consult with concerned Indian tribes and other groups (once potentially affected tribes and groups are identified) to learn about and develop strategies for preserving and providing access to ethnographic resources on NPS- and partner-owned lands. The NPS and its Key Partners will 1) encourage archeologists, anthropologists, and researchers to consult with tribes and other groups regarding areas of interest that could be included in research efforts and 2) promote ethnographic involvement in excavations and anthropological research. Thus, implementation of this alternative would result in beneficial, minor to moderate, long-term impacts on ethnographic resources that were identified on NPS- and partner-owned lands.

If ethnographic resources were identified on privately owned lands in the park, protection and preservation of such resources would be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. The NPS and its Key Partners would encourage preservation of identified ethnographic resources and technical assistance would be available to private landowners to enable them to protect such resources, but ultimate decisions regarding preservation and use would rest with the landowners. Thus, implementation of this alternative would result in potential adverse, minor to moderate, long-term impacts on ethnographic resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and establishment of the NHP, ethnographic resources were likely subjected to minor to moderate adverse impacts by a variety of human activities, such as large special events and agricultural operations, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative A were implemented.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park due to regional growth, would result in potential adverse, minor to moderate, short-term impacts on any identified ethnographic resources during periods of construction.

Additionally, these developments would likely contribute to an increase in park visitation and thus potentially disturb, or disrupt access to, ethnographic resources. Therefore, they would also result in potential adverse, minor to moderate, long-term impacts on identified ethnographic resources.

These developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would also result in potential adverse, minor to moderate, long-term impacts on ethnographic resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute minor to moderate, long-term adverse impacts on any overall cumulative impact on ethnographic resources. The adverse impacts on such resources associated with Alternative A, however, would constitute a relatively small component of any overall cumulative impact.

Conclusion. Overall, implementation of Alternative A would result in beneficial, minor to moderate, long-term effects on ethnographic resources on NPS- and partner-owned lands in the park; and would result in potentially adverse, minor to moderate, long-term effects on ethnographic resources on privately owned lands. Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to result in adverse, minor to moderate, long-term cumulative impacts on ethnographic resources; however, this alternative's contribution to these impacts would be a relatively small component of any overall cumulative effect.

Impacts from actions contained in this alternative would not likely result in impairment of ethnographic resources in the park.

■ Historic Structures

Direct and Indirect Impacts. Under Alternative A, historic structures on NPS- and partner-owned lands would continue to be surveyed, inventoried, and evaluated under National Register of Historic Places criteria to determine their eligibility for listing in the National Register. This would be done as NPS and partner staffing and funding permit. To appropriately preserve and protect National Register-listed or National Register-eligible historic structures (i.e., Belle Grove Manor House, Harmony Hall, Solomon Heater House, and Whitham property) on NPS- and partner-owned lands, all preservation and rehabilitation efforts would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995) and ongoing Section 106 consultation with the Virginia State Historic Preservation Officer. Any materials removed during rehabilitation efforts would be evaluated to determine their value to the park's museum collections and/or for their comparative use in future preservation work at the sites. Stabilization, preservation, and rehabilitation would have *no adverse effect* on historic structures.

Nevertheless, some negligible to minor, adverse impacts on historic fabric in historic structures could result from climatic conditions and other natural processes as well as from anticipated increases in visitation levels and continued use of structures for residential, administrative, and interpretive activities. However, these impacts would be minimized to the extent possible by public education efforts as well as by preservation treatment and regular cyclic maintenance as NPS and partner funding and personnel permit. Few, if any, adverse impacts would be anticipated.

Protection and preservation of historic structures on privately owned property would continue to be subject to the discretion of private landowners. The NPS and its Key Partners would encourage preservation of historic structures on private lands and technical assistance would be available to private landowners to enable them to preserve such resources; however actions regarding preservation of such resources would ultimately be subject to the discretion of landowners. While some National Register-listed privately owned properties would continue to maintain their historic integrity as a result of landowner preservation activities, other listed properties on private lands would likely continue to deteriorate from lack of preservation treatment. This variable level of facility and resource management could contribute to the deterioration of historic structures in the park. In most cases, adverse impacts would be realized only when private lands are developed.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, historic structures were adversely impacted by a variety of human activities, such as large special events, inadvertent disturbance, and vandalism; and by natural processes, such as erosion, weathering, and other climatic conditions. Many of these activities and processes have continued to the present and would likely continue if Alternative A were implemented.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would have potentially adverse, minor to moderate, long-term impacts on historic structures because they would likely result in increasing park visitation and the potential for some loss of historic fabric from historic structures.

As described above, implementation of Alternative A would result in both beneficial and adverse impacts on historic structures. Yet, due to the adverse impacts of other current or reasonably foreseeable actions the cumulative impact would be adverse. Alternative A, however, would contribute only minimally to the adverse cumulative impact.

Section 106 Summary. The Section 106 determination of effect on historic structures on NPS- and partner-owned lands would be *no adverse effect*; on privately owned land the determination would be potential *adverse effect*.

Conclusion. Overall, implementation of Alternative A would result in beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands in the park; and would result in potentially adverse, minor to moderate, long-term impacts on historic structures on privately owned lands.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to result in cumulative adverse, minor to moderate, long-term impacts on historic structures; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of historic structures in the park.

■ Cultural Landscapes

Direct and Indirect Impacts. Comprehensive cultural landscape studies have not been completed for all NPS- and partner-owned lands in the park. A draft cultural landscape inventory (CLI) has been completed for the Whitham Farmstead, which is the only NPS-owned property within the park. Under Alternative A cultural landscapes on NPS- and partner-owned lands would continue to be surveyed, inventoried, and evaluated under National Register of Historic Places criteria to determine their eligibility for listing in the National Register as NPS and partner staffing and funding permit. To appropriately preserve and protect National Register-listed or National Register-eligible cultural landscapes on NPS- and partner-owned lands, all stabilization, preservation, and rehabilitation efforts would be

undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995) and ongoing Section 106 consultation with the Virginia State Historic Preservation Officer. Stabilization, preservation, and rehabilitation would have *no adverse effect* on cultural landscape resources.

Careful design would ensure that the expansion or development of trails would minimally affect the scale and visual relationships among landscape features. In addition, the topography, vegetation, circulation features, and land use patterns of cultural landscapes would remain largely unaltered. Few, if any, adverse impacts would be anticipated.

Nevertheless, some negligible to minor, adverse impacts on significant elements of cultural landscapes (such as vegetation, land use, building and settlement patterns, and views and vistas), could result from climatic conditions and other natural processes, as well as from anticipated increases in visitation levels, continued use of structures for residential, administrative, and interpretive activities, and encroaching highway, residential, and commercial development. However, these impacts would be minimized to the extent possible by public education efforts, as well as from preservation treatment as NPS and partner funding and personnel permit. Few, if any, adverse impacts would be anticipated. Thus, implementation of Alternative A would result in beneficial, minor to moderate, long-term impacts on cultural landscape resources on NPS- and partner-owned lands.

Protection and preservation of significant elements of cultural landscapes (such as vegetation, land use, building and settlement patterns, and views and vistas) on privately owned property would continue to be subject to the discretion of private landowners. The NPS and its Key Partners would encourage preservation of significant elements of cultural landscapes on private lands, and technical assistance would be available to private landowners to enable them to protect such resources; however actions regarding cultural landscape preservation would be subject to the discretion of landowners. While some National Register-listed privately owned properties would continue to maintain their historic integrity as a result of landowner preservation activities, other listed properties on private lands would likely continue to deteriorate from lack of preservation treatment. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of Alternative A would result in potential adverse, minor to moderate, long-term impacts on cultural landscape resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, cultural landscapes were adversely impacted by a variety of human activities, such as large special events, agricultural operations (which have impacted Civil War-related resources), inadvertent disturbance, and vandalism; and by natural processes, such as erosion, weathering, and other

climatic conditions. Many of these activities and processes have continued to the present and would likely continue if Alternative A were implemented.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would have adverse effects on cultural landscape resources because they would likely result in increasing park visitation and the potential for loss of significant cultural landscape features. These developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because they would result in visual intrusions on the historic scene and would contribute to the loss of significant elements of the park's rural and pastoral landscape.

As described above, implementation of Alternative A would result in both beneficial and adverse impacts on cultural landscapes. Yet, due to the adverse impacts of other current or reasonably foreseeable actions, the cumulative impact would be adverse. Alternative A, however, would contribute only minimally to the adverse cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on cultural landscapes on NPS- and partner-owned lands; and the determination of effect would be potential *adverse effect* on cultural landscapes on privately owned lands.

Conclusion. Overall, implementation of Alternative A would result in beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands in the park; and would result in potential adverse, minor to moderate, long-term impacts on privately owned lands.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on cultural landscapes; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of cultural landscapes in the park.

■ **Museum Collections**

Direct and Indirect Impacts. Under Alternative A, the NPS and its Key Partners would continue to preserve and manage collections of cultural and natural resource

objects, artifacts, and archives relating to the park lands they own within the legislated boundaries of the park. This would be done in compliance with NPS and other professional standards for collecting, managing, and preserving museum collections. As museum collections are acquired, the materials would be accessioned, cataloged, preserved, protected, and made available for access and use according to NPS and other professional standards and guidelines.

Privately owned collections of cultural and natural objects, artifacts, and archival materials would likely continue to remain in private ownership or be deposited with organizations or institutions at the discretion of landowners. As a result, such collections of historical and natural objects, artifacts, and archives could be potentially degraded, lost, or scattered, thus reducing or eliminating their future usefulness for research and interpretation.

Cumulative Impacts. Because conditions would not change, there would be no cumulative effects on museum collections under this alternative.

Conclusion. Overall, actions under this alternative would result in beneficial, minor to moderate, long-term impacts on museum collections possessed by the NPS and its Key Partners. Actions under this alternative would result in potential minor to moderate, long-term, adverse impacts on privately owned collections. There would be no cumulative impacts on museum collections under this alternative.

Impacts from actions contained in this alternative would not likely result in impairment of museum collections in the park.

4.3.2 Natural Resources

■ Scenic/Visual Resources/Viewsheds

Direct and Indirect Impacts. Some of the existing visitor uses and recreational activities that occur in the park, including scenic driving, participation in large special events, and trail use, would continue to affect scenic resources. Visitation to the Cedar Creek Battlefield, Belle Grove Plantation, and other visitor attractions would continue to affect the scenic qualities of these areas. Impacts from scenic driving could include the creation of denuded areas and ruts along road corridors that may affect the scenic quality of the area. Large special events could continue to impact the scenic qualities associated with historic sites and cultural landscapes by affecting vegetation and landscape resources through vegetation trampling or loss. Trail use and general recreation could produce braided trails, denuded areas, and litter that would affect the visual qualities of the park.

Development of the Keister Tract would substantially increase visitor use in the southern portion of the park. Visitation at this site would increase after the area opens to the public and then would likely continue to gradually increase over the life of the plan. This increase in visitation and associated uses also would affect the

scenic and visual qualities of this site. Collectively, these recreational uses and activities would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized.

Land use and resource management activities in the park would continue to affect the scenic resources of the park. Under Alternative A, the NPS and its Key Partners would continue to manage scenic resources and viewsheds independently according to their own policies. Management of cultural landscapes, including the management of historic structures and natural resources that contribute to the cultural setting, would continue to be variable and could lead to adverse impacts to the scenic character of the park. Coordination between the NPS and its Key Partners on land and resource management in the park would continue to be informal and sporadic. For example, the management of open fields and grasslands could differ among partners and may lead to variations in vegetation patterns that may affect the visual integrity and scenic qualities of the pastoral landscape. Impacts are likely to be long-term and could be beneficial or adverse. The intensity of the impacts is unknown, although it is expected that it would be localized.

The construction of new facilities in the park, such as buildings, trails, and signs, has the potential to affect the scenic resources of the park. Decisions on facility development under Alternative A would continue to be left up to the respective partners and the NPS. Impacts on the rural and scenic character of the park could be realized from development that is either misplaced or out of context, injuring scenic resources and viewsheds. Depending on the nature and scope of facility development, impacts would be expected to be adverse and long-term in localized areas and could range from negligible to moderate intensity. The potential for impacts on scenic resources from facility development on partner- and NPS-owned lands in the park is low, given that the NPS and its Key Partners are committed to the protection and enhancement of scenic resources.

Land protection activities in the park would continue to affect the park's scenic resources and viewsheds. Land protection and acquisition activities would continue to be primarily driven by the partners with no overall plan. Acquisition of key historic sites within the park would continue to be the focus, in contrast to protecting key views, vistas, and scenic backdrops. Land and interests in land would be acquired by donation or from willing sellers as funds become available. The acquisition of key properties could result in the protection of important scenic resources and would prohibit development that could adversely impact these resources. Under Alternative A, technical assistance to Key Partners, private landowners, and nearby communities on scenic viewshed issues would continue to be limited or nonexistent. Lacking a coordinated land protection approach, the effect on scenic resource/viewshed protection and enhancement would be beneficial, but limited in extent. Continuation of the existing land protection approach would likely result in the protection of a core park area surrounded by a patchwork of

developed private lands. Land protection under Alternative A would be expected to result in long-term, minor, beneficial, localized impacts on scenic resources.

Scenic resources on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be affected by land-use and land-management activities, development, and land protection. Land-use and land-management activities, including general residential use, agriculture, or other inadvertent human activity, could adversely affect scenic resources by degrading the site conditions of an area. Increased residential and commercial development on private lands would adversely impact scenic resources and viewsheds through the placement of items or structures that may be incompatible with the historic, scenic qualities of an area. Land protection activities and initiatives assumed by private landowners would have a beneficial impact on scenic resources within the park. Although the NPS and its Key Partners would continue to encourage and promote the protection of scenic resources and viewsheds on private lands, resource preservation efforts would be subject to the discretion of individual landowners. Collectively, impacts on scenic resources and viewsheds from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities. Adverse impacts would be major only if significant portions of the land are developed.

Cumulative Impacts. All of the actions and projects identified as "cumulative projects" would affect the park's fundamental scenic resources and values. The expansion of I-81 would increase the footprint of the highway corridor and related facilities in the park. The interstate would likely be more visible from more areas of the park. Expansion of the O-N Minerals rock quarry would likely include additional infrastructure and more stockpiles adjacent to the park boundary, which would affect the rural character and setting of the park. The upgrade of the power transmission lines that emanate from the Meadow Brook substation just north of the park would affect the park's rural character and scenic views from within the park. The impacts of increased land conversion and development in the region would continue to increase property values in the park, adding pressure to landowners that could result in increased development and loss of scenic resources. Increases in residential and commercial development near or adjacent to the park could result in impacts on the park's rural setting, scenic qualities, and viewsheds, primarily due to the intensity of land uses and the design of new developments. Collectively, these other actions would result in long-term, moderate to major, adverse impacts. The impacts would be localized, but could affect many sites.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions described above, there would be a long-term, moderate to major, adverse cumulative impact

on the park's scenic resources and viewsheds. The actions in Alternative A would contribute a relatively small increment to this cumulative impact.

Conclusion. The park's scenic resources and viewsheds would be affected by the actions under Alternative A, including the continuation of existing policies and practices for visitor use, land use and management, development, and land protection. Activities on private lands would also continue to affect the park's scenic resources and viewsheds.

Visitor use would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized. Land use and management impacts on scenic resources would be long-term, beneficial or adverse, and localized, with unknown intensities. Development impacts would be long-term, adverse, negligible to moderate, and localized. Land protection would result in long-term, beneficial, minor impacts that would be localized. Private land activities would result in long-term, adverse, localized impacts, with intensities ranging from negligible to major depending on the scale of these activities.

When the impacts of Alternative A are added to the effects of other current and foreseeable future actions, there would be a moderate to major, long-term, adverse cumulative impact on the park's scenic resources and viewsheds. The impacts would be localized, but could affect many sites. The actions in Alternative A would add a small increment to this overall impact.

Impacts from actions contained in this alternative would likely result in potential impairment of scenic/visual resources/viewsheds in the park.

■ Soils

Direct and Indirect Impacts. Under Alternative A, soils in the park would likely continue to be compacted and eroded from visitor use in localized areas, such as along existing trails, parking areas, and at reenactment and interpretive sites. In some areas, new human-created, unofficial social trails may form with increased visitation, particularly at popular sites. In sloped areas, unofficial social trails would result in increased soil erosion from storm water runoff. Large special events would continue to result in concentrated adverse impacts on soils from visitors, horses, and vehicles, especially in sensitive areas such as highly erodible and hydric soils. These long-term, adverse impacts would be of minor to moderate intensity and limited in extent.

Under Alternative A, the NPS and its Key Partners would continue to manage soil resources independently according to their own policies. Soils in the park would continue to be altered in areas that are in agricultural production. This alteration could include compaction and erosion from grazing cattle, as well as cultivation of fields and hay production and harvest. Cattle grazing in stream corridors would

continue to cause soil erosion. Under Alternative A, technical assistance to Key Partners, private landowners, and nearby communities on soil resource issues would continue to be limited to nonexistent. Collectively, these activities would result in long-term adverse minor to moderate impacts that would be limited in extent.

Soils could be altered due to the construction of new visitor facilities, such as buildings, trails, and signs. Soil alteration includes soil erosion and associated soil loss during construction activities (short-term) and long-term disruption of the soil profile at facility sites. Depending on the nature and scope of the development, impacts would be expected to be adverse and long-term in localized areas and could range from negligible to moderate intensity. Maintenance of existing facilities would probably result in some erosion and/or alteration of soil properties, resulting in a negligible to minor, long-term, adverse impact in localized areas.

Land protection activities in the park would continue to affect the park's soils. Land protection and acquisition activities would continue to be primarily driven by the partners with no agreed-to plan. Although acquisition of key historic sites within the park would continue to be the focus, these properties would also contain soil resources. Acquisition of these properties could result in the protection of important soils, including prime farmland or hydric soils, and would prohibit development that could adversely impact these resources, thus resulting in a beneficial impact. Lacking a coordinated land protection approach, the effect on the protection and enhancement of soils in the park would likely be beneficial, but limited in extent. Land protection under Alternative A would be expected to result in long-term, minor, beneficial impacts on soils.

Soils on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by land use, management, and development. Land-use and land-management activities, including general residential use, agricultural production, or some inadvertent human activity, could adversely affect soil resources. Land protection activities and initiatives assumed by private landowners would have a beneficial impact on soils within the park. Although the NPS and its Key Partners would continue to encourage and promote the protection of soils on private lands, resource preservation efforts would be subject to the discretion of individual landowners. Collectively, impacts on soils from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities.

Cumulative Impacts. The expansion of I-81 through the park would result in the alteration and loss of soils in the park due to roadway construction and the impacts of heavy equipment use. The impacts of increased land conversion and residential and commercial development in the region would continue to increase property values in the park, adding pressure to landowners that could result in increased

development and loss of soil resources in the park. Collectively, these other actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions, there would be a long-term, minor to moderate, adverse cumulative impact on soils. The actions in Alternative A would contribute an appreciable increment to this cumulative impact.

Conclusion. Some of the park's soils would be affected by the actions under Alternative A, including the continuation of existing policies and practices for visitor use, land use and management, development, and land protection. Activities on private lands would also continue to affect the park's soils.

Visitor use impacts on soils would be long-term, adverse, minor to moderate, and localized. Land use and management impacts on soils would be long-term, adverse, minor to moderate, and localized. Facility development and maintenance impacts would be long-term, adverse, negligible to moderate, and localized. Land protection would result in long-term, beneficial, minor impacts and would be localized. Private land activities would result in long-term, adverse, localized impacts, with intensities ranging from negligible to major depending on the scale of these activities.

When the impacts of Alternative A are added to the effects of other current and foreseeable future actions, there would be a minor to moderate, long-term, adverse cumulative impact on soils in the park. The impacts would be localized. The actions in Alternative A would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of soils in the park.

■ Groundwater

Direct and Indirect Impacts. Increases in visitation to the partner-owned sites would likely increase the demand for domestic water. Development of the Keister Tract would substantially increase visitor use in the southern portion of the park. Visitation at this site would increase after the area opens to the public and then would likely continue to gradually increase over the life of the plan. These new uses and corresponding increases in park visitation could result in long-term, adverse impacts on groundwater and domestic water supplies. The impacts could extend beyond park boundaries. Predicting the intensity of this impact is difficult, but it is anticipated to be minor because the increase in water use above existing rates of consumption would be relatively small when compared to the size of the aquifer.

Groundwater quality in the park could continue to be affected by visitor use in locations such as along existing roads and at parking areas. Inadvertent chemical spills, including oil from automobiles, could enter the soil profile and impact

groundwater quality. Park visitors could also affect groundwater resources by improperly or inadvertently disposing of chemicals or other substances that may enter groundwater via the park's karst topography. Areas with karst features, such as sinkholes, that have more direct connections to groundwater and surface waters, would be more likely to facilitate adverse impacts on groundwater. These adverse impacts would likely be long-term, localized, and of negligible to minor intensity because they would be limited to discrete areas such as roads and parking areas.

Under Alternative A, the NPS and its Key Partners would continue to utilize and manage groundwater resources independently according to their own policies. Groundwater resources in the park would continue to be affected by the land use and management decisions of the NPS and its Key Partners. The NPS and its Key Partners would continue to employ agricultural practices that have the potential to affect groundwater quality and consequently the underlying aquifer. Under Alternative A, technical assistance to Key Partners, private landowners, and nearby communities on groundwater extraction and groundwater quality issues would continue to be limited to nonexistent. These long-term adverse impacts would be localized and intensities would be negligible to minor because the scope and frequency of impacts would be relatively small.

According to the Frederick County Comprehensive Plan, it is unknown how long the area aquifer will be able to meet domestic water supply needs. It is presumed that the quantity of groundwater being withdrawn for current NPS and partner purposes is relatively small compared to private uses in the park, and water use is not expected to increase substantially during the life of this plan. No new facility development would occur on NPS-owned land; therefore, no additional water withdrawals would be expected. New facility development in the park resulting from partner actions could lead to increased demands on water resources. The establishment of new wells or other water withdrawals in the park could adversely affect water supplies parkwide over the long-term; however, the impact would be expected to be negligible to minor because a relatively small amount of water would be required for new facility development.

Land protection activities in the park would continue to affect the park's groundwater. Land protection and acquisition activities would continue to be primarily driven by the partners with no agreed-to plan. Although acquisition of key historic sites within the park would continue to be the focus, these properties overlay groundwater. Acquisition of these properties could aid in the protection of groundwater by eliminating or reducing the development potential of the property. This would result in a reduction in demand for domestic water that would help with current water supply issues. Elimination or reduction of development would also reduce the potential for adverse impacts on groundwater quality by reducing human activities that could result in inadvertent chemical contamination. Lacking a coordinated land protection approach, the effect on the protection and enhancement

of groundwater in the park would likely be beneficial, but limited in extent. Land protection under Alternative A would be expected to result in long-term, minor, beneficial impacts on groundwater.

Groundwater on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by development and land use and management. Land protection activities and initiatives assumed by private landowners could have a beneficial impact on groundwater within the park. Increased residential and commercial development on private lands would adversely impact groundwater due to increased water extraction and the potential for groundwater quality impacts associated with residential and commercial activities. Land-use and land-management activities, including general residential use, agricultural production, or some inadvertent human activity, could adversely affect groundwater. Although the NPS and its Key Partners would continue to encourage and promote the protection of groundwater on private lands, resource preservation efforts would be subject to the discretion of individual landowners. Collectively, impacts on groundwater from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. Three of the four actions and projects identified as "cumulative projects" would affect groundwater resources. The expansion of I-81 would likely affect groundwater supply in the area in the short-term because the water required for construction would likely be withdrawn from the local aquifer. Expansion of the O-N Minerals rock quarry is anticipated to result in aquifer drawdown and could affect groundwater quality in the immediate area. Aquifer drawdowns of 10 feet could occur up to 9,600 feet from the quarry (NPS 2006b). Quarries are regulated facilities that must adhere to federal and state permit requirements that would serve to mitigate any adverse impacts. The impacts of increased land conversion and development in the region would continue to increase property values in the park, adding pressure to landowners that could result in increased development. Increases in residential and commercial development near or adjacent to the park could result in impacts on groundwater resources due to increased water demand and the potential for impacts on groundwater quality. Population growth in the area is already stressing existing water supplies. Collectively, these other actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions described above, there would be a long-term, adverse cumulative impact on groundwater resources. The impacts would extend beyond park boundaries and would include the region. It is difficult to predict and quantify the impacts, but they are anticipated to be moderate; the impacts would be more than imperceptible, but

substantial changes to aquifer resources would not be expected. The actions in Alternative A would add a very small increment to this overall impact.

Conclusion. Groundwater resources in the park would continue to be affected by the actions under Alternative A, including the continuation of existing policies and practices for visitor use, land use and land management, development, and land protection. Activities on private lands would also continue to affect the park's scenic resources and viewsheds.

Visitor use impacts on groundwater would be long-term, adverse, negligible to minor, and localized. Land use and management impacts on groundwater would be long-term, adverse, negligible to minor, and localized. Facility development and maintenance impacts would be long-term, adverse, negligible to minor, and experienced parkwide. Land protection would result in long-term, beneficial, minor impacts that would be localized. Private land activities would result in long-term, adverse, localized impacts, with intensities ranging from negligible to moderate depending on the scale of these activities.

When the impacts of Alternative A are added to the effects of other current and foreseeable future actions, there would be a moderate, long-term, adverse, cumulative impact on groundwater resources. The impacts could extend beyond park boundaries in some cases. The actions in Alternative A would add a very small increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of groundwater in the park.

■ Surface Water Quality

Direct and Indirect Impacts. Under Alternative A, surface water quality in the park would continue to be affected by visitor use due to the potential for soil erosion and inadvertent chemical contamination. Trail use adjacent to surface waters would continue to cause soil erosion that would affect the turbidity and chemical integrity of surface waters. Large special events would likely continue to result in adverse impacts on surface water quality due to the concentration of visitor activities, including stock and vehicle use, and their potential to increase soil erosion. Concentrated or repeated visitor activities in riparian areas, such as the use of horses during battle re-enactments, would likely continue to result in adverse impacts on surface water quality due to vegetation loss and resultant increased erosion. This erosion would affect the turbidity and chemical integrity of surface waters. Chemical contamination of waters could occur due to surface water runoff from parking areas that may contain oil and heavy metals. These long-term adverse impacts would be of minor intensity and limited in extent because of the infrequency of impacts and the lack of proximity to surface waters.

Under Alternative A, the NPS and its Key Partners would continue to utilize and manage surface waters independently according to their own policies. Technical assistance to Key Partners, private landowners, and nearby communities on water resource management issues would continue to be limited to nonexistent. Surface waters and water quality in the park would continue to be affected by land use and management decisions of the NPS, its Key Partners, and private landowners. The NPS and its Key Partners would continue to employ agricultural practices that have the potential to affect surface water quality. Soils in the park would continue to be altered in areas that are in agricultural production, which would contribute to soil erosion. Cattle grazing in stream corridors would continue to cause soil erosion and nutrient input into streams. Chemical use could also affect surface waters.

Perennial streams in the park, including Cedar Creek, the North Fork of the Shenandoah River, and Meadow Brook, provide important habitat to aquatic organisms and sensitive wildlife species in the area; therefore, water quality within these streams is of concern. Impacts could include increased turbidity and water temperature, as well as altered chemical composition resulting from erosion and urban pollutants. These impacts could lead to the degradation of aquatic wildlife habitat and surface water resources available for agricultural use. Collectively, these long-term adverse impacts would be mostly localized, but could occur parkwide. The intensity of the impact would be minor to moderate because land management practices, especially agricultural practices, near streams and rivers would continue to contribute materials and substances that affect surface water quality.

Development of new facilities in the park, such as buildings, trails, and signs, would affect surface water quality. Should the respective partners choose to develop new facilities on the land they own, the impacts would depend on the nature and scope of the development and would be expected to include short-term adverse impacts from construction and long-term, adverse impacts from surface water runoff. Short-term impacts from construction include increased erosion and resultant sedimentation, while long-term impacts include increased nutrient and other chemical inputs from runoff generated by impervious surfaces. Facility development would likely be the greatest at the Keister Tract, which is adjacent to a reach of the North Fork of the Shenandoah River. The potential for adverse impacts on surface water quality would likely be greatest at this site. However, impacts would be reduced from the implementation of best management practices (BMPs) and mitigation measures. In general, impacts on surface water quality from actions in this plan would be localized and of minor intensity due to the relatively small amount of facility development.

Land protection and acquisition activities in the park would continue to affect the park's surface water quality. These activities would continue to be driven primarily by the partners with no agreed-to plan. Although acquisition of key historic sites

within the park would continue to be the focus, these properties could also contain surface waters or could influence nearby surface waters. Acquisition of these properties would aid in the protection of surface water quality by eliminating or reducing the development potential of the property over time. Elimination or reduction of development would reduce the potential for adverse impacts on surface water quality by reducing the potential for increased erosion, surface water runoff, and human activities that could result in inadvertent chemical contamination. Under Alternative A, technical assistance to Key Partners, private landowners, and nearby communities on groundwater issues would continue to be limited to nonexistent. Lacking a coordinated land protection approach, the effect on the protection and enhancement of surface water quality in the park would likely be beneficial, but limited in extent. Land protection under Alternative A would be expected to result in long-term, minor, beneficial impacts on surface water quality.

Surface water quality on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by land use, land management, and development. Land-use and land-management activities, including general residential use, agricultural production, or other inadvertent human activity, would continue to adversely affect surface water quality due to the potential for contamination of surface waters from runoff and inadvertent chemical spills. Land protection activities and initiatives assumed by private landowners would continue to have a beneficial impact on surface water quality within the park. Increased residential and commercial development on private lands would adversely impact surface water quality from the addition of urban pollutants in surface water runoff. Although the NPS and its Key Partners would continue to encourage and promote the protection of surface water quality on private lands, resource preservation efforts would be subject to the discretion of individual landowners. Collectively, impacts on surface water quality from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities.

Cumulative Impacts. Three of the four actions and projects identified as "cumulative projects" would affect surface water quality. The expansion of I-81 would affect surface water quality in the park in the short-term due to construction activities. I-81 crosses Cedar Creek and one of its unnamed tributaries. It is reasonable to expect that some short-term adverse impacts on surface water quality would occur due to increased erosion, sediment loading, and channel manipulation; however, employing mitigation measures during construction should eliminate any long-term impacts. Expansion of the O-N Minerals rock quarry is anticipated to result in potential impacts on surface water quality resulting from the disposal of large volumes of intercepted groundwater (NPS 2006b). Quarries are regulated facilities that must adhere to federal and state permit requirements, which would serve to mitigate any adverse impacts. The impacts of increased land

conversion and development in the region would continue to increase property values in the park, adding pressure to landowners that could result in increased development. Increases in residential and commercial development near or adjacent to the park would result in impacts on surface water quality due to increased erosion from construction near waterways and from overall increases in impervious surfaces and associated urban pollutants within the area. Development in close proximity to Cedar Creek and the North Fork of the Shenandoah River could adversely affect sensitive aquatic organisms and lead to a loss of biodiversity in the area. These cumulative impacts would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions described above, there would be a long-term, adverse cumulative impact on surface water quality in the park. The impacts would be mostly localized but could extend further downstream into the watershed. It is difficult to predict and quantify the impacts, but they are anticipated to be minor to moderate. The actions in Alternative A would add an appreciable increment to this overall impact.

Conclusion. Surface water quality in the park would continue to be affected by the actions under Alternative A, including the continuation of existing policies and practices for visitor use, land use and management, development, and land protection. Activities on private lands would also continue to affect the park's surface water quality.

Visitor use impacts on surface water quality would be long-term, adverse, minor, and localized. Land use and land management impacts on surface water quality would be long-term, adverse, minor to moderate, and mostly localized. Development impacts would be both short-term and long-term, adverse, minor, and localized. Land protection would result in long-term, beneficial, minor impacts and would be localized. Private land activities would result in long-term, adverse, localized impacts, with intensities ranging from negligible to major depending on the scale of these activities.

When the impacts of Alternative A are added to the effects of other current and foreseeable future actions, there would be a minor to moderate, long-term, adverse cumulative impact on surface water quality. The impacts would be mostly localized, but could extend beyond park boundaries. The actions in Alternative A would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of surface water quality in the park.

■ Vegetation

Direct and Indirect Impacts. Under Alternative A, some of the existing visitor uses and recreational activities that occur in the park, including informal trail use and participation in large special events, would continue to affect vegetation. Some vegetation may be lost due to the formation of human-created, unofficial social trails in or near popular areas. General recreational use also could adversely affect native vegetation in local areas. Large special events would continue to impact vegetation by causing injury or mortality in isolated areas due to trampling from visitor use and damage to trees from horse activity and hitching. Impacts would likely continue to be greatest in sensitive areas such as riparian areas, wetlands, and rare plant communities. The volume of use and the effects of incompatible participant behavior generally lead to adverse impacts on native vegetation. Visitor use in the park, including automobile and human use, would continue to be a source of exotic and invasive plants and could facilitate the spread and proliferation of these species. Collectively, visitor use would result in long-term, adverse, minor impacts that would be localized.

Under Alternative A, the NPS and its Key Partners would continue to manage vegetation independently according to their own policies. Land use and resource management activities in the park would continue to affect vegetation. The management of vegetation that contributes to the park's cultural landscapes, agricultural lands, and natural areas would continue to be variable and could lead to impacts on vegetation. Managing vegetation to support cultural landscape values through agricultural use and/or mowing could impact plant communities. Agricultural lands in the park would continue to be used for cattle grazing, hay production, or crop cultivation. However, this would have a negligible effect on native vegetation, as native plants have been largely absent from these areas for many years. Conventional agricultural use could also produce unintended impacts on adjacent native vegetation due to chemical use, harvest activities, and general agricultural activity. Mowing could affect plant vigor and the presence and abundance of woody plant material. Management of natural areas, including riparian areas, wetlands, and sensitive plant communities, could have both adverse and beneficial impacts on vegetation. Adverse impacts could include vegetation trampling or loss due to year round grazing and agricultural use, intense deer browse, and the lack of integrated pest management (IPM). Beneficial impacts could result from implementing grazing management and livestock watering techniques, managing wildlife populations, and monitoring the impacts of exotic and invasive plants. The removal of cattle grazing at the Keister Tract would likely produce beneficial impacts on vegetation at this site.

Invasive and exotic plants would continue to affect vegetation in the park. Pockets of invasive and exotic plants would continue to be present in the park during the life of this plan. Alternative A does not contain any specific proposals or actions regarding integrated pest management. It is presumed that IPM on NPS-owned

land would be conducted in accordance with the requirements of NPS policy. IPM on partner-owned lands would be conducted according to their respective policies. The abundance and distribution of non-native plants in the park could increase. Although it is difficult to determine the impact on native species, due to the uncertainties about the type of species that might be introduced in the future and the locations and frequencies of introductions, it is expected that with adequate monitoring and weed control efforts, the impacts would be limited in extent and highest along areas such as trails, roads, and waterways.

Collectively, impacts on vegetation from land use and management would be localized, adverse, of minor to moderate intensity, and could be either short- or long-term.

Development and maintenance of park facilities, including buildings, trails, and signs, would continue to affect vegetation. Under Alternative A, decisions on new facility construction would continue to be left up to the respective partners and the NPS. Potential impacts on vegetation would include vegetation loss and increases in the introduction of exotic and invasive plants. The development of visitor facilities at the Keister Tract would cause permanent loss of vegetation in the footprint of a development and would likely cause short-term, adverse impacts on vegetation adjacent to the footprint due to construction activities. Depending on the nature and scope of facility development elsewhere in the park, impacts would be expected to be short- and long-term, adverse, localized, and could range from minor to moderate in intensity.

Land protection and acquisition activities in the park under Alternative A would continue to affect the park's vegetation. These activities would continue to be primarily driven by the partners with no agreed-to plan. Although acquisition of key historic sites within the park would continue to be the focus, these properties could also contain vegetation and associated natural landscapes. Acquisition of these properties could result in the protection of important vegetation communities and would prohibit development that could adversely impact these resources, a beneficial effect. Under Alternative A, technical assistance to Key Partners, private landowners, and nearby communities on vegetation management issues would continue to be limited to nonexistent. Lacking a coordinated land protection approach, the effect on the protection and enhancement of vegetation communities would likely be beneficial, but limited in extent. Continuation of the existing land protection approach would likely result in the protection of a core park area surrounded by a patchwork of developed private lands. Land protection under Alternative A would be expected to result in long-term, negligible to minor, beneficial impacts on vegetation.

Vegetation on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by land-use and

land-management activities, development, and land protection. Land-use and land-management activities, including general residential use, agriculture, or some inadvertent human activity, could adversely affect vegetation and result in plant injury or mortality. Increased residential and commercial development on private lands would adversely impact vegetation, resulting in the loss of vegetation and degradation of vegetation communities. Land protection activities and initiatives assumed by private landowners would have beneficial impacts on vegetation within the park by preventing vegetation loss due to development. Although the NPS and its Key Partners would continue to encourage and promote the protection of native vegetation on private lands, resource preservation efforts would be subject to the discretion of individual landowners. In most cases, adverse impacts would be realized only when private lands are developed. Collectively, impacts on vegetation from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities.

Cumulative Impacts. All four actions and projects identified as “cumulative projects” could affect the park’s vegetation. The expansion of I-81 would affect vegetation in the park due to construction activities and runoff. Road construction would result in the loss of vegetation where vegetation is cleared. Vegetation alongside the newly constructed interstate would also be affected by surface water runoff from the roadway. Expansion of the O-N Minerals rock quarry could result in impacts on vegetation due to potential impacts on surface water quality and groundwater drawdowns. The disposal of intercepted groundwater in nearby waterways could degrade surface water quality, which in turn could injure riparian and/or aquatic plants or cause mortality. Quarries are regulated facilities that must adhere to federal and state permit requirements, which would serve to mitigate any adverse impacts. Groundwater drawdowns would reduce the water table in affected areas, which could stress plants or even cause mortality in instances of long-term reductions in water availability. The maintenance of upgraded or newly constructed powerlines near the park could affect the park’s vegetation due to potential impacts associated with vegetation management in the powerline corridors. Herbicides are routinely used in powerline corridors to eliminate woody vegetation. The application of herbicides that control woody plant growth could result in drift to non-target species in the park. Since the Meadow Brook power substation and the nearest powerline corridor are about one mile from the park’s northern boundary, the likelihood of drift affecting park vegetation is very low, but it is possible. The impacts of increased land conversion and development in the region would continue to increase property values in the park, adding pressure to landowners that could result in increased development and permanent loss of native vegetation. Increases in residential and commercial development near or adjacent to the park could result in impacts on park vegetation. Vegetation adjacent to construction sites could be affected in the short-term by erosion, sedimentation, and impacts on surface water

quality resulting from construction activities. Vegetation adjacent to newly developed areas could be affected over the long-term by surface water runoff that may contain urban pollutants that may injure or kill plants. These cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions described above, there would be a long-term, adverse cumulative impact on vegetation in the park. The impacts would be localized. It is difficult to predict and quantify the impacts, but they are anticipated to be minor to moderate. The actions in Alternative A would add an appreciable increment to this overall impact.

Conclusion. Vegetation in the park would be affected by the actions under Alternative A, including those associated with visitor use, land use, land management, development, and land protection. Activities on private lands would also continue to affect the park's vegetation.

Visitor use impacts on vegetation would be long-term, adverse, minor, and localized. Land use and management would result in short- or long-term and adverse or beneficial impacts on vegetation that would be localized and of minor to moderate intensity. Development impacts would be short- and long-term, adverse, minor to moderate, and localized. Land protection impacts would be long-term, beneficial, negligible to minor, and localized. Private land activities would result in long-term, adverse, localized impacts, with intensities ranging from negligible to major depending on the scale of these activities.

When the impacts of Alternative A are added to the effects of other current and foreseeable future actions, there would be a minor to moderate, long-term, adverse cumulative impact on vegetation. The impacts would be mostly localized. The actions in Alternative A would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of vegetation in the park.

4.3.3 Visitor Use and Experience

Direct and Indirect Impacts. Alternative A would continue the existing arrangement of visitor contact taking place primarily at Key Partner sites, including park headquarters. The Key Partners would be responsible for interpretation and visitor services at individual sites. The typical visitor would likely stop at a single Key Partner site, with contacts at multiple sites being less frequent. There would be limited opportunities for visitors with historical interests to be introduced to park-wide interpretive themes, to become aware of the full array of park resources, and to learn of its national significance. The NPS would have no role in providing formal services, and most visitors would not interact with NPS staff at park headquarters.

The park would not be readily identified as a unit of the National Park System by the public. The impact would be long-term, moderate, and adverse.

There would be a modest expansion of interpretive opportunities by the Key Partners. Belle Grove would rehabilitate Harmony Hall, and when that is completed, the site would be opened for public tours. The Cedar Creek Battlefield Foundation may further develop the trail on the Bayliss tract and others may be developed by NPS, Belle Grove, or the Shenandoah Valley Battlefields Foundation on their lands. Trails would be developed as individual segments, with little potential for physical or interpretive connections. These opportunities would provide a negligible to minor and beneficial long-term impact on the visitor experience.

Visitors would tend to focus their trip primarily around the northern battlefield area, which is the location of the contact sites. The southern portions of the park would be infrequently visited, although some visitors would continue to access this part of the park on an auto tour. The existing auto touring routes would be continued in this alternative. Auto tour visitors would, in general, experience the park as a series of individual sites, and like the visitors stopping at a contact site, would not have opportunities to be introduced to park-wide themes and the range of park resources. They would not be fully aware of the existence of a national park and its significance.

The Cedar Creek Battlefield Foundation would continue to sponsor the annual re-enactment of the Battle of Cedar Creek and possibly re-enactments of other Civil War battles. These events are not designed as venues for interpretation, although the Battle of Cedar Creek re-enactment may offer enhanced opportunities for learning about the events that took place in the park. There could be increased appreciation for the site on the part of participants and spectators, as visitors make the connection between the landscape and the military events and learn of the specific resources that influenced the outcomes of the battle. Re-enactments of other battles could provide opportunities for learning about the Civil War, but these events would take place without a connection to historical locations. Such re-enactments would provide limited opportunities to expose visitors to the park events, resources, and values that make it a significant place. Belle Grove would continue holding special events on an annual basis. Some of these events may have only a peripheral connection to the plantation, such as the "Of Ale and History" beer tasting festival, which draws a large crowd.

Taken as a whole, special events are enjoyed by thousands of visitors and account for a large proportion of current park attendance but do not appeal to all visitors with historical interests. Although held infrequently, they generate activity that precludes use and enjoyment of partner sites by other visitors in the northern battlefield area of the park. Visitors not interested in re-enactments could experience conflicts for the duration of the events, and conflicts would increase with

the frequency of large special events and re-enactments. For the re-enactment enthusiast and other special event attendees, the impact of park actions on the visitor experience would be beneficial. For visitors with other historical interests, the impact would be adverse. The duration in both cases is short-term. The level of intensity could vary from minor to major because there are a variety of factors, such as weather and traffic congestion, influencing these time-sensitive events.

The development of the Keister tract would increase opportunities for recreational uses of the park. This would lead to an increase in visits to the park. Park actions would have a long-term, minor, and beneficial impact on recreational opportunities.

During the public scoping process, many members of the public addressed the importance of scenic viewsheds and voiced general concerns about the protection of views and scenic landscapes. Visitor enjoyment of the park is to some extent dependent on being able to view scenic vistas and broad landscapes that may be fully or partially located on privately-owned lands. Some of these areas are located within the park; others are outside the park but visible from points within the boundary. This alternative would not take proactive steps to protect privately-owned lands; as development occurs, the absence of park actions in this area could lead to a lessening of visitor enjoyment and understanding of park resources.

Cumulative Impacts. Recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as expansion of the I-81 corridor through the park, encroaching residential, commercial, and industrial development on lands within the park boundaries resulting from the growth of Strasburg and Middletown, expansion of the Chemstone rock quarry adjacent to the park's western boundary, and construction of power transmission lines near the park, would likely contribute to disturbances in the visual landscape, increases in the ambient noise level, and traffic congestion. These factors would detract from the visitor's enjoyment of the park. Thus, such undertakings would be expected to have an adverse, long-term impact on visitor use and experience. To some extent, they may be localized. The level of intensity would range from minor to major, depending on the location.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, moderate adverse cumulative impact on visitor use and experience. The absence of park actions in the area of land protection could contribute an appreciable increment to this cumulative impact.

Conclusion. While visitor services and interpretation would be available at individual contact sites managed by Key Partners, the typical visitor would not be exposed to full range of park resources at the park or to opportunities to learn about park-wide interpretive themes. Visitors may not reach an understanding of the park's national significance, and its identity as a unit of the National Park

System would not be clear. Park actions in Alternative A would lead to an increase in the ways that visitors could experience the park, but mainly for recreational use. Overall, the impact of Alternative A would be long-term, moderate, and adverse.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, moderate adverse cumulative impact on visitor use and experience. The absence of park actions in the area of land protection could contribute an appreciable increment to this cumulative impact.

4.3.4 Socioeconomic Environment

Direct and Indirect Impacts. Under Alternative A, the park would continue to contribute to the tourism industry in the three-county area and be an important part of the local socioeconomic environment. Middletown, at the northeastern end of the park, and Strasburg, at the southwest end, are the two gateway towns most closely associated with the park. These communities provide a range of goods and services for the visiting public as well as for park employees and other workers employed in tourism-related businesses. Because of the proximity of these communities to the park and their distance from other visitor areas, these two individual gateway communities would continue to receive the greatest impacts from the actions in this alternative.

The scattered areas of the park that are currently accessible to the public are a result of its size, configuration, land ownership patterns, and the varying uses of land within the park. Visitors must travel through one or more of the three counties (Frederick, Shenandoah, Warren) to gain access to the park. Consequently, impacts would be expected to be confined to the three-county region or the smaller local area. Under Alternative A, it is expected that most visitors would continue to start their visit at the Belle Grove or the Cedar Creek Battlefield visitor contact facility in Middletown. Visitors would then begin their tour based upon their individual preferences. Visitation to the NPS-owned property (Whitham Farm) would continue to be discouraged, as it is currently leased as a residence and is relatively out-of-the-way. It is not likely that much visitor use would occur at the NPS site over time, unless its use changes from a private residence and further development occurs. Local visitors and others familiar with the park would continue to go directly to their desired destination, say the Belle Grove Plantation or Keister Tract, and would have little reason to include the visitor contact facility or the NPS site as part of their visit. It is expected that the NPS's association with the park would continue to result in increased public awareness, interest, and visibility to the park, but increases in total park visitation under this alternative would be expected to be the lowest among all of the alternatives.

Visitors from outside the region would continue to be attracted to the park because of the extant historic facilities (e.g., Belle Grove Plantation), the historic battlefield

itself, and the battle reenactments. Access to the battlefield and interpretation of the Civil War that are provided by the Key Partners and the NPS would continue to be the key attractions for tourists. The reenactments would continue to be the most significant events in terms of number of visitors on site at one time and visitor-related spending that occurs each year. The battlefield reenactments are important short-term activities that draw increasing numbers of participants (historic Civil War re-enactors) and spectators to the region. This infusion of 12,000 to 14,000 visitors each year from outside the three-county region (with their accompanying spending) has a beneficial impact on the regional economy because it provides customers and income for local businesses. An increase in visitation is expected as a result of the NPS and Key Partners' efforts and would continue to produce beneficial economic and fiscal impacts for the local economy. Increasing visitation to the park would probably cause some increases in expenditures by out-of-the region visitors, which would benefit a few businesses and individuals within the local economy. Firms in the accommodations, food service, and retail trade industries are the most likely to be affected.

The NPS level of work under Alternative A would be essentially as it is now – two full-time equivalent (FTE) positions and an annual operating budget of \$284,500 (FY 2007). It is assumed that one additional NPS staff would be hired. The NPS annual operating budget would be expected to rise to about \$366,000 under current management trends. The low level of NPS presence at the park would continue to result in heavy reliance on the Key Partners for providing visitor access and programs, interpretation, management, maintenance, land acquisition, etc.

Signs, trails, and a visitor center that are typically part of a traditional NPS park would not be developed. The only potential capital investment by the NPS under Alternative A would be rehabilitation of the Whitham Farm property to be used for park administrative purposes. The economic impact of this project would be beneficial, but minor.

The NPS would not actively seek to acquire additional land holdings, but could respond as opportunities arise. Further protection of the park and other historic resources through increased land acquisition, conservation easements, or other means, would continue to be left up to the Key Partners and any actions by individual landowners or local government. Impacts from land acquisition under Alternative A would be negligible. Payments in Lieu of Taxes (PILT) would continue to be made by the federal government to Warren County for the NPS-owned parcel.

Economic and fiscal impacts on the local economy (areas within and adjacent to the park's boundaries and specifically Middletown and Strasburg) due to NPS actions would be beneficial, minor, local in extent, and long-term in duration (staffing and operations funding is an ongoing commitment). NPS spending would continue to affect only a few individuals and business firms.

The Key Partners would continue to employ the equivalent of six or seven FTEs for administration and resource management, and would continue to use the dozens of volunteers that assist them with their work. The Key Partners' annual operating expenditures would continue at approximately \$646,000. Development of the Keister Tract into a park would constitute the majority of any capital improvements by the Key Partners under Alternative A.

Economic and fiscal impacts on the three-county, regional economy are generally the same as the local impacts, with additional expenditures occurring in the region as out-of-region visitors travel to and from the park. Their spending for food, lodging, souvenirs, etc. in the region brings in income which is vital to local businesses. These expenditures are also re-circulated within the economy as businesses pay staff and employees purchase goods and services within the three-county region. Total recurring costs by the NPS and Key Partners would be about \$1.0 million annually, while total one-time costs would be about \$7.3 million. A few businesses and individuals in the region would continue to benefit, but the overall impacts have much less importance due to the greater size of the economy of the three-county region. Impacts on the region—with over \$3.3 billion in earnings and over 96,600 jobs in 2004—as measured by these or other economic indicators (e.g., a notable increase in income or a decrease in unemployment, poverty, etc.) would be negligible.

Changes in the three-county (plus the city of Winchester) regional economy would include impacts on the regional socioeconomic base due to changes in park operations and other management or development actions. The socioeconomic base includes such factors as population, income, employment, earnings, etc. The relatively small amount of park development and rehabilitation projects contained in this alternative would benefit the construction industry and associated workers.

Cumulative Impacts. Expansion of the I-81 corridor could increase the number of construction-related jobs in the area as well as increase spending within the local hospitality industry, a beneficial impact that would be short-term and of minor intensity. Expansion of the Chemstone quarry and upgrade of the power transmission lines could also increase jobs and spending in the local area, producing long-term, minor, beneficial impacts. The quarry expansion could also have adverse impacts on property values in the nearby area. Increased residential and commercial development would increase spending on land and construction materials while producing jobs in the region. The beneficial impact on socioeconomic conditions from this action would likely be long-term and of moderate intensity.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, minor to moderate,

cumulative impact on the local and regional economy. The actions in Alternative A would add a very small increment to this overall impact.

Conclusion. The small NPS effort of three FTEs and an annual operating budget of \$366,000 would result in long-term, beneficial, negligible to minor fiscal impacts within the local and regional economies. The partners' \$646,000 annual expenditures and others' efforts would provide most of the impetus that results in greater long- and short-term, minor, beneficial fiscal impacts within the local and regional economies. Rehabilitation of the Whitham Farm property and development of the Keister Tract into a park would constitute the majority of capital investments under Alternative A. The battle reenactments would continue to result in beneficial, short-term, regional economic impacts that are major events during the short time they occur. Overall tourism spending is expected to increase to a minor to moderate degree as visitor use of the park by people from outside the region increases. Total recurring costs by the NPS and Key Partners would be about \$1.0 million annually, while total one-time costs would be about \$7.3 million. Some local and regional businesses and individuals would benefit. Acquisition of land for the park becomes more expensive and more difficult as the region continues to grow.

When the likely effects of implementing the actions contained in Alternative A are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, minor to moderate, cumulative impact on the local and regional economy. The actions in Alternative A would add a very small increment to this overall impact.

4.3.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. Alternative A could result in several unavoidable adverse impacts on cultural and natural resources with impact intensities that are greater than minor, such as illegal collection of archeological resources, plants, and animals within the park boundary. Increased education, interpretation, and outreach efforts would help lessen, but not eliminate, the likelihood of this potential impact. Some soils and vegetation could be lost or altered, due to the construction of new facilities in the park and to soil erosion from increased visitor use.

4.3.6 Irreversible and Irretrievable Commitments of Resources

New actions would be taken that would either result in the consumption of nonrenewable cultural or natural resources, or in the use of renewable resources that would preclude other uses for a period of time. In the construction of new facilities, including buildings and trails, limited amounts of nonrenewable resources would be used, including fuels and building materials. These resources would be essentially irretrievable once they were committed.

4.3.7 The Relationship between Short-Term Uses of the Environment and Long-Term Productivity

Lands in the park that are protected would remain in their current state and maintain their long-term productivity. The primary short-term uses of Cedar Creek and Belle Grove NHP would continue to be historic preservation, heritage tourism, and recreational use. 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 likely would be only a small effect on the park's long-term productivity. Efforts to protect, restore, and enhance natural and cultural resources in the park would increase the long-term productivity of the environment in localized areas.

4.4 Environmental Consequences of Alternative B

4.4.1 Cultural Resources

■ Archeological Resources

Direct and Indirect Impacts. The impacts of actions on archeological resources under Alternative B would be generally the same as those described under Alternative A. Although the NPS would acquire land and interests in land by donation or from willing sellers as funds are available, the partners would continue to have primary responsibility for land acquisition and resource protection. The current land status—approximately one-third of the park owned and protected from development by the NPS and its Key Partners and two-thirds of the park privately owned—would not be expected to change significantly.

Large special events would continue to have the potential to adversely impact archeological resources because visitors, vehicles, ground fires, and horses would likely continue to affect archeological resources. The development of new hiking/bicycling trails and auto touring routes in the park under Alternative B could affect archeological resources. However, trails and auto touring routes would be sited to avoid known archeological resources. Auto touring routes would be located within established rights-of-way. All ground-disturbing activities 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 Virginia State Historic Preservation Officer (if the project was a federal undertaking). If previously undiscovered archeological resources were uncovered during construction, 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 developed in consultation with the Virginia State Historic Preservation Officer. Few, if any, adverse impacts on archeological resources would be expected due to efforts to avoid all known sites.

Archeological resources adjacent to or easily accessible from trails, roads, and developed areas could be vulnerable to surface disturbance, inadvertent damage, and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. However, continuing NPS staff presence, instituting and monitoring user capacity, and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains; any adverse impacts would be expected to be minimal if any.

Cumulative Impacts. In the past, human activities, lack of sufficient resource monitoring and protection programs, and climatic and natural processes have resulted in the loss or disturbance of archeological resources. Because much of the park was not surveyed and inventoried for archeological resources until recent years, some decisions about site development and permitted activities, such as large special events, have been made that, in hindsight, may have resulted in the loss or disturbance to an unknown number of archeological sites on lands in the park. Although ongoing and expanded archeological site monitoring programs would be initiated and efforts would be undertaken to minimize or mitigate potential impacts from human activities and natural causes, an unknown number of archeological sites on NPS- and partner-owned lands in the park would likely continue to be adversely impacted by current and ongoing human activities, such as large special events; weather and climatic conditions; and natural processes. Actions under Alternative B, such as development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on archeological resources, although efforts would be undertaken to avoid all known sites. NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Other recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as the expansion of the I-81 corridor through the park; encroaching residential, commercial, and industrial development on lands within the park boundaries due to regional growth; expansion of the of the O-N Minerals rock quarry adjacent to the park's western boundary; and construction of power transmission lines near the park, would likely contribute to disturbance or destruction of archeological resources. Thus, such undertakings would be expected to have adverse, minor to moderate, long-term impacts on archeological resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute adverse impacts on any overall cumulative impact

on archeological resources. The adverse impacts on such resources associated with Alternative B, however, would constitute a relatively small component of any overall cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on archeological resources on NPS- and partner-owned lands in the park; the determination would be potential *adverse effect* on archeological resources on privately owned lands.

Conclusion. Overall, implementation of Alternative B would have beneficial, minor to moderate, long-term impacts on archeological resources on NPS- and partner-owned lands in the park; and would have potential adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have no adverse effect or a limited cumulative adverse, minor to moderate, long-term impacts on archeological resources; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of archeological resources in the park.

■ Ethnographic Resources

Direct and Indirect Impacts. Under Alternative B the NPS and its Key Partners will consult with concerned Indian tribes and other groups (once ethnographic resources and potentially affected tribes and groups are identified) to identify, learn about, and develop strategies for preserving and providing access to ethnographic resources on NPS- and partner-owned lands. The NPS and its Key Partners would also continue to encourage archeologists, anthropologists, and researchers to consult with the tribes and other groups regarding areas of interest that could be included in research efforts, and to promote ethnographic involvement in excavations and anthropological research. The development of new hiking/bicycling trails and auto touring routes in the park under Alternative B could affect identified ethnographic resources; however, trails would be sited to avoid identified ethnographic resources and auto touring routes would be located in established rights-of-way. Few, if any, adverse impacts on such resources would be expected. Thus, implementation of this alternative would be expected to have beneficial, minor to moderate, long-term impacts on ethnographic resources on NPS- and partner-owned lands.

If ethnographic resources were identified on privately owned lands in the park, protection and preservation of such resources would be subject to the discretion of

landowners, although the NPS and its Key Partners would encourage preservation of identified ethnographic resources and technical assistance would be available to private landowners to enable them to protect such resources. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of this alternative could have potential adverse, minor to moderate, long-term impacts on ethnographic resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and establishment of the NHP, ethnographic resources were likely subjected to minor to moderate adverse impacts by a variety of human activities, such as large special events, agricultural operations, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative B were implemented.

Actions under this alternative, such as development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on ethnographic resources, although efforts would be undertaken to avoid all known sites and NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would potentially have adverse, minor to moderate, short-term impacts on identified ethnographic resources during periods of construction.

Additionally, these developments would likely contribute to an increase in park visitation and thus potentially disturb, or disrupt access to, ethnographic resources. Therefore, they would potentially result in adverse, minor to moderate, long-term impacts on identified ethnographic resources.

These developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would also result in adverse, minor to moderate, long-term impacts on ethnographic resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute minor to moderate, long-term, adverse impacts on any overall cumulative impact on ethnographic resources. The adverse impacts on such resources associated with Alternative B, however, would constitute a relatively small component of any overall cumulative impact.

Conclusion. Overall, implementation of Alternative B would result in beneficial, minor to moderate, long-term impacts on identified ethnographic resources on NPS- and partner-owned lands. Implementation of Alternative B would result in potential adverse, minor to moderate, long-term impacts on ethnographic resources on privately owned lands. Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would generally result in cumulative adverse, minor to moderate, long-term impacts on ethnographic resources; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of ethnographic resources in the park.

■ Historic Structures

Direct and Indirect Impacts. The impacts of actions on historic structures would be generally the same as those described under Alternative A. Although the NPS would acquire land and interests in land by donation or from willing sellers as funds are available, the partners would continue to have primary responsibility for land acquisition and resource protection, and the current status of publicly and privately owned lands in the park would not be expected to change significantly.

Development of new recreational opportunities in the park, such as hiking and bicycle trails and auto touring routes, would likely result in increased park visitation and the possible loss of some historic fabric from historic structures. However, instituting and monitoring user-capacity indicators and implementing potential management strategies to mitigate adverse impacts would help reduce impacts on historic structures caused by visitor use. Thus, implementation of this alternative would result in beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands in the park.

Protection and preservation of historic structures on privately owned property would continue to be subject to the discretion of private landowners, thus resulting in potential adverse impacts on historic fabric on historic structures. The NPS and partners would encourage preservation of historic structures on private lands, and technical assistance would be available to private landowners to enable them to preserve such resources; however actions regarding preservation would ultimately be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, actions under this alternative would result in potential adverse, minor to moderate, long-term impacts on historic structures on privately owned lands in the park.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, historic structures were adversely impacted by a variety

of human activities, such as large special events, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and process have continued to the present and would likely continue if Alternative B were implemented, although NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Other recent, current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would have adverse, minor to moderate, long-term impacts on historic structures because they would likely result in increased park visitation and the potential for loss of historic fabric on historic structures.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute adverse impacts on any overall cumulative impact on historic structures. The adverse impacts on such resources associated with Alternative B, however, would constitute a relatively small component of any overall cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on historic structures on NPS- and partner-owned lands; the determination would be potential *adverse effect* on historic structures on privately owned lands.

Conclusion. Overall, the implementation of Alternative B would have beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands in the park. The implementation of Alternative B would have potential adverse, minor to moderate, long-term impacts on historic structures on privately owned lands. Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on historic structures; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of historic structures in the park.

■ Cultural Landscapes

Direct and Indirect Impacts. The impacts of actions on cultural landscapes under Alternative B would be generally the same as those described under Alternative A. Although the NPS would acquire land and interests in land by

donation or from willing sellers as funds are available, the partners would continue to have primary responsibility for land acquisition and resource protection, and the current status of publicly and privately owned lands in the park would not be expected to change significantly.

Development of new recreational opportunities in the park, such as hiking and bicycle trails and new auto touring routes, would likely result in increased park visitation and the possible loss of some cultural landscape elements. However, careful design would ensure that expansion or development of trails and touring routes would minimally affect the scale and visual relationships among landscape features. In addition, the topography, vegetation, circulation features, and land-use patterns of the cultural landscape would remain largely unaltered. Few if any adverse impacts would be anticipated. Instituting and monitoring user-capacity indicators, as well as implementing potential management strategies to mitigate adverse impacts, would help reduce impacts on cultural landscapes caused by visitor use. Thus, actions under this alternative would generally have beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands in the park.

Protection and preservation of significant elements of cultural landscapes, such as vegetation, land use, building and settlement patterns, and views and vistas, on privately owned property would continue to be subject to the discretion of private landowners, thus resulting in potential adverse impacts on historic properties. The NPS and partners would encourage preservation of significant elements of cultural landscapes on private lands, and technical assistance would be available to private landowners to enable them to preserve such resources; however actions regarding preservation would ultimately be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, actions under this alternative would result in potential adverse, minor to moderate, long-term impacts on cultural landscapes on privately owned lands in the park.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, cultural landscapes were adversely impacted by a variety of human activities, such as large special events, agricultural operations (which have impacted Civil War-related resources), inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative B were implemented. Actions under this alternative, such as development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on cultural landscape elements, although efforts would be undertaken to avoid significant landscape components; NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Other recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, commercial, and industrial development on lands within the park boundaries due to regional growth, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because they would likely result in increased park visitation and the potential for loss of some landscape features. These developments, along with major expansion of the of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of power transmission lines near the park, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because they would result in visual intrusions on the historic scene and would contribute to the loss of significant elements of the park's rural and pastoral landscape.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute adverse impacts on any overall cumulative impact on cultural landscapes. The adverse impacts on such resources associated with Alternative B, however, would constitute a relatively small component of any overall cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on cultural landscapes on NPS- and partner-owned lands in the park; the determination would be potential *adverse effect* on cultural landscapes on privately owned lands.

Conclusion. Overall, implementation of Alternative B would result in beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands in the park; and would result in potential adverse, minor to moderate, long-term impacts on cultural landscapes on privately owned lands.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on cultural landscapes; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of cultural landscapes in the park.

■ **Museum Collections**

Direct and Indirect Impacts. The impacts of actions under Alternative B on museum collections would be generally the same as those described under

Alternative A. Under Alternative B, the NPS and its Key Partners would continue to preserve and manage collections of cultural and natural resource objects, artifacts, and archives relating to the parklands they own within the designated boundaries of the park in compliance with NPS and other professional standards for collecting, accessioning, cataloging, managing, and preserving such collections.

Privately owned cultural and natural objects, artifacts, and archival materials would continue to remain in private ownership or be deposited with organizations or institutions at the discretion of the landowners. As a result, collections could be potentially degraded, lost, or scattered, thus reducing or eliminating their future usefulness for research and interpretation.

Cumulative Impacts. Because conditions would not change, there would be no cumulative effects on museum collections under this alternative.

Conclusion. Overall, implementation of Alternative B would result in beneficial, minor to moderate, long-term impacts on museum collections possessed by the NPS and its Key Partners; and would result in potential adverse, minor to moderate, long-term impacts on privately owned collections.

There would be no cumulative effects on museum collections under this alternative.

Impacts from actions contained in this alternative would not likely result in impairment of museum collections in the park.

4.4.2 Natural Resources

■ Scenic/Visual Resources/Viewsheds

Direct and Indirect Impacts. The impacts of land protection in the park would be generally the same as in Alternative A. The partners would seek to acquire land within the park boundary as opportunities and funding allow—the current status of publicly and privately owned lands in the park would not be expected to change significantly. Under Alternative B, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including scenic resource protection. Lacking a coordinated land protection approach, the effect on scenic resource/viewshed protection and enhancement would be beneficial, but limited in extent. Continuation of the existing land protection approach would likely result in the protection of a core park area surrounded by a patchwork of developed private lands. Land protection under Alternative B would be expected to result in long-term, beneficial, minor impacts on scenic resources.

Impacts on scenic resources and viewsheds from visitor use, land use, and land management under Alternative B would be generally the same as those described in Alternative A. Scenic driving, large special events, trail use, and general

recreational use would be expected to cause adverse impacts on scenic and visual resources as described in Alternative A. Increases in park visitation resulting from the development of auto touring routes and new trail opportunities under Alternative B would likely increase the potential for adverse impacts on scenic resources. Visitor use under Alternative B would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized.

Land use and resource management activities in the park, including management of cultural landscapes and agricultural settings, would continue to affect the scenic resources of the park. Under Alternative B, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park, which would produce a beneficial long-term impact. The NPS and its Key Partners would collaborate to manage various aspects of the park, including scenic resources. As in Alternative A, resource management responsibilities would continue to be handled primarily by the Key Partners. Collectively, these actions would improve coordination and accountability for scenic resource management, which would result in long-term, beneficial, localized impacts on scenic resources and viewsheds. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

Alternative B utilizes existing facilities to conduct visitor contact and orientation functions, which would have no additional impact on scenic resources and viewsheds. However, some new visitor facilities would also be built under this alternative, including hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs. Overall, facility development would be increased under Alternative B and would produce greater adverse impacts on scenic resources compared to Alternative A. The impacts on scenic resources from development under Alternative B would be expected to be long-term, adverse, localized, and of minor intensity.

Three Visitor Focal Areas have been proposed in this alternative. The locations of the proposed Visitor Focal Areas cross the boundaries of the following zones: Large Events, Cultural Landscape, and Natural Resource. Potential impacts on scenic resources from development in these areas could include obstructed views from poorly placed signs and interpretive structures. These impacts from development in Visitor Focal Areas would be expected to be long-term, adverse, localized, and of negligible to minor intensity.

The locations of the proposed Visitor Services Zone are fully contained inside the boundaries of the Cultural Landscape Zone. Potential impacts on scenic resources from development in these areas could include obstructed views from poorly placed facilities and structures that are incompatible with the surrounding landscape and rural character. Potential impacts from development in the Visitor Services Zone

would be expected to be long-term, adverse, localized, and of minor to moderate intensity.

Two conceptual trail corridors have been proposed in this alternative. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. Trails in this alternative pass through forested areas and traverse the borders of open fields. Trails themselves would have negligible impacts on scenic resources and viewsheds. However, trailhead development could have adverse impacts. This alternative proposes a total of two trailheads. Adverse impacts from trailheads have been minimized due to their placement along existing roads and highways. Potential impacts from trailhead development would be expected to be long-term, adverse, localized, and of negligible to minor intensity.

The development of auto touring routes could have adverse impacts on scenic resources and viewsheds. The routes themselves would use existing road rights-of-way and therefore would have no impact on scenic resources. The development of a wayside along U.S. 11 to support the touring routes has the potential to impact scenic resources. It is presumed that any construction required would be contained within the right-of-way. Even so, such a facility could affect the scenic qualities of the area due to increases in asphalt surfacing and the installation of new signs. If planned and constructed properly, adverse impacts from the development of a single wayside would be negligible. Impacts from auto tour routes could also include the creation of denuded areas and ruts along road corridors that may affect the scenic quality of the area. Impacts on scenic resources and viewsheds are expected to be long-term, adverse, minor, and localized.

Impacts on scenic resources and viewsheds from activities on private land would be generally the same as those described in Alternative A. Scenic resources on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by land-use and land-management activities, development, and land protection. Collectively, impacts on scenic resources and viewsheds from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities. Adverse impacts would be major only if significant portions of the land are developed.

Cumulative Impacts. The impacts of cumulative actions on scenic resources and viewsheds would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, moderate to major, adverse impacts. The impacts would be localized, but could affect many sites.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions, there would be a long-term, moderate to major, adverse cumulative impact on the park's

scenic resources and viewsheds. The adverse effects of projects and actions outside of the park would substantially outweigh the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative B would contribute a small increment to this resulting cumulative impact.

Conclusion. The park's scenic resources and viewsheds would be affected by the actions under Alternative B. Impacts from visitor use, land use, land management, and land protection would be generally the same as those described in Alternative A. Adverse impacts from facility development in Alternative B would be greater than in Alternative A.

Visitor use would result in long-term, minor to moderate, adverse impacts that would be localized. Land use and management impacts would be long-term, beneficial or adverse, minor, and would be localized. Development impacts would be long-term, adverse, localized, and intensities would range from negligible to moderate depending upon the type of development. Land protection would result in long-term, beneficial, minor impacts that would be localized.

When the impacts of Alternative B are added to the effects of other current and foreseeable future actions, there would be a moderate to major, long-term, adverse cumulative impact on the park's scenic resources and viewsheds. The impacts would be localized, but could affect many sites. The adverse impacts of projects and actions outside of the park would substantially outweigh the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative B would contribute a small increment to this overall cumulative impact.

Impacts from actions contained in this alternative would likely result in potential impairment of scenic/visual resources/viewsheds in the park.

■ Soils

Direct and Indirect Impacts. The impacts of land protection on soils under Alternative B would be generally the same as in Alternative A. The partners would seek to acquire land within the park boundary as opportunities and funding allow—the current status of publicly and privately owned lands in the park would not be expected to change significantly. The land protection approach under Alternative B, which is the same as Alternative A, would be expected to result in long-term, negligible to minor, beneficial impacts on soils.

Impacts on soils from visitor use, land use, and land management under Alternative B would be generally the same as those described in Alternative A. Trail use would continue to cause soil compaction and erosion. Large special events would likely continue to cause soils compaction and erosion from people, vehicles, and horses. Increases in park visitation resulting from the development of auto touring routes and new trail opportunities under Alternative B would likely increase the potential

for adverse impacts on soils. These impacts would be long-term, adverse, minor to moderate, and localized.

Under Alternative B, instituting and monitoring user-capacity indicators, as well as implementing management strategies to mitigate adverse impacts, would help reduce soil erosion caused by visitor use. Compared to Alternative A, this would likely result in a minor, long-term, beneficial impact that would be localized.

Land use and resource management activities in the park would continue to affect soils. Agricultural production would produce soil compaction and erosion, both from field cultivation and livestock grazing. Under Alternative B, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. Collectively, these activities would result in long-term, minor to moderate, adverse impacts that would be limited in extent.

Under Alternative B, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including soils. As in Alternative A, resource management responsibilities would continue to be handled primarily by the Key Partners. Collectively, these actions would improve coordination and accountability for soil resource management in comparison to Alternative A; this would result in long-term beneficial impacts on soils that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

Alternative B utilizes existing facilities to conduct visitor contact and orientation functions, which would have no additional impact on soils. As in all the alternatives, maintenance of existing facilities would probably result in some erosion and/or alteration of soil properties, resulting in a negligible to minor, long-term adverse impact in localized areas.

Some new visitor facilities would also be built under this alternative, including hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs. Overall, facility development would be increased under Alternative B and would produce greater adverse impacts on soils compared with those of Alternative A.

Three Visitor Focal Areas have been proposed in this alternative. Proposed development in the Visitor Focal Areas and Visitor Services Zone would affect soils. The degree of impact would depend on the scale of development that occurred on the site. Impacts on soils in these areas would likely include the loss of soils due to the facility construction and the potential for compaction and alteration of soils adjacent to the sites due to heavy equipment use. Impacts from development in the Visitor Focal Areas and Visitor Services Zone would be expected to be long-term, adverse, localized, and of minor to moderate intensity.

Two conceptual trail corridors have been proposed in this alternative. The trails would traverse mostly upland soils. Site preparation work would disturb the soil profile and displace soils along the trail, generally down to the level where mineral soil can be found. Construction equipment also would likely disturb and compact adjacent soils in the project areas. The potential for soil erosion would increase in these areas. Construction of the trails would result in long-term, minor to moderate adverse impacts in localized areas. The implementation of best management practices (BMPs) would reduce the adverse impacts on soils. Trailhead development, which could include the clearing of areas to accommodate parking and trail access, would be expected to result in long-term, moderate, adverse impacts in localized areas.

The development of auto touring routes could have adverse impacts on soils. The routes themselves would use existing road rights-of-way and therefore would have no impact on soils. The development of a wayside along U.S. 11 to support the touring routes could adversely impact soils. It is presumed that any construction required would be contained within the road right-of-way; however, portions of the right-of-way may be undisturbed. Impacts from auto tour routes could also include the compaction of soil along road corridors and the potential for soil erosion. Increases in asphalt surfacing and the installation of new signs would disturb soils. Impacts on soils are expected to be long-term, adverse, moderate, and localized.

Impacts on soils from private land activities would be generally the same as those described in Alternative A. Soils on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by development, agricultural production, and visitor use in the park. Collectively, impacts on soils from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on soils would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions, there would be a long-term, moderate, adverse cumulative impact on soils. The actions in Alternative B would contribute an appreciable increment to this cumulative impact.

Conclusion. The park's soils would be affected by the actions under Alternative B. Impacts from visitor use, land use, land management, and land protection would be generally the same as those described in Alternative A. Adverse impacts from facility development would be greater in Alternative B than in Alternative A.

Visitor use would result in long-term, minor to moderate, adverse impacts on soils that would be localized. Land use and land management impacts on soils would be long-term, beneficial or adverse, minor to moderate, and localized. Development impacts would be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending upon the type of development. Land protection would result in long-term, negligible to minor, beneficial impacts that would be localized.

When the impacts of Alternative B are added to the effects of other current and foreseeable future actions, there would be a moderate, long-term adverse cumulative impact on soils in the park. The impacts would be localized. The actions in Alternative B would add a moderate increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of soils in the park.

■ Groundwater

Direct and Indirect Impacts. The impacts of land protection under Alternative B would be generally the same as in Alternative A. The partners would seek to acquire land within the park boundary as opportunities and funding allow – the current status of publicly and privately owned lands in the park would not be expected to change significantly. Continuation of the existing land protection approach would be expected to result in long-term, minor, beneficial impacts on groundwater.

Impacts on groundwater from visitor use, land use, and land management under Alternative B would be generally the same as those described in Alternative A. Increased park visitation to the partner-owned sites would likely increase the demand for domestic water. Development of the Keister Tract would substantially increase visitor use in the southern portion of the park. Visitation at this site would increase after the site opens to the public and then would likely continue to gradually increase over the life of the plan. These new uses and corresponding increases in park visitation could result in long-term, adverse impacts on groundwater and domestic water supplies. The impacts could extend beyond park boundaries. Predicting the intensity of this impact is difficult, but it is anticipated to be minor because the increase in water use above existing rates of consumption would be relatively small when compared to the size of the aquifer.

As in Alternative A, visitor use would continue to affect groundwater quality in the park in locations such as along existing roads and at parking areas. Under Alternative B, new parking areas developed in the Visitor Focal Areas and/or the Visitor Services Zone would contribute to any potential impacts. Inadvertent chemical spills, including oil from automobiles, could enter the soil profile and impact groundwater quality. Areas with karst features, such as sinkholes, that have

more direct connections to groundwater and surface waters, would be more likely to experience adverse impacts on groundwater. These adverse impacts would likely be long-term, localized, and of negligible to minor intensity because they would be limited to discrete areas such as roads and parking areas. Under Alternative B, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. Collectively, these activities would result in long-term, adverse, localized, minor impacts.

Under Alternative B, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including water resources. As in Alternative A, resource management responsibilities would continue to be handled primarily by the Key Partners. Collectively, these actions would improve coordination and accountability for water resource management, which would result in long-term, beneficial impacts on groundwater that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be negligible to minor.

Facility development under Alternative B would be increased and would produce greater adverse impacts on groundwater when compared to Alternative A. However, groundwater withdrawal for NPS and partner uses would continue to be relatively small compared to other uses in the park, and water consumption is not expected to increase substantially over the life of the plan. Impacts on groundwater from facility development under this alternative would be limited to those generated by facility development in the Visitor Services Zone. Facilities built in the Visitor Service Zone, such as restrooms and campgrounds, would likely require water to support visitor use. The number of new wells or the amount of domestic water that would be needed has not been determined and would be dependent on the scale of development that occurs. Overall, impacts would be expected to be long-term, adverse, mostly localized, and their intensity would be negligible to minor.

Impacts on groundwater from private land activities would be generally the same as those described in Alternative A. Groundwater on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by development, land use, and land management. In most cases, adverse impacts would be realized only when private lands are developed. Collectively, impacts on groundwater from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on groundwater would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term adverse cumulative impact on groundwater resources. The impacts could extend beyond park boundaries and could include the region. It is difficult to predict and quantify the impacts, but they are anticipated to be moderate. The actions in Alternative B would add a small increment to this overall impact.

Conclusion. Groundwater resources in the park would be affected by the actions under Alternative B. Impacts from visitor use, land use, land management, and land protection would be generally the same as those described in Alternative A. Adverse impacts from facility development in Alternative B would be greater than in Alternative A.

Visitor use impacts would be short- and long-term, adverse, negligible to minor, and localized. Land use and land management impacts would be long-term, adverse, minor, and localized. Facility development and maintenance impacts would be long-term, adverse, negligible to minor, and localized. Land protection would result in long-term, minor, beneficial impacts that would be localized.

When the impacts of Alternative B are added to the effects of other current and foreseeable future actions, there would be a moderate long-term, adverse cumulative impact on groundwater resources. The impacts could extend beyond park boundaries in some cases. The actions in Alternative B would add a small increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of groundwater in the park.

■ Surface Water Quality

Direct and Indirect Impacts. The impacts of land protection in the park would be generally the same as in Alternative A. The partners would seek to acquire land within the park boundary as opportunities and funding allow – the current status of publicly and privately owned lands in the park would not be expected to change significantly. Continuation of the existing land protection approach would be expected to result in long-term, minor, localized, beneficial impacts on surface water quality.

Impacts on surface water quality from visitor use, land use, and land management under Alternative B would be generally the same as those described in Alternative A. Trail use and large special events would continue to produce adverse impacts on surface water, such as vegetation loss with resultant increased erosion and inadvertent chemical contamination. Agricultural practices would continue to cause stream bank erosion and chemical inputs into surface waters. Impacts on surface

water quality from visitor use would be expected to be long-term, adverse, minor, and localized.

Under Alternative B, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. The NPS and its Key Partners would also develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including water resources. As in Alternative A, resource management responsibilities would continue to be handled primarily by the Key Partners. Collectively, these actions would improve coordination and accountability for water resource management in comparison to Alternative A; this would result in long-term beneficial impacts on surface water quality that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

As in all of the action alternatives, the Natural Resource Zone is designed to protect areas of high biodiversity such as stream corridors and the state-designated Panther Conservation Site. This zone spans approximately 300 feet on both sides of all streams and rivers within the park boundary. This zone would preserve existing vegetation within this 600-foot corridor, providing a vegetated riparian buffer that would filter pollutants and reduce inputs into streams and rivers. The impact on surface water quality would be expected to be long-term, beneficial, moderate, and localized.

Facility development would be increased under Alternative B and would produce greater adverse impacts on surface water quality compared to Alternative A. Impacts on surface water quality from facility development proposed under Alternative B would be limited primarily to those generated by the construction of a trail that terminates at Cedar Creek—no other new facilities are proposed near surface waters. Site preparation work would disturb and displace soils along the trail, which could result in sediment inputs into the stream. There is also potential for inadvertent chemical contamination from the use of construction equipment. With the application of mitigation measures, such as the installation of erosion barriers, any adverse impacts on surface water quality would likely be short-term and negligible to minor in local areas.

New parking areas developed in the Visitor Focal Areas and/or the Visitor Services Zone under Alternative B could contribute to potential impacts on surface water quality through runoff. Inadvertent chemical spills, including oil from automobiles, could enter surface waters through runoff. These long-term, adverse impacts would likely be of negligible to minor intensity and localized because the sites are discrete and relatively small in area.

Impacts on surface water quality from private land activities would be generally the same as those described in Alternative A. Surface water quality on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by land use and management, development, and land protection. Collectively, impacts on surface water quality from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on surface water quality would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term, adverse cumulative impact on surface water quality in the park. The impacts would be mostly localized, but could extend further downstream into the watershed. It is difficult to predict and quantify the impacts, but they are anticipated to be minor to moderate. The actions in Alternative B would add an appreciable increment to this overall impact.

Conclusion. Surface water quality in the park would be affected by the actions under Alternative B. Impacts from visitor use, land use, land management, and land protection would be generally the same as those described in Alternative A. Adverse impacts from facility development would be greater than Alternative A.

Visitor use impacts would be long-term, adverse, minor, and localized. Land use and land management impacts would be long-term, adverse or beneficial, minor to moderate, and mostly localized. Development impacts would be short-term, adverse, negligible to minor, and localized. Land protection would result in long-term, beneficial, minor impacts that would be localized.

When the impacts of Alternative B are added to the effects of other current and foreseeable future actions, there would be a minor to moderate long-term, adverse cumulative impact on surface water quality. The impacts would be mostly localized, but could extend beyond park boundaries. The actions in Alternative B would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of surface water quality in the park.

■ Vegetation

Direct and Indirect Impacts. The impacts of land protection in the park under Alternative B would be generally the same as those in Alternative A. The partners would seek to acquire land within the park boundary as opportunities and funding

allow—the current status of publicly and privately owned lands in the park would not be expected to change significantly. Land protection under Alternative B would be expected to result in long-term, negligible to minor, beneficial impacts on vegetation.

Under Alternative B, impacts on vegetation from visitor use, land use, and land management would be generally the same as those in Alternative A. General recreational use and trail use, along with large special events, would continue to adversely impact vegetation through trampling and vegetation loss. Large special events would continue to impact vegetation by causing injury or mortality in isolated areas due to trampling from visitor use and damage to trees from horse activity and hitching. Increases in park visitation resulting from the development of auto touring routes and new trail opportunities under Alternative B would likely increase the trampling of plants or loss of vegetation. Increased automobile and human use would also increase the potential for the spread and proliferation of exotic and invasive plants. Illegal collection of plants could also occur in the park. Collectively, this would result in long-term, adverse, localized, minor impacts on vegetation.

Under Alternative B, instituting and monitoring user-capacity indicators, as well as implementing management strategies to mitigate adverse impacts, would reduce impacts on vegetation caused by visitor use. In comparison with Alternative A, this alternative would likely result in a minor, long-term, beneficial impact that would be localized.

Impacts on vegetation from land use and land management under Alternative B would be generally the same as those described in Alternative A. The management of agricultural lands, natural areas, exotic and invasive plants, and cultural landscapes would continue to be variable and could lead to impacts on vegetation.

Under Alternative B, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals.

Under Alternative B, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would manage various aspects of the park, including vegetation. As in Alternative A, resource management responsibilities would continue to be handled primarily by the Key Partners. Collectively, these actions would improve coordination and accountability for vegetation management, which would result in long-term beneficial impacts on vegetation that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

As in all of the action alternatives, the Natural Resource Zone is designed to protect areas of high biodiversity such as stream corridors and the state-designated Panther Conservation Site. This zone spans approximately 300 feet on both sides of all streams and rivers within the park boundary. This zone would preserve existing vegetation within the 600-foot corridor and would act as a riparian buffer. The park would seek to develop a habitat management program for the Panther Conservation Site in cooperation with the Cedar Creek Battlefield Foundation (who owns the site) and the state of Virginia. Such a program would likely result in increased protection and enhancement of rare plant communities compared to Alternative A. The impact on vegetation from these actions would likely be long-term, beneficial, minor to moderate, and localized.

Overall, impacts on vegetation from land use and land management under Alternative B would be long-term, adverse, localized, and of minor intensity.

Facility development would be increased under Alternative B and would produce greater adverse impacts on vegetation compared to Alternative A. The construction of new facilities in the park under this alternative, including hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, has the potential to affect vegetation. As in all of the alternatives, the development of visitor facilities at the Keister Tract would cause permanent loss of vegetation in the footprint of a development and would likely cause short-term adverse impacts on vegetation adjacent to the footprint due to construction activities. Maintenance of existing facilities would likely result in some injury or loss of plant material, resulting in a negligible to minor, long-term, adverse impact in localized areas.

Three Visitor Focal Areas have been proposed in this alternative. New development to support interpretive experiences in the Visitor Focal Areas would result in negligible to minor impacts on vegetation due to the installation of signs or other similar interpretive facilities. Impacts would be limited mostly to agricultural lands where native vegetation has already been substantially altered or is not present. Some negligible to minor impacts on woodlands could be realized at the Keister Tract, such as tree removal and root damage from construction and visitation. These impacts would be long-term, adverse, and localized.

Development in the Visitor Services Zone could result in impacts on agricultural lands and woodlands. The intensity of the impacts would be greater than in the Visitor Focal Areas due to the potential impacts on woodlands. Impacts would be long-term, adverse, localized, and of minor to moderate intensity.

Two conceptual trail corridors have been proposed in this alternative. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. The trails would traverse mostly forested uplands. Some upland grasslands (open fields) would be affected, primarily along the field border, and some riparian vegetation could also be

affected. The removal of trees would be avoided to the extent possible. Trail construction would result in permanent loss of vegetation within the trail corridor, and some adverse impacts on adjacent vegetation could also be realized from the use of heavy equipment. Impacts on vegetation would be long-term, adverse, minor, and localized. Trailhead development would result in similar impacts.

The development of auto touring routes could have adverse impacts on vegetation. The routes themselves would utilize existing road rights-of-way and therefore would have no impact on vegetation. Development of a wayside along U.S. 11 to support the touring routes could adversely impact vegetation if additional clearing of vegetation is required. Impacts from auto tour routes could also include injury to or loss of vegetation along road corridors. Impacts on vegetation are expected to be long-term, adverse, minor, and localized, affecting a relatively small area.

Impacts on vegetation from private land activities under Alternative B would be generally the same as those described in Alternative A. Vegetation on private lands within the park, which constitute approximately two-thirds of the park's total acreage, would continue to be impacted by land-use and land-management activities, development, and land protection. In most cases, adverse impacts would be realized only when private lands are developed. Collectively, impacts on vegetation from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on vegetation would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term adverse cumulative impact on vegetation in the park. The impacts would be localized. It is difficult to predict and quantify the impacts, but they are anticipated to be minor to moderate. The actions in Alternative B would add an appreciable increment to this overall impact.

Conclusion. Vegetation in the park would be affected by the actions under Alternative B. Impacts from visitor use, land use, land management, and land protection would be generally the same as those described in Alternative A. Adverse impacts from facility development in Alternative B would be greater than in Alternative A.

Visitor use impacts would be long-term, adverse, minor, and localized. Land use and management would result in long-term, adverse or beneficial, localized impacts of minor intensity. Development impacts would be long-term, adverse, negligible to

moderate, and localized. Land protection impacts would be long-term, beneficial, negligible to minor, and localized.

When the impacts of Alternative B are added to the effects of other current and foreseeable future actions, there would be minor to moderate, long-term, adverse cumulative impacts on vegetation. The impacts would be mostly localized. The actions in Alternative B would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of vegetation in the park.

4.4.3 Visitor Use and Experience

Direct and Indirect Impacts. In Alternative B, the NPS and the Key Partners would collaborate in the development of interpretive programming. Harmony Hall would be open to the public for tours after Belle Grove completes rehabilitation of the site, as in Alternative A. In Alternative B, there would be an increase in the NPS presence, and rangers would be involved at partner sites, including Harmony Hall, in activities such as talks or tours.

Visitors would still continue to access the northern battlefield area of the park with frequency due to the location of Key Partner sites. In general, this alternative would make more areas of the park accessible to the visitor through the expansion of auto touring routes, and hiking and biking trails. However, the trails would be located in selected or discrete areas. As in Alternative A, they would lack connectivity.

New auto touring routes would likely lead to connections to existing local and regional tours. Users of these auto routes would tour more areas of the park, and park visitors would be introduced to attractions and sites in the region. Due to the collaborative approach to interpretation, there would be more opportunity for users of auto routes and trails in this alternative to be exposed to park wide themes and stories. The impact would be long-term, minor, and beneficial.

The Cedar Creek Battlefield Foundation would continue to sponsor the annual re-enactment of the Battle of Cedar Creek and possibly re-enactments of other Civil War battles. The impacts of re-enactments and other special events held by Key Partners would be similar to Alternative A.

Under Alternative B, the development of the Keister tract would increase opportunities for recreational use. This would lead to an increase in recreational visitors, and provide a long-term, minor, and beneficial impact on visitor use.

This alternative, as in Alternative A, would not lead to proactive steps to protect privately-owned lands. As development occurs, the absence of park actions in this

area could lead to a lessening of visitor enjoyment and understanding of park resources.

Cumulative Impacts. Recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as expansion of the I-81 corridor through the park, encroaching residential, commercial, and industrial development on lands within the park boundaries resulting from the growth of Strasburg and Middletown, expansion of the Chemstone rock quarry adjacent to the park's western boundary, and construction of power transmission lines near the park, would likely contribute to disturbances in the visual landscape, increases in the ambient noise level, and traffic congestion. These factors would detract from the visitor's enjoyment of the park. Thus, such undertakings would be expected to have an adverse, long-term impact on visitor use and experience. To some extent, they may be localized. The level of intensity would range from minor to major, depending on the location.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, moderate adverse cumulative impact on visitor use and experience. The absence of park actions in the area of land protection could contribute an appreciable increment to this cumulative impact on visitor use and experience.

Conclusion. In Alternative B the visitor experience would be enriched through a collaborative approach to interpretation among the Key Partners. Overall, park actions in Alternative B would have a long-term, minor, and beneficial impact on visitor use and experience.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, moderate adverse cumulative impact on visitor use and experience. The absence of park actions in the area of land protection could contribute an appreciable increment to this cumulative impact on visitor use and experience.

4.4.4 Socioeconomic Environment

Direct and Indirect Impacts. Under Alternative B, the park would continue to contribute to the tourism industry in the three-county area and be an important part of the local socioeconomic environment. Beneficial impacts on the local and regional economy from actions contained in Alternative B would be slightly greater than those in Alternative A.

Middletown, at the northeastern end of the park, and Strasburg, at the southwest end, are the two gateway towns most closely associated with the park. These

communities provide a range of goods and services for the visiting public as well as for park employees and other workers employed in tourism-related businesses. Because of the proximity of these communities to the park and their distance from other visitor areas, these two individual gateway communities would continue to receive the greatest impacts from the actions in this alternative.

As in Alternative A, only scattered areas of the park would be accessible to the public due to its size, configuration, land ownership patterns, and the varying uses of land within the park. Visitors must travel through one or more of the three counties (Frederick, Shenandoah, Warren) to gain access to the park.

The battle reenactments would continue to be the most significant events in terms of the number of visitors on site at one time and visitor-related spending that occurs each year. The Key Partners and local merchants would continue to provide goods and services to the visiting public. The battlefield reenactments are important short-term activities that would likely continue and could draw increasing numbers of participants (historic Civil War re-enactors) and spectators to the region. This infusion of 12,000 to 14,000 visitors each year from outside the three-county region (with their accompanying spending) has a beneficial impact on the local and regional economy because it would continue to provide customers and income for local businesses. Increasing visitation is expected as a result of NPS and Key Partners' efforts and would continue to produce beneficial economic and fiscal impacts for the local economy.

Alternative B includes a low level of development sponsored by the NPS. There would not be an NPS visitor center. It is expected that most visitors would continue to start their visit at the Cedar Creek Battlefield visitor contact facility in Middletown as they do under Alternative A. Park staff would provide services and interpretation through ranger led tours and talks. Most contacts by park staff would be at sites owned by the Key Partners or other locations within the park. Visitation patterns and the resulting economic impacts would be expected to be generally the same as in Alternative A. Hiring a staff of six FTEs (about \$600,000 for salaries, benefits, utilities, equipment, and consumables such as office supplies, etc.) would provide the primary recurring fiscal impact. Short-term expenditures (one-time costs) of about \$2.7 million would be used to develop NPS facilities in the park. These capital investments would constitute the major portion of the NPS development of the park over the next 20 years. As in Alternative A, the only capital investment by the Key Partners would be developing the Keister Tract into a park – the economic impact would be the same as in Alternative A.

Relative to Alternative A, park visitation would be expected to increase moderately under Alternative B. Table 4.2 presents the visitation figures for 1996 through 2005 for some NPS battlefield parks that are in Virginia and/or relatively close to Cedar Creek and Belle Grove NHP. It is not likely that visitor use at Cedar Creek and Belle

Table 4.2 Visitor Use at NPS Civil War Battlefield Parks near Cedar Creek and Belle Grove National Historical Park

Year	Antietam NB	Appomattox Courthouse NHP	Fredericksburg Spotsylvania NMP	Gettysburg NMP	Harpers Ferry NHP	Manassas NBP	Petersburg NB	Richmond NBP
1996	246,082	205,938	477,991	1,632,720	314,548	725,086	171,312	77,807
1997	275,639	204,862	464,773	1,727,070	340,246	1,025,826	177,325	77,707
1998	275,385	201,874	449,798	1,701,660	371,094	972,709	155,993	82,187
1999	268,897	198,665	480,820	1,641,838	333,738	815,338	148,676	87,957
2000	286,896	196,363	489,833	1,542,184	317,699	692,006	171,099	90,422
2001	303,599	190,422	465,323	1,792,380	325,156	822,684	161,999	108,244
2002	303,209	177,219	464,890	1,833,033	286,289	779,147	167,563	106,397
2003	279,694	155,031	443,634	1,769,688	264,478	759,953	162,547	96,014
2004	237,885	152,453	443,030	1,724,420	260,783	722,132	158,167	84,876
2005	295,309	136,827	534,636	1,705,601	241,807	715,622	143,455	68,438
Average	277,260	181,965	471,473	1,707,059	305,584	803,050	161,814	88,005
Maximum	303,599	205,938	534,636	1,833,033	371,094	1,025,826	177,325	108,244
Minimum	237,885	136,827	443,030	1,542,184	241,807	692,006	143,455	68,438

¹ All figures are recreation visits based on the Fiscal Year.

Source: National Park Service, Public Use Statistics Office.

Grove NHP would approach the range for better known parks like Gettysburg National Military Park (averaging 1.7 million recreation visits annually) or Manassas National Battlefield Park (averaging 0.8 million recreation visits annually). Petersburg National Battlefield and Richmond National Battlefield Park are most similar to Cedar Creek and Belle Grove NHP in that they have multiple units separated by distance, requiring motorized transportation (perhaps an auto tour) for the visitor to experience all the parts of the park. These two parks are well established and have had annual visitation in the 70,000 to 177,000 range during the period 1996-2005. Over the next 20 years, as Cedar Creek and Belle Grove NHP becomes established, more developed, and better known to the public, annual visitation at the lower end of the range of 50,000 to 200,000 could be reasonably expected.

Increasing visitation is expected as a result of NPS and Key Partners' efforts and would continue to produce beneficial economic and fiscal impacts for the local economy, affecting only a few businesses and individuals within the local economy. Overall, increases in visitation would be expected to produce greater beneficial economic impacts compared to Alternative A. It is presumed that the staffing levels and annual operating budgets of the Key Partners could increase slightly under Alternative B (estimated at \$660,000 annually), but would remain at least the same as in Alternative A.

As development of the park moves from the planning stage to implementation of the approved GMP, additional fiscal impacts would occur as funds are spent for facilities development and additional staff. People being drawn to the park because of the NPS presence would also result in additional beneficial fiscal and employment impacts due to increased spending by visitors from outside the three-county region.

The impacts of land acquisition would be expected to be the same as in Alternative A. Payments in Lieu of Taxes (PILT) would be generally the same as described in Alternative A. Land acquisition efforts would continue to have a negligible impact on the local economy. The Key Partners would seek to acquire lands as opportunities and funding allow, but the amount of parkland acquired would not be expected to change much compared to existing conditions. Further protection of the park and other historic resources through increased land acquisition, conservation easements, or other means, would continue to be left up to the Key Partners and any actions by individual landowners or local government. Land acquisition would be on a willing seller-willing buyer basis. Private owners would receive fair market value in exchange for any land bought by the federal government. Acquisition of any privately owned land by the federal government would remove this property from the local tax rolls, but federal PILT payments would increase and partially offset the decrease in property taxes collected by the local governments.

Locally, businesses and individuals in the towns of Middletown and Strasburg, and in other nearby local commercial centers, would probably benefit the most from implementation of Alternative B. Most goods and services needed for the park would be acquired from this local area or the greater three-county region. The demand for goods and services by the NPS and the Key Partners would increase compared to the current levels under Alternative A. Businesses and individuals in the local/regional construction industry and related suppliers of materials would benefit in the short-term during construction activities. These developments would happen over a number of years and the resulting beneficial impacts (e.g., increases in income and the creation of some jobs) would be moderate to major for some business firms and individuals within the local economy. Firms in the accommodations, food service, and retail trade industries are the most likely to be affected. The annual NPS operating budget would increase to approximately \$730,000 (in 2007 dollars), which would provide the primary recurring fiscal impact.

The 2005 economic impact of all the NPS parks (that report visitor use according to NPS standards and methodology) was calculated based upon the Money Generation Model Version 2.¹ Data for some relatively close battlefield parks are displayed in Table 4.3. For fiscal year 2005, Petersburg NB had nearly 150,000 recreation visits and Richmond NBP received about 72,000 recreation visits. Non-local visitor

¹ *Stynes, Daniel J. August 2006.*

Table 4.3 Economic Impacts for NPS Battlefield Parks near Cedar Creek and Belle Grove NHP
(estimated using Money Generation Model 2)

Park	2005 * Recreation Visits	Visitor Spending 2005 *		Jobs	Personal income	Value added
		All visitors	Non-local Visitors			
Antietam NB	281,009	\$12,791,000	\$11,482,000	258	\$4,754,000	\$7,523,000
Appomattox Court House NHP	142,009	6,943,000	6,480,000	146	2,683,000	4,246,000
Fredericksburg & Spotsylvania NMP	532,369	26,029,000	24,294	546	10,058,000	15,917,000
Gettysburg NMP	1,716,467	97,123,000	96,439,000	2,999	33,782,000	53,840,000
Harpers Ferry NHP	242,116	11,838,000	11,049,000	248	4,574,000	7,239,000
Manassas NBP	718,712	12,006,000	11,594,000	251	5,422,000	8,581,000
Petersburg NB	149,911	7,330,000	6,841,000	154	2,832,000	4,482,000
Richmond NBP	71,695	4,271,000	3,849,000	86	1,594,000	2,522,000
Average	481,786	22,291,375	18,469,787	586	8,212,375	13,043,750
Maximum	1,716,467	97,123,000	96,439,000	2,999	33,782,000	53,840,000
Minimum	71,695	\$4,271,000	\$24,294	86	\$1,594,000	\$2,522,000

* Data for Recreation Visits and Visitor Spending are from Fiscal Year 2005.

Source: Stynes, Daniel J. August 2006.

spending in the local region associated with these parks was more than \$6.8 million and \$3.8 million, respectively. About 150 jobs were supported by visitation to Petersburg NB and over 80 jobs by visitors to Richmond NBP.¹ Respectively, over \$2.8 million and nearly \$1.6 million in personal income in the regions surrounding these parks can be attributed to park visitors.² Visitor use and spending associated with visitor use at these two parks generated \$4.4 million and \$2.5 million, respectively, in value added.³ Based on this information, the economic impact of Cedar Creek and Belle Grove NHP (including both NPS and Key Partner activities and contributions) could be expected to fall within these ranges after the park is further developed, becomes better known, and average visitation reaches the 70,000 to 150,000 range. Economic and fiscal impacts on the three-county, regional economy are the local impacts identified above with some additional expenditure occurring in the region as out-of-region visitors travel to and from the park. Total recurring costs by the NPS and Key Partners would be about \$1.4 million annually, while total one-time costs would be about \$9.1 million. Some

¹ "Jobs are the number of jobs in the region supported by the visitor spending. Job estimates are not full time equivalents, but include part time and seasonal positions." Stynes, et al May 2000.

² "Personal income includes wage and salary income, proprietor's income and employee benefits." Stynes, et al May 2000.

³ "Value added is a commonly used measure of the contribution of an industry or region to gross national or gross state product. Value added is personal income plus rents and profits, plus indirect business taxes. As the name implies, it is the "value added" by the region to the final good or service being produced." Stynes, et al May 2000.

million annually, while total one-time costs would be about \$9.1 million. Some businesses and individuals in the region would benefit, but the overall impacts have much less importance due to the greater size of the economy of the three-county region. Impacts on the region – with over \$3.3 billion in earnings and over 96,600 jobs in 2004 – as measured by these or other economic indicators (e.g., a notable increase in income or a decrease in unemployment, poverty, etc.) would be negligible.

Changes in the three-county (plus the city of Winchester) regional economy would include impacts on the regional socioeconomic base due to changes in park operations and other management or development actions. The socioeconomic base includes such factors as population, income, employment, earnings, etc. Park development and rehabilitation projects during the life of the plan would generally benefit the construction industry and associated workers.

Cumulative Impacts. Expansion of the I-81 corridor could increase the number of construction-related jobs in the area as well as increase spending within the local hospitality industry, a beneficial impact that would be short-term and of minor intensity. Expansion of the Chemstone quarry and upgrade of the power transmission lines could also increase jobs and spending in the local area, producing long-term, minor, beneficial impacts. The quarry expansion could also have adverse impacts on property values in the nearby area. Increased residential and commercial development would increase spending on land and construction materials while producing jobs in the region. The beneficial impact on socioeconomic conditions from this action would likely be long-term and of moderate intensity.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, minor to moderate, cumulative impact on the local and regional economy. The actions in Alternative B would add a very small increment to this overall impact.

Conclusion. The NPS expansion to six FTEs and an annual operating budget of \$730,000 would result in minor, long-term, beneficial fiscal impacts within the local and regional economies. Short-term expenditures (one-time costs) of approximately \$2.7 million by the NPS for facility development would occur under Alternative B. This spending would benefit a few businesses and individuals, mostly in the construction industrial sector. The Key Partners' annual operating costs would be about \$660,000. The Key Partners' and others' efforts would provide most of the impetus that results in greater long- and short-term, minor, beneficial recurring fiscal impacts within the local and regional economies, but the increased NPS presence would also contribute to these results. The battle reenactments would continue to result in beneficial, short-term, regional, economic impacts that

are major events during the short time they occur. Overall tourism spending is expected to increase to a minor to moderate degree as use of the park by people from outside the region increases. Total recurring costs by the NPS and Key Partners would be about \$1.4 million annually, while total one-time costs would be about \$9.1 million. Some local and regional businesses and individuals (most likely in the accommodations and food service, and retail trade industries) providing goods and services to the park and the visiting public would benefit. Acquisition of land for the park would become more expensive and more difficult as the region continues to grow.

When the likely effects of implementing the actions contained in Alternative B are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, minor to moderate, cumulative impact on the local and regional economy. The actions in Alternative B would add a very small increment to this overall impact.

4.4.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. Alternative B could result in several unavoidable adverse impacts on cultural and natural resources with impact intensities that are greater than minor, such as illegal collection of archeological resources, plants, and animals within the park boundary. Increased education, interpretation, and outreach efforts would help lessen, but not eliminate, the likelihood of this potential impact. Some soils and vegetation could be lost or altered due to the construction of new facilities in the park and to soil erosion from increased visitor use.

4.4.6 Irreversible and Irretrievable Commitments of Resources

New actions would be taken that would either result in the consumption of nonrenewable cultural or natural resources, or in the use of renewable resources that would preclude other uses for a period of time. In the construction of new facilities, including buildings and trails, limited amounts of nonrenewable resources would be used, including fuels and building materials. These resources would be essentially irretrievable once they were committed.

4.4.7 The Relationship between Short-Term Uses of the Environment and Long-Term Productivity

Lands in the park that are protected would remain in their current state and maintain their long-term productivity. The primary short-term uses of Cedar Creek and Belle Grove NHP would continue to be historic preservation, heritage tourism, and recreation. 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 likely would only be a small effect on the park's long-term productivity. Efforts to protect,

restore, and enhance natural and cultural resources in the park would increase the long-term productivity of the environment in localized areas.

4.5 Environmental Consequences of Alternative C

4.5.1 Cultural Resources

■ Archeological Resources

Direct and Indirect Impacts. Actions under Alternative C would be expected to have beneficial, minor to moderate, long-term impacts on archeological resources on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative C, when compared with Alternative A, holds the potential for greater protection and preservation of archeological resources because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative proactive land protection strategies for resource preservation within and outside park boundaries.

Large special events would continue to have the potential to adversely impact archeological resources because visitors, vehicles, ground fires, and horses would likely continue to affect archeological resources. Development of new hiking/bicycling trails, auto touring routes, and a visitor center (either in or near the park) under Alternative C could affect archeological resources. However, the facilities would be sited to avoid known archeological resources. All ground-disturbing activities 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 Virginia State Historic Preservation Officer (if the project was a federal undertaking). If previously undiscovered archeological resources were uncovered during construction, 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 developed in consultation with the Virginia State Historic Preservation Officer. Few, if any,

adverse impacts on archeological resources would be expected due to efforts to avoid all known sites.

Archeological resources adjacent to or easily accessible from trails, roads, and developed areas could be vulnerable to surface disturbance, inadvertent damage, and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. However, NPS staff presence, instituting and monitoring user capacity, and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains, and any adverse impacts would be expected to be minimal if any.

While anticipated growth in park visitation and the continuation of large special events could result in rising levels of inadvertent disturbance to archeological resources, these impacts would be expected to be negligible because the NPS and its Key Partners would initiate efforts to educate the general public and private landowners about the importance and value of archeological resources.

Under this alternative, activities to protect and preserve archeological resources on privately owned lands within the park boundaries, which would constitute less than 10% of the park's total acreage, would ultimately remain at the discretion of the landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of Alternative C would be expected to have potential adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands.

Cumulative Impacts. In the past, human activities, lack of sufficient resource monitoring and protection programs, and climatic and natural processes have resulted in the loss or disturbance of archeological resources. Because much of the park was not surveyed and inventoried for archeological resources until recent years, some decisions about site development and permitted activities, such as large special events, have been made that, in hindsight, may have resulted in the loss or disturbance to an unknown number of archeological sites on lands in the park. Although ongoing and expanded archeological site monitoring programs would be initiated and efforts would be undertaken to minimize or mitigate potential impacts from human activities and natural causes, an unknown number of archeological sites on NPS- and partner-owned lands in the park would likely continue to be adversely impacted by current and ongoing human activities, such as large special events, weather and climatic conditions, and natural processes, such as erosion and the shifting and cutting of river channels. Actions under this alternative, such as development of new hiking/bicycling trails and auto touring routes, could have minimal additional adverse impacts on archeological resources, although efforts would be undertaken to avoid all known sites, while NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Other recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as the expansion of the I-81 corridor through the park, encroaching residential, commercial, and industrial development on lands within the park boundaries due to regional growth, expansion of the of the O-N Minerals rock quarry adjacent to the park's western boundary, and construction of power transmission lines near the park, would likely contribute to disturbance or destruction of archeological resources. Thus, such undertakings would be expected to have adverse, minor to moderate, long-term impacts on archeological resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute adverse effects to any overall cumulative impact on archeological resources. The adverse impacts on such resources associated with Alternative C, however, would constitute a relatively small component of any overall cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on archeological resources on NPS- and partner-owned lands; the determination would be potential *adverse effect* on privately owned lands.

Conclusion. Overall, implementation of Alternative C would result in beneficial, minor to moderate, long-term impacts on archeological resources on NPS- and partner-owned lands and potential adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands. The adverse impacts under this alternative, however, would be less than those resulting from Alternative A because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park and develop proactive strategies for resource and viewshed protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have potential cumulative adverse, minor to moderate, long-term impacts on archeological resources; however, this alternative's contribution to these impacts would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of archeological resources in the park.

■ Ethnographic Resources

Direct and Indirect Impacts. Actions under Alternative C would be expected to have beneficial, minor to moderate, long-term impacts on ethnographic resources (once they are identified) on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative C, when compared with Alternative A, holds the potential for greater protection and preservation of ethnographic resources because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop collaborative proactive land protection strategies for viewshed and resource preservation within and outside park boundaries. The NPS and its Key Partners will consult with concerned Indian tribes and other groups (once ethnographic resources and potentially affected tribes and groups are identified) to identify, learn about, and develop strategies for preserving and providing access to ethnographic resources on NPS- and partner-owned lands.

The development of new facilities, such as hiking/bicycling trails, auto touring routes, and a visitor center (either in or near the park) under Alternative C would be expected to have negligible impacts on ethnographic resources because the facilities would avoid known resources. While anticipated growth in park visitation could result in rising levels of inadvertent disturbance to ethnographic resources, these impacts would be expected to be negligible because the NPS and its Key Partners would initiate efforts to educate the general public and private landowners about the importance and value of such resources.

Under this alternative, activities to protect and preserve ethnographic resources on privately owned lands within the park, which would constitute less than 10% of the park's total acreage, would ultimately remain at the discretion of the landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of Alternative C would be expected to have potential adverse, minor to moderate, long-term impacts on ethnographic resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, ethnographic resources were likely subjected to minor to moderate adverse impacts by a variety of human activities, such as large special events, agricultural operations, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative C were implemented. Actions under

this alternative, such as the development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on ethnographic resources, although efforts would be undertaken to avoid all known sites, while NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism, and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would potentially have adverse, minor to moderate, short-term impacts on identified ethnographic resources during periods of construction.

Additionally, these developments would likely contribute to an increase in park visitation and thus potentially disturb, or disrupt access to, ethnographic resources. Therefore, they would potentially result in adverse, minor to moderate, long-term impacts on identified ethnographic resources.

These developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would also have potential adverse, minor to moderate, long-term impacts on ethnographic resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute minor to moderate, long-term to permanent, adverse impacts on any overall cumulative impact on ethnographic resources. The adverse impacts on such resources associated with Alternative C, however, would constitute a relatively small component of any overall cumulative impact.

Conclusion. Overall, implementation of Alternative C would result in beneficial, minor to moderate, long-term impacts on ethnographic resources on NPS- and partner-owned lands in the park. Implementation of Alternative C would result in potential adverse, minor to moderate, long-term impacts on such resources on privately owned lands. However, this alternative, when compared with Alternative A, holds the potential for greater protection and preservation of ethnographic resources because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop proactive strategies for viewshed and resource protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on ethnographic resources; however, this alternative's contribution to these

impacts would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of ethnographic resources in the park.

■ **Historic Structures**

Direct and Indirect Impacts. Actions under Alternative C would be expected to have beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative C, when compared with Alternative A, holds the potential for greater protection and preservation of historic structures because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative proactive protection strategies for resource protection and preservation within and outside park boundaries. Few, if any, adverse impacts on historic structures would be anticipated.

While anticipated growth in park visitation and the continuation of large special events could result in the loss of some historic fabric in historic structures. NPS and partner acquisition of lands and key historic sites, as well as development of proactive strategies to protect resources within and outside the park, would be expected to result in beneficial, minor to moderate, long-term impacts on historic structures. Nevertheless, activities to protect and preserve historic structures on privately owned lands within park boundaries, which would constitute less than 10% of the park's total acreage, would ultimately remain subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, actions under this alternative would have potential adverse, minor to moderate, long-term impacts on such resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, historic structures were adversely impacted by a

variety of human activities, such as large special events, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative C were implemented. NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would potentially result in adverse, minor to moderate, long-term impacts on historic structures because these developments would likely result in increased park visitation and the potential for loss of historic fabric from historic structures.

As described above, implementation of Alternative C would result in both beneficial and adverse impacts on historic structures. Yet, due to the adverse impacts of other current or reasonably foreseeable actions, the cumulative impact would be adverse, minor to moderate, and long-term. Alternative C, however, would contribute only minimally to the cumulative adverse impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on historic structures on NPS- and partner-owned lands; the determination would be potential *adverse effect* on privately owned lands.

Conclusion. Overall, implementation of Alternative C would result in beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands. Implementation of Alternative C would result in potential adverse, minor to moderate, long-term impacts on historic structures on privately owned lands. The adverse impacts under this alternative, however, would be less than those resulting from Alternative A because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park and develop proactive strategies for resource preservation within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have potential cumulative adverse, minor to moderate, long-term impacts on historic structures; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of historic structures in the park.

■ Cultural Landscapes

Direct and Indirect Impacts. Actions under Alternative C would be expected to have beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative C, when compared with Alternative A, holds the potential for greater protection and preservation of cultural landscapes because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop collaborative proactive land protection strategies for viewshed and resource preservation within and outside park boundaries.

Although development of new auto touring routes, trails, and a visitor center (either in or near the park) under Alternative C could potentially impact some elements of cultural landscapes. These impacts would be negligible because efforts would be undertaken to avoid significant cultural landscape elements and ensure that the facilities would blend with their natural surroundings as well as the park's pastoral and rural landforms. Careful design would ensure that expansion or development of trails on NPS- and partner-owned lands would minimally affect the scale and visual relationships among landscape features. In addition, the topography, vegetation, circulation features, and land use patterns of the cultural landscape would remain largely unaltered. Few, if any, adverse impacts would be anticipated.

While anticipated growth in park visitation and the continuation of large special events could result in the loss of some cultural landscape elements, NPS and partner acquisition of lands and key historic sites, as well as development of proactive strategies to protect resources and viewsheds within and outside the park, would be expected to have beneficial, minor to moderate, long-term impacts on cultural landscapes. Nevertheless, activities to protect and preserve cultural landscapes on privately owned lands within park boundaries, which would constitute less than 10% of the park's total acreage, would ultimately remain subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, actions under this alternative would have

potential adverse, minor to moderate, long-term impacts on cultural landscapes on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, cultural landscapes were adversely impacted by a variety of human activities, such as large special events, agricultural operations (which have impacted Civil War-related resources), inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative C were implemented. Actions under this alternative, such as development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on cultural landscapes, although efforts would be undertaken to avoid all known sites, while NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because they would likely result in increasing park visitation and the potential for loss of some significant cultural landscape features. Additionally, these developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because the developments would result in visual intrusions on the historic scene and contribute to the loss of significant elements of the park's rural and pastoral landscape.

As described above, implementation of Alternative C would result in both beneficial and adverse impacts on cultural landscapes. Yet, due to the adverse impacts of other current or reasonably foreseeable actions, the cumulative impact would be adverse, minor to moderate, and long-term. Alternative C, however, would contribute only minimally to the adverse cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on cultural landscapes on NPS- and partner-owned lands; the determination would be potential *adverse effect* on cultural landscapes on privately owned lands.

Conclusion. Overall, implementation of Alternative C would result in beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands. Implementation of Alternative C would result in potential adverse, minor to moderate, long-term impacts on cultural landscapes on privately owned lands. The adverse impacts under this alternative, however, would be less than

those resulting from Alternative A because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park and develop proactive strategies for resource and viewshed protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have potential cumulative adverse, minor to moderate, long-term impacts on cultural landscapes; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of cultural landscapes in the park.

■ **Museum Collections**

Direct and Indirect Impacts. The impacts of actions under Alternative C on museum collections would be generally the same as those described under Alternative A. However, this alternative holds the potential for enlarged museum collections compared with Alternative A, because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park. All NPS- and partner-owned collections would be accessioned, cataloged, preserved, protected, and made available for access and use according to NPS and other professional standards and guidelines. Under Alternative C, some items in the collections would likely be displayed in the NPS visitor center or at the partner-owned or privately owned sites that participate in the park's interpretive program.

Privately owned collections of cultural and natural objects, artifacts, and archival materials would likely continue to remain in private ownership or be deposited with organizations or institutions at the discretion of the landowners. As a result, such collections of historical and natural objects, artifacts, and archives could potentially be degraded, lost, or scattered, thus reducing or eliminating their future usefulness for research and interpretation.

Cumulative Impacts. Because conditions would not change, there would be no cumulative effects on museum collections under this alternative.

Conclusion. Overall, implementation of Alternative C would result in beneficial, minor to moderate, long-term impacts on museum collections possessed by the NPS and its Key Partners. Implementation of Alternative C would result in potential adverse, minor to moderate, long-term impacts on privately owned collections. However, this alternative holds the potential for enlarged museum collections compared with Alternative A, because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park.

Impacts from actions contained in this alternative would not likely result in impairment of museum collections in the park.

4.5.2 Natural Resources

■ Scenic/Visual Resources/Viewsheds

Direct and Indirect Impacts. Alternative C holds the potential for greater protection and preservation of scenic resources and viewsheds because the NPS and its Key Partners would own more land in the park and develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on scenic resources under Alternative C would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's scenic resources and viewsheds. Relative to Alternative A, coordination of land protection and acquisition activities would be improved under Alternative C. The NPS and its Key Partners would protect and acquire about 2,000 acres of land. The acquisition of key properties could result in the protection of important scenic resources and would prohibit development that could adversely impact the scenic resources and viewsheds of the park. Acquisition of key historic sites within the park would continue to be the focus, in contrast to protecting key views, vistas, and scenic backdrops. However, the NPS and its Key Partners would develop proactive strategies to protect related resources outside the park boundary, utilizing conservation easements and consulting with local governments. Under Alternative C, the NPS and the Key Partners would also provide technical assistance to one another, to private landowners, and to nearby communities specifically related to viewshed protection issues in the park. The beneficial impacts on scenic resources from land protection would be greater than those under Alternatives A and B. Collectively, this land protection approach would be expected to result in long-term, beneficial, moderate, localized impacts.

Visitor use, including trail use, scenic driving, and participation in large special events, would continue to affect scenic resources. Increases in park visitation, resulting from the development of auto touring routes and new trail opportunities under Alternative C, would likely increase the potential for adverse impacts on scenic resources. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. Collectively, this would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized.

Land use and resource management activities in the park would continue to affect the scenic resources of the park. The management of cultural landscapes and agricultural settings would continue to affect scenic resources. Impacts are likely to be long-term and could be beneficial or adverse. The intensity of the impacts is unknown; however the impacts are expected to be localized.

Under Alternative C, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including scenic resources. Collectively, these actions would improve coordination and accountability for scenic resource management compared to Alternative A; this would result in long-term beneficial localized impacts on scenic resources and viewsheds. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

Facility development under Alternative C would increase and could produce greater impacts on scenic resources compared to Alternative A. The types of impacts would be generally the same as in Alternative A, but the impacts would be greater and would affect more areas of the park.

The construction of new facilities under this alternative, including hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, has the potential to affect the scenic resources of the park. As in all alternatives, maintenance of existing facilities would probably result in some erosion and/or alteration of soil properties, resulting in a negligible to minor long-term adverse impact in localized areas.

This alternative includes the development of a visitor center in, or near, the park in an undetermined location. The visitor center would not be an imposing structure on the landscape and would not be located in key viewsheds - potential impacts to scenic resources would be expected to be negligible. Appropriate studies and NEPA compliance would be required to move forward with implementation.

Eight Visitor Focal Areas have been proposed in this alternative. Potential impacts on scenic resources from development in these areas could include obstructed views from poorly placed signs and interpretive structures. Potential impacts from

development in Visitor Focal Areas would be expected to be long-term, adverse, localized, and of negligible to minor intensity.

The locations of the proposed Visitor Services Zone are fully contained inside the boundaries of the Cultural Landscape Zone. Potential impacts on scenic resources from development in these areas could include obstructed views from poorly placed facilities and structures that are incompatible with the surrounding landscape and rural character. Potential impacts from development in the Visitor Services Zone would be expected to be long-term, adverse, localized, and of minor to moderate intensity.

Several conceptual trail corridors have been proposed in this alternative, including one that follows the course of the battle. Trails in this alternative pass through forested areas and traverse the borders of open fields. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. Trails themselves would have negligible impacts on scenic resources and viewsheds. However, trailhead development could have adverse impacts. This alternative proposes a total of seven trailheads. Adverse impacts from trailheads have been minimized due to their placement at sites with previous disturbance—along existing highways, roads, and driveways. Some new disturbance would still be required, which could affect the pastoral landscape and its scenic qualities. Potential impacts from trailhead development would be expected to be long-term, adverse, minor, and localized.

The development of auto touring routes could have adverse impacts on scenic resources and viewsheds. The routes themselves would utilize existing road rights-of-way and therefore would have no impact on scenic resources. The development of two waysides along existing roadways to support the touring routes has the potential to impact scenic resources. It is presumed that any construction required would be contained within the right-of-way. Even so, such a facility has the potential to affect the scenic qualities of the area due to increases in asphalt surfacing and the installation of new signs. If wayside developments are planned and constructed properly, adverse impacts would likely be negligible. Impacts from auto tour routes could also include the creation of denuded areas and ruts along road corridors that may affect the scenic quality of the area. Impacts on scenic resources and viewsheds are expected to be long-term, adverse, minor, and localized.

Impacts on scenic resources from activities on private land would be less than those described in Alternative A due to increased land protection. Scenic resources on private lands within the park, which would constitute less than half of the park's total acreage under Alternative C, would continue to be impacted by land-use and land-management activities, development, and land protection. The types of impacts would be generally the same as those described in Alternative A.

Collectively, impacts on scenic resources and viewsheds from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities. Adverse impacts would be major only if significant portions of the land are developed.

Cumulative Impacts. The impact of cumulative actions on scenic resources and viewsheds would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, moderate to major, adverse impacts.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions outside the park described above, there would be a long-term, moderate, adverse cumulative impact on the park's scenic resources and viewsheds. The adverse impacts of projects and actions outside of the park would be substantially mitigated by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative C would contribute an appreciable increment to this resulting cumulative impact.

Conclusion. The park's scenic resources and viewsheds would be affected by the actions under Alternative C, including those associated with visitor use, land use, land management, development, and land protection. Adverse impacts on soils from facility development would be greater than those in Alternatives A and B, but the beneficial impacts of land protection would also be greater.

Visitor use would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized. Land use and management impacts on scenic resources would be long-term, beneficial or adverse, minor, and would be localized. Development impacts would be long-term, adverse, localized, and intensities would range from negligible to moderate depending upon the type of development. Land protection would result in long-term, beneficial, moderate impacts that would be localized.

When the impacts of Alternative C are added to the effects of other current and foreseeable future actions, there would be a moderate to major, long-term, adverse cumulative impact on the park's scenic resources and viewsheds. The impacts would be localized. The adverse impacts of projects and actions outside of the park would be substantially mitigated by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative C would contribute an appreciable increment to this overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of scenic/visual resources/viewsheds in the park.

■ Soils

Direct and Indirect Impacts. Alternative C holds the potential for greater protection and preservation of soils because the NPS and its Key Partners would own more land in the park and would develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on soils under Alternative C would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's soils. Relative to Alternative A, coordination of land protection and acquisition activities would be improved under Alternative C. Together the NPS and its Key Partners would protect and acquire about 2,000 acres of land. Although acquisition of key historic sites within the park would continue to be the focus, these properties would also contain soil resources. Acquisition of these properties could result in the protection of important soils, including prime farmland or hydric soils, and would prohibit development that could adversely impact these resources. The beneficial impacts on soils from land protection would be greater than those under Alternative A and Alternative B. Under this alternative the NPS and its Key Partners would also develop proactive strategies to protect related resources outside the park boundary, utilizing conservation easements and consulting with local governments. Under Alternative C, the NPS and Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities specifically related to viewshed protection issues in the park. Collectively, this land protection approach would be expected to result in long-term, beneficial, localized impacts on soils of minor to moderate intensity.

Impacts on soils from visitor use would continue to affect soils in the park. Trail use and large special events such as battle reenactments would continue to compact soils and cause erosion from people, vehicles, and horses. Soils along existing trails and near parking areas would likely experience the same effect.

Increases in park visitation, resulting from the development of auto touring routes and new trail opportunities under Alternative C, would likely increase the potential for adverse impacts on soils as described above. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. The potential for increased development of unofficial social trails created by visitors would likely increase under this alternative since the development of more trails in the park would allow visitors to access previously inaccessible areas of the park and may encourage them to go off trail, especially near the Visitor Focal Areas. On the other hand, it could be argued that the development of the trail system will formalize access and minimize impacts from visitor use. Overall, visitor use would result in long-term, minor to moderate, adverse impacts on soils and would be localized.

Under Alternative C, instituting and monitoring user-capacity indicators, as well as implementing management strategies to mitigate adverse impacts, would reduce soil erosion caused by visitor use. Compared to Alternative A, implementing Alternative C would likely result in a minor, long-term, beneficial impact that would be localized.

Land use and resource management activities in the park would continue to affect soils. Agricultural production and livestock grazing would continue to cause soil compaction and erosion. Under Alternative C, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. Collectively, these activities would result in long-term, minor to moderate, adverse impacts that would be limited in extent.

Under Alternative C, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including soils. Collectively, these actions would improve coordination and accountability for scenic resource management compared to Alternative A; this would result in long-term beneficial impacts on soils that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

Facility development under Alternative C would increase and would produce greater impacts on soils compared to Alternatives A and B. The construction of new facilities under this alternative, including a visitor center, hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, would affect soils. As in all alternatives, maintenance of existing facilities would probably result in some erosion and/or alteration of soil properties, resulting in a negligible to minor, long-term, adverse impact in localized areas.

This alternative includes the development of a visitor center in, or near, the park in an undetermined location outside of the park. If establishment of the visitor center

required new construction, some soils would be lost to erosion and/or substantially altered in local areas where ground disturbance occurs. Mitigation measures, such as installing erosion matting and silt fences, would help reduce the impacts. The impact on soils would be long-term, adverse, moderate, and localized.

Eight Visitor Focal Areas have been proposed in this alternative. Proposed development in the Visitor Focal Areas and Visitor Services Zone would affect soils. The degree of impact would depend on the scale of development that occurred on the site. Impacts on soils in these areas would likely include the loss of soils due to the facility construction and the potential for compaction and alteration of soils adjacent to the sites due to heavy equipment use. Impacts from development in the Visitor Focal Areas and Visitor Services Zone would be expected to be long-term, adverse, localized, and of minor to moderate intensity.

Several conceptual trail corridors have been proposed in this alternative. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. These trails would traverse mostly upland soils. Site preparation work would disturb the soil profile and displace soils along the trail, generally down to the level where mineral soil can be found. Construction equipment also would likely disturb and compact adjacent soils in the project areas. The potential for soil erosion would increase in these areas. Construction of the trails would result in long-term, minor to moderate adverse impacts in localized areas. The implementation of best management practices (BMPs) would reduce the adverse impacts on soils. Trailhead development, which could include the clearing of areas to accommodate parking and trail access, would be expected to result in long-term, moderate, adverse impacts in localized areas.

The development of auto touring routes could have adverse impacts on soils. The routes themselves would utilize existing road rights-of-way and therefore would have no impact on soils. The development of two waysides along existing roadways to support the touring routes could adversely impact soils. It is presumed that any construction required would be contained within the road right-of-way; however, portions of the right-of-way may be undisturbed. Impacts from auto tour routes could also include the compaction of soil along road corridors and the potential for soil erosion. Increases in asphalt surfacing and the installation of new signs would disturb soils. Impacts on soils are expected to be long-term, adverse, moderate, and localized.

Impacts on soils on private lands in the park would be less than those described in Alternative A due to increased land protection. Soils on private lands within the park, which would constitute less than half of the park's total acreage under Alternative C, would continue to be impacted by development and agricultural production. The types of impacts would be generally the same as those described in Alternative A. Collectively, impacts on soils from activities that occur on private

lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on soils would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term, moderate, adverse cumulative impact on soils. The actions in Alternative C would contribute an appreciable increment to this cumulative impact.

Conclusion. The park's soils would be affected by the actions under Alternative C, including those associated with visitor use, land use, land management, development, and land protection. Adverse impacts on soils from facility development would be greater than those in Alternatives A and B, but the beneficial impacts of land protection would be greater.

Visitor use would result in long-term, minor to moderate, adverse impacts on soils that would be localized. Land use and management impacts on soils would be long-term, beneficial or adverse, minor to moderate, and would be localized. Development impacts would be long-term, adverse, localized, and intensities would range from negligible to moderate depending upon the type of development. Land protection would result in long-term, minor to moderate, beneficial impacts that would be localized.

When the impacts of Alternative C are added to the effects of other current and foreseeable future actions, there would be a moderate, long-term, adverse cumulative impact on soils in the park. The impacts would be localized. The actions in Alternative C would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of soils in the park.

■ Groundwater

Direct and Indirect Impacts. Alternative C holds the potential for greater protection and preservation of groundwater because the NPS and its Key Partners would own more land in the park and would develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on groundwater under Alternative C would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's groundwater. Relative to Alternative A, coordination of land protection and acquisition activities would be improved under Alternative C. The NPS and its Key Partners would protect and acquire about 2,000 acres of land. Although acquisition of key historic sites within the park would continue to be the focus, these properties would also overlay groundwater. Acquisition of these properties could aid in the protection of groundwater by eliminating or reducing the development potential of the property. This would result in a reduction in demand for domestic water that would help with current water supply issues. Elimination or reduction of development would also reduce the potential for adverse impacts on groundwater quality by reducing human activities that could result in inadvertent chemical contamination. The beneficial impacts on groundwater from land protection would be greater than those under Alternative A, but still minor. Land protection under Alternative C would be expected to result in long-term, beneficial, minor, localized impacts.

Impacts on groundwater from visitor use under Alternative C would be greater than under Alternative A due to increased park visitation and corresponding increases in water consumption. Increased park visitation resulting from increased visits to the partner-owned sites would likely increase the demand for domestic water. Development of the Keister Tract would also substantially increase visitor use in the southern portion of the park. Visitation at this site would increase after the area opens to the public and then would likely continue to gradually increase over the life of the plan. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. These new uses and corresponding increases in park visitation could result in long-term, adverse impacts on groundwater and domestic water supplies. The impacts could extend beyond park boundaries. Predicting the intensity of this impact is difficult, but it is anticipated to be minor because the increase in water use above existing rates of consumption would be relatively small when compared to the size of the aquifer.

As in Alternative A, groundwater quality in the park, in locations such as along existing roads and at parking areas, would continue to be affected by visitor use. Under Alternative C, new parking areas developed in the Visitor Focal Areas and/or the Visitor Services Zone would contribute to potential impacts. Inadvertent chemical spills, including oil from automobiles, could enter the soil profile and impact groundwater quality. Areas with karst features, such as sinkholes, that have more direct connections to groundwater and surface waters, would be more likely to experience adverse impacts on groundwater. These adverse impacts would likely be long-term, localized, and of negligible to minor intensity because they would be limited to discrete areas such as roads and parking areas.

Land use and resource management activities in the park could continue to affect groundwater. Groundwater quality could be affected by chemicals used in agricultural production. The impact would likely be long-term, adverse, minor, and localized. Under Alternative C, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. Collectively, these activities would result in long-term, adverse, minor, localized impacts.

Under Alternative C, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including water resources. Collectively, these actions would improve coordination and accountability for water resource management in comparison to Alternative A, which would result in long-term beneficial impacts on groundwater that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be negligible to minor.

Facility development would increase under Alternative C and the impacts on groundwater would be slightly greater than in Alternatives A and B. Groundwater withdrawal for NPS and partner uses would continue to be relatively small compared to other uses in the park, and water consumption is not expected to increase substantially over the life of the plan. Impacts on groundwater from facility development under this alternative would be limited to those generated by the establishment of a visitor center and facility development in the Visitor Services Zone. The visitor center would require domestic water to support visitor use and staff operations. Increased water withdrawals required for domestic water use would adversely impact groundwater supply and/or aquifer levels in the area. Facilities built in the Visitor Service Zone, such as restrooms and campgrounds, would likely require water to support visitor use. The number of new wells or the amount of domestic water that would be needed has not been determined and would be dependent on the scale of development that occurs. Overall, impacts would be expected to be long-term, adverse, mostly localized, and their intensity

would be negligible to minor. Trailhead development on NPS-owned land is not expected to require additional water consumption over the long-term.

Adverse impacts on groundwater on private lands in the park would be less than those described in Alternative A due to increased land protection. Groundwater on private lands within the park, which would constitute less than half of the park's total acreage under Alternative C, would continue to be impacted by development, land use, and land management. The types of impacts would be generally the same as those described in Alternative A. In most cases, adverse impacts would be realized only when private lands are developed. Collectively, impacts on groundwater from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on groundwater would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term, adverse cumulative impact on groundwater resources. The impacts could extend beyond park boundaries and could include the region. It is difficult to predict and quantify the impacts, but they are anticipated to be moderate. The actions in Alternative C would add a small increment to this overall impact.

Conclusion. Groundwater resources in the park would be affected by the actions under Alternative C, including those related to visitor use, land use, land management, development, and land protection. Adverse impacts on groundwater from facility development would be slightly greater than those in Alternatives A and B, but the beneficial impacts of land protection would also be greater.

Visitor use impacts on groundwater would be short- and long-term, adverse, negligible to minor, and localized. Land use and management impacts on groundwater would be long-term, adverse or beneficial, negligible to minor, and localized. Facility development and maintenance impacts would be long-term, adverse, negligible to minor, and localized. Land protection would result in long-term, beneficial, minor impacts that would be localized.

When the impacts of Alternative C are added to the effects of other current and foreseeable future actions, there would be a moderate long-term adverse cumulative impact on groundwater resources. The impacts could extend beyond park boundaries in some cases. The actions in Alternative C would add a small increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of groundwater in the park.

■ Surface Water Quality

Direct and Indirect Impacts. Alternative C holds the potential for greater protection and preservation of surface water quality because the NPS and its Key Partners would own more land in the park and develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on surface water quality under Alternative C would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's surface water quality. Relative to Alternative A, coordination of land protection and acquisition activities would be improved under Alternative C. The NPS and its Key Partners would protect and acquire about 2,000 acres of land. The beneficial impacts on surface water quality from land protection under Alternative C would be greater than those under Alternatives A and B. Many of the tracts identified as protection priorities in Alternative C contain creek and stream frontage. Acquisition of the properties provides the NPS and its Key Partners with the ability to control land uses adjacent to surface waters and thereby minimize inputs into waterways. Land use and/or management practices would likely transition from rural agricultural use to visitor use and preservation over the life of the plan, which would produce beneficial impacts. Land protection under Alternative C would be expected to result in long-term, beneficial, minor, localized impacts.

Under Alternative C, surface water quality in the park would continue to be affected by visitor use due to the potential for soil erosion and inadvertent chemical contamination. Trail use and large special events would continue to produce adverse impacts on surface water, such as vegetation loss with resultant increased erosion, and inadvertent chemical contamination. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which,

in turn, would likely increase total park visitation. Visitor use under Alternative C would result in long-term, adverse, minor, localized impacts.

Compared to Alternative A, adverse impacts on surface water quality from land use and resource management would be reduced; however, surface water quality would continue to be affected. Agricultural practices would continue to cause stream bank erosion and chemical inputs into surface waters. Under Alternative C, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including assistance on natural resource issues. Collectively, these activities would result in long-term, adverse, minor to moderate, localized impacts.

Under Alternative C, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including water resources. Collectively, these actions would improve coordination and accountability for water resource management in comparison to Alternative A; this would result in long-term beneficial impacts on surface water quality that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

As in all of the action alternatives, the Natural Resource Zone is designed to protect areas of high biodiversity such as stream corridors and the state-designated Panther Conservation Site. This zone spans approximately 300 feet on both sides of all streams and rivers within the park boundary. This zone would preserve existing vegetation within this 600-foot corridor, providing a vegetated riparian buffer that would filter pollutants and reduce inputs into streams and rivers. The impact on surface water quality would be expected to be long-term, beneficial, moderate, and localized.

Facility development would increase under Alternative C and would produce greater impacts on surface water quality compared to Alternatives A and B. Impacts on surface water quality from facility development proposed under this alternative would be generally limited to the construction of trails, trail crossings, and trailheads—no other new facilities are proposed near surface waters. Trail construction adjacent to Cedar Creek, Meadow Brook, and the North Fork of the Shenandoah River could affect surface water quality. With the implementation of mitigation measures, such as erosion control, impacts would be reduced. Impacts from trail construction would be short-term, adverse, localized, and of minor intensity.

The conceptual trail corridors identify three crossings of Cedar Creek and two crossings of Meadow Brook. Construction of trail crossings would affect surface water quality. There is also potential for inadvertent chemical contamination from

the use of construction equipment. Impacts from the construction of trail crossings would be short-term, adverse, localized, and of minor intensity. Seven trailheads are proposed under this alternative; however, they are all located away from surface waters and mitigation measures should reduce or eliminate any impacts on surface water quality. The impacts from construction of trailheads would be short-term, adverse, localized, and of negligible to minor intensity.

New parking areas developed near surface waters in the Visitor Focal Areas would contribute to any potential impacts on surface water quality. Inadvertent chemical spills, including oil from automobiles parked at Visitor Focal Areas or in the Visitor Services Zone, could enter surface waters through runoff. The impacts would be long-term, adverse, localized, and of negligible to minor intensity.

Impacts on surface water quality on private lands in the park would be less than those described in Alternative A. Surface water quality on private lands within the park, which would constitute less than half of the park's total acreage under Alternative C, would continue to be impacted by development, land use, land management, and land protection. The types of impacts would be generally the same as those described in Alternative A. Collectively, impacts on surface water quality from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on surface water quality would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term adverse cumulative impact on surface water quality in the park. The impacts would be mostly localized and could extend further downstream into the watershed. It is difficult to predict and quantify the impacts, but they are anticipated to be minor to moderate. The actions in Alternative C would add a small increment to this overall impact.

Conclusion. Surface water quality in the park would be affected by the actions under Alternative C, including actions associated with visitor use, land use, land management, development, and land protection. Adverse impacts on surface water quality from facility development would be greater than those in Alternatives A and B, but the beneficial impacts of land protection would also be greater.

Visitor use impacts on surface water quality would be long-term, adverse, minor, and localized. Land use and land management impacts on surface water quality would be long-term, adverse or beneficial, minor to moderate, and mostly localized. Development impacts would be short-term, adverse, negligible to minor, and

localized. Land protection would result in long-term, beneficial, localized, minor impacts.

When the impacts of Alternative C are added to the effects of other current and foreseeable future actions, there would be a minor to moderate, long-term, adverse cumulative impact on surface water quality. The impacts would be mostly localized, but could extend beyond park boundaries. The actions in Alternative C would add a small increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of surface water quality in the park.

■ Vegetation

Direct and Indirect Impacts. Alternative C holds the potential for greater protection and preservation of vegetation because the NPS and its Key Partners would own more land in the park and would develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on vegetation under Alternative C would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of key historic sites
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's vegetation. Relative to Alternative A, coordination of land protection and acquisition activities would be improved under Alternative C. The NPS and its Key Partners would protect and acquire about 2,000 acres of land. Although acquisition of key historic sites within the park would continue to be the focus, these properties would also contain vegetation. Acquisition of these properties could result in the protection of important vegetation, including wetlands, riparian areas, and other unique or rare plant communities, and would prohibit development that could adversely impact these resources. The beneficial impacts on vegetation from land protection would be greater than those under Alternatives A and B. Land protection under Alternative C would be expected to result in long-term, beneficial, minor, localized impacts.

General recreational use and trail use, along with large special events, would continue to adversely impact vegetation through trampling and vegetation loss. Large special events would continue to impact vegetation by causing injury or mortality in isolated areas due to trampling from visitor use and damage to trees from horse activity and hitching. Increases in park visitation, resulting from the development of auto touring routes and new trail opportunities under Alternative C, would likely increase the trampling of plants or loss of vegetation. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which in turn, would likely increase total park visitation. Increased automobile and human use would also increase the potential for the spread and proliferation of exotic and invasive plants. The potential for development of unofficial social trails caused by visitors would likely increase under this alternative since the development of more trails in the park would allow visitors to access previously inaccessible areas of the park and may encourage them to go off trail, especially near the Visitor Focal Areas. On the other hand, it could be argued that the development of the trail system will formalize access and minimize impacts on vegetation from visitor use. Illegal collection of plants could also occur in the park. Visitor use under Alternative C would result in long-term, adverse, localized, minor impacts on vegetation.

Under Alternative C, instituting and monitoring user-capacity indicators, as well as implementing management strategies to mitigate adverse impacts, should reduce impacts on vegetation caused by visitor use. Compared to Alternative A, Alternative C would likely result in a minor, long-term, beneficial impact that would be localized.

Land use and resource management activities in the park would continue to affect vegetation. Although the management of agricultural lands, natural areas, exotic and invasive plants, and vegetation that contribute to the park's cultural landscapes would continue to be variable and could produce adverse impacts, the beneficial impacts on vegetation from land use and land management under Alternative C would be greater than those under Alternative A due to increased coordination between the NPS and its Key Partners.

Under Alternative C, the NPS and Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource and vegetation management goals. The NPS and its Key Partners would also develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including vegetation. Collectively, these actions would improve coordination and accountability for vegetation management, which would result in long-term beneficial impacts on vegetation that are localized. Predicting the intensity of these impacts is difficult, but they are anticipated to be minor.

As in all of the action alternatives, the Natural Resource Zone is designed to protect areas of high biodiversity such as stream corridors and the state-designated Panther Conservation Site. This zone spans approximately 300 feet on both sides of all streams and rivers within the park boundary. This zone would preserve existing vegetation within the 600-foot corridor and would act as a riparian buffer. The park would seek to develop a habitat management program for the Panther Conservation Site in cooperation with the Cedar Creek Battlefield Foundation (who owns the site) and the state of Virginia. Such a program would likely result in increased protection and enhancement of rare plant communities compared to Alternative A. The impact on vegetation from these actions would likely be long-term, beneficial, minor to moderate, and localized.

Collectively, impacts on vegetation from land use and management under Alternative C would be long-term, adverse or beneficial, localized, and of minor intensity.

Facility development would increase under Alternative C and would produce greater impacts on vegetation compared to Alternatives A and B. The construction of new facilities under this alternative, including a visitor center, hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, has the potential to affect vegetation. As in all of the alternatives, the development of visitor facilities at the Keister Tract would cause permanent loss of vegetation in the footprint of a development and would likely cause short-term adverse impacts on vegetation adjacent to the footprint due to construction activities. Maintenance of existing facilities would likely result in some injury to, or loss of, plant material, resulting in a negligible to minor, long-term, adverse impact in localized areas.

This alternative includes the development of a visitor center in, or near, the park in an undetermined location. The siting of the new facility would likely be in a previously disturbed and developed area with limited native vegetation. Construction of the visitor center would result in permanent loss of vegetation, which would be a long-term, adverse, minor, localized impact.

Eight Visitor Focal Areas have been proposed in this alternative. New development to support interpretive experiences in the Visitor Focal Areas would result in negligible to minor impacts on vegetation due to the installation of signs or other similar interpretive facilities. Impacts would be limited mostly to agricultural lands where native vegetation has already been substantially altered or is not present. Some negligible to minor impacts on woodlands, such as tree removal and root damage from construction and visitation, could be realized at the Keister Tract. These impacts would be long-term, adverse, and localized.

Development in the Visitor Services Zone could result in impacts on agricultural lands and woodlands similar to those described above. The intensity of the impacts would be greater in this zone than in the Visitor Focal Areas due to the potential

impacts on woodlands. Impacts would be long-term, adverse, localized, and of minor to moderate intensity.

Several conceptual trail corridors have been proposed in this alternative. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. The trails would traverse forested uplands and upland grasslands (open fields). Trails in open fields travel primarily along the field border. Trails near waterways could affect riparian vegetation. The removal of trees would be avoided to the extent possible. Trail construction would result in permanent loss of vegetation within the trail corridor, and some adverse impacts on adjacent vegetation could also be realized from the use of heavy equipment. Trail construction in the Panther Conservation Site could result in impacts on rare or unique plant communities due to the loss of vegetation and the indirect impacts on vegetation from the use of heavy equipment. Impacts on vegetation would be long-term, adverse, minor, and localized. Development of seven trailheads under this alternative would result in similar impacts.

The development of auto touring routes could have adverse impacts on vegetation. The routes themselves would utilize existing road rights-of-way and therefore would have no impact on vegetation. The development of two waysides along existing roadways to support the touring routes could adversely impact vegetation if additional clearing of vegetation is required. Impacts from auto tour routes could also include injury to or loss of vegetation along road corridors. Impacts on vegetation are expected to be long-term, adverse, minor, and localized, affecting a relatively small area.

Impacts on vegetation on private lands in the park under Alternative C would be less than those described in Alternative A due to increased land protection. Vegetation on private lands within the park, which would constitute less than half of the park's total acreage under Alternative C, would continue to be impacted by development, land use, land management, and land protection. The types of impacts would be generally the same as those described in Alternative A. In most cases, adverse impacts would be realized only when private lands are developed. Collectively, impacts on vegetation from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on vegetation would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term adverse cumulative impact on vegetation in the park. The impacts would be localized. It is difficult to predict and quantify the

impacts, but they are anticipated to be minor to moderate. The actions in Alternative C would add an appreciable increment to this overall impact.

Conclusion. Vegetation in the park would be affected by the actions under Alternative C, including those associated with visitor use, land use, land management, development, and land protection. Adverse impacts on vegetation from facility development under Alternative C would be greater than those in Alternatives A and B, but the beneficial impacts of land protection would also be greater.

Visitor use impacts on vegetation would be long-term, adverse or beneficial, minor, and localized. Land use and management would result in long-term, adverse or beneficial, minor impacts on vegetation that would be localized. Development impacts would be long-term, adverse, negligible to moderate, and localized. Land protection impacts would be long-term, beneficial, minor, and localized.

When the impacts of Alternative C are added to the effects of other current and foreseeable future actions, there would be a minor to moderate long-term adverse cumulative impact on vegetation. The impacts would be mostly localized. The actions in Alternative C would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of vegetation in the park.

4.5.3 Visitor Use and Experience

Direct and Indirect Impacts. Under Alternative C, the NPS and the Key Partners would collaborate in the development of interpretive programming and sites operated by the Key Partners would remain open. There would be an increase in the NPS presence, and rangers would be involved at partner sites, including Harmony Hall, in activities such as talks or tours. The NPS identity and presence in the region would be promoted. Under this alternative, the NPS would develop a visitor center in, or near, the park, providing a focus for orientation, visitor services, and interpretation. The visitor center would serve as a central hub for visitors to learn the stories of the park and be oriented to the National Historic District. The Key Partners would continue to operate their sites, effectively serving as visitor facilities within the park. The visitor center would clearly identify the park as a unit of the National Park System. More visitors would be drawn to the park due to the presence of the NPS visitor center, which would likely function as an attraction in the region. Park actions would lead to increased visitation due to interest among NPS 'baggers', curious visitors drawn by the NPS visitor center or other interpretive sites, and visitors with historical interests who want to see more of the National Historic District. The impact would be long-term, moderate, and beneficial.

Alternative C proposes a substantial increase in interpretive opportunities over Alternatives A and B by developing venues or focal areas for interpretation at key historic sites and trails that follow the course of the battle of Cedar Creek and the historic mill road network. The trails and focal areas would guide visitors throughout the park for an immediate on-site experience of key historic sites, enriching the interpretation of significant events. Park actions to expand interpretive experiences would provide a long-term, major and beneficial impact.

The Cedar Creek Battlefield Foundation would continue to sponsor the annual re-enactment of the Battle of Cedar Creek and possibly re-enactments of other Civil War battles. The impacts of re-enactments and other special events held by Key Partners would be similar to Alternative A.

Under Alternative C, new auto touring routes would likely lead to connections to existing local and regional tours through park and non-park actions. Users of these auto routes would tour more areas of the park, and park visitors would be introduced to attractions and sites in the region. The impact would be long-term, minor and beneficial.

Visitors would continue to access the northern battlefield area of the park with frequency due to the location of Key Partner sites. Alternative C provides greater accessibility to the southern portions of the park through the trail system. Several visitor focal areas are proposed in the southern portions of the park, and would serve as a visitor draw to that area.

The development of the Keister tract would increase opportunities for recreational use, as in Alternatives A and B. Recreational use would also increase on the trail system. The trails would attract more bicyclists and hikers using the park for recreational use and using it more frequently. The impact on recreational use would be long-term, moderate, and beneficial.

The focus of land and resource protection under Alternative C would be key historic sites. The park would either acquire or assure the preservation of several discrete historic sites, which would then be available for visitor use and enjoyment over the long term. However, lands around focal areas that are in private ownership and unprotected may be developed, so over time there could be some diminishment of the visitor experience and understanding of historical events. The impact of park actions on visitor use and experience would be long-term, minor to moderate and beneficial.

Cumulative Impacts. Recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as expansion of the I-81 corridor through the park, encroaching residential, commercial, and industrial development on lands within the park boundaries resulting from the growth of Strasburg and Middletown, expansion of the Chemstone rock quarry adjacent to the

park's western boundary, and construction of power transmission lines near the park, would likely contribute to disturbances in the visual landscape, increases in the ambient noise level, and traffic congestion. These factors would detract from the visitor's enjoyment of the park. Thus, such undertakings would be expected to have an adverse, long-term impact on visitor use and experience. To some extent, they may be localized. The level of intensity would range from minor to major, depending on the location.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, moderate adverse cumulative impact on visitor use and experience. The beneficial effect is likely to be at a minor to moderate level, due to the focus on individual sites. Park actions in the area of land protection would help to reduce the adverse cumulative impact on visitor use and experience.

Conclusion. The visitor would benefit from a central, NPS managed visitor center, an expanded interpretive experience and multiple ways to access and use the park. However, park actions would not be sufficient to protect landscape settings. Overall, park actions in Alternative C would have a long-term, moderate, and beneficial impact on visitor use and experience.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, moderate adverse cumulative impact on visitor use and experience. The beneficial effect is likely to be at a minor to moderate level, due to the focus on individual sites. Park actions in the area of land protection would help to reduce the adverse cumulative impact on visitor use and experience.

4.5.4 Socioeconomic Environment

Direct and Indirect Impacts. Under Alternative C, the park would continue to contribute to the tourism industry in the three-county area and be an important part of the local socioeconomic environment. Beneficial impacts on the local and regional economy from actions contained in Alternative C would be greater than from those contained in Alternatives A and B.

Middletown, at the northeastern end of the park, and Strasburg, at the southwest end, are the two gateway towns most closely associated with the park. These communities provide a range of goods and services for the visiting public as well as for park employees and other workers employed in tourism-related businesses. Because of the proximity of these communities to the park and their distance from other visitor areas, these two individual gateway communities would continue to receive the greatest impacts from the actions in this alternative.

The reenactments would continue to be the most significant events in terms of number of visitors at the site at one time and visitor-related spending that occurs each year. The battlefield reenactments are important short-term activities that would likely continue and could draw increasing numbers of participants (historic Civil War re-enactors) and spectators to the region. This infusion of 12,000 to 14,000 visitors each year from outside the three-county region (with their accompanying spending) would continue to have a beneficial impact on the local and regional economy because it would continue to provide customers and income for local businesses. Increasing visitation is expected as a result of NPS and Key Partners' efforts and would continue to produce beneficial economic and fiscal impacts for the local and regional economy, affecting some businesses and individuals within the local/regional economy.

Compared to Alternative A, public accessibility to the park is improved under Alternative C. Limitations on accessibility to park lands would continue, due to land ownership patterns and the varying uses of land within the park. Visitors must still travel through one or more of the three counties (Frederick, Shenandoah, Warren) to gain access to the park.

Under Alternative C, an NPS visitor center would be constructed and would be the focal point for visitor orientation. It is anticipated that most visitors would start their visit at the new visitor center and then begin their tour to major visitor attractions within the park. Relative to Alternative A, this would result in increased public awareness, interest, and visibility to the park over time, which would result in increased visitation to the park as a whole.

Under Alternative C, the NPS would hire 18 FTEs (about \$1.6 million for salaries, benefits, utilities, and consumables such as office supplies, etc.) to operate the visitor center, provide interpretation and other visitor services, and implement the actions contained in this alternative.

Short-term development projects would include building a visitor center and developing a variety of park facilities, including trails, trailheads, waysides, interpretive media, etc. for a total of about \$13.2 million in one-time NPS costs. These facility investments (one-time costs) would constitute the major portion of the NPS development of the park over the next 20 years. As in Alternative A, the only capital investment by the Key Partners would be developing the Keister Tract into a park – the economic impact would be the same as in Alternative A.

It is presumed that the staffing levels and annual operating budgets of the Key Partners could increase slightly under Alternative C (estimated at \$660,000 annually), but would remain at least the same as in Alternative A.

As development of the park moves from the planning stage to implementation of the approved GMP, additional fiscal impacts would occur as funds are spent for

facilities development and additional staff. People drawn to the park because of the NPS presence would also result in additional beneficial fiscal and employment impacts due to increased spending by visitors from outside the three-county region.

Land acquisition under Alternative C would have an impact on the local economy. Approximately 2,000 acres of land would be acquired by the NPS and the Key Partners at a projected cost of \$40 million. Spending by the NPS on land required for the development of the visitor center is estimated at \$250,000. Land acquisition would be on a willing seller-willing buyer basis. Private owners would receive fair market value in exchange for any land bought by the federal government. Acquisition of privately owned land by the federal government would remove this property from the local tax rolls, but federal Payments in Lieu of Taxes (PILT) would increase and partially offset the decrease in property taxes collected by the local governments.

Relative to Alternative A, park visitation would be expected to increase substantially under Alternative C. Table 4.2 above presents the visitation figures for 1996 through 2005 for some NPS battlefield parks that are in Virginia and/or relatively close to Cedar Creek and Belle Grove NHP. It is not likely that visitor use at Cedar Creek and Belle Grove NHP would approach the range for better known parks like Gettysburg National Military Park (averaging 1.7 million recreation visits annually) or Manassas National Battlefield Park (averaging 0.8 million recreation visits annually). Petersburg National Battlefield and Richmond National Battlefield Park are most similar to Cedar Creek and Belle Grove NHP in that they have multiple units separated by distance, requiring motorized transportation (perhaps an auto tour) for the visitor to experience all the parts of the entire park. These two parks are well established and have had annual visitation in the 70,000 to 177,000 range during the period 1996 - 2005. Over the next 20 years, as Cedar Creek and Belle Grove NHP becomes more developed, well established, and better known to the public, annual visitation in the middle of the range of 50,000 to 200,000 could be reasonably expected. Overall, increases in visitation would be expected to produce greater beneficial economic impacts on the local and regional economy compared to Alternative A.

Locally, businesses and individuals in the towns of Middletown and Strasburg, and other local commercial centers, would probably benefit the most from implementation of Alternative C. Most goods and services needed for the park would be acquired from this area or the greater three-county region. The demand for goods and services by the NPS and the Key Partners would increase compared to the current levels under Alternative A. Spending would happen over a number of years and the resulting impacts (e.g., increases in income and the creation of some jobs) would be moderate to major for some business firms and individuals within the local economy. The NPS annual operating budget would increase to

approximately \$2.0 million (in 2007 dollars), providing the primary long-term recurring fiscal impact.

The 2005 economic impact of all the NPS parks (that report visitor use according to NPS standards and methodology) was calculated based upon the Money Generation Model Version 2.¹ Data for some relatively close battlefield parks are displayed in Table 4.3 above. For fiscal year 2005 Petersburg NB had nearly 150,000 recreation visits and Richmond NBP received about 72,000 recreation visits. Non-local visitor spending in the local region associated with these parks was more than \$6.8 million and \$3.8 million, respectively. About 150 jobs were supported by visitation to Petersburg NB and over 80 jobs by visitors to Richmond NBP.² Respectively, over \$2.8 million and nearly \$1.6 million in personal income in the regions surrounding these parks can be attributed to park visitors.³ Visitor use, and spending associated with visitor use, at these two parks generated \$4.4 million and \$2.5 million, respectively, in value added.⁴ Based upon this information, the economic impact of Cedar Creek and Belle Grove NHP (including both NPS and partner activities and contributions) could be expected to fall within these ranges after the park is further developed and becomes better known, and average visitation reaches the 70,000 to 150,000 range.

Economic and fiscal impacts on the three-county, regional economy are the local impacts identified above with some additional expenditures occurring in the region as out-of-region visitors travel to the park. Total recurring costs by the NPS and Key Partners would be about \$2.7 million annually, while total one-time costs would be about \$55.6 million. Some businesses and individuals in the region would benefit, but the overall impacts have much less importance due to the greater size of the economy of the three-county region. Impacts on the region—with over \$3.3 billion in earnings and over 96,600 jobs in 2004—as measured by these or other economic indicators (e.g., a notable increase in income or a decrease in unemployment, poverty, etc.) would be negligible.

Changes in the three-county (plus the city of Winchester) regional economy would include impacts on the regional socioeconomic base due to changes in park operations and other management or development actions. The socioeconomic base includes such factors as population, income, employment, earnings, etc. Park development and rehabilitation projects during the life of the plan would generally benefit the construction industry and associated workers.

¹ *Stynes, Daniel J. August 2006.*

² *"Jobs are the number of jobs in the region supported by the visitor spending. Job estimates are not full time equivalents, but include part time and seasonal positions." Stynes, et al May 2000.*

³ *"Personal income includes wage and salary income, proprietor's income and employee benefits." Stynes, et al May 2000.*

⁴ *"Value added is a commonly used measure of the contribution of an industry or region to gross national or gross state product. Value added is personal income plus rents and profits, plus indirect business taxes. As the name implies, it is the "value added" by the region to the final good or service being produced." Stynes, et al May 2000.*

Cumulative Impacts. Expansion of the I-81 corridor could increase the number of construction-related jobs in the area as well as increase spending within the local hospitality industry, a beneficial impact that would be short-term and of minor intensity. Expansion of the Chemstone quarry and upgrade of the power transmission lines could also increase jobs and spending in the local area, producing long-term, minor, beneficial impacts. The quarry expansion could also have adverse impacts on property values in the nearby area. Increased residential and commercial development would increase spending on land and construction materials while producing jobs in the region. The beneficial impact on socioeconomic conditions from this action would likely be long-term and of moderate intensity.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, moderate to major, cumulative impact on the local and regional economy. The actions in Alternative C would add an appreciable increment to this overall impact.

Conclusion. The NPS expansion to 18 FTEs and an annual operating budget of \$2.0 million (in 2007 dollars) would result in minor, long-term, beneficial fiscal impacts within the local and regional economies. Short-term expenditures (one-time costs) by the NPS of approximately \$13.2 million for a visitor center and park facility development would occur. About 2,000 acres of land would be acquired under Alternative C by the NPS and Key Partners for a total of about \$40 million. PILT payments to the affected local governments would increase. Acquisition of land for the park will become more expensive and more difficult as the region continues to grow. The Key Partners' annual operating costs would be about \$660,000. The Key Partners' and others' efforts would provide most of the impetus that results in greater long- and short-term, minor beneficial fiscal impacts within the local and regional economies, but the increased NPS presence would also contribute to these results. The battle reenactments would continue to result in beneficial, short-term, regional, economic impacts that are major events during the short time they occur. Overall tourism spending is expected to increase to a minor to moderate degree as use of the park by people from outside the region increases. Total recurring costs by the NPS and Key Partners would be about \$2.7 million annually, while total one-time costs would be about \$55.6 million. Some local and regional businesses and individuals (most likely in the accommodations and food service, and retail trade industries) providing goods and services to the park and the visiting public would benefit.

When the likely effects of implementing the actions contained in Alternative C are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, moderate to major,

cumulative impact on the local and regional economy. The actions in Alternative C would add an appreciable increment to this overall impact.

4.5.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. Alternative C could result in several unavoidable adverse impacts on cultural and natural resources with impact intensities that are greater than minor, such as illegal collection of archeological resources, plants, and animals within the park boundary. Increased education, interpretation, and outreach efforts would help lessen, but not eliminate, the likelihood of this potential impact. Some soils and vegetation could be lost or altered due to the construction of new facilities in the park and due to soil erosion from increased visitor use.

4.5.6 Irreversible and Irretrievable Commitments of Resources

New actions would be taken that would either result in the consumption of nonrenewable cultural or natural resources, or in the use of renewable resources that would preclude other uses for a period of time. In the construction of new facilities, including buildings and trails, limited amounts of nonrenewable resources would be used, including fuels and building materials. These resources would be essentially irretrievable once they were committed.

4.5.7 The Relationship between Short-Term Uses of the Environment and Long-Term Productivity

Lands in the park that are protected would remain in their current state and maintain their long-term productivity. The primary short-term uses of Cedar Creek and Belle Grove NHP would continue to be historic preservation, heritage tourism, and recreation. 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 likely would be only a small effect on the park's long-term productivity. Efforts to protect, restore, and enhance natural and cultural resources in the park would increase the long-term productivity of the environment in localized areas.

4.6 Environmental Consequences of Alternative D (Preferred)

4.6.1 Cultural Resources

■ Archeological Resources

Direct and Indirect Impacts. Actions under Alternative D would be expected to have beneficial, minor to moderate, long-term impacts on archeological resources on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach

based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners

- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection within the park and outside park boundaries

Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of archeological resources, because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop collaborative proactive land protection strategies for viewshed and resource preservation within and outside the park boundaries.

Large special events would continue to have the potential to adversely impact archeological resources because visitors, vehicles, ground fires, and horses would likely continue to affect archeological resources. Under Alternative D, the development of new hiking/bicycling trails in the park with connections to regional trails outside the park, new auto touring routes, and a visitor center (either in or near the park) could affect archeological resources. However, the facilities would be sited to avoid known archeological resources. All ground-disturbing activities 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 Virginia State Historic Preservation Officer (if the project was a federal undertaking). If previously undiscovered archeological resources were uncovered during construction, 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 Virginia State Historic Preservation Officer. Few, if any, adverse impacts on archeological resources would be expected due to efforts to avoid all known sites.

Archeological resources adjacent to or easily accessible from trails, roads, and developed areas could be vulnerable to surface disturbance, inadvertent damage, and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. However, continued NPS staff presence, instituting and monitoring user capacity, and emphasizing visitor education would discourage vandalism and inadvertent destruction of cultural remains; any adverse impacts would be expected to be minimal.

While anticipated growth in park visitation and continuing large special events could result in rising levels of inadvertent disturbance to archeological resources, such impacts would be expected to be negligible because the NPS and its Key Partners would initiate efforts to educate the general public and private landowners about the importance and value of archeological resources.

Nevertheless, activities to protect and preserve archeological resources on privately owned lands in the park, which would represent less than 10% of the park under Alternative D, would ultimately be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of this alternative would be expected to have potential adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands.

Cumulative Impacts. In the past, human activities, lack of sufficient resource monitoring and protection programs, and climatic and natural processes have resulted in the loss or disturbance of archeological resources. Because much of the park was not surveyed and inventoried for archeological resources until recent years, some decisions about site development and permitted activities, such as large special events, have been made that, in hindsight, may have resulted in the loss or disturbance to an unknown number of archeological sites on lands in the park. Although ongoing and expanded archeological site monitoring programs would be initiated and efforts would be undertaken to minimize or mitigate potential impacts from human activities and natural causes, an unknown number of archeological sites on NPS- and partner-owned lands in the park would likely continue to be adversely impacted by current and ongoing human activities, such as large special events; weather and climatic conditions; and natural processes, such as erosion and the shifting and cutting of river channels. Actions under this alternative, such as development of new hiking/bicycling trails and auto touring routes, could have minimal additional adverse impacts on archeological resources, although efforts would be undertaken to avoid all known sites; NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Other recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as the expansion of the I-81 corridor through the park; encroaching residential, commercial, and industrial development on lands within the park boundaries due to regional growth; expansion of the of the O-N Minerals rock quarry adjacent to the park's western boundary; and construction of power transmission lines near the park, would likely contribute to disturbance or destruction of archeological resources. Thus, such undertakings would be expected to have adverse, minor to moderate, long-term impacts on archeological resources.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute adverse, minor to moderate, long-term impacts on any overall cumulative impact on archeological resources. The adverse impacts on such resources associated with Alternative D, however, would constitute a relatively small component of any overall cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on archeological resources on NPS- and partner-owned lands; the determination would be potential *adverse effect* on archeological resources on privately owned lands.

Conclusion. Overall, implementation of Alternative D would result in beneficial, minor to moderate, long-term impacts on archeological resources on NPS- and partner-owned lands. Implementation of Alternative D would result in potential adverse, minor to moderate, long-term impacts on archeological resources on privately owned lands. The adverse effects under this alternative, however, would be less than those resulting from Alternative A because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park and would develop proactive strategies for resource protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on archeological resources; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of archeological resources in the park.

■ Ethnographic Resources

Direct and Indirect Impacts. Actions under Alternative D would be expected to have beneficial, minor to moderate, long-term impacts on ethnographic resources (once they are identified and documented) on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners

- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of ethnographic resources because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative proactive land protection strategies for viewshed and resource preservation within and outside park boundaries. The NPS and its Key Partners will consult with concerned Indian tribes and other groups (once ethnographic resources and potentially affected tribes and groups are identified) to identify, learn about, and develop strategies for preserving and providing access to ethnographic resources on NPS- and partner-owned lands.

Under Alternative D, the development of new facilities in the park, such as hiking/bicycling trails, auto touring routes, and a visitor center, would be expected to have negligible impacts on ethnographic resources because the facilities would be sited to avoid such resources. While anticipated growth in park visitation could result in rising levels of inadvertent disturbance to ethnographic resources, these impacts would be expected to be negligible because the NPS and its Key Partners would initiate efforts to educate the general public and private landowners about the importance and value of such resources.

Under this alternative, activities to protect and preserve ethnographic resources on privately owned lands within the park, which would represent less than 10% of the park under Alternative D, would ultimately remain at the discretion of the landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, implementation of this alternative would be expected to have potential adverse, minor to moderate, long-term impacts on ethnographic resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, ethnographic resources were likely subjected to minor to moderate adverse impacts by a variety of human activities, such as large special events, agricultural operations, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative D were implemented. Actions under this alternative, such as development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on ethnographic resources, although efforts would be undertaken to avoid all known sites; NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would potentially have adverse, minor to moderate, short-term impacts on identified ethnographic resources during periods of construction.

Additionally, these developments would likely contribute to an increase in park visitation and thus potentially disturb, or disrupt access to, ethnographic resources. Therefore, they would potentially result in adverse, minor to moderate, long-term impacts on identified ethnographic resources.

These developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would also have potential adverse, minor to moderate, long-term impacts on ethnographic resources for similar reasons.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to contribute minor to moderate, long-term to permanent, adverse impacts on any overall cumulative impact on ethnographic resources. The adverse impacts on such resources associated with Alternative D, however, would constitute a relatively small component of any overall cumulative impact.

Conclusion. Overall, implementation of Alternative D would result in beneficial, minor to moderate, long-term impacts on ethnographic resources on NPS- and partner-owned lands in the park. Implementation of Alternative D would result in potential adverse, minor to moderate, long-term impacts on such resources on privately owned lands. However, this alternative, when compared with Alternative A, holds the potential for greater protection and preservation of and access to ethnographic resources because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop proactive strategies for viewshed and resource protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on archeological resources; however, this alternative's contribution to these impacts would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of ethnographic resources in the park.

■ Historic Structures

Direct and Indirect Impacts. Actions under Alternative D would be expected to have beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of historic structures because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop collaborative proactive protection strategies for resource preservation within and outside park boundaries. Few, if any, adverse impacts would be anticipated.

While anticipated growth in park visitation and the continuation of large special events could result in the loss of some historic fabric in historic structures, NPS and partner acquisition of lands focused on the park's broader landscapes, as well as development of proactive strategies to protect historic structures within and outside the park boundaries, would be expected to have beneficial, minor to moderate, long-term impacts on historic structures. Nevertheless, activities to protect and preserve historic structures on privately owned lands within the park, which would represent less than 10% of the park under Alternative D, would continue to be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, actions under this alternative would potentially have adverse, minor to moderate, long-term impacts on such resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, historic structures were adversely impacted by a variety of human activities, such as large special events, inadvertent disturbance, and vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative D were implemented. NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would have adverse, minor to moderate, long-term impacts on historic structures because they would likely result in increasing park visitation and the potential for loss of historic fabric on some historic structures.

As described above, implementation of Alternative D would result in both beneficial and adverse impacts on historic structures. Yet, due to the adverse impacts of other current or reasonably foreseeable actions, the cumulative impact would be adverse, minor to moderate, and long-term. Alternative D, however, would contribute only minimally to the adverse cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on historic structures on NPS- and partner-owned lands and potential *adverse effect* on historic structures on privately owned lands.

Conclusion. Overall, implementation of Alternative D would result in beneficial, minor to moderate, long-term impacts on historic structures on NPS- and partner-owned lands. Implementation of Alternative D would result in potential adverse, minor to moderate, long-term impacts on such resources on privately owned lands. The adverse impacts under this alternative, however, would be less than those resulting from Alternative A because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park and would develop proactive strategies for resource and viewshed protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term impacts on historic structures; however, this alternative's contribution to these effects would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of historic structures/cultural landscapes in the park.

■ Cultural Landscapes

Direct and Indirect Impacts. Actions under Alternative D would be expected to have beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach

based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners

- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of cultural landscapes because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative proactive land protection strategies for viewshed and resource preservation within and outside park boundaries. Although development of new auto touring routes, trails, and a visitor center (either in or near the park) under Alternative D could potentially impact some elements of cultural landscapes, these impacts would be negligible because efforts would be undertaken to ensure that the facilities would avoid significant landscape features and blend with their natural surroundings as well as the park's pastoral and rural landforms and features. Careful design would ensure that the expansion and development of trails and auto touring routes on NPS- and partner-owned lands would minimally affect the scale and visual relationships among landscape features. In addition, the topography, vegetation, circulation features, and land use patterns of the cultural landscape would remain largely unaltered. Few, if any, adverse impacts would be anticipated.

While anticipated growth in park visitation and the continuation of large special events could result in the loss of some cultural landscape elements, NPS and partner acquisition of lands focused on the park's broader landscapes, as well as development of proactive strategies to protect resources and viewsheds within and outside the park boundaries, would be expected to have beneficial, minor to moderate, long-term impacts on cultural landscapes. Nevertheless, activities to protect and preserve cultural landscapes on privately owned lands within the park, which would represent less than 10% of the park under Alternative D, would continue to be subject to the discretion of landowners. In most cases, adverse impacts would be realized only when private lands are developed. Thus, actions under this alternative would potentially have adverse, minor to moderate, long-term impacts on cultural landscape resources on privately owned lands.

Cumulative Impacts. Prior to partner acquisition of lands in the park area and the establishment of the NHP, cultural landscapes were adversely impacted by a variety of human activities, such as large special events, agricultural operations (which have impacted Civil War-related resources), inadvertent disturbance, and

vandalism; and by natural processes. Many of these activities and processes have continued to the present and would likely continue if Alternative D were implemented. Actions under this alternative, such as development of new hiking/bicycling trails and new auto touring routes, could have minimal additional adverse impacts on cultural landscapes, although efforts would be undertaken to avoid all known sites, and NPS staff presence, monitoring programs, and visitor education would be expected to discourage vandalism and inadvertent destruction.

Current, ongoing, and reasonably foreseeable projects and developments on or adjacent to park lands, such as the expansion of the I-81 corridor through the park and encroaching residential, industrial, and commercial development within the park boundaries due to regional growth, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because these developments would likely result in increasing park visitation and the potential for loss of some significant cultural landscape features. These developments, along with major expansion of the O-N Minerals rock quarry adjacent to the park's western boundary and construction of overhead power transmission lines near the park, would have adverse, minor to moderate, long-term impacts on cultural landscape resources because they would result in visual intrusions on the historic scene and would contribute to the loss of significant elements of the park's rural and pastoral landscape.

As described above, implementation of Alternative D would result in both beneficial and adverse impacts on cultural landscapes. Yet, due to the adverse impacts of other current or reasonably foreseeable actions the cumulative impact would be adverse, minor to moderate, and long-term. Alternative D, however, would contribute only minimally to the cumulative adverse impact.

Section 106 Summary. The Section 106 determination of effect would be *no adverse effect* on cultural landscapes on NPS- and partner-owned lands; the determination would be *adverse effect* on such resources on privately owned lands.

Conclusion. Overall, implementation of Alternative D would result in beneficial, minor to moderate, long-term impacts on cultural landscapes on NPS- and partner-owned lands. Implementation of Alternative D would result in potential adverse, minor to moderate, long-term impacts on such resources on privately owned lands. The adverse impacts under this alternative, however, would be less than those resulting from Alternative A because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park and develop proactive strategies for resource and viewshed protection within and outside the park boundaries.

Actions under this alternative, when combined with other current and reasonably foreseeable future undertakings in the park and surrounding area, would be generally expected to have cumulative adverse, minor to moderate, long-term

impacts on cultural landscapes; however, this alternative's contribution to these impacts would constitute a relatively small component of any overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of cultural landscapes in the park.

■ **Museum Collections**

Direct and Indirect Impacts. Actions under Alternative D would have beneficial, minor to moderate, long-term impacts on museum collections associated with NPS- and partner-owned lands and would have potential adverse, minor to moderate, long-term impacts on collections associated with privately owned lands. However, this alternative holds the potential for enlarged museum collections compared with Alternative A, because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park. All NPS- and partner-owned collections would be accessioned, cataloged, preserved, protected, and made available for access and use according to NPS and other professional standards and guidelines. Under Alternative D, some items in the collections would likely be displayed in the NPS visitor center or at the partner- and privately owned sites that participate in the park's interpretation program.

Privately owned collections of cultural and natural objects, artifacts, and archival materials would likely continue to remain in private ownership or be deposited with organizations or institutions at the discretion of the landowners. As a result, such collections of historical and natural objects, artifacts, and archives could be potentially degraded, lost, or scattered, thus reducing or eliminating their future usefulness for research and interpretation.

Cumulative Impacts. Because conditions would not change, there would be no cumulative impacts on museum collections under this alternative.

Conclusion. Overall, implementation of Alternative D would result in beneficial, minor to moderate, long-term impacts on museum collections possessed by the NPS and its Key Partners. Implementation of Alternative D would result in potential adverse, minor to moderate, long-term impacts on privately owned collections. However, this alternative holds the potential for enlarged museum collections compared with Alternative A, because the NPS and its Key Partners would acquire more land within the legislated boundaries of the park.

There would be no cumulative impacts on museum collections under this alternative.

Impacts from actions contained in this alternative would not likely result in impairment of museum collections in the park.

4.6.2 Natural Resources

■ Scenic/Visual Resources/Viewsheds

Direct and Indirect Impacts. Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of scenic resources and viewsheds because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on scenic resources under Alternative D would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's scenic resources and viewsheds. Relative to Alternative A, coordination of land protection and acquisition activities would be improved and would be greatest under Alternative D. The NPS and its Key Partners would protect and acquire about 2,000 acres of land, with the highest priority being given to protecting cultural landscapes and/or providing connectivity between NPS- and partner-owned tracts of land. Protecting cultural landscapes would include the protection of key views, vistas, and scenic backdrops. Land acquisition would prohibit development that could adversely impact the scenic resources and viewsheds of the park and would likely result in the protection of important scenic resources. Under Alternative D, the NPS and its Key Partners would develop proactive strategies to protect related resources outside the park boundary, using conservation easements and consulting with local governments. The NPS and the Key Partners would also provide technical assistance to one another, to private landowners, and to nearby communities specifically related to viewshed protection issues in the park under this alternative. Land protection under Alternative D would be expected to result in long-term, beneficial, localized impacts of moderate to major intensity.

Visitor use, including trail use, scenic driving, and participation in large special events, would continue to affect scenic resources. Park visitation is expected to be

highest under this alternative. Increases in park visitation, resulting from the development of auto touring routes and new trail opportunities under Alternative D, would likely increase the potential for adverse impacts on scenic resources. Trail connections to regional trails outside the park would increase opportunities for area residents to travel to and through the park, which would likely increase park visitation. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. The potential for increased development of unofficial social trails caused by visitors would likely increase under this alternative since the development of more trails in the park would allow visitors to access previously inaccessible areas of the park and may encourage them to go off trail, especially near the Visitor Focal Areas. On the other hand, it could be argued that the development of the trail system will formalize access and minimize impacts on scenic resources from visitor use. Visitor use would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized.

Land use and resource management activities in the park would continue to affect the scenic resources of the park. The management of cultural landscapes and agricultural settings would continue to affect scenic resources. Impacts are likely to be long-term and could be beneficial or adverse. The intensity of the impacts is unknown, although it is expected that it would be localized.

Under Alternative D, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including scenic resources and viewsheds. The beneficial impacts on scenic resources due to increased and improved coordination between the NPS and its Key Partners would be greater than in Alternative A.

Collectively, these actions would improve coordination and accountability for scenic resource management, which would result in long-term, beneficial impacts on scenic resources and viewsheds. The impacts may not include the entire park, but would be widespread. Predicting the intensity of this impact is difficult, but it is anticipated to be moderate.

Facility development would be increased under Alternative D and the impacts would be greater than in all other alternatives. The construction of new facilities under this alternative, including a visitor center, hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, has the potential to affect the scenic resources of the park. As in all of the alternatives, maintenance of existing facilities would probably result in some erosion and/or alteration of soil properties, resulting in a negligible to minor, long-term, adverse impact in localized areas.

This alternative includes the development of a visitor center in, or near, the park in an undetermined location. The visitor center will not be an imposing structure on

the landscape and would not be located in key viewsheds - potential impacts to scenic resources would be expected to be negligible. Appropriate studies and NEPA compliance would be required to move forward with implementation.

Ten Visitor Focal Areas have been proposed in this alternative. The locations of the proposed Visitor Focal Areas cross the boundaries of all of the proposed management zones in the park. Potential impacts on scenic resources from development in these areas could include obstructed views from poorly placed signs and interpretive structures. Potential impacts from development in Visitor Focal Areas would be expected to be long-term, adverse, localized and of negligible to minor intensity.

The locations of the proposed Visitor Services Zone are fully contained inside the boundaries of the Cultural Landscape Zone. Potential impacts on scenic resources from development in these areas could include obstructed views from poorly placed facilities and structures that are incompatible with the surrounding landscape and rural character. Potential impacts from development in the Visitor Services Zone would be expected to be long-term, adverse, localized and of minor to moderate intensity.

The trail system in this alternative would be more extensive than in the other alternatives. These trails would pass through all of the park's management zones, and would include a trail that follows the course of the battle. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. Trails in this alternative pass through forested areas and traverse the borders of open fields. The trails themselves would have negligible impacts on scenic resources and viewsheds. However, trailhead development could have adverse impacts. This alternative proposes a total of nine trailheads. Adverse impacts from trailheads have been minimized due to their placement at sites with previous disturbance: along existing highways, roads, and driveways. Some new disturbance would still be required, which could affect the pastoral landscape and its scenic qualities. Potential impacts from trailhead development would be expected to be long-term, adverse, minor, and localized.

The development of auto touring routes could have adverse impacts on scenic resources and viewsheds. The routes themselves would use existing road rights-of-way and therefore would have no impact on scenic resources. The development of four waysides along existing roadways to support the touring routes has the potential to impact scenic resources. It is presumed that any construction required would be contained within the right-of-way. Even so, such a facility has the potential to affect the scenic qualities of the area due to increases in asphalt surfacing and the installation of new signs. If wayside developments are planned and constructed properly, adverse impacts would likely be negligible. Impacts from auto tour routes could also include the creation of denuded areas and ruts along

road corridors that may affect the scenic quality of the area. Impacts on scenic resources and viewsheds are expected to be long-term, adverse, minor, and localized.

Adverse impacts on scenic resources and viewsheds on private lands in the park would be less than those described in Alternative A. Scenic resources on private lands within the park, which would constitute less than 10% of the park's total acreage under Alternative D, would continue to be impacted by development, land use, land management, and land protection. The types of impacts would be generally the same as those described in Alternative A. The NPS and its Key Partners would continue to encourage and promote the protection of scenic resources and viewsheds on private lands, with improved capacity for community outreach and education on resource preservation efforts due to the establishment of a new visitor center. This would enable the park to realize its special mandates for resource conservation as identified in the park's enabling legislation. Final decision and actions on private lands would still be left to the discretion of private landowners. In most cases, adverse impacts would be realized only when private lands are developed. Collectively, impacts on scenic resources and viewsheds from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on scenic resources and viewsheds would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, moderate to major, adverse impacts.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions, there would be a long-term, minor, adverse cumulative impact on the park's scenic resources and viewsheds. Impacts would be localized, but could affect many sites. The adverse effects of projects and actions outside of the park would be substantially mitigated by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative D would contribute a large increment to this resulting cumulative impact.

Conclusion. The park's scenic resources and viewsheds would be affected by the actions under Alternative D, including actions associated with visitor use, land use, land management, development, and land protection. The potential for adverse impacts on scenic resources from facility development would be greater than in all other alternatives, but the beneficial impacts of land protection would be greatest under Alternative D.

Visitor use would result in long-term, minor to moderate, adverse impacts on scenic resources that would be localized. Land use and management impacts on scenic resources would be long-term, beneficial, moderate, and localized. Development

impacts would be long-term, adverse, localized, with intensities ranging from negligible to moderate depending upon the type of development. Land protection would result in long-term, moderate to major, beneficial impacts that would be localized.

When the impacts of Alternative D are added to the effects of other current and foreseeable future actions, there would be a minor, long-term, adverse cumulative impact on the park's scenic resources and viewsheds. The impacts would be localized. The adverse impacts of projects and actions outside of the park would be substantially mitigated by the beneficial impacts of land protection actions contained in this alternative. Impacts would be localized, but could affect many sites. The actions in Alternative D would contribute a large increment to this overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of scenic/visual resources/viewsheds in the park.

■ Soils

Direct and Indirect Impacts. Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of soils because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on soils under Alternative D would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's soils. Relative to Alternative A, coordination of land protection and acquisition activities would be improved and would be the greatest under Alternative D. The NPS and its Key Partners would protect and acquire about 2,000 acres of land. Acquisition of these properties could result in the protection of important soils, including prime

farmland or hydric soils, and would prohibit development that could adversely impact these and other soil resources. Under Alternative D, the NPS and its Key Partners would develop proactive strategies to protect related resources outside the park boundary, using conservation easements and consulting with local governments. Land protection under Alternative D would be expected to result in long-term, beneficial, moderate to major, localized impacts.

Impacts on soils from visitor use would continue to affect soils in the park. Trail use and visitor use during large special events such as battle reenactments would compact soils and cause erosion from people, vehicles, and horses. Soils along existing trails and near parking areas would likely experience the same impacts.

Increases in park visitation, resulting from the development of new facilities in the park under Alternative D, would likely increase the potential for adverse impacts on soils as described above. The acquisition of key historic properties would also increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. The potential for increased development of unofficial social trails caused by visitors would likely increase under this alternative since the development of more trails in the park would allow visitors to access previously inaccessible areas of the park and may encourage them to go off trail, especially near the Visitor Focal Areas. On the other hand, it could be argued that the development of the trail system will formalize access and minimize impacts from visitor use. Overall, visitor use would result in long-term, minor to moderate, adverse impacts on soils that would be localized.

Under Alternative D, instituting and monitoring user-capacity indicators, as well as implementing management strategies to mitigate adverse impacts, would reduce soil erosion caused by visitor use. Compared to Alternative A, this would likely result in a minor, long-term, beneficial impact that would be localized.

Land use and resource management activities in the park would continue to affect soils. Agricultural production and livestock grazing would continue to cause soil compaction and erosion. Under Alternative D, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. Collectively, these activities would result in long-term, minor to moderate, adverse impacts that would be limited in extent.

Under Alternative D, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including soils.

The Key Partners would continue to be the majority landowner under this alternative; however, the NPS would also be a significant landowner and would be

most involved in resource management under this alternative. There would still be the potential for adverse impacts on the soils in the park due to varied management by the respective owners; however, compared to Alternative A, land use and management would be greatly improved. Collectively, these actions would improve coordination and accountability for resource management in comparison with Alternative A; this would result in long-term beneficial impacts on soils that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor.

Facility development would be increased under Alternative D and impacts would be greater than those under all the other alternatives. The construction of new facilities under this alternative, including a visitor center, hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, has the potential to affect soils. As in all of the alternatives, maintenance of existing facilities would probably result in some erosion and/or alteration of soil properties, resulting in a negligible to minor, long-term, adverse impact in localized areas.

This alternative includes the development of a visitor center in, or near, the park in an undetermined location. If establishment of the visitor center required new construction, some soils would be lost to erosion and/or substantially altered in local areas where ground disturbance occurs. Mitigation measures, such as installing erosion matting and silt fences, would help reduce the impacts. The impact on soils would be long-term, adverse, moderate, and localized.

Ten Visitor Focal Areas have been proposed in this alternative. Proposed development in the Visitor Focal Areas and Visitor Services Zone would affect soils. The degree of impact would depend on the scale of development that occurred on site. Impacts on soils in these areas would likely include the loss of soils due to the facility construction and the potential for compaction and alteration of soils adjacent to the sites due to heavy equipment use. Impacts from development in the Visitor Focal Areas and Visitor Services Zone would be expected to be long-term, adverse, localized, and of minor to moderate intensity.

The trail system in this alternative would be more extensive than in the other alternatives. These trails would pass through all of the park's management zones, and would include a trail that follows the course of the battle. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. Site preparation work would disturb the soil profile and displace soils along the trail, generally down to the level where mineral soil can be found. Construction equipment also would likely disturb and compact adjacent soils in the project areas. The potential for soil erosion would increase in these areas. Construction of the trails would result in long-term, minor to moderate, adverse impacts in localized areas. This alternative includes a total of nine trailheads. Trailhead development, which could include the clearing of areas to

accommodate parking and trail access, would be expected to result in long-term, moderate, adverse impacts in localized areas.

The development of auto touring routes could have adverse impacts on soils. The routes themselves would utilize existing road rights-of-way and therefore would have no impact on soils. The development of four waysides along existing roadways to support the touring routes could adversely impact soils. It is presumed that any construction required would be contained within the road right-of-way; however, portions of the right-of-way may be undisturbed. Increases in asphalt surfacing and the installation of new signs would disturb soils. Impacts from auto tour routes could also include the compaction of soil along road corridors and the potential for soil erosion. Impacts on soils are expected to be long-term, adverse, moderate, and localized.

Impacts on soils on private lands in the park would be less than those described in Alternative A. Soils on private lands within the park, which would constitute less than 10% of the park's total acreage under Alternative D, would continue to be impacted by development, land use, land management, and land protection. The types of impacts would be generally the same as those described in Alternative A. Collectively, impacts on soils from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to major depending on their land use implications.

Cumulative Impacts. The impact of cumulative actions on soils would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term, minor to moderate, adverse, localized cumulative impact on soils. The adverse effects of projects and actions outside of the park would be mitigated and largely outweighed by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative D would contribute a large increment to this resulting cumulative impact.

Conclusion. The park's soils would be affected by the actions under Alternative D, including those associated with visitor use, land use, land management, development, and land protection. Adverse impacts on soils from facility development would be greater than in all other alternatives, but the beneficial impacts of land protection would be greatest under Alternative D.

Visitor use would result in long-term, minor to moderate, adverse impacts on soils that would be localized. Land use and management impacts on soils would be long-term, beneficial or adverse, minor to moderate, and would be localized. Development impacts would be long-term, adverse, localized, with intensities

ranging from negligible to moderate depending upon the type of development. Land protection would result in long-term, moderate to major, beneficial impacts that would be localized.

When the impacts of Alternative D are added to the effects of other current and foreseeable future actions, there would be a minor to moderate long-term adverse cumulative impact on soils in the park. The impacts would be localized. The adverse effects of projects and actions outside of the park would be mitigated and largely outweighed by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative D would contribute a large increment to this overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of soils in the park.

■ Groundwater

Direct and Indirect Impacts. Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of groundwater because the NPS and its Key Partners would own more land within the legislated boundaries of the park and would develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on groundwater under Alternative D would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's groundwater. Relative to Alternative A, coordination of land protection and acquisition activities would be improved and would be the greatest under Alternative D. The NPS and its Key Partners would protect and acquire about 2,000 additional acres of land. Although acquisition of cultural landscapes would continue to be the focus, these properties overlay groundwater. Acquisition of these properties could aid in the protection of groundwater by eliminating or reducing the development

potential of the property. This would result in a reduction in demand for domestic water that would help with current water supply issues. Elimination or reduction of development would also reduce the potential for adverse impacts on groundwater quality by reducing human activities that could result in inadvertent chemical contamination. The beneficial impacts on groundwater from land protection would be the greater than in Alternative A. Under Alternative D, the NPS and its Key Partners would develop proactive strategies to protect related resources outside the park boundary, using conservation easements and consulting with local governments. Land protection under Alternative D would be expected to result in long-term, beneficial, moderate, localized impacts.

Under Alternative D, increased park visitation resulting from increased visits to the partner-owned sites would likely increase the demand for domestic water. Development of the Keister Tract would substantially increase visitor use in the southern portion of the park. Visitation at this site would increase after the area opens to the public and then would likely continue to gradually increase over the life of the plan. The acquisition of key properties would also increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. These new uses and corresponding increases in park visitation could result in long-term, adverse impacts on groundwater and domestic water supplies. The impacts could extend beyond park boundaries. Predicting the intensity of this impact is difficult, but it is anticipated to be minor because the increase in water use above existing rates of consumption would be relatively small when compared to the size of the aquifer.

As in Alternative A, groundwater quality in the park, in locations such as along existing roads and at parking areas, would continue to be affected by visitor use. Under Alternative D, new parking areas developed in the Visitor Focal Areas and/or the Visitor Services Zone would contribute to any potential impacts. Inadvertent chemical spills, including oil from automobiles, could enter the soil profile and impact groundwater quality. Areas with karst features, such as sinkholes, that have more direct connections to groundwater and surface waters, would be more likely to experience adverse impacts on groundwater. These adverse impacts would likely be long-term, localized, and of negligible to minor intensity because they would be limited to discrete areas such as roads and parking areas.

Land use and resource management activities in the park could continue to affect groundwater. Groundwater quality could be affected by chemicals used in agricultural production. The impact would likely be long-term, adverse, minor, and localized. Under Alternative D, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource goals. Collectively, these activities would result in long-term, adverse, localized, minor impacts.

Under Alternative D, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including water resources.

The Key Partners would continue to be the majority landowner under this alternative; however, the NPS would also be a significant landowner and would be most involved in resource management under this alternative. There would still be potential for adverse impacts on groundwater in the park due to varied management by the respective owners; however, compared to Alternative A, that potential would be reduced. Collectively, these actions would improve coordination and accountability for water resource management, which would result in long-term beneficial impacts on groundwater that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be negligible to minor.

Facility development would increase under Alternative D and the impacts on groundwater would be greater than in Alternative A, but about the same as in Alternatives B and C. Groundwater withdrawal for NPS and partner uses would continue to be relatively small compared to other uses in the park, and water consumption is not expected to increase substantially over the life of the plan. Impacts on groundwater from facility development under this alternative would be limited to those generated by the establishment of a visitor center and facility development in the Visitor Services Zone. The visitor center would require domestic water to support visitor use and staff operations. Increased water withdrawals required for domestic water use would adversely impact groundwater supply and/or aquifer levels in the area. Facilities built in the Visitor Service Zone, such as restrooms and campgrounds, would likely require water to support visitor use. The number of new wells or the amount of domestic water that would be needed has not been determined and would be dependent on the scale of development that occurs. Overall, impacts would be expected to be long-term, adverse, mostly localized, and negligible to minor in intensity. Trailhead development on NPS-owned land is not expected to require additional water consumption over the long-term.

Impacts on groundwater on private lands in the park would be less than those described in Alternative A. Groundwater on private lands within the park, which would constitute less than 10% of the park's total acreage under Alternative D, would continue to be impacted by development, land use, land management, and land protection. In most cases, adverse impacts would be realized only when private lands are developed. The types of impacts would be generally the same as those described in Alternative A. Collectively, impacts on groundwater from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on groundwater would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions, there would be a long-term adverse cumulative impact on groundwater resources. The impacts could extend beyond park boundaries and could include the region. The adverse effects of projects and actions outside of the park would be mitigated by the beneficial impacts of land protection actions contained in this alternative. It is difficult to predict and quantify the impacts, but they are anticipated to be moderate. The actions in Alternative D would contribute an appreciable increment to this resulting cumulative impact.

Conclusion. Groundwater resources in the park would be affected by the actions under Alternative D, including actions associated with visitor use, land use and management, development, and land protection. Adverse impacts on groundwater from facility development would be greater than in Alternative A, but the beneficial impacts of land protection would be the greatest under Alternative D.

Visitor use impacts on groundwater would be short- and long-term, adverse, negligible to minor, and localized. Land use and management impacts on groundwater would be long-term, adverse or beneficial, negligible to minor, and localized. Facility development and maintenance impacts would be long-term, adverse, negligible to minor, and localized. Land protection would result in long-term, beneficial, moderate impacts that would be localized.

When the impacts of Alternative D are added to the effects of other current and foreseeable future actions, there would be a moderate long-term adverse cumulative impact on groundwater resources. The impacts could extend beyond park boundaries in some cases. The actions in Alternative D would add an appreciable increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of groundwater in the park.

■ Surface Water Quality

Direct and Indirect Impacts. Alternative D, when compared with the other alternatives, holds the greatest potential for protection and preservation of surface water quality because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on surface water quality under Alternative C would be expected to be less than those under Alternative D because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's surface water quality. Relative to Alternative A, coordination of land protection and acquisition activities would be improved and would be the greatest under Alternative D. The NPS and its Key Partners would protect and acquire about 2,000 additional acres of land. Although acquisition of cultural landscapes within the park would be the focus, these properties could also contain surface waters or could influence nearby surface waters. Many of the tracts identified as protection priorities in Alternative D contain creek and stream frontage. This alternative provides the greatest level of riparian protection. Acquisition of these properties would aid in the protection of surface water quality by eliminating or reducing the development potential of the property. This would result in a reduction in erosion caused by construction activities and property use. Elimination or reduction of development would also reduce the potential for adverse impacts on surface water quality by reducing surface water runoff and human activities that could result in inadvertent chemical contamination. Under Alternative D, the NPS and its Key Partners would develop proactive strategies to protect related resources outside the park boundary, using conservation easements and consulting with local governments. Land protection under Alternative D would be expected to result in long-term, beneficial, moderate, localized impacts.

Under Alternative D, surface water quality in the park would continue to be affected by visitor use due to the potential for soil erosion and inadvertent chemical contamination. Trail use and large special events would continue to produce adverse impacts on surface water, such as vegetation loss with resultant increased erosion and inadvertent chemical contamination. The large amount of land acquisition in this alternative would likely result in increased visitor opportunities available in the park, which, in turn, would likely increase total park visitation. Park visitation is expected to be highest under this alternative. These new uses and corresponding increases in park visitation could result in impacts on surface water quality similar to the impacts described in Alternative A. The acquisition of key historic properties would also increase the visitor opportunities available in the park,

which, in turn, would likely increase total park visitation. Visitor use under Alternative D would result in long-term, adverse, localized, minor impacts.

Compared to Alternative A, adverse impacts on surface water quality from land use and resource management would be reduced; however, surface water quality would continue to be affected. Agricultural practices would continue to cause stream bank erosion and chemical inputs into surface waters. Under Alternative D, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including assistance on natural resources. Collectively, these activities would result in long-term, adverse, minor to moderate, localized impacts.

Under Alternative D, the NPS and its Key Partners would develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including water resources. Beneficial impacts on surface water quality would be greater than those under Alternative A and generally the same as in Alternative C.

The Key Partners would continue to be the majority landowner under this alternative; however, the NPS would also be a significant landowner and would be most involved in resource management under this alternative. There would still be potential for adverse impacts on the surface water quality in the park due to varied management by the respective owners; however, compared to Alternative A, land use and management would be greatly improved. Land acquisition under this alternative would provide the NPS and its Key Partners with the ability to control land uses adjacent to surface waters and thereby minimize inputs into waterways. Land use and/or management practices would likely transition from rural agricultural use to a focus on visitor use and preservation over the life of the plan, which would produce beneficial impacts. Land ownership provides special opportunities to implement restoration projects that could beneficially impact surface water quality and wildlife that depend on high quality waters. Collectively, these actions would improve coordination and accountability for water resource management in comparison to Alternative A; this would result in long-term beneficial impacts on surface water quality that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be minor to moderate.

As in all of the action alternatives, the Natural Resource Zone is designed to protect areas of high biodiversity such as stream corridors and the state-designated Panther Conservation Site. This zone spans approximately 300 feet on both sides of all streams and rivers within the park boundary. This zone would preserve existing vegetation within this 600-foot corridor, providing a vegetated riparian buffer that would filter pollutants and reduce inputs into streams and rivers. The impact on surface water quality would be expected to be long-term, beneficial, moderate, and localized.

Facility development would be increased under Alternative D and impacts on surface water quality would be greater than those under Alternative A. Impacts on surface water quality from facility development proposed under this alternative would be generally limited to the construction of trails, trail crossings, and trailheads—no other new facilities are proposed near surface waters. Trail construction adjacent to Cedar Creek, Meadow Brook, and the North Fork of the Shenandoah River could affect surface water quality. With the implementation of mitigation measures, such as erosion control, impacts would be reduced. Impacts from trail construction would be short-term, adverse, localized, and of minor intensity. The conceptual trail corridors identify four crossings of Cedar Creek, five crossings of Meadow Brook, and two crossings of an unnamed tributary to Meadow Brook. Construction of trail crossings would affect surface water quality. There is also potential for inadvertent chemical contamination from the use of construction equipment. Impacts from the construction of trail crossings would be short-term, adverse, localized, and of minor intensity.

Nine trailheads are proposed under this alternative. Two of them are located adjacent to surface waters and therefore could have effects on surface water quality. With the implementation of mitigation measures, such as erosion control, impacts would be reduced. The impacts from construction of trailheads would be short-term, adverse, localized, and of negligible to minor intensity. Inadvertent chemical spills, including oil from automobiles parked at trailheads, could enter surface waters through runoff. New parking areas developed near surface waters in the Visitor Focal Areas would also contribute to any potential impacts on surface water quality. The impacts would be long-term, adverse, localized, and of negligible to minor intensity.

Impacts on surface water quality on private lands in the park would be less than those described in Alternative A. Surface water quality on private lands within the park, which would constitute less than 10% of the park's total acreage under Alternative D, would continue to be impacted by development, land use, land management, and land protection. The types of impacts would be generally the same as those described in Alternative A. The establishment of a new visitor center would improve the NPS's capacity for community outreach and education on resource preservation efforts. The NPS would be better able to meet its special mandates for resource conservation as identified in the park's enabling legislation by having an opportunity to encourage and promote the protection of surface water quality on private lands. Although the NPS and its Key Partners would continue to encourage and promote the protection of surface water quality on private lands, resource preservation efforts would be subject to the discretion of individual landowners. Collectively, impacts on surface water quality from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on surface water quality would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions outside the park, there would be a long-term, adverse cumulative impact on surface water quality in the park. The impacts would be mostly localized, but could extend further downstream into the watershed. The adverse effects of projects and actions outside of the park would be mitigated by the beneficial impacts of land protection actions contained in this alternative. It is difficult to predict and quantify the impacts, but they are anticipated to be minor to moderate. The actions in Alternative D would contribute a large increment to this resulting cumulative impact.

Conclusion. Surface water quality in the park would be affected by the actions under Alternative D, including actions associated with visitor use, land use, land management, development, and land protection. Adverse impacts on surface water quality from facility development would be greater than in all other alternatives, but the beneficial impacts of land protection would be greatest under Alternative D.

Visitor use impacts on surface water quality would be long-term, adverse, minor, and localized. Land use and management impacts on surface water quality would be long-term, adverse or beneficial, minor to moderate, and mostly localized. Development impacts would be short-term, adverse, negligible to minor, and localized. Land protection would result in long-term, beneficial, moderate, localized impacts.

When the impacts of Alternative D are added to the effects of other current and foreseeable future actions, there would be a minor to moderate long-term adverse cumulative impact on surface water quality. The impacts would be mostly localized, but could extend beyond park boundaries. The adverse impacts of projects and actions outside of the park would be mitigated by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative D would add a large increment to this overall impact.

Impacts from actions contained in this alternative would not likely result in impairment of surface water quality in the park.

■ **Vegetation**

Direct and Indirect Impacts. Alternative D, when compared with the other alternatives, holds the greatest potential for greater protection and preservation of vegetation because the NPS and its Key Partners would own more land within the legislated boundaries of the park and develop collaborative, proactive land protection strategies for resource preservation within and outside park boundaries.

Impacts on vegetation under Alternative D would be expected to be less than those under Alternative A because the NPS and its Key Partners would

- develop a land protection plan and acquire land and interest in land (approximately 2,000 acres over the life of the plan) in a phased approach based on land protection priorities, with the highest priority being given to acquisition of the park's broader landscapes and connectivity between parcels of land currently owned by the partners
- develop proactive strategies to protect related resources outside the park boundary
- provide technical assistance to one another, private landowners, and nearby communities in support of viewshed and resource protection in the park and outside park boundaries

Land protection activities in the park would continue to affect the park's vegetation. Relative to Alternative A, coordination of land protection and acquisition activities would be improved and would be the greatest under Alternative D. The NPS and its Key Partners would protect and acquire about 2,000 acres of land, with the highest priority being given to protecting cultural landscapes and/or providing connectivity between NPS- and partner-owned tracts of land. Although acquisition of cultural landscapes within the park would be the focus, these properties would also contain vegetation. Acquisition of these properties could result in the protection of important vegetation, including wetlands, riparian areas, and other unique or rare plant communities, and would prohibit development that could adversely impact these resources. This alternative includes protection of a larger proportion of lands in the southern portion of the park where woodlands dominate. Therefore, woodlands would be best protected under Alternative D.

General recreational use and trail use, along with large special events, would continue to adversely impact vegetation through trampling and vegetation loss. Large special events would continue to impact vegetation by causing injury or mortality in isolated areas due to trampling from visitor use and damage to trees from horse activity and hitching. Park visitation is expected to be highest under this alternative. Increases in park visitation, resulting from the development of auto touring routes and new trail opportunities under Alternative D, would likely increase trampling of plants and loss of vegetation. Land acquisition would also likely increase the visitor opportunities available in the park, which, in turn, would likely increase total park visitation. Increased automobile and human use would also increase the potential for the spread and proliferation of exotic and invasive plants. The potential for increased development of unofficial social trails created by visitors would likely increase under this alternative since the development of more trails in the park would allow visitors to access previously inaccessible areas of the park and may encourage them to go off trail, especially near the Visitor Focal Areas. On the

other hand, it could be argued that the development of the trail system will formalize access and minimize impacts on vegetation from visitor use. Illegal collection of plants could also occur in the park. Visitor use under Alternative D would result in long-term, adverse, localized, minor impacts on vegetation.

Under Alternative D, instituting and monitoring user-capacity indicators, as well as implementing management strategies to mitigate adverse impacts, should reduce impacts on vegetation caused by visitor use. Compared to the Alternative A, this would likely result in a minor, long-term, beneficial impact that would be localized.

Land use and resource management activities in the park would continue to affect vegetation. Although the management of agricultural lands, natural areas, exotic and invasive plants, and vegetation that contribute to the park's cultural landscapes would continue to be variable and could produce adverse impacts, the beneficial impacts on vegetation from land use and management would be greater than those under Alternative A due to increased coordination between the NPS and its Key Partners. The reduction or elimination of livestock grazing in the park over the life of the plan would also be expected to produce beneficial impacts on vegetation from removing livestock herbivory and reducing the transport and proliferation of exotic and invasive plants.

Under Alternative D, the NPS and the Key Partners would provide technical assistance to one another, to private landowners, and to nearby communities in support of goals that further the purposes of the park, including natural resource and vegetation management goals. The NPS and its Key Partners would also develop written, shared strategies for implementing the GMP and policies for operating the park. The NPS and its Key Partners would collaborate to manage various aspects of the park, including vegetation.

The Key Partners would continue to be the majority landowner under this alternative; however, the NPS would also be a significant landowner and would be most involved in resource management under this alternative. There would still be potential for adverse impacts on vegetation in the park due to varied management by the park's partners; however, compared to Alternative A, land use and management would be improved. Increased land ownership would provide increased opportunities to implement restoration projects that could beneficially impact vegetation and natural landscapes in the park. Collectively, these actions would improve coordination and accountability for vegetation management, which would result in long-term beneficial impacts on vegetation that are localized. Predicting the intensity of this impact is difficult, but it is anticipated to be moderate.

As in all of the action alternatives, the Natural Resource Zone is designed to protect areas of high biodiversity such as stream corridors and the state-designated Panther Conservation Site. This zone spans approximately 300 feet on both sides of all

streams and rivers within the park boundary. This zone would preserve existing vegetation within the 600-foot corridor and would act as a riparian buffer. The park would seek to develop a habitat management program for the Panther Conservation Site in cooperation with the Cedar Creek Battlefield Foundation (who owns the site) and the state of Virginia. Such a program would likely result in increased protection and enhancement of rare plant communities compared to such protection in Alternative A. The impact on vegetation from these actions would likely be long-term, beneficial, minor to moderate, and localized.

Collectively, impacts on vegetation from land use and management under Alternative D would be long-term, adverse or beneficial, localized, and of minor to moderate intensity.

Facility development would be increased under this alternative and adverse impacts would be greater than those under all other alternatives. The construction of new facilities under this alternative, including a visitor center, hiking and biking trails (with trailheads), auto touring routes (with waysides), and signs, has the potential to affect vegetation. As in all of the alternatives, the development of visitor facilities at the Keister Tract would cause permanent loss of vegetation in the footprint of a development and would likely cause short-term adverse impacts on vegetation adjacent to the footprint due to construction activities. Maintenance of existing facilities would likely result in some injury or loss of plant material, resulting in a negligible to minor, long-term, adverse impact in localized areas.

This alternative includes the development of a visitor center in, or near, the park in an undetermined location. Citing of the new facility would likely be in a previously disturbed and developed area with limited native vegetation. Construction of the visitor center would result in permanent loss of vegetation, which would be a long-term, adverse, minor, localized impact.

Ten Visitor Focal Areas have been proposed in this alternative. New development to support interpretive experiences in the Visitor Focal Areas would result in negligible to minor impacts on vegetation due to the installation of signs or other similar interpretive facilities. Impacts would be limited mostly to agricultural lands where native vegetation has already been substantially altered or is not present. Some negligible to minor impacts on woodlands could be realized at the Keister Tract, such as tree removal and root damage from construction and visitation. These impacts would be long-term, adverse, and localized.

Development in the Visitor Services Zone could result in impacts on agricultural lands and woodlands similar to those described above. The intensity of the impacts in the Visitor Services Zone would be greater than in the Visitor Focal Areas. Impacts would be long-term, adverse, localized, and of minor to moderate intensity.

The trail system in this alternative would be more extensive than in the other alternatives. These trails would pass through all of the park's management zones, and would include a trail that follows the course of the battle. Trails are planned to be four feet wide, constructed out of natural surfaces or gravel crusher fines, and used for hiking and bicycling only. Trails would traverse forested uplands, upland grasslands (open fields), and forested bottomlands. Trails in open fields would be primarily along the field border. Trails near waterways could affect riparian vegetation. Trail construction would result in permanent loss of vegetation within the trail corridor, and some adverse impacts on adjacent vegetation could also be realized from the use of heavy equipment. Trail construction in the Panther Conservation Site could result in impacts on rare or unique plant communities due to the loss of vegetation and the indirect impacts on vegetation from the use of heavy equipment. Impacts on vegetation would be long-term, adverse, minor, and localized. Development of nine trailheads under this alternative would result in similar impacts.

The development of auto touring routes could have adverse impacts on vegetation. The routes themselves would use existing road rights-of-way and therefore would have no impact on vegetation. The development of four waysides along existing roadways to support the touring routes could adversely impact vegetation if additional clearing of vegetation is required. Impacts from auto tour routes could also include injury to or loss of vegetation along road corridors. Impacts on vegetation are expected to be long-term, adverse, minor, and localized, affecting a relatively small area.

Under Alternative D, the NPS and its Key Partners would develop proactive strategies to protect related resources outside the park boundary, using conservation easements and consulting with local governments. This would likely include a focus on vegetation that contributes to the scenic qualities and natural landscapes of the area.

Overall, land protection under Alternative D would be expected to result in long-term, beneficial, moderate, localized impacts.

Adverse impacts on vegetation on private lands in the park would be less than those described in Alternative A due to increased land protection. Vegetation on private lands within the park, which would constitute less than 10% of the park's total acreage under Alternative D, would continue to be impacted by development, land use, land management, and land protection. In most cases, adverse impacts would be realized only when private lands are developed. The types of impacts would be generally the same as those described in Alternative A.

The establishment of a new visitor center would improve the NPS's capacity for community outreach and education on resource preservation efforts. The NPS would be better able to meet its special mandates for resource conservation as

identified in the park's enabling legislation by having an opportunity to encourage and promote the protection of vegetation on private lands. Final decision and actions on private lands would still be left to the discretion of individual private landowners.

Collectively, impacts on vegetation from activities that occur on private lands in the park are expected to be long-term, adverse, and localized, with intensities ranging from negligible to moderate depending on the scale of these activities.

Cumulative Impacts. The impact of cumulative actions on vegetation would be generally the same as those described under Alternative A. Cumulative actions would result in long-term, minor to moderate, adverse impacts.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions, there would be a long-term, adverse cumulative impact on vegetation in the park. The impacts would be localized. It is difficult to predict and quantify the impacts, but they are anticipated to be minor. The adverse impacts of projects and actions outside of the park would be mitigated and largely outweighed by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative D would contribute a large beneficial increment to this resulting cumulative impact.

Conclusion. Vegetation in the park would be affected by the actions under Alternative D, including those associated with visitor use, land use, land management, development, and land protection. In general, adverse impacts on vegetation from facility development would be greater than in all other alternatives, but the beneficial impacts of land protection would be greatest under Alternative D.

Visitor use impacts on vegetation would be long-term, adverse or beneficial, minor, and localized. Land use and management would result in long-term and adverse or beneficial impacts on vegetation that would be localized and of minor to moderate intensity. Development impacts would be long-term, adverse, negligible to moderate, and localized. Land protection impacts would be long-term, beneficial, moderate, and localized.

When the impacts of Alternative D are added to the effects of other current and foreseeable future actions, there would be a minor long-term, adverse cumulative impact on vegetation. The impacts would be mostly localized. The adverse impacts of projects and actions outside of the park would be mitigated and largely outweighed by the beneficial impacts of land protection actions contained in this alternative. The actions in Alternative D would contribute a large increment to this overall cumulative impact.

Impacts from actions contained in this alternative would not likely result in impairment of vegetation in the park.

4.6.3 Visitor Use and Experience

Direct and Indirect Impacts. Under Alternative D, the Key Partners would collaborate in the development of interpretive programming, and sites operated by Key Partners would remain open. A visitor center would be developed in, or near, the park, providing a focus for visitor contact, orientation, and interpretation to the park and the National Historic District. The visitor center would also provide educational and research activities in the areas of research and resource conservation. The impact on visitor understanding and appreciation of the park would be long-term, major and beneficial.

The NPS identity and presence in the region would be promoted. This alternative would expand the NPS presence beyond individual sites in the park to sites in the National Historic District. Personal services such as ranger led talks and tours would strengthen park-district linkages and promote recognition of the district as nationally significant. Increased visitation is expected due to interest among NPS ‘baggers’, curious visitors drawn by the NPS visitor center and other interpretive sites, and visitors with historical interests who want to see more of the National Historic District. These actions would provide a long-term, moderate, and beneficial impact.

Interpretive experiences in this alternative would be expanded and enriched over Alternative C. In Alternative D, focal areas would serve as venues for interpretation, with historic sites presented in the context of broader landscapes, natural resource protection, and connectivity between Key Partner sites. The ability to deliver focused interpretation in landscape settings would add to the effectiveness of the park’s programs. The trails following the course of the battle of Cedar Creek and the historic mill road network would travel through the full extent of the park. Visitors would have opportunities for exposure to the full range of park resources on the trail, and to enjoy physical connections between individual sites. Additionally, trails would connect to resource outside the park in Strasburg, Middletown, and the George Washington National Forest, allowing visitors to access regional resources and trail systems.

New auto touring routes would likely lead to connections to existing local and regional tours through park actions. Users of these auto routes would tour more areas of the park, and park visitors would be introduced to attractions and sites in the region. The impact would be long-term, minor, and beneficial.

The Cedar Creek Battlefield Foundation would continue to sponsor the annual re-enactment of the Battle of Cedar Creek and possibly re-enactments of other Civil

War battles. The impacts of re-enactments and other special events held by Key Partners would be similar to Alternative A.

Visitor focal areas and the extensive trail system would bring visitors to the southern portions of the park to a greater extent than the other alternatives. There would be greater connectivity between Key Partner sites, as land protection efforts would focus on connections between park-owned or protected lands.

Park actions to protect landscape settings, develop connections to the regional trail system, and create new auto routes would have a long-term, major, and beneficial impact on heritage tourism in the region. Among the alternatives, D has the potential to benefit related regional initiatives to the greatest extent.

The focus of land protection activities would be broader landscapes and connectivity between lands currently owned by the partners. The protection of larger landscape settings would support the visitor experience in terms of scenic enjoyment and understanding of historic events, particularly at visitor focal areas where active interpretation is provided. However, development of lands close to the park but outside the boundary that are of scenic or historic interest could potentially diminish this aspect of the park experience. Despite this, the impact of park actions on visitor use and experience would be long-term, major, and beneficial.

Cumulative Impacts. Recent, current, and reasonably foreseeable planning endeavors and undertakings on or near park lands, such as expansion of the I-81 corridor through the park, encroaching residential, commercial, and industrial development on lands within the park boundaries resulting from the growth of Strasburg and Middletown, expansion of the Chemstone rock quarry adjacent to the park's western boundary, and construction of power transmission lines near the park, would likely contribute to disturbances in the visual landscape, increases in the ambient noise level, and traffic congestion. These factors would detract from the visitor's enjoyment of the park. Thus, such undertakings would be expected to have an adverse, long-term impact on visitor use and experience. To some extent, they may be localized. The level of intensity would range from minor to major, depending on the location.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, minor, adverse cumulative impact on visitor use and experience. Park actions in the area of land protection would reduce the adverse cumulative impact on visitor use and experience. The beneficial effect is likely to be at a moderate to major level, due to focus on landscape-scale settings and connectivity between Key Partner sites.

Conclusion. The visitor would benefit from a central, NPS developed and managed visitor center, a range of interpretive opportunities in protected landscape settings,

and connectivity to the regional trail system. The overall impact of Alternative D on visitor use and experience would be long-term, major, and beneficial.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other past, present, and reasonably foreseeable actions outside the park, there would be a long-term, minor, adverse cumulative impact on visitor use and experience. Park actions in the area of land protection would reduce the adverse cumulative impact on visitor use and experience. The beneficial effect is likely to be at a moderate to major level, due to focus on landscape-scale settings and connectivity between Key Partner sites.

4.6.4 Socioeconomic Environment

Direct and Indirect Impacts. Under Alternative D, the park would continue to contribute to the tourism industry in the three-county area and would be an important part of the local socioeconomic environment. Beneficial impacts on the local and regional economy from actions contained in Alternative D would be greater than those in Alternatives A, B, and C.

Middletown, at the northeastern end of the park, and Strasburg, at the southwest end, are the two gateway towns most closely associated with the park. These communities provide a range of goods and services for the visiting public as well as for park employees and other workers employed in tourism-related businesses. Because of the proximity of these communities to the park and their distance from other visitor areas, these two individual gateway communities would continue to receive the greatest impacts from the actions in this alternative.

The reenactments would continue to be the most significant events in terms of number of visitors on site at one time and visitor-related spending that occurs each year. The battlefield reenactments are important short-term activities that would likely continue and could draw increasing numbers of participants (historic Civil War re-enactors) and spectators to the region. This infusion of 12,000 to 14,000 visitors each year from outside the three-county region (with their accompanying spending) has a beneficial impact on the local and regional economy because it would continue to provide customers and income for local businesses. Increasing visitation is expected as a result of NPS and Key Partners' efforts and would continue to produce beneficial economic and fiscal impacts for the local economy.

Compared to Alternative A, public accessibility to the park would be the greatest under Alternative D. Limitations on accessibility to park lands, due to land ownership patterns and the varying uses of land within the park, would be greatly reduced under Alternative D. Visitors must still travel through one or more of the three counties (Frederick, Shenandoah, Warren) to gain access to the park.

As in Alternative C, an NPS visitor center would be constructed and would be the focal point for visitor orientation. It is anticipated that most visitors would start their visit at the new visitor center and then begin their tour to major visitor attractions within the park. Relative to Alternative A, this would result in increased public awareness, interest, and visibility to the park over time, which would result in increased visitation to the park as a whole.

Under Alternative D, a staff of 25 FTEs (about \$2.2 million annually for salaries, benefits, utilities, and consumables such as office supplies, etc.) would be required to operate the visitor center, provide interpretation and other visitor services, and implement the actions contained in Alternative D.

Facility development would be the greatest under Alternative D. The major short-term NPS development projects would include building a visitor center and developing a variety of facilities in the park, including trails, trailheads, waysides, interpretive media, etc. (\$18.5 million). These facility investments (one-time costs) would constitute the major portion of the NPS development of the park over the next 20 years. As in Alternative A, the only capital investment by the Key Partners would be developing the Keister Tract into a park – the economic impact would be the same as in Alternative A.

It is presumed that the staffing levels and annual operating budgets of the Key Partners could increase slightly under Alternative D (estimated at \$660,000 annually), but would remain at least the same as in Alternative A.

As development of the park moves from the planning stage to implementation of the approved GMP, additional fiscal impacts would occur as funds are spent to develop facilities and hire additional staff. People drawn to the park because of the NPS presence would also result in additional beneficial fiscal and employment impacts due to increased spending by visitors from outside the three-county region.

Land acquisition efforts under Alternative D would be the same as alternative C in terms of acres acquired over the life of the plan. The NPS and Key Partners would seek to acquire about 2,000 acres at a projected cost of about \$40 million. Spending by the NPS on land required for the development of the visitor center is estimated at \$250,000. Land acquisition would be on a willing seller-willing buyer basis. Private owners would receive fair market value in exchange for any land brought by the federal government. Acquisition of privately owned land by the federal government would remove this property from the local tax rolls, but federal Payments in Lieu of Taxes (PILT) would increase and partially offset the decrease in property taxes collected by the local governments.

Relative to Alternative A, park visitation would be expected to increase the most under Alternative D. Table 4.2 above presents the visitation figures for 1996 through 2005 for some NPS battlefield parks that are in Virginia and/or relatively

close to Cedar Creek and Belle Grove NHP. It is not likely that visitor use at Cedar Creek and Belle Grove NHP would approach the range for better-known parks like Gettysburg National Military Park (averaging 1.7 million recreation visits annually) or Manassas National Battlefield Park (averaging 0.8 million recreation visits annually). Petersburg National Battlefield and Richmond National Battlefield Park are most similar to Cedar Creek and Belle Grove NHP in that they have multiple units separated by distance requiring motorized transportation (perhaps an auto tour) for the visitor to experience all the parts of the entire park. These two parks are well established and have had annual visitation in the 70,000 to 177,000 range during the period 1996 to 2005. Over the next 20 years, Cedar Creek and Belle Grove NHP becomes more developed, well established, and better known to the public, annual visitation in the upper part of the range of 50,000 to 200,000 could be reasonably expected.

Locally the towns of Middletown and Strasburg, and other local commercial centers, would probably benefit the most from implementation of Alternative D. Most goods and services needed for the park would be acquired from this area or the greater three-county region. The demand for goods and services by the NPS and the Key Partners would increase compared to the current levels under Alternative A. Spending would happen over a number of years and the resulting impacts (e.g., increases in income and the creation of some jobs) would be moderate to major for some business firms and individuals within the local economy. The NPS annual operating budget would increase to approximately \$2.8 million (in 2007 dollars), providing the primary long-term recurring fiscal impact.

The 2005 economic impact of all the NPS parks (that report visitor use according to NPS standards and methodology) was calculated based upon the Money Generation Model Version 2.⁹ Data for some relatively close battlefield parks are displayed in Table 4.3 above. For fiscal year 2005 Petersburg NB had nearly 150,000 recreation visits and Richmond NBP received about 72,000 recreation visits. Non-local visitor spending in the local region associated with these parks was more than \$6.8 million and \$3.8 million, respectively. About 150 jobs were supported by visitation to Petersburg NB and over 80 jobs by visitors to Richmond NBP.¹⁰ Respectively, over \$2.8 million and nearly \$1.6 million in personal income in the regions surrounding these parks can be attributed to park visitors.¹¹ Visitor use and spending associated with visitor use at these two parks generated \$4.4 million and \$2.5 million, respectively, in value added.¹² Based upon this information, the economic impact of

⁹ *Stynes, Daniel J. August 2006.*

¹⁰ *"Jobs are the number of jobs in the region supported by the visitor spending. Job estimates are not full time equivalents, but include part time and seasonal positions." Stynes, et al May 2000.*

¹¹ *"Personal income includes wage and salary income, proprietor's income and employee benefits." Stynes, et al May 2000.*

¹² *"Value added is a commonly used measure of the contribution of an industry or region to gross national or gross state product. Value added is personal income plus rents and profits,*

Cedar Creek and Belle Grove NHP (including both NPS and Key Partner activities and contributions) could be expected to fall within these ranges after the park is further developed, becomes better known, and average visitation reaches the 70,000 to 150,000 range.

Economic and fiscal impacts on the three-county, regional economy are the local impacts identified above with some additional expenditures occurring in the region as out-of-region visitors travel to the park. Total recurring costs by the NPS and Key Partners would be about \$3.4 million annually, while total one-time costs would be about \$60.1 million. Some businesses and individuals in the region would benefit but the overall impacts have much less significance due to the greater size of the economy of the three-county region. Impacts on the region – with over \$3.3 billion in earnings and over 96,600 jobs in 2004 – as measured by these or other economic indicators (e.g., a notable increase in income or a decrease in unemployment, poverty, etc.) would be negligible.

Changes in the three-county (plus the city of Winchester) regional economy would include impacts on the regional socioeconomic base due to changes in park operations and other management or development actions. The socioeconomic base includes such factors as population, income, employment, earnings, etc. Park development and rehabilitation projects during the life of the plan would generally benefit the construction industry and associated workers.

Cumulative Impacts. Expansion of the I-81 corridor could increase the number of construction-related jobs in the area as well as increase spending within the local hospitality industry, a beneficial impact that would be short-term and of minor intensity. Expansion of the Chemstone quarry and upgrade of the power transmission lines could also increase jobs and spending in the local area, producing long-term, minor, beneficial impacts. The quarry expansion could also have adverse impacts on property values in the nearby area. Increased residential and commercial development would increase spending on land and construction materials while producing jobs in the region. The beneficial impact on socioeconomic conditions from this action would likely be long-term and of moderate intensity.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, moderate to major, cumulative impact on the local and regional economy. The actions in Alternative D would add an appreciable increment to this overall impact.

Conclusion. The NPS expansion to 25 FTEs and an annual operating budget of \$2.8 million (in 2007 dollars) would result in negligible to minor, long-term,

plus indirect business taxes. As the name implies, it is the "value added" by the region to the final good or service being produced." Stynes, et al May 2000.

beneficial fiscal impacts within the local and regional economies. Short-term expenditures (one-time costs) by the NPS of approximately \$18.5 million for the development of a visitor center and various park facilities would occur. This spending would benefit some businesses and individuals, mostly in the construction industrial sector. About 2,000 acres of land would be acquired under Alternative D. Acquisition of land for the park would become more expensive and more difficult as the region continues to grow. The Key Partners' annual operating costs would be about \$660,000. The Key Partners and others' efforts would provide most of the impetus that would result in greater long- and short-term, minor, beneficial fiscal impacts within the regional and local economies, but the increased NPS presence would also contribute to these results. The battle reenactments would continue to result in beneficial, short-term, regional, economic impacts that are major events during the short time they occur. Overall tourism spending is expected to increase to a minor to moderate degree as use of the park by people from outside the region increases. Total recurring costs by the NPS and Key Partners would be about \$3.4 million annually, while total one-time costs would be about \$60.1 million. Some local and regional businesses and individuals (most likely in the accommodations and food service, and retail trade industries) providing goods and services to the park and the visiting public would benefit.

When the likely effects of implementing the actions contained in Alternative D are added to the effects of other current and reasonably foreseeable actions as described above, there would be a long-term, beneficial, moderate to major, cumulative impact on the local and regional economy. The actions in Alternative D would add an appreciable increment to this overall impact.

4.6.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. Alternative D could result in several unavoidable adverse impacts on cultural and natural resources with impact intensities that are greater than minor, such as illegal collection of archeological resources, plants, and animals within the park boundary. Increased education, interpretation, and outreach efforts would help lessen, but not eliminate, the likelihood of this potential impact. Some soils and vegetation could be lost or altered due to the construction of new facilities in the park and to soil erosion from increased visitor use.

4.6.6 Irreversible and Irretrievable Commitments of Resources

New actions would be taken that would either result in the consumption of nonrenewable cultural or natural resources, or in the use of renewable resources that would preclude other uses for a period of time. In the construction of new facilities, including buildings and trails, limited amounts of nonrenewable resources would be used, including fuels and building materials. These resources would be essentially irretrievable once they were committed.

4.6.7 The Relationship between Short-Term Uses of the Environment and Long-Term Productivity

Lands in the park that are protected would remain in their current state and maintain their long-term productivity. The primary short-term uses of Cedar Creek and Belle Grove NHP would continue to be historic preservation, heritage tourism, and recreation. 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 likely would be only a small effect on the park's long-term productivity. Efforts to protect, restore, and enhance natural and cultural resources in the park would increase the long-term productivity of the environment in localized areas.



CHAPTER 5

CONSULTATION AND COORDINATION

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



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5.0 Consultation and Coordination

5.1 Public Involvement and Agency Coordination

Since beginning the GMP planning process in July 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 park's Advisory Commission and Key Partners, as well as other stakeholders, including the general public, interested individuals, local governments, civic organizations, 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 that have occurred during development of the GMP. For a summary of the comments received during these activities see Section 1.6 above and Appendix C below. Scoping activities and interests and concerns identified through December 2006 are summarized in more detail in the *GMP/EIS Scoping Report* (NPS 2006b). The key decision points considered in the GMP planning process – developed through the analysis of issues and concerns related to park management – are discussed above in Section 1.7.

5.2 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 September 29, 2006 Cedar Creek and Belle Grove NHP sent a letter to the Virginia State Historic Preservation Officer and to the Advisory Council on Historic Preservation to initiate consultation for the GMP/EIS. Since that time, the NPS has met with the SHPO to review progress in developing the GMP, to discuss findings of cultural resource surveys completed by the NPS, and to discuss management alternatives for the park's GMP.

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. Section 106 compliance will also occur in conjunction with future acquisition of land within the park's legislative boundary by the NPS.

Table 5.1 Cedar Creek and Belle Grove NHP GMP/EIS – Civic Engagement Activities
(June 1, 2005 through June 7, 2007)

Date	Audience	Venue	Planning Presentation	Scoping Session
6/15/05	Interim Park Management Team	Belle Grove	•	
7/13/05	Park Advisory Commission	Middletown Town Hall, Middletown	•	
8/27/05	Strasburg Planning Commission and Town Council	Strasburg Town Hall, Strasburg	•	•
9/15/05	Park Advisory Commission	Strasburg Town Hall, Strasburg	•	•
9/19/05	Shenandoah Valley Battlefields Foundation Advisory Board	SVBF Office, New Market	•	•
10/03/05	Middletown Town Council	Middletown Town Hall, Middletown	•	•
10/11/05	Strasburg Town Council	Strasburg Town Hall, Strasburg	•	
10/20/05	Frederick County/Winchester Tourism Board	Public Safety Bldg., Winchester	•	•
10/26/05	Shenandoah Valley Battlefields Foundation Interpretation Committee	SVBF Office, New Market	•	•
11/13/05	Belle Grove Advisory Board	Belle Grove	•	•
11/15/05	Shenandoah County Board of Supervisors	Shenandoah Co Office, Woodstock	•	•
11/17/05	Park Advisory Commission	Middletown Town Hall, Middletown	•	Partnerships
12/06/05	Warren County Board of Supervisors	Warren County Office, Front Royal	•	•
12/13/05	Key Partners	Belle Grove	•	Partnerships
1/19/06	Park Advisory Commission	Strasburg Town Hall, Strasburg	•	Transportation
2/01/06	Warren/Linden Rotary Club	The Apple House Restaurant, Linden	•	•
2/15/06	Key Partners	Belle Grove		Partnerships
2/22/06	Fisher Diagnostics – All Employee Meeting (160 people)	Fisher Diagnostics, Middletown	•	
3/15/06	Key Partners	Belle Grove	•	Fundamental Resources and Values
3/16/06	Park Advisory Commission	Middletown Town Hall, Middletown	•	Fundamental Resources and Values; Facilities and Visitor Experience
3/21/06	Shenandoah University – Scholars and Students	Shenandoah University, Winchester	▪	Scholar's Roundtable on Fundamental Resources and Values

Table 5.1 Cedar Creek and Belle Grove NHP GMP/EIS – Civic Engagement Activities
(June 1, 2005 through June 7, 2007) (continued)

Date	Audience	Venue	Planning Presentation	Scoping Session
3/29/06	Belle Grove docents and volunteers	Belle Grove	•	• Interpretive Themes
4/04/06	Shenandoah Valley Battlefields Foundation Executive Director and Staff	SVBF Office, New Market		•
4/06/06	Cedar Creek Battlefield Foundation Executive Director	CCBF Office, Middletown		•
4/07/06	Kris Tierney, Assistant County Administrator, Frederick County	Frederick County Office, Winchester		•
4/07/06	Belle Grove Plantation Executive Director	Belle Grove		•
4/07/06	Shenandoah County Parks and Recreation, Executive Director	Parks and Recreation Office, Edinburg		•
4/18/06	Retired USGS employees	Old Country Buffet, Fairfax	•	•
4/27/06	Lord Fairfax Community College – Scholars and Students	LFCC Campus, Middletown	•	•
5/17/06	Key Partners	Belle Grove	•	•
5/18/06	Park Advisory Commission	Strasburg Town Hall, Strasburg	•	• GMP Alternatives; “Vision” for the Park
5/19/06	Mary Bowser, Park Advisory Commission	Middletown		•
5/19/06	Warren Hofstra, Professor of History, Shenandoah University	Winchester		•
6/06/06	National Trust for Historic Preservation – Executive Leadership	NTHP Headquarters, Washington, DC	•	
6/06/06	National Trust for Historic Preservation – Staff	NTHP Headquarters, Washington, DC	•	•
6/14/06	Frederick County Board of Supervisors	Frederick County Office, Winchester	•	
6/20/06	Joseph Whitehorne, Professor of History, Lord Fairfax Community College	Middletown		•
6/20/06	Nora Amos, Planner, Town of Strasburg	Strasburg Town Hall, Strasburg		•
6/20/06	NPS Public Scoping Meeting	Strasburg Town Hall, Strasburg	•	•
6/21/06	Sarah Mauck, Councilperson-Elect, Town of Strasburg	Strasburg Town Hall, Strasburg		•
6/21/06	NPS Public Scoping Meeting	Middletown Town Hall, Middletown	•	•
6/22/06	Patrick Farris, Park Advisory Commission and Executive Director, Warren Heritage Society	Warren Heritage Society Office, Front Royal		•
6/22/06	Tom Christoffel, Northern Shenandoah Valley Regional Commission	Front Royal		•
6/22/06	Tess Klimm, Town of Middletown Planning Board	CEBE Office		•
6/22/06	NPS Public Scoping Meeting	Warren County Government Center, Front Royal	•	•

Table 5.1 Cedar Creek and Belle Grove NHP GMP/EIS – Civic Engagement Activities
(June 1, 2005 through June 7, 2007) (continued)

Date	Audience	Venue	Planning Presentation	Scoping Session
6/23/06	Gigi and George Pasquet	Strasburg		•
6/23/06	Michael Kehoe, Board of Directors, Cedar Creek Battlefield Foundation	Stephens City Town Hall, Stephens City		•
7/11/06	Frederick County Rotary Club	Buffet Restaurant, Stephens City, VA	•	
7/20/06	Park Advisory Commission	Middletown Town Hall, Middletown	•	• GMP Scoping Results
9/20/06	Key Partners	Belle Grove	•	
9/21/06	Park Advisory Commission	Warren County Government Center, Front Royal	•	• Alternative Concepts
9/28/06	Virginia Department of Game and Inland Fisheries	CEBE Office	•	• Wildlife and Endangered Species Occurrences in the Park
11/7/06	Key Partners	Belle Grove	•	• Alternative Concepts
11/16/06	Park Advisory Commission	Strasburg Town Hall	•	• Alternative Concepts
1/18/07	Park Advisory Commission	Middletown Town Hall	•	• Alternative Concepts and Management Zones
1/25/07	Park Landowners' Forum	Lord Fairfax Community College	•	
1/29/07	The Conservation Fund	The Conservation Fund Offices, Arlington, VA	•	
3/13/07	Key Partners	Belle Grove	•	• Management Zones
3/15/07	Park Advisory Commission	Warren County Government Center	•	• Alternative Concepts, Management Zones, Final Scoping Report
3/19/07	Belle Grove Board of Directors	Belle Grove	• Alternative Concepts	
3/20/07	Shenandoah Valley Battlefields Foundation Board of Directors	New Market	• Alternative Concepts	
3/22/07	State of Virginia, Department of Game and Inland Fisheries, Department of Conservation and Recreation, Department of Historic Resources, Natural Heritage Program	Richmond	•	• Alternative Concepts
3/26/07	Civil War Preservation Trust	Washington, D.C.	•	• Alternative Concepts
4/11/07	Winchester Cluster, Shenandoah Valley Battlefields National Historic District	Winchester	•	• Alternative Concepts
4/12/07	Rockingham Cluster, Shenandoah Valley Battlefields National Historic District	Port Republic	•	• Alternative Concepts
4/19/07	Virginia Division of Forestry	Middletown	•	• Alternative Concepts
4/25/07	Signal Cluster, Shenandoah Valley Battlefields National Historic District	Strasburg	•	• Alternative Concepts

Table 5.1 Cedar Creek and Belle Grove NHP GMP/EIS – Civic Engagement Activities
(June 1, 2005 through June 7, 2007) (continued)

Date	Audience	Venue	Planning Presentation	Scoping Session
4/25/07	Signal Cluster, Shenandoah Valley Battlefields National Historic District	Strasburg	•	• Alternative Concepts
4/27/07	Shenandoah Valley African American Association	Museum of the Shenandoah Valley, Winchester	•	• Civic Engagement Session
4/28/07	Shenandoah County Democratic Women	Woodstock	•	• Alternative Concepts
5/8/07	Key Partners	CEBE Office, Middletown		• User Capacity Workshop
5/17/07	Park Advisory Commission	Strasburg Town Hall, Strasburg		• Alternative Concepts
6/7/07	Cedar Creek Battlefield Foundation Board of Directors	CCBF Office, Middletown	•	• Alternative Concepts

Cultural resource studies are currently underway to identify Indian tribes with known or possible cultural associations with sites located within the legislative boundary of Cedar Creek and Belle Grove NHP. The NPS will consult with the associated Indian tribes once studies have been completed. Consultation with these tribes will continue throughout implementation of the GMP.

5.3 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 October 25, 2006 Cedar Creek and Belle Grove NHP initiated consultation with the Virginia Field Office of the U.S. Fish and Wildlife Service (US FWS), the Virginia Department of Conservation and Recreation (VDCR), and the Virginia Department of Game and Inland Fisheries (VDGIF) to initiate consultation and request information about special status species within the park. The U.S. Fish and Wildlife Service responded on December 20, 2006 stating that the proposed action will not adversely affect federally listed species or federally designated critical habitat because no federally listed species are known to occur in the project area (see Appendix D).

VDCR responded on November 28, 2006 identifying a number of natural heritage occurrences within or near the park, summarized as follows (see Appendix D):

- the North Fork of the Shenandoah River-Strasburg Stream Conservation Unit is located downstream of the park
- the Panther Conservation Unit is partly located within the park
- the park includes a section of Cedar Creek and Meadow Brook that has been designated “Threatened and Endangered Species Water” for Wood Turtle
- the park includes a section of the North Fork of the Shenandoah River that has been designated “Threatened and Endangered Species Water” for Brook Floater
- the park lies within a well-developed karst landscape typical of the Shenandoah Valley (including at least one significant cave)

VCDR recommended avoidance of actions with the potential to adversely impact documented natural heritage resources and surveying for various species within the designated conservation units (see Appendix D).

VDGIF responded on November 20, 2006 stating that waters within and adjacent to the park are inhabited by the federal species of concern and state endangered brook floater and state designated threatened wood turtle (see Appendix D). VDGIF also stated that a number of other species identified in the Virginia Wildlife Action Plan as species of greatest conservation need are likely to occur in and around the park, if suitable habitat exists. A number of general management actions were recommended to enhance existing habitat and to provide additional habitat. Actions were also recommended to mitigate potential impacts associated with future park development related to stormwater management, erosion and sedimentation control, instream construction, and trail development.

5.4 Draft GMP/EIS Document Review

The Draft GMP/EIS for Cedar Creek and Belle Grove NHP will be on public and agency review. 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.

5.5 List of Draft GMP/EIS Recipients

Copies of the Draft GMP/EIS were distributed to the following government officials and agencies, non-governmental organizations, consultants and businesses. Copies were also distributed to over 350 individuals who requested the document or who are on the park's public involvement mailing list.

■ Congressional Delegation

Virginia Senator George Allen

Virginia Representative Bob Goodlatte

Vermont Senator Jim Jeffords

Virginia Senator John Warner

Virginia Senator Jim Webb

Virginia Representative Frank Wolf

■ Cedar Creek and Belle Grove NHP Advisory Commission

Fred Andreae, *National Trust for Historic Preservation*

Mary Bowser, *Private Landowner*

Honorable Gene Dicks, *Town of Middletown*

Roy Downey, *Private Landowner*

Patrick Farris, *Warren County*

Diann Jacox, *National Park Service*

Howard Kittell, *Shenandoah Valley Battlefields Foundation*

Richard Kleese, *Shenandoah County*

Sarah Mauck, *Town of Strasburg*

Elizabeth McClung, *Belle Grove, Inc.*

Gary Rinkerman, *Cedar Creek Battlefield Foundation*

James Smalls, *U.S. Forest Service*

Alson Smith, *State of Virginia*

Randolph Jones, *State of Virginia*

Dan Stickley, *Citizen Interest Group*

Kris Tierney, *Frederick County*

Richard Wilson, *Town of Strasburg*

■ Cedar Creek and Belle Grove NHP Key Partners

Belle Grove, Incorporated

Cedar Creek Battlefield Foundation

National Trust for Historic Preservation

Shenandoah County Commissioners (and Shenandoah County Department of Parks and Recreation)

Shenandoah Valley Battlefields Foundation

■ **Federal Agencies**

U.S. Army Corps of Engineers

U.S. Department of Agriculture, George Washington National Forest

U.S. Department of Agriculture, Natural Resource Conservation Service

U.S. Department of the Interior, Fish and Wildlife Service, Virginia Field Office

Advisory Council on Historic Preservation, Office of Federal Agency Programs

■ **Virginia Legislative Delegation**

Clifford Athey

■ **Virginia Agencies**

Virginia Department of Agriculture

Virginia Department of Conservation and Recreation

Virginia Department of Conservation and Recreation, Natural Heritage Program

Virginia Department of Emergency Management

Virginia Department of Environmental Quality, Air Quality Division

Virginia Department of Environmental Quality, Environmental Enhancement Division

Virginia Department of Environmental Quality, Waste Division

Virginia Department of Environmental Quality, Water Quality Division

Virginia Department of Environmental Quality, Water Resources Division

Virginia Department of Forestry

Virginia Department of Game and Inland Fisheries

Virginia Department of Housing and Community Development

Virginia Department of Mines

Virginia Department of Transportation, District Administrator

Virginia Department of Rail and Public Transportation

Virginia State Health Commissioner

Virginia Tourism Corporation

Virginia Department of Historic Resources

■ **Local Governments**

Frederick County

Shenandoah County

Warren County

Town of Middletown

Town of Strasburg

Town of Edinburgh

Town of Front Royal

Town of Stephens City

Town of Toms Brook

Town of Woodstock

Frederick County Planning Commission

Shenandoah County Planning Commission
Warren County Planning Commission
Town of Middletown Planning Commission
Town of Strasburg Planning Commission

■ **Organizations and Institutions**

Chantilly Battlefield Association
Civil War Preservation Trust
Friends of the North Fork of the Shenandoah River
Front Royal Tourism
Front Royal-Warren County Economic Development Authority
Kernstown Battlefield Association
Lord Fairfax Community College
Lord Fairfax Small Business Development Center
Museum of the Shenandoah Valley
National Parks and Conservation Association
Northern Shenandoah Valley Regional Planning Commission
Potomac Conservancy
Preserve Frederick
Scenic 340 Project
Shenandoah County Historical Society
Shenandoah Long Rifles
Shenandoah University
Shenandoah Valley Civil War Round Table
Shenandoah Valley Music Festival
Shenandoah Valley Network
Strasburg Heritage Association, Inc.
Strasburg Museum
The Conservation Fund
Valley Conservation Council
Virginia Outdoors Foundation
Warren Heritage Society
Warren Rifles Confederate Museum
Winchester-Frederick County Convention and Visitors Bureau
Woodstock Chamber of Commerce

■ **Businesses**

First Bank
Fisher Diagnostics
Greenway Engineering
Holtzman Corporation
Hotel Strasburg
Inn at Narrow Passage

Jennings Gap Partnership

LaRose LLC

Massey Maxwell Associates

O-N Minerals, Chemstone

Shenandoah National Bank

Sympoetica

Watson & Henry, Associates



APPENDIX A

PARK ENABLING LEGISLATION

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



Appendix A

Park Enabling Legislation

- Public Law 107-373, Cedar Creek and Belle Grove National Historical Park Act (116 Stat. 3104 – 3109, December 19, 2002)

Public Law 107–373
107th Congress

An Act

Dec. 19, 2002
[H.R. 4944]

To designate the Cedar Creek and Belle Grove National Historical Park as a unit of the National Park System, and for other purposes.

Cedar Creek and
Belle Grove
National
Historical Park
Act.
Virginia.
16 USC 410iii
note.
USC 410iii.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Cedar Creek and Belle Grove National Historical Park Act”.

SEC. 2. PURPOSE.

The purpose of this Act is to establish the Cedar Creek and Belle Grove National Historical Park in order to—

(1) help preserve, protect, and interpret a nationally significant Civil War landscape and antebellum plantation for the education, inspiration, and benefit of present and future generations;

(2) tell the rich story of Shenandoah Valley history from early settlement through the Civil War and beyond, and the Battle of Cedar Creek and its significance in the conduct of the war in the Shenandoah Valley;

(3) preserve the significant historic, natural, cultural, military, and scenic resources found in the Cedar Creek Battlefield and Belle Grove Plantation areas through partnerships with local landowners and the community; and

(4) serve as a focal point to recognize and interpret important events and geographic locations within the Shenandoah Valley Battlefields National Historic District representing key Civil War battles in the Shenandoah Valley, including those battlefields associated with the Thomas J. (Stonewall) Jackson campaign of 1862 and the decisive campaigns of 1864.

16 USC 410iii–1.

SEC. 3. FINDINGS.

Congress finds the following:

(1) The Battle of Cedar Creek, also known as the battle of Belle Grove, was a major event of the Civil War and the history of this country. It represented the end of the Civil War’s Shenandoah Valley campaign of 1864 and contributed to the reelection of President Abraham Lincoln and the eventual outcome of the war.

(2) 2,500 acres of the Cedar Creek Battlefield and Belle Grove Plantation were designated a national historic landmark in 1969 because of their ability to illustrate and interpret important eras and events in the history of the United States. The Cedar Creek Battlefield, Belle Grove Manor House, the

Heater House, and Harmony Hall (a National Historic Landmark) are also listed on the Virginia Landmarks Register.

(3) The Secretary of the Interior has approved the Shenandoah Valley Battlefields National Historic District Management Plan and the National Park Service Special Resource Study, both of which recognized Cedar Creek Battlefield as the most significant Civil War resource within the historic district. The management plan, which was developed with extensive public participation over a 3-year period and is administered by the Shenandoah Valley Battlefields Foundation, recommends that Cedar Creek Battlefield be established as a new unit of the National Park System.

(4) The Cedar Creek Battlefield Foundation, organized in 1988 to preserve and interpret the Cedar Creek Battlefield and the 1864 Valley Campaign, has acquired 308 acres of land within the boundaries of the National Historic Landmark. The foundation annually hosts a major reenactment and living history event on the Cedar Creek Battlefield.

(5) Belle Grove Plantation is a Historic Site of the National Trust for Historic Preservation that occupies 383 acres within the National Historic Landmark. The Belle Grove Manor House was built by Isaac Hite, a Revolutionary War patriot married to the sister of President James Madison, who was a frequent visitor at Belle Grove. President Thomas Jefferson assisted with the design of the house. During the Civil War Belle Grove was at the center of the decisive battle of Cedar Creek. Belle Grove is managed locally by Belle Grove, Incorporated, and has been open to the public since 1967. The house has remained virtually unchanged since it was built in 1797, offering visitors an experience of the life and times of the people who lived there in the 18th and 19th centuries.

(6) The panoramic views of the mountains, natural areas, and waterways provide visitors with an inspiring setting of great natural beauty. The historic, natural, cultural, military, and scenic resources found in the Cedar Creek Battlefield and Belle Grove Plantation areas are nationally and regionally significant.

(7) The existing, independent, not-for-profit organizations dedicated to the protection and interpretation of the resources described above provide the foundation for public-private partnerships to further the success of protecting, preserving, and interpreting these resources.

(8) None of these resources, sites, or stories of the Shenandoah Valley are protected by or interpreted within the National Park System.

SEC. 4. DEFINITIONS.

16 USC 410iii-2.

In this Act:

(1) COMMISSION.—The term “Commission” means the Cedar Creek and Belle Grove National Historical Park Advisory Commission established by section 9.

(2) MAP.—The term “Map” means the map entitled “Boundary Map Cedar Creek and Belle Grove National Historical Park”, numbered CEBE-80,001, and dated September 2002.

(3) PARK.—The term “Park” means the Cedar Creek and Belle Grove National Historical Park established under section 5 and depicted on the Map.

(4) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

16 USC 410iii-3. **SEC. 5. ESTABLISHMENT OF CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK.**

(a) ESTABLISHMENT.—There is established the Cedar Creek and Belle Grove National Historical Park, consisting of approximately 3,000 acres, as generally depicted on the Map.

(b) AVAILABILITY OF MAP.—The Map shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

16 USC 410iii-4. **SEC. 6. ACQUISITION OF PROPERTY.**

(a) REAL PROPERTY.—The Secretary may acquire land or interests in land within the boundaries of the Park, from willing sellers only, by donation, purchase with donated or appropriated funds, or exchange.

(b) BOUNDARY REVISION.—After acquiring land for the Park, the Secretary shall—

(1) revise the boundary of the Park to include newly acquired land within the boundary; and

(2) administer newly acquired land subject to applicable laws (including regulations).

(c) PERSONAL PROPERTY.—The Secretary may acquire personal property associated with, and appropriate for, interpretation of the Park.

(d) CONSERVATION EASEMENTS AND COVENANTS.—The Secretary is authorized to acquire conservation easements and enter into covenants regarding lands in or adjacent to the Park from willing sellers only. Such conservation easements and covenants shall have the effect of protecting the scenic, natural, and historic resources on adjacent lands and preserving the natural or historic setting of the Park when viewed from within or outside the Park.

(e) SUPPORT FACILITIES.—The National Park Service is authorized to acquire from willing sellers, land outside the Park boundary but in close proximity to the Park, for the development of visitor, administrative, museum, curatorial, and maintenance facilities.

16 USC 410iii-5. **SEC. 7. ADMINISTRATION.**

The Secretary shall administer the Park in accordance with this Act and the provisions of law generally applicable to units of the National Park System, including—

(1) the Act entitled “An Act to establish a National Park Service, and for other purposes”, approved August 25, 1916 (16 U.S.C. 1 et seq.); and

(2) the Act entitled “An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes”, approved August 21, 1935 (16 U.S.C. 461 et seq.).

16 USC 410iii-6. **SEC. 8. MANAGEMENT OF PARK.**

(a) MANAGEMENT PLAN.—The Secretary, in consultation with the Commission, shall prepare a management plan for the Park. In particular, the management plan shall contain provisions to address the needs of owners of non-Federal land, including independent nonprofit organizations within the boundaries of the Park.

Deadline.

(b) SUBMISSION OF PLAN TO CONGRESS.—Not later than 3 years after the date of the enactment of this Act, the Secretary shall

submit the management plan for the Park to the Committee on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

SEC. 9. CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK ADVISORY COMMISSION. 16 USC 410iii-7.

(a) **ESTABLISHMENT.**—There is established the Cedar Creek and Belle Grove National Historical Park Advisory Commission.

(b) **DUTIES.**—The Commission shall—

(1) advise the Secretary in the preparation and implementation of a general management plan described in section 8; and

(2) advise the Secretary with respect to the identification of sites of significance outside the Park boundary deemed necessary to fulfill the purposes of this Act.

(c) **MEMBERSHIP.**—

(1) **COMPOSITION.**—The Commission shall be composed of 15 members appointed by the Secretary so as to include the following:

(A) 1 representative from the Commonwealth of Virginia.

(B) 1 representative each from the local governments of Strasburg, Middletown, Frederick County, Shenandoah County, and Warren County.

(C) 2 representatives of private landowners within the Park.

(D) 1 representative from a citizen interest group.

(E) 1 representative from the Cedar Creek Battlefield Foundation.

(F) 1 representative from Belle Grove, Incorporated.

(G) 1 representative from the National Trust for Historic Preservation.

(H) 1 representative from the Shenandoah Valley Battlefields Foundation.

(I) 1 ex-officio representative from the National Park Service.

(J) 1 ex-officio representative from the United States Forest Service.

(2) **CHAIRPERSON.**—The Chairperson of the Commission shall be elected by the members to serve a term of one year renewable for one additional year.

(3) **VACANCIES.**—A vacancy on the Commission shall be filled in the same manner in which the original appointment was made.

(4) **TERMS OF SERVICE.**—

(A) **IN GENERAL.**—Each member shall be appointed for a term of 3 years and may be reappointed for not more than 2 successive terms.

(B) **INITIAL MEMBERS.**—Of the members first appointed under paragraph (1), the Secretary shall appoint—

(i) 4 members for a term of 1 year;

(ii) 5 members for a term of 2 years; and

(iii) 6 members for a term of 3 years.

(5) **EXTENDED SERVICE.**—A member may serve after the expiration of that member's term until a successor has taken office.

(6) MAJORITY RULE.—The Commission shall act and advise by affirmative vote of a majority of its members.

(7) MEETINGS.—The Commission shall meet at least quarterly at the call of the chairperson or a majority of the members of the Commission.

(8) QUORUM.—8 members shall constitute a quorum.

(d) COMPENSATION.—Members shall serve without pay. Members who are full-time officers or employees of the United States, the Commonwealth of Virginia, or any political subdivision thereof shall receive no additional pay on account of their service on the Commission.

(e) TRAVEL EXPENSES.—While away from their homes or regular places of business in the performance of service for the Commission, members shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5, United States Code.

(f) HEARINGS; PUBLIC INVOLVEMENT.—The Commission may, for purposes of carrying out this Act, hold such hearings, sit and act at such times and places, take such public testimony, and receive such evidence, as the Commission considers appropriate. The Commission may not issue subpoenas or exercise any subpoena authority.

16 USC 410iii–8.

SEC. 10. CONSERVATION OF CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK.

(a) ENCOURAGEMENT OF CONSERVATION.—The Secretary and the Commission shall encourage conservation of the historic and natural resources within and in proximity of the Park by landowners, local governments, organizations, and businesses.

(b) PROVISION OF TECHNICAL ASSISTANCE.—The Secretary may provide technical assistance to local governments, in cooperative efforts which complement the values of the Park.

(c) COOPERATION BY FEDERAL AGENCIES.—Any Federal entity conducting or supporting activities directly affecting the Park shall consult, cooperate, and, to the maximum extent practicable, coordinate its activities with the Secretary in a manner that—

(1) is consistent with the purposes of this Act and the standards and criteria established pursuant to the general management plan developed pursuant to section 8;

(2) is not likely to have an adverse effect on the resources of the Park; and

(3) is likely to provide for full public participation in order to consider the views of all interested parties.

16 USC 410iii–9.

SEC. 11. ENDOWMENT.

(a) IN GENERAL.—In accordance with the provisions of subsection (b), the Secretary is authorized to receive and expend funds from an endowment to be established with the National Park Foundation, or its successors and assigns.

(b) CONDITIONS.—Funds from the endowment referred to in subsection (a) shall be expended exclusively as the Secretary, in consultation with the Commission, may designate for the interpretation, preservation, and maintenance of the Park resources and public access areas. No expenditure shall be made pursuant to this section unless the Secretary determines that such expenditure is consistent with the purposes of this Act.

SEC. 12. COOPERATIVE AGREEMENTS.16 USC
410iii-10.

(a) **IN GENERAL.**—In order to further the purposes of this Act, the Secretary is authorized to enter into cooperative agreements with interested public and private entities and individuals (including the National Trust for Historic Preservation, Belle Grove, Inc., the Cedar Creek Battlefield Foundation, the Shenandoah Valley Battlefields Foundation, and the Counties of Frederick, Shenandoah, and Warren), through technical and financial assistance, including encouraging the conservation of historic and natural resources of the Park.

(b) **TECHNICAL AND FINANCIAL ASSISTANCE.**—The Secretary may provide to any person, organization, or governmental entity technical and financial assistance for the purposes of this Act, including the following:

- (1) Preserving historic structures within the Park.
- (2) Maintaining the natural or cultural landscape of the Park.
- (3) Local preservation planning, interpretation, and management of public visitation for the Park.
- (4) Furthering the goals of the Shenandoah Valley Battlefields Foundation related to the Park.

SEC. 13. ROLES OF KEY PARTNER ORGANIZATIONS.16 USC
410iii-11.

(a) **IN GENERAL.**—In recognition that central portions of the Park are presently owned and operated for the benefit of the public by key partner organizations, the Secretary shall acknowledge and support the continued participation of these partner organizations in the management of the Park.

(b) **PARK PARTNERS.**—Roles of the current key partners include the following:

(1) **CEDAR CREEK BATTLEFIELD FOUNDATION.**—The Cedar Creek Battlefield Foundation may—

- (A) continue to own, operate, and manage the lands acquired by the Foundation within the Park;
- (B) continue to conduct reenactments and other events within the Park; and
- (C) transfer ownership interest in portions of their land to the National Park Service by donation, sale, or other means that meet the legal requirements of National Park Service land acquisitions.

(2) **NATIONAL TRUST FOR HISTORIC PRESERVATION AND BELLE GROVE INCORPORATED.**—The National Trust for Historic Preservation and Belle Grove Incorporated may continue to own, operate, and manage Belle Grove Plantation and its structures and grounds within the Park boundary. Belle Grove Incorporated may continue to own the house and grounds known as Bowman's Fort or Harmony Hall for the purpose of permanent preservation, with a long-term goal of opening the property to the public.

(3) **SHENANDOAH COUNTY.**—Shenandoah County may continue to own, operate, and manage the Keister park site within the Park for the benefit of the public.

(4) **PARK COMMUNITY PARTNERS.**—The Secretary shall cooperate with the Park's adjacent historic towns of Strasburg and Middletown, Virginia, as well as Frederick, Shenandoah, and Warren counties in furthering the purposes of the Park.

(5) SHENANDOAH VALLEY BATTLEFIELDS FOUNDATION.—The Shenandoah Valley Battlefields Foundation may continue to administer and manage the Shenandoah Valley Battlefields National Historic District in partnership with the National Park Service and in accordance with the Management Plan for the District in which the Park is located.

16 USC
410iii–12.

SEC. 14. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated such sums as are necessary to carry out this Act.

Approved December 19, 2002.

LEGISLATIVE HISTORY—H.R. 4944 (S. 2623):

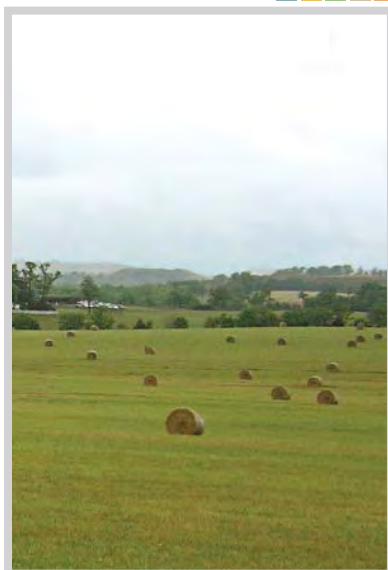
HOUSE REPORTS: No. 107–713 (Comm. on Resources).

CONGRESSIONAL RECORD, Vol. 148 (2002):

Oct. 1, considered and passed House.

Nov. 19, considered and passed Senate.





APPENDIX B

APPLICABLE FEDERAL AND COMMONWEALTH OF VIRGINIA LAWS AND REGULATIONS AND NATIONAL PARK SERVICE POLICIES

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



Appendix B

Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies

FEDERAL LAWS	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
National Park Service Organic Act of 1916	16 U.S.C. 1-4 et seq.	Promotes and regulates the use of national parks, monuments, and reservations, by such means and measures as to conserve the scenery and the natural and historic objects and the wildlife therein and provides for the enjoyment of the land in such manner as will leave them unimpaired for the enjoyment of future generations	National Park Service
National Parks and Recreation Act of 1978	16 U.S.C. 1(a)-7(b)	Requires the National Park Service to conduct comprehensive general management planning on park units	National Park Service
Government Performance and Results Act of 1993	P.L. 103-62; 31 U.S.C. 1101	Requires Federal Agencies to develop a strategic planning and performance management system establishing goals and reporting results	Federal Agencies
National Parks Omnibus Management Act of 1998	P.L. 105-391; 112 Stat 3497; 36 CFR 51	Public accommodations, facilities, and services in NPS units shall be limited to those accommodations, facilities, and services necessary for public use and enjoyment, and consistent with the preservation and conservation of the resources and values of the unit	National Park Service
General Authorities Act of 1970, as amended in 1978	16 U.S.C. 1a-1	Affirmed that all national park areas, including historic sites, while acknowledged to be "distinct in character," were "united through their interrelated purposes and resources into one national park system, as cumulative expressions of a single national heritage"	National Park Service
National Environmental Policy Act of 1969 (NEPA)	P.L. 91-190, as amended by P.L. 94-52; 42 U.S.C. 4321-4347	Establishes national policy for protection of the human environment and ensures that decision-makers take into account; requires all Federal Agencies to analyze alternatives and document impacts resulting from proposed actions that could potentially affect the natural and human environment	Federal Agencies
Council on Environmental Quality (CEQ) Regulations, as amended	40 CFR 1500-1508	Implements NEPA and provides guidance to Federal Agencies in the preparation of environmental documents identified under NEPA	Federal Agencies
Procedural Provisions of the National Environmental Policy Act by CEQ, as amended	40 CFR Parts 1500-1508	Provides guidance to Federal Agencies in the preparation of environmental documents	Federal Agencies
Administrative Procedures Act of 1979, as amended	5 U.S.C. 551, et seq	Outlines the forms of administrative proceedings (hearings, adjudication, etc.) and prescribes procedural and substantive limitations thereon; provides for judicial review of federal decision-making actions	Federal Agencies
Shenandoah Valley Battlefields National Historic District Act and Commission Act of 1996	P.L. 104-333	Establishes the Shenandoah Valley Battlefields National Historic District to preserve, conserve, and interpret the legacy of the Civil War in the Shenandoah Valley	National Park Service
Cedar Creek and Belle Grove National Historical Park Act	P.L. 107-373	Establishes Cedar Creek and Belle Grove National Historical park to preserve, protect, and interpret the Battle of Cedar Creek landscape and antebellum agricultural community; to tell the story of Shenandoah Valley history; to preserve significant historic, natural, cultural, military, and scenic resources found in and around the battlefield and Belle Grove Plantation areas; and to serve as a focal point within the Shenandoah Valley Battlefields National Historic District	National Park Service

Appendix B. Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies (continued)

FEDERAL LAWS (continued)	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
National Trust Act of 1949	16. U.S.C. 468-c-e	Facilitates public participation in the preservation of sites, buildings, and objects of national significance or interest	Federal Agencies
Historic Sites Act of 1935	16 U.S.C. 461-467; 36 CFR 65	Establishes a national policy to preserve historic sites and objects of national significance for public use	Federal Agencies
National Historic Preservation Act of 1966, as amended; Sec. 106 and Sec. 110	16 U.S.C. 470; 36 CFR 60,63, 65,78-79, 800	Protects and preserves districts, sites, and structures and architectural, archeological, and cultural resources; Section 106 requires consultation with the State Historic Preservation Office; Section 110 requires that NPS identify and nominate all eligible resources under its jurisdiction to the National Register of Historic Places	Federal Agencies
Antiquities Act of 1906, as amended	16. U.S.C. 431-433	Provides for the protection of historic and prehistoric remains, "or any antiquity," on federal lands; authorizes the President to declare national monuments by proclamation; authorizes the scientific investigation of antiquities on federal lands; provides for protection of historic monuments on public lands	Federal Agencies
Archeological and Historic Preservation Act of 1974, as amended	16 U.S.C. 469-469c	Requires survey, recovery and preservation of significant scientific, prehistorical, historical, archeological, or paleontological data when such data may be destroyed due to a federal project; directs Federal Agencies to notify the Secretary of the Interior whenever they find that such a project may cause loss or damage	Federal Agencies
Archeological Resources Protection Act of 1979, as amended	16 U.S.C. 470aa-mm	Prohibits the unauthorized excavation or removal of archeological resources on federal and Indian land. Archeological resources include sites, features, artifacts, etc.	Federal Agencies
Native American Graves Protection and Repatriation Act	25 U.S.C. 3001 et seq; 43 CFR 10	Requires Federal Agencies and museums receiving federal funding to return Native American cultural items – including human remains – to their respective peoples (allowing a short time for analysis by archeological teams)	Federal Agencies and museums receiving federal funding
American Indian Religious Freedom Act	42 U.S.C. 21	Protects and preserves the traditional religious rights of American Indians, Eskimos, Aleuts, and Native Hawaiians on federal lands	Federal Agencies
Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation	48 FR 44716	Organizes information about federal preservation activities; describes results to be achieved by Federal Agencies, states, and other when planning for the identification, evaluation, registration and treatment of historic properties; integrates diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's cultural heritage	Federal, State, and Local Agencies
Secretary of the Interior's Standards for the Treatment of Historic Properties	36 CFR 68	Provides guidance regarding the treatment of historic properties, focusing treatments: preservation, rehabilitation, restoration, and reconstruction	National Park Service
The Architectural Barriers Act of 1968; the Rehabilitation Act of 1973; and Americans with Disabilities Act of 1990	42 U.S.C. 4157 et seq.; 29 U.S.C. 701, et seq.; 42 U.S.C. 12101, P.L. 101-336, 1-4 Stat. 327	Requires public buildings constructed, altered, leased, or financed with federal funds to be accessible to persons with disabilities; ensures that all facilities and programs are accessible to visitors with disabilities	Federal, State, and Local Agencies
Federal Cave Resources Protection Act	16. U.S.C. 4301-4310	Protects and preserves significant caves on federal lands for the perpetual use, enjoyment, and benefit of all people; fosters increased cooperation and exchange of information between governments and those who use caves on federal land	Federal Agencies

Appendix B. Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies (continued)

FEDERAL LAWS (continued)	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
Clean Water Act (CWA) of 1977, as amended, Sec. 401, Sec. 402 and Sec. 404(b)(1)	33 U.S.C. 121, et seq.	Sec. 401 regulates water quality requirements specified under the CWA; Section 402 requires a National Pollutant Discharge Elimination System (NPDES) permit for discharges into waters of the U.S.; Sec. 404 requires a permit before dredging or filling wetlands can occur	Federal, State, and Local Agencies
Rivers and Harbors Act of 1899	33 U.S.C. 403	Prohibits construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. without Congressional approval	Federal, State, and Local Agencies
Federal Water Pollution Control Act of 1972, as amended	33 U.S.C. 1251-1376, et seq.	Establishes criteria and performance standards for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters through prevention, reduction, and elimination of pollution	Federal, State, and Local Agencies
Fish and Wildlife Coordination Act of 1934, as amended	16 U.S.C. 661-666c; 48 Stat. 401	Requires Federal Agencies to coordinate with the FWS when any project involves impoundment, diversion, channel deepening or other modification of a stream or water body	Federal, State, and Local Agencies
Clean Air Act (CAA) Amendments of 1990, as amended; Sec. 118	42 U.S.C. 7401, et seq. 42 U.S.C. 7609	Establishes standards to protect and improve air quality; requires project conformity with State Implementation Plan concerning air quality; Sec. 118 requires federal land managers to protect air quality on federal land	Federal, State, and Local Agencies
Endangered Species Act of 1973, as amended	16 U.S.C. 1531-1543	Establishes a policy to protect and restore federally listed threatened and endangered species of flora and fauna	Federal, State, and Local Agencies
Federal Farmland Protection Act of 1981	7 U.S.C. 4201-4209	Minimizes impacts of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses; assures to the extent possible that federal programs are administered to be compatible with the farmland protection programs and policies of state and local units of government and private organizations	Federal, State, and Local Agencies
Land and Water Conservation Fund Act of 1965, as amended; Section 6(f)	16 U.S.C. 4601-4 to 4601-11	Preserves, develops, and assures the quality and quantity of outdoor recreational resources; applies to all projects that impact recreational lands involving funds obtained from the Land and Water Conservation Fund	Federal, State, and Local Agencies
Resource Conservation and Recovery Act, as amended	42 U.S.C. s/s 6901 et seq. (1976)	Authorizes USEPA to control hazardous waste, including the generation, transportation, treatment, storage, and disposal of hazardous waste; RCRA also sets forth a framework for the management of non-hazardous wastes; addresses environmental problems resulting from underground storage tanks; focuses on active and future facilities, not abandoned or historical sites	federal, state and Local Governments; private industry
Federal Communications Commission Procedures Implementing the National Environmental Policy Act of 1969	47 CFR 1.301-1.1319	Addresses impacts that proposed antenna structures may have on historical sites and other protected resources	Federal Communications Commission and cell service carriers
Uniform Relocation Assistance and Real Property Acquisition Policies Act	42 U.S.C. 4601 et seq.	Establishes uniform policies to compensate people displaced from their homes or businesses by activities that are wholly or partially federally-funded	Federal Agencies
Payments In Lieu of Taxes Act (PILOT or PILT), as amended by P.L 98-63	P.L. 94-565 (31 U.S.C. 6901-6907), recodified at 31 U.S.C. 6907	Provides certain payments from the Federal Government to Local Governments to compensate for the removal of land from the local real estate tax base and the amount (acres) of certain public lands within the boundaries of local governmental units	National Park Service
Department of Transportation Act of 1966, Section 4(f)	49 U.S.C. 303	Requires the Secretary of Transportation to demonstrate that there is no feasible or prudent alternative to impacting publicly-owned land from a park, recreation area, wildlife and waterfowl refuge, or an historic site of national, state or local significance, or any land from an historic site of national, state or local significance, and that all possible planning to minimize harm to such land is incorporated into the proposed transportation project	U.S Department of Transportation; WV DOT; FAA

Appendix B. Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies (continued)

NPS MANDATES	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
Final Draft Park Planning Program Standards	NPS 2007	Describes the National Park Service framework for park planning and decision-making, which includes six discrete kinds of planning, each with its own particular purpose and standards	National Park Service
National Park Service Management Policies 2006	NPS 2006	Sets the policy framework and provides direction for all management decisions for units of the national park system	National Park Service
NPS Special Directive 92-11 and P.L. 105-391	P.L. 105-391	Identifies NPS criteria and qualifications for resource evaluation and determination of a site's suitability and feasibility for inclusion in the national park system; provides guidance for NPS special resource studies	National Park Service
Conservation Planning, Environmental Impact Analyses and Decision-Making	Director's Order 12 and Handbook for Environmental Analysis	Provides bureau guidance on NEPA compliance consistent with CEQ regulations and on approaches to environmental documentation	National Park Service
National Park Service Tourism	Director's Order 17	Promotes and supports sustainable, responsible, informed, and managed visitor use through cooperation and coordination with the tourism industry	National Park Service
Land Protection	Director's Order 25	Articulates the framework for land protection and the process for land acquisition and interests in land within the authorized boundaries of NPS units; the policy includes direction for parks to develop a "land protection plan," which establishes land acquisition priorities	National Park Service
Cultural Resource Management	Director's Order 28	Addresses the preservation and treatment of archeological, cultural, and historic properties and ethnographic resources	National Park Service
Cultural Resource Management	Director's Order 28A	Articulates framework for planning, reviewing, and undertaking archeological activities and other activities that may affect archeological resources within the National Park System; also addresses the manner in which the Service will meet its archeological assistance responsibilities outside the national parks	National Park Service
Cultural Resource Management Guideline Release No. 5	NPS-28	Addresses standards and requirements for research, planning, and stewardship of cultural resources, as well as management of archeological resources, cultural landscapes, historic, and prehistoric structures, museum objects, and ethnographic resources	National Park Service
Coordination with State Historic Preservation Officers	Programmatic Memorandum of Agreement among NPS, Advisory Council on Historic Preservation and National Council of SHPOs (1995; revised 2002)	Describes how the NPS will carry out its Section 106 responsibilities with respect to managing the national park system; states that the NPS will coordinate with SHPO activities for research related to resource management needs and identification, evaluation, and registration of park historic properties	National Park Service
Accessibility for Park Visitors	Director's Order 42	Ensures that all people have the highest level of accessibility that is reasonable to NPS programs, facilities, and services in conformance with applicable regulations and standards	National Park Service
Special Park Uses	Director's Order 53	Provides supplemental guidance to Section 8.6 of NPS Management Policies on permitting special park uses	National Park Service
Natural Resource Management Guidelines	NPS-77	Guides the actions of park managers so that natural resource management activities planned and initiated at field areas comply with federal laws and regulations, and with Department of the Interior and NPS policy	National Park Service

Appendix B. Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies (continued)

NPS MANDATES (continued)	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
Wetlands Protection	Director's Order 77-1	Establishes NPS policies, requirements and standards for implementing Executive Order 11990, "Protection of Wetlands;" recommends park units obtain a parkwide wetland inventory, based on "Classification of Wetlands and Deepwater Habitats of the U.S.," FWS/OBS-79-31	National Park Service
Integrated Pest Management Manual and Integrated Pest Management Plan	Reference Manual 77-7	Describes the biology and management of 21 species or categories of pests; minimizes the use of toxic pesticides and establishes a strategy for the control of invasive species	National Park Service
Structural Fire Management	Directors Order 58 and Reference Manual-58	Supplements the structural fire policy articulated in NPS Management Policies by setting forth the operational policies and procedures necessary to establish and implement structural fire management programs throughout the national park system	National Park Service
FEDERAL EXECUTIVE ORDERS	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
<i>Chesapeake 2000</i> , Chesapeake Bay Agreement	Directive No. 98-2, 12/8/98	Directs collaborative management of the Chesapeake Bay Program	National Park Service, UPS EPA, US FWS, US DOT, US DOD, VA, MD D.C., PA, MD, and Chesapeake Bay Foundation
Intergovernmental Review of Federal Programs	E.O. 12372	Establishes clearinghouse coordination required with state and local agencies concerning impacts of federal projects	Federal Agencies
Protection and Enhancement of Environmental Quality	E.O. 11514, as amended by E.O. 11990	Provides federal leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life	Federal Agencies
Protection of Floodplains	E.O. 11988	Establishes federal policy to avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to preserve the natural and beneficial values served by floodplains	Federal Agencies
Protection of Wetlands	E.O. 11990	Requires Federal Agencies to consider all practicable alternatives to impacting wetlands	Federal Agencies
Off-Road Vehicles on Public Lands	E.O. 11644, as amended by E.O. 11989	Requires public land managers to establish policies and procedures to ensure the use of off-road vehicles on public lands will be controlled to protect the resources, to promote the safety of all users of those lands and to minimize conflicts among the various uses of those lands	Federal Agencies
Invasive Species	E.O. 13112	Prevents the introduction of invasive species and provides for their control and to minimize the economic and human health impacts that invasive species cause	Federal Agencies
Protection and Enhancement of the Cultural Environment	E.O. 11593	Establishes federal policy to protect and enhance the cultural environment	Federal Agencies
Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations	E.O. 12898	Established federal policy to avoid federal actions that cause disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment	Federal Agencies
Governmental Actions and Interference with Constitutionally Protected Property Rights	E.O. 12630	Establishes federal policy to assist Federal Agencies in proposing, planning and implementing actions with due regard to the constitutional protections provided by the Fifth Amendment and to reduce undue or inadvertent burdens on the public resulting from lawful government action	Federal Agencies

Appendix B. Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies (continued)

FEDERAL EXECUTIVE ORDERS (continued)	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
American Indian Sacred Sites	E.O. 13007	Requires that management of federal land shall, to the extent practicable, permitted by law, accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of sacred sites	Federal Agencies
Strengthening Federal Environmental, Energy, and Transportation Management	E.O. 13423	Requires federal agencies to conduct their environmental, transportation, and energy-related activities in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.	Federal Agencies
Government-to-Government Relations with Tribal Governments	Presidential Memorandum of April 29, 1994	Establishes principles to be followed by federal departments and agencies in their interactions with Native American tribal governments and requiring consideration of the impacts of federal actions on tribal trust resources	Federal Agencies
COMMONWEALTH OF VIRGINIA	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
State Environmental Review Process (SERP)	Code of Virginia: Title 10.1-1188 (b), Chapter 11, Art. 2	Provides guidance on the Commonwealth of Virginia's environmental review process	Commonwealth Agencies
Environmental Impact Review of Major State Facilities	Code of Virginia: Title 10.1-1188 (a), Chapter 11, Art. 2	Requires Commonwealth Agencies to submit environmental impact reports on major projects; sets forth procedures for agency environmental impact reports	Commonwealth Agencies
Scenic Rivers Act, 1970	Code of Virginia: Title 10.1-401 et seq	Protects and preserves certain rivers possessing natural or pastoral beaut	all agencies
Virginia Cave Protection Act	Code of Virginia: Title 10-150.11-150.18	Recognizes the unique qualities of caves and the irreplaceable archeological and natural resources found therein and establishes measures to protect cave resources	all agencies
County Comprehensive Planning	Code of Virginia: Title 15.2-2223-2224	Requires that all localities have comprehensive plans showing the proposed uses for land throughout the locality; sensitive environmental areas; historical areas; etc.	Local Governments
County Historic District Zoning	Code of Virginia: Title 15.2-2283	Authorizes localities to protect historic structures and areas through zoning	Local Governments
Historic Districts	Code of Virginia: Title 15.2-2306	Authorizes localities to preserve historic resources through the establishment of historic districts	Local Governments
Agricultural, Horticultural, and Food	Code of Virginia: Title 3.1-18-8	Protects and enhances agricultural and forested land as economic and environmental resources	Commonwealth Agencies
Agricultural and Forestal District Act	Code of Virginia: Title 15.2-440	Provides for the creation of Agricultural and Forestal Districts through the voluntary applications of landowners	Local Governments
Historic Register Listing	Code of Virginia: Title 10.1-2204	Establishes authority for the Virginia Board of Historic Resources to nominate historic structures, sites and districts for listing on the Virginia Landmarks Register and National Register of Historic Places	Commonwealth Agencies

Appendix B. Applicable Federal and Commonwealth of Virginia Laws and Regulations and National Park Service Policies (continued)

COMMONWEALTH OF VIRGINIA (continued)	REFERENCE	PURPOSE	COMPLIANCE REQUIRED BY
Virginia Cultural Resources	Code of Virginia: Title 10.1-2200	Preserves and protects state cultural, historic, and archeological resources	Commonwealth Agencies and Non-Governmental Organizations
Virginia Antiquities Act	Code of Virginia: Title 10.1 Chapter 23	Establishes authority for state programs to identify, evaluate, preserve, and protect sites and objects of antiquity which have historic, scientific, archeological, or educational value and are located on state-controlled land	Commonwealth Agencies
Virginia Natural Heritage Program	Code of Virginia: Title 10.1-212	Establishes a natural heritage program that identifies significant natural resources	Commonwealth Agencies
Virginia Water Quality Improvement Act of 1997	Code of Virginia: Title 10.1, Chapter 21.1	Establishes the state's water quality and defines point source and non-point source pollution programs in Virginia	Commonwealth Agencies and Non-Governmental Organizations
Virginia Erosion and Sediment Control Act, 1973, as amended	Code of Virginia: Title 10.1, Chapter 5, Art. 4	Establishes regulations controlling soil erosion, sediment deposition and runoff to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources	Commonwealth Agencies and Non-Governmental Organizations
Virginia Natural Area Preserves Act	Code of Virginia: Title 10.1-209, Chapter 2, Art. 3	Establishes and protects areas of special concern that the Commonwealth has designated as natural area preserves	Commonwealth Agencies and Non-Governmental Organizations
Virginia Endangered Plant and Insect Act	Code of Virginia: Sec. 3.1-1020-1030	Authorizes the Virginia Department of Agriculture and Consumer Services to regulate and protect Virginia's endangered plants and insects	Commonwealth Agencies and Non-Governmental Organizations
Virginia Endangered Species Act, 1987, as amended	Code of Virginia: Sec. 29.1-564-568, Chapter 5, Art. 1	Regulates endangered or threatened species in Virginia and to prohibit the taking, transportation, processing, sale or offer for sale within the Commonwealth, any threatened or endangered species of fish or wildlife	Commonwealth Agencies and Non-Governmental Organizations
Scenic Highway and Virginia Byways Act, 1966	Code of Virginia: Sec. 10, Chapter 390	Authorizes the Commonwealth Transportation Board and the Department of Recreation and Conservation to recognize certain roads and outstanding features	Commonwealth Agencies



APPENDIX C

SCOPING SUMMARY AND ANALYSIS

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



Appendix C

Scoping Summary and Analysis

Project scoping identified a wide range of issues relevant to the management of Cedar Creek and Belle Grove NHP. In order to identify which issues are appropriately addressed in general management level planning for the park they have been sorted into four categories, as follows:

- interests or concerns that are appropriately addressed by the GMP
- interests or concerns that are adequately addressed by servicewide law or policy guidance
- interests or concerns that should be addressed in implementation plans
- interests and concerns that are beyond the scope of the GMP or future implementation plans

Following each interest or concern listed the number in parentheses is the number of times the issues was raised during scoping meetings.

1.0 Interests and Concerns that are Appropriately Addressed by the GMP

1.1 The Park's Fundamental and Other Important Resources and Values

Cedar Creek Battlefield

- 1.1.1 What has been preserved is only the infantry contact area. The battle area was really 20x15 miles in size. By focusing within the park, the visitor will think that is all that was involved in the battle.
- 1.1.2 The old subdivision in Middletown is a depression era subdivision and it encompasses the area of final forward Confederate movement.
- 1.1.3 Reenactments can be damaging to the resource, e.g., contemporary percussion caps are almost identical to those used in Civil War.
- 1.1.4 Opinions differ as to whether reenactments should be contained to present locations or expanded.
- 1.1.5 If NPS were not involved in CEBE, SVBF would probably be doing a battlefield preservation plan for the area within the park.

Archeological Resources

- 1.1.6 Archaeological resources and sites.
- 1.1.7 There are Indian mounds within the park.
- 1.1.8 CCBF owns Panthers Cave, a natural area with archaeological resources used by local colleges, and it should be part of the park.
- 1.1.9 CCBF lands include four prehistoric, largely undisturbed sites.
- 1.1.10 Shenandoah River bottoms were probably used as camping grounds by Native Americans.

Road Traces, Earthworks, and Old Valley Turnpike

- 1.1.11 The Valley Pike as an original roadway - its narrow character as it passes through the towns in the northern Valley.
- 1.1.12 Valley Pike has been a major transportation route historically, dating back to prehistory.
- 1.1.13 Importance of towns along the Valley Pike.
- 1.1.14 Towns as gateways, i.e., "string of pearls" along the Valley Pike.
- 1.1.15 Historically, Middletown was a wagon town -- all the stuff is still there.

Park Features that Help Interpret Battles and Deployments

- 1.1.16 The landscape was fundamental to Jackson's 1862 campaign, e.g., the Valley was an avenue of invasion to Washington, DC.
- 1.1.17 Importance of topography and the Shenandoah Valley to the Civil War.
- 1.1.18 The park has important areas such as the infantry contact area and cemetery hill.
- 1.1.19 Visitors need to understand the importance of Fishers Hill where confederates were camped and started their march. Until the actual contact, all other sites are outside the park boundary.
- 1.1.20 The key to understanding the ultimate federal success is the ridgeline northwest of the cemetery. Has been partially subdivided. The area should be purchased and the houses torn down.
- 1.1.21 No one has yet mapped the historically important sites on the periphery of the park. Those sites could tell the story of how armies work before they confront one another.
- 1.1.22 Monuments within the park.

Geography, Topography and Landscape Features of the Region

- 1.1.23 Important natural and cultural landscapes and their interrelationships. (3)

Cultural Landscapes, Historic Buildings, and Historic Structures

- 1.1.24 Belle Grove is the last surviving example of a plantation and was a focus of the movement in the valley that supported secession.
- 1.1.25 Harmony Hall as an icon of early Valley settlement.
- 1.1.26 The architectural integrity of Belle Grove and Harmony Hall.

Limestone and the Limestone Geologic System that Creates the Region's Waterways

- 1.1.27 Limestone and its importance to agriculture, early settlement and economic development.
- 1.1.28 The Valley's limestone is the source of its fertile soils as well as building material.

Cedar Creek

- 1.1.29 The waterways in the park.
- 1.1.30 Cedar Creek is a high quality stream, and water supplies for Winchester are drawn from the Shenandoah River below Cedar Creek.

Landscapes and Panoramic Views

- 1.1.31 Important views and viewsheds, particularly those that have not changed much since the Civil War.
- 1.1.32 Integrity of the park's landscapes.
- 1.1.33 Landscapes and views.
- 1.1.34 Viewsheds should be one of the criteria for land protection planning.
- 1.1.35 Park viewsheds and landscapes are very important.
- 1.1.36 Landscapes and scenery are important, i.e., views of the Blue Ridge, Massanutten and Allegheny Mountains
- 1.1.37 Identify scenic resources.
- 1.1.38 There are concerns about the impacts of Chemstone's proposed expansion, e.g., the park's resources, water, viewsheds, noise and blasting, truck traffic and public safety.
- 1.1.39 Very hard to see the original landscape, although there are exceptions such as the Heater House.

Natural Resources of the Shenandoah Valley

- 1.1.40 The park has excellent bird habitat.
- 1.1.41 The Valley's natural resources had a major effect on settlement patterns.
- 1.1.42 Habitat diversity is a key natural feature of the Valley. Several state listed plant species are within the park but no known federally listed species.
- 1.1.43 The area has unique flora and fauna, and it is used by Shenandoah University and Lord Fairfax Community College for training natural history students.

Stories – Battle of Cedar Creek and the Civil War

- 1.1.44 Connect the battle of Cedar Creek to the rest of the entire Civil War.
- 1.1.45 Story of the Shenandoah Valley's importance to the Civil War and the significance of the Battle of Cedar Creek.
- 1.1.46 The Civil War, battle of Cedar Creek and their many stories.
- 1.1.47 Individual stories of the battle of Cedar Creek, e.g., Ramseur and Custer, Sheridan's ride, the end of the Confederate presence in the Valley, and the battle's impact on Lincoln's reelection.
- 1.1.48 How can we get people to think at the level that Early and Sheridan were thinking, i.e., the bigger scale of the battle?
- 1.1.49 Story of Signal Knob and its importance. (2)
- 1.1.50 Experience of visiting the reenactment and a Civil War landscape.
- 1.1.51 The Hotchkiss maps and Taylor sketches.
- 1.1.52 Entire Heritage District offers opportunity to tell the Civil War story.
- 1.1.53 Cedar Creek should tell the story not told at other battlefield sites or parks, including communities and civilians who experienced the Shenandoah Valley battles.
- 1.1.54 How should CEBE provide a broader interpretation of social history and the Civil War?

- 1.1.55 Civil War perspectives are varied. Examples include slavery, life in small communities, military history, women's roles during the war, and the impact of a civil war on people's lives.
- 1.1.56 People visiting the valley have images in mind, and they will be drawn to the park to have those images fulfilled.
- 1.1.57 Challenge during the Civil War was the continuous pitting of a powerful opponent against a much weaker entity who used the element of surprise to compensate.
- 1.1.58 As people become more interested in the battlefield, they should be exposed to other sites such as Shawnee Springs hospital and the railroad site in Winchester.
- 1.1.59 SVBF's interest is to have visitors experience the Shenandoah Valley through visits to the valley's communities and approximately 30 museums.
- 1.1.60 Need interpretive enclaves outside of the park.

Stories – The Shenandoah Valley as Breadbasket

- 1.1.61 Agriculture and the Valley as a breadbasket. (2)
- 1.1.62 19th century agriculture.

Stories – Native Americans

- 1.1.63 The Native American story is important.
- 1.1.64 Story of the Shenandoah Valley as America's first frontier, with sensitivity given to the Native American perspective.

Stories – Cultural History of the Valley

- 1.1.65 One focus of the GMP would be to understand history through the Civil War period. Another would be broader, i.e., Native American sites, early settlement, the Civil War, and subsequent valley history.
- 1.1.66 The valley's transition from prehistoric to modern times.
- 1.1.67 Scope of history – span from pre-European to Civil War to modern.
- 1.1.68 Interpretation of the valley's early history, Valley Pike history and Civil War history.
- 1.1.69 Whereas the SVBF is focusing on the Civil War, CEBE should provide a window into 200 years of history.
- 1.1.70 Compared to the heritage area, the park will be telling a longer deeper story over the course of human history. It needs to tell a bigger story than the Cedar Creek battle.
- 1.1.71 Pre-Civil War history of the area is important.
- 1.1.72 Interaction between and effect of the natural environment on settlement life.
- 1.1.73 Transportation, commerce and the movement of people - the transitory nature of people moving from the East to the interior USA.
- 1.1.74 Story of Valley Pike's history and importance.
- 1.1.75 Transportation, commerce and the settlement pattern in the Northern Valley.

- 1.1.76 Middletown Heritage Society members want a broader interpretation of the area than the Civil War, e.g., local 18th century iron forge.
- 1.1.77 Some European families came to the colonies to build a republican society, i.e., economically independent people living free as citizens in a republic. The valley embodied those ideas as early as 1780s.
- 1.1.78 Jefferson's sense of liberty was derived largely by his visits to the valley - in comparison to eastern VA where society was stratified and people were exploited.
- 1.1.79 People in the valley lived in a "happy state of mediocrity".
- 1.1.80 Belle Grove provides an excellent opportunity to tell the story of the republican style landscape.
- 1.1.81 Settings and stories associated with Belle Grove and Harmony Hall.
- 1.1.82 Belle Grove and plantation life and culture.
- 1.1.83 Fort Bowman (Harmony Hall) and Belle Grove would best tell the colonial stories. (2)
- 1.1.84 Belle Grove can be misunderstood as a presentation similar to those of eastern VA. It was more of a big farm than a plantation.
- 1.1.85 Should look to what historically attracted people to the Shenandoah Valley, and why they are attracted today. The Valley has been the top list of travel destinations since the late 18th century.
- 1.1.86 The economic world that developed by 1800 would sell very well to the Civil War visitor.
- 1.1.87 Plantation culture, valley settlement, George Washington's relationship to the area, and stories of how the Civil War affected everyday people.
- 1.1.88 The park area may be seen as representing a middle class, with Belle Grove being the exception.
- 1.1.89 Relationships in a plantation society, i.e., free and slave labor.
- 1.1.90 The stories of the Hites, Bowmans, Heaters and other families. (2)
- 1.1.91 West side of Warren County was settled by Germans, which is different than the English dominance in the tidewater area.
- 1.1.92 Long Meadow Farm was large enough to have slaves and was tied somewhat with the culture of eastern Warren County.
- 1.1.93 German heritage remained until the Revolution.
- 1.1.94 Quakers arrived with the Germans and settled in the corridor along Front Royal Pike (Route 540). Yet there is no place in the valley where the Quaker story is told.
- 1.1.95 There was an influx of Quakers into the area during the Revolution, to escape being rounded-up because their refusal to sympathize with the war effort. Afterwards, they largely dispersed, many moving to Ohio.
- 1.1.96 Cannot tell the full story of the area without including the stories of the towns.

Stories - Slavery

- 1.1.97 The African American/slave experience in the Northern Valley is a very important story.

- 1.1.98 Slavery is a complicated issue in the valley. Slaves were used on small farms but they were fewer in number than elsewhere.
- 1.1.99 The area began growing wheat in the 1850s, using slaves.
- 1.1.100 Story of slavery, the plantation community and relationship between slaves and their owners.

1.2 Resource Protection

- 1.2.1 What will be the strategy for protecting the privately-owned the Vermont monument?
- 1.2.2 How can CEBE assist Middletown with its proposed historic preservation ordinance?
- 1.2.3 How will the existing NPS 7-acre property be treated in the GMP?
- 1.2.4 Core area of the Cedar Creek battlefield encompasses approximately 15,000 acres.
- 1.2.5 The GMP must protect vistas and the park's setting, which may be the most important aspect of the area.
- 1.2.6 The value of the area will be diminished exponentially if the landscape becomes cluttered.
- 1.2.7 Different sites have differing carrying capacities. The GMP should cover this.
- 1.2.8 Proposed expansion of I-81 will impact Harmony Hall.
- 1.2.9 Land that key partners have cobbled together now extends from Bowman's Ford to Middletown.
- 1.2.10 There has never been a broad understanding of the area's important resources.
- 1.2.11 Stickley Farm and Cemetery area should be acquisition priorities.
- 1.2.12 Protect Shenandoah River and Cedar Creek.
- 1.2.13 Concerns for the expansion of Chemstone quarry, pollution of Cedar Creek.
- 1.2.14 Preservation of historic houses.
- 1.2.15 Environmental restoration.
- 1.2.16 Possibility of losing the park's viewsheds.
- 1.2.17 Water quality of Cedar Creek.
- 1.2.18 Preservation of scenic resources and living history (e.g. reenactments).
- 1.2.19 Reconstruction of spring house near Heater House.
- 1.2.20 Preservation of Route 11 corridor.
- 1.2.21 Future of significant sites outside park boundary.

1.3 Visitor Use and Experience

- 1.3.1 Will NPS own sufficient contiguous land to enable a meaningful visitor experience?

- 1.3.2 How would CEBE approach the visitor experience with no further land acquisitions?
- 1.3.3 Strasburg would like to see Civil War reenactments south of I-81.
- 1.3.4 What are the NPS management implications of CEBE not having a significant land base?
- 1.3.5 Partners must develop a coordinated interpretive plan for visitors.
- 1.3.6 A visitor center can serve as a starting point for visitors.
- 1.3.7 Visitors should receive information at Belle Grove, and through individual and group touring by vehicles and foot.
- 1.3.8 Favorable view of the cluster concept as depicted in the SVBF plan.
- 1.3.9 Use interpretative themes as an umbrella to connect us.
- 1.3.10 The park's visitor center could be the principal gateway to the Signal Knob Cluster and function as the introduction to the entire region.
- 1.3.11 The park might be more densely interpreted than the Shenandoah Valley Historic District.
- 1.3.12 SVBF's management plan calls for each cluster to have an orientation center as the jumping off point for visitors. It has been generally thought that NPS would have the largest visitor center in the heritage area.
- 1.3.13 Belle Grove has many visitors who ask about the full range of recreation opportunities in the area.
- 1.3.14 Electronic media should be explored for interpretation.
- 1.3.15 Belle Grove Inc. plans to develop a master site plan for the plantation, which is likely to change its interpretive approach, e.g., providing interpretive zones for telling stories of slavery, industrial development, and family histories.
- 1.3.16 Belle Grove Inc. envisions Harmony Hall as another Horne Museum with public access.
- 1.3.17 CEBE is the center of the Shenandoah Valley heritage area. It is the first place you come to and it should be a gateway.
- 1.3.18 Middletown is interested in becoming a better gateway community.
- 1.3.19 Annual Civil War reenactments are very important to the area's economics and interpretation. NPS should consider the re-enactors as its largest user group.
- 1.3.20 CEBE is a critical component of the tourism industry, which is very important to the region.
- 1.3.21 Warren County portion of the park is very rural and presents opportunities for a park experience.
- 1.3.22 Marketing will help the visitor understand the difference between the heritage area and the park.
- 1.3.23 Worst case scenario for the park will be if the public only sees it as the Battle of Cedar Creek.
- 1.3.24 Middletown Heritage Society created in 1996 to develop a walking tour.
- 1.3.25 Middletown should be a gateway community to the park.
- 1.3.26 Would like to see a visitor center in Middletown.

- 1.3.27 Permanent small scale reenactment activities, e.g., a settler's wagon, cannon/musket demonstration, fife-and-drum unit, bring history to life and tend too draw return visitors.
- 1.3.28 Possible permanent host to seasonal arts/crafts/theme festivals/events, in conjunction with nearby towns/communities.
- 1.3.29 Selected leasing of non-conflicting hunting areas; especially for safe low-noise/impact bow, shotgun and muzzle-loading.
- 1.3.30 A possible on-site period-drama utilizing Shenandoah University's Conservatory Theatre program. An outdoor amphitheatre would be needed but could also be used for everyday park educational programs and exhibits.
- 1.3.31 State tourism surveys suggest public's interest in the big broad context of history.
- 1.3.32 Need to interpret what has been preserved as well as other things peripheral to it.
- 1.3.33 Differing perspectives among partners on military versus cultural themes. However, most visitors initially will come because it is a Civil War site.
- 1.3.34 Branding the park as a broader social history park would distinguish it from the Historic District.
- 1.3.35 Many battlefield park visitors are attracted to the battle areas and blood-soaked ground, and they pay less attention to period structures.
- 1.3.36 Reenactments may face a time in the next 5-10 years when they are not as popular because the re-enactors have become older and not replaced by younger people.
- 1.3.37 Traffic issue on Route 11 and all roads in park during reenactments.
- 1.3.38 Charm of small towns and rural roads will be lost if widened to accommodate visitors.
- 1.3.39 Positive economic stimulus – what is attraction of the park?
- 1.3.40 How do we offer access, transportation, history, information, entertainment and education to the public?
- 1.3.41 Future use of Keister Tract.
- 1.3.42 How to preserve visitor experience in face of I-81 expansion and quarry expansion?
- 1.3.43 Public access to Cedar Creek.
- 1.3.44 Need to balance historical interpretation – prehistoric through post Civil War.
- 1.3.45 Signage should include historical markers, directions to important sites, and audio tapes for driving tours.

1.4 Partnerships and Organizational Effectiveness

- 1.4.1 What is CEBE Advisory Commission's long-term role?
- 1.4.2 How can a partnership concept be used to manage the park?
- 1.4.3 How can NPS develop a shared vision of the park with its partners?

- 1.4.4 Should NPS partners be encouraged to adopt NPS general management policies?
- 1.4.5 How will CEBE work with local governments?
- 1.4.6 Will the GMP consider different partnership alternatives?
- 1.4.7 The partnership must be seamless at the visitor center where the overview story is presented.
- 1.4.8 Key partners interested in a potential "hub-and-spoke" management relationship with NPS.
- 1.4.9 NPS key partners potentially interested in collaborating on tours, trails, staffing and volunteers, meetings, land protection, fees and ticketing, marketing, security, transportation and visitor education.
- 1.4.10 What long-term role will the CEBE Advisory Commission have?
- 1.4.11 Can CEBE and its partners agree on a common set of guiding principles?
- 1.4.12 We should encourage consistency among partners and NPS in their policies and permissible activities.
- 1.4.13 Park partners must look at overlap of mutual interests.
- 1.4.14 Partners must coordinate efforts but not be involved in managing one another's properties.
- 1.4.15 We need a management entity or representative body to handle management of mutual interests.
- 1.4.16 We must look at other NPS partnership models when developing alternatives.
- 1.4.17 NPS should be the anchor that ties partners and lands together.
- 1.4.18 NPS should be more focused on coordination, technical and financial support than a traditional operation.
- 1.4.19 NPS should be a coordinator among partners.
- 1.4.20 The park should be a hybrid between traditional and non-traditional NPS operations.
- 1.4.21 CEBE partners should not share individual property maintenance and management, but should share land protection, scheduling of events, interpretation, and shared infrastructure.
- 1.4.22 A visitor center might be multi-use and shared among the partners.
- 1.4.23 It is important that partners have the financial resources to sustain their own operations.
- 1.4.24 How to get "buy-in" of the GMP among the various partners and stakeholders? Possibly there should be a legal document.
- 1.4.25 One possible management entity may be a foundation with a board and voting members including the key partners.
- 1.4.26 There must be a management entity for the park. SVBF could serve as an example.
- 1.4.27 Local governments must buy-in to whatever management entity is created for the park.
- 1.4.28 To what extent are we talking about managing each other's operations or are we talking about managing our own operations and collaborating?

- 1.4.29 GMP should have general principles for how the stakeholders will collaborate.
- 1.4.30 Cooperative agreements could be instruments for the implementation of the GMP.
- 1.4.31 For partners to cede some level of autonomy, there would have to be something that they get back in return.
- 1.4.32 An important aspect of the partnership will be private landowners within the park. What voice will they have in creating the GMP?
- 1.4.33 What does "park community" mean in CEBE's legislation?
- 1.4.34 There are partners other than the "The Cornerstones." How do we involve them?
- 1.4.35 We are fortunate that the partners are currently self-sufficient.
- 1.4.36 One way to protect landscapes is through partnerships.
- 1.4.37 One way to engage local governments is to show them that the park can bring revenue.
- 1.4.38 Think of partners as "overlapping spheres".
- 1.4.39 We need a matrix on policies/capacities and constraints, or a set of guidelines that partners agree to. Topics should include visitor education, land protection, joint ticketing, signage, and marketing.
- 1.4.40 We have shared values and shared vision, but each property needs to maintain its unique identity, where the visitor is encouraged to pass from one property to the next.
- 1.4.41 We need to help the visitor understand the roles of the various partners.
- 1.4.42 Management and operations - what activities will we do together? Education and interpretation, sharing staff and volunteers, security and law enforcement, ticketing, tours.
- 1.4.43 Certain partners may have the lead on certain issues, but not on others. We will have niches.
- 1.4.44 What will be the management entity for the partnership? Will it be the Park Advisory Commission. Will it be the key partners? Who will be at the table?
- 1.4.45 The mechanism for decision-making must be in the GMP.
- 1.4.46 Will the management entity be advisory? What degree of autonomy will each partner retain?
- 1.4.47 Partners to have cooperative agreements with NPS to formalize their participation in the management entity.
- 1.4.48 Conceptual model: a "hub and spoke concept," with NPS at the hub and partners as the spokes. The rim would be the mutual issues on which we work.
- 1.4.49 Key issues would be run through the management entity.
- 1.4.50 Do partners have responsibility to each other or just to NPS?
- 1.4.51 Would the management entity be staffed?
- 1.4.52 How will partnership conflicts be resolved?

- 1.4.53 Partners to have a limited and voluntary role outside their properties.
- 1.4.54 The management entity will be a forum or congress for decision-making.
- 1.4.55 Criteria to become a key partner or perhaps be on the management entity might be "landowner interest and a preservation purpose". Would public access also be required?
- 1.4.56 NPS operation should fall somewhere between a traditional operation and a strict coordination role. Partners are interested in a quasi-traditional role for NPS.
- 1.4.57 Should a "coordinator-only" role be an alternative in the GMP?
- 1.4.58 Belle Grove is interested in NPS conducting interpretive programs.
- 1.4.59 One GMP alternative should show NPS in a traditional role, another should show NPS as strictly a partnership coordinator, and a third should be somewhere between the two. This will help bracket the analysis and educate the public.
- 1.4.60 Need a vision allowing NPS to assume a reasonable level of ownership and staffing.
- 1.4.61 The GMP should not give the impression that the park sprang from the SVBHD Plan.
- 1.4.62 It is important that the GMP resolve partner responsibilities, working relationships with NPS, and how partner issues will be resolved.
- 1.4.63 Cooperative agreements between NPS and its partners are important and should be informed by the GMP.
- 1.4.64 Cooperative agreements between NPS and its partners are important and should be informed by the GMP.
- 1.4.65 Big challenge at the park is to educate landowners regarding the difference between SVBF and NPS.
- 1.4.66 SVBF has had to work to explain difference between the heritage district and the park.
- 1.4.67 SVBF has started work on a cluster plan for the Strasburg area, likely to be called the Signal Hill Cluster group.
- 1.4.68 There is an opportunity at Cedar Creek to engage partners in preservation activities.
- 1.4.69 A matrix might be used to show a management framework that provides the basis for seeking and allocating funds.
- 1.4.70 Belle Grove Inc. is accustomed to working with many partners.
- 1.4.71 The park's future should be a partnership, with NPS, key partners and others owning land, while some stays in private hands. This would be better than an NPS "command and control" model.
- 1.4.72 The National Trust for Historic Preservation strongly supports its partnership with the NPS in managing the park.
- 1.4.73 CEBE is generally not on the "radar" of Frederick County officials, and it has not entered into discussions about what should happen to the county's rural area.
- 1.4.74 There was a lot of energy and anticipation when CEBE was created, but not much has happened and the energy needs to be rejuvenated.

- 1.4.75 Frederick County officials will not take actions to support the park unless they feel they have public support.
- 1.4.76 Shenandoah University can potentially provide volunteers, interns, educational programs, student involvement, and research projects.
- 1.4.77 Lord Fairfax Community College can provide support and facilities for the GMP planning effort.
- 1.4.78 The GMP should address student internships.
- 1.4.79 Lord Fairfax Community College can integrate park needs into its curriculum.
- 1.4.80 How can Lord Fairfax Community College use the park as a laboratory for land use and preservation studies?
- 1.4.81 Creation of a park "sustainability" subcommittee in conjunction with Shenandoah University's History/Tourism program and Byrd School.
- 1.4.82 CCBF has been acting as a land trust. It could operate as a "friend of the park" to buy land when NPS cannot.
- 1.4.83 It was assumed that the park and the arrival of a superintendent would bring funding. CCBF's donor base initially withered, and it took about two years to re-educate donors and bring them back.
- 1.4.84 CCBF has many supporters who are diverse but not particularly wealthy.
- 1.4.85 CCBF has raised money with the focus on the need to retain a national memory and sustain national values. At the other end of the spectrum, regional economic development has also been used.
- 1.4.85 Virginia Canoe Association very interested in preserving Cedar Creek as a canoe route.
- 1.4.86 UK Civil War Roundtable is a consistent supporter of the CCBF.
- 1.4.87 More things bind the CEBC partners than separate them. They don't compete for the same sources of money.
- 1.4.88 Belle Grove is likely to remain as an autonomous entity but CCBF could become a friends group for the park.
- 1.4.89 Local colleges and universities can help educate people about the park.
- 1.4.90 An interdisciplinary masters degree program should be created, involving park management, history and education.
- 1.4.91 Coordination by NPS with towns and counties.
- 1.4.92 Communication among NPS, local residents and communities.
- 1.4.93 Time it takes for NPS plan – by 2008 will there be anything left?
- 1.4.94 Continuing communication among stakeholders and the park.
- 1.4.95 NPS voice in local government to influence growth and development, and to protect viewscales.
- 1.4.96 Coordinated visitor services with regional visitor services partners.

1.5 Park Operations and Facilities

- 1.5.1 How will the GMP address the need for a park visitor center?

- 1.5.2 Interest in developing trails connecting Keister Park with Signal Knob, the National Forest and Belle Grove.
- 1.5.3 NPS partners are interested in a CEBE visitor center.
- 1.5.4 GMP must distinguish short-term and long-term strategies, considering its current limited staff and land base but not missing opportunity for setting a long-term bigger vision.
- 1.5.5 A GMP goal should be to lay the foundation for a sustainable park, taking into account difficulty of achieving funding for a start-up park.
- 1.5.6 Belle Grove is seeking help from NPS in interpreting natural resources.
- 1.5.7 NPS should provide consistency for trails throughout the park.
- 1.5.8 What will be NPS policy on trail maintenance?
- 1.5.9 Will there be recreational non-interpretive trails, e.g., at the Keister property?
- 1.5.10 We need to provide access to the park for the mobility impaired.
- 1.5.11 A park visitor center should be in a central location.
- 1.5.12 The visitor center should have a panoramic view of the battlefield and park.
- 1.5.13 Are there existing facilities that could be used for the visitor center?
- 1.5.14 NPS should own visitor center and enough land to be a presence.
- 1.5.15 Visitor center issues: hub of park, staffing, potential political concerns about its location and funding sources.
- 1.5.16 NPS needs a central location and high visibility in the area.
- 1.5.17 The GMP does not need to identify a specific site for the visitor center.
- 1.5.18 There is an interest in where the visitor center will be located.
- 1.5.19 Local partners should have a strong say in where and how the visitor center will be built.
- 1.5.20 The visitor center for the "Signal Hill" cluster will likely be within the park.
- 1.5.21 "Points of visitor contact" in the CEBE legislation is assumed to mean visitor center.
- 1.5.22 There is a need for visitor wayfinding from Route 11.
- 1.5.23 Belle Grove's Overseer's Cottage is not suitable as a visitor center site.
- 1.5.24 If the park is to have a trail system, it should be located along original road beds.
- 1.5.25 Shenandoah County would like the GMP process to incorporate the County's plan for Keister Park.
- 1.5.26 Although it could probably not sell the property to NPS, Shenandoah County would consider NPS taking over the management of Keister Park.
- 1.5.27 Middletown Town Council would like to see an NPS visitor center in or near Middletown.
- 1.5.28 Different opinions regarding the location of the NPS visitor center, e.g., preferences for Frederick County versus another site that would maximize tourism for entire region without regard to political boundaries.

- 1.5.29 The visitor center should not be at Belle Grove because it would focus the experience too much on the Belle Grove story.
- 1.5.30 Middletown needs to update its infrastructure and accommodate some growth if it is to be vibrant and have an economic base.
- 1.5.31 The old Middletown School building would have been a good orientation site.
- 1.5.31 A continuous walking and bike trail should be considered that would connect Fishers Hill and Belle Grove, as well as the Tuscarawas Trail in the vicinity of Toms Brook.
- 1.5.32 What are the research needs for the park?
- 1.5.33 Wireless internet capability (WIFI) should be provided throughout the park for interactive sharing of information with visitors.
- 1.5.34 The Fort Ticonderoga, NY gift shop is tasteful in appearance. It sells tourist products that generate cash for the park, should be considered as a model.
- 1.5.35 CCBF has done a second reenactment in summer 2006 to generate cash, but it has been a drain on volunteers.
- 1.5.36 Support for the reenactments but concerned they are impacting the resource and there is little local landowner involvement in how or when reenactment activities occur.
- 1.5.37 Establishment of park headquarters (role, size, location, and mission).
- 1.5.38 Address alternative transportation.
- 1.5.39 Transportation/buses on narrow unpaved roads.
- 1.5.40 No parking at Ranseur Monument.
- 1.5.41 Location of visitors center.
- 1.5.42 Road problems – too small for traffic, paving, maintenance – park traffic versus commuter/local traffic.
- 1.5.43 Traffic issues with tourists (buses).
- 1.5.44 Public outreach and communications.
- 1.5.45 Visitor center – will there be one?
- 1.5.46 Future hunting and fishing in the park.
- 1.5.47 Future road changes in the park.
- 1.5.48 Public safety hazards of increased road traffic, especially trucks on Route 11 and expanded I-81 and quarry.

1.6 Land Protection and Boundary Adjustment

- 1.6.1 How will NPS approach scenic easements outside the park?
- 1.6.2 Should the GMP include a land protection plan?
- 1.6.3 How will CEBC address resource protection in the context of encroaching development?
- 1.6.4 Should the GMP prescribe a general phasing plan tied to future land protection?
- 1.6.5 How will CEBC deal with the potential impacts of an I-81 expansion?

- 1.6.6 What will be the framework for decision-making related to land protection?
- 1.6.7 How will the CEBE Advisory Commission address lands outside the CEBE boundary?
- 1.6.8 How should CEBE work with developers to minimize negative impacts on the park?
- 1.6.9 Should CEBE work directly with the Town of Strasburg regarding their growth policies?
- 1.6.10 Local communities do not necessarily see the need to preserve more land in that Belle Grove and Cedar Creek Foundation already have substantial holdings.
- 1.6.11 NPS may have to acquire additional land to preserve and interpret the area's history.
- 1.6.12 NPS should purchase lands in the park.
- 1.6.13 NPS should be a major player in the preservation of land.
- 1.6.14 Private land can be protected through easements and zoning.
- 1.6.15 We must make sure that the rights of private property owners are respected, particularly with regard to park visitors.
- 1.6.16 Landscapes and views are influenced by forces within and outside the park.
- 1.6.17 Proposed expansion of I-81 may take 320 acres within the authorized park boundaries.
- 1.6.18 Land protection must be done now and should be a major issue in the GMP.
- 1.6.19 Need to distinguish between public and private interests in the park.
- 1.6.20 Land protection is critically important.
- 1.6.21 Some people believe that land protection is more important than the visitor center.
- 1.6.22 Land protection is critically important and it should be funded to its fullest extent.
- 1.6.23 All involved in the GMP planning process should address landowner concerns, including those of the partners and private property owners in the park.
- 1.6.24 SVBF management plan calls for building relationships with landowners.
- 1.6.25 SVBF's battlefield plans for Cross Keys and Port Republic were successful and done simultaneously with county comprehensive plan updates. They involved landowners and were perceived as enhancements to the county plans.
- 1.6.26 SVBF Management Plan identified 18,000 acres as the "core area" which remains largely rural or protected, of which 6,000 acres are at Cedar Creek. Many of those lands are outside of the park's legislative boundaries.
- 1.6.27 It would probably be difficult to change CEBE boundaries because of political obstacles, the possible exception being Warren County.
- 1.6.28 Possibly NPS could indicate a federal interest in lands beyond current CEBE boundaries, which may be the basis for asking for funds to support the preservation efforts of its partners.

- 1.6.29 More land is being preserved in the Cedar Creek area than elsewhere in the heritage area.
- 1.6.30 Time has come for SVBF to become more creative with limited funding, e.g., exploring purchase and resale with conservation easements.
- 1.6.31 SVBF has not thought much about using limited development techniques; might be hard for the SVBF board and the public to accept.
- 1.6.32 Private property rights interests have indicated concerns that the SVBF is putting pressure on local governments to adopt regulations to restrict private property rights.
- 1.6.33 Key partners would generally like NPS to own more land, and they believe that a larger land base will be necessary to secure adequate NPS funding for the park.
- 1.6.34 Shenandoah County is now working on acquiring other properties for park purposes.
- 1.6.35 Land protection is critically important.
- 1.6.36 Conservation easements should be used more aggressively, with assistance of Piedmont Environmental Council and the Potomac Conservancy.
- 1.6.37 Connecting protected land along US 11 is critical, e.g., Harmony Hall should be connected with Belle Grove to create a more cohesive park.
- 1.6.38 NPS and its partners must get land conservation groups involved in the park.
- 1.6.39 NPS needed to start acquiring land 15 years ago. It will have problems acquiring land today.
- 1.6.40 Housing developments will be the biggest threat in terms of changing the area's landscape and culture.
- 1.6.41 Perhaps Middletown could use annexation to bring the park into town to provide better development controls, e.g., through a historic protection ordinance.
- 1.6.42 Land protection is very important, i.e., the battlefield should not be developed.
- 1.6.43 Middletown Town Council wants to work with private landowners to promote land protection, with assistance from NPS.
- 1.6.44 NPS should consider conservation easements as a land protection tool.
- 1.6.45 Middletown concerned about the expansion of I-81 and the Chemstone quarry.
- 1.6.46 Land protection is very important. We will not have a viable park without an appropriate land base. Can towns and counties help?
- 1.6.47 Shenandoah County Board of Supervisors supports the use of conservation easements as a means of controlling growth.
- 1.6.48 Shenandoah County Board of Supervisors is concerned about land protection.
- 1.6.49 Concern for encroaching development, especially in the Strasburg area.
- 1.6.50 Frederick County's Comprehensive Plan (2003) does not recognize that the park is in the County. However, a plan update could recognize the park and propose new policies, e.g., amending rural-by-right provisions.

- 1.6.51 Frederick County has taken the position that land protection will promote tourism but has not had the hard numbers to back-up the value of preservation and creation of the park.
- 1.6.52 Frederick County government and its regulations are sensitive to property rights issues.
- 1.6.53 Frederick County recently established an authority to work on conservation easements.
- 1.6.54 Frederick County's 2003 Comprehensive Plan has an urban growth boundary and a goal to concentrate 70% of its growth in the designated urban area. Middletown is outside the urban growth area.
- 1.6.55 Frederick County's rural-by-right provisions allow 1 dwelling/5 acres, with clustering at the same density and 40% open space set aside.
- 1.6.56 What is happening on the periphery of the park poses the greatest impediment to understanding what is important and significant about the park.
- 1.6.57 The park is already compromised by I-81.
- 1.6.58 The nearby "mountainscapes" are already protected by federal ownership.
- 1.6.59 Should use local network of leaders to work on protecting the park's land base. Town and counties could approach property owners and offer conservation incentives.
- 1.6.60 Warren County should consider working with landowners along Bowmans Mill Road and Long Meadow Road, and rezone for preservation.
- 1.6.61 There has been a lot of real estate speculation in Middletown in recent years, but recently it has cooled off.
- 1.6.62 Middletown working on a "traditional neighborhood design" option for new development, e.g., with grid design and mixed housing.
- 1.6.63 Strasburg needs to develop a new vision for its growth, considering an urban growth boundary.
- 1.6.64 I-81 is often viewed as a negative but it can also be viewed as an economic benefit.
- 1.6.65 Land protection is critically important.
- 1.6.66 We must protect enough land for interpretation, and we can work with developers if necessary.
- 1.6.67 The GMP must address a coordinated approach for dealing with external threats and land protection issues.
- 1.6.68 I-81 often viewed as negative but it can also be viewed as a potential revenue stream.
- 1.6.69 When Joe Whitehorne wrote his driving tour in 1985, it was easy to interpret the landscape. But it has dramatically changed in the past 20 years.
- 1.6.70 It was important to create the park to assist in the overall concept of the Historic District. For 20 years before the District, it was a perpetual fight to preserve anything.
- 1.6.71 Need conservation easements on lands within the park's viewsheds.
- 1.6.72 Working relationships need to be established with landowners and developers to plant vegetation screens and use earth tones in building materials.

- 1.6.73 Currently there is no vehicle in place for communities to inform and educate developers regarding the resources on their properties.
- 1.6.74 Developers are buying up all available land. NPS cannot wait until the plan is completed to protect land. All available tools should be used to protect land in the park now.
- 1.6.75 Land protection is of paramount importance.
- 1.6.76 Growth and development - impact on park.
- 1.6.77 Concern for potential restrictions on landowners within park.
- 1.6.78 Historical conservation easements.
- 1.6.79 Protecting viewsheds and improving buffers.
- 1.6.80 Coordination between NPS and local government.
- 1.6.81 Land protection efforts undertaken by local governments.
- 1.6.82 How much of CCBF's lands will be accessible to the public?
- 1.6.83 Growth and development impacts on the park.
- 1.6.84 Balance between public value and private property rights.
- 1.6.85 Preservation of natural resources and viewsheds.
- 1.6.86 Land acquisition – concern for potential condemnation by NPS.
- 1.6.87 Do property owners have a voice in park?
- 1.6.88 Boundary adjustments – concern about property rights.
- 1.6.89 Local governments need guidance on development issues.
- 1.6.90 Allowance for continued current uses.
- 1.6.91 Communication needed with park private landowners and homeowners associations.
- 1.6.92 Landowners' rights – restrictions – passing to inheritance (children) – farming.
- 1.6.93 Input from landowners – how were boundaries drawn?
- 1.6.94 Maintaining scenic views/improving current viewshed challenges.
- 1.6.95 Effect of possible quarry rezoning on the park.
- 1.6.96 How will park affect private property and owners?
- 1.6.97 Maintain agrarian community.
- 1.6.98 What's going to happen to property adjacent to the Park?
- 1.6.99 Enforcement of viewshed pollution on adjacent properties.
- 1.6.100 Protection of scenic resources outside of park boundaries.
- 1.6.101 Future of private lands in park.
- 1.6.102 Building regulations on private lands in the park?

2.0 Interests and Concerns that are Adequately Addressed by Servicewide Law or Policy Guidance

- 2.1 How will CEBE and its partners manage visitors fees?
- 2.2 Can NPS be legally bound to a voting board?
- 2.3 Can the Park Advisory Commission have a long-term role in managing the park?
- 2.4 The GMP and planning process need to stick to a broad vision. Then the partners and other stakeholders contribute resources toward the vision.
- 2.5 Will management entity meetings be open to the public?
- 2.6 More NPS funding is likely if NPS owns more land, which in turn translates to more ability to assist partners.
- 2.7 What NPS funds will be available for use by partners?
- 2.8 There is an understanding of the strong correlation between having a land base and NPS funding.
- 2.9 SVBF is interested in owning land and having NPS manage it for them. Shenandoah County may be interested in this as well.
- 2.10 How will NPS and key partners affect private landowners?
- 2.11 Can NPS rangers work with partners on law enforcement matters?
- 2.12 NPS current funding realities must be incorporated into the planning process.
- 2.13 We need various contingencies for potential park funding levels.
- 2.14 Can NPS accept donations of land or money?
- 2.15 Will there be adequate federal funding for the park?
- 2.16 Can NPS buy land outside of its boundary?
- 2.17 The results of the land protection plan will greatly impact funding needs.
- 2.18 How and why were park boundaries decided, and are they permanent?

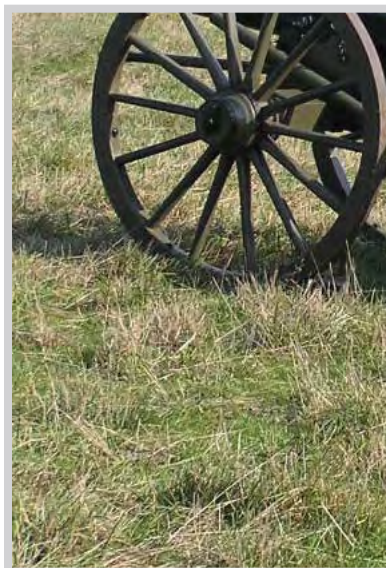
3.0 Interests and Concerns that should be Addressed in Implementation Plans

- 3.1 We must let people know when they are in the park. It is very important that visitors know when they are "in" and "out" of the park.
- 3.2 Interpreting troop movements and military history is important but we must be careful not to clutter the landscape with signs, perhaps using technology.
- 3.3 Some places will require a live interpreter so that tours can be tailored to the audience.
- 3.4 Partners should coordinate hours of use and events.
- 3.5 The park should have its own unique "branding" with consistent signage.
- 3.6 "A Partnership Park" should be a byline in all marketing materials. (2)
- 3.7 Partners can collaborate on training staff to give a consistent message.

- 3.8 How to integrate partnership with NPS policies (e.g., what to do when NPS policies differ from partner policies)? For example, hunting.
- 3.9 How should different partners positions be handled, e.g., with respect to hunting policies?
- 3.10 Hunting policy on NPS and partner lands is a huge issue.
- 3.11 A possible interim solution for the visitor center would be Lord Fairfax College.
- 3.12 Need to obtain a commitment for staffing the park at the program level.
- 3.13 Shenandoah County would like the visitor center. The only visitor center it has now is in New Market, run by the Shenandoah Valley travel organization.

4.0 Interests and Concerns that are Beyond the Scope of the GMP or Future Implementation Plans

- 4.1 How will CEBE address some negative community attitudes towards NPS?
- 4.2 What will be the sources of NPS funding for future land acquisitions? (3)
- 4.3 Adequacy of future funding for key partners.
- 4.4 Potential new key partners might be added over time.
- 4.5 What if other organizations (i.e., a land trust) protect land within the park. Are they eligible to become key partners?
- 4.6 Public safety/traffic issues/control of truck traffic on Route 11.
- 4.7 Key partners as well as Shenandoah County and Middletown have taken the position of finding "reasonable solutions" for an expanded I-81.
- 4.8 Chemstone has proffered to give Belle Grove the original mill.
- 4.9 Belle Grove Inc. would like to have Belle Grove become a model for land stewardship, e.g., it is working with the Potomac Conservancy to develop a rain garden and remove cattle from the pond.
- 4.10 Belle Grove is interested in acquiring public water from Middletown.
- 4.11 Middletown has a state-recognized historic district and is developing its own historic district ordinance.
- 4.12 Frederick County has done a lot of work to protect Civil War sites.
- 4.13 Virginia tax credits for conservation easements are critically important.
- 4.14 Tax incentives should be offered to conservation easements placed on battlefield lands.
- 4.15 How many reenactments should occur yearly?



APPENDIX D

COMPLIANCE COORDINATION

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



Appendix D

Compliance Coordination

- Letter Sent to Advisory Council on Historic Preservation (September 29, 2006)
- Letter Sent to Virginia Department of Historic Resources (September 29, 2006)
- Letter Received from U.S. Fish and Wildlife Service (December 20, 2006)
- Letter Received from Virginia Department of Conservation and Recreation (November 28, 2006)
- Letter Received from Virginia Department of Game and Inland Fisheries (November 20, 2006)
- Letter Received from Virginia Department of Conservation and Recreation, Planning and Recreation Resources (January 22, 2007)



United States Department of the Interior

NATIONAL PARK SERVICE
Cedar Creek & Belle Grove National Historical Park
7718 ½ Main Street
P.O. Box 700
Middletown, VA 22645

IN REPLY REFER TO:

September 29, 2006

Mr. Don Klima
Director, Office of Federal Agency Programs
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue, NW Suite 809
Washington, DC 20004

Dear Mr. Fowler:

The National Park Service proposes to develop and subsequently implement a General Management Plan (GMP) for Cedar Creek & Belle Grove National Historical Park located in Frederick, Shenandoah and Warren Counties and Middletown and Strasburg, Virginia. In addition to the planning document, we will also prepare an Environmental Impact Statement (EIS). Accordingly, we would like to initiate the consultation process for compliance with Section 106 of the National Historic Preservation Act of 1966, as Amended, and its implementing regulations, and the 1995 Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

Cedar Creek and Belle Grove National Historical Park was established in December 2002 as a "partnership park" which means that it will continue to be jointly owned, managed and operated by the National Park Service in partnership with Belle Grove Plantation Inc., Cedar Creek Battlefield Foundation, National Trust for Historic Preservation, Shenandoah Valley Battlefields Foundation and Shenandoah County, Virginia. Currently, the legislated boundary for the national park includes approximately 3486 acres – of which 7.4 acres are owned by the National Park Service; 1040 are owned and managed by our key park partners and the remainder 2424 acres are owned by 100+ individual private landowners. The park's enabling legislation provides for the National Park Service to purchase or accept donations from willing property owners only, and we anticipate for the foreseeable future, that most of the land and resources within the boundary will continue to be owned by individual property owners. Additionally, our enabling legislation provides for the key partners mentioned above to continue to independently own, manage and operate their properties, although the National Park Service may provide technical and/or financial assistance.

In addition to the usual resource protection and visitor services issues that are typically addressed in General Management Plans, this plan will also address how the key park partners will collaborate in the management of the national park, and how the park will work with community partners including local governments and private property owners to preserve and protect the cultural resources within the park.

We are also aware of several undertakings proposed by others that have the potential to affect cultural resources at the Cedar Creek and Belle Grove National Historical Park. The park is intersected by I-81 and is in close proximity to I-66, and the proposed expansion or improvements to these roads have the potential to directly impact cultural resources in and around the national park. In addition, immediately adjacent to Belle Grove Plantation, on the western boundary of the park, an existing mining operations, proposes to expand by 600+ acres, and this undertaking has the potential to adversely affect the character defining

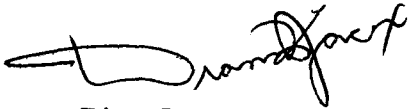
cultural resources and scenic values of the park. And although the park was established in December 2002, a rapid increase in commercial and residential development adjacent and in view of the park's boundary, have the potential to adversely affect historic landscapes in and around the national park.

We hope to meet with the Virginia State Historic Preservation Officer and staff on the general management planning process, the unique aspects of the park partnership, and to solicit input about issues that might be potentially addressed in the General Management Plan. We are open to meeting with your staff on these issues as well. For now, we are enclosing a copy of the park's enabling legislation and the GMP project agreement.

We look forward to working with you and your staff on the protection of historic resources and values at Cedar Creek and Belle Grove National Historical Park. Should you have any questions please feel free to contact me or community planner Christopher Stubbs at 540-868-9176 or at diann_jacox@nps.gov and chris_stubbs@nps.gov, respectively.

Thank you for your sustained support of the National Park Service in the protection of historic resources and values.

Sincerely,

A handwritten signature in black ink, appearing to read "Diann Jacox", written over a horizontal line.

Diann Jacox
Superintendent

Enclosures

Cc:
Ethel Eaton, PhD, Virginia Department of Historic Resources



United States Department of the Interior

NATIONAL PARK SERVICE
Cedar Creek & Belle Grove National Historical Park
7718 ½ Main Street
P.O. Box 700
Middletown, VA 22645

IN REPLY REFER TO:

September 29, 2006

Ms. Kathleen Kilpatrick, SHPO
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Dear Ms. Kilpatrick:

The National Park Service proposes to develop and subsequently implement a General Management Plan (GMP) for Cedar Creek & Belle Grove National Historical Park located in Frederick, Shenandoah and Warren Counties and Middletown and Strasburg, Virginia. In addition to the planning document, we will also prepare an Environmental Impact Statement (EIS). Accordingly, we would like to initiate the consultation process for compliance with Section 106 of the National Historic Preservation Act of 1966, as Amended, and its implementing regulations and the 1995 Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

Cedar Creek and Belle Grove National Historical Park was established in December 2002 as a "partnership park" which means that it will continue to be jointly owned, managed and operated by the National Park Service in partnership with Belle Grove Plantation Inc., Cedar Creek Battlefield Foundation, National Trust for Historic Preservation, Shenandoah Valley Battlefields Foundation and Shenandoah County, Virginia. Currently the legislated boundary for the national park includes approximately 3471 acres – of which 7.4 acres are owned by the National Park Service, 1040 are owned and managed by our key park partners and the remainder 2424 acres are owned by 100+ individual private landowners. The park's enabling legislation provides for the National Park Service to purchase or accept donations from willing property owners only, and we anticipate for the foreseeable future, that most of the land and resources within the boundary will continue to be owned by individual property owners. Additionally, our enabling legislation provides for the key partners mentioned above to continue to independently own, manage and operate their properties although the National Park Service may provide technical and/or financial assistance.

In addition to the usual resource protection and visitor services issues that are typically addressed in General Management Plans, this plan will also address how the key park partners will collaborate in the management of the national park, and how the park will work with community partners including local governments and private property owners to preserve and protect the cultural and natural resources within the park.

Although currently the park's highest priority is completing the General Management Plan we would also like to discuss several undertakings proposed by others that have the potential to affect cultural resources at the Cedar Creek and Belle Grove National Historical Park. The park is intersected by I-81 and is in close proximity to I-66, and the proposed expansion or improvements to these roads have the potential to directly impact cultural resources in and around the national park. In addition, immediately adjacent to Belle

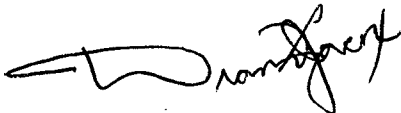
Grove Plantation, on the western boundary of the park, an existing mining operation proposes to expand by 600+ acres, and this undertaking has the potential to adversely affect the character defining cultural resources and scenic values of the park. And although the park was established in December 2002, a rapid increase in commercial and residential development adjacent and in view of the park's boundary, have the potential to adversely affect historic landscapes in and around the national park.

In addition to initiating Section 106 compliance on our General Management Plan, we would like to engage you in a discussion of how we can best protect the natural and cultural values of the national park. Our thought was to travel to Richmond, Virginia in the near future to brief you and your staff on the general management planning process, the unique aspects of the park partnership, and to solicit from you input about issues that might be potentially addressed in the General Management Plan as well as your thoughts about how we might best provide protection for the natural and cultural resources and values for which the national park was established. For now, we are enclosing copies of the park's enabling legislation and GMP project agreement, which will help you understand the partnership nature of the park.

We look forward to working with you and your staff on the protection of historic resources and values at Cedar Creek and Belle Grove National Historical Park. Should you have any questions please feel free to contact me or community planner Christopher Stubbs at 540-868-9176 or at diann_jacox@nps.gov and chris_stubbs@nps.gov, respectively.

Thank you for your sustained support of the National Park Service in the protection of historic resources and values.

Sincerely,



Diann Jacox
Superintendent

Enclosures

Cc:

Don Klima, Advisory Council on Historic Preservation
Ethel Eaton, PhD, Virginia Department of Historic Resources



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6669 Short Lane
Gloucester, VA 23061

Date: December 20, 2006Project name: Cedar Creek & Belle Grove National Park Management PlanProject number: 2007-TA-0131 City/County SHENANDOAH Co., VA

The U.S. Fish and Wildlife Service (Service) has reviewed your request for information on federally listed or proposed endangered or threatened species and designated critical habitat for the above referenced project. The following comments are provided under provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

☒ We have reviewed the information you have provided and believe that the proposed action will not adversely affect federally listed species or federally designated critical habitat because no federally listed species are known to occur in the project area. Should project plans change or if additional information on listed and proposed species becomes available, this determination may be reconsidered.

☐ We recommend that you contact **both** of the following State agencies for site specific information on listed species in Virginia. Each agency maintains a different database and has differing expertise and/or regulatory responsibility:

Virginia Dept. of Game & Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230
(804) 367-1000

Virginia Dept. of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 2nd Floor
Richmond, VA 23219
(804) 786-7951

If either agency indicates a federally listed species is **present**, please resubmit your project description with letters from both agencies attached.

☐ If **appropriate habitat may be present**, we recommend surveys within appropriate habitat by a qualified surveyor. Enclosed are county lists with fact sheets that contain information the species' habitat requirements and lists of qualified surveyors. If this project involves a Federal agency (Federal permit, funding, or land), we encourage the Federal agency to contact this office if appropriate habitat is present and if they determine their proposed action may affect federally listed species or critical habitat.

☐ Determinations of the presence of waters of the United States, including wetlands, and the need for permits are made by the U.S. Army Corps of Engineers. They may be contacted at: Regulatory Branch, U.S. Army Corps of Engineers, Norfolk District, 803 Front Street, Norfolk, Virginia 23510, telephone (757) 441-7652.

Our website <http://virginiafieldoffice.fws.gov> contains many resources that may assist with project reviews. Point of contact is Mike Drummond at (804) 693-6694, ext. 114.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office



L. Preston Bryant, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

217 Governor Street
Richmond, Virginia 23219-2010
(804) 786-7951 FAX (804) 371-2674

November 28, 2006

Christopher J. Stubbs
National Park Service
Cedar Creek & Belle Grove
National Historical Park
P.O. Box 700
Middletown, VA 22645

Re: Cedar Creek & Belle Grove National Historical Park Management Plan

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the North Fork Shenandoah River-Strasburg Stream Conservation Unit has been documented downstream from the project location. Stream Conservation Units (SCUs) identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. This site has been ranked as a B5 conservation site, which indicates it is of general biodiversity significance. The natural heritage resources associated with this conservation site are:

<i>Alasmodonta varicosa</i>	Brook Floater	G3/S1/NL/LE
<i>Lampsilis cariosa</i>	Yellow Lampmussel	G3G4/S2/NL/SC
<i>Lasmigona subviridis</i>	Green Floater	G3/S2/NL/LT

The brook floater is a small rare mussel species that typically occurs in and near riffles and rapids of smaller creeks with rocky or gravelly substrates. Threats include poor water quality, as this species does not tolerate silt or nutrient pollution well (Stephenson, 1991). Please note that the brook floater is listed as endangered by Virginia Department of Game and Inland Fisheries (VDGIF).

The yellow lampmussel averages about 70 mm in length but can reach a length of 130 mm (Johnson, 1970). The yellow lampmussel is found in larger streams and rivers where good currents exist over a sand and gravel substrate and in small creeks and ponds. This species is known to occur in the Potomac, York, and Chowan river basins (TNC, 1996). Please note that this species is currently classified as a special concern species by VDGIF; however, this designation has no official legal status.

The green floater is a rare freshwater mussel that ranges from New York to North Carolina in the Atlantic Slope drainages, as well as the New and Kanawha River systems in Virginia and West Virginia.

*State Parks • Soil and Water Conservation • Natural Heritage • Outdoor Recreation Planning
Chesapeake Bay Local Assistance • Dam Safety and Floodplain Management • Land Conservation*

Throughout its range, the green floater appears to prefer the pools and eddies with gravelly and sandy bottoms of smaller rivers and creeks or of smaller channels of large rivers (Ortman, 1919). According to Riddick (1973), in central Virginia, the green floater prefers habitats with gravel or sand bottoms in small to medium-sized streams. Green floaters are small, usually reaching a length less than 55mm. The color on the shell varies from pale yellow to brownish green. There may be numerous narrow or wide green or blackish rays on the shell surface, mostly on juveniles (Kitchel, 1991). Please note, as of July 2006 the green floater is now listed as state threatened by Virginia Department of Game and Inland Fisheries (VDGIF).

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization, and dredging, and the invasion of exotic mollusk species.

In addition, the project area is within the Panther Conservation Site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Panther Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resources associated with this site are:

Montane Dry Calcareous Forest/Woodland
Significant Cave

GNR/SNR/NL/NL
GNR/SNR/NL/NL

Montane Dry Calcareous Forest and Woodlands

These deciduous or occasionally mixed forests and woodlands occur on subxeric, fertile habitats over carbonate formations of limestone or dolomite. Habitats are steep, usually rocky, south- to west-facing slopes at elevations from < 300 to 900 m (< 1,000 to 2,900 ft). Soils vary from circumneutral to moderately alkaline and have high calcium levels. Confined in Virginia to the mountains, these communities are most frequent and extensive in the Ridge and Valley, but occur locally in both the Blue Ridge and Cumberland Mountains. Tree canopies vary from nearly closed to sparse and woodland-like. Considerable compositional variation is evident in these communities across western Virginia. A rare and distinctive community type in this group, confined to the largely dolomitic Elbrook formation in the southwestern Ridge and Valley, features an abundance of the magnesiophiles prairie ragwort (*Packera plattensis* = *Senecio plattensis*), glade wild quinine (*Parthenium auriculatum*), and tall larkspur (*Delphinium exaltatum*), as well as populations of the federally listed smooth coneflower (*Echinacea laevigata*) and the globally rare, Virginia endemic Addison's leatherflower (*Clematis addisonii*) (Fleming et al., 2006).

Also, Canby's mountain-lover (*Paxistima canbyi*, G2/S2/SOC/NL) is located in the project area. Canby's mountain-lover is a low evergreen shrub that occurs on limestone bluffs and cliffs and shaly slopes, often overlooking streams and rivers (The Nature Conservancy, 1996). This species is currently known from 15 occurrences, and historically known from multiple additional occurrences, in Virginia. DCR recommends surveying this area for Canby's mountain lover and other species that are possible within this habitat.

Furthermore, the project area is within a section of Cedar Creek and Meadow Brook that has been designated by the VDGIF as being "Threatened and Endangered Species Water" for Wood turtle

(*Glyptemys insculpta*, G4/S2/NL/LT). The Wood turtle inhabits forested floodplains and nearby fields, wet meadows, and farmlands (Mitchell, 1994). As this species overwinters on the bottoms of creeks and streams, a primary habitat requirement is the presence of water (Mitchell, 1994). Please note that the Wood turtle is currently classified as threatened by the VDGIF.

The project area is also within a section of the North Fork Shenandoah River-Strasburg SCU that has been designated by the VDGIF as being "Threatened and Endangered Species Water" for Brook Floater.

The Cedar Creek and Belle Grove National Historic Park (NHP) lies almost entirely on a well-developed karst landscape typical of the Shenandoah Valley. A single designated significant cave - Panther Cave - lies within the park boundary. Other, smaller caves may exist. While no biological significance is attributed to the cave, it does have archaeological significance. More can be found out about this from Phil Lucas, data manager of the Virginia Speleological Survey at 540-396-3584. The remainder of the property almost certainly hosts several globally rare subterranean aquatic species, including but not limited to Shenandoah Valley Cave Amphipod (*Stygobromus gracilipes*, G3G4/S2S3/NL/SC), Biggers Cave Amphipod (*Stygobromus biggersi*, G2G4/S1S2/NL/NL) and Price's Cave Isopod (*Caecidotea pricei*, G5/S3/NL/NL). Caves inaccessible to humans are also likely to host Thin-neck cave beetle (*Pseudanophthalmus parvicollis*, G1/S1/NL/NL). Presumably, management of the property as a National Historic Park should have little impact upon these species. However, any development project should be designed in such a way as to minimize impact to karst features. In addition, natural heritage staff would like access to the Park to perform surveys for karst features. Finally, any wells present on the property should be sampled with baited traps to check for the presence of the subterranean aquatic fauna listed above. Please contact Wil Orndorff (540-831-4056) for more information regarding karst surveys.

DCR recommends avoidance of documented natural heritage resources within the project area. DCR also recommends surveying for the wood turtle, mussels and dragonflies in Cedar Creek and surveying for insects, especially butterflies & moths within the Dry Calcareous Woodland community types along Cedar Creek, along with surveying for wood turtle in Meadow Brook. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

In addition, DCR recommends an updated mussel survey in the North Fork Shenandoah River. To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations. Due to the legal status of the brook floater, green floater and the wood turtle, DCR recommends coordination with VDGIF to ensure compliance with protected species legislation.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in this letter. Their database may be accessed from www.dgif.virginia.gov/wildlifeinfo_map/index.html, or contact Shirl Dressler at (804) 367-6913.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

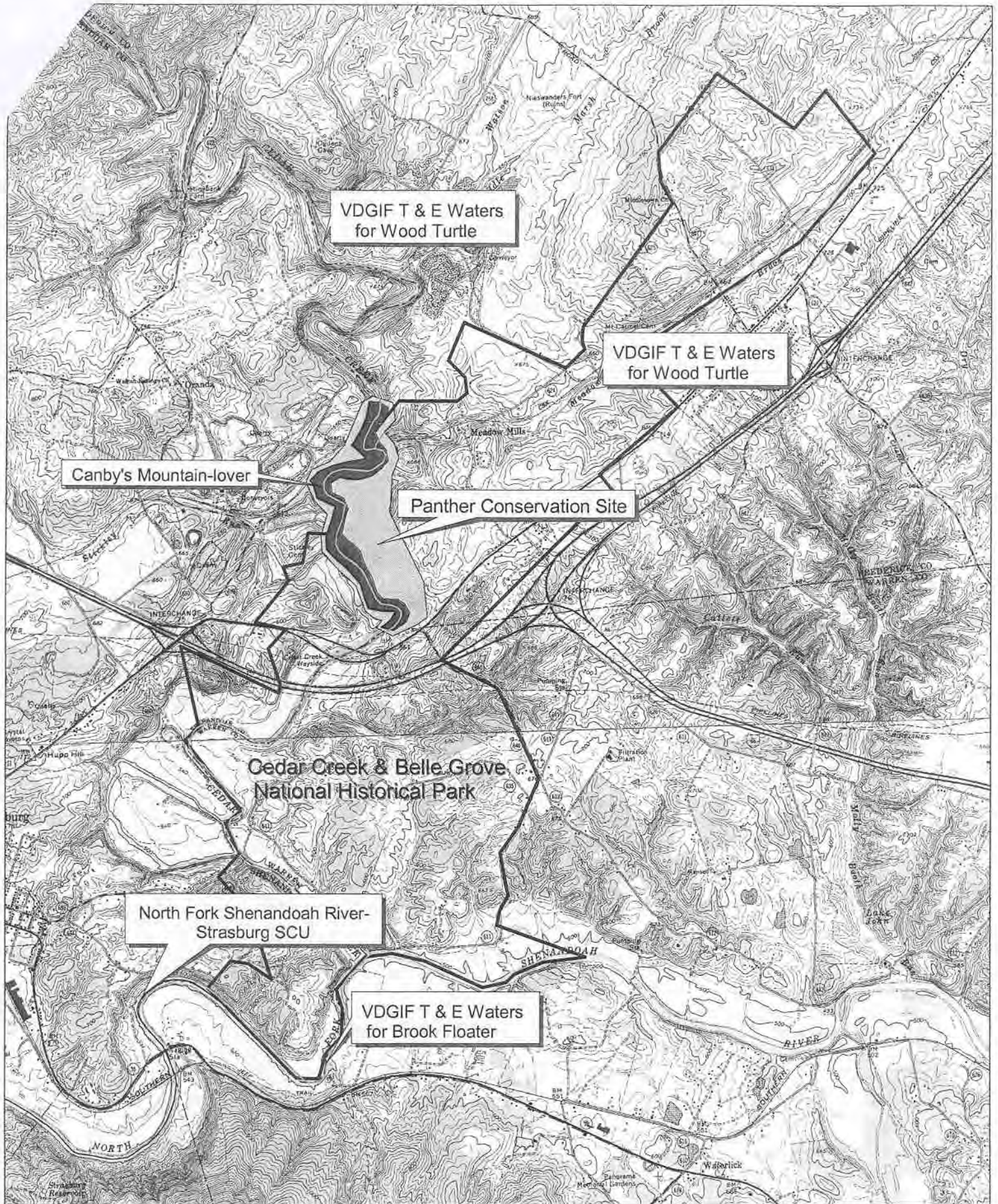
A handwritten signature in black ink, appearing to read "S. Rene' Hypes", with a stylized flourish at the end.

S. Rene' Hypes
Project Review Coordinator

Cc: Bob Munson, DCR-DPRR
Andy Zadnik, VDGIF

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Cedar Creek & Belle Grove National Historical Park
Middletown & Strasburg 24K Quadrangles

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COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

J. Carlton Courter, III
Director

November 20, 2006

Christopher J. Stubbs
Community Planner
National Park Service
Cedar Creek/Belle Grove NHP
7718 ½ Main St., P.O. Box 700
Middletown, VA 22645

RE: NHP Scoping Comments
ESSLog #23072

Dear Mr. Stubbs:

We have reviewed the information sent to us regarding the above mentioned request for scoping comments for the management plan for Cedar Creek and Belle Grove National Historic Park. The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises full law enforcement and regulatory jurisdiction over those resources, inclusive of State or Federally *Endangered* or *Threatened* species, but excluding listed insects. We are a consulting agency under the U. S. Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and we provide environmental analysis of projects or permit applications coordinated through the Virginia Department of Environmental Quality, the Virginia Marine Resources Commission, the Virginia Department of Transportation, the U. S. Army Corps of Engineers, and other state or federal agencies. Our role in these procedures is to determine likely impacts upon fish and wildlife resources and habitats, and to recommend appropriate measures to avoid, reduce, or compensate for those impacts.

According to our records, federal species of concern state endangered brook floater (*Alasmodonta varicosa*) and state threatened wood turtle (*Glyptemys insculpta*) have been documented within the park boundaries and/or in waters adjacent to the park. The brook floater is known to occur in the North Fork Shenandoah River at the south end of the park and the wood turtle is known from Meadow Brook, Middle Marsh Brook, Buffalo Marsh Run and Cedar Creek. The above mentioned waters have been designated Threatened and Endangered Species Waters due to the presence of wood turtle or brook floater. To best protect brook floater and other aquatic resources from harm or further habitat degradation, we recommend maintaining at least 100-foot (preferably up to 300-foot) undisturbed vegetated buffers along the North Fork Shenandoah River and its tributaries. We highly recommend fencing all cattle and/or other

Mr. Christopher Stubbs
11/20/2006
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livestock out of these streams to prevent impacts to water quality, prevent erosion and sedimentation and habitat degradation. To best protect the wood turtle and its habitat, we recommend maintaining 600-foot undisturbed vegetated riparian buffers along the streams where this species is known to occur. This species, although highly aquatic, also utilizes upland areas adjacent to streams during warmer weather for foraging and nesting. This species, like mussels, can be adversely affected by poor water quality, streambank erosion and impacts upon riparian areas. Again, we highly recommend fencing cattle and/or other livestock from these streams for the same reasons as mentioned above. We would be happy to assist the Park Service in delineating these riparian buffers, providing recommendations on specific management techniques and projects on park lands.

In addition to the listed species mentioned above, a number of species included as species of greatest conservation need in Virginia's Wildlife Action Plan are likely to occur, if suitable habitat exists, in and around the park. I have enclosed a table that lists these species as well as definitions of the tiers that these species fall within. We recommend that the Virginia Wildlife Action Plan (available through www.dgif.virginia.gov) be reviewed to determine what threats are known to these species, what suitable habitat for these species consists of and how to best protect them and their habitats from harm.

In terms of general wildlife habitat and management, we recommend maintaining forested habitat to the greatest extent possible, providing corridors between open spaces and managing for native wildlife species. This may include developing easements on open space and riparian buffers. We note that there appear to be some areas within the park that currently support grassland/early successional habitat. These areas could be managed to provide habitat for currently existing and historical grassland wildlife species. VDGIF would be willing to assist the Park Service in these and other wildlife management efforts. We recommend maintaining undisturbed wooded buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams. For any construction/building/imperious surface projects, we typically recommend that the stormwater controls be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

In the case of instream work (road crossings, culverts, etc), we recommend that these projects be reviewed by our agency. Because the streams and rivers in and around the park are of particularly high ecological value, we may recommend specific conservation actions to protect these resources and the species that inhabit them. In general, for instream projects, we recommend conducting such activities during low or no-flow conditions, using non-erodible cofferdams to isolate the construction area, blocking no more than 50% of the streamflow at any given time, stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures. Due to future maintenance costs associated with culverts, and the loss of riparian and aquatic habitat, we prefer stream crossings to be constructed via clear-span bridges. However, if this is not possible, we

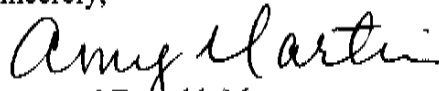
Mr. Christopher Stubbs
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recommend countersinking any culverts below the streambed at least 6 inches, or the use of bottomless culverts, to allow passage of aquatic organisms. We also recommend the installation of floodplain culverts to carry bankfull discharges.

We generally support the inclusion of trails within park systems to allow visitors to enjoy our natural resources, learn about the park and its historic and ecological values, and to participate in recreational opportunities. In the case of Cedar Creek and Belle Grove National Historic Park, we recommend that trails be laid out in such a way as to protect riparian areas that support listed wildlife species. If trails are required within the protective buffers mentioned above, we recommend coordination with our agency to reduce impacts that such trails may have upon wildlife and the aquatic systems located within the park.

Thank you for the opportunity to provide input and recommendation on the general management plan and to inform the development of the EIS. Please contact Amy Martin or me at (804) 367-6913 if we may be of further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Amy Martin".

Raymond Fernald, Manager
Nongame and Environmental Programs

Enclosures: 1

Table including tiered and listed wildlife species known or likely to occur within or around the Cedar Creek and Belle Grove National Historic Park.

Status*	Tier**	Common Name	Scientific Name	Confirmed	Confirming Database
FESE	I	Bat, Indiana	Myotis sodalis		BOVA
FTST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
FSSE	I	Wren, Bewick's	Thryomanes bewickii		BOVA
FSSE	II	Floater, brook	Alasmidonta varicosa	Yes	Collections,BOVA
ST	I	Turtle, wood	Glyptemys insculpta	Yes	Collections,BOVA
ST	I	Falcon, peregrine	Falco peregrinus		BOVA
ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
FSST	I	Skipper, Appalachian grizzled	Pyrgus wyandot		BOVA
FSST	II	Floater, green	Lasmigona subviridis		BOVA
FSST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
FSSS	II	Salamander, Cow Knob	Plethodon punctatus		BOVA
FS	II	Warbler, cerulean	Dendroica cerulea		BOVA
FSSS	II	Pigtoe, Tennessee	Fusconaia barnesiana		BOVA
FS	II	Crescent, tawny	Phyciodes batesii batesii		BOVA
FS	III	Myotis, eastern small-footed	Myotis leibii		BOVA
FS	IV	Darter, Appalachia	Percina gymnocephala		BOVA
FS	IV	Cottontail, Appalachian	Sylvilagus obscurus		BOVA
FS	IV	Woodrat, Allegheny	Neotoma magister		BOVA
SS	I	Warbler, golden-	Vermivora		BOVA

		winged	chrysoptera		
SS	II	Wren, winter	Troglodytes troglodytes		BOVA
SS	III	Harrier, northern	Circus cyaneus		BOVA
SS	III	Owl, barn	Tyto alba pratincola		BOVA
SS	IV	Creeper, brown	Certhia americana		BOVA
SS		Dickcissel	Spiza americana		BOVA
SS		Finch, purple	Carpodacus purpureus		BOVA
SS		Flycatcher, alder	Empidonax alnorum		BOVA
SS		Kinglet, golden-crowned	Regulus satrapa		BOVA
SS		Moorhen, common	Gallinula chloropus cachinnans		BOVA
SS		Nuthatch, red-breasted	Sitta canadensis		BOVA
SS		Thrush, hermit	Catharus guttatus		BOVA
SS		Warbler, magnolia	Dendroica magnolia		BOVA
SS		Otter, northern river	Lontra canadensis lataxina		BOVA
	I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
	I	Warbler, black-throated green	Dendroica virens		BOVA

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened;
 FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate;
 CC=Collection Concern; SS=State Special Concern

**Degree of
 **Tier Conservation
 Need**

Description

- | | | |
|---|-----------------------------|--|
| 1 | Critical Conservation Need | Faces an extremely high risk of extinction or extirpation. Populations of these species are at critically low levels, facing immediate threat(s), or occur within an extremely limited range. Intense and immediate management action is needed. |
| 2 | Very High Conservation Need | Has a high risk of extinction or extirpation. Populations of these species are at very low levels, facing real threat(s), or occur within a very limited distribution. Immediate management is needed for stabilization and recovery. |

3	High Conservation Need	Extinction or extirpation is possible. Populations of these species are in decline or have declined to low levels or are in a restricted range. Management action is needed to stabilize or increase populations.
4	Moderate Conservation Need	The species may be rare in parts of its range, particularly on the periphery. Populations of these species have demonstrated a significant declining trend or one is suspected which, if continued, is likely to qualify this species for a higher tier in the foreseeable future. Long-term planning is necessary to stabilize or increase populations.

L. Preston Bryant, Jr.
Secretary of Natural Resources



Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

Christopher Stubbs
National Park Service
National Historic Park
7718 ½ Main Street
PO Box 700
Middletown, VA 22645

January 22, 2007

RE: Cedar Creek and Belle Grove National Historic Park

Dear Mr. Stubbs:

Recently we were given the opportunity to comment on the Cedar Creek & Belle Grove National Historical Park – General Management Plan. As the primary entity responsible for coordination of federal and state recreational resource planning and the development of the *Virginia Outdoors Plan* (VOP), the Department of Conservation and Recreation takes a keen interest in all outdoor recreation resource planning efforts in Virginia. We have a mandate (*Code of Virginia* §10.1-200.6) to work with all federal agencies on recreation planning. Our involvement is in part to provide technical assistance and recreational survey information and to help assure as seamless a provision of services and protection of resources as possible.

There are a number of issues related to the General Management Plan for Cedar Creek & Belle Grove National Historical Park. We hope that the following comments will be of use and that we can be of service as the process continues. Please note that there are a number of recommendations from the Virginia Outdoors Plan (VOP) that affect the GMP, or lands and properties within close proximity of the Cedar Creek & Belle Grove National Historical Park. Coordination with DCR and other related agencies and organizations would provide an integrated plan.

Following are the draft recommendations from the VOP that could affect the GMP [note that these are edited as appropriate for this GMP]:

Cedar Creek and Belle Grove National Historical Park should continue to work with state and local partners to update and develop a General Management Plan (GMP), to guide park management for the next 20 years. The GMP is scheduled for completion in 2008. As infill for the park progresses, NPS should partner with localities to seek out opportunities for additional land for protection from development and to provide adjacent lands to meet local recreational needs. The GMP should protect the historic and open space context of **Belle Grove** and **Harmony Hall** plantations, two Valley icons within the Cedar Creek and Belle Grove National Historical Park. Each helps tell the story of the Valley Pike

along which they are located. The historic road that connected these two plantations should be restored and developed as part of a historic road network in the region.

Implement the Keister Tract Master Plan for Shenandoah County's recent purchase of a 150-acre **parcel near the confluence of the North Fork of the Shenandoah River and Cedar Creek**. The critical location on the river and the close proximity to the national forest, and adjacent to Belle Grove- Cedar Creek National Park, will give the park a regional significance that can support a variety of recreational opportunities for the people of the area.

Develop a greenway along the **Shenandoah River** to connect the state and national park sites with other public resources.

Develop a managed blueway system of access and recreational use areas and provide additional public access along both the **North Fork of the Shenandoah River**. The **North Fork of the Shenandoah River** should be considered for Scenic River designation and a greenway developed along it. Additional and improved public access is needed to all the major streams of the region, including **Cedar Creek**. Where appropriate, portages should be created and maintained around dams and other river obstacles. Develop a blueway canoe and kayak trail along **Cedar Creek** to capture its unusual natural features (limestone cliffs, endangered turtle habitat, eagle and other raptor habitat) and historic areas, including improved public access. **Cedar Creek** in Shenandoah, Frederick and Warren counties is recommended for evaluation to determine suitability for inclusion into the Virginia Scenic River Program. Protect and preserve the scenic areas along the **North Fork of the Shenandoah River**. The **North Fork of the Shenandoah** and **Cedar Creek** were identified in the U.S.D.A. Forest Service's Revised Land and Resource Management Plan as eligible for study for federal Wild and Scenic River designation. Should this process proceed, DCR will work with the Forest Service to determine if these rivers should be designated.

Continue implementation of the **Shenandoah Valley Battlefields National Historic District** Management Plan, which promotes the protection and continued appreciation of the historic, cultural, and natural resources that are associated with the battlefields and are important to the people of the region, the Shenandoah Valley and the nation. Private land trusts and the local, state, and federal governments should continue to coordinate land conservation and interpretive efforts.

Designate the historic and scenic **Valley Road**, Route 11, as a Virginia Scenic Byway, develop a corridor management plan, and create a historic district for the protection of the scenic corridor. Provide alternative routes, when stretches do not qualify for scenic byway designation. Develop a plan to make it eligible for National Scenic Byway designation. Consider its evolution from a Native American hunting path, to the Great Wagon Road, to Valley Turnpike, and finally to modern Route 11. Protect agricultural land along Route 11 corridor through out the region.

Interstate 81 is a recognized scenic corridor by the American Automobile Association. It is a major gateway and travel corridor through the state. Care should be given to protecting this great resource that showcases Virginia. Protect the views of mountain ridges. Protect agricultural land through out the region.

NPS to complete and implement the **Winchester-Frederick Bike-Pedestrian plan** in conjunction with partner, City of Winchester and Frederick County. The Plan will be coordinated with the regions' "Walking & Wheeling" Plan.

Maintain and pursue coordinated local and regional implementation of : **“Walking & Wheeling the Northern Shenandoah Valley** - The Plan for Improving Local/Regional Pedestrian & Bicycle Access & Linkages for Recreation & Civil War Heritage Tourism.”

As you continue with your planning process, our Department offers to be involved with the general management planning team and project appropriate technical assistance, especially that which has to do with the VOP. As an agency involved in the protection of our natural, recreational, cultural and historic resources for the current and future generations of Virginians to enjoy, it would be our pleasure to become partners with you as you continue the general management plan process.

Feel free to contact us with any question. Please add our representative, Lynn Crump, lcrump@dcrr.state.va.us , 203 Governor Street, Suite 326, Richmond, VA 23219, to your mailing and email lists.

Thank you so much for the opportunity to be involved in this planning endeavor.

Sincerely,

John Davy, Division Director
Planning and Recreation Resources

cc: Lynn M. Crump, L.A., ASLA, Environmental Programs Planner



REFERENCES

GLOSSARY

ACRONYMS

PREPARERS

INDEX

CEDAR CREEK AND BELLE GROVE NATIONAL HISTORICAL PARK



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Glossary

Accessibility. The provision of NPS programs, facilities, and services in ways that include individuals with disabilities or makes available to those individuals, the same benefits available to persons without disabilities.

Affected environment. The existing biological, physical, cultural, social, and economic conditions that are subject to direct and indirect changes which result from actions described in alternatives under consideration.

Alternative. A possible course of action, one of several ways to achieve an objective or vision. The term is used in a GMP to describe different management actions.

Area-specific management prescriptions. Area-specific guidance about the desired resource conditions, visitor experience opportunities, and appropriate kinds and levels of management, development, and access (modes of transportation) for each area of a park, based on how it is zoned; also the kinds of changes needed to move from the existing to the desired conditions.

Best management practices (BMPs). Practices that apply the most current means and technologies available to not only comply with mandatory environmental regulations, but also maintain a superior level of environmental performance.

Carrying capacity. The type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in a park.

Cedar Creek and Belle Grove National Historical Park (NHP). A unit of the National Park System, created by an Act of Congress in 2002.

Community Partners. Communities in and around the park who participate with the NPS in management of the park, as identified in Section 13 of the park's enabling legislation, including: the towns of Strasburg and Middletown, Virginia, as well as Frederick, Shenandoah, and Warren counties.

Connected action. Actions that are closely related. They automatically trigger other actions that have environmental impacts, they cannot or will not proceed unless other actions have been taken previously or simultaneously, or they are interdependent parts of a larger action and/or depend on the larger action for their justification.

Cooperating agency. A federal action other than the one preparing the National Environmental Policy Act document (lead agency) that has jurisdiction over the proposal by virtue of law or special expertise and that has been deemed a cooperating agency by the lead agency. State or local governments, and/or Indian tribes, may be designated cooperating agencies as appropriate.

Cultural landscape. A geographic area (including both cultural and natural resources and the wildlife and domestic animals therein) associated with a historic event, activity or person or exhibiting other cultural or aesthetic values. There are four types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Cultural resources. Aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a cultural. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures and objects for the National Register of Historic Places, and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes.

Cumulative actions. Actions that, when viewed with other actions in the past, the present, or the foreseeable future regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.

Cumulative impact. The impacts of cumulative actions.

Desired condition. A qualitative description of the integrity and character for a set of resources and values, including visitor experiences, that park management has committed to achieve and maintain.

Developed area. An area managed to provide and maintain facilities (e.g. roads, campgrounds, housing) serving park managers and visitors. Includes areas where park development or intensive use may have substantially altered the natural environment or the setting for culturally significant resources.

Direct effect. An impact that occurs as a result of the proposed action or alternative in the same place and at the same time as the action.

Environmental consequences. The scientific and analytic basis for comparing alternatives in an environmental impact statement, based on their environmental effects, including any unavoidable adverse effects. Environmental consequences include short-term, long-term, and cumulative impacts to ecological, aesthetic, historical, cultural, economic, and social environments.

Environmental impact statement. A detailed National Environmental Policy Act document that is prepared when a proposal or alternatives have the potential for significant impact on the human environment.

Ethnographic resources. Objects and places, including sites, structures, landscapes, and natural resources, with traditional cultural meaning and value to associated peoples. Research and consultation with people identifies and explains the places and things they find culturally meaningful. Ethnographic resources eligible for the National Register are called traditional cultural properties.

Environmentally preferred alternative. Of the action alternatives analyzed, the one that would best promote the policies in NEPA Section 101.

Fundamental resources and values. Those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes, including opportunities for visitor enjoyment, determined to warrant primary consideration during planning and management because they are critical to achieving the park's purpose and maintaining its significance.

General Management Plan (GMP). A National Park Service planning document which clearly defines direction for resource preservation and visitor use in a park,

and serves as the basic foundation for decision making. GMPs are developed with broad public involvement.

Historic site. A landscape significant for its association with a historic event, activity or person.

Indicators of user capacity. Specific, measurable physical, ecological, or social variables that can be measured to track changes in conditions caused by public use, so that progress toward attaining the desired conditions can be assessed.

Impact topics. Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources is evaluated in the impact section of an EIS.

Impairment. An impact so severe that, in the professional judgment of a responsible NPS manager, it would harm the integrity of park resources or values and violate the 1916 NPS Organic Act.

Indirect impact. Reasonably foreseeable impacts that occur removed in time or space from the proposed action.

Interpretation. Activities or media designed to help people understand, appreciate, enjoy, and care for the natural and cultural environment.

Issue. Some point of debate that needs to be decided. For GMP planning purposes issues can be divided into “major questions to be answered by the GMP” (also referred to as the decision points of the GMP) and the “NEPA issues” (usually environmental problems related to one or more of the planning alternatives).

Key Partners. Organizations who participate with the NPS in management of the park, as identified in Section 13 of the park’s enabling legislation, including: Belle Grove Incorporated, Cedar Creek Battlefield Foundation, the National Trust for Historic Preservation, Shenandoah County, and the Shenandoah Valley Battlefields Foundation.

Lead agency. The agency either preparing or taking primary responsibility for preparing the National Environmental Policy Act document.

Management concept. A brief, inspirational statement of the kind of place a park should be (a “vision” statement).

Management prescription. A description of the specific resource conditions and visitor experiences along with appropriate kinds and levels of management, use, and development for each area of a park that are to be achieved and maintained over time.

Mitigation. Modification of a proposal to lessen the intensity of its impact on a particular resource.

National Historic District. (see Shenandoah Valley Battlefields National Historic District)

National Park Service (NPS). The agency in the U.S. Dept. of the Interior charged with overseeing the National Park System.

No Action Alternative. An alternative in an environmental impact statement that continues the current management direction. This alternative serves as a benchmark against which action alternatives are compared.

Notice of intent. The notice submitted to the *Federal Register* that an environmental impact statement will be prepared. It describes the proposed action and alternatives, identifies a contact person in the National Park Service, and gives time, place, and descriptive details of the agency's proposed scoping process.

Other important resources and values. Those attributes that are determined to be particularly important to park management and planning, although they are not related to the park's purpose and significance.

Park. In this GMP/EIS, the term "park" is used interchangeably with "Cedar Creek and Belle Grove National Historical Park (NHP)" to describe the area of approximately 3,471 acres designated by Congress as a unit of the national park system.

Park purpose. The specific reason(s) for establishing a particular park.

Preferred alternative. The alternative an NPS decision-maker has identified as preferred at the draft EIS stage. It is identified to show the public which alternative is likely to be selected to help focus its comments.

Primary interpretive themes. The most important ideas or concepts to be communicated to the public about a park.

Projected implementation costs. A projection of the probably range of recurring annual costs, initial one-time costs, and life-cycle costs of plan implementation.

Proposal. The stage at which the National Park Service has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal. The goal can be a project, plan, policy, program, and so forth. The National Environmental Policy Act process begins when the effects can be meaningfully evaluated.

Record of decision. The document that is prepared to substantiate a decision based on an environmental impact statement. It includes a statement of the decision made, a detailed discussion of decision rationale, and the reasons for not adopting all mitigation measures analyzed, if applicable.

Shenandoah Valley Battlefields National Historic District. The area designated by Congress in 1996 and managed by the Shenandoah Valley Battlefields Foundation to preserve and interpret the Shenandoah Valley's Civil War legacy. The counties and cities that compose the district include: Augusta, Clarke, Frederick, Highland, Page, Rockingham, Shenandoah, and Warren Counties and the cities of Harrisonburg, Staunton, Waynesboro, and Winchester, Virginia.

Significance. Statements of why, within a national, regional, and systemwide context, the park's resources and values are important enough to warrant national park designation.

Scoping. Internal NPS decision-making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of interested and affected public.

Special mandates. Legal mandates specific to the park that expand upon or contradict a park's legislated purpose.

Stakeholders. Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of the project execution/completion. They may also exert an influence over the project and its results. For GMP planning purposes, the term stakeholder includes NPS officials/staff as well as public and private sector partners and the public, which may have varying levels of involvement.

Universal design. The design of products and environments to be usable by all people to the greatest extent possible, without the need for adaptation or specialized design.

User capacity. The types and levels of visitor and other public use that can be accommodated while sustaining the desired resource conditions and visitor experiences that complement the purposes of a park.

Visitor experience. The perceptions, feeling, and interactions that visitors have with the park's environment and programs. The experience is affected by the setting, the types and levels of activities permitted, and the interpretive techniques used to convey park themes.

Acronyms

ACHP – Advisory Council on Historic Preservation

BMPs – best management practices

CBA – Choosing By Advantages

CEBE – Cedar Creek and Belle Grove National Historical Park

CEQ – Council on Environmental Quality

CFR – Code of Federal Regulations

DO – Director's Order

DSC – National Park Service Denver Service Center

EIS – Environmental Impact Statement

EO – Executive Order

EPA – U.S. Environmental Protection Agency

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

FONSI – Finding of No Significant Impact

FR – Federal Register

FTE – Full-time equivalent (staff positions)

FWS – U.S. Fish and Wildlife Service

GMP – General Management Plan

GPRA – Government Performance and Results Act

LPP – Land Protection Plan

MOA – Memorandum of Agreement

NEPA – National Environmental Policy Act

NERI – New River Gorge National River

NHPA – National Historic Preservation Act

NOA – Notice of Availability

NOI – Notice of Intent

NOAA – National Oceanic and Atmospheric Administration

NPDES – National Pollutant Discharge Elimination System

NPS – National Park Service

NRCS – U.S. Department of Agriculture Natural Resources and Conservation Service

NWI – U.S. Fish and Wildlife Service National Wetland Inventory

ONPS – Operation of National Park System

PEPC – Planning, Environment and Public Comment System

PL – Public Law

ppm – parts per million

PSA – public service area

ROD – Record of Decision

ROW – right-of-way

T&E – threatened and endangered

SHPO – State Historic Preservation Officer

SCU – Stream Conservation Unit

SIU – Sections of Independent Utility

USC – U.S. Code

USACOE – U.S. Army Corps of Engineers

USDC – U.S. Department of Commerce, Bureau of the Census

USGS – U.S. Geological Survey

USFWS – U.S. Fish and Wildlife Service

VDCR – Virginia Department of Conservation and Recreation

VDGIF – Virginia Department of
Game and Inland Fisheries

VDHR – Virginia Department of
Historic Resources

VDOT – Virginia Department of
Transportation

VOP – Virginia Outdoors Plan

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