Manassas National Battlefield Park
Virginia

National Park Service
U.S. Department of the Interior

Manassas National Battlefield Park

Final General Management Plan/Environmental Impact Statement

April 2008

Final General Management Plan and Environmental Impact Statement

MANASSAS NATIONAL BATTLEFIELD PARK

Fairfax and Prince William Counties, Virginia

This *Final General Management Plan / Environmental Impact Statement* describes and analyzes three alternatives for managing Manassas National Battlefield Park. The approved plan will help managers make decisions about managing natural and cultural resources, visitation, and development for the next 15 to 20 years. Issues that are addressed in this *General Management Plan* include commuter traffic on the portions of U.S. Route 29 and Virginia Route 234 in the park, the interpretive approach used to describe the two battles of Manassas and their role in the Civil War, and the types of facilities needed to support that approach. A separate environmental impact statement is being developed for the Manassas National Battlefield Park Bypass, which is designed to remove commuter traffic from state and federal highways in the park.

Alternative A, the no-action alternative, describes the existing conditions and current directions of park management. It serves as the basis for comparing the other alternatives and for understanding why certain changes have been proposed. This alternative proposes limited, if any, changes in interpretation and management of the park. Coordination with agencies and other groups would continue. The park would be operated and maintained as before, and there would be very little change in visitor or other park facilities. Issues would be resolved as they emerged and not as the result of a comprehensive plan. Current laws, policies, and guidelines would continue to guide resource management actions.

The two "action" alternatives describe various approaches to managing the park's resources and visitation. Both call for the removal of commuter and truck traffic from U.S. Route 29 and VA Route 234. **Alternative B (NPS Preferred Alternative)—The Two Battles of Manassas—A Comprehensive Understanding of Each Battle** proposes a future condition at the park that focuses on interpreting the two battles of Manassas as distinct military events. The visitor center at Henry Hill would orient visitors to the park as a whole and focus on the Battle of First Manassas. A separate visitor contact station would focus on the events of the Battle of Second Manassas. **Alternative C — The Defining Moments of the Battles of Manassas—An Understanding of the Principal Events** would focus on the "watershed" events of the battles, encouraging visitors towards one major visitor center and multiple interpretive sites. The existing visitor center at Henry Hill, where a portion of the first battle took place, would be removed and a new visitor center would be constructed near Stone Bridge.

The public review period on the *Draft Environmental Impact Statement* ended February 27, 2006. This final document summarizes the comments received and reflects changes made as a result of comments. The no-action period for this final plan and environmental impact statement will end 30 days after the Environmental Protection Agency has published a notice in the *Federal Register*. The course of action that would be implemented will be documented through the issuance of a record of decision once the no-action period has ended. For additional information about this plan, please contact Dr. Robert Sutton, Superintendent, Manassas National Battlefield Park.

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SUMMARY

The purpose of this *General Management Plan/ Environmental Impact Statement* is to define a direction for the management of Manassas National Battlefield Park for the next 15 to 20 years. The approved plan will provide a framework for making decisions about managing the natural and cultural resources, visitor use, development, and operations of the park so that future opportunities and problems can be effectively addressed.

This updated plan is necessary to address current issues related to commuter traffic on the portions of U.S. Route 29 and Virginia Route 234 in the park, the interpretive approach used to describe the two battles of Manassas and their role in the Civil War, and the types of facilities needed to support that approach.

ISSUES TO BE ADDRESSED

Issues addressed in this plan include the quality and amount of interpretation devoted to each of the two battles, heavy traffic on U.S. Route 29 and VA Route 234, the preservation and rehabilitation of wartime and other historic structures and sites, recreational use of the park, future operational requirements, and the relationship between current vegetation patterns and the park's overall interpretive goals.

Heavy commuter and truck traffic on the portions of U.S. Route 29 and VA Route 234 that run through the park detracts from visitor enjoyment, safety, and interpretive activities. This traffic makes it difficult for visitors to follow the automobile tour route or to visit park resources at their own pace.

Current vegetation patterns at the park are reminiscent of wartime patterns, but are often different from the exact wartime conditions that influenced the strategies and tactics of the two battles of Manassas. Rehabilitation of historic views would improve interpretive efforts, but that rehabilitation would also have effects on natural communities.

Recreation is the source of many visits to Manassas National Battlefield Park. It is important to manage this use without threatening or damaging the park's abundant cultural and natural resources or compromising its interpretive program.

The management alternatives described in this plan present challenges for park operations and maintenance. Transferring portions of U.S. Route 29 and VA Route 234 to park control, rehabilitating and maintaining cultural landscapes, and upgrading interpretive materials and activities would all generate the need for additional operational and maintenance capacity.

ALTERNATIVES

To achieve the desired conditions at Manassas National Battlefield Park, the planning team developed a "no-action" alternative (continuing present management) and two "action" alternatives for managing the resources and visitor uses of the park. Each action alternative assigns portions of the park to different management zones. The management prescription for each zone identifies how the zone could be managed to achieve desired resource conditions and visitor experiences. In each action alternative, the five management zones — including Visitor Experience/Services, Cultural Landscape Rehabilitation/Preservation, Motorized Sightseeing/Park Circulation, Recreation, and Park Operations and Maintenance — specify a combination of resource, visitor experience, and facilities conditions.

Alternative A—Continuing Current Management Principles (No Action), represents a continuation of current management direction and trends at Manassas National Battlefield Park, and serves as a baseline for comparing the resource conditions and visitor experiences prescribed by the two action alternatives. Existing conditions, trends, and management practices would be maintained with only minor changes.

Managers would continue to follow the special mandates and servicewide mandates and policies. The current, most recognizable features in the park would continue to serve as the primary focus for visitor use and interpretation. Orientation and visitor services related to both battles would continue to be offered at the Henry Hill visitor center.

Under this alternative, historical park uses and development patterns would continue in accordance with the 1983 *General Management Plan*. The main roads within the park (U.S. Route 29 and VA Route 234) would remain open to commuter and truck traffic. Current facilities at the park would be maintained, upgraded, and rehabilitated as needed. Some changes would be made to visitor use patterns to improve access to those lands added to the park since the 1983 *General Management Plan* was completed, including the Brawner Farm and Stuart's Hill tracts.

Alternative B (NPS Preferred Alternative)—The Two Battles of Manassas—A Comprehensive Understanding of Each Battle proposes a future condition at the park that focuses on interpreting the two battles of Manassas as distinct military events. Visitors would gain a thorough understanding of the first and second battles by visiting two separate visitor contact areas, each focused on one battle. These primary interpretive sites, including a visitor center and a visitor contact station, would be the two main focal points of visitor services in the park. Visitors could explore the many historic sites associated with each event throughout the park. The experience at each battlefield would be unique, with stand-alone visitor areas and automobile tour routes. Separate, chronological automobile and bicycle tours would be developed for each battle. In this alternative, the rehabilitation of the historic landscape would be critical to enable visitors to understand the events and military tactics associated with each battle.

Overall visitor experience and safety would be enhanced by the construction of the Manassas National Battlefield Park Bypass. This road would permit the removal of heavy commuter and commercial truck traffic from the portions of U.S. Route 29 and VA Route 234 that run through the park. Through-traffic would be further limited with the addition of controlled access points.

Visitors would experience a battlefield landscape that resembles its wartime appearance. Key interpretive views would be preserved and re-created to help visitors understand how the battles unfolded and the importance of certain locations. Wartime structures would be preserved and other historic structures would be retained to mark the site of wartime buildings.

Alternative C—The Defining Moments of the Battles of Manassas—An Understanding of the Principal Events would focus on the "watershed" events of the battles, encouraging visitors towards one major visitor center and multiple key interpretive sites. Interpretation of these general events, the outcomes of the battles, and the broader story of the Civil War would be emphasized over the detailed military tactics of each battle. Although other sites in the park would be accessible, the concentration of interpretation and visitor use would be in areas that illustrate the "defining" moments of the battles. Rehabilitating the historic scene in some of these areas would help visitors understand these principal events.

In alternative C, the overall reasons and strategy for the Civil War would be presented in a comprehensive way. The importance of the battles of Manassas would be presented in the overall context of the Civil War. Other stories, such as the local families and African Americans that were affected by the battles of Manassas could be interpreted in the park. The general stories and outcomes of the battles would also be presented. The existing Henry Hill visitor center would be removed, and orientation and visitor services for both battles would be carried out from a new visitor center near Stone Bridge. The visitor experience would not be highly structured and key interpretive areas could be visited without regard to order or sequence. Visitors could

tailor their visit to those elements of the battles in which they were most interested.

Key interpretive areas would explain the battle events. In these areas, historic structures would serve interpretive functions and would be accessible to visitors. Extensive interpretive displays would explain the battle events and view corridors would be developed to enhance visitor understanding of the "watershed" battle events.

Overall visitor experience and safety would be enhanced by the construction of the Manassas National Battlefield Park Bypass. This road would eliminate heavy commuter and commercial truck traffic through the park (U.S. Route 29 and VA Route 234). Through-traffic would be further limited with the addition of controlled access points.

ENVIRONMENTAL CONSEQUENCES

The planning team evaluated the potential consequences that the actions of each alternative could have on natural resources, cultural resources, the visitor experience, the socioeconomic environment, and park operations and maintenance. The beneficial or adverse effects of each alternative were categorized as either short-term or long-term, and their intensity was rated as negligible, minor, moderate, or major. The impacts of the various alternatives are compared in Table 2-3.

For **alternative A, the no-action alternative,** the presence of heavy commuter and truck traffic volumes on the portions of U.S. Route 29 and VA Route 234 that run through the park would continue to have major adverse impacts on visitor transportation within the park, and would also create adverse impacts on cultural resources, visitor experience, and the park's soundscape. This traffic would continue to cause excessive delays, making it difficult for visitors to access and use all areas of the park. In addition, visitor focus would remain on the Battle of First Manassas (First Manassas) because of the location of the visitor center and the heavy volumes of non-park vehicles that inhibit viewing many of the Battle of Second Manassas (Second Manassas) sites.

Alternative A would have negligible impacts on air quality; vegetation and wildlife; threatened, endangered, and rare species; water resources; the socioeconomic environment; and recreation. Because alternative A would not change the way that individuals access private or public property within or near park boundaries, this alternative would have a negligible impact on the socioeconomic environment. The heavy and increasing amount of non-park traffic on park roads would continue to have an adverse impact on park operations.

Under **alternative B, the preferred alternative,** the removal of non-park traffic from park roads, rehabilitation of historic vegetation patterns, removal of the existing U.S. Route 29 bridge over Bull Run, and continued preservation and rehabilitation of historic structures would have a moderate to major long-term beneficial impact on transportation and visitor experience. Interpretation related to the Battle of Second Manassas would continue to be located at the Stuart's Hill visitor contact station until it could be relocated to Brawner Farm. The use of Brawner Farm to emphasize Second Manassas would have a beneficial impact on cultural resources and visitor experience.

Controlled access points at the park entrances would contribute to the beneficial impact on transportation, cultural resources, and visitor use. This change also would have a negligible long-term impact on owners of private property within park boundaries. The construction of a new bridge and associated access road over Bull Run would have a long-term adverse impact on cultural resources and water resources, while removing the modern highway bridge on U.S. Route 29 would have a beneficial impact on the cultural landscape.

Construction activities associated with these changes would have a negligible to minor short-term adverse impact on air quality, vegetation and wildlife, and the park's

soundscape. Air quality outside the park would be adversely affected by the rerouting of traffic onto the Manassas National Battlefield Park Bypass.

Historic view rehabilitation would have a minor long-term adverse impact on some forest-based species, and a minor long-term beneficial impact on some species that inhabit grasslands and open fields. These changes would have no effect on threatened or endangered species and may affect but are not likely to adversely affect their habitats, because no supporting habitats would be disturbed. Alternative B would create negligible adverse impacts on water resources.

Enhanced recreation facilities and opportunities would create a minor long-term benefit for recreation.

Under **alternative C,** the removal of non-park traffic from park roads, removal of the existing U.S. Route 29 bridge over Bull Run, creation of a new visitor center, rehabilitation of some historic views, and continued preservation and rehabilitation of historic structures would have a major long-term beneficial impact on transportation and visitor experience.

Controlled access points at park entrances would contribute to the beneficial impact on transportation, cultural resources, and visitor use. The impact on owners of private property within park boundaries would be negligible.

The construction of a new bridge over Bull Run and associated access roads would have a long-term adverse impact on cultural resources and water resources, while removing the modern highway bridge on U.S. Route 29 would have a beneficial impact on the cultural landscape.

Construction activities associated with these changes would have a negligible to minor short-term adverse impact on air quality, vegetation and wildlife, and the park's soundscape. Air quality outside the park would be adversely affected by the rerouting of traffic onto the Manassas National Battlefield Park Bypass.

Historic view rehabilitation would have a minor long-term adverse impact on some forest-based species, and a minor long-term beneficial impact on some species that inhabit grasslands and open fields. These changes would have no effect on threatened or endangered species and may affect but are not likely to adversely affect their habitats, because no supporting habitats would be disturbed. Alternative C would create negligible adverse impacts on water resources.

Enhanced recreation facilities and opportunities would create a minor long-term benefit for recreation.

RESPONSE TO COMMENTS ON THE DRAFT PLAN

The 60-day review and comment period for the *Draft General Management Plan / Environmental Impact Statement* occurred between December 30, 2005 and February 28, 2006. The comments received have been reviewed and analyzed. Many of the comments received were at the implementation level and will be addressed in planning that will tier from this *General Management Plan*. The comments received are discussed in greater detail in the "Consultation and Coordination" chapter.

Alternative B, the preferred alternative, has been modified based on stipulations from the Commonwealth Transportation Board in its approval of the Battlefield Bypass on June 15, 2006. The Board was concerned about maintaining access on U.S. Route 29 in the event of an emergency. To address this stipulation, NPS management proposed that the modern highway bridge over Bull Run on U.S. Route 29 be removed and that a new bridge and access road be constructed farther south. This approach would

- maintain emergency access on U.S. Route 29

- remove a modern intrusion in the cultural landscape in an important area of the battlefield
- improve the visitor experience and interpretive opportunities at Stone Bridge.

The new bridge and access road were analyzed as part of alternative C in the *Draft General Management Plan / Environmental Impact Statement*.

This final plan includes agency and organization letters as well as responses to all substantive comments. This *Final General Management Plan / Environmental Impact Statement* will be distributed to the public. After a 30-day no-action period, a record of decision identifying the selected alternative (the approved plan) will be issued.

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PURPOSE OF AND NEED FOR THE PLAN

PURPOSE AND NEED

INTRODUCTION

The National Parks and Recreation Act of 1978 requires each unit of the national park system to develop a general management plan (GMP). The National Park Services' (NPS') *Management Policies: The Guide to Managing the National Park System states* "the Service will maintain an up-to-date GMP for each unit of the national park system" (Section 2.3.1, General Management Planning).

The purpose of a general management plan is to ensure that a park has a clearly defined direction for resource preservation and visitor use to best achieve the NPS' mandate to preserve resources unimpaired for the enjoyment of future generations. General management planning also makes the National Park Service more effective, collaborative, and accountable by

- ***Providing a balance between continuity and adaptability in decision making.*** Defining the desired conditions to be achieved and maintained in a park provides a touchstone that allows park managers and staff to constantly adapt their actions to changing situations while staying focused on what is most important about the park.
- ***Analyzing the park in relation to its surrounding ecosystem, cultural setting, and community.*** This helps park managers and staff understand how the park can interrelate with neighbors and others in ways that are ecologically, socially, and economically sustainable. Decisions made within such a larger context are more likely to be successful over time.
- Affording everyone who has a stake in decisions affecting a park an opportunity to be involved in the planning process and to understand the decisions that are made. National parks are often the focus of intense public interest. Public involvement throughout the planning process provides opportunities for park managers and staff to interact with the public and learn about concerns, expectations, and values. Public involvement also provides settings for park managers and staff to share information about the park's purpose and significance, address other guidelines for management, and discuss issues and constraints.

The ultimate outcome of general management planning for national parks is an agreement among the National Park Service, its partners, and the public on why each area is managed as part of the national park system, what resource conditions and visitor experience should exist there, and how those conditions can best be achieved and maintained over time.

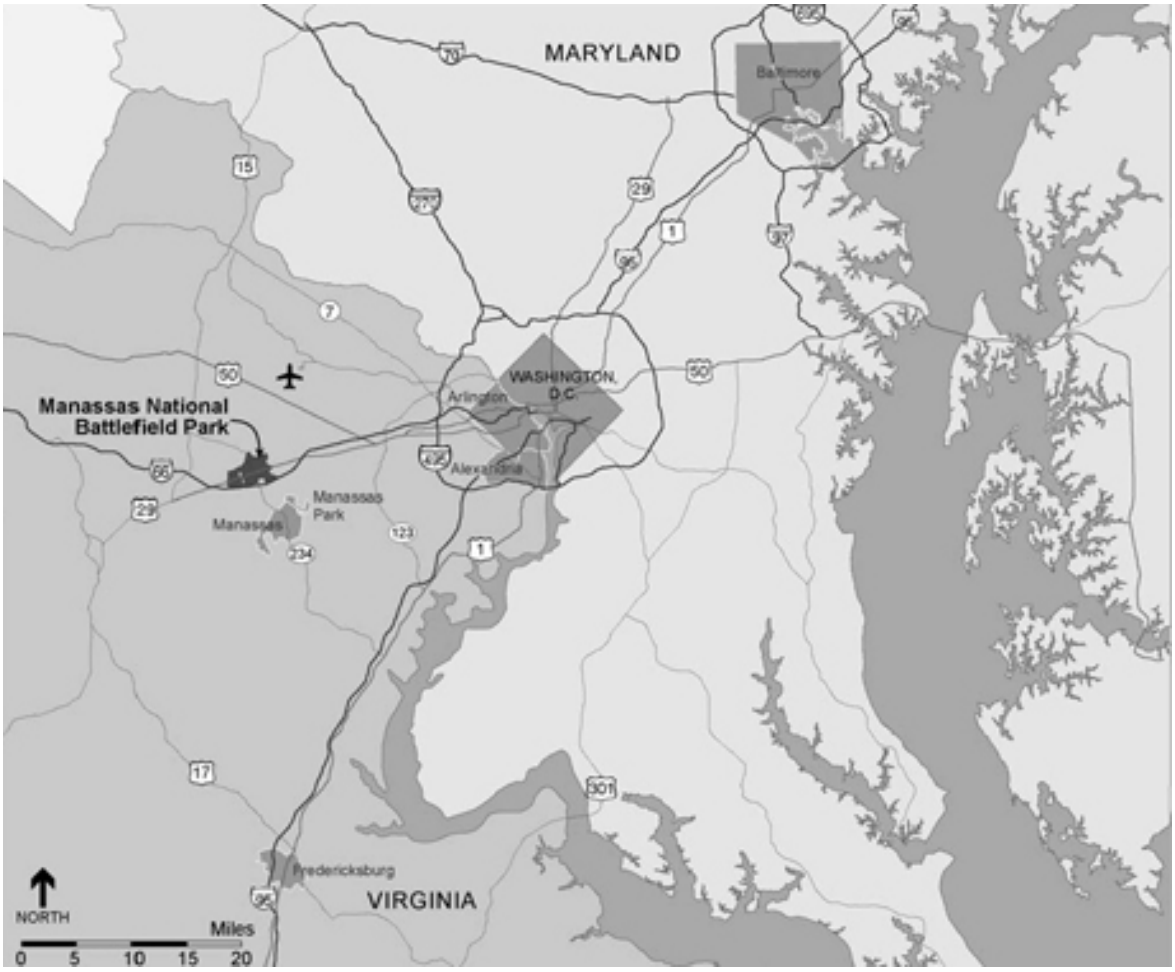
This *Final General Management Plan / Environmental Impact Statement* for Manassas National Battlefield Park presents and analyzes three alternative future directions. These include one "no-action" alternative and two "action" alternatives.

BRIEF DESCRIPTION OF THE PARK

The maps in this document are for illustration purposes only and are not drawn exactly to scale.

Because of its "historical importance as the battlefield site of the First and Second Battles of Manassas," Secretary of the Interior Harold L. Ickes designated Manassas National Battlefield Park on May 10, 1940. Subsequent legislation in 1954, 1980, and 1988 established the present park boundary to "preserve the most historically important lands relating to the two battles of Manassas."

Manassas National Battlefield Park is located in the Piedmont region of Virginia in Fairfax and Prince William Counties (see Map 1-1), approximately 25 miles west of Washington. D.C. Of the park's 5,071 acres, the federal government owns approximately 85 percent and private owners hold the remaining 15



Map 1-1: Regional Map

percent. Interstate 66 borders the park to the south and Pageland Lane (VA 705) borders the park to the west.

The park is bisected by Lee Highway (U.S. Route 29, also known by its historic names of the Warrenton Turnpike) and Sudley Road (VA Route 234). These two roads follow the basic historic road alignments used by Civil War troops (see Map 1-2). Today, they provide the main visitor access to the battlefields. The roads also receive heavy use by commuters, residents, and trucks from nearby quarries and construction operations. The heavy volumes of commuter and truck traffic create a safety problem and encroach on the visitor experience.

The farmlands and fields that historically surrounded the park are giving way to suburban Washington, D.C. While the areas to the north of the park retain some rural character, the areas south and west of the park now bustle with residential and commercial development.

The park's most important resources are the large tracts of land managed to represent the battlefield landscape as it existed at the time of the Civil War. The battlefield landscape comes under the cultural resource category of "cultural landscapes" and will be analyzed as a cultural landscape impact topic later in this document. Included in this landscape are three houses that date from the Civil War period, several post-war historic buildings, a

Map 1-2: Vicinity Map

Confederate cemetery, the reconstructed Stone Bridge over Bull Run, six miles of historic road traces, and numerous other resources, including historic structures, archeological resources, cemeteries, trenches, and earthworks. A detailed description of some of the park's cultural resources is provided in Appendix A: Description of Resources.

PURPOSE OF THE PLAN

The purpose of this *General Management Plan / Environmental Impact Statement* is to guide decision making and problem solving related to resource protection and visitor experience at Manassas National Battlefield Park. The approved plan will provide a framework for proactive decision making, including decisions on visitor use and on managing natural and cultural resources and development. This framework will allow managers to address future opportunities and problems effectively.

This plan prescribes the resource conditions and visitor experiences that are to be achieved and maintained at Manassas National Battlefield Park over time. Management decisions must be made where laws, policies,

and regulations do not provide clear guidance, or where limitations will be based on the park's purpose, resource analysis, and the evaluation of environmental consequences and costs.

This plan does not document how particular programs or projects will be implemented or prioritized. Those decisions will be made as part of more detailed implementation planning, which will be linked to the broad, comprehensive decisions presented in this plan.

NEED FOR THE PLAN

Manassas National Battlefield Park has been operating under the *1983 General Management Plan*, and the Manassas National Battlefield Park Amendments of 1988. The latter brought the Stuart's Hill tract into the park and authorized the study of alternatives for the portions of U.S. Route 29 and VA Route 234 that bisect the park. Although many elements of the original plan are still applicable, NPS planning guidance has changed since 1983, and the older plan does not address current issues, particularly those related to transportation within the park and interpretation of park resources.

The Manassas National Battlefield Park Amendments of 1988 brought into the park additional lands important to the Battle of Second Manassas (Second Manassas). They also required cooperation with state and nearby jurisdictions in protecting important historic views from within the park, and directed the National Park Service to study the relocation of two public highways.

With the acquisition of the Stuart's Hill area, the park has the opportunity to provide a more comprehensive interpretation of the Battle of Second Manassas. The alternatives presented in this plan recommend actions that may be taken to rehabilitate the historic battlefield landscape, enhance visitor understanding of the two battles, and improve the visitor experience through increased interpretive opportunities of both battles and the entire Civil War. The plan also addresses new facilities or developments required for implementing the alternatives, with a view to preserving the historic character of the battlefield.

Since 1983, the volumes of commuter and truck traffic along U.S. Route 29 and VA Route 234 have increased dramatically, creating a safety problem and diminishing the visitor experience. Concurrent with this general management planning effort, the Federal Highway Administration and National Park Service have completed the *Manassas National Battlefield Park Bypass Draft Environmental Impact Statement* (Battlefield Bypass study). The candidate alignments, including the preferred alternative, for the bypass are shown in Appendix F.

Regardless of the specific alignment, completion of the bypass will allow for the eventual closure of U.S. Route 29 and VA Route 234 within the park to through traffic. This *General Management Plan / Environmental Impact Statement* addresses internal circulation, access, and transportation concepts that can be implemented for each alternative once a new bypass is in place. All issues related to traffic impacts outside park boundaries (either from the bypass itself or from the resulting restrictions on roads in the park) are addressed in the Battlefield Bypass study.

NEXT STEPS

The purpose of a general management plan is to provide the park with an overall vision of desired future conditions as a foundation for decision making. The implementation of the approved plan for Manassas National Battlefield Park will depend on future funding and the timing of external factors such as the creation of a new bypass route. The approval of the plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the approved plan could take many years to achieve. Because the bypass could also take a long time to implement, the alternatives of this *General Management Plan* provide for interim

management strategies to address concerns of traffic congestion and visitor safety.

IMPLEMENTATION OF THE PLAN

This *General Management Plan* does not describe how particular programs or projects should be prioritized or implemented. Those decisions will be addressed during the more detailed planning associated with strategic plans and implementation plans. The implementation of the approved plan will also depend on the completion of additional feasibility studies and more detailed planning and environmental documentation related to the major actions proposed.

GUIDANCE FOR THE PLANNING EFFORT

PURPOSE AND SIGNIFICANCE

Manassas National Battlefield Park was established in 1940 to preserve the scene of two major Civil War battles. Located a few miles north of the prized railroad junction of Manassas, Virginia, this peaceful slice of the Virginia countryside bore witness to clashes between the armies of the North and South in 1861 and 1862. Descriptions and depictions of the major events of the two battles are found in Appendix B: Description of Battle Events.

The park's purpose statement describes the fundamental reasons Manassas National Battlefield Park was set aside by the Secretary of the Interior as part of the national park system. The purpose statement is the standard against which all decisions and actions are tested. It is based on the park's enabling legislation, legislative history, and NPS policies. The significance statement defines the importance of the park's resource in relevant regional, national, and international contexts and relates directly to the park's purpose and why the park was established. Knowing the park's significance helps managers set protection priorities and determine desirable visitor experiences. This significance statement describes why Manassas National Battlefield Park is a special place and explains the importance of the battle events and resources as they relate to the park's purpose.

Park Purpose

Manassas National Battlefield Park was established to preserve the historic landscape containing historic sites, buildings, objects, and views that contribute to the national significance of the Battles of First and Second Manassas, for the use, inspiration, and benefit of the public.

Park Significance

Manassas National Battlefield Park is nationally significant because it includes the locations of the Battles of First and Second Manassas. Many park resources contribute to this national significance, the public's appreciation of the battlefield events, and its understanding of the social and economic impacts of the Civil War.

- The park—which is one of only a few Civil War battlefield parks that include the majority of the actual battlefield areas where troops formed, fought, and died—provides visitors with an opportunity to experience the features that shaped the two battles. These features include historic structures, road traces, sites, and cemeteries. Historic artifacts on exhibit from the park's museum collections and archeological sites within the park represent the Battle of First Manassas (July 21, 1861) and the Battle of Second Manassas (August 28-30, 1862).
- The park contains cultural landscapes from the period of the battles (1861-1862) that contain historic features of the battles, as well as woodlands, fields, streams, rolling hills, and certain views or vistas that are representative of the physical setting that existed at the time of the battles. The park also contains cultural landscapes from the period after the battles (1865-1940) that commemorate the battles with monuments and other objects erected in memory of soldiers who fought there.

PRIMARY INTERPRETIVE THEMES

The park's primary interpretive themes focus on the events of the Battles of First and Second Manassas, as well as the way that those battles affected the surrounding community and the nation as a whole. These interpretive themes are stated below.

- The Battle of First Manassas and the Battle of Second Manassas were two major battles of the American Civil War—each unique in strategy, tactics, and consequences for the outcome of the war.
- The devastating impact of the battles on the social and economic fabric of the

community, and the history of local families is important for an understanding of the tragic dimensions of the Civil War.

- The Battles of First and Second Manassas illustrate the application and advancement of 19th century military science and technology.
- The experiences of soldiers of all ranks from both sides of the conflict provide meaningful insights into the two battles of Manassas.

The Manassas Battlefields and related features represent local, state, and national efforts to preserve and commemorate our nation's Civil War heritage.

HISTORIC CONTEXT

The two battles of Manassas are significant in the nation's history because

- The Battle of First Manassas was the first major land battle of the Civil War, and it dispelled all preconceived notions of a short war. The 900 Americans killed on the battlefield were graphic proof that Civil War would be a protracted, bloody struggle.
- The Battle of Second Manassas brought the Confederacy to the height of its power and opened the way for the first Confederate campaign into the North.

The two battles of Manassas are significant in the region's history because

- The two battles illustrate northern Virginia's role in the Civil War and teach aspects of that history to visitors from other parts of the region, the nation, and other countries.
- The park preserves a historic agrarian landscape as the setting for the two battles. This landscape is also important for its environmental quality and its role in preserving natural resources.

GOALS

Based on the park's purpose and significance, the following goals for Manassas National Battlefield Park establish the general condition of cultural and natural resources and visitor experiences desired in the future. The purpose of Manassas National Battlefield Park will be fulfilled when the following goals are achieved:

- The historic landscape is maintained in a way that gives visitors an understanding of the events of the two battles.
- Significant cultural resources of the battles and their commemoration are identified, preserved, protected, maintained, and rehabilitated where appropriate.
- Visitors learn about the battles through a variety of high-quality interpretive and educational experiences, programs, and facilities.
- All park uses and visitor experiences are conducted in a manner that is compatible with the park's purpose.
- Roads within the park are used primarily by visitors, by residents who live within park boundaries, and for park operations.
- Modern intrusions into the historic landscape are minimal.
- The park cooperates with local, state, and other national groups to protect resources and tell the stories of the battles of Manassas.
- The rural and agrarian character of views outside the park is maintained.
- Park facilities and services provide visitors with a high-quality experience and support the park's purpose.

The alternatives presented in this plan consider and explore these goals in somewhat different ways. The alternatives set forth actions to achieve these goals in a manner that is consistent with the park's purpose and significance.

SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS

In addition to the park's purpose and significance, there are federal laws and policies that shape park resource management and visitor use decisions. Some of the most relevant laws, policies, and programs include the Chesapeake Bay Agreement, Clean Air Act, Endangered Species Act, Executive Orders 11988 and 11990 regarding the management of floodplains and wetlands, National Environmental Policy Act, National Historic Preservation Act, National Park Service Organic Act, and the National Park Service Mission Goals.

In the process of preparing this *General Management Plan / Environmental Impact Statement*, the National Park Service derived its guidance from several laws and regulations. All decisions made through general management planning must fit within the broad parameters established by

- the park's particular mission and mission goals
- any special mandates or commitments that may apply to the park
- the large body of laws and policy applicable to all units of the national park system

The purpose of this section is to clarify and articulate the parameters established by special mandates, administrative commitments, and servicewide laws and policy.

Special mandates are park-specific and typically are found within the park's establishing legislation (see Appendix C: Relevant Legislation and Special Mandates). The park was designated by a secretarial order in 1940. In 1954, Congress added another 1,400 acres to the park and established a ceiling of approximately 3,000 acres for the park.

Subsequent federal legislation in 1980 raised the acreage limit to 4,525 acres and identified a specified boundary, with no provision for changes in the boundary.

The Manassas National Battlefield Park Amendments of 1988 (Public Law 100-46) expanded the park to nearly 5,100 acres and stated that the Secretary of the Interior "in consultation and consensus with the Commonwealth of Virginia, the Federal Highway Administration, and Prince William County, shall conduct a study regarding the relocation of highways (knows as routes 29 and 234) in, and in the vicinity of, the Manassas National Battlefield Park."

The act also requires the Secretary of the Interior to cooperate with the Commonwealth of Virginia and local governments "in order to promote and achieve scenic preservation of views from within the park through zoning and other means as the parties determine feasible."

Additional regulatory provisions apply in accordance with Title 36, *Code of Federal Regulations*, Chapter 1, Parts 1-7, authorized by Title 16 *United States Code*, Section 3, and the Superintendent's Compendium.

Manassas National Battlefield Park also has a partnership with the Smithsonian Institution to rehabilitate more than 100 acres of Civil War battlefield, including 45 acres of valuable wetlands in the Stuart's Hill tract. This tract contains land that was drastically altered in preparation for a mixed-use development. Alterations included re-contouring the area, constructing an entrance road, and re-configuring the drainage network in preparation for construction of a housing development. The developer also altered the hydrology and filled in wetland areas.

After years of planning and negotiations, the rehabilitation and mitigation project began in June 2003 and was completed in November 2003. It involved excavation of over 100 acres, grading back to the 1862 contours, and rehabilitating approximately 30 acres of emergent wetlands and 15 acres of forested wetlands. Upland areas were planted in native warm-season grasses, creating a habitat type that is rapidly dwindling in Virginia.

The regrading and repositioning of this section of the park reestablished within 1 meter the contours that were present during the Battle of Second Manassas of 1862. A portion of the area was used as a mitigation site for the National Air and Space Museum's Udvar-Hazy Center near Washington-Dulles International Airport, while helping the park meet its requirement to preserve historic landscape features and the integrity of the battlefield site.

SERVICEWIDE LAWS AND POLICIES

Management of national park system units is guided by numerous Congressional acts, executive orders, and specific NPS policies. As with all units of the national park system, the management of Manassas National Battlefield Park is guided by the 1916 Organic Act (which created the National Park Service); the General Authorities Act of 1970; the Act of March 27; 1978, relating to the management of the national park system; and other applicable federal laws and regulations, such as the Endangered Species Act, National Environmental Policy Act; and National Historic Preservation Act. Actions are also guided by the NPS' *Management Policies*.

Many resource conditions and some aspects of visitor experience are prescribed by these legal mandates and NPS policies. This plan is not needed to decide, for instance, to protect endangered species and archeological resources, and to provide access for visitors with disabilities. The conditions prescribed by laws, regulations, and policies most pertinent to the planning and management of the park are summarized in Table 1-1.

Table 1-1:
Servicewide Mandates and Policies Pertaining to Manassas National Battlefield Park

Natural Resources	
Air Quality	The National Park Service has the responsibility to protect air quality under both the 1916 Organic Act and the Clean Air Act. Accordingly, the National Park Service will seek to perpetuate the best possible air quality in parks to preserve natural resources and systems; preserve cultural resources; and sustain visitor enjoyment, human health, and scenic vistas Source: Clean Air Act; *Management Policies*—4.7.1 "Air Quality;" and NPS Director's Order #77, "Natural Resources Management Guidelines"
Natural Soundscape	The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks. Using appropriate management planning, superintendents will identify what levels of human-caused sound can be accepted within the management purposes of the park. Source: *Management Policies*—4.9 "Soundscape Management" and Director's Order #47, "Soundscape Preservation and Noise Management"
Vegetation and Wildlife	The National Park Service will maintain as parts of the natural ecosystem all native plants and animals in the park. The National Park Service will achieve this maintenance by (1) preserving and restoring natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur; (2) restoring native plant and animal populations and the communities in parks when they have been extirpated by past human actions; and (3) minimizing human impact on native plants, animals, populations, communities, and ecosystems and the processes that sustain them. Source: *Management Policies*—4.4 "Biological Resource Management"

Table 1-1: Servicewide Mandates and Policies Pertaining to Manassas National Battlefield Park	
Threatened and Endangered Species	The National Park Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act. The National Park Service will determine all management actions for the protection and perpetuation of federally, state-, or locally listed species through the park management planning process, and will include consultation with lead federal and state agencies as appropriate. Source: Endangered Species Act and *Management Policies*—4.4.2.3 "Management of Threatened and Endangered Plants and Animals"
Lightscape Management/ Night Sky	The National Park Service will preserve, to the greatest extent possible, the natural lightscapes of parks, which are natural resources and values that exist in the absence of human-caused light. Current policy desires a condition whereby excellent opportunities to see the night sky are available. It is desired that artificial light sources both within and outside the park do not affect opportunities to see the night sky unacceptably and adversely, and that artificial light sources should be shielded when possible. Current policy requires that artificial light sources be restricted to those areas where security, basic human safety, and special cultural resource requirements must be met. Source: *Management Policies*—4.10 "Lightscape Management"
Habitat Manipulation	In historic zones, habitat manipulation may be used to recreate a scene that is mandated by the enabling legislation of the area or the park's general management plan, or is deemed essential to the original intent for which the park was designated. For historic zones in parks where a historical perspective is not essential to the management goals or original purposes for the area, or to the intent of the enabling legislation, the area should be managed as a natural area to the largest extent possible, consistent with Sections 106 and 110 of the National Historic Preservation Act. Source: NPS Director's Order #77, "Natural Resources Management Guidelines"
Soils	The National Park Service actively seeks to understand and preserve the soil resources of the park, and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources. Natural soil resources and processes function in as natural a condition as possible, except where special considerations are allowable under policy. Source: *Management Policies*—4.8.2.4 "Soil Resource Management"
Topography and Geology	The park's geologic resources are preserved and protected as integral components of the park's natural systems. Source: *Management Policies* and NPS Director's Order #77, "Natural Resources Management Guidelines"
Water Resources/ Water Quality	Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards. NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater. Source: Clean Water Act; Executive Order (EO) 11514, "Protection and Enhancement of Environmental Quality;" *Management Policies*; and Director's Order #77, "Natural Resources Management Guidelines"
Floodplains	Natural floodplain values are preserved or restored. Long- and short-term environmental effects associated with the occupancy and modification of floodplains are avoided. When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain or where the floodplain will be affected, the Director's Order #77-2 guides National Park Service procedures, including: • Preparing and approving a statement of findings (SOF); • Using nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains; • Ensuring that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 Code of Federal Regulations 60). Source: EO 11988, "Floodplain Management;" Rivers and Harbors Act; *Management Policies*; and Director's Order #77-2, "Floodplain Management"

Table 1-1: Servicewide Mandates and Policies Pertaining to Manassas National Battlefield Park	
Wetlands	The natural and beneficial values of wetlands are preserved and enhanced. The National Park Service implements a "no net loss of wetlands" policy and strives to achieve a longer-term goal of net gain of wetlands across the national park system through the restoration of previously degraded wetlands. The National Park Service avoids to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and avoids direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The National Park Service compensates for remaining unavoidable adverse impacts on wetlands by restoring wetlands that have been previously degraded. Source: Clean Water Act; EO 11990, "Protection of Wetlands;" *Management Policies*; and Director's Order #77-1, "Wetland Protection"
Cultural Resources	
Archeological Resources	Archeological sites are identified and inventoried and their significance is determined and documented. Research is conducted to support interpretation and resource management. Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site is professionally documented and excavated and the resulting artifacts, materials, and records are curated and conserved in consultation with the Virginia State Historic Preservation Office and American Indian tribes. Some archeological sites that can be adequately protected may be interpreted to visitors. Source: National Historic Preservation Act of 1966, as amended (16 *United States Code* 470); Archeological Resources Protection Act; the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (36 *Code of Federal Regulations* 800); *Management Policies*; and Director's Order #28, "Cultural Resource Management Guideline"
Cultural Landscapes	Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the National Register, and to assist in future management decisions for landscapes and associated resources, both cultural and natural. The management of cultural landscapes focuses on preserving the landscape's physical attributes, biotic systems, and use when that use contributes to its historical significance. The preservation, rehabilitation, restoration, or reconstruction of cultural landscapes is undertaken in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings. Source: National Historic Preservation Act of 1966, as amended (16 *United States Code* 470); Advisory Council on Historic Preservation's implementing regulations regarding the Protection of Historic Properties (36 *Code of Federal Regulations* 800); Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings; *Management Policies*; and Director's Order #28, "Cultural Resources Management Guideline"
Museum Collections and Archives	All museum collections and archives (artifacts, objects, specimens, manuscript collections, other documents, and photographs) are identified and inventoried, catalogued, documented, preserved, and protected, and provision is made for their access to and use for exhibits, research, and interpretation. The qualities that contribute to the significance of collections are protected in accordance with established standards. Source: National Historic Preservation Act of 1966; American Indian Religious Freedom Act of 1978; Archeological and Historic Preservation Act of 1974; Archeological Resources Protection Act of 1979; Native American Graves Protection and Repatriation Act of 1990; *Management Policies*; NPS *Museum Handbook*; and Director's Order #28, "Cultural Resource Management Guideline"

Table 1-1: Servicewide Mandates and Policies Pertaining to Manassas National Battlefield Park	
Historic Structures	Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities that contribute to the listing or eligibility for listing of historic structures in the National Register are protected in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable). Source: National Historic Preservation Act of 1966, as amended (16 *United States Code* 470); Archeological and Historic Preservation Act; Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (36 *Code of Federal Regulations* 800); *Management Policies*; and Director's Order #28, "Cultural Resource Management Guideline"
Ethnographic Resources	Ethnographic resources are variations of natural resources and standard cultural resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users. Certain contemporary American Indian and other communities are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of NPS resources with which they are traditionally associated. Recognizing that its resource protection mandate affects this human use and cultural context of park resources, the National Park Service plans and executes programs in ways to safeguard cultural and natural resources while reflecting informed concern for contemporary peoples and cultures traditionally associated with them. Source: National Historic Preservation Act of 1966, as amended (16 *United States Code* 470); Advisory Council on Historic Preservation implementing regulations; *Management Policies*; Director's Order #28, "Cultural Resource Management Guideline"; Executive Order 13007, "American Indian Sacred Sites;" American Indian Religious Freedom Act; and Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (36 *Code of Federal Regulations* 800)
Socioeconomic Environment	
Visitor Use and Experience	Park resources are conserved unimpaired for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the park. No activities occur that would cause derogation of the values and purposes for which the park has been established. For all zones, districts, or other logical management divisions within a park, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas. Park visitors will have opportunities to understand and appreciate the significance of the park and its resources, and to develop a personal stewardship ethic. To the extent feasible, programs, services, and facilities in the park are accessible to and usable by all people, including those with disabilities. Source: NPS Organic Act; National Park System General Authorities Act; *Management Policies*; Architectural Barriers Act Accessibility Standards (ABAAS), May 2006; Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities (28 *Code of Federal Regulations* 36); Uniform Federal Accessibility Standards of 1984 (UFAS); U.S. Access Board Draft Accessibility Guidelines for Outdoor Developed Areas of 1999; *Management Policies*; Director's Order #42, "Accessibility for Visitors with Disabilities in NPS Programs, Facilities, and Services;" Rehabilitation Act of 1973; and Secretary of the Interior's regulation 43 *Code of Federal Regulations* 17, "Enforcement on the Basis of Disability in Interior Programs"
Environmental Justice	Federal agencies are required to assess whether their actions have disproportionately high and adverse human health or environmental effects on minority and low-income populations. Source: National Environmental Policy Act; Director's Order #12, "Conservation Planning, Environmental Impact Analysis, and Decision-making;" Council on Environmental Quality regulations; and Executive Order 12989, "Environmental Justice in Minority and Low-Income Populations"

Table 1-1: Servicewide Mandates and Policies Pertaining to Manassas National Battlefield Park	
Other Topics	
Land Protection	The National Park Service is required by the Organic Act to protect and preserve unimpaired the resources and values of the national park system while providing for public use and enjoyment. When acquisition is necessary and appropriate, the National Park Service will acquire those lands and/or interests as promptly as possible. Land protection plans are prepared to determine and publicly document what lands or interests in land need to be in public ownership, and what means of protection are available to achieve the purposes for which the national park was created. Source: *Management Policies*—3.0, "Land Protection"
Sustainable Design / Development	The National Park Service and concessioner visitor management facilities are harmonious with park resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy-efficient, and cost-effective. All decisions regarding park operations, facilities management, and development in the park, from the initial concept through design and construction, reflect principles of resource conservation. Thus, all park developments and park operations are sustainable to the maximum degree possible and practical. New developments and existing facilities are built and modified according to the *Guiding Principles of Sustainable Design* (1993) or other similar guidelines. Management decision-making and activities throughout the national park system use value analysis, which is mandatory for all Department of the Interior bureaus, to help achieve this goal. Value planning, which may be used interchangeably with value analysis, value engineering, or value management, is most often used when value methods are applied on general management or similar planning activities. Source: *Management Policies*; Executive Order 13123, "Greening the Government through Efficient Energy Management;" Executive Order 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition;" NPS *Guiding Principles of Sustainable Design*; Director's Order #13, "Environmental Leadership;" and Director's Order #90, "Value Analysis"
Transportation	Visitors have reasonable access to the park, and there are connections from the park to regional transportation systems as appropriate. Transportation facilities in the park provide access for the protection, use, and enjoyment of park resources. They preserve the integrity of the surroundings, respect ecological processes, protect park resources, and provide the highest visual quality and a rewarding visitor experience. The National Park Service participates in all transportation planning forums that may result in links to parks or impact park resources. Working with federal, tribal, state, and local agencies on transportation issues, the National Park Service seeks reasonable access to parks, and connections to external transportation systems. Source: NPS *Transportation Planning Guidebook*, *Management Policies*

RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS GENERAL MANAGEMENT PLAN

Manassas National Battlefield Park is located in Prince William and Fairfax Counties, Virginia. Properties surrounding the park are primarily privately owned residential and agricultural lands. There are a few commercial and state-owned parcels near the park. There are no tribal lands nearby.

Several federal, state, and local plans, either underway or recently completed, will affect conditions at Manassas National Battlefield Park. Many of these plans involve new or altered transportation facilities in the vicinity of the park.

Other relevant planning efforts include visitor surveys and interpretation plans. These plans are described in detail below.

- ***Manassas National Battlefield Park Bypass Environmental Impact Statement (Battlefield Bypass Study), Federal Highway Administration and National Park Service:*** This study evaluates a variety of transportation improvement alternatives in the vicinity of the Manassas National Battlefield Park to alleviate traffic and congestion within the park. The study area for the project covers portions of Prince William, Loudoun, Fairfax, and Fauquier Counties, the Cities of Manassas and Manassas Park, and the Town of Haymarket. These efforts would improve circulation and visitor experience within the park by removing commuter and truck traffic from the state and federal highways in the park.
- The Manassas National Battlefield Park Amendments of 1988 and Federal Highway Administration policy required the Prince William and Fairfax County Boards of Supervisors and the Commonwealth Transportation Board to approve a bypass alternative. All of these entities have approved Alternative D, modified. The Federal Highway Administration and National Park Service are in the process of developing a final environmental impact statement and record of decision (see Appendix F).
- ***Interstate 66 Multimodal Transportation and Environmental Study (I-66 Study), Virginia Department of Transportation:*** The Virginia Department of Transportation and Virginia Department of Rail and Public Transportation have initiated the study for improving mobility along the I-66 corridor from just west of the I-66/Capital Beltway (I-495) interchange in Fairfax County to the I-66/U.S. Route 15 interchange in Prince William County (approximately 24 miles). This study will examine possible improvements to I-66, Metrorail, Virginia Railway Express, and express bus service. Transportation improvements to this corridor are necessary to enhance safety and to provide increased capacity for current and projected future travel demands.
- ***Tri-County Parkway Location Study and Environmental Impact Statement (Tri-County Parkway Study), Virginia Department of Transportation:*** The Tri-County Parkway location study team is evaluating a new north/south transportation link in northern Virginia to connect the City of Manassas with I-66 and the Loudoun County Parkway in the Dulles area. The Tri-County Parkway would be approximately 10 miles long, traversing portions of Prince William, Fairfax, and Loudoun Counties, along with the Cities of Manassas and Manassas Park. The concept for a Tri-County Parkway is identified in the Northern Virginia 2020 Transportation Plan and in the comprehensive plans for Fairfax, Loudoun, and Prince William Counties.
- On November 17, 2005, the Commonwealth Transportation Board approved the "West 2" alignment for the

Tri-County Parkway. This alignment runs essentially parallel to the Bypass Alternative D, modified, along the west side of the battlefield. The Tri-County Parkway and the Battlefield Bypass will be built in the corridor on the same roadway.

- ***VA Route 234 Bypass North, Federal Highway Administration:*** This is the remaining section of the 10-mile VA Route 234 Manassas Bypass. In 1997, the Virginia Department of Transportation opened 5.3 miles of the road from I-66 to VA Route 28. Construction has not yet begun on the Bypass North.
- ***Manassas National Battlefield Park Transportation Study, June 1996, National Park Service:*** This study examined the operational and safety characteristics of the traffic and parking conditions within the park. It identified several parking areas that were over capacity, as well as roads and intersections that posed the greatest safety risk to park visitors.
- ***The Comprehensive Interpretive Plan for Manassas National Battlefield Park, In Process, National Park Service:*** The park staff is in the process of building on the recommendations developed in the 1994 interpretive prospectus for Manassas National Battlefield Park. The park staff reaffirmed the park significance statements and interpretive themes. Based on this work, park staff and their partners have developed an array of desired visitor experience goals that will guide the development of interpretive media, exhibits, and facilities. The park staff expects to complete the comprehensive interpretive plan in the fall of 2007.
- ***Manassas National Battlefield Park Wildland Fire Management Plan, National Park Service:*** This plan guides the decision-making process where safety, social, political, and resource values are evaluated, and appropriate management response strategies are identified. It is used to provide a framework for fuels management strategies through the use of prescribed fire and mechanical treatments, and to provide a basis from which to cooperate more fully in planning and implementing a wildland fire program across agency boundaries.
- ***Manassas National Battlefield Park Visitor Study, summer 1995, University of Idaho:*** This report summarizes the results of visitor surveys and helps the park staff refine visitor services, facilities, and interpretation.

PLANNING ISSUES/CONCERNS

INTRODUCTION

Several planning-related issues were raised by park staff and the public in meetings, newsletter responses, and discussions with staff from other agencies and organizations. Planning issues are derived from an examination of the full range of comments and ideas solicited from park staff, other agencies, special interest groups, and the general public during scoping. An understanding of the park mission and important planning issues helped the planning team develop potential management alternatives that respond to current and future resource and visitor experience conditions.

The following summary encompasses the full range of planning issues identified during scoping. The issues generally fall into two categories: comments most appropriately addressed by a general management plan, and non-general management planning issues, non-planning issues or those issues most appropriately addressed in other plans.

PLANNING ISSUES ADDRESSED IN THIS GENERAL MANAGEMENT PLAN

Orientation and Visitor Services

Manassas National Battlefield Park was the site of two key battles during the Civil War. However, the two Manassas battles receive unequal interpretive treatment at the park. Visitation is concentrated at the visitor center on Henry Hill, the focal point of the events of the Battle of First Manassas (First Manassas). Due in part to initial park boundaries that did not include much of the contested ground of Second Manassas, more limited interpretive efforts have been devoted to that battle. The addition of lands associated with Second Manassas offers the park the opportunity to present the full story of this battle.

Inadequate or antiquated interpretive media, a hazardous and complicated driving tour route, congested roads, and limited vehicular access have adversely affected the visitor experience and interpretation in the park. Maintenance and appropriate location of equestrian trails is also important to the community.

Historic Cultural Landscapes

Like many Civil War battlefields, Manassas National Battlefield Park is much more heavily wooded now than during the war. However, portions of the park still retain their wartime appearance. The continuity of agrarian patterns from the 19th century period of the two battles of Manassas through the 20th century establishment of the park, as well as the fact that major road alignments (such as U.S. Route 29 and VA Route 234) generally follow their wartime alignments, have helped the park keep its Civil War-era atmosphere. Unfortunately, the heavy traffic on these roads makes interpretation of some of the battle stories difficult and inhibits visitor appreciation of the historic battlefield landscape.

The 1988 boundary adjustments mandate cooperation with state and local governments to promote the preservation of views from within the park. The park staff has worked closely with nearby jurisdictions to protect these vistas. However, continued rapid population growth in the Manassas area, accompanied by commercial and residential development in surrounding communities, intrudes on the historic setting of the battlefield. Such development already separates the battlefield from the area of the historic Manassas Junction and threatens eventually to disrupt historically significant views. The prospect of tall buildings on the periphery of the battlefield threatens the NPS' attempts to maintain a sense of place and contemplative atmosphere for visitors.

Traffic and Transportation

Two heavily traveled highways, U.S. Route 29 and VA Route 234, bisect the park and

intersect in the heart of the battlefield. These two roads, known during the Civil War as Warrenton Turnpike and Sudley Road, respectively, generally follow their wartime alignments and provide visitor access to much of the park. The current use of these roads as commuter and commercial truck traffic routes conflicts with public safety and enjoyment of the park.

In the Manassas National Battlefield Park Amendments of 1988, Congress authorized $30 million for a traffic study and subsequent highway construction to reroute commuter traffic away from the portions of U.S. Route 29 and VA Route 234 that traverse the park. Although construction monies have not been appropriated to date, monies were allocated for the Battlefield Bypass study, which examined candidate alignments for a bypass in the vicinity of the park to reroute traffic from these two roadways. The Federal Highway Administration and National Park Service as co-lead agencies, and the Virginia Department of Transportation as a cooperating agency, have completed the public draft of the Battlefield Bypass study and have developed a preferred bypass alternative route.

This *General Management Plan / Environmental Impact Statement* addresses internal transportation and circulation issues related to visitor experience, understanding, and safety, as well as resource protection. The two action alternatives presume a future where the Battlefield Bypass is in place, and park roads are closed to through traffic and are used primarily for park purposes.

Historic Structures and Sites

The Stone House and Lucinda Dogan House were altered after the Civil War with additions and interior modifications. These two structures are the only surviving wartime buildings to have been rehabilitated to their 1860s appearance. A third wartime building, the Thornberry House, named after the wartime owner and also known as the Sudley Post Office after the war, also underwent some alteration after the Civil War and has been rehabilitated for visitor use. These three houses are the only surviving wartime buildings in the park.

The park's List of Classified Structures includes 40 structures, which include buildings, roads, monuments, and a bridge.[1] Planning issues involve determining the appropriate level of stabilization or rehabilitation for the surviving wartime buildings and other historic structures. To the extent feasible, the surviving wartime buildings should be accessible to all visitors, including those with disabilities.

Trail Management

The park includes an extensive network of pedestrian and bridle trails. The trails provide access to most points of interpretive interest, but the size and complexity of the network has proved confusing to visitors. Bicycles are not permitted on trails or unpaved roads unless they are being used by trained, commissioned law enforcement personnel in performance of their duties. Adequate trail maintenance can be affected by park operations funding levels that fluctuate annually. To the extent feasible, trails should be made accessible to visitors with disabilities.

Recreation

As the regional population grows, surrounding land is developed, and open space decreases, the National Park Service faces increased pressure to open the battlefield to active recreational uses. The NPS' *Management Policies* (Section 8.1.1) state that the National Park Service "will only allow uses that are (1) appropriate to the purpose for which the park was established, and (2) can be sustained without causing unacceptable impacts. Recreational activities and other uses that would impair a park's resources, values, or purposes cannot be allowed."

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[1] The List of Classified Structures includes structures that have "historical, architectural, and/or engineering significance within parks of the national park system in which the National Park Service has, or plans to acquire, any legally enforceable interest" (NPS 2004).

Because many forms of recreation do not require a national park setting, the National Park Service will provide opportunities for forms of enjoyment that are "uniquely suited and appropriate to the superlative natural and cultural resources found in the parks."

Based on Section 8.2 of the NPS' *Management Policies*, visitor activities that will be encouraged are those that

- are appropriate for the purpose for which the park was established; and
- are inspirational, educational, or healthful, and otherwise appropriate to the park environment; and
- will foster an understanding of and appreciation for park resources and values, or will promote enjoyment through a direct association with, interaction with, or relation to the park resources; and
- can be sustained without causing unacceptable impacts to park resources or values.

For the purposes of the NPS' *Management Policies*, unacceptable impacts are impacts that, individually or cumulatively, would

- be inconsistent with the park's purposes or values, or
- impede the attainment of a park's desired conditions for natural and cultural resources as identified through the park's planning process, or
- create an unsafe or unhealthy environment for visitors or employees, or
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- unreasonably interfere with
- park programs or activities, or
- an appropriate use, or
- an atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park, or
- NPS concessioner or contractor operations or services.

In addition to any applicable state licenses and permits that may be required, a special-use permit from the park superintendent is required for certain visitor activities, such as weddings, wreath laying ceremonies, and organized equestrian events. Meanwhile, the park treats some accepted activities, such as organized events, as special events and manages them according to the criteria and procedures of the *Special Park Uses Guideline* (NPS-53). Recreational activities such as picnicking and fishing (with a valid permit) are typically permitted in specified areas of the park, while swimming and the use of bicycles on unpaved roads are typically prohibited. These prohibitions and permissions change periodically, and are outlined in the annual *Superintendent's Compendium*.

Boundaries

The 1980 boundary legislation prohibits the Secretary of the Interior from changing the boundaries of the park. Unlike other units of the national park system that have legislative authority under Section 7(c) of the Land and Water Conservation Fund Act of 1965 and the National Parks Omnibus Management Act of 1998 to enter into minor boundary adjustments, Public Law 96-442 specifically prohibits Manassas National Battlefield Park from arranging any boundary adjustments without legislation by Congress.

This planning process has identified several specific parcels of land outside the legislative boundary that are of special importance and cultural value to Manassas National Battlefield Park, that contribute to its historic battlefield landscape, and that meet NPS criteria for boundary adjustments (*Management Policies*, Sections 3.5 through 3.7). These parcels of land are described under alternatives B and C as part of the proposals for each of these action alternatives.

Cooperative Efforts in Interpretation and Preservation

Some historic resources related to the Manassas battles lie outside park boundaries and face an uncertain future. Manassas National Battlefield Park recently expanded its National Register of Historic Places boundary to incorporate many of the historic sites and structures directly adjacent to the park. Expanded cooperation is needed between federal, state, and local agencies and private groups and organizations to help preserve and interpret these important Civil War resources. Specific partnership opportunities would be developed in the activities that tier off this *General Management Plan*.

Carrying Capacity

There are three principal components that relate to determining the carrying capacity for a national park

- Ecological or physical capacity, which includes the capabilities of the natural and cultural resources to sustain levels of visitor use without unacceptable damage.
- Sociological carrying capacity, which includes the ability of visitors to enjoy and appreciate these resources without undue interference by other visitors.
- NPS management, which includes the efforts that have been, or can be applied to the park to mitigate unwanted impacts. This relates to the management of features such as roads, parking lots, buildings, trails, and visitor information.

Table 1-2 summarizes the desired conditions, indicators, and standards that the National Park Service will use to ensure that the carrying capacity of Manassas National Battlefield Park is not exceeded. The park does not currently have a quantitative system for measuring carrying capacity, and relies instead on qualitative observations about the use and crowding of various park resources.

Congested traffic on the portions of U.S. Route 29 and VA Route 234 that bisect the park influences carrying capacity, as well as the park's ability to measure that capacity. While visitation counts are taken at specific locations such as the visitor center or visitor contact station, the overall number of non-park trips on the highways makes it difficult to obtain accurate visitation information for the park.

Non-park traffic and limited staff availability make it difficult for the park staff to maintain a system of quantitative indicators and standards. Thus, many of the indicators and standards in Table 1-2 are constructed in a way that enables qualitative measurement by park staff as part of their ongoing duties.

With the exception of museum display, storage, and curation space, which are already reaching capacity, Manassas National Battlefield Park does not presently approach its carrying capacity. This statement reflects the patterns of use observed by park staff in recent years.

The park does experience, and will continue to have, limited occurrences of crowding at certain locations during certain times of the year. Specifically, the area near Stone Bridge tends to be crowded during fair-weather weekends in the spring and autumn. The park superintendent deems this situation acceptable because such occurrences are rare, the entire park does not experience crowding, and no appreciable damage is done to natural and cultural resources.

The park staff will periodically review and, if necessary, update the indicators and standards described in Table 1-2. If visitation (regardless of how it is measured) increases sharply, or if staff members observe other activity that indicates a potential lack of capacity, the park staff may choose to implement more specific indicators and standards.

ISSUES IDENTIFIED THAT ARE NOT GENERAL MANAGEMENT PLAN-LEVEL ISSUES

During public involvement, from 1996 through 2003, issues were identified by the public that are not considered general management

Table 1-2: Carrying Capacity Indicators and Standards		
Visitor Experience and Services	Desired Condition	Visitors will be able to obtain park information, orientation, and services and will be able to access cultural resources and interpretive materials, exhibits, and sites without experiencing frequent delays. Museum space will be adequate to accomplish the park's interpretive goals.
	Indicator	The number of times per year that the visitor center, Second Manassas visitor contact station, and major interpretive sites and parking lots at sites such as Stone Bridge and Henry Hill experience crowding, and the magnitude of that crowding. The amount of space available for museum activities, including laboratory space and storage of park records and digital files.
	Standard	Visitors will experience crowded conditions a few times per year. These will occur primarily during the spring and autumn, and only at a limited number of locations such as Stone Bridge. During these peak periods, visitors will still be able to find uncrowded conditions in other areas of the park. The park will have museum space that is adequate to accomplish its interpretive goals.
Circulation and Parking	Desired Condition	Visitors will be able to follow the park's tour routes (via automobile or bicycle) and use the park's parking lots while experiencing no more than moderate traffic congestion and rare parking difficulties.
	Indicator	The number of times per year that tour routes and other park roads experience delays because of excess visitor traffic; the number of times per year that parking lots are full for an extended period of time. It is understood that, unless and until the portions of U.S. Route 29 and VA Route 234 that traverse the park are closed to non-park traffic, the NPS' ability to measure this indicator is limited. The current levels of non-park traffic on these routes mean that NPS staff can only observe traffic on other park roads and can only observe parking crowding at lots not located along U.S. Route 29 and VA Route 234.
	Standard	Visitors will experience crowded conditions (heavy traffic congestion and a lack of parking) a few times per year. These will occur primarily during the spring and autumn, and only at a limited number of locations such as Stone Bridge. During these peak periods, visitors will still be able to find uncrowded road conditions and parking lots in other areas of the park.
Recreation	Desired Condition	Visitors participating in approved recreational activities will be able to enjoy the park's natural and cultural resources without causing damage to those resources.
	Indicator	Damage to natural habitats, cultural resources, interpretive materials, or historic landscapes because of activities such as horseback riding or picnicking.
	Standard	"Social trails," which are undesignated trails created by repeated use, will not occur.
Park Operations and Maintenance	Desired Condition	The National Park Service will have adequate staff and resources to perform needed maintenance and management activities, and will do so without causing undue distraction to visitors.
	Indicator	The ability of staffing levels, maintenance facilities, resources, and supplies to meet park needs; the number and severity of visitor concerns and comments about operations and maintenance activities.
	Standard	Staffing and resources will not delay or prevent normal operation and maintenance activities; visitor concerns and comments about operations and maintenance activities will not increase in frequency or severity.

plan-level issues. These issues include items that might be accomplished in other plans, and items that are not planning issues.

This *General Management Plan* establishes a management philosophy for the battlefield and determines appropriate uses and conditions for park resources. Subsequent planning will address detailed design, operations, and maintenance issues. Issues identified by the public that might be addressed in other plans include

- treatment of specific park signs
- architectural/preservation treatments of specific structures
- management of equestrian trails and users
- interpretation specific to individual sites or techniques, such as living history
- transportation using shuttle buses

Items that are not considered planning issues and cannot be addressed by this plan include

- development and economic growth in the region and around the park
- restrictions on hunting outside the park
- enhanced volunteer programs
- links between the park and the historic City of Manassas

IMPACT TOPICS (RESOURCES AND VALUES AT STAKE DURING THE PLANNING PROCESS)

The Council on Environmental Quality guidelines for implementing the National Environmental Policy Act (NEPA) require that the description of the affected environment must focus on describing the resources that could be affected by implementation of the alternatives. Impact topics were developed to focus the environmental analysis and to ensure that alternatives were evaluated against relevant topics.

Impact topics are resources of concern that could be affected, either beneficially or adversely, by the range of alternatives. These impact topics were identified based on federal laws and other legal requirements, the Council on Environmental Quality guidelines, the NPS' *Management Policies*, park subject-matter experts, knowledge of limited or easily impacted resources, and issues or concerns expressed by other agencies or the public during scoping. A brief rationale for the selection of each impact topic is given below, as are reasons for dismissing topics from further consideration.

The exact footprints and locations of proposed development under the alternatives have not been developed for this *General Management Plan*. Therefore, site-specific impacts will be evaluated and appropriate environmental compliance will be completed during the design stage. Similarly, acreage estimates associated with forest removal or scene rehabilitation under the alternatives are presented for comparative purposes only. Although these acreages are representative of the magnitude of change expected, further refinement of the actual boundaries of the historic scene rehabilitation areas would occur based on more precise field surveys.

The impact topics retained for detailed study are explained below.

NATURAL RESOURCES

Air Quality

The Manassas National Battlefield Park is within Virginia Air Quality Control Region VII, which is a nonattainment area for ozone. Section 118 of the Clean Air Act requires federal facilities to comply with all federal and state air quality standards and regulations, while Section 176 of the act requires federal facilities to conform to state programs designed to attain and maintain those standards. The alternatives under consideration could have an effect on air quality because of the changes to the transportation patterns and use of the park roads; therefore, this document analyzes air quality in more detail.

The park's location in an air quality nonattainment area could create opportunities for inter-agency cooperation and funding that could be used to alleviate traffic and its associated noise.

Soundscape

The NPS' *Management Policies* and Director's Order #47, "Soundscape Preservation and Noise Management" recognize that natural soundscapes are park resources and call for the National Park Service to preserve natural soundscapes. The existing commercial and commuter vehicular traffic within the park greatly influences the soundscape, adversely impacting the visitor experience; therefore, this document analyzes soundscape management in more detail.

Vegetation and Wildlife

The Manassas National Battlefield Park supports a wide array of plants and animals. The Organic Act and the NPS' *Management Policies* require the National Park Service to protect and conserve native plant and animal populations that could be affected by visitors or park actions. Changes in plant populations

and wildlife habitat could occur because of proposed actions, such as the forest clearing and battlefield scene rehabilitation; therefore, this document analyzes vegetation and wildlife in more detail.

Many parks in developed areas also realize that, because their natural resources have been protected from development over time, they have become "islands" for many native species of plants and animals. This realization substantially broadens previous thinking about such parks as solely "cultural parks," and is another reason to retain vegetation and wildlife as an impact topic.

Threatened, Endangered, and Rare Species and Natural Communities

The Endangered Species Act requires federal agencies to ensure their activities will not jeopardize existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. Consultation with the U.S. Fish and Wildlife Service and state resource agencies and review of past studies identified a number of special status species. This document analyzes threatened, endangered, and rare species and natural communities in more detail to determine if the alternatives could have an effect on listed species.

Water Resources (Water Bodies, Water Quality, Wetlands, and Floodplains)

The actions necessary to fulfill the management prescriptions proposed under the two action alternatives could potentially impact water quality, wetlands, stream bank stability, and floodplains. Proposed actions such as the removal of the modern U.S. Route 29 bridge, scene rehabilitation, and construction of a replacement bridge over Bull Run are activities that would have impacts on water resources. Therefore, this document analyzes water resources in more detail.

CULTURAL RESOURCES

Cultural Resources (Historic Structures, Cultural Landscapes, and Archeological Resources)

The consideration of impacts on cultural resources is required by the National Historic Preservation Act of 1966 as amended; the National Environmental Policy Act of 1969 as amended; Director's Order #28, "Cultural Resource Management Guideline"; the NPS' *Management Policies*; and *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making*. Actions proposed in this plan could affect archeological resources, cultural landscapes, and historic structures. Therefore, this document analyzes cultural resources in more detail.

Ethnographic resources, which are also considered cultural resources, are included among those topics dismissed from further consideration, as described later in this chapter.

Museum Collections and Archives

The museum collections at Manassas National Battlefield Park embody a wide range of materials. The present onsite museum collections and archive facilities are nearing capacity. The anticipated growth of the collection will eventually require more museum objects being stored offsite at the Museum Resource Center and additional space to accommodate museum records and electronic media. Both of the action alternatives would affect museum collections and archives in the park. For this reason, this document analyzes museum collections and archives in more detail.

TRANSPORTATION/TRAFFIC

The visitor experience at the park is adversely affected by current traffic levels on U.S. Route 29 and VA Route 234. During public scoping, concerns were raised regarding the potential effect that the removal of the U.S. Route 29 bridge over Bull Run and controlled access at

the other park entrances could have on emergency response. Safety associated with the transportation system is also considered under the transportation impact analysis. Therefore, this document analyzes transportation/traffic in more detail.

SOCIOECONOMIC ENVIRONMENT

The controlled access at park entrances along U.S. Route 29 and VA Route 234 would affect nearby residents and businesses. Therefore, this document analyzes socioeconomic impacts in more detail.

RECREATION

Improvements and additions to the hiking and bridle trails would affect park recreation and the types of recreational opportunities available to visitors. Therefore, this document analyzes recreation in more detail.

VISITOR EXPERIENCE

Visitor experience was identified as an important issue that could be appreciably affected by the alternatives. The Organic Act and the NPS' *Management Policies* direct the National Park Service to provide enjoyment opportunities for visitors that are uniquely suited and appropriate to the resources found in the park, to the extent that such enjoyment does not constitute impairment or derogation of those resources. Visitor uses, access, orientation, and recreational activities would be affected by the proposed alternatives; therefore, this document analyzes the visitor experience in more detail.

PARK OPERATIONS AND MAINTENANCE

The alternatives proposed in this plan could affect park operations, including changes in staffing, maintenance, and enforcement. Therefore, this document analyzes park operations in more detail.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The topics listed below would either not be affected or would be negligibly affected by the alternatives evaluated in this document. Therefore, these topics are briefly discussed in this section of the *General Management Plan* and then dismissed from further consideration or evaluation. Negligible effects are effects that are localized and immeasurable at the lowest level of detection.

SOILS, TOPOGRAPHY, AND GEOLOGY

The soils at the Manassas National Battlefield Park are primarily in the Arcola-Panorama-Nestoria general soils unit. Arcola silt loam and Arcola-Nestoria complex are the predominant soils. These are deep, moderately deep, and shallow soils that are well drained and have loamy subsoil. Soils in this general soils unit are largely used for the general crops in the area (Elder 1989). Topography of the park consists of gently rolling hills interspersed with narrow ridges and relatively small ravines. Generally, slopes range from 0 to 25 percent. Elevations range from approximately 325 feet above mean sea level along the ridges in the western portion of the park to about 130 feet above mean sea level along Bull Run.

The park resides in the Triassic basin of the Piedmont physiographic province in northern Virginia. This area is underlain primarily by calcareous siltstone and sandstone, metasiltstone, and intrusive diabase. Most of the diabase in the park is in the southwest and western sections and near Bald Hill. Bands of metasiltstone surround the diabase outcrops. Many of the northern Virginia Triassic region's rare plant species are associated with habitats underlain by diabase or metasiltstone. The remainder of the park is underlain by red siltstone of the Balls Bluff formation, which is well exposed along Bull Run. Soils derived from underlying bedrock have relatively high clay content and generally low to moderate permeability.

Under the proposed alternatives, negligible adverse impacts on soils, topography, or geology would occur because the proposed actions would not involve excavation or grading that would result in a noticeable change to the terrain. There would be no topographic leveling or effects on scientifically important geologic formations or strata.

The new visitor center on the east side of the park included in alternative C, and the new bridge, new access road, and landscape rehabilitation proposed under both action alternatives would have impacts to soils and topography. However, based on the context of the park, the area of proposed disturbance is small, and best management practices would be implemented in accordance with state guidelines to minimize soil loss during constructon. Separate environmental analyses would be completed for each of these proposed actions. In addition, while changes to visitation patterns, trail use, and other visitor activities would have adverse impacts from increased erosion with soil loss, these impacts would be negligible because the change in the areas of disturbance would be small. Therefore, soils, topography, and geology were dismissed as impact topics.

PRIME FARMLAND SOILS

The purpose of the Farmland Protection Policy Act is to "minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure the federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland" (7 *United States Code* 4201(b)). The Farmland Protection Policy Act is the primary responsibility of the Department of Agriculture, which has delegated implementation to the Natural Resources Conservation Service. A memorandum dated August 11, 1980 from the Council on

Environmental Quality requires federal agencies to assess the effects of their actions on lands classified by the Natural Resources Conservation Service as prime and unique farmlands. Prime farmland is defined as land best suited for producing food, feed, forage, fiber, and oilseed crops. The land could be cropland, pasture, rangeland, forest, or other land or water that has not been developed. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops.

All soil types within the park are considered prime farm soils. There is no unique farmland within the park.

Similar to soils, topography, and geology, no or negligible adverse impacts on prime farmland soils would occur from the proposed management prescriptions because the proposed actions do not involve significant excavation, grading, or change to the terrain. Therefore, prime farmland soils were dismissed as an impact topic. If, during future site-specific planning activities, it is determined that more than 5 acres of prime farmland soils would be disturbed, the National Park Service would evaluate the potential impacts in accordance with the Natural Resources Conservation Service scoring system and would calculate a farmland conversion impact rating.

INDIAN TRUST RESOURCES

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed action by Department of the Interior agencies be explicitly addressed in environmental documents. The Federal Indian Trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaskan native tribes.

There are no Indian trust resources in the area of the Manassas National Battlefield Park. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians based on their status as Indians. Therefore, Indian trust resources were dismissed as an impact topic.

ETHNOGRAPHIC RESOURCES

The National Park Service defines ethnographic resources as any "site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (Director's Order #28, p. 191). Information about the Manassas National Battlefield Park's ethnographic resources is quite limited. Although Native American artifacts have been found in the park, no ethnographic resources associated with specific Native American tribes or other ethnic descendants are known to exist in or near the park. No tribe or group of descendants currently uses the park for ethnographic purposes, and no contemporary tribe has ever been identified as having inhabited the park.

Historically, African-Americans lived in and around the park. Archeology has uncovered clues to the lives of enslaved African Americans at the middling plantations of Portici and Brownsville and the lives of free African Americans at the Robinson House. The Robinson House, the Nash Site, and the Davis family occupation at the Thornberry House site all provide important insights into the struggles and achievements of life after the war, through Reconstruction, and into the Jim Crow era. The Robinson family and other descendant families currently have strong ties to the park. Some have shared their memories, stories, hand-drawn maps, and other oral traditions concerning their family histories and homesteads (NPS, 2004b).

The proposed alternatives would have a negligible impact on resources associated with Native American or African-American ethnographic resources. Therefore, ethnographic resources were dismissed as an impact topic.

ENVIRONMENTAL JUSTICE

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations" directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority or low-income populations.

According to the 2000 U.S. Census figures, the minority community comprises between 17.2 and 31.1 percent of the population in the counties in the study area. The percentage of individuals living below the poverty line in the project area ranges from 2.8 percent to 7.8 percent, compared to approximately 9.6 percent of Virginia residents who live below the poverty line. No minority or low-income populations were identified within the study area, and there would be no disproportionate adverse impact to populations or communities. Therefore, environmental justice was dismissed as an impact topic.

LAND USE

The park is surrounded by lands under a variety of public and private ownership. These lands are used for agricultural, business and commercial, residential, park and open space, and transportation purposes. The park's proximity to the greater Washington, D.C. metropolitan area and to growing areas of northern Virginia have led to increasing commercial, residential, and other development, as well as robust transportation facilities in the area surrounding the park.

The park remains an island of open space of historical, cultural, and recreational value within a part of northern Virginia that is becoming more and more suburban and urban in character. The basic land use of the park as a major cultural resource and open space area is in conformance with local land use plans. Because the proposed alternatives would not change the park's basic use, there would be no conflicts with local land use planning.

The land use change associated with alternative B would be negligible because of the proximity of the existing visitor center to existing services in the area, as well as existing county zoning and land use restrictions.

Much of the area outside the east boundary of the park retains its rural character. Although the relocation of the visitor center to the east side of the park in alternative C could have a localized impact on adjacent properties, the proposed visitor center is unlikely to change surrounding land uses or increase the density of residential development. The potential impacts on residential development patterns associated with the proposed visitor center are expected to be negligible to minor because of the rural character of the area and the current zoning pattern.

Currently, U.S. Route 29 gets heavy use by commuters and commercial traffic. Traffic studies along U.S. Route 29 in the park show average daily traffic volumes ranging from 9,089 to 13,166 vehicles, most of which are not park related. All segments of U.S. Route 29 within the park were found to be operating at unacceptable levels during peak periods. The percentage of truck traffic is also heavy within the park, ranging from 9 percent to 13 percent of all traffic, which is much higher than the 2 percent to 5 percent typically seen on most roads.

Based on the current heavy use of U.S. Route 29, relocating the visitor center to the eastern boundary of the park is unlikely to make a noticeable difference in traffic patterns in the park or surrounding areas. Once the Battlefield Bypass is completed, it is likely that even with the proposed visitor center the traffic in the area would still be dramatically reduced.

Prior to developing the visitor center, the National Park Service would work with Fairfax County to minimize the impacts of the visitor center on local traffic patterns. Overall, the action alternatives would have a negligible to minor adverse impact on land use. Consequently, land use will not be further analyzed in this document.

PUBLIC HEALTH AND SAFETY

In general, the proposed alternatives would promote a healthier and safer environment for visitors. Overall, the rehabilitation of certain structures within the park would improve site accessibility and improve the health conditions of the facilities at the park. These benefits resulting from the proposed facility improvements and enhanced site accessibility are generally small and site-specific.

The proposed alternatives would have a small beneficial impact and no adverse safety or health concerns. Therefore, public health and safety was dismissed as an impact topic. Safety-related issues and emergency response related to the transportation improvements are discussed in the transportation impact analysis.

ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

THE ALTERNATIVES

INTRODUCTION

Many aspects of the desired future condition of Manassas National Battlefield Park are defined in the establishing legislation, the park's purpose and significance statements, and the servicewide mandates and policies that are described in the "Purpose of and Need for the Plan" chapter. Within these parameters, the park staff solicited input from the public, other NPS staff, government agencies, and other organizations regarding issues and desired future conditions for Manassas National Battlefield Park. Planning team members also gathered information about existing visitor use and the condition of facilities and resources.

The building blocks for an approved plan for managing a national park are the management prescriptions and the alternatives. All are developed within the framework of the park's purpose, significance, mandates, and legislation.

Management prescriptions are descriptions of desired conditions for park resources and visitor experiences in different areas, or zones, of the park. Management prescriptions are determined for each national park system unit to identify the widest range of potential appropriate resource conditions, visitor experiences, and facilities that fall within the scope of the park's purpose, significance, and special mandates. Five management prescriptions have been identified for Manassas National Battlefield Park.

Each of the alternatives in this *General Management Plan* has a different comprehensive management concept. These management concepts describe what the park would be like, and would guide how the park's management prescriptions would be applied to support the concept. The combination of concept and application of management prescriptions gives an overall picture of what the park would be like under a given alternative.

FORMULATION OF ALTERNATIVES

This *General Management Plan / Environmental Impact Statement* presents three alternatives. The alternatives focus on what resource conditions and visitor uses are desired for Manassas National Battlefield Park, rather than on how these conditions will be achieved. Desired future conditions provide a long-term framework for making management decisions. Implementation-level decisions are generally much more detailed and short-lived. Opportunities often depend on variables of funding availability, leading to variation in implementation. Thus, the alternatives do not include specific implementation strategies for resource or visitor use management. The alternatives for Manassas National Battlefield Park directly respond to the major planning issues identified by the public, park staff and other interested parties.

More detailed plans or studies may be required to identify specific implementation strategies before most conditions proposed in the alternatives are achieved. The implementation of any alternative would also depend on future funding and environmental compliance. This plan does not guarantee that money would be forthcoming. The plan establishes a vision for the future that would guide day-to-day and year-to-year management of the national park but full implementation could take many years.

Over the life of this plan, the park may be able to consider actions not analyzed in the environmental impact statement. Before any actions were initiated, park management would determine if the actions were consistent with the rationale of the management approaches adopted in this plan and if the actions would assist the park in achieving desired future conditions articulated in the plan. If park management determined that the proposed action would meet these conditions,

all necessary compliance would be completed at that time. Among the three alternatives developed through this plan, alternative A is the "no-action" alternative, which presents a continuation of existing management direction. It is included as a baseline for comparing the consequences of implementing the two "action" alternatives—alternatives B and C. These action alternatives present different ways to manage resources and visitor use and improve facilities and infrastructure at Manassas National Battlefield Park. Both assume the completion of the Manassas National Battlefield Park Bypass, which would remove commuter and heavy truck traffic from the portions of U.S. Route 29 and VA Route 234 that run through the park.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

Manassas National Battlefield Park is an unusual site in that two major Civil War battles were fought on virtually the same ground 13 months apart in 1861 and 1862. Since the conclusion of the war, most Americans have focused on the first battle for a number of reasons.

- It was the first major land battle of the war.
- It was the largest battle involving American troops up to that date.
- A large group of spectators came out from Washington, D.C. to watch the spectacle.
- Thomas "Stonewall" Jackson received his *nom de guerre* on the battlefield.
- On a more sobering note, some 900 individuals lost their lives in the fighting.

While First Manassas has drawn more attention and interest, the Second Manassas was equally important.

- Unlike the first battle, in which nearly all of the soldiers were raw recruits ignorant of the realities of warfare, the second battle was fought by more seasoned veterans who understood the harsh nature of battle.
- These soldiers were much more efficient killing machines, who exacted a much higher price for their efforts: nearly 3,200 were killed in the second battle.
- Second Manassas was one of the earliest engagements in which the Confederates were led by General Robert E. Lee. Many historians believe his leadership turned Second Manassas into one of his greatest tactical victories of the war. Lee's stunning success emboldened him to lead his army into the North, where he was repulsed less than three weeks later.

For a variety of reasons, Second Manassas has received less emphasis at Manassas National Battlefield Park. The park's *Interpretive Prospectus* (1994) points out that "the fact that Manassas Battlefield contains the sites of two separate battles covering some of the same ground makes clear interpretation of both battles very difficult. Traditionally, the park's interpretive program has emphasized First Manassas at the expense of the Second Battle of Manassas."

The same report found that less than 8 percent of all park visitors even started the Second Manassas Driving Tour, and less than 1 percent finished it. To solve this "identity crisis" for Second Manassas, the *Prospectus* calls for "an easily identifiable and accessible 'focal point' to begin the interpretation of Second Manassas."

Alternative B's comprehensive approach to interpreting *both* battles will enable visitors to grasp the evolution of this conflict from the first battle, which many supporters and participants on both sides thought would be a quick and easy victory, to the second battle, which those same people now recognized was part of a long and very deadly affair. Selecting alternative B as the preferred alternative for the future development and management of the park would facilitate and deepen visitor understanding of the Civil War and the importance of both battles that occurred at Manassas. Alternative B will also help visitors understand how Civil War battles were literally fought in the front yards of residents, a common

occurrence in mid-1800s warfare. Park patrons will be able to place these battles in the context of the entire war, including the important battles that occurred elsewhere between First and Second Manassas, as well as subsequent battles such as Antietam.

Implementation of alternative B will give visitors a much better understanding of the battles of Manassas. In addition to an immersion in the strategies, tactics, troop movements, and wise and unwise military decisions by the commanders, visitors will leave the park with a much better understanding of the fundamental role that the Civil War played in American history.

MANAGEMENT PRESCRIPTIONS

Management prescriptions influence the management of park resources by specifying the range of desired visitor experiences, desired cultural and natural resource conditions, and appropriate kinds of activities and facilities necessary to achieve those goals in designated areas, or zones, of the park over time. Applying these prescriptions differently to the park's specific geographic areas creates the range of viable alternatives required by the planning process. Alternative A, the no-action alternative, would maintain current management practices, as is required by the planning process. Table 2-1 summarizes the management prescriptions proposed for Manassas National Battlefield Park.

Visitor Experience/Services Prescription

In areas of the park where this prescription was applied, visitors would encounter a high concentration of activity, services, interpretation, and orientation. The areas would be developed more intensely, but remain protected from intrusive effects of modern development and incompatible activities. Hiking and equestrian trails would be included under this prescription.

Natural and Cultural Resource Conditions. Natural resources would be actively managed to accommodate intense visitor use for interpretation, education, and visitor services. The management emphasis in areas under this prescription would include minor modifications to facilities to better preserve resources. The historic natural and cultural landscapes would be safeguarded in a way that preserves the integrity of historic views and vistas. Modern additions to the landscape would be permitted but designed to complement the historic and natural context.

Visitor Experience/Appropriate Facilities Conditions. Visitors to these areas or zones would experience a high-degree of social interaction. Buildings, structures, and signs of people would be predominant. Facilities would be convenient and accessible, with little need for visitors to make large time commitments.

Major visitor and administrative facilities would be expected in this area. Orientation and interpretation would be provided through a variety of formats. Typical visitor support facilities would include contact stations, museums, interpretive media, bookstores, parking areas, comfort stations, benches, picnic tables, water fountains, sidewalks, and trails for walking, hiking and equestrian use.

Cultural Landscape Rehabilitation/ Preservation Prescription

Under this prescription, cultural and natural resources, including historic buildings, structures, and landscapes, would be rehabilitated to conditions representative of the Civil War period to support visitor understanding or in-depth interpretation of the battles. Modern elements could be present in this zone, but they would not distract from the cultural landscape. Management of visitor activities, interpretation sites, historic structures, and trails would ensure resource protection and preservation.

Natural and Cultural Resource Conditions. Cultural and natural resources would be rehabilitated to conditions representative of the Civil War time period. Resource and viewshed preservation and protection would be the primary focus. While the sight and

Table 2-1: Management Prescriptions

	Natural & Cultural Resource Conditions	Visitor Experience/ Appropriate Facilities Conditions	Representative Activities
Visitor Experience/ Services	• Minor modifications to existing facilities, amenities, and resources • Modern additions to the landscape are permitted, but do not distract from the historic and natural context • Located in such a way as to not intrude on historic views or vistas of the cultural landscape	• Orientation and interpretation occur in this area through a variety of formats • Buildings, structures, and signs of people are predominant • Cultural and natural resources are present • Facilities are convenient and accessible; there is little need for visitors to make a large time commitment to see the area • Social interaction with others is likely	• Major visitor and administrative facilities are found in this area • Visitor support facilities such as contact stations, museums, interpretive media, bookstores, parking areas, comfort stations, benches, picnicking, walking trails, and bridle trails are present • Orientation and interpretation are provided through various formats
Cultural Landscape Rehabilitation/Preservation	• Cultural and natural resources are rehabilitated (including buildings, other structures, and landscapes) to conditions representative of the Civil War time period to support visitor understanding and in-depth interpretation of the battles • The sights and sounds of people are evident in limited amounts • Resource protection and preservation are the primary focus • Except for essential changes, tolerance for resource impacts is low • Modern intrusions are not evident	• Emphasis is on in-depth learning about and visitation of important park resources • Experiences are primarily self-guided or ranger-led • Structure and direction is provided through trails, interpretive media, and signs, but opportunities for self-discovery exist • Visitors need to make a moderate time commitment to experience resources • Opportunities for solitude exist at certain times, but there are likely to be encounters with other visitors	• Trails, overlooks, wayside exhibits, small parking areas, driveways, and interpretive media are found in this area • Predominant activities include walking, viewing resources, and attending interpretive tours • Special events and activities are allowed by permit only
Motorized Sightseeing and Circulation	• Areas in this zone provide a scenic, visually appealing natural and cultural backdrop for motorized park touring and circulation • Areas in this zone are managed to ensure resource protection and public safety • Resources may be modified for essential visitor and park operational needs, such as paving roads or felling hazardous trees	• Paved roadways and associated developments are used for touring the park, enjoying scenic overlooks, and stopping to visit roadside interpretive media • Visitor experience generally depends on automobiles or bicycles, involves driving or riding along a well-maintained road, and is linear in nature • Observing the natural or cultural environment is important, and a sense of discovery is part of the experience • The probability of encountering other visitors is high	• Motorized sightseeing occurs in a nonintrusive way throughout the zone, primarily on existing roadways • The area includes paved roadways, pullouts, overlooks, associated short trails, parking areas, and other facilities that support visitor touring • Roadway design and speed limits are adjusted in this zone to safely accommodate cars and bicyclists, and frequent stops • This area includes park entrance facilities and associated visitor service areas
Recreation	• Area has minor modifications to existing facilities, amenities, and resources to accommodate large groups of visitors • Facilities are located in such a way as to not interfere with historic views or vistas of the cultural landscape	• Visitor experience is focused on recreational and social interaction with some interpretive opportunities present • Natural and cultural resources provide the visual backdrop within this setting, with predominant signs of other visitors • Visitor support facilities are convenient and accessible	• Facilities are present to accommodate large group picnics and approved recreational activities • Visitor amenities include picnic tables, restrooms, and parking • Approved recreational activities and picnicking would occur in this zone • Special events and activities are allowed by permit only
Park Operations and Maintenance	• Area has minor modifications to existing facilities, amenities, and resources to accommodate changing operational needs • Locations are selected to minimize intrusions on the historic views and vistas and areas of high visitor use	• Area is dedicated to park operational and maintenance needs • Visitors are discouraged from entering these areas	• Zone includes essential facilities, structures, and equipment to meet operational and maintenance needs of the park • Activities and facilities in this zone may affect the visual, audio, and olfactory experience of the park

sounds of people would be evident, the impact to resources would be low. Modern elements may be present this zone, but would not distract from the natural and cultural landscape.

Visitor Experience/Appropriate Facilities Conditions. Through self-guided or ranger-led experiences, the visitor would learn about important park resources and events. Structure and direction would be provided but some opportunities for discovery would exist. At certain times of the day or season, opportunities for solitude would exist, but in general there would likely be encounters with other visitors. Visitors would need to make a moderate time commitment to experience the resources. Trails, overlooks, small parking areas, paved driveways, and wayside exhibits and other interpretive media would be found in this area. Predominant activities would include walking, viewing resources, and attending interpretive walks and talks. Special events and activities would be allowed by permit only.

Motorized Sightseeing/Park Circulation Prescription

This prescription would be applied to areas that provide scenic, visually appealing, natural and cultural backdrops for motorized touring and circulation in the park. Visitors could experience this prescription by vehicle or bicycle, while driving along well-maintained roads in a linear/ sequential nature and making frequent stops at interpretive exhibits. Some alteration of resources (road paving or the felling of trees that pose hazards to visitors) may be necessary to facilitate visitation and park operations.

Natural and Cultural Resource Conditions. Areas falling under this prescription would be intensely managed to ensure resource protection and public safety. Areas in this prescription would provide a scenic, visually appealing natural and cultural backdrop for motorized park touring and circulation. Resources would be modified for essential visitor needs and park operations and maintenance. Motorized sightseeing would occur along existing roadways and would be nonintrusive.

Visitor Experience/Appropriate Facilities Conditions. This area would include paved roadways and associated development used for touring the park, enjoying scenic overlooks, and stopping to visit roadside interpretive media. Visitors would be heavily dependent on vehicles or bicycles and would use a well-maintained road for sequential or linear touring. Visitors would observe the natural and cultural environment and have some opportunities for self-discovery.

The probability of encountering other visitors would be high. The area would include paved roadways, pullouts, overlooks, short trails, parking areas, and other visitor facilities that support touring. Roadway design and speed limits would be adjusted in this prescription to safely accommodate both cars and bicycles making frequent stops. This prescription would also include park entrance facilities and associated visitor service areas.

Recreation Prescription

In areas of the park where this prescription was applied, visitors would be able to picnic in large groups and enjoy approved recreational activities. Interaction with cultural and natural resources would be secondary in this prescription.

Recreational activities such as picnicking and fishing (with a valid permit) typically would be permitted in specified areas of the park, while swimming and the use of bicycles on unpaved roads typically would be prohibited. Special events or activities typically would be allowed by permit only. These prohibitions and permissions could change periodically, and would be outlined in the annual *Superintendent's Compendium*.

Natural and Cultural Resource Conditions. Under this prescription, resources, facilities, and amenities may need modifications to accommodate large groups of visitors. The prescription would be sited to not interfere with historic views and vistas and cultural

landscapes. Visitors, facilities, and resources would be intensely managed in this prescription.

Visitor Experience/Appropriate Facilities Conditions. Visitors would experience recreational opportunities and social interactions with some interpretive opportunities. Natural and cultural resources would provide a visual backdrop within this setting with human interactions predominant. Visitor support facilities would be convenient and accessible. Facilities and visitor amenities would accommodate large group picnics and associated and approved recreational activities. Visitor amenities would include picnic tables, restrooms, and parking.

Park Operations and Maintenance Prescription

This prescription would meet the essential operational and maintenance needs of the park. Management of activities and facilities in this prescription would focus on limiting visual, auditory, or olfactory impacts to park resources and visitor enjoyment.

Natural and Cultural Resource Conditions. This prescription would be located in areas that would minimize intrusions on the historic views or vistas and areas of high visitor use. The areas are generally small, with intense resource manipulation to meet operational needs. As such, they may include minor to major modifications to existing facilities, amenities, and resources to accommodate changing operations and maintenance needs.

Visitor Experience/Appropriate Facilities Conditions. Because this area would be dedicated to park operations and maintenance needs, visitors would be discouraged. Areas falling under this prescription would have essential facilities, structures, and equipment to meet the operations and maintenance needs of the park. Activities and facilities in this prescription may intensely limit visitor enjoyment and affect the visual, audio, and olfactory experience of the park.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO ACTION)

CONCEPT

This no-action alternative consists of a continuation of current management direction and trends at Manassas National Battlefield Park, and serves as a baseline measurement for comparing the resource conditions and visitor experiences prescribed by the two action alternatives. The existing conditions, trends, and management practices would be maintained with only minor changes. Managers would continue to follow the special mandates and servicewide mandates and policies described in the "Purpose of and Need for the Plan" chapter. The current, most recognizable features in the park would continue to serve as the primary focus for visitor use and interpretation. Orientation and visitor services related to both battles would continue to be offered at a single, centralized location. Map 2-1 depicts the cultural and historic elements of alternative A.

Under this alternative, historical park uses and development patterns would continue in accordance with the 1983 *General Management Plan*. The main roads within the park (U.S. Route 29 and VA Route 234) would remain open to commuter and truck traffic. Current facilities at the park would be maintained, upgraded, and rehabilitated as needed. Some changes would be made to visitor use patterns to improve access to those lands added to the park since the 1983 plan was completed, including the Brawner Farm and Stuart's Hill tracts.

Opportunities for visitors to explore the park would be different for each battle. Visitor use would be concentrated in a central area at Henry Hill, with a smaller visitor contact station on Stuart's Hill. Heavy volumes of commuter and commercial truck traffic would continue to impede the interpretation of Second Manassas. However, the park would devote equal time and facilities to both battles. Visitors would visit the sites of First and Second Manassas by automobile tour and hiking trails.

Alternative A would present visitors with a battlefield landscape that would be characteristic of the area's rural past but that would fail to capture the nuances of the wartime landscape that shaped the strategies, decisions, and events of the two battles. Only small components of the altered historic landscape would be rehabilitated. Visitors would learn about the historic landscape through interpretive displays and programs. Structures built before the park's creation in 1940, and especially wartime structures, would be preserved. Some postwar structures would mark the sites of wartime buildings. Map 2-2 shows the circulation and interpretation features of alternative A.

MANAGEMENT ZONES

The 1983 *General Management Plan* indicates that "the park is on the National Register of Historic Places and is therefore zoned as historic." As a result, the 1983 *General Management Plan* defined three management subzones for the park. The park would retain these subzones in alternative A. The subzones, as described by the 1983 *General Management Plan*, are described below.

Battlefield Rehabilitation Subzone [2]

"The rehabilitation subzone will encompass the core area of historic resources important for interpreting the battle stories. The size and character of this subzone is determined by the locations of visitor use and development areas. Significant resources in this subzone include the historic battlefield landscape and several historic structures.

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[2] The 1983 document's use of the word "restoration" corresponds to this document's use of the word "rehabilitation."

"The level of historic structure rehabilitation or preservation in each subzone will be based on architectural integrity and significance . . . . New or existing facilities that are not directly related to historic preservation and Civil War interpretation will not be allowed in this subzone unless the property is privately owned or serves a protection function."

Preservation Subzone

"Within this subzone, all historic structures will be preserved at levels commensurate with their significance and integrity, and those sections of the landscape that have already been restored will continue to be maintained.

"Within this subzone, recreation, visitor use, and park operations facilities can be provided, but the importance of the historic resources will still remain paramount in any considerations for development."

Protection Subzone

"This…subzone along the outer perimeter of the park…is critical for protecting the quality of the visitor's experience and the present integrity of the core historic resources from outside intrusions. On parklands within this protection subzone, vegetation will be allowed to grow into forest where lands within the two other subzones need special protection. Otherwise, the landscape will be preserved in its existing condition. Historic structures will be preserved at a level commensurate with their integrity and significance."

ORIENTATION AND VISITOR SERVICES

Visitor Center

The Henry Hill visitor center would remain as the primary center of interpretation for First Manassas and the first contact and orientation site for park visitors. The level of visitor use would be high. The visitor center would include visitor services and would retain its current parking area. At the Henry Hill visitor center, visitors would receive initial information, orientation, and interpretation. The visitor center would also be the starting point for the two battlefield tours.

First Manassas Tour

Visitors would primarily experience the resources of First Manassas through the 1-mile-long Henry Hill Loop Trail, a self-guided interpretive tour. The First Manassas Tour (hiking trail) is a longer trail that connects several interpretive sites. These trails present the story of First Manassas in a way that helps visitors understand and study battle events. The function of the Henry Hill Loop Trail would be to provide visitors with a relatively easy way to experience the many resources on Henry Hill.

The hiking trail for the First Manassas Tour is approximately 5 miles long. The function of the First Manassas Tour would be to provide visitors with the opportunity to develop a fuller understanding of the battles while providing them with solitude and a sense of discovery. The hiking trail would receive low levels of visitor use, and would follow existing trails. Visitors using this trail would be able to understand the events of the battle, and could visit the historic sites of First Manassas, such as Henry Hill, Stone Bridge, Van Pelt Hill, Pittsylvania, Matthews Hill, and Stone House.

In addition to the tour and trails, visitors could drive to several of the important interpretive sites. These interpretive areas would receive low to moderate levels of visitor use and would include a parking area, interpretive displays, and in some areas, a short loop trail. These interpretive areas would include sites such as the Stone Bridge, Sudley, Matthews Hill, Stone House, Chinn Ridge, and Portici.

Second Manassas Tour

Visitors would continue to use the chronological driving tour to visit the sites of Second Manassas. The tour route and the sites it connects would receive low to moderate levels of use. A small parking area, interpretive displays, and a short loop trail would be

Map 2-1

SYMBOL KEY

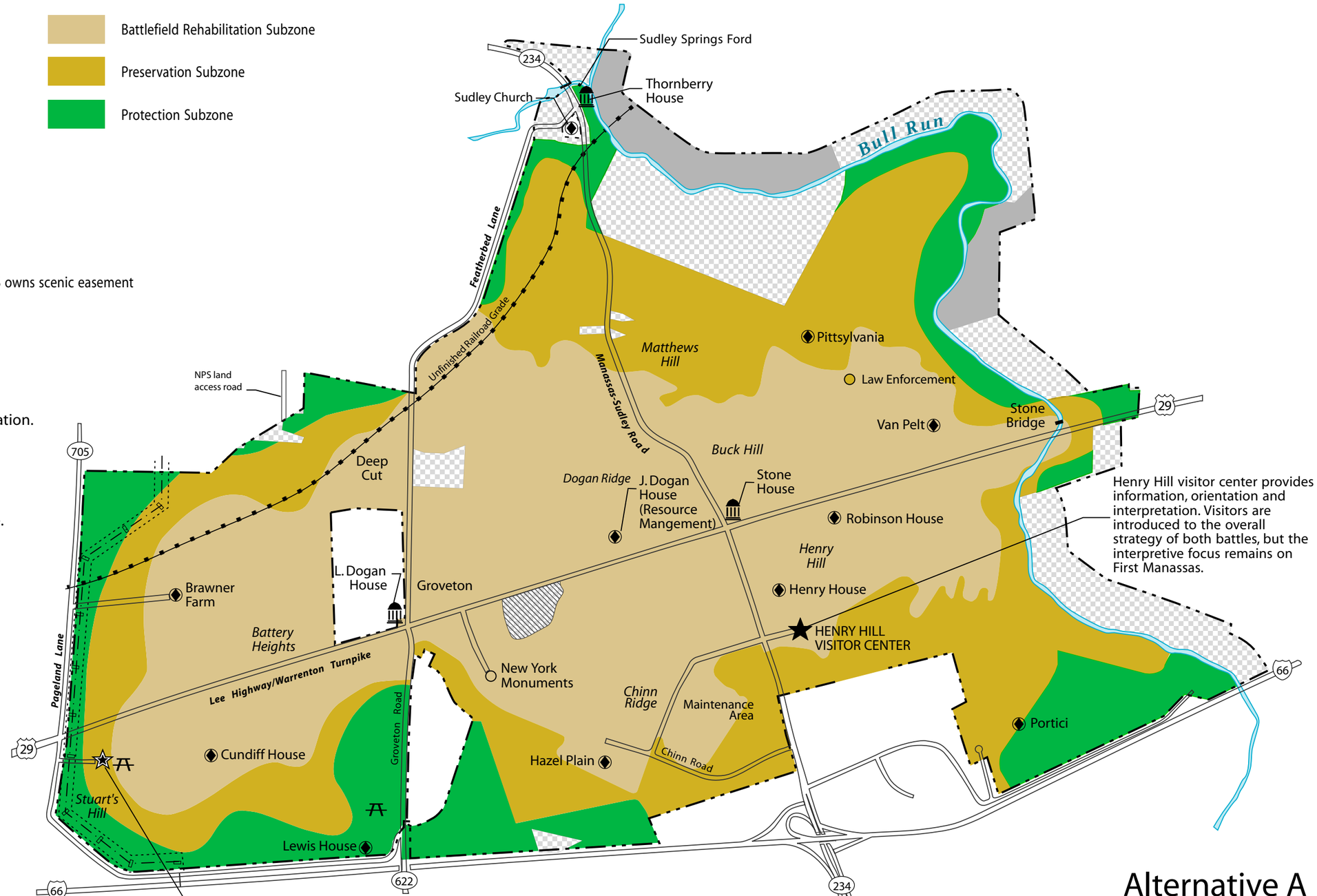
- National Battlefield Park Boundary
- Picnic area
- Preserved war time structure (structures would be upgraded for visitor use)
- Visitor center
- Visitor Contact Station and Park Headquarters
- Historic House site
- Other Significant Site
- Unfinished Railroad Grade
- Non-NPS public land within park boundary
- Privately owned land within park boundary
- Privately owned land within park boundary; NPS owns scenic easement
- Privately owned land outside park boundary
- Power line easement

MANAGEMENT SUBZONES

- Battlefield Rehabilitation Subzone
- Preservation Subzone
- Protection Subzone

NOTES:

- Orientation and visitor services for both battles would be carried out from a central location.
- First Manassas would continue to receive greater visitor attention, although the Park would continue to devote equal time and facilities to both battles.
- Visitors would gain an understanding of both battles by visiting the many sites of each battle.
- Only small components of the altered historic landscape within the rehabilitated subzone would be rehabilitated.



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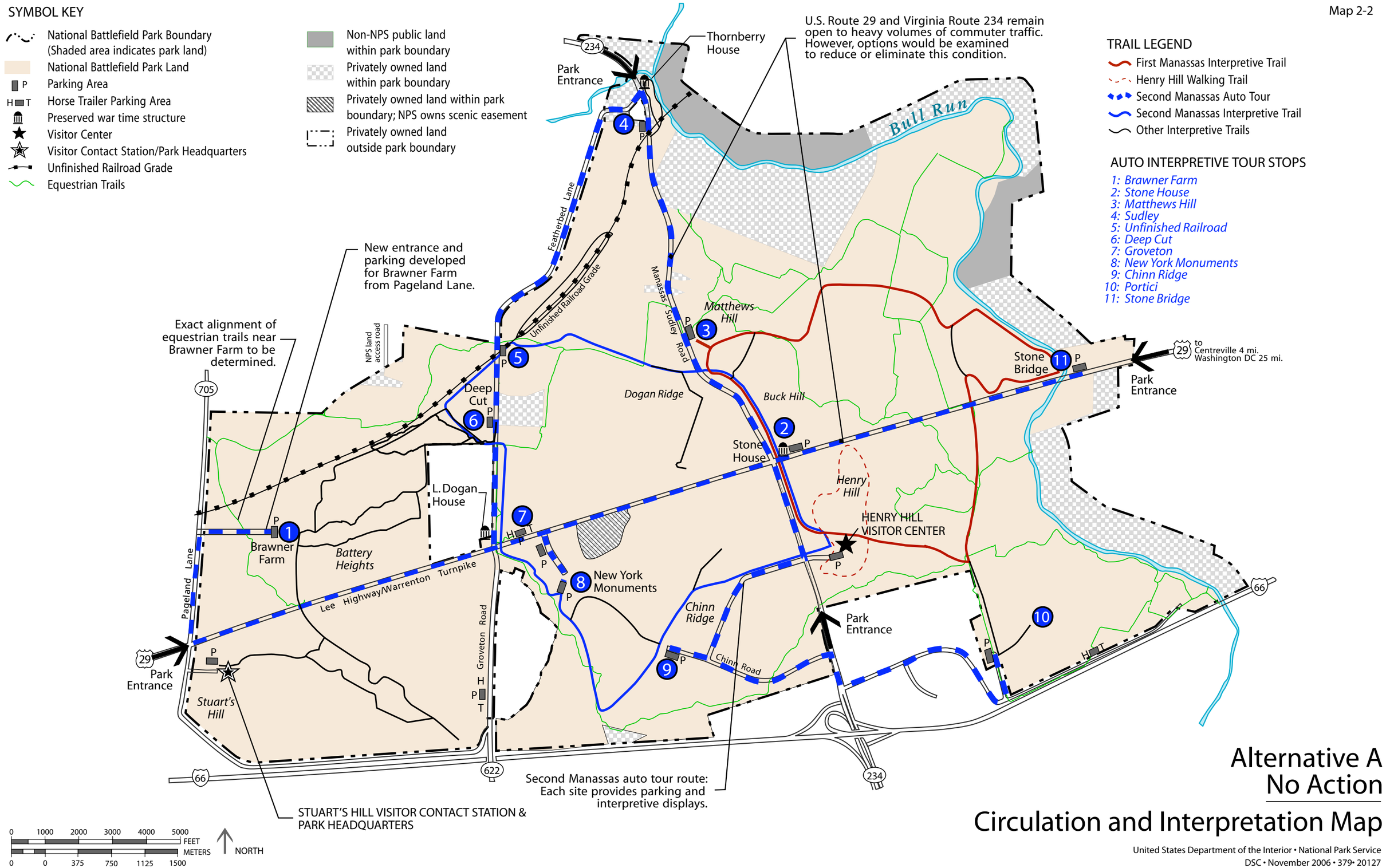
NORTH

Alternative A
No Action

Cultural and Historic Landscape Map

United States Department of the Interior • National Park Service
DSC • November 2006 • 379• 20126



Alternative A
No Action

Circulation and Interpretation Map

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provided at the tour stops. A new tour stop at and access to Brawner Farm would use a new access road and parking lot currently being implemented. The environmental assessment for the Pageland Lane road and site development for Brawner Farm (including a new parking area) has been completed, and a finding of no significant impact has been issued.

The existing Battery Heights tour stop and parking area on U.S. Route 29 would be removed. Other sites connected by the route include Stone House, Matthews Hill/Dogan Ridge, Sudley, Unfinished Railroad, Deep Cut, Groveton, the New York Monuments, Hazel Plain, Portici, and Stone Bridge, a total of 11 stops.

The hiking trail for Second Manassas is approximately 6 miles long. Visitors would experience the resources of Second Manassas through hiking trails and the existing automobile tour route. The Second Manassas hiking trail and Stuart's Hill Loop Trail would provide visitors with an opportunity to develop a fuller understanding of the battle.

The hiking trail would follow existing trails. There would be relatively low levels of visitor use. The trail would begin at the Henry Hill visitor center and connect resources of Second Manassas, such as the Stone House, Dogan Ridge, the Unfinished Railroad, Deep Cut, Brawner Farm, Groveton, New York Monuments, Chinn Ridge, and Henry Hill.

A visitor contact station would continue to operate seasonally at Stuart's Hill. The functions of the visitor contact station would be to orient visitors to the park and Second Manassas and to interpret the resources of Second Manassas with emphasis on Stuart's Hill and the Brawner Farm area. The area would receive moderate use. The contact station would contain interpretive exhibits and visitor services.

The self-guided Stuart's Hill Loop Trail would begin at the visitor contact station and connect the resources of Stuart's Hill, Brawner Farm, and the Cundiff and Lewis House sites. The trail would receive moderate use.

CULTURAL LANDSCAPE REHABILITATION AND PRESERVATION

Alternative A would maintain the current pattern of open fields and wooded areas and would continue to attempt to recreate the 1861-1862 scene as was recommended in the 1983 *General Management Plan*. All or a proportionately greater percentage of the park could be rehabilitated to the historic scene if funding became available to accomplish this work. Vegetative buffers would be developed to screen the power lines and development outside the park.

Historic structures and features that date from the battles (Stone House, Thornberry House, L. Dogan House, and Unfinished Railroad), or that are important elements of the park's interpretive focus (Brawner Farm, Henry House, J. Dogan House, and Robinson House ruins) would be the top preservation priority.

The Fiscal Year 2005 construction budget for Manassas National Battlefield Park included $1.92 million for the rehabilitation of Brawner Farm. This rehabilitation would strengthen the structure itself, and will provide new vehicular access and parking facilities. This would allow Brawner Farm to accommodate the visitation generated by the park's driving tour and interpretive trails.

TRANSPORTATION AND CIRCULATION

Heavy commuter traffic during morning and evening rush hours and heavy commercial truck traffic related to quarry operations outside the park put extremely high traffic loads at all hours of the day on the portions of U.S. Route 29 and VA Route 234 that run through the park. This situation results in truck and car accidents and seriously encroaches on park visitor safety and overall experience.

Through the Battlefield Bypass study, the Federal Highway Administration and National

Park Service worked with the Commonwealth of Virginia and nearby jurisdictions to study the feasibility of relocating through-traffic to routes outside the park. Once constructed, the Battlefield Bypass would remove commuter traffic from the portions of U.S. Route 29 and VA Route 234 that run through in the park. Until completion of the Battlefield Bypass, the current traffic situation would likely continue to compromise park resources and visitor experience. Alternative A does not assume the presence of a finished Battlefield Bypass.

The park does not currently issue licenses for commercial tours of the park, and does not plan to issue such licenses in alternatives A, B, or C.

PARK OPERATIONS AND MAINTENANCE

Alternative A would not alter current park functions. All park functions would continue to occur in their current locations. The park would maintain its current staffing levels of 32 full-time-equivalent employees, with minor adjustments up or down depending on changing park needs and funding levels.

BOUNDARY ADJUSTMENTS

In alternative A, there are no proposed boundary adjustments. Current legislation prohibits such adjustments without legislative action.

ESTIMATED COSTS

The purpose of the cost estimate in a general management plan is to provide a general sense of the cost to implement one alternative relative to other alternatives considered. The relative costs associated with each of the alternatives in this plan have not changed since the publication of the draft plan. However, how these costs are presented in this *Final General Management Plan* has been modified to reflect a change in NPS policy regarding presentation of costs in general management plans.

The presentation of costs within a general management plan is based on the types and general intensities of development in each alternative, estimated staffing levels that would be required to fully implement the alternative, and deferred maintenance. The cost estimate for this alternative is provided to give a relative sense of its implementation cost when compared to other alternatives described in this plan. All costs have been rounded to the nearest $100,000, and were estimated based on 2005 dollars. The actual costs to implement the alternative could be higher or lower. For this reason these costs are not appropriate for budgeting purposes. The actual costs will be determined prior to implementation and will be based on the design of facilities and identification of detailed resource protection and visitor experience goals. The cost estimates presented represent the total costs of projects described in the alternatives. Potential cost-sharing opportunities with partners could reduce these overall costs. Approval of the general management plan does not guarantee funding or staffing for proposed actions will be available. Full implementation of the approved general management plan may be many years in the future. The total annual operating costs for this alternative would be $2.4 million.

The total one-time costs for this alternative would be $3.4 million, and the cost of deferred maintenance would be $5 million. For more information, particularly about the changes in how the costs are presented in this plan please see “Appendix D: Estimated Costs.”

ALTERNATIVE B (NPS-PREFERRED ALTERNATIVE) - THE TWO BATTLES OF MANASSAS—A COMPREHENSIVE UNDERSTANDING OF EACH BATTLE

CONCEPT

Alternative B proposes a future condition at the park that focuses on interpreting the two battles of Manassas as distinct military events. Visitors would gain a thorough understanding of the first and second battles by visiting two separate visitor contact areas, each focused on one battle. These primary interpretive sites, including a visitor center and a visitor contact station, would be the two main focal points of visitor services in the park. Visitors could explore the many historic sites associated with each event throughout the park. Separate, chronological, sequential, automobile and bicycle tours would be developed for each battle. In this alternative, the rehabilitation of the historic landscape would be critical to enable visitors to understand the events and military tactics associated with each battle. Because of the safety concerns posed by the high traffic volumes on U.S. Route 29 and VA Route 234, separate automobile and bicycle tour routes could not be implemented until the completion of the Battlefield Bypass.

Overall visitor experience and safety would be enhanced by the construction of the Manassas National Battlefield Park Bypass. This road would permit the elimination of heavy commuter and commercial truck traffic on the portions of U.S. Route 29 and VA Route 234 that run through the park. Through traffic would be further limited with the addition of controlled access facilities at the park's four major entry points. Alternative B assumes the presence of a finished Battlefield Bypass.

Map 2-3 depicts the cultural and historic elements of alternative B, while Map 2-4 shows the circulation and interpretation elements. Visitors would experience a battlefield landscape that resembles its wartime appearance. Key interpretive views would help visitors understand how the battles unfolded and the importance of certain locations. Wartime structures would be preserved and other historic structures would be retained to mark the site of wartime buildings.

ORIENTATION AND VISITOR SERVICES PRESCRIPTION

In alternative B, visitors would experience the battlefields in settings that are characteristic of the wartime scene. They would experience the two battles as distinct military events, starting at separate orientation points, followed by visits to the many other historic sites associated with each event. The existing visitor center at Henry Hill would orient visitors to both battlefields, but would concentrate primarily on First Manassas. The Second Manassas visitor contact station would remain at its current location at Stuart's Hill until it can be moved to the rehabilitated facility at Brawner Farm.

First Manassas Visitor Center

In alternative B, visitors would be encouraged to begin their visit at the Henry Hill visitor center. The Henry Hill visitor center would function as an orientation center for the park as a whole, the primary orientation site for First Manassas, the initial stop for the First Manassas automobile/ bicycle tour, and the beginning and ending point of the First Manassas Hiking Trail. As the primary entry point to the park, Henry Hill would be the visitor's first point of contact with the park staff.

This facility would accommodate a high level of visitor use. Interpretive media, museum collections, and visitor amenities would be concentrated in the visitor center. The interpretive materials at the Henry Hill visitor center would focus on the overall importance and strategy of First Manassas, but general park materials would also be available. A self-guided loop trail would take visitors to Henry Hill to experience the battlefield resources. For a greater understanding of the entire

battle, an automobile tour and bicycle route and a self-guided hiking trail would begin at Henry Hill and connect the resources of First Manassas.

First Manassas Automobile/ Bicycle Tour Route

Under alternative B, the National Park Service would develop a new First Manassas automobile and bicycle tour route. The tour route would help visitors develop a more thorough understanding of the events and stories of First Manassas by visiting important battlefield resources. The self-guided tour route would follow the flow of the battle by chronologically interpreting connected sites such as the Stone Bridge, Sudley Church, Matthews Hill, Henry Hill, Chinn Ridge, and Portici. Short loop trails would encourage visitors to leave the main tour route to experience the resources up close. Interpretive displays along the trails would illustrate the events and stories of the battle.

The park brochure and other media such as an audiotape would explain the route and the first battle. The tour route would use existing roads and trails, and would follow wartime routes where possible. No new roadways or trails would be developed for the tour route. The function of the tour stops would be to provide visitors with the general flow of the battle and information on that specific conflict. The tour stops would receive moderate visitor use and include small parking areas and interpretive displays.

Alternative B would not include the development or implementation of an alternative transportation system to move visitors throughout the park. However, future development of such a system would not be inconsistent with this alternative. A shuttle system or other transport options that would allow visitors to leave their personal vehicles and tour in larger groups could be explored. Current visitation levels make it difficult to support such a system on a continued basis. If future visitation levels dramatically increased, and it became feasible and desirable to develop a park shuttle system, a transportation study to analyze several transit options would be prepared.

First Manassas Hiking Trail

The location of the First Manassas hiking trail would remain largely unchanged, and would continue to provide visitors with the opportunity to experience the battlefield on foot. The self-guided hiking trail (approximately 5 miles) would link the resources of First Manassas, such as Stone Bridge, the Van Pelt House site, Pittsylvania, Matthews Hill, Stone House, and Henry Hill. Wayside exhibits would interpret the resources and stories along the trail. The hiking trail would also continue to connect to some of the smaller loop and spur trails, which are designed to be primarily accessed from the First Manassas automobile/bicycle tour route. The National Park Service would upgrade current trails and interpretive media on the First Manassas hiking trail as necessary.

Second Manassas Visitor Contact Station

Visitors would receive a brief orientation to the park at the Henry Hill visitor center. Visitors specifically interested in the Battle of Second Manassas would then be directed to the Second Manassas visitor contact station for more detailed orientation and information. The current visitor contact facility at Stuart's Hill would serve as the Second Manassas visitor contact station until the facilities can be moved to Brawner Farm. The Second Manassas visitor contact station would contain a limited amount of interpretive media and museum items relevant to the second battle, as well as basic visitor services (information and orientation) and amenities to accommodate year-round visitor use.

The first stop on the Second Manassas driving tour is Brawner Farm, which was the site of the opening engagement of the Second Battle. The rehabilitation of Brawner Farm would allow that facility to accommodate the visitation generated by the Second Manassas driving

SYMBOL KEY

- National Battlefield Park Boundary
- Picnic area
- Preserved war time structure (structures would be upgraded for visitor use)
- Visitor Center/Contact Station
- Park Headquarters
- Historic House site
- Other historic site
- Unfinished Railroad Grade
- Sites of Major Combat
- Non-NPS public land within park boundary
- Privately owned land within park boundary
- Privately owned land within park boundary; NPS owns scenic easement
- Privately owned land outside park boundary
- Power line easement
- Proposed Boundary Adjustment
- Proposed Forest Cut Areas
- Proposed Re-forestation Areas
- Historic Views Restored

MANAGEMENT ZONES

- Visitor Experience / Services Zone
- Cultural Landscape Rehabilitation/Preservation Zone
- Motorized Sightseeing / Park Circulation Zone
- Recreation Zone
- Park Operations and Maintenance Zone

NOTES:

- Orientation and visitor services for both battles would be carried out from two central locations.
- Both battles would be presented as distinct military events.
- Visitors would gain an understanding of both battles by visiting the many sites of each battle.
- Extensive landscape rehabilitation would re-establish major historic views and further clear prominent battlefield sites.

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NORTH

Alternative B
Preferred Alternative

The Two Battles of Manassas
Cultural and Historic Landscape Map

United States Department of the Interior • National Park Service
DSC • November 2006 • 379•20128

SYMBOL KEY

- National Battlefield Park Boundary
- National Battlefield Park Land
- P Parking Area
- H T Horse Trailer Parking Area
- Preserved war time structure
- Visitor Center/Contact Station
- Park Headquarters
- Unfinished Railroad Grade
- Equestrian Trails
- Proposed Gate Location
- Non-NPS public land within park boundary
- Privately owned land within park boundary
- Privately owned land within park boundary; NPS owns scenic easement
- Privately owned land outside park boundary

NOTES

- Orientation and visitor services for both battles would be conducted from two central locations.
- Both battles would be presented as distinct military events.
- Visitors would gain an understanding of both battles by visiting the many sites of each battle.
- Extensive landscape rehabilitation would re-establish major historic views and clear prominent battlefield sites.

INTERPRETIVE TOUR AND TRAIL LEGEND

1st Manassas Interpretive Trails

- Auto/bicycle tour
- Auto tour-Interpretive area
- Long loop trail
- Spur-short loop trail

2nd Manassas Interpretive Trails

- Auto/bicycle tour
- Auto tour-interpretive area
- Long loop trail
- Spur-short loop trail

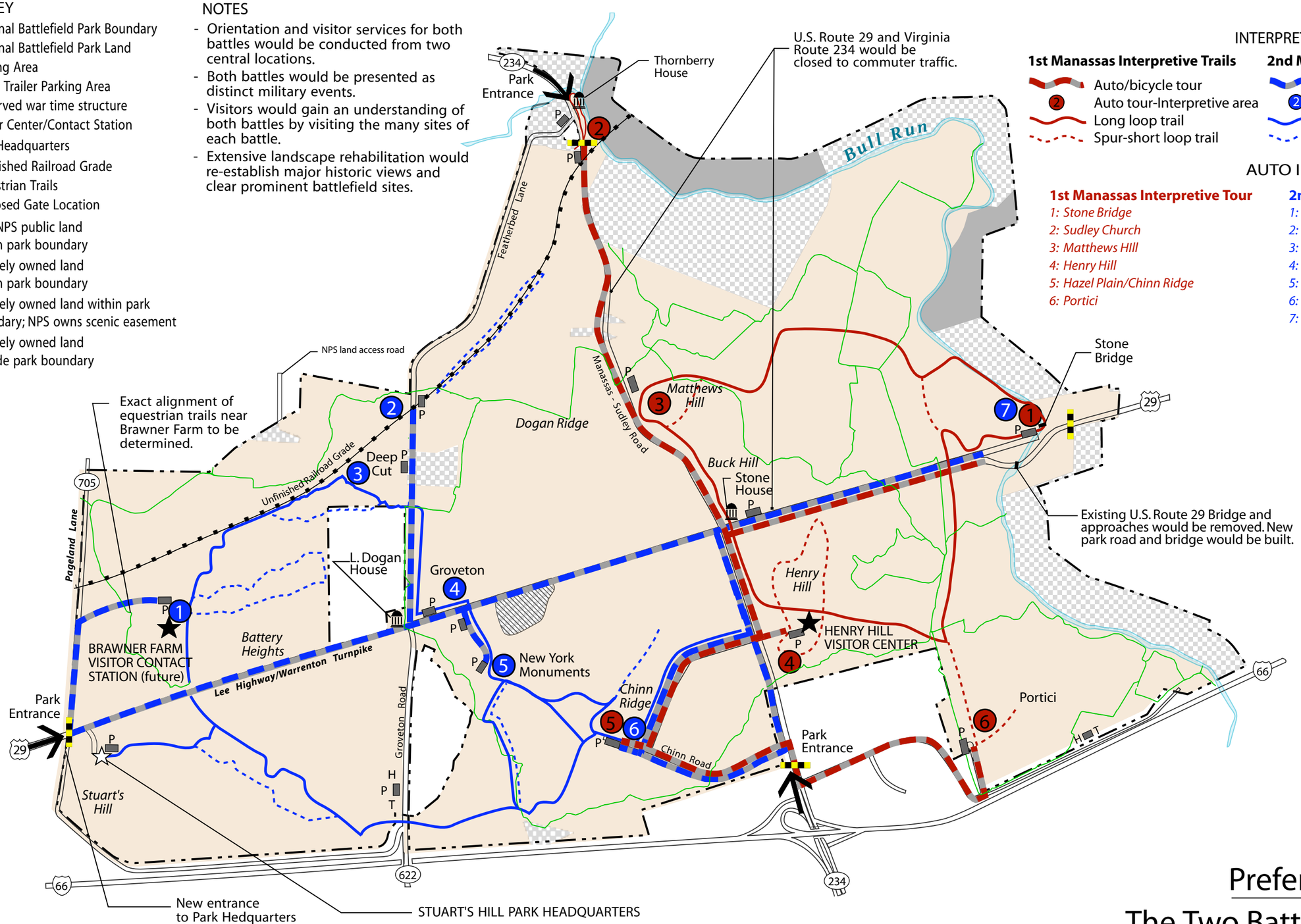
AUTO INTERPRETIVE TOUR STOPS

1st Manassas Interpretive Tour

1: *Stone Bridge*
2: *Sudley Church*
3: *Matthews HIll*
4: *Henry Hill*
5: *Hazel Plain/Chinn Ridge*
6: *Portici*

2nd Manassas Interpretive Tour

1: *Brawner Farm*
2: *Unfinished Railroad*
3: *Deep Cut*
4: *Groveton*
5: *New York Monuments*
6: *Hazel Plain/Chinn Ridge*
7: *Stone Bridge*



Alternative B
Preferred Alternative

The Two Battles of Manassas
Circulation and Interpretation Map

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tour, interpretive trails and, eventually, the visitor contact station.

Second Manassas Automobile/ Bicycle Tour Route

The Second Manassas automobile/bicycle tour route would help visitors develop a more thorough understanding of the events and stories of Second Manassas by visiting important battlefield sites. The self-guided tour route would begin at Brawner Farm and would follow the flow of the battle by connecting sites such as Brawner Farm, Unfinished Railroad, Deep Cut, Groveton, New York Monuments, Chinn Ridge, and Stone Bridge.

The park brochure and other media such as an audiotape would explain the route and resources. The tour route would use existing roads and follow wartime routes where possible. No new roads would be developed for the tour route.

The function of the tour stops would be to provide visitors with in-depth information on the many aspects of each element of Second Manassas, and the role of each engagement in the overall battle. The tour stops would receive moderate use and would include small parking areas and interpretive displays. Each tour stop would also include a short loop trail to encourage visitors to leave their cars or bicycles and experience the resources on foot. Interpretive displays along the loop trail would illustrate the events and stories of the battles.

Second Manassas Hiking Trail

The newly configured Second Manassas hiking trail would provide visitors with the opportunity to experience the sites of Second Manassas on foot, while giving the visitor a sense of solitude and discovery. The self-guided hiking trail (approximately 5 miles) would begin at Brawner Farm and would connect many of the resources of Second Manassas, including the Cundiff and Lewis house sites, Brawner Farm, Unfinished Railroad, Deep Cut, Groveton, New York Monuments, and Chinn Ridge. Wayside exhibits and other media would interpret the resources and stories along the trail. To achieve this condition, the National Park Service would upgrade current trails and interpretive media on the Second Manassas hiking trail, and would create new portions of the trail as necessary.

Equestrian Trails

Bridle trails would traverse the park, but would remain separate from the hiking trails. They would provide visitors with the opportunity to experience the park on horseback. Equestrian trails and parking areas for horse trailers would be provided in areas where they could be safely accommodated without impacting historic resources or other visitor uses. The final alignment of a new equestrian trail near Stuart's Hill, as well as the equestrian trails near Brawner Farm would be determined during the implementation of alternative B.

CULTURAL LANDSCAPE REHABILITATION/PRESERVATION PRESCRIPTION

In alternative B, the wartime battlefield landscape would be the focus of resource protection efforts. The function of the landscape would be to represent the wartime scene and help visitors better understand the battles. Modern intrusions would be minimal.

The current landscape on the battlefields has changed over time from its wartime conditions. To help visitors understand the battles and to provide guidance for the management of natural resources, the landscape would be rehabilitated to the 1861-1862 conditions in several key areas through a combination of tree removal, clearing, and reforestation. The National Park Service would clear several wooded areas in the park and reforest other areas to rehabilitate the historic landscape as was recommended in the 1983 *General Management Plan*. In this alternative, approximately 327 acres of forest would be removed, which is nearly the amount identified in the 1983 *General Management Plan*. Approximately 82 acres of land that is

currently open field and grassland would be reforested as it was historically.

The areas to be cleared would be managed as open grassland (or, in a few instances, shrub) communities that would be desirable habitat for a variety of birds and wildlife, while still restoring historic vistas for the visitors. Maintaining some of these areas with a lawnmower or other machinery may be prohibited because of terrain. In those cases, prescribed burns would be considered as a potential management tool to help small parcels maintain their historic appearance.

The following historic scene rehabilitation activities would be conducted:

- Approximately 100 acres of woodlands northeast of Brawner Farm, along the Unfinished Railroad grade, and around Deep Cut would be cleared and replaced with open fields and grasslands. This would reestablish the view from Brawner Farm to Deep Cut.
- Approximately 45 acres of woods along the west side of Chinn Ridge would be cleared and replaced with open fields and grasslands to reestablish the view between the ridge and the site of the New York Monuments.
- Approximately 25 acres of woods along the east side of the Chinn Ridge would be cleared and replaced with open fields and grassland to reestablish the view between Chinn Ridge and Henry Hill. The riparian buffer along Chinn Branch would be retained.
- The current Stuart's Hill clearing would be expanded by approximately 30 acres to the east. The clearing would restore the view from General Lee's headquarters towards Centreville during Second Manassas. Approximately 20 acres of land that is currently open space south of Stuart's Hill would be reforested. The historic landscape around the Cundiff House would be rehabilitated to wartime conditions. Approximately 40 acres of trees would be removed and converted to grassland and/or scrubland. Approximately 15 acres of land that is currently open space would be reforested.
- Approximately 20 acres along the north-central portion of Dogan Ridge would be reforested, and a small area of 3 acres along the curve of the Sudley-Manassas Road would be cleared and managed as open fields.
- Approximately 35 acres of trees would be removed from Matthews Hill and the open fields rehabilitated. To the north, an area of approximately 25 acres would be reforested.
- An additional 5 acres of land along Bull Run to the west of Poplar Ford would be reforested.

To minimize the environmental impact of the tree clearings, the National Park Service would employ best management practices for each phase of the clearings.

Preservation and Rehabilitation of Historic Structures and Sites Prescription

Historic buildings, commemorative features, and site markers are important elements of the battlefield landscape. The National Park Service would continue to preserve historic structures and features, including those that date from the battles, such as Stone House, L. Dogan House, Thornberry House, and the Unfinished Railroad. Buildings and structures that do not date from the battles but are historic or mark the site of wartime structures would be stabilized to function as important interpretive sites or maintained for park uses. These structures include the Brawner Farm House, Henry House, J. Dogan House, Pringle House, and Stone Bridge.

In addition to continued protection of these structures, the National Park Service would initiate several actions:

- Rehabilitate the Brawner Farm House (beginning in Fiscal Year 2005) to support public visitation, as part of the Second Manassas tour route.

- Create a "ghosted" outline of the Robinson House ruins. From the Civil War period.
- Preserve and stabilize the J. Dogan House. This preservation effort would include removing nonconforming structural elements such as siding and removing the nonconforming modern garage.
- The existing U.S. Route 29 bridge over Bull Run would be removed to eliminate modern intrusions from the battlefield landscape and to return the site to a more historic appearance.

MOTORIZED SIGHTSEEING AND CIRCULATION PRESCRIPTION

To minimize the impacts of traffic congestion and to enhance the visitor experience on the battlefields, the portions of U.S. Route 29 and VA Route 234 within the boundaries of the park would be transferred to the jurisdiction of the National Park Service and the speed limits would be reduced to 25 miles per hour. These actions would be taken once the Battlefield Bypass is complete. Traffic would be further controlled by providing restricted access to the park at the north and south entrances (VA Route 234), and at the east and west boundary (U.S. Route 29) of the park.

These new entrance facilities would be the primary location for collection of park entrance fees. These facilities could either be staffed by park personnel or, in some cases, might be designed as fully automated gates. A more detailed examination of the layout, facility design, and operational characteristic of these entrance stations would be part of subsequent planning and design efforts. Separate accommodation would be made to give unhindered park access to emergency vehicles, park residents, local deliveries, and other essential services.

Designated bicycle lanes would be marked along primary roads throughout the park. The signalized intersection at U.S. Route 29 and VA Route 234 would be replaced with a four-way stop to reduce the real and perceived scale of the road and return it to its historic character. Excess pavement and other physical alterations to the intersection would be removed in this alternative, as a way to reduce the scale of the road crossing and restore the historic and more rural appearance of the intersection. In this alternative, the existing U.S. Route 29 bridge over Bull Run would be removed and a replacement bridge would be constructed in a new location with fewer impacts on the cultural landscape. A parking lot to the west of Stone Bridge would enable visitors to walk to and see the historic bridge and associated sites inside the park.

RECREATION PRESCRIPTION

A newly designated recreation area would be developed off Groveton Road to accommodate approved recreational activities, bus parking, and equestrian trail parking. This area is removed from the primary historic landscapes and major interpretive sites. Visitor facilities such as restrooms and picnic tables would be found in this area.

PARK OPERATIONS AND MAINTENANCE PRESCRIPTION

Alternative B would not alter the locations of current park administrative and operational functions. If additional space was needed for park operations in the future, park structures would be adaptively reused. Should the park require any major new facilities, they would be located on disturbed ground within the park where there is no likelihood of encountering war-related artifacts or features, or at a location outside the current park or historic district boundaries, should an opportunity or need for a partnership facility arise. A new access road would be developed to the headquarters building at Stuart's Hill from U.S. Route 29, and the existing access road would be closed and the landscape rehabilitated.

A new operational consideration in this alternative would be the change in ownership of the portions of U.S. Route 29 and VA Route 234 within the boundaries of the park. As proposed, these roads would be turned over by the Commonwealth of Virginia to the National

Park Service. As part of the Battlefield Bypass study, the details of this acquisition and the related impacts and issues concerning maintenance and management of these roadways would be determined. Estimates provided by the Battlefield Bypass study team and the Virginia Department of Transportation indicate that, after acquisition and removal of the signalized intersection, the portions of U.S. Route 29 and VA Route 234 within the park would cost approximately $35,000 to $40,000 per year (in 2005 dollars) to maintain.

Staffing levels over the next 15 to 20 years would increase under this alternative. To accommodate the proposed interpretive needs, maintenance requirements, law enforcement, and overall management of the resources, an additional 18 full-time-equivalent employees would be necessary to fully implement this alternative. Not all of the additional employees would need to be National Park Service employees. The park would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the park.

The increase in personnel would be necessary to implement the expanded and enhanced interpretation opportunities in the alternative. There would also be a greater demand for resources once the park assumed primary jurisdiction over the portions of U.S. Route 29 and VA Route 234 within the park. Visitation in the park is expected to increase over the life of the plan, which would result in a greater demand for visitor safety, law enforcement, and resource protection services.

BOUNDARY ADJUSTMENTS

In alternative B a boundary adjustment to the park would be necessary to include the four tracts of land described below. This adjustment would require legislation to amend the existing boundary.

The Davis Tract: A 136-acre parcel of land west of Featherbed Lane across from the northwestern edge of thecurrent park boundary. This parcel was recently acquired by the Civil War Preservation Trust and a group of local residents. The land is important to the Battle of Second Manassas as a site where General Thomas J. "Stonewall" Jackson maneuvered and withstood repeated assaults. Thus, it is especially key to the story at Manassas National Battlefield Park.

The Stonewall Memory Garden Tract: A 43-acre parcel located in the northern half of the Stonewall Memory Garden and north of the L Dogan House on the west side of Featherbed Lane. The parcel is not part of cemetery operations. This property is, without question, the most important property currently outside the park boundaries. On this site, Union general Fitz-John Porter led an assault on Jackson's line along the Unfinished Railroad on the last day of Second Manassas (August 30, 1862). A sliver of land that was part of that assault is currently within the park boundary. The additional 43 acres would include all land associated with that part of the battle and would allow full interpretation of the story.

The Conservation Trust Parcel: A 24.25-acre tract of land purchased by the Conservation Trust in 1991 and located almost entirely within the park boundary. The Conservation Trust transferred that land to the National Park Service, but a small piece (0.75 acre) east of Pageland Lane was outside the park boundary. Since that time, the Conservation Trust has transferred the land to the Civil War Preservation Trust, which has expressed interest in donating the land to the park.

Dunklin Monument: A 6-acre parcel of land near the park headquarters south of Route 29 on the west side of Pageland Lane. The family of a Texas Confederate soldier, Timothy Dunklin, who was killed at Second Manassas, erected the monument. Dunklin is believed to be buried under the monument, and some accounts indicate that other Confederate soldiers are buried nearby. The Dunklin Monument tract is part of an estate called the Latsios Trust. The family owns some 177 acres in two adjoining parcels and has expressed a strong interest in developing the land as an

office/high technology complex. Several years ago, the Virginia Department of Transportation purchased a right-of-way through the property, just to the west of the monument, which left the monument intact along with about 6 acres.

ESTIMATED COSTS

The purpose of the cost estimate in a general management plan is to provide a general sense of the cost to implement one alternative relative to other alternatives considered. The relative costs associated with each of the alternatives in this plan have not changed since the publication of the draft plan. However, how these costs are presented in this *Final General Management Plan* has been modified to reflect a change in NPS policy regarding presentation of costs in general management plans.

The presentation of costs within a general management plan is based on the types and general intensities of development in each alternative, estimated staffing levels that would be required to fully implement the alternative, and deferred maintenance. The cost estimate for this alternative is provided to give a relative sense of its implementation cost when compared to other alternatives described in this plan. All costs have been rounded to the nearest $100,000 and were estimated based on 2005 dollars. The actual costs to implement the alternative could be higher or lower. For this reason these costs are not appropriate for budgeting purposes. The actual costs will be determined prior to implementation and will be based on the design of facilities and identification of detailed resource protection and visitor experience goals. The cost estimates presented represent the total costs of projects described in the alternatives. Potential cost-sharing opportunities with partners could reduce these overall costs. Approval of the general management plan does not guarantee that funding or staffing for proposed actions will be available. Full implementation of the approved general management plan may be many years in the future. The total annual operating costs for this alternative would be $3.4 million.

The total one-time costs for this alternative would be $33 million, and the cost of deferred maintenance would be $5 million. For more information, particularly about the changes in how the costs are presented in this plan, please see “Appendix D: Estimated Costs.”

The costs associated with the demolition of the modern bridge on U. S. Route 29, construction of a new bridge with fewer impacts on the cultural landscape, and the associated realignment of U.S. Route 29 are identified as part of the one-time costs for this *Final General Management Plan* because they would occur within park boundaries. However, these actions and the associated costs have been accounted for in the mitigation measures for the Battlefield Bypass and would likely be funded in a separate appropriation.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS—AN UNDERSTANDING OF THE PRINCIPAL EVENTS

CONCEPT

Alternative C focuses on the "watershed" events of the battles, encouraging visitors towards one major visitor center and multiple interpretive sites. Interpretation of these general events, the outcomes of the battles, and the broader story of the Civil War would be emphasized over the detailed military tactics of each battle. Although other sites in the park would be accessible, the concentration of interpretation and visitor use would be in areas that illustrate the "defining" moments of the battles. Rehabilitating the historic scene in these areas would be important to help visitors understand these principal events.

In alternative C, the overall reasons and strategy for the Civil War would be presented in a comprehensive way. The importance of the Manassas battles would be presented in the overall context of the Civil War. Other stories, such as the local families and African Americans that were affected by the Manassas battles, could be interpreted in the park. Map 2-5 depicts the cultural and historic elements of alternative C.

The general stories and outcomes of the battles would also be presented. Orientation and visitor services for both battles would be carried out from a central location. The visitor experience would not be highly structured and key interpretive areas could be visited without regard to order or sequence. Visitors could tailor their visit to those elements of the battles in which they were most interested.

Key interpretive areas would explain the battle events. In these areas, historic structures would serve interpretive functions and would be accessible to visitors. Extensive interpretive displays would explain the battle events, and view corridors would be developed to enhance visitor understanding of key battle events. The National Park Service would also establish vegetative buffers and design visitor areas so that adjacent development could not be seen. Map 2-6 depicts the circulation and interpretation elements of alternative C.

Overall visitor experience and safety would be enhanced by the construction of the Manassas National Battlefield Park Bypass. This road would eliminate heavy commuter and commercial truck traffic from the portions of U.S. Route 29 and VA Route 234 that run through the park. Through traffic would be further limited with the addition of controlled access points. Alternative C assumes the presence of a finished Battlefield Bypass.

ORIENTATION AND VISITOR SERVICES PRESCRIPTION

In alternative C, visitors would be able to move through the park and experience the battlefields in a setting that is characteristic of the historic scene. Visitors would be oriented to the park at a new visitor center near Stone Bridge. Here they would learn about the watershed events of the war. Visitors would be encouraged to visit key sites throughout the park for specific interpretation of battle events. The visitor center at Henry Hill would be removed, rehabilitating the historic landscape and battlefield scene in this location.

Stone Bridge Visitor Center

In alternative C, a new visitor center near Stone Bridge and the eastern boundary of the park would function as the initial stop and primary orientation point for park visitors. The area would accommodate a high level of visitor use by including a parking area and visitor services in the visitor center.

The function of the new visitor center would be to orient visitors to the park and to present the overall strategy and tactics of the two battles. The focus of interpretation at this visitor center would be on the comprehensive story of the Civil War. The visitor center would

also highlight key interpretive sites throughout the park. Visitors could then visit by automobile or bicycle the sites of both battles that interested them. Formal tour routes would not exist.

The relocation of the visitors' facilities would require a feasibility study to evaluate the proposed location. This relocation would create a major new entry point to the park that would correspond with proposed access changes associated with eliminating commuter traffic from the park. A new access road and bridge over Bull Run would be constructed to minimize impacts on the historical scene. Should partnership opportunities present themselves, a Civil War Museum and Heritage Center, which would interpret the local impact of the Civil War, would be explored as part of the new visitor center.

The Henry Hill visitor center is in the area of the most intense fighting of First Manassas. In this alternative, upon completion of consultation under Section 106 of the National Historic Preservation Act, the Henry Hill visitor center would be removed from Henry Hill, allowing for the rehabilitation of the historic battlefield landscape.

Key Interpretive Sites

Key interpretive sites throughout the park would convey the overall stories of the Battles of First and Second Manassas, as well as major stories specific to each particular site. Visitors would not need to visit all of the sites or visit them in a sequence to understand the battles. Visitors would have the freedom to experience as many or as few of the sites as they wished while gaining a general understanding of the battles.

The key interpretive sites would include Brawner Farm, Chinn Ridge, Deep Cut/Unfinished Railroad, Groveton/New York Avenue, Henry Hill, Portici, Stone Bridge, Stone House, Stuart's Hill, and Sudley.

Each of these sites would receive moderate to high visitor use and would include a parking area and interpretive loop trail. Living history and other interpretive programs would be concentrated at these sites. Extensive interpretive exhibits would be provided at a greater level than in alternative B and, where possible, would be incorporated into historic structures or important engagement sites.

Each site would convey four basic messages

- The overall story of the Civil War
- The general strategy and tactics of the Battles of First and Second Manassas
- Detailed interpretation of the site and its role and impacts on the battles
- A description of other major sites in the park

Each site could also include information on archeology, social history, and other similar topics. To meet these conditions, the National Park Service would initiate several actions:

- Extensive interpretive displays would be developed for each of the key interpretive sites, and current loop trails would be upgraded to enhance the visitor's experience and understanding of the Civil War and the two battles.
- The Thornberry House and Henry House have been rehabilitated to accommodate interior interpretive exhibits. Similar improvements are underway at the Brawner House.
- The informal parking area at the gate to Brawner Farm along the Warrenton Turnpike would be removed and this important view would be restored. The current Battery Heights parking area would be removed and the interpretive displays would be incorporated into the Brawner Farm program.
- The trail that connects the Groveton parking area with the L. Dogan House, the Groveton Confederate Cemetery, and the New York Monuments would be retained.
- New interpretive displays for Second Manassas would be installed at a visitor contact station at Brawner Farm.

- Depending on the exact location of the new bypass, a new entrance roadway and improved parking areas at Stuart's Hill would help minimize the visual impact of the high voltage transmission lines along the park's western boundary.

Battlefield Trails

Current hiking trails would be redesigned to create two separate, 5-mile-long hiking trails for First Manassas and Second Manassas. The primary function of the trails would be to provide those visitors interested in the military and tactical aspects of the battles with an opportunity to gain a more thorough understanding of the battles. A secondary function of the trails would be to provide visitors with solitude and a sense of discovery. The First Manassas hiking trail would begin and end at the Stone Bridge and would link sites related to the first battle. The Second Manassas hiking trail would begin and end at Brawner Farm and would link the resources related to the second battle.

Equestrian Trails

Bridle trails would traverse the park, but would remain separate from the hiking trails. They would provide visitors with the opportunity to experience the park on horseback. Equestrian trails and parking areas for horse trailers would be provided in areas where they could be safely accommodated without impacting historic resources or other visitor uses. The final alignment of a new equestrian trail near Stuart's Hill, as well as the equestrian trails near Brawner Farm, would be determined during the implementation of alternative C.

CULTURAL LANDSCAPE REHABILITATION/PRESERVATION PRESCRIPTION

Alternative C would not attempt to re-create the historic landscape and would manage the current patterns of open fields and wooded areas. Historic views would be explained through interpretive exhibits. In those areas where especially important views are obscured by modern tree cover, view corridors would be established. These corridors would not attempt to represent the extent of the historic field pattern. However, the cleared corridors would provide a line of sight between important features and would be wide enough to avoid encroachment by the wooded areas. Riparian buffer zones would protect bottomland forests and wetlands within perimeters of proposed cuts. Where the battlefield resources were maintained to represent the wartime scene, interpretive exhibits would be created to allow visitors to understand the role of the landscape and the battlefield terrain on the events of the two battles.

To meet these conditions, the National Park Service would initiate the following actions:

- The current view corridor at Deep Cut would be widened by removing approximately 40 acres of trees.
- A view corridor would be reestablished from Chinn Ridge to the New York Monuments by removing approximately 30 acres of trees.

To minimize the environmental impact of the tree clearings, the National Park Service would employ best management practices for each phase of the clearings.

Preservation ad Rehabilitation of Historic Structures and Sites

Historic structures and features, including those that date from the battles, would be preserved and would be prominent features at the key interpretive sites. These structures include the Stone House, L. Dogan House, Thornberry House, Robinson House ruins, and Unfinished Railroad. Other structures that do not date from the battles but that are historic or mark the site of wartime structures would be retained as important engagement sites or for park uses. These structures include Brawner House, Henry House, J. Dogan House, Pringle House, and Stone Bridge.

Map 2-5

SYMBOL KEY

- National Battlefield Park Boundary
- Picnic area
- Preserved war time structure (structures would be upgraded for visitor use)
- Visitor Center
- Park Headquarters
- Historic House site
- Other historic site
- Unfinished Railroad Grade
- Sites of Major Combat
- Non-NPS public land within park boundary
- Privately owned land within park boundary
- Privately owned land within park boundary; NPS owns scenic easement
- Privately owned land outside park boundary
- Power line easement
- Proposed Boundary Adjustment
- Proposed Forest Cut Areas
- Historic Views Restored

MANAGEMENT ZONES

- Visitor Experience / Services Zone
- Cultural Landscape Rehabilitation/Preservation Zone
- Motorized Sightseeing / Park Circulation Zone
- Recreation Zone
- Park Operations and Maintenance Zone

NOTES:

- Visitors would gain an overall understanding of both battles by visiting the sites of "watershed" events.
- A few important view corridors would be developed, but landscape rehabilitation would not be extensive.
- A new visitor's center would be located near Stone Bridge. The new visitor center would orient visitors to the park and would present the overall strategy and tactics of the two battles. The interpretive focus of this visitor center would be on the Comprehensive Story of the Civil War.

0 1000 2000 3000 4000 5000 FEET
0 0 375 750 1125 1500 METERS
NORTH

Alternative C

Defining Moments of the Battles of Manassas Cultural and Historic Landscape Map

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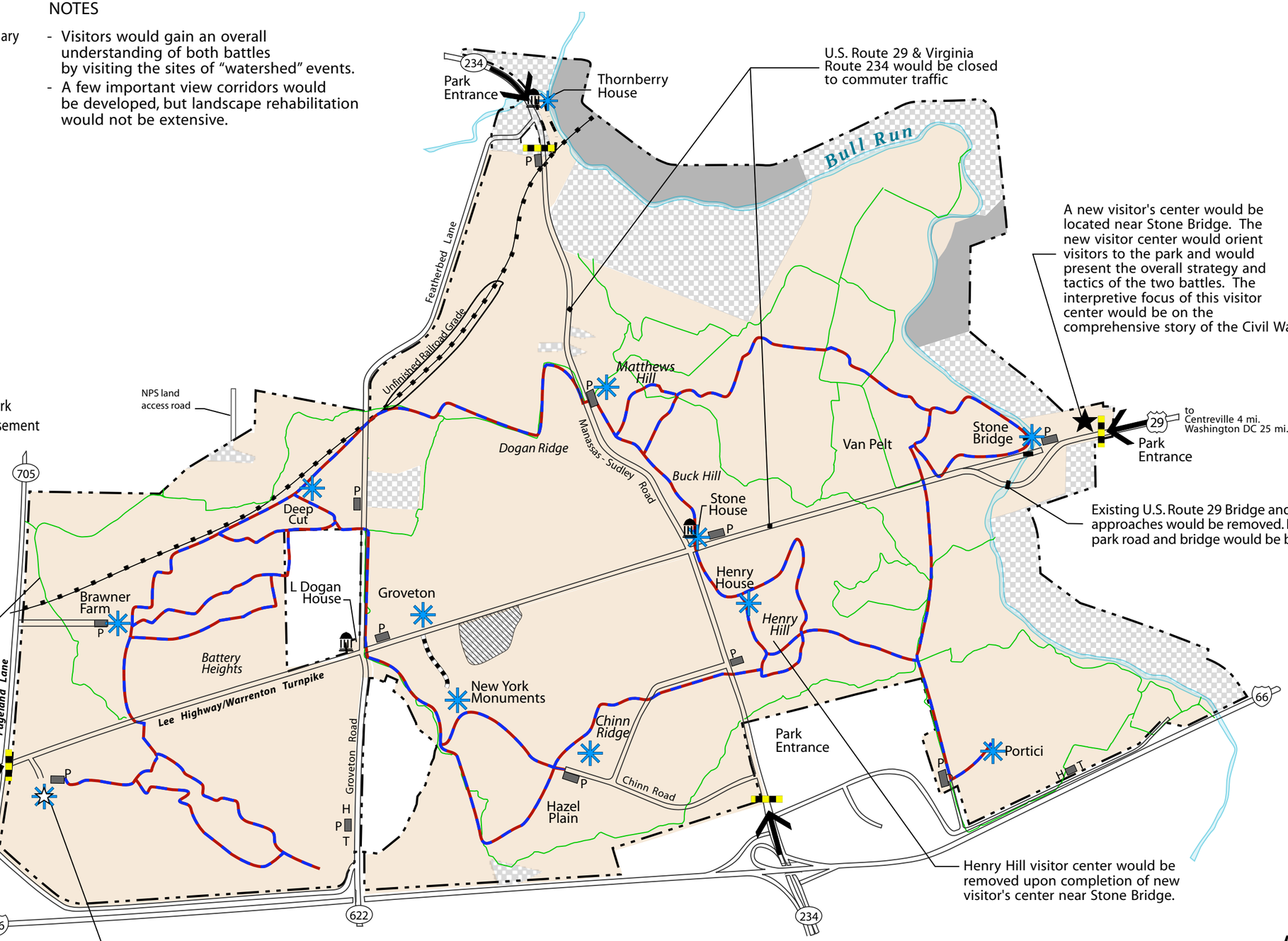
SYMBOL KEY

- National Battlefield Park Boundary
- National Battlefield Park Land
- Parking Area
- Horse Trailer Parking Area
- Preserved war time structure
- Visitor Center
- Park Headquarters
- Unfinished Railroad Grade
- Equestrian Trails
- Other Interpretive Trail
- Proposed Gate Location
- Major Interpretive Trail
- Roadway converted to trail
- Key Interpretive Point
- Non-NPS public land within park boundary
- Privately owned land within park boundary
- Privately owned land within park boundary; NPS owns scenic easement
- Privately owned land outside park boundary

NOTES

- Visitors would gain an overall understanding of both battles by visiting the sites of "watershed" events.
- A few important view corridors would be developed, but landscape rehabilitation would not be extensive.



STUART'S HILL PARK HEADQUARTERS
Park offices would be retained in current locations. Any future increase of office facilities would occur by adaptively using park structures, or facilities would be sought ouside the park.

0 1000 2000 3000 4000 5000 FEET
0 0 375 750 1125 1500 METERS
NORTH

Alternative C

Defining Moments of the Battles of Manassas Circulation and Interpretation Map

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In addition to continued protection of these structures, the National Park Service would initiate the following actions:

- Rehabilitate the Brawner Farm House (beginning in Fiscal Year 2005) to support public visitation, as part of the automobile/bicycle tour route.
- Stabilize and upgrade the L. Dogan House to function as a key interpretive site with exhibits, parking, and trail access.
- Use the Stone House as a key interpretive site with exhibits, parking, and trail access. The house has been rehabilitated, and it has both furnishings and exhibits, with parking already available. It would be a fully functional interpretive site under this alternative.
- Use the Thornberry House as a key interpretive site with exhibits, parking, and trail access.

MOTORIZED SIGHTSEEING AND CIRCULATION PRESCRIPTION

To minimize the impacts of traffic congestion and enhance the visitor experience on the battlefields, the portions of U.S. Route 29 and VA Route 234 within the boundaries of the park would be transferred to the jurisdiction of the National Park Service and the speed limits would be reduced to 25 miles per hour. Once a new bypass route was in place, traffic would be further controlled by providing restricted access to the park at the north and south entrances (VA Route 234), and at the east and west boundaries (U.S. Route 29) of the park.

These new entrance facilities would also be the primary location for collection of park entrance fees. These facilities could either be staffed by park personnel or, in some cases, might be designed as fully automated gates. A more detailed examination of the layout, facility design, and operational characteristic of these entrance stations would be part of subsequent planning and design efforts. It is possible that these other entrances could be closed as park access points. Separate accommodation would be made to give unhindered park access to emergency vehicles, residents, local deliveries, and other essential services.

To create a more appropriate roadway system within the park, the signalized intersection at U.S. Route 29 and VA Route 234 would be replaced with a four-way stop, and the historic character would be restored by returning roads to a two-lane width throughout. With reduced speed limits, designated bicycle lanes would be marked along primary roads throughout the park. Although not specific to this proposal, it would be consistent with this alternative for National Park Service to, when possible, redesign the roads (with narrower pavement, historic grades, and other features) to minimize their impact on the battlefields.

In this alternative, the existing U.S. Route 29 bridge over Bull Run would be removed and a replacement bridge would be constructed in a new location with fewer impacts on the historic landscape. This would occur in conjunction with the Battlefield Bypass and the development of a new visitor center near Stone Bridge. This area would also serve as the primary entrance for park visitors.

In this alternative, the National Park Service would explore the development of an alternative transportation system to move visitors throughout the park. A shuttle system or other transportation options that would allow visitors to leave their personal vehicles and tour in larger groups could be explored. Current visitation levels make it difficult to support such a system on a continued basis. However, if future visitation levels dramatically increased and it became feasible and desirable to develop a park shuttle system, a transportation study to analyze several transit options would be prepared.

RECREATION PRESCRIPTION

A newly designated recreation area would be developed off Groveton Road to accommodate approved recreational activities, bus parking, and equestrian trail parking. This area is away from the primary historic landscapes and major interpretive sites. Visitor facilities

such as restrooms and picnic tables would be present in this area.

PARK OPERATIONS AND MAINTENANCE PRESCRIPTION

Alternative C would not alter the locations of current park administrative and operational functions. If additional space was needed for park operations in the future, existing park structures would be adaptively reused. It would also be consistent with alternative C to relocate some office and/or administrative functions to the new visitor center facility at Stone Bridge.

A new operational consideration in this alternative would be the change in ownership of U.S. Route 29 and VA Route 234 within the boundaries of the park. As proposed, these roads would be turned over from the Commonwealth of Virginia to the National Park Service. As part of the Battlefield Bypass study, the details of this acquisition and the related impacts and issues concerning maintenance and management of these roadways would be determined. Estimates provided by the Battlefield Bypass study team and the Virginia Department of Transportation indicate that, after acquisition and removal of the signalized intersection, the portions of U.S. Route 29 and VA Route 234 within the park would cost approximately $35,000 to $40,000 per year (in 2005 dollars) to maintain.

Staffing levels over the next 15 to 20 years would increase under this alternative. To accommodate the proposed interpretive needs, maintenance requirements, law enforcement, and overall management of the resources, an additional 25 full-time-equivalent employees would be necessary to fully implement this alternative. Not all the additional full-time-equivalent employees would need to be National Park Service employees. Park managers would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the park.

The increase in personnel would be necessary to implement the expanded and enhanced interpretation opportunities in the alternative. There would also be a greater demand for resources once the park assumed primary jurisdiction over the portions of U.S. Route 29 and VA Route 234 within the park. Visitation in the park is expected to increase over the life of the plan, which would also result in a greater demand for visitor safety, law enforcement, and resource protection services.

BOUNDARY ADJUSTMENTS

In alternative C a boundary adjustment to the park would be necessary to include the four tracts of land described below. This adjustment would require legislation to amend the existing boundary.

The Davis Tract: A 136-acre parcel of land west of Featherbed Lane across from the northwestern edge of thecurrent park boundary. This parcel was recently acquired by the Civil War Preservation Trust and a group of local residents. The land is important to the Battle of Second Manassas as a site where General Thomas J. “Stonewall” Jackson maneuvered and withstood repeated assaults. Thus it is especially key to the story at Manassas National Battlefield Park.

The Stonewall Memory Garden Tract: A 43-acre parcel located in the northern half of the Stonewall Memory Garden and north of the L Dogan House on the west side of Featherbed Lane. The parcel is not part of cemetery operations. This property is, without question, the most important property currently outside the park boundaries. On this site, Union general Fitz-John Porter led an assault on Jackson’s line along the Unfinished Railroad on the last day of Second Manassas (August 30, 1862). A sliver of land that was part of that assault is currently within the park boundary. The additional 43 acres would include all land associated with that part of the battle and would allow full interpretation of the story.

The Conservation Trust Parcel: A 24.25-acre tract of land purchased by the Conservation

Trust in 1991 and located almost entirely within the park boundary. The Conservation Trust transferred that land to the National Park Service, but a small piece (0.75 acre) east of Pageland Lane, was outside the park boundary. Since that time, the Conservation Trust has transferred the land to the Civil War Preservation Trust, which has expressed interest in donating the land to the park.

Dunklin Monument: A 6-acre parcel of land near the park headquarters south of Route 29 and on the west side of Pageland Lane. The family of a Texas Confederate soldier, Timothy Dunklin, who was killed at Second Manassas, erected the monument. Dunklin is believed to be buried under the monument, and some accounts indicate that other Confederate soldiers are buried nearby. The Dunklin Monument tract is part of an estate called the Latsios Trust. The family owns some 177 acres in two adjoining parcels and has expressed a strong interest in developing the land as an office/high technology complex. Several years ago, the Virginia Department of Transportation purchased a right-of-way through the property, just to the west of the monument, which left the monument intact along with about 6 acres.

ESTIMATED COSTS

The purpose of the cost estimate in a general management plan is to provide a general sense of the cost to implement one alternative relative to other alternatives considered. The relative costs associated with each of the alternatives in this plan have not changed since the publication of the draft plan. However, how these costs are presented in this *Final General Management Plan* has been modified to reflect a change in NPS policy regarding presentation of costs in general management plans.

The presentation of costs within a general management plan is based on the types and general intensities of development in each alternative, estimated staffing levels that would be required to fully implement the alternative, and deferred maintenance. The cost estimate for this alternative is provided to give a relative sense of its implementation cost when compared to other alternatives described in this plan. All costs have been rounded to the nearest $100,000 and were estimated based on 2005 dollars. The actual costs to implement the alternative could be higher or lower. For this reason these costs are not appropriate for budgeting purposes. The actual costs will be determined prior to implementation and will be based on the design of facilities and identification of detailed resource protection and visitor experience goals. The cost estimates presented represent the total costs of projects described in the alternatives. Potential cost-sharing opportunities with partners could reduce these overall costs. Approval of the general management plan does not guarantee funding or staffing for proposed actions will be available. Full implementation of the approved general management plan may be many years in the future. The total annual operating costs for this alternative would be $3.8 million.

The total one-time costs for this alternative would be $49.3 million, and the cost of deferred maintenance would be $5 million. For more information, particularly about the changes in how the costs are presented in this plan, please see "Appendix D: Estimated Costs."

The costs associated with the demolition of the modern bridge on U. S. Route 29, construction of a new bridge with fewer impacts on the cultural landscape and the associated realignment of U.S. Route 29 are identified as part of the one-time costs for this *Final General Management Plan* because they would occur within park boundaries. However, these actions and the associated costs have been accounted for in the mitigation measures for the Battlefield Bypass and would likely be funded in a separate appropriation.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

In response to comments submitted on the *Draft General Management Plan / Environmental Impact Statement*, the National Park Service considered an additional alternative concept for the *General Management Plan*. This alternative would be similar to alternative A, the no-action alternative. Under this concept, U.S. Route 29 and VA Route 234 would continue to serve as the main commuter arteries in the area. Traffic-related adverse impacts would be mitigated by a number of measures, including upgrades of other local roads to carry additional traffic, improved shoulders, and traffic calming improvements such as roundabouts.

This option was dismissed because the proposal to construct or not construct the bypass is beyond the scope of the general management plan. The Battlefield Bypass study is being conducted in response to a Congressional mandate to consider and develop plans for the closing of the in-park segments of these public highways.

The Manassas National Battlefield Park Amendments of 1988 were enacted to preserve the most important historic properties related to the battles of Manassas. It was determined at that time that highway expansion and resulting increased traffic on U.S. Route 29 and VA Route 234 could pose too great an impact on the natural and cultural resources of Manassas National Battlefield Park and that alternative routes for traffic were required.

Specifically, Congress directed that the "Secretary of the Interior…in consultation and consensus with the Commonwealth of Virginia, the Federal Highway Administration, and Prince William County, shall conduct a study regarding the relocation of highways (know as routes 29 and 234) in, and in the vicinity of, the Manassas National Battlefield Park. . . . The study shall specifically consider and develop plans for the closing of these public highways (known as routes 29 and 234) that transect the park and shall include analysis of the timing and method of such closures and of means to provide alternative routes for traffic now transecting the park."

Population growth forecasts for the region project substantial increases through the year 2025. It is anticipated that the population of Fairfax County will grow by 24 percent during this period, Loudoun County will grow by 195 percent, and Prince William County will grow by 41 percent.

It is reasonable to extrapolate that traffic volumes will increase at similar rates over this period. The growth in traffic volume over the recent past supports this assumption. Traffic volumes within the park increased on VA Route 234 south of U.S. Route 29 at an average rate of 1.3 percent annually between 1996 and 2002. Traffic on U.S. Route 29 east of U.S. Route 29 increased at an average rate of 6.1 percent annually over this same period.

According to the NPS' *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making*, the following criteria must be considered in a decision to dismiss an alternative:

- Technical or economic infeasibility.
- Inability to meet project objectives or resolve needs.
- Duplication with other, less environmentally damaging or less expensive alternatives.
- Conflict with an up-to-date and valid park plan, statement of purpose and significance, or other policy, such that a major change in the plan or policy would be needed to implement.
- Too great an environmental impact.

The decision to dismiss this alternative was based on Criteria A, D, and E. Given the likely increase in regional traffic volumes over the next 15 to 20 years, U.S. Route 29 and VA Route 234 could not accommodate additional traffic volume without widening the roads. Traffic already meets or exceeds capacity for these roads. Traffic calming techniques would be inadequate to manage these levels of use. It is not feasible to widen these roads beyond the existing road bed, as widening would result in too great an impact on the cultural landscape of the park. Current traffic loads pose unacceptable safety risks, which would only worsen with traffic increases.

This proposal would be in conflict with the Manassas National Battlefield Park Amendments, which Congress passed in 1988. This legislation mandated a study regarding the relocation of U.S. Route 29 and VA Route 234 and specifically "the closing of the public highways that transect the park" (see HR 4333, Title X, § 10004). The resulting Battlefield Bypass study assessed the impacts of continued use of VA Route 234 and U.S. Route 29 as the main commuter routes in the park. This analysis determined that this use would result in moderate adverse impacts on the cultural landscapes in the park.

Any construction to expand the highway, combined with the increased traffic flow in the park resulting from this expansion, would create a potential impact on the integrity of park resources and the visitor experience. Traffic-induced noise accounts for most or all of the sound in key locations in the park. It is reasonable to assume the noise level in the park would increase with additional traffic, further diminishing the opportunity to enjoy the peaceful and solemn setting of the battlefield. This would pose a major long-term adverse impact on the visitor experience at Manassas National Battlefield Park. Therefore, it was determined that this is not a viable alternative, as required under the National Environmental Policy Act, and it was not subjected to further analysis.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

In accordance with NPS Director's Order #12, the National Park Service is required to identify the environmentally preferable alternative in all environmental documents. The environmentally preferable alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969. The Council on Environmental Quality provides direction that the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act, which considers

- fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations
- assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings
- attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
- preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice
- achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
- enhancing the quality of renewable resources and approaching the maximum attainable recycling of nonrenewable resources

Alternative A (no-action) would not resolve traffic problems. Commuter and commercial traffic would remain detrimental to the visitor experience, cultural resources, and visitor safety at the park.

Implementation of alternative A would not fully achieve criteria 1 through 5 above. Alternative A does not completely fulfill the responsibilities to protect resources, nor does it assure a safe and culturally pleasing surrounding for succeeding generations (Criteria 1 and 2). Furthermore, alternative A does not attain the widest range of beneficial use without degradation and risk of health and safety (Criterion 3). For example, traffic levels adversely impact the battlefield resource, safety, and visitor use and experience. Alternative A fails to preserve and protect some of the cultural aspects and natural heritage of the park because of the traffic conditions (Criterion 4). Finally, alternative A does not fully achieve a balance between the resource and the surrounding population because commuter traffic through the park would continue to affect the battlefield cultural landscape and visitor experience (Criterion 5). Therefore, alternative A is not the environmentally preferred alternative.

The two action alternatives, B and C, are focused primarily on rehabilitation and preservation of the battlefield resources and the enhancement of the visitor experience, which is instrumental to the park's mission and purpose. Therefore, many of the actions under alternatives B and C have beneficial impacts on the cultural environment and visitor experience with some compromise on the natural or social environment.

As an example, the cultural landscape rehabilitation (forest thinning) under alternative B would have greater benefit to the battlefield landscape and visitor experience than alternative C because it would rehabilitate the landscape to its wartime appearance. The conversion of some forested areas to grasslands and/or scrubland in both alternatives B and C would be beneficial to grassland and scrubland species of plants and animals. More of this type of conversion would be done in B than C. However, to accomplish this; the park would clear more forested area, creating a

greater adverse impact on woodland vegetation and wildlife than alternative C.

Similarly, because it would remove the visitor center from Henry Hill, alternative C would have greater benefits than alternative B by rehabilitating the historic battlefield landscape. However, the relocation of the visitor center to the east side of the park would likely have greater adverse impacts to water resources.

When identifying the environmentally preferred alternative and assessing impacts to the natural, socioeconomic, and cultural environments, it is important to understand the primary purpose of the park as identified in the establishing legislation. The park's mission is "to preserve and protect the sites, structures, and objects associated with the Battles of First and Second Manassas and, through interpretation, foster an understanding and appreciation of their significance in the broader context of the American Civil War for the inspiration and benefit to the public."

The two action alternatives, alternatives B and C, fulfill the National Park Service's responsibility as a trustee for the environment for succeeding generations (Criterion 1) through resource protection and preservation. The proposed actions included in alternatives B and C would assure that all generations have safe, healthful, and aesthetically and culturally pleasing surroundings (Criterion 2) because of the visitor services enhancements, transportation improvements, battlefield scene rehabilitation, and historic structure preservation and rehabilitation. Under alternatives B and C, the National Park Service seeks to preserve the cultural and natural heritage aspects (Criterion 4) of the park. Both alternatives seek to restore a balance between the population and the resource (Criterion 5) by eliminating commuter and commercial traffic on the portions of U.S. Route 29 and VA Route 234 that run through the park to enhance cultural resources, the soundscape, and the visitor experience.

Overall, both alternatives promote national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Alternative B maximizes use of the Henry Hill visitor center and a separate Second Manassas visitor contact station. The battlefield landscape rehabilitation under alternative B would have a greater beneficial impact on the cultural landscape compared to the relocation of the visitor center off the battlefield under alternative C. Nevertheless, they also create adverse impacts on natural resources.

Both alternatives B and C propose creating a new access road and bridge into the park. However, alternative C also would develop a new visitor center and entry point on the east side of the park. This action would lead to greater impacts on natural resources than the actions identified in alternative B and could have a limited impact on land use patterns outside the park boundary.

Site-specific environmental analyses have not been completed to compare the degree of impacts of the landscape rehabilitation efforts and the visitor center. However, the natural resource impacts associated with the new visitor center under alternative C are anticipated to be greater than impacts resulting from the landscape rehabilitation. While both actions have adverse impacts, the full range of landscape rehabilitation activities under alternative B would also have some beneficial impacts because it would create greater habitat diversity in the park. Therefore, alternative B would best fulfill Criterion 3. Of the three alternatives, it would have the greatest benefits for the least amount of degradation to the environment.

Alternative B also maximizes the use of the Henry Hill visitor center and Second Manassas visitor contact station with fewer adverse impacts, which better fulfills Criteria 3 and 6. Alternative B proposes the continued use of both facilities. Under alternative C, the National Park Service would begin planning to remove the existing visitor center and build a new visitor center near Stone Bridge. Because alternative B would maximize the use of the Henry Hill visitor center and the Second Manassas visitor contact station, alternative B is the environmentally preferred alternative.

MITIGATION MEASURES / BEST MANAGEMENT PRACTICES

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

To ensure that implementation of the action alternatives protects unimpaired natural and cultural resources and the quality of the visitor experience, a consistent set of mitigation measures would be applied to actions proposed in this plan.

The National Park Service would prepare appropriate environmental reviews, such as those required by the National Environmental Policy Act, National Historic Preservation Act, and other relevant legislation, for the future actions described in the alternatives. As part of the environmental review, the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable.

The implementation of a compliance-monitoring program could be considered as a way to stay within the parameters of National Environmental Policy Act and National Historic Preservation Act compliance documents, U.S. Army Corps of Engineers Section 404 permits, and other key regulations. The compliance-monitoring program would oversee these mitigation measures and would include reporting protocols.

The following mitigation measures and best management practices would be applied to avoid or minimize potential impacts from implementation of the alternatives. These measures would apply to all alternatives.

NATURAL RESOURCES

If site-specific actions proposed under this *General Management Plan* would have the potential to impact water resources, water quality, or other aspects of the natural environment, the National Park Service would subject the projects to site-specific planning and compliance. Additional environmental analysis and documentation would be needed to comply with the National Environmental Policy Act prior to implementation. Examples of actions where additional analysis would be needed might include, but would not be limited to, the U.S. Route 29 bridge removal and reconstruction in a different location, landscape scene rehabilitation, and other projects that may require land disturbance.

For construction or scene rehabilitation, the National Park Service contract administrators would specify that contractors use appropriate sediment and erosion control measures; minimize discharge to water bodies; regularly inspect construction equipment for leaks of petroleum and other chemicals; and provide for dust control, the addition of pollution control devices on construction equipment, and the use of low-polluting fuels. Where ground disturbance is anticipated, best management practices to control soil erosion and loss during construction activities would include minimization of disturbance areas, use of silt fences, revegetation, or other applicable practices to control drainage and erosion in accordance with an approved sediment and erosion control plan.

The National Park Service would maintain the riparian buffers along all streams to mitigate potential bank erosion and channel siltation from forest removal areas. Forest removal operations would incorporate Virginia Department of Forestry best management practices to avoid erosion problems, particularly where disturbance would occur on slopes. Riparian buffers as identified here may be maintained as wooded buffers or shrub and

grass buffers, depending on the significance of the historic views to be restored at specific sites within the park.

Upon the completion of the Battlefield Bypass and the transfer of the portions of U.S. Route 29 and VA Route 234 within the park to NPS jurisdiction, the addition of pollution control devices on maintenance equipment and the use of low polluting fuels would be called for in any future plans.

CULTURAL RESOURCES

The National Park Service would conduct site-specific planning and compliance for projects that have the potential for impacts on historic resources. The National Park Service would make efforts to avoid adverse impacts through use of the Secretary of the Interior's Standards for Archeology and Historic Preservation as well as screening and/or sensitive design that would be compatible with historic resources. If adverse impacts could not be avoided, the National Park Service would mitigate these impacts through a consultation process with all interested parties.

As appropriate, archeological surveys and/or monitoring would precede any construction. Limited information is available about existing archeological resources in the park. Known archeological resources would be avoided, and new facilities would be located in previously disturbed areas to the greatest extent possible. If National Register-eligible or -listed archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Virginia Department of Historic Resources (the state historic preservation office).

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 was developed in consultation with the state historic preservation office.

In the unlikely event that Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony were discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 *United States Code* 3001) of 1990 would be followed. Other human remains would be treated in accordance with applicable local regulations.

Through best management practices, the National Park Service would rehabilitate the battlefield and cultural landscape to the greatest extent feasible. This process could entail the rehabilitation of important historic viewsheds through thinning and clearing of selected wooded areas, rehabilitation of historic forested areas through natural succession, and rehabilitation of agricultural fields by removing noncontributing and incompatible structures and incorporating new structures using compatible design.

SOCIOECONOMIC ENVIRONMENT

If site-specific actions proposed under this *General Management Plan* would have the potential to impact the social setting, economy, or other aspects of the socioeconomic environment, the National Park Service would subject the projects to site-specific planning and compliance. Additional environmental analysis and documentation to comply with the National Environmental Policy Act would be needed prior to implementation. Examples of actions where additional analysis would be needed would include, but not be limited to, the controlled access into the park.

VISITOR EXPERIENCE

The air quality non-attainment for ozone standards might offer exploratory partnering and/or funding opportunities with neighboring jurisdictions to lessen nearby vehicular traffic. This might reduce the noise and, thus, improve the park's soundscape for visitors.

FUTURE STUDIES AND IMPLEMENTATION PLANS NEEDED

Following completion and approval of a *General Management Plan* for Manassas National Battlefield Park, other, more detailed studies and plans would be needed for implementation of specific actions. As required, additional environmental compliance for conformance with the National Environmental Policy Act, National Historic Preservation Act, and other relevant laws and policies, and public involvement would be conducted. Those additional studies would include, but would not be limited to

- Environmental assessment for improvements to the Second Manassas visitor contact station.
- Controlled access study and environmental assessment for implementation of controlled access or gates on U.S. Route 29 and VA Route 234 and transportation improvements.
- Environmental assessment and assessment of effect for the removal and reconstruction of the U.S. Route 29 Bridge over Bull Run.
- Environmental assessment and assessment of effect for battlefield landscape and scene rehabilitation activities described in this plan, taking into consideration the cultural landscape reports performed for the Brawner Farm and Stuart's Hill areas.
- Section 106 compliance and assessment of effect for historic rehabilitation and preservation projects in this plan.
- Environmental assessment for a new visitor center and associated site improvements at the eastern boundary of the park near Stone Bridge, as proposed in alternative C.
- A cultural landscape report for the entire park is needed to enhance the park's existing partial cultural landscape inventories, and to make specific landscape treatment recommendations that would be reconciled with the battlefield landscape and scene rehabilitation activities proposed and described in this plan. Separate cultural landscape reports have been prepared for the Brawner Farm and Stuart's Hill areas, but none have been prepared for other parts of the park, or for the park as a whole. Implementation of such activities would call for additional compliance with the National Environmental Policy Act of 1969 and Section 106 of the National Historic Preservation Act of 1966.
- Visitation surveys to assess seasonal visitor use and anticipated staffing, interpretive, and transportation needs.
- A park-wide archeological survey is recommended to assist the National Park Service with the protection of archeological resources that are threatened by looting and park use. The park holds high research interest for historical archeology, and the likelihood of uncovering useful information is high. While high-quality data exists for some specific sites within the park, most of the park has not been surveyed.
- A park-wide resource stewardship plan, in accordance with updated park planning standards and Director's Order #2-1.
- A trails management plan that has been approved via the Section 106 compliance process is recommended to facilitate trails maintenance and planning. The purpose of the trails management plan is to outline the extensive, comprehensive trail network located within Manassas National Battlefield Park and to prescribe acceptable standards and uses compatible with preserving park resources and the environment. The document's purpose is to provide visitors with a trail system that will enable them to enjoy the battlefield, gain an appreciation of the significance of the two battles of Manassas, and have a sense of the environment present at the time of the battles.

SUMMARIES

NPS guidance in *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* requires that environmental impact statements include summaries that will facilitate reader understanding.

- The important features of each alternative that were described in this chapter are summarized in Table 2-2. The relative costs for each alternative are included at the ends of each alternative's description.
- Table 2-3 addresses the Director's Order #12 requirement for a summary that presents "the impacts of each alternative, including a determination of potential improvement to park resources." The table includes both adverse and beneficial effects of the alternatives and identifies their intensity (negligible, minor, moderate, or major) and duration (short-term or long-term). More detailed information supporting Table 2-3 on the effects of the alternatives is provided in the "Environmental Consequences" chapter.

Table 2-2: Alternatives Summary			
	Alternative A— No Action	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
	Continue current management. Continue to implement the 1983 *General Management Plan* actions on a limited basis. Visitor experience remains compromised because of heavy commuter traffic.	A comprehensive understanding of each battle. Visitor experience is greatly enhanced with the elimination of commuter traffic.	A comprehensive understanding of the Civil War and the strategic importance of each battle within the context of the war. Visitor experience is greatly enhanced with the elimination of commuter traffic.
Concept	• Current management practices would be continued; First Manassas would continue to receive greater interpretation and visitor attention because of the difficulty of traversing the portions of U.S. Route 29 and VA Route 234 in the park. However, the park is able to devote more time and facilities to both battles, especially with the more recent additions of the Brawner Farm and Stuart's Hill tracts. • Orientation and visitor services for both battles would primarily be carried out from the Henry Hill visitor center. • Visitors would gain an understanding of both battles by visiting the many sites associated with each battle. • Only small components of the altered historic landscape would be rehabilitated.	• Both battles would be presented as distinct military events. The additions of the Brawner Farm and Stuart's Hill tracts provide a much greater opportunity to present a more comprehensive story of Second Manassas. • Heavy volumes of commuter and commercial truck traffic would be eliminated from the park, greatly enhancing the visitor experience. • Orientation and visitor services for both battles would be carried out from two locations. The Henry Hill visitor center would be the primary orientation point for the park as a whole, and would serve as the starting point for First Manassas tours. • A Battle of Second Manassas visitor contact station at Stuart's Hill (and eventually at Brawner Farm) would interpret the Battle of Second Manassas and would serve as the starting point for Battle of Second Manassas tours. • Visitors would gain a thorough understanding of both battles by visiting the many sites associated with each battle. • Rehabilitation of the historic scene would be important to enhance visitor understanding of battle events and tactics.	• Visitors would gain an overall understanding of both battles by visiting the sites of "watershed" events. • The importance of the Manassas battles would be presented as they relate to the overall context of the Civil War. Other stories, such as those pertaining to local families, including African American families and communities that were impacted by the Manassas battles, could also be interpreted in the park. • The overall reasons and strategy for the Civil War and how the war ended would be presented in a Civil War museum; perhaps in partnership with other groups. • Heavy volumes of commuter and commercial truck traffic would be eliminated from the park. This would greatly enhance the visitor experience. • Orientation and visitor services for both battles would be carried out from a new visitor center, to be constructed near Stone Bridge. • Important view corridors would be developed to enhance visitor understanding of battle events and tactics.

Table 2-2: Alternatives Summary			
	Alternative A— No Action	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
Management Prescriptions and Specific Actions	• Visitors would be oriented to the park and introduced to both battles at Henry Hill. Visitors would receive additional information on Second Manassas at a visitor contact station on Stuart's Hill. • The interpretive materials at the Henry Hill visitor center would still focus on the overall importance and strategy of First Manassas. The visitor contact station at Stuart's Hill would focus on Second Manassas. • Orientation and visitor services for both battles would primarily be carried out from the existing visitor center. • An automobile/bicycle tour route of several of the major battle sites would continue to exist, and would focus primarily on the major sites of Second Manassas. Visitors would tour First Manassas sites on foot via the Henry Hill Loop Trail. The First Manassas Hiking Trail would also be available for longer hikes. • Each site would present the specific battlefield engagement, and provide a parking area and interpretive displays. Most areas would have a short-loop hiking trail. However, interpretive programs would still be primarily concentrated at the visitor center. • Two separate, long-loop interpretive hiking trails (5 miles each) would start at the Henry Hill visitor center and would connect major engagement sites of each battle. These trails would provide an opportunity to learn more about the individual engagements and battles. • Bridle trails would continue to remain separate from the hiking trails.	• Visitors would be oriented to the resources of First Manassas at the visitor center on Henry Hill and to the resources of Second Manassas at a visitor contact station at Stuart's Hill and, eventually, at Brawner Farm. • The interpretive materials at the Henry Hill visitor center would focus on the overall importance and strategy of the First Battle, and the Second Manassas visitor contact station primarily would interpret the Second Battle. • Orientation and visitor services for both battles would be carried out from two locations. • Separate automobile and bicycle tour routes would be developed for each battle. The sites would generally be visited in chronological order. Each site would include a parking area, interpretive displays, and a short-loop trail. Interpretive programs would be concentrated in these areas. • Each site would present the role of the conflict and other key engagements in the two battles. • Two separate, long-loop interpretive hiking trails (5 miles each) would connect major engagement sites of each battle, enhancing the visitor's understanding of the battles. • The First Manassas loop trail would start at the Henry Hill visitor center and connect the sites of the first battle. The Second Manassas loop trail would originate at Brawner Farm and would explore many of the important battle sites of the second battle. • Bridle trails would be separate from the interpretive loop hiking trails.	• Visitors would be oriented to the park at the new visitor center, to be constructed near Stone Bridge. • The importance of the Manassas battles would be presented as they relate to the overall context of the Civil War. Other stories, including those pertaining to the local families and African American communities that were impacted by the Manassas battles, could also be interpreted in the park. • Orientation and visitor services for both battles would be carried out from a central location. • The overall reasons and strategy for the Civil War, and major Civil War topics such as tactics, weapons, and technological developments could be presented in a Civil War museum situated within or external to the park; perhaps in partnership with other groups. • From the visitor center, visitors would be directed to an automobile/bicycle tour route that would include sites from both battles. The sites could be visited in any order; formal tour routes would not exist. Each tour site would include a parking area, a more extensive level of interpretive displays, and a short-loop trail. Interpretive programs would be concentrated in these areas. • Each tour site would present the role of the conflict and other key engagements in the two battles. Expanded interpretation at key areas would discuss the overall story of the Civil War and the Battles of First and Second Manassas. It could also include archeology, social history, and other related topics.

Table 2-2: Alternatives Summary			
	Alternative A— No Action	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
Management Prescriptions and Specific Actions	• Roads through the park would continue to remain open to heavy volumes of commuter and commercial truck traffic. Park management would explore other options to reduce or eliminate vehicular traffic. • A new entrance road and parking area for Brawner Farm would be constructed off Pageland Lane. Access to the visitor contact station at Stuart's Hill would continue to be provided from Pageland Lane. • All wartime structures, as well as other important structures and sites, such as the Henry House, L. Dogan House, Thornberry House, and Robinson House ruins, would be preserved. • The current pattern of open fields and wooded areas would remain, and only small components of altered historic landscapes would be rehabilitated. The historic landscape would be explained through interpretive displays. Extensive scene restoration would not occur. • Park offices would be retained in current locations.	• Roads through the park would be closed to heavy volumes of commuter and commercial truck traffic. • A new entrance road and parking area for Brawner Farm would be constructed off Pageland Lane. • The new access road and parking area for Stuart's Hill would be developed and the existing road would be rehabilitated. • All wartime structures would be preserved. Brawner Farm and the Henry House, Thornberry House, and L. Dogan House would serve as important interpretive sites, and the outline of the Robinson House would be ghosted. • Cultural landscape rehabilitation would reestablish major historic views and clear prominent battlefield sites. • Park offices would be retained in current locations. The maintenance area could be expanded in the future, and other park operations could be increased by adaptively reusing existing park structures. • Authorization would be sought from Congress for the park to expand its boundary to include four specific tracts of land: the Davis Tract, the Stonewall Memory Garden Tract, the Dunklin Monument area, and a three-quarter-acre area owned by the Civil War Preservation Trust.	• Separate interpretive long-loop hiking trails (5 miles each) would originate at the Stone Bridge and Brawner Farm, and would connect major engagement sites of each battle. The routes would follow existing trails and would enhance the visitor's understanding of the battles. Bridle trails would be separate from the interpretive loop hiking trails. • Roads through the park would be closed to heavy volumes of commuter and commercial truck traffic. • A new entrance road and parking area for Brawner Farm would be constructed off Pageland Lane. • All wartime structures would be preserved. The Brawner, Henry, and L. Dogan houses and the Thornberry House would be retained as important sites and all structures would be upgraded to accommodate visitor use. • Cultural landscape rehabilitation would re-create a few important view corridors, but extensive scene restoration would not occur. • Park offices would be retained in current locations. The maintenance area could be expanded in the future, and other park operations could be increased by adaptively reusing existing park structures. Some office and/or administrative functions could be relocated to the visitor's center at Stone Bridge. • Authorization would be sought from Congress for the park to expand its boundary to include four specific tracts of land: the Davis Tract, the Stonewall Memory Garden Tract, the Dunklin Monument area, and a three-quarter-acre area owned by the Civil War Preservation Trust.

Table 2-3: Summary of Impacts of Implementing the Alternatives			
Impact Topics	**Alternative A— No Action**	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
Natural Environment Air Quality	• Negligible long-term adverse impacts on air quality would persist. Cumulative impact on air quality would be moderate short-term and adverse.	• Negligible to minor short-term adverse impacts to air quality would occur during construction activities and landscape rehabilitation. A negligible long-term beneficial impact to air quality within the park would occur. A minor long-term adverse impact on air quality would occur outside the park from the redistribution of traffic. Cumulative impacts on air quality would be adverse and minor.	• Negligible to minor short-term adverse impacts to air quality would occur during construction activities and landscape rehabilitation. A negligible long-term beneficial impact to air quality within the park would occur. A minor long-term adverse impact on air quality would occur outside the park from the redistribution of traffic. Cumulative impacts on air quality would be adverse and minor.
Soundscape	• A moderate long-term adverse impact on the park's soundscape would persist. A moderate long-term adverse cumulative impact would occur.	• A negligible long-term adverse impact on the soundscape would occur from the new contact station and other small projects. Minor short-term adverse impacts on the soundscape would result from forest removal activities. Moderate long-term beneficial impacts would result from traffic and transportation changes. No long-term cumulative impacts on noise would occur.	• A minor to moderate long-term beneficial impact on the soundscape would occur from the relocation of the visitor center and the redirection of traffic. Negligible to minor short-term adverse impacts on the soundscape would be associated with construction. No long-term cumulative impacts on noise would occur.
Vegetation and Wildlife	• Negligible long-term adverse impacts on vegetation and wildlife would occur. Moderate long-term adverse cumulative impacts would occur.	• The impact on vegetation and wildlife would be long-term adverse and minor because of the potential removal of vegetation to construct the new access road at Stuart's Hill and improve parking. • There would be beneficial impacts to vegetation at Stuart's Hill from rehabilitation of the existing roadbed. • The reduction of traffic and travel speeds would reduce the number of animals killed by vehicles, which would be a minor long-term beneficial impact. • The long-term adverse impacts associated with the new access road and bridge would be moderate. • Potential long-term adverse impacts to wildlife from diversion of traffic and changes in traffic levels on other roads outside the park would likely range from negligible to minor. • The reduction of woodlands would have a minor long-term adverse impact on forest species and a minor long-term beneficial impact on species that prefer grasslands and edge habitats.	• The long-term adverse impacts associated with the new visitor center, access road, and bridge would be moderate. • The reduction of traffic and travel speeds would reduce the number of animals killed by vehicles, which would be a minor long-term beneficial impact. • Potential long-term adverse impacts to wildlife from diversion of traffic and changes in traffic levels on other roads outside the park would likely range from negligible to minor. • The impact on vegetation and wildlife at Stuart's Hill would be long-term adverse and minor because of the potential removal of vegetation to construct the road and improve parking. There would be beneficial impacts to vegetation from rehabilitation of the existing roadbed. • The reduction of woodlands would have a negligible to minor long-term adverse impact on forest species and a negligible to minor long-term beneficial impact on species that prefer grasslands and edge habitats.

Table 2-3: Summary of Impacts of Implementing the Alternatives			
Impact Topics	**Alternative A— No Action**	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
		• Collectively, the cumulative impact would be anticipated to be minor to moderate long-term and adverse.	• Collectively, the cumulative impact would be anticipated to be minor to moderate long-term and adverse.
Threatened, Endangered, and Rare Species and Natural Communities	• No effect on threatened, endangered, or rare species or their habitats would occur. No cumulative impact would occur.	• Forest removal to rehabilitate the historic landscape may affect but is not likely to adversely affect species that prefer open fields or edge habitat. Woodland species may be affected, but are not likely to be adversely affected. • Proposed actions would have no effect on threatened or endangered species and may affect but are not likely to adversely affect their habitats, because no supporting habitats would be disturbed. • The cumulative impact would affect but not likely adversely affect threatened and endangered species.	• Forest removal to create view corridors may affect but is not likely to adversely affect species that prefer open fields or edge habitat. Woodland species may be affected, but are not likely to be adversely affected. • Proposed actions may affect but are not likely to adversely affect threatened or endangered species or their habitats because no supporting habitats would be disturbed. • The cumulative impact would affect but not likely adversely affect threatened and endangered species.
Water Resources (Water Bodies, Water Quality, Wetlands, and Floodplains)	• Negligible long-term adverse impacts on water resources would occur. • The cumulative adverse impact would be long-term and moderate.	• The new Stuart's Hill access road would have short-term negligible adverse impacts. • Transportation-related improvements would have a long-term beneficial impact by reducing the volume of polluted runoff that would reach water resources in the park. • The removal of the U.S. Route 29 bridge would likely have a minor long-term beneficial impact on the floodplain and stream and negligible short-term adverse impacts during demolition. • The new bridge over Bull Run and its associated approach roads would have moderate long-term adverse impacts on the floodplain, stream and, potentially, wetlands. • The cumulative adverse impact would be long-term and moderate.	• Transportation-related improvements would have a long-term beneficial impact by reducing the volume of polluted runoff that would reach water resources in the park. • The removal of the U.S. Route 29 bridge would likely have a minor long-term beneficial impact on the floodplain and stream and negligible short-term adverse impacts during demolition. • The new visitor center, new bridge over Bull Run, and its associated approach roads would have moderate long-term adverse impacts on the floodplain, stream and, potentially, wetlands. • The new Stuart's Hill access road would have short-term negligible adverse impacts. • The cumulative adverse impact would be long-term and moderate.

Table 2-3: Summary of Impacts of Implementing the Alternatives			
Impact Topics	**Alternative A— No Action**	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
Cultural Resources	• Few if any adverse effects to archeological resources would occur. If significant archeological resources could not be avoided during construction, impacts would be adverse. • There would be no adverse effects associated with the preservation and rehabilitation of historic structures and cultural landscapes or construction of parking areas, loop trails, and interpretive displays. • Moving artifacts and archives to a facility outside the park would cause a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research. The cumulative impact to museum collections would be beneficial long-term and of minor to moderate intensity. • Any adverse cumulative impacts would be a small component of that cumulative impact.	• If archeological resources could not be avoided during construction, impacts would be adverse. • No adverse effect would be anticipated as a result of construction for a Second Manassas visitor contact station. There would be no adverse effects associated with preservation and rehabilitation of historic structures and cultural landscapes or construction of small parking areas, loop trails, and interpretive displays. Restricting access to U.S. Route 29 and VA Route 234 would have a beneficial impact on historic structures and cultural landscapes. • Removing the U.S. Route 29 bridge over Bull Run would have a beneficial effect on the cultural landscape. • Moving artifacts and archives to a facility outside the park would cause a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research. The cumulative impact to museum collections would be beneficial long-term and of minor to moderate intensity. • Any adverse cumulative impacts would be a small component of that cumulative impact.	• If archeological resources could not be avoided during construction, impacts would be adverse. • No adverse effect would be anticipated as a result of construction for a new visitor center, access road, and bridge. There would be no adverse effects associated with preservation and rehabilitation of historic structures and cultural landscapes or construction of small parking areas, loop trails, and interpretive displays. Restricting access to U.S. Route 29 and VA Route 234 would have a beneficial impact on historic structures and cultural landscapes. • Removing the U.S. Route 29 bridge over Bull Run would have a beneficial effect on the cultural landscape. • Museum collections would continue to be adequately stored and protected. Moving artifacts and archives to a facility outside the park would cause a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research. The cumulative impact to museum collections would be beneficial long-term and of minor to moderate intensity. • Any adverse cumulative impacts would be a small component of that cumulative impact.
Transportation/Traffic	• Commuter and commercial traffic would continue to have major long-term adverse impacts on transportation within the park, causing excessive delays and potential safety risks for motorists. No cumulative impact would occur.	• The controlled access measures would have a major long-term beneficial impact on transportation in the park because of the reduction in commuter and truck traffic in the park. A major long-term beneficial cumulative impact would occur.	• The controlled access measures would have a major long-term beneficial impact on transportation in the park because of the reduction in commuter and truck traffic in the park. A major long-term beneficial cumulative impact would occur.

Table 2-3: Summary of Impacts of Implementing the Alternatives			
Impact Topics	**Alternative A— No Action**	**Alternative B— The Two Battles of Manassas**	**Alternative C— The Defining Moments of the Battles**
Socioeconomic Environment	• Negligible impacts to the existing socioeconomic environment would occur. Negligible cumulative impact would occur.	• Negligible long-term adverse impacts would occur for residents requiring access through the park. Negligible long-term adverse impacts to emergency response would occur. A few businesses could experience minor adverse long-term impacts. Minor adverse cumulative impacts would occur.	• Negligible long-term adverse impacts would occur for residents requiring access through the park. Negligible long-term adverse impacts to emergency response would occur. A few businesses could experience minor adverse long-term impacts. Minor adverse cumulative impacts would occur.
Recreation	• No impacts to the existing recreation conditions would occur. No cumulative impact would occur.	• Minor long-term beneficial impacts would result from the enhanced recreational opportunities. A minor beneficial cumulative impact would occur.	• Minor long-term beneficial impacts would result from the enhanced recreational opportunities. A minor beneficial cumulative impact would occur.
Visitor Experience	• Major long-term adverse impacts would occur, primarily because of conflicts between park visitors and non-park traffic. Cumulative impact would be moderate long-term and adverse.	• The elimination of commuter and truck traffic, removal of the existing U.S. Route 29 bridge, battlefield scene rehabilitation, and preservation and maintenance of historic structures would have a major long-term beneficial impact on the visitor experience. A moderate beneficial cumulative impact would occur.	• The elimination of commuter and truck traffic, removal of the existing U.S. Route 29 bridge, battlefield scene rehabilitation, and preservation and maintenance of historic structures would have a major long-term beneficial impact on the visitor experience. A moderate beneficial cumulative impact would occur.
Park Operations and Maintenance	• Minor long-term adverse impacts would occur. Negligible cumulative impact would occur.	• Minor and moderate long-term adverse impacts would occur because of changed operations associated with a visitor contact station for Second Manassas, new interpretive programs, change in ownership of the roads, and controlled access into the park. Negligible cumulative impact would occur.	• Minor and moderate long-term adverse impacts would occur because of changed operations associated with the new visitor center, new interpretive programs, change in ownership of the roads, and controlled access into the park. Negligible cumulative impact would occur.

AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the existing environment of the Manassas National Battlefield Park and the surrounding region. It focuses on describing the key park resources, uses, facilities and socioeconomic characteristics that provide the necessary background and setting information for the study team to determine the likely effects, described in the Environmental Consequences chapter, of the alternatives. Some features are also discussed because they provide context, and/or must be considered in environmental impact statements.

The affected environment section is general in nature because of the programmatic approach of general management planning. There are many sources from which more detailed information can be obtained on the natural, cultural, and human environment of Manassas National Battlefield Park. Many of these sources were used in the preparation of this *General Management Plan / Environmental Impact Statement* and are listed in the "Selected Bibliography" near the end of this volume. Additional information on park resources can be found on the Internet at www.battlefieldbypass.com and in the *Manassas National Battlefield Park Bypass Existing Conditions Report* (2003) prepared by the Federal Highway Administration and the National Park Service.

NATURAL ENVIRONMENT

AIR QUALITY

National Ambient Air Quality Standards for certain major air pollutants, including sulfur dioxide, nitrogen oxides, particulate matter, ozone, carbon monoxide, and lead, were established under the 1970 Clean Air Act Amendments. Areas in the United States that meet these standards are known as attainment areas. Areas in which the standards are not met are known as nonattainment areas.

Manassas National Battlefield Park is in Virginia Air Quality Control Region VII, which is in severe nonattainment for ozone. The region is in attainment for the other pollutants.

Section 118 of the Clean Air Act requires federal facilities such as Manassas National Battlefield Park to comply with all federal and state air quality standards and regulations. Section 176 of the act requires federal facilities to conform to state programs designed to attain and maintain those standards.

The 1977 Clean Air Act Amendments established a program to preserve, protect, and enhance the air quality in certain areas of the United States. One hundred and fifty-eight of those areas, including national parks over 6,000 acres and wilderness areas over 5,000 acres, were designated mandatory Class I areas with little additional air pollution permitted over baseline concentrations. Stringent air quality standards, known as increments, were established for those areas for certain air pollutants, including sulfur dioxide, nitrogen oxides, and particulate matter, from new or modified existing major stationary sources. The nation's remaining areas, such as Manassas National Battlefield Park, are Class II areas. The Clean Air Act established less stringent increments for those areas for the three pollutants cited above.

The major source of air pollution within the park is vehicle emissions. However, the major sources of regional air pollution are outside the park and include stationary sources in the surrounding counties, motor vehicle use in the region, and other sources in the Washington, D.C. metropolitan area. Historically significant views and the visual setting are integral to the visitor experience and can be diminished by air pollution.

SOUNDSCAPE

The NPS' *Management Policies* and *Director's Order #47: Soundscape Preservation and Noise Management* recognize natural soundscapes as a park resource and call for the National Park Service to preserve natural soundscapes. Presently, the soundscape and noise levels at the park are greatly influenced by vehicular and truck traffic on U.S. Route 29, VA Route 234, and I-66.

The National Park Service conducted a traffic noise and vibration assessment for Manassas National Battlefield Park in 1996. The vibration assessment looked at the effects of vibration from the vehicular traffic on the park resources such as the Stone House, and the traffic noise assessment examined the effect of traffic on the visitor experience.

The study found that the risk to the building resulting from damage caused by traffic-induced vibration is small (Peccia 1996).

In contrast, the noise assessment stated that the existing traffic noise levels create noise impacts serious enough to consider noise abatement at several of the key visitor sites at the park (Peccia 1996). When noise levels were compared to land-use compatibility guidelines, many of the park's resources would be discouraged from use as sites for cultural activities because of existing noise levels.

VEGETATION AND WILDLIFE

Vegetation

The park's vegetation is a patchwork of open fields and forest communities representing

different successional stages and ecological conditions. The open fields are maintained through agricultural leases and mowing by park personnel. Many of these grasslands contain native grass communities, particularly Indian grass/little bluestem. Grasslands cover about 35 percent of the park. The forest communities, which cover approximately 50 percent of the park, are primarily deciduous stands of oak-hickory, pine/cedar forest, mixed pine/hardwood stands, and bottomland hardwood stands.

The Virginia Department of Conservation and Recreation, Division of Natural Heritage completed a vascular plant inventory of Manassas National Battlefield Park in March 2001. The species list was added to the Virginia Biological and Conservation Data System. Of over 700 taxa inventoried in the park, 124 are invasive, exotic species.

The coniferous forest (mainly pine/cedar community) is in a successional stage of growth that developed from previously open fields and is characterized by Virginia pine (*Pinus virginiana*), eastern red cedar (*Juniperus virginiana*), and shortleaf pine (*Pinus echinata*). The mixed forest is in a transitional stage that occurs in comparatively small, scattered stands. Oak-hickory dominates the deciduous forest in upland areas and represents the climax growth stage in the park. Stands are often more than 100 years old and commonly consist of white oak (*Quercus alba*), northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), white ash (*Fraxinus americana*), and hickory (*Carya sp.*).

Floodplain bottomland forests, found primarily along Bull Run, represent old, undisturbed forests with many mature floodplain trees. Tree species include pin oak (*Quercus palustris*), swamp white oak (*Quercus bicolor*), green ash (*Fraxinus pennsylvanica*), and American elm (*Ulnus americana*). Various bottomland hardwoods also occur along the riparian fringe of tributary streams. Small patches of loblolly pine (*Pinus taeda*) and eastern white pine (*Pinus strobus*) occur on somewhat drier slopes and bluffs (VDCR DNH 2001). Map 3-1 depicts the historic vegetative communities that existed at the time of the battles of Manassas.

Wildlife

To date, the park staff has documented 168 bird species, 26 mammal species, 23 reptile species, and 19 amphibian species within the park. The National Park Service maintains a current list of species known or likely to use the habitat of the park. More detailed information can be found on the park's website at http://www.nps.gov/mana/pphtml/managementdocuments.html. Common species known to occur in the park include white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), beaver (*Castor canadensis*), and many species of songbirds.

Within Manassas National Battlefield Park, mammals are protected from hunting pressure and surrounding urban development. The fragmented forests interspersed with shrubs and meadows are good habitats for mammals such as eastern fox squirrels, eastern chipmunks, eastern cottontails, short-tailed shrews, and the eastern mole. Some are more specialized in their habitat needs, like the red fox, which prefers open, shrubby, and brushy areas. White-tailed deer are among the most prominent mammals in Manassas National Battlefield Park. Numerous amphibians and reptiles also can be found in the park near vernal pools, small depressions, and other wetlands. Spring peepers, wood frogs, and spotted and marbled salamanders are amphibians commonly found in the park.

White-tailed deer pose a number of resource management challenges in the park because of their impacts on the vegetative community. The large deer population has impacted the ability of the park to reforest historically wooded areas, establish streamside buffers, and created vegetative buffers from development. The foraging activity disrupts natural forest succession processes in the park and removes woody vegetation cover needed for ground-nesting birds. The maintenance

division in the park reports that deer consume between 75 percent and 90 percent of newly installed perennials and annuals.

Distance sampling of deer within the park began in 2000 and has been conducted annually. The current deer density in Manassas National Battlefield Park is estimated at 67 deer per square kilometer. This greatly exceeds the estimated carrying capacity of 15.4 deer per square kilometer for the Virginia Piedmont. The buck-to-doe ratio is 1-to-5.75, indicating overpopulation, and the fawn-to-doe ratio is 0.27-to-1, indicating a stressed population.

All forests in the park have a prominent browse line. In 2000, the park established 30 deer exclosures to determine the impacts the white-tailed deer have on vegetation in the park. In 2004, the effects of deer browsing on three forest types were compared. Results indicated that white-tailed deer are having a substantial adverse impact on the structure and woody seedling composition of forests in the park. In each forest type, the forb cover and vertical plant cover were suppressed, and species richness and seedling survival rates were reduced.

Private property owners and local governments in the area have expressed concern about the deer population. Of particular concern is that resident deer from the park move into and repopulate areas following deer management efforts outside the park.

Manassas National Battlefield Park supports one of the best grassland and shrubland species suites in the region, with healthy populations of several state bird species of conservation concern. These include the eastern meadowlark, grasshopper sparrow, field sparrow, prairie warbler, brown thrasher, and eastern towhee. In 2005, a Henslow's sparrow pair, a state threatened species, was reported on the site. Manassas National Battlefield Park is known to support 168 bird species, including 54 confirmed breeders.

Edge species of birds known to inhabit areas of the park near potential historic landscape modifications include the eastern meadowlark (*Sturnella magna*), prairie warbler (*Dendroica discolor*), indigo bunting (*Paserina cyanea*), grasshopper sparrow (*Ammodramus savannarum*), yellow-breasted chat (*Icteria virens)*, American goldfinch (*Carduelis tristis*), barn swallow (*Hirundo rustica*), and eastern bluebird (*Sialis sialis*). Other species typically found in edge or forested areas include the common yellowthroat (*Geothylpis trichas*), American robin (*Turdus, migratorius*), cedar waxwing (*Bombycilla cedorum*), eastern wood pewee (*Contopus virens*), and chimney swift (*Chaetura pelagica*).

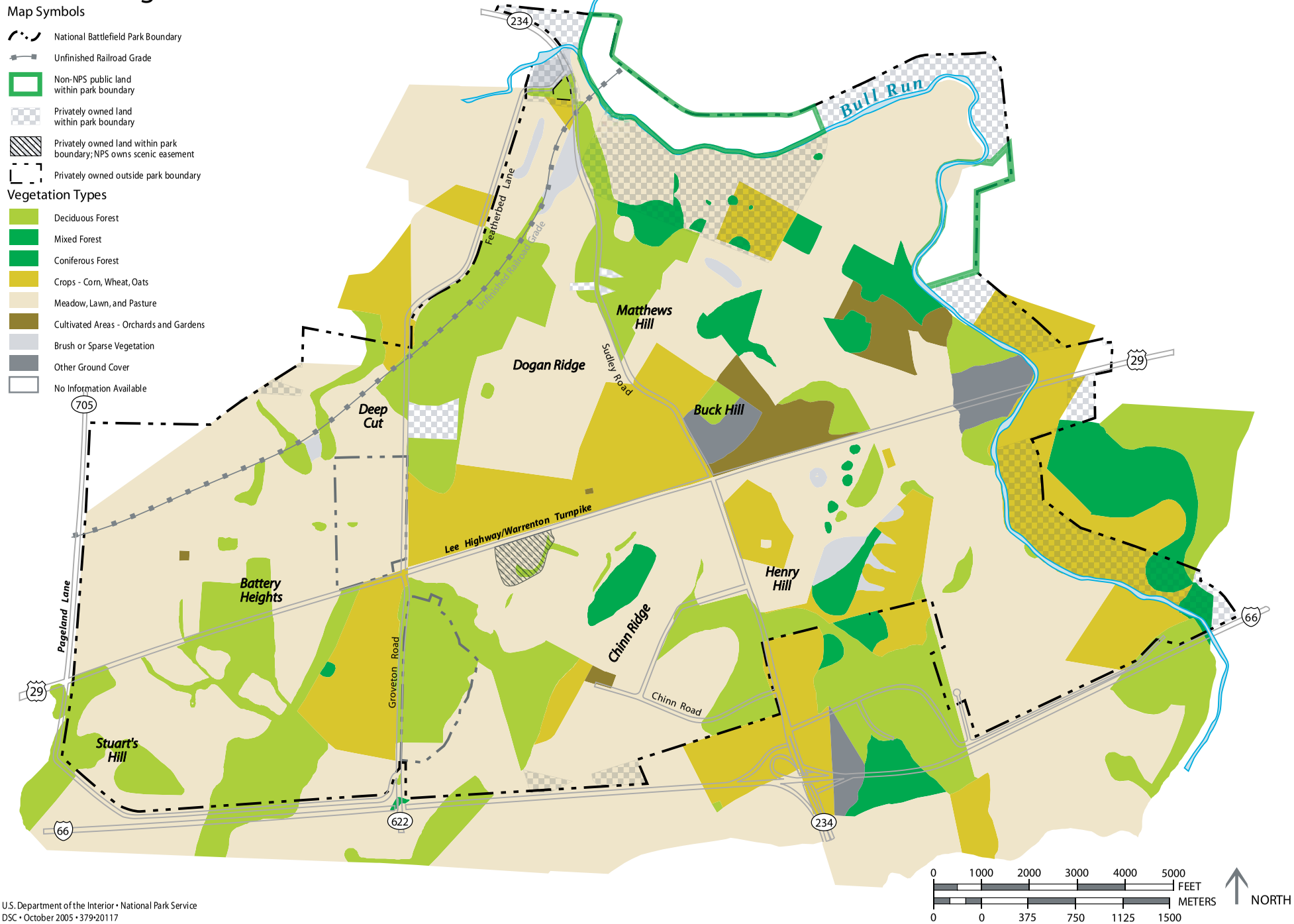
Other species are adapted to the forest interior and primarily nest away from edges in the deep forest. Many of these forest interior species require large (greater than 375 acres), contiguous tracts of forest for breeding, and few are found in forest stands of less than 25 acres (USFS 1996, 1992). Only a few forest interior species are known to occur in the areas of potential landscape modification. These include the scarlet tanager (*Piranga olivacea*), Acadian flycatcher (*Empidonax virescens*), blue-gray gnatcatcher (*Poleoptila caeruelea*), and wood thrush (*Hylocichla mustelina*). These are area-sensitive species that are more common in larger rather than smaller wooded areas and may not successfully breed in small patches of otherwise suitable habitat. Although these birds are considered forest interior species, they occur in less than optimum conditions and can be found in areas other than forest interior habitat.

Threatened, Endangered, and Rare Species and Natural Communities

Manassas National Battlefield Park is classified under the Piedmont Region, Culpeper Basin. This Triassic basin historically supported a number of plants now considered rare by the Commonwealth of Virginia. Since settlement by Europeans, the original grasslands in Prince

Map 3-1

Historic Vegetation Patterns



U.S. Department of the Interior • National Park Service
DSC • October 2005 • 379•20117

William County that supported these now scattered populations have been eliminated by agriculture, suppression of natural fires, and construction. In recent years, large portions of the Triassic basin in Prince William and surrounding counties have been subjected to intensive development pressure as the metropolitan Washington, D.C. area has expanded westward. As a result, many of the natural areas in the surrounding region have been destroyed, and the park is increasingly becoming a natural oasis as development in the region increases.

In 1997 and 1998, the Virginia Department of Conservation and Recreation's Division of Natural Heritage inventoried Manassas National Battlefield Park for rare, threatened, and endangered species and significant natural communities. According to that report, Manassas National Battlefield Park is "one of the region's most unspoiled areas" (VDCR DNH 1998). The rare and significant habitats that occur in Manassas National Battlefield Park are the upland depression swamp forest, oak-hickory forest (both threatened elsewhere in Virginia because of development), eastern white pine forest, and piedmont mountain swamp forest.

A Division of Natural Heritage study completed in 1997 inventoried potential habitats within the park for threatened, endangered, and rare species and significant natural communities. This inventory found no federally or state-listed threatened or endangered species. Similarly, the 1997 vascular plant inventory found no federal or state endangered species.

Some rare plants do occur in Manassas National Battlefield Park. The DNH studies identified 13 occurrences of state-listed rare plants associated with diabase or metasiltstone substrates, including four each of Appalachian quillwort (*Isoetes appalachiana*) and marsh hedgenettle (*Stachys pilosa var. arenicola*), two each of blue hearts (*Buchnera americana*) and hairy beardtongue (*Penstemon hirsutus*), and one of buffalo clover (*Trifolium reflexum*). Other rare species documented include Mead's sedge (*Carex meadii*), hoary puccoon (*Lithospermum canescens*), and purple milkweed (*Asclepias purpurascens*).

The populations of Appalachian quillwort were in found small, shallow intermittent streams. Hairy beardtongue, blue-hearts, and marsh hedgenettle are associated with open habitats. The park contains the majority of the known Virginia populations of marsh hedgenettle. Buffalo clover is characteristic of prairies and savannas west of the Appalachians and was found in an open canopied Virginia pine stand.

The Division of Natural Heritage also found six occurrences of communities considered rare or significant. Three occurrences of basic oak-hickory forest, covering about 72 acres, were found in the western portion of the park on diabase uplands. These stands are classified as white oak/eastern redbud/bottlebrush grass-cliff muhly. This community type is uncommon to rare in Virginia and is highly threatened because of widespread destruction by development in its primary northern Virginia range.

Also found were one occurrence each of upland depression swamp, eastern white pine forest, and piedmont/mountain swamp forest.

- The upland depression swamp comprises about 3 acres of seasonally flooded wetland south of Battery Heights. This community type is also uncommon to rare in Virginia and is threatened because of widespread destruction by development in its primary northern Virginia range.
- The eastern white pine forest community consists of a 10- to 15- acre stand of mixed eastern white pine, eastern hemlock, and oaks on a steep bluff overlooking Bull Run. This forest type is significant because of the type's rarity in the piedmont.
- The piedmont/mountain swamp forest covers about 40 acres on the alluvial floodplain of Bull Run. The dominant canopy species is pin oak. Pin oak swamps are rare in Virginia, although they are

locally common in the northern Virginia Triassic basin.

While no federally listed, proposed, and candidate threatened or endangered species were known to exist in the park, the U.S. Department of the Interior, Fish and Wildlife Service provided information about threatened and endangered species in Loudoun, Fairfax, and Prince William Counties. The information provided by the Department of the Interior is reproduced in Appendix E: Threatened, Endangered, and Rare Species and Natural Communities.

Bald eagles (*Haliaeetus leucocephalus*) may occasionally be seen, but are transient in the area. A number of rare invertebrate species are known to exist in Prince William County and may potentially occur in the park. Three of these species are state or federal species of concern or are state-listed. They include two mussels, the state-endangered brook floater (*Alasmidonta vericosa*) and the yellow lance (*Elliptio lanceolata*), and a butterfly species of concern, the regal fritillary (*Speyeria idalia*). Other potential rare invertebrates include several aquatic species of amphipods, clubtails, and a stonefly.

WATER RESOURCES (WATER BODIES, WATER QUALITY, WETLANDS, AND FLOODPLAINS)

The park is within the Chesapeake Bay watershed, and its main watercourse is Bull Run, which forms most of the park's eastern boundary. The primary stream within the park is Youngs Branch, which meanders south and east through the park, eventually draining into Bull Run.

The Youngs Branch watershed is approximately 3,000 acres, most of it within the park boundary. The main tributary of Youngs Branch begins near Brawner Farm as an intermittent stream. As it flows eastward, it joins with other tributaries, including Dogan Branch and Chinn Branch, to become a perennial stream.

As stream flow increases, the 100-year floodplain widens as permitted by the adjoining terrain. Bull Run has a primarily wooded, asymmetrical 100-year floodplain bounded by adjacent bluffs.

Wetlands in the park are typically found along the park's bodies of water. Map 3-2 shows the locations of the streams, ponds, and wetlands at Manassas National Battlefield Park.

There are ten farm ponds scattered throughout the park. Most of these ponds were formed from the installation of small earthen dams on small streams. All dams are classified as downstream, low hazard potential, minor size. In the late 1990s, the park took corrective actions to repair many of the dams. Today, the dams are in good condition.

A water quality investigation was conducted for the park in 1995 (Wyatt Group 1995). All streams sampled were reported to be within acceptable levels, although some stream bank erosion was noted and occasional high levels of fecal coliform were noted after rain.

It is the park's practice to plant native species of vegetation in areas where stream bank stability is less than desired. Otherwise, the park maintains bank stability by protecting existing riparian buffer areas. Farm ponds and beaver ponds were noted to have beneficial effects on stream health by removing sediments.

Additional data were collected and presented in the *Baseline Water Quality Data Inventory and Analysis Report (1997)*. The park has recently initiated a basic water quality monitoring program to analyze trends in water quality.

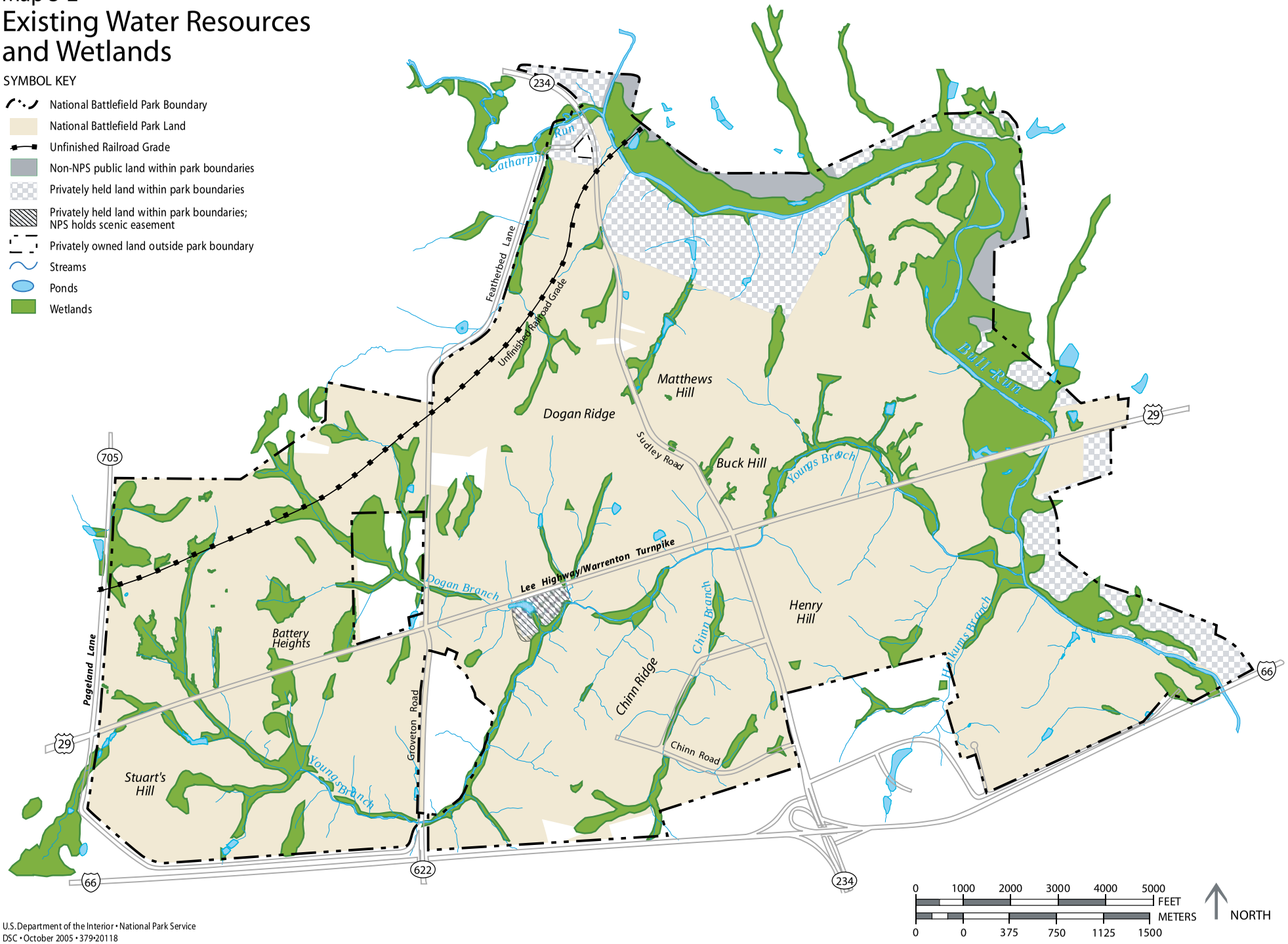
In the summer of 1997, the National Park Service began a cooperative arrangement with the Audubon Naturalist Society. Since that time the National Park Service and Audubon Naturalist Society have collected data on water quality and macro-invertebrate diversity while conducting water quality workshops within the park.

Map 3-2

Existing Water Resources and Wetlands

SYMBOL KEY

- National Battlefield Park Boundary
- National Battlefield Park Land
- Unfinished Railroad Grade
- Non-NPS public land within park boundaries
- Privately held land within park boundaries
- Privately held land within park boundaries; NPS holds scenic easement
- Privately owned land outside park boundary
- Streams
- Ponds
- Wetlands



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Preliminary data for Youngs Branch indicate poor diversity within the stream, attributed to high water temperatures caused by poor canopy cover, sediment run-off, and marginal bank stability caused by high storm flows. Lack of a woody buffer along the stream may also have contributed to weak stream banks. Increased flows are probably the result of increased development outside the park.

Water quality monitoring, conducted when possible by the regional water resources division, collects data on water temperature, air temperature, depth of stream, flow rate, specific conductance, dissolved oxygen, pH, salinity, alkalinity, nitrite, phosphorus, ammonia, carbon dioxide, and chloride. This water chemistry data, along with macroinvertebrate information, allows the park to better evaluate stream health.

The National Park Service officially recognizes the wetland definition used by the U.S. Fish and Wildlife Service as outlined in *Classification of Wetlands and Deepwater Habitats of the United States* (USFWS 1979). The National Wetland Inventory map (Manassas Quadrangle dated 1983) was reviewed to identify known wetlands at the park. The watercourses in the park, including the adjacent riparian and bottomlands as well as ponds, are classified as various types of wetlands. Palustrine forested wetlands at the park include the floodplain bottomland forests, found primarily along Bull Run. They represent old, undisturbed forests with many mature floodplain trees. Species generally include pin oak, swamp white oak, green ash, and American elm.

Two forested wetland systems worthy of special consideration have been identified at the park, including an upland depression swamp and piedmont/mountain swamp forest. The upland depression swamp comprises about 3 acres of seasonally flooded wetland south of Battery Heights. The piedmont/mountain swamp forest covers about 40 acres on the alluvial floodplain of Bull Run (DCR DNH 1993). Various bottomland hardwoods also occur along the riparian fringe of tributary streams. Small palustrine emergent wetlands exist sporadically around the park, and are generally associated with the small ponds or swales at the lower elevations.

CULTURAL ENVIRONMENT

Twice in two years, major armies of the United States and the Confederate States met in combat at Manassas. The Battle of First Manassas (July 21, 1861), the war's first major land battle, ended in a stunning Confederate victory that shattered hopes for a short and easy war. Thirteen months later, the Battle of Second Manassas (August 28-30, 1862), a battle four times larger than the first, brought another Southern triumph and gave Confederate forces their greatest opportunity for strategic success.

Manassas National Battlefield Park, established in 1940, preserves important portions of these two overlapping battlefields and the sites associated with them. The cultural resources related to the Civil War that comprise the park survive today as evocative reminders of the nation's fratricidal struggle. The following is a brief description of the cultural resources. More information on each site can be found in Appendix A: Description of Resources and Appendix B: Description of the Battle Events.

HISTORIC STRUCTURES

Manassas National Battlefield Park was listed in the National Register of Historic Places on October 15, 1966, as part of that year's National Historic Preservation Act. The nomination form to follow up on that designation was submitted in 1981. In 2004, the park superintendent submitted a revised concurrent nomination to the Virginia State Historic Preservation Office, to reflect the new park areas added since the 1981 document, and to add non-park land to the National Register boundaries. The nomination was approved in January 2006.

The revised 2004 form lists 62 structures, monuments, and sites as contributing to the park's significance. These include houses, farms, and Civil War memorials as well as landscape features such as roads, woodlands, and fields important in shaping the battles' events.

The List of Classified Structures is an inventory of contributing historic structures that gives guidance to the planning process by providing an inventory and list of treatment measures for these structures. At Manassas National Battlefield Park, 40 structures, including monuments, roads, houses, and a bridge, have been included on the List of Classified Structures.

- Thirty-six of these have been designated as structures that must be preserved and maintained.
- Another three structures have been categorized as resources that should be preserved and maintained.
- One structure was classified as a resource that may be preserved or maintained.

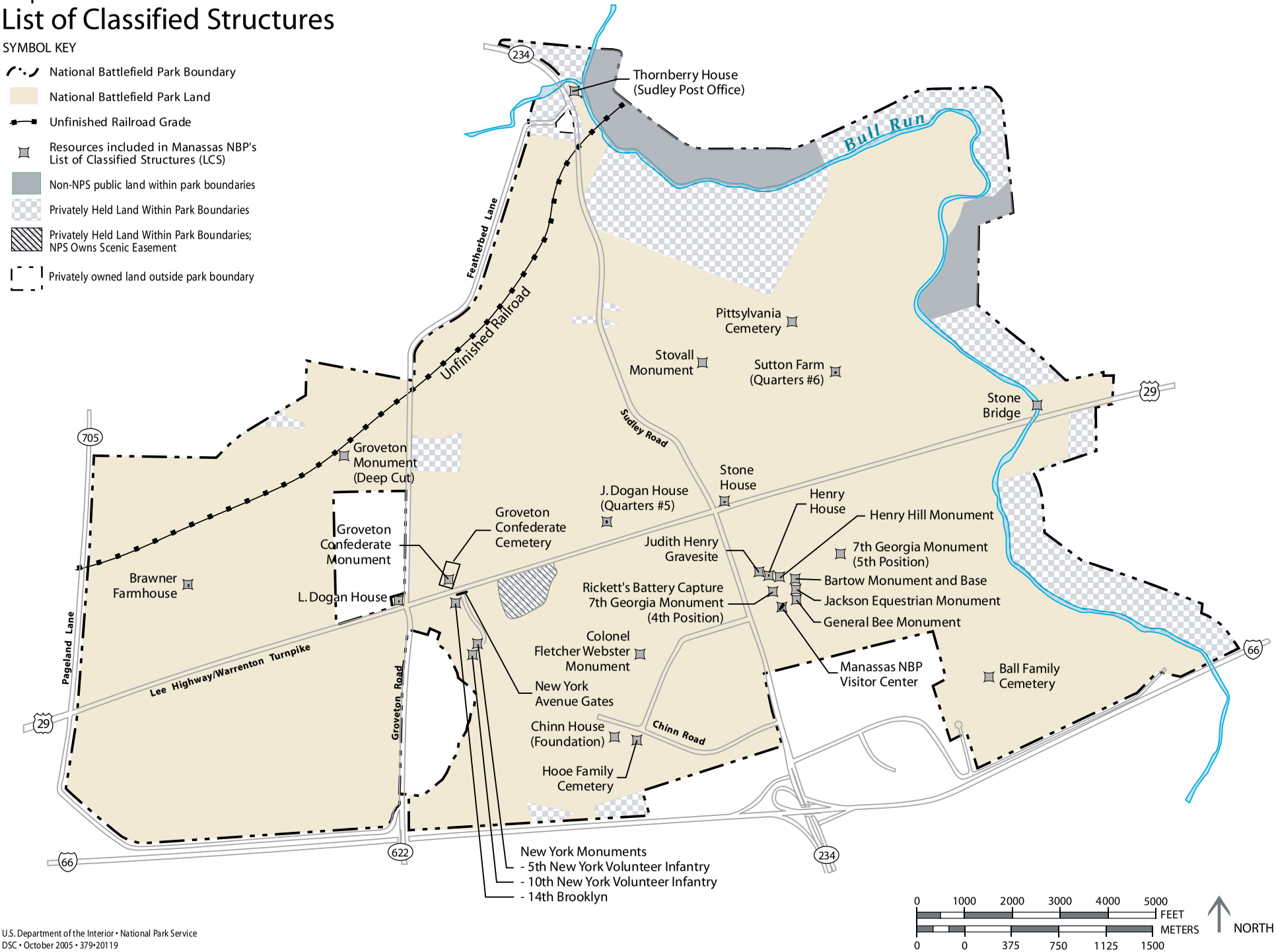
Map 3-3 highlights the resources included on the park's List of Classified Structures.

Among the battlefield's historic structures, the Stone House and the Lucinda Dogan House merit special attention as the park's only wartime buildings rehabilitated to their 1860s appearance. Within the park, only one other building, the Thornberry House, dates to the time of the battles, albeit with some alteration. Several other buildings, including the Henry House, John Dogan House (Rosefield), and Brawner Farm House, serve to mark the locations of Civil War period dwellings and function as aids to interpretation.

In addition to the battle-related resources, the park contains an appreciable number of commemorative features that postdate the fighting. The Henry Hill area includes several monuments and markers. These include the remains of a wartime monument to Confederate Colonel Francis Bartow that is perhaps the earliest Civil War monument anywhere, and an equestrian statue honoring Confederate General Thomas J. "Stonewall" Jackson, who

Map 3-3

List of Classified Structures



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received his *nom de guerre* nearby. Other prominent monuments include a pair of sandstone obelisks erected by Union veterans in 1865, one on Henry Hill and one adjacent to the Deep Cut, and three monuments near Groveton commissioned by the State of New York to honor the 5th and 10th New York and the 14th Brooklyn regiments.

Those examples notwithstanding, monuments are not extensive at Manassas National Battlefield Park. The park contains fewer than 20 formal monuments and troop markers scattered across the battlefield. The largest postwar commemorative feature on the battlefield landscape is the Groveton Confederate Cemetery, which contains the remains of more than 260 Confederate dead from the two battles.

CULTURAL LANDSCAPES

In 1996, the National Capital Region of the National Park Service conducted three cultural landscape inventories of different parts of the park. These inventories did not include the Stuart's Hill tract, which had previously been studied by the University Of Georgia, School Of Environmental Design. The 1996 effort produced a cultural landscape rehabilitation report. Each study included a reconnaissance section that identified the scope of the cultural landscape, what is known about the resource, and future research needs. Each study also contained an analysis and evaluation section, which provided a site history of the landscape development, defined the characteristics that contribute to the historic character of the landscape, and identified the individual features associated with those characteristics.

The historic battlefield landscape constitutes the park's most important resource and provides the setting for understanding the events of the Civil War battles fought here. Although the ground cover has changed in some areas, the terrain remains largely unaltered, and key landscape features survive. Within the battlefield landscape are numerous resources that contribute to the park's significance, including historic buildings, archeological sites and ruins, remnants of historic fence lines, cemeteries and burial sites, traces of wartime roads and farm lanes, the reconstructed Stone Bridge, and the graded bed of the Unfinished Railroad.

ARCHEOLOGICAL RESOURCES

Archeological surveys have been carried out in several sections of the park, but no comprehensive park survey has been undertaken. The surveys that have been completed are, for the most part, related to park development projects or specific park research requirements. Since the early 1980s, surveys of selected areas of the park identified 92 archeological sites. Of these sites, more than two-thirds are in "good" condition. These surveys revealed that the park contains a variety of prehistoric and historic resources.

A park-wide survey of all archeological sites is necessary to identify and evaluate the park's archeological resources and to provide park management with the information necessary to ensure that such resources are protected, conserved, and managed appropriately. Such a survey is also necessary to ensure that park management decisions do not inadvertently impact archeological resources.

Archeological resources dot the historic landscape and provide evidence of the impact of war on the local community. Physical remains of antebellum plantations, modest farmsteads, slave quarters, and outbuildings combine to demonstrate the complexity of the rural, agricultural setting of the battles and help to delineate the historic scene. In addition to the many ruined house sites, traces of earthworks scattered along Bull Run, remnants of soldiers' huts, and depressions from disinterred battlefield burials are among the archeological features that call to mind the convulsive events of the 1860s.

Nearly all the recorded prehistoric sites need further fieldwork, as there is little available information. One potential prehistoric research issue is the development of a context of lithic scatters, which are common

prehistoric resources within the park boundaries (Little 1995). Another issue of historical archeological interest concerns the life of African-Americans before and after the battles and the Civil War (Little 1995).

MUSEUM COLLECTIONS AND ARCHIVES

Original documents and historic artifacts relating to the Battle of First Manassas, the Battle of Second Manassas, and the families and farms impacted by these battles constitute the primary focus of the collection and material for museum exhibits housed in the Henry Hill visitor center and Second Manassas visitor contact station. The collection also includes 40 cannon tubes displayed on reproduction carriages and distributed at battery sites throughout the park. These museum collections are used as part of the visitor center's and visitor contact station's role as orientation points. The museum elements visible to the public are selected to match and enhance the other orientation displays at these facilities, and are also tied to the interpretive elements and cultural landscape of the battlefields themselves.

Less than one percent of the more than 165,000 objects in the park's growing museum collections are ever on exhibit. The remainder of these objects is kept in onsite and offsite storage facilities. The bulk of the archeological and architectural material and furnishings is maintained at the Museum Resource Center, a regional storage facility in Landover, Maryland. Because of limited onsite storage space at the Henry Hill visitor center, only the less bulky objects that directly support the park's primary interpretive themes and offer the greatest research value can be maintained at the park.

One full-time museum specialist is responsible for managing the park museum collections in accordance with established NPS standards. If needs are beyond the limits of training, experience, and available equipment and facilities, the museum specialist coordinates conservation measures with professional conservators. There is no dedicated space for conservation laboratory work, photography, or exhibit preparation. Additional space is currently maintained at Stuart's Hill for the storage and processing of archival materials in the collection.

The present onsite museum collections and archive facilities are nearing capacity. The anticipated growth of the collection will eventually require more offsite storage for museum objects at the Museum Resources Center, and additional space to accommodate museum records and electronic media.

TRANSPORTATION/TRAFFIC

ROADWAY CHARACTERISTICS

Manassas National Battlefield Park is just north of I-66, surrounding the intersection of U.S. Route 29 and VA Route 234. This location places the park within the heavily populated Washington, D.C. metropolitan area, and along a major transportation corridor that serves increasingly developed northern Virginia. Map 3-4 shows the roads and trails in the Manassas National Battlefield Park.

U.S. Route 29 and VA Route 234 are regional highways that run east-west and north-south, respectively, within the Manassas National Battlefield Park. Both roads are two lanes wide, except that U.S. Route 29 becomes a multilane, divided highway in the western portion of the park. The two highways meet at a signalized intersection in the center of the park. Currently, these highways are used by park visitors, commuters, truckers, and regional travelers.

As part of the Battlefield Bypass study, the Federal Highway Administration completed an existing conditions report that details the transportation conditions of the park and surrounding area. This *General Management Plan / Environmental Impact Statement* is a programmatic study, and is therefore more general in nature. For more detailed information on roadway capacity and levels of service on the roadways and intersections in and adjacent to the park, please refer to the Battlefield Bypass study (FHWA 2005).

TRAFFIC COUNTS AND LEVELS OF SERVICE

Traffic counts collected as part of the Battlefield Bypass study's existing conditions report indicate that U.S. Route 29 carries between 9,000 and 13,200 vehicles per day, and VA Route 234 carries between 9,800 and 14,100 vehicles per day (FHWA 2002). The existing corridor levels of service and average daily traffic counts are shown in Table 3-1.

Table 3-1: Levels of Services for U.S. Route 29 and Virginia Route 234 Corridors

Road Segment	Levels of Service		Average Daily Traffic
	AM	PM	
U.S. Route 29 East of VA Route 234	F	F	13,166
U.S. Route 29 West of VA Route 234	E	E	9,089
VA Route 234 North of U.S. Route 29	E	E	9,815
VA Route 234 South of U.S. Route 29	E	E	14,079

Source: Manassas National Battlefield Park Bypass Study Draft EIS (FHWA 2005).

While definitive data are not available, anecdotal observations indicate that at least 95 percent of this traffic volume is attributable to "through" trips that do not include a stop in the park.

The traffic capacity analyses were performed by the Federal Highway Administration, based on the procedures specified by the *Transportation Research Board Special Report 209: Highway Capacity Manual, 1997*. Level of service is a qualitative rating of the effectiveness of a highway or highway facility in serving traffic, in terms of operating conditions. The *Highway Capacity Manual* identifies operating conditions ranging from A, for best operations (low volume and the unimpeded ability to travel at the speed limit) to F, for worst conditions. The levels of service used for signalized intersections in the Battlefield Bypass study are summarized below.

- LOS A describes operations with an average delay of less than 10.0 seconds.

- LOS B describes operations with an average delay in the range of 10.1 to 20.0 seconds per vehicle.
- LOS C describes operations with delays in the range of 20.1 to 35.0 seconds per vehicle. Individual cycle failures, where all waiting vehicles do not clear the intersection during a single green time, may begin to appear at this level. This is generally considered the lower end of the range of the acceptable level of service in rural areas.
- LOS D describes operation with delays in the range of 35.1 to 55.0 seconds per vehicle. Individual signal cycle failures are noticeable. This is generally considered the lower end of the range of acceptable levels of service in urban areas.
- LOS E describes operations with delays in the range of 55.1 to 80.0 seconds per vehicle. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions (at capacity).
- LOS F describes operations with average delays in excess of 80.0 seconds per vehicle. There are many individual cycle failures. This LOS is considered to be unacceptable to most drivers.

The intersection of U.S. Route 29 and VA Route 234 operates at level of service F during both the morning and evening peak hours. The intersection has a delay in excess of 80 seconds per vehicle, which is considered to be unacceptable to most drivers.

The volume of through-traffic using routes within the park has become a serious detriment to the quality of the visitor experience the park can provide. The mix of pedestrian and vehicle traffic, as well as the mix of slower recreational traffic and higher-speed, through-traffic also poses safety hazards for park visitors.

SAFETY

A transportation study for the park was completed in June 1996. This study found that most vehicular accidents within the park occur on U.S. Route 29 and VA Route 234, while relatively few accidents occur on internal park roads. The accident rates on U.S. Route 29 and VA Route 234 are comparable to those of similar roads in Prince William County.

The study identified the signalized intersection at U.S. Route 29 and VA Route 234 as being problematic and a safety concern because the intersection is operating at capacity during the morning, noon, and evening peak travel periods. Erratic vehicular movement associated with traffic congestion was cited as the primary safety concern (Peccia 1996).

Another safety concern is potential conflicts of pedestrians or bicyclists with the heavy vehicular traffic on U.S. Route 29 and VA Route 234. Presently, a number of the park's trails cross U.S. Route 29 and VA Route 234.

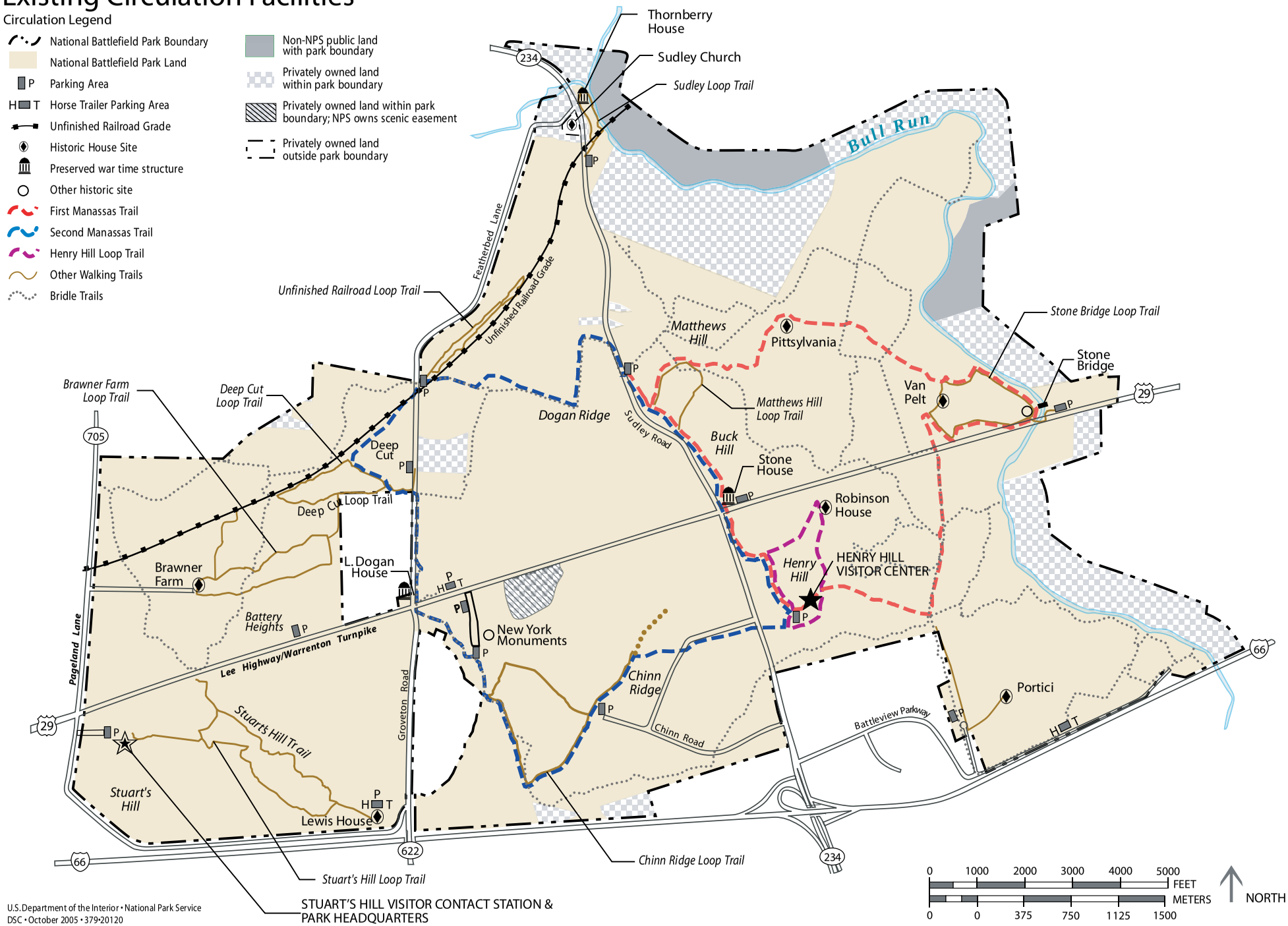
EMERGENCY RESPONSE

To respond to serious incidents, the National Park Service relies on local emergency services. Emergency response to Manassas National Battlefield Park is provided by local fire departments and emergency response facilities.

The park is served primarily by Stonewall Jackson Volunteer Fire Department, Station 11, at 7814 Garner Drive in Manassas. The station is approximately 1.7 miles from the park's southern entrance on VA Route 234 and approximately 3 miles from the intersection of U.S. Route 29 and VA Route 234 at the center of the park. The response time to this location is approximately 5 minutes, but can be greater, depending on traffic congestion on the roads. The station is equipped with ambulances and fire engines.

Map 3-4

Existing Circulation Facilities



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The western end of the park is served by the Prince William County Gainesville District Volunteer Fire Department, Station 4, at 14450 John Marshall Highway (State Highway 55). The station is approximately 3 miles from the western entrance of the park. The response time to the central area of the park is 7 to 12 minutes. The station is equipped with ambulances, fire trucks, and a rescue squad.

Emergency response may also be provided by the West Centreville Volunteer Fire Department Station 38, at 6001 O'Day Drive in Centreville. The station is approximately 3 miles from the eastern entrance on U.S. Route 29. The station is equipped with ambulances and fire trucks.

The park falls within the jurisdiction of the National Capital Region Museum Emergency Response Team (MERT). This group, composed of experts in cultural resource management, is prepared to respond quickly to regional incidents, such as natural disasters or special events, which may threaten or endanger museum collections, both cultural and natural, and associated historic structures and archeological sites.

SOCIOECONOMIC ENVIRONMENT

POPULATION

The park is located in Prince William and Fairfax Counties and is near Loudoun County. The local economic region consists of these counties plus Arlington County and the independent Cities of Alexandria, Fairfax City, Falls Church, Manassas, and Manassas Park.

As of April 2000, Fairfax County's population was 969,749 (Census, 2000). Its population is now believed to have surpassed one million. From 1990 to 2000, Fairfax County's population increased by 18.5 percent. Individuals identifying themselves as "white" made up 69.9 percent of the population, followed by "Asian" at 13 percent, and "African American" at 8.6 percent. American Indians, Native Hawaiians, and Other Pacific Islanders made up the remaining 8.5 percent. Individuals 65 years old and over comprised 7.9 percent of the population.

Loudoun County's population increased by 96.8 percent from 1990 to 2000, and as of the 2000 census, it had a population of 169,599. White individuals made up 82.8 percent of the population, followed by African Americans at 6.9 percent, with Asians, American Indians, Native Hawaiians, and Other Pacific Islanders making up the remaining 10.3 percent. Individuals 65 years old and over comprised 5.6 percent of the population.

Prince William County's April 2000 population was 280,813. From 1990 to 2000, Prince William County's population increased by 30.6 percent. White individuals made up 68.9 percent of the population, followed by African Americans at 18.8 percent. American Indians, Asians, Native Hawaiians, and Other Pacific Islanders made up the remaining 12.3 percent. Individuals 65 years old and over comprised 4.8 percent of the population.

Based on a review of Prince William County Geographic Information Systems information and aerial photography, there are approximately 70 to 75 residential homes that are within the park boundaries or that require access through the park boundaries to access their property. The Battlefield Bypass study identified 37 private in-holdings in Prince William County and 17 private in-holdings in Fairfax County (FHWA 2002). In addition to the in-holdings, which refer to privately owned properties that are either fully or partially located within the legislative boundaries of the park, there are approximately 20 private landowners that require use of state and U.S. routes in the park to access their properties.

ECONOMY [3]

In terms of earnings, the service sector of the economy is by far the most important for the local region and the state as a whole. However, the closer a jurisdiction is to Washington, D.C., the more important the federal government sector becomes to earnings.

Between 1999 and 2000, median household income in Virginia increased by 4.3 percent, to $46,789. In Prince William County, income increased by 6.9 percent, to $67,466, while Fairfax County income increased 8.1 percent, to $84,009.

The trade, transportation, and utilities industrial category employed the largest portions of the state's workforce in 2000 at 18.5 percent. Government employed 17.8 percent of the workforce, and professional and business services employed 16.2 percent.

EMPLOYMENT

The Arlington, Fairfax, Loudoun, and Prince William County area of northern Virginia contained nearly 25.6 percent of the state's workforce in 2000. One measure of an area's social and economic well-being is

[3] Source for all data: the Virginia Employment Commission website: http://velma.virtuallmi.com/

unemployment. This statistic measures the number of people that were available for work and were unable to find suitable work. In 2000, the unemployment rate for Virginia (2.7 percent) was below that of the country as a whole (3.7 percent). The unemployment rates for each of the political units that make up the local region ranged from 1.6 percent to 2.8 percent. For the affected area, the employment situation was better than it was for the country or state.

PER CAPITA INCOME

Personal income is a commonly used measure of the purchasing power available to the residents of a geopolitical unit. Prince William County together with Manassas and Manassas Park (average per capita income of $29,967 in 2000) were somewhat behind the state average of $31,120 and slightly higher than the country as a whole (average per capita income of $29,469). Bureau of Economic Analysis data show that for 2000, except for Prince William County, Manassas, and Manassas Park, the local area had per capita incomes ranging from $40,290 to $51,227, which is substantially higher than the rest of the state and the nation in terms of per capita personal income.

POVERTY

The poverty rate is another measure of the economic and social well-being of an area. In 2000, the percent of persons living below the poverty level within the affected area ranged from 2.8 percent to 7.8 percent. Throughout the affected area, the percentage of persons living below the official poverty level in 2000 was substantially lower than the state (9.6 percent) and national (12.4 percent) averages.

Growing population, growth in industry earnings, relatively high per capita incomes, and relatively low unemployment and poverty rates all indicate that the affected area has a vigorous, robust economy supporting a stable social environment.

RECREATION

The battles, location, historic resources, and historic significance of Manassas National Battlefield Park make it unique among the many parks and recreational areas of the affected region. The Henry Hill walking tour is the primary way that visitors experience the Battle of First Manassas, while the park's driving tour is the primary way for people to experience the Battle of Second Manassas. The park also features walking, hiking, and horseback riding facilities.

Picnicking and hiking are available at the 400-acre Conway Robinson Memorial State Forest, which is 1/4 mile west of the park. In addition, there are numerous other parks and recreation facilities within the local area that provide a wide variety of public recreational opportunities.

Bull Run Regional Park, operated by the Northern Virginia Regional Park Authority, is approximately 4 miles east of the Henry Hill visitor center. This facility features a broad range of recreational activities, and accommodates large groups' special events.

VISITOR EXPERIENCE

Resources available for visitor use include one visitor center, one visitor contact station, a picnic area, 5,071 acres of battlefield park, 12 miles of tour road, 150 interpretive park signs, 21 miles of hiking trails, and 23 miles of bridle trails.

VISITATION USE AND PATTERNS

The visitor use and patterns of use described in this section provide background for understanding levels of use and impacts of this use on the park's resources. Visitor use data have been collected for many years. Recreational visits for 2003 depicted in Table 3-2 are indicative of the normal park visitation patterns at Manassas National Battlefield Park.

Table 3-2: Visitor Use for 2003[1]

Month	Recreation Visits
January	20,033
February	24,609
March	82,093
April	146,231
May	93,407
June	50,962
July	54,314
August	118,450
September	64,394
October	36,462
November	36,457
December	32,541
Total	**759,953**

Source: National Park Service, Public Use Statistics Program Center, PSPC-WASO, available on the Internet at www2.nature.nps.gov/stats/.

[1] Non-recreation visits were reported as a constant 40 per month for an annual total of 480 non-recreational visits. These numbers, respectively, would be added to the monthly and yearly figures to obtain total visits for a particular month or the year.

The park is open all year.

Visitation at most parks is seasonal, with the lowest level of use in the winter and the highest in the summer. Spring and autumn are usually seasons of transition, with use going up in the spring and down in the fall. However, visitation patterns at Manassas National Battlefield Park differ from this typical model. Summer visitation is considerably higher than winter visitation. However, pleasant weather, combined with spring blossoms or autumn foliage, create peak visitation during spring and fall weekends.

Annual visitor use figures are presented in Table 3-3. Annual visitor use at the park fluctuates from year to year. While it has increased slightly, visitation has generally been stable. A similar trend is expected in the future.

VISITOR PROFILE

Three general categories of visitors at the Manassas National Battlefield Park are as follows:

- General visitors—These people usually have limited specific interests in, or knowledge of, the battles. They visit the park to gain a general understanding of the park's significance. These visitors usually spend less than two hours in the park, mostly at the visitor center and the Henry Hill area.
- Historical visitors—These individuals have a good understanding of the overall significance of the battles, and they are looking to examine and understand the actions and details of the two battles. They will spend about five hours in the park touring the battle sites.
- Recreational visitors—This people are seeking recreational experiences such as cross-country skiing, fishing, hiking, horseback riding, jogging, nature study, picnicking, and sledding. They usually

come to the park on spring, summer, and fall weekends and holidays.

As described above, the heaviest use of the park occurs during fall and spring weekends. At these times, local use increases dramatically. Seasonal variations are as follows:

- Spring: heaviest use occurs on weekends and is usually concentrated around Stone Bridge, the visitor center, and the surrounding area. Increased use by seniors and school groups occurs, as well as more use by hikers, joggers, and picnickers.
- Summer: family groups on extended vacations dominate the park. Peak daily use occurs between the hours of 11:00 a.m. and 4:00 p.m. The heaviest use is on the weekends.
- Fall: senior citizen and organized tour use increases, especially in October. Use is concentrated on weekends. Area residents make increased use of the park for recreational activities.
- Winter: visitation is the lightest of any season. Area residents and business commuters predominate during this period. Heaviest use occurs during periods of snowfall, when cross-country skiing, sledding, and snow play are the main attractions.

PROJECTION OF FUTURE USE

A variety of factors affects park use. Forecasting visitor use is subject to a high probability of error because the method generally used is simplistic, relatively few data points are available to establish the trend, and there is no cause and effect relationship between past use, future use, and extraneous variables beyond the control of the National Park Service. In addition, the high levels of non-park vehicular traffic on U.S. Route 29 and VA Route 234 preclude accurate counts of park-related traffic. Based on historical data, it is assumed that visitation would probably increase over the long term. This pattern also reflects the general trend for most national park system units.

Table 3-3: Annual Visitor Use, 1983 to 2003

Year	Recreation Visits[1]	Non-Recreation Visits[2]	Total Visits
2003	759,953	480	760,433
2002	779,147	480	779,627
2001	822,684	480	823,164
2000	692,006	480	692,486
1999	815,338	480	815,818
1998	972,709	480	973,189
1997	1,025,826	480	1,026,306
1996	725,086	480	725,566
1995	676,087	480	676,567
1994	917,534	480	918,014
1993	614,897	480	615,377
1992	867,606	480	868,086
1991	905,485	480	905,965
1990	799,972	480	800,452
1989	767,138	480	767,619
1988	778,861	420	779,281
1987	667,014	No data collected	667,014
1986	793,274	No data collected	793,274
1985	723,998	No data collected	723,998
1984	703,100	No data collected	703,100
1983	720,754	No data collected	720,754

Source: National Park Service, Public Use Statistics Program Center, PSPC-WASO, available on the Internet at (www2.nature.nps.gov/stats/)

[1] Recreation visits are the entries of persons, for any part of a day, onto lands or waters administered by the National Park Service for recreation purposes.

[2] Non-recreation visits are entries of persons going to and from in-holdings, trades people with business in the park, non-NPS personnel (such as guides) pursuing a gainful business, and other non-NPS entries for purposes other than recreational pursuits.

PARK OPERATIONS AND MAINTENANCE

Manassas National Battlefield Park had a base operating budget of approximately $2,526,500 in Fiscal Year 2004 and a work force of 29 permanent positions and 9 seasonal positions. This work force was supplemented in 2004 by approximately 11,900 hours (more than 5.8 full-time-equivalents) of Volunteers-in-Parks service. The park's base budget in Fiscal Year 2004 was supplemented by approximately $6,000 of donated funds and $163,300 fee enhancement funds from entrance fees.

Management staff includes the superintendent and cultural and natural resources managers. Staff is organized into four operating divisions: Interpretation, Visitor Protection, Maintenance, and Administration. Staff expertise and specialties include one museum curator, one historian, one natural resource program manager/geographical positioning system specialist, one computer specialist, and two exhibit specialists. This staff is supplemented and/or supported using special project funds, contracts, and/or the assistance or expertise of various NPS entities and other organizations, as available.

Park administration structures include

- one visitor center
- one visitor contact station
- one central maintenance facility
- park headquarters
- one law enforcement office building
- one horse barn
- one hay barn/fire cache building
- one tack building
- one resource management building
- three employee housing units

The park includes 4.65 miles of paved and 7.6 miles of unpaved roadways and two picnic areas. Additional information on the park operations is available from the *Annual Performance Plan for the Manassas National Battlefield Park*, which can be obtained at http://www.nps.gov/mana/administration/GPRA%202003/gpra2003.htm.

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The National Environmental Policy Act mandates that environmental impact statements disclose the potential environmental consequences of a proposed federal action. In this case, the proposed federal action would be the adoption of one of the alternatives described in this *General Management Plan / Environmental Impact Statement* for Manassas National Battlefield Park. This chapter describes the potential impacts associated with the three alternatives. By assessing the environmental consequences of all the alternatives on an equivalent basis, the National Park Service and other decision-makers can decide which alternative creates the most desirable combination of beneficial results with the fewest adverse effects on the environment.

The environmental consequences associated with the proposed actions are analyzed on a qualitative level because of the general nature of the alternatives and proposed actions. Thus, this environmental impact statement should be considered a programmatic analysis.

Future implementation proposals would be tiered (procedurally connected) to this broad-scale *General Management Plan / Environmental Impact Statement*, and additional planning and environmental analysis would be conducted in accordance with the National Environmental Policy Act, Director's Order #12, the NPS' *Management Policies*, and other regulations. This situation is especially true for the transportation improvements (controlled access measures) and cultural landscape rehabilitation (forest removal and revegetation) described under alternatives B and C. As a result, the analysis in this document is designed to provide the park superintendent with general management direction.

METHODOLOGY FOR ASSESSING IMPACTS

Potential impacts are described in terms of type (beneficial or adverse), context (site-specific, local, or regional), direct versus indirect, duration (short-term or long-term), and intensity (negligible, minor, moderate, or major). Clarification of each of these concepts is provided below.

Impact Type

For each impact topic, the effects of the proposed action could be either adverse or beneficial. In some cases, the actions could result in both adverse and beneficial impacts for the same impact topic.

Intensity

This evaluation used the approach for defining intensity (or magnitude) for an impact as presented in Director's Order #12. Each impact was determined to be negligible, minor, moderate, or major. For each impact topic, the criteria defining the thresholds for each intensity level were determined. Most of the intensities are expressed qualitatively because this *General Management Plan / Environmental Impact Statement* is a programmatic document.

Context

The context of each impact is described in terms of site-specific, local, or regional. For instance, the construction of a new visitor center may have site-specific adverse impacts to terrestrial resources while the reduction in commuter traffic in the park would have localized benefits to the visitor experience.

Duration

The planning horizon for this *General Management Plan / Environmental Impact Statement* is approximately 20 years. In general,

impacts that occur within one year or less were classified as short-term. Long-term effects would last for more than one year. Duration definitions are provided for each impact topic.

Direct Versus Indirect Impacts

Direct impacts are those caused by an action at the same time and place as the action. Indirect impacts are reasonably foreseeable but occur later in time, at another place, or to another resource. An example of difference involves the removal of vegetation (direct impact), which would cause soil erosion and sedimentation, thus affecting the water quality (indirect impact) of a nearby waterway.

Impairment to Park Resources and Values

The NPS' *Management Policies* require analysis of potential effects to determine whether actions would impair park resources. NPS managers must always seek ways to avoid or minimize, to the greatest degree practicable, adversely impacting park resources and values.

Laws regarding the management of national park system units give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park. Although Congress has given the National Park Service the management discretion to allow certain impacts, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

Any impact to any park resource or value could constitute an impairment. However, an impact would be more likely to constitute an impairment if it has a major or severe adverse effect on a resource or value whose conservation is

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- key to the natural or cultural integrity of the park
- identified as a goal in the park's general management plan or other relevant National Park Service planning documents

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. A determination on impairment is made for most impact topics, consistent with Sections 1.4.5 and 1.4.7.1 of the NPS' *Management Policies*. A determination of impairment is not required for visitor experience (unless the impact is resource-based), transportation, socioeconomics, and park operations.

Cumulative Impacts

The Council on Environmental Quality regulations, which implement the National Environmental Policy Act, require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 *Code of Federal Regulations* 1508.7). Cumulative impacts are considered for all alternatives and are presented at the end of each impact topic analysis.

Cumulative impacts are evaluated in a regional context, which varies by impact topic. Cumulative effects were determined by combining the impacts of the proposed action with other past, present, and reasonable foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over a period of time. Therefore, it was necessary to identify other ongoing or foreseeable future projects at Manassas National Battlefield Park and, as necessary, the surrounding region.

CUMULATIVE IMPACT SCENARIO

As part of the analysis and consideration of potential cumulative impacts, other past, present, and reasonably foreseeable projects

were identified. For each project, the National Park Service considered the potential cumulative effect when combined with the potential impacts of actions and management decisions proposed in this *General Management Plan*. A brief overview of other ongoing or past studies and pending projects in the immediate area follows. Projects that have the potential for cumulative effects are discussed further in the impact analysis.

Projects with Potential Cumulative Impacts

Manassas National Battlefield Park Bypass Environmental Impact Statement (Battlefield Bypass Study)

U.S. Route 29 and VA Route 234 transect the Manassas National Battlefield Park. The volume of commuter traffic that uses these roads has resulted in traffic safety and congestion problems, adverse impacts to visitor experience, and problems for basic park operations. In response to the conflicting uses of roads within the park, Congress passed the Manassas National Battlefield Park Amendments of 1988, requiring the study of alternatives to the current situation.

That legislation served as the impetus for the Battlefield Bypass study described in the "Purpose of and Need for the Plan" section. The Battlefield Bypass study analyzes the impacts of relocating both U.S. Route 29 and VA Route 234 from their current locations within the park, and includes analysis of all elements leading to the preparation of an environmental impact statement. These include, but are not limited to, traffic modeling and evaluations, cultural resource evaluations, socioeconomic evaluations, natural resource evaluations, and alternatives development.

The Manassas National Battlefield Park Amendments of 1988 and Federal Highway Administration policy required the Prince William and Fairfax County Boards of Supervisors and the Commonwealth Transportation Board to approve a bypass alternative. All of these entities approved Alternative D, modified. The Federal Highway Administration and National Park Service are preparing a final environmental impact statement and record of decision.

Approval of the Battlefield Bypass by the Commonwealth Transportation Board was contingent on the mitigation of traffic impacts resulting from the closure of U.S. Route 29 and VA Route 234 within the park. The Board's concerns included the impact on emergency access if the bridge over Bull Run on U.S. Route 29 was removed.

To address this concern, the preferred alternative was modified. The modern highway bridge on U.S. Route 29 would be removed, and a new bridge would be constructed south of the existing bridge in a location with fewer adverse impacts on the cultural landscape, visitor experience, and interpretation. A detailed discussion of the changes to alternative B has been incorporated into the chapter of this document entitled "Alternatives including the Preferred Alternative." The environmental impacts and costs of the new access road and bridge are addressed in this document (see the "Environmental Consequences" section and appendix D) because these facilities would be within park boundaries. However, because these changes are related to mitigation measures associated with the Battlefield Bypass study, implementation of these actions would occur in conjunction with the development of the Battlefield Bypass. Further information on the Battlefield Bypass can be found on the Internet at http://www.battlefieldbypass.com.

I-66 Multimodal Transportation and Environmental Study (I-66 Study)

Interstate 66 runs east-west through northern Virginia and is immediately south of Manassas National Battlefield Park. The Virginia Department of Transportation and the Department of Rail and Public Transportation have initiated the I-66 study for improving mobility along the I-66 corridor from just west of the I-66/I-495 (Capital Beltway) interchange in Fairfax County to the I-66/U.S. Route 15 interchange near Haymarket in Prince William

County. An earlier major investment study selected multimodal transportation improvements in the I-66 corridor to enhance safety while providing increased capacity for current and projected future travel demands.

The current I-66 study will examine configurations and locations of improvements to the I-66 travel lanes; Metrorail; commuter and local bus service, transit stations, and parking; and other facilities. The Federal Highway Administration and the Federal Transit Administration, acting as joint lead federal agencies, are working with the Virginia Department of Transportation and the Virginia Department of Rail and Public Transportation to prepare an environmental impact statement as required by and in accordance with the National Environmental Policy Act. Further information on this project can be found on the Internet at http://www.infoi66.com.

Tri-County Parkway Location Study and Environmental Impact Statement (Tri-County Parkway Study)

The Virginia Department of Transportation has completed a draft environmental impact statement and location study for a new roadway, referred to as the Tri-County Parkway. The Virginia Department of Transportation started this study in 2002 to evaluate a new north-south transportation link in northern Virginia to connect the City of Manassas with I-66 and the Loudoun County Parkway in the Dulles area.

On November 17, 2005, the Commonwealth Transportation Board approved the "West 2" alignment for the Tri-County Parkway. This alignment runs essentially parallel to the Battlefield Bypass Alternative D, modified, along the west side of the battlefield.

Now that the Commonwealth Transportation Board has selected an alternative for the Tri-County Parkway west of the park, Virginia Department of Transportation, National Park Service, and Federal Highway Administration are working closely to design one roadway from I-66 to VA Route 234 north of the park that will accommodate the bypass and the Tri-County Parkway within one right-of-way.

Virginia Route 234 Bypass North

During the 1990s, the Virginia Department of Transportation conducted a study to plan the alignment and construction of a bypass for VA Route 234 around the City of Manassas. The proposed route would run west of the park, rejoining VA Route 234 north of the park at Catharpin. During preparation of the environmental impact statement for this project, budgetary and other concerns forced the Virginia Department of Transportation to cease work on the northern portion of the route, and to construct only the portion south of I-66. The resumption of the northern portion of the VA Route 234 bypass is a matter of continued discussion and planning.

Stuart's Hill Tract Rehabilitation and Picnic Area Construction

The Stuart's Hill Tract rehabilitation and picnic area construction project was a collaborative effort between the National Park Service and the Smithsonian Institution. The Stuart's Hill Tract was acquired in 1988 by the National Park Service. Part of that tract included an area where a private developer had begun alterations for a mixed-use community that drastically altered the landscape. Alterations included the establishment of an entrance road, re-contouring of the area, and establishment of a drainage network.

The Stuart's Hill Tract rehabilitation project entailed returning previously disturbed areas to their historic grades, creating wetlands, replanting native vegetation, and developing a new picnic facility and area. The wetland creation part of the project served as compensatory wetland mitigation for the Smithsonian Institution, for wetland impacts associated with the National Air and Space Museum's Udvar-Hazy Center near Washington-Dulles International Airport.

IMPACTS ON THE NATURAL ENVIRONMENT

AIR QUALITY

Methodology

The impact assessment for air quality focused on changes to the levels of air emission from the proposed actions under each alternative. The analysis also considered the physical impacts associated with any new developmental plans and anticipated visitor uses. The context of the evaluation was Manassas National Battlefield Park and immediate surrounding area.

For this programmatic study, the impacts discussed are qualitative. The potential impacts on the National Ambient Air Quality Standards and other impacts outside the park associated with the closure of U.S. Route 29 and VA Route 234 to commuter and commercial traffic are included in the Battlefield Bypass study described above. For the purposes of this document, it is estimated that more than 95 percent of the park's traffic volume is attributable to "through" trips that do not include a stop in the park.

Definition of Intensity Levels

Analyses of the potential intensity levels of impacts resulting from each alternative on air quality were derived from the information available from Prince William County and regional agencies in northern Virginia. Definitions for the thresholds of change for the intensity of impacts on air quality are as follows:

- *Negligible:* The impact is localized and not measurable or at the lowest level of detection.
- *Minor:* The impact is localized and slight but detectable. The impact would have no effect on the ability to comply with National Ambient Air Quality Standards.
- *Moderate:* The impact is readily apparent and appreciable. The impact could have an effect in the area on the ability to comply with National Ambient Air Quality Standards.
- *Major:* The impact is severe and highly noticeable. The impact would have an effect on the ability to comply with National Ambient Air Quality Standards.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors or the length of construction activities. A long-term impact would last more than one year and would be more permanent in nature.

Alternative A—Continuing Current Management Practices (No-Action)

Under the no-action alternative, there would be no change in the region's levels of emission from vehicular traffic at the Manassas National Battlefield Park or surrounding area. The no-action alternative would not change any county's ability to comply with the National Ambient Air Quality Standards. Local impacts on air quality presently exist from emissions generated during rush hours from traffic congestion at the intersection of U.S. Route 29 and VA Route 234. Over time, the local emission levels would be expected to increase; however, levels would increase only slightly because the intersection is at or near its operational capacity. These existing conditions have a localized adverse impact on air quality in the park. The impact is long-term and negligible.

Cumulative Impacts. A number of past, present, and pending road and other construction projects in close vicinity to Manassas National Battlefield Park have the potential to produce short-term adverse impacts on air quality from fugitive dust and emissions during construction. In the long term, the air quality impacts depend on the final route selection and designs for each project. However, for the purposes of evaluating the cumulative impact scenario, it is assumed that there would be a negligible impact on air quality in the vicinity of

Manassas National Battlefield Park. This would occur because traffic is only being rerouted from U.S. Route 29, VA Route 234, and other roads, and there would be lower emissions generated from shorter delays at intersections.

The incremental impact associated with implementation of alternative A would be expected to be small. The increased emissions levels under alternative A, when combined with other past, present, and reasonably foreseeable future projects, such as pending road construction projects, would be expected to have a moderate short-term adverse cumulative impact on air quality in the vicinity of Manassas National Battlefield Park.

Conclusion. Negligible long-term adverse impacts on air quality would continue along the VA Route 234 and U.S. Route 29 corridors. Adverse cumulative impacts would be moderate; however, the incremental contribution of Alternate A would be small. Because there would be no major adverse impact to resources or values, there would be no impairment of the park's resources or values.

Alternative B—The Two Battles Of Manassas (Preferred Alternative)

Removal to the bridge over Bull Run on U.S. Route 29, the construction of a new bridge and access road, other construction-related activities associated with improving visitor services, and landscape rehabilitation under alternative B would have a localized adverse impact on air quality as a result of fugitive dust, particulates, and emissions produced by construction equipment. This impact would be short-term and minor because the amount of disturbed area at any given time would be relatively small. Forest removal operations are expected to be conducted in phases, which would limit the amount and extent of construction activity occurring at any time.

Some fugitive dust, particulates, and emissions produced by construction equipment would still be in the air to some degree despite the mitigation measures of using low-polluting fuel and having pollution control devices installed on the construction equipment. The adverse impact would be short-term and negligible because the projects are limited in areal extent and because best management practices (such as watering and seeding for erosion control) would be implemented to reduce construction-related impacts.

Closure of roads through the park to heavy commuter traffic would result in a long-term negligible improvement in local air quality along those road corridors within the park. Rerouted traffic would contribute to emissions along roads outside the park. Emissions outside park boundaries are considered as part of the Battlefield Bypass study. The redistribution of vehicular traffic would not be expected to have an adverse impact on any jurisdiction's ability to comply with National Ambient Air Quality Standards; therefore, the adverse impacts to air quality in the region would be expected to be minor and long-term.

The magnitude of impacts on air quality outside the park resulting from redistributing the commuter and commercial traffic is being evaluated as part of the Battlefield Bypass study, but this impact on air quality is anticipated to be minor long-term and adverse.

Cumulative Impacts. The construction-related activities and forest removal operations under alternative B, when combined with other past, present, and reasonably foreseeable future projects such as the Manassas National Battlefield Park Bypass, I-66 improvements, and Tri-County Parkway, would have an adverse cumulative impact on air quality. Traffic congestion and fugitive dust during construction would add to the localized short-term impact on air quality. The incremental impact associated with implementation of any of the proposed activities under alternative B would be expected to be small and would not have a noticeable contribution to the cumulative impact.

The magnitude of the impact on air quality resulting from the other road improvement projects and redistribution of commuter and commercial traffic outside the park is being

evaluated in more detail as part of the Battlefield Bypass study and the Tri-County Parkway study. The cumulative impact depends on the final route selection. However, the impact is likely to be minor long-term and adverse; therefore, the overall cumulative impact would likely be minor.

Conclusion. Negligible to minor short-term adverse impacts to air quality in the park would occur periodically during construction activities and landscape rehabilitation. In the long term, there would be a localized reduction in traffic-related air pollutants along the portions of U.S. Route 29 and VA Route 234 within the park, a negligible beneficial impact. The magnitude of impacts on air quality resulting from redistributing the commuter and commercial traffic outside the park is being evaluated as part of the ongoing Battlefield Bypass study. This long-term impact is anticipated to be adverse and minor. Cumulative impact on air quality would be adverse and minor.

Additional mitigation measures could further minimize the construction-related short-term impacts to air quality. Such measures could include, but are not limited to, dust control, pollution control devices on construction equipment, and the use of low-polluting fuels.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

Alternative C—The Defining Moments of the Battles of Manassas

Relocating the visitor center off Henry Hill to a new location to the southeast of Stone Bridge would have similar construction-related impacts to that of alternative B except the footprint and magnitude of construction would be larger. Fugitive dust, particulates, and emissions produced by construction equipment would have short-term minor adverse impacts on air quality. In the long term, the new visitor center and other improvements proposed under alternative C would have negligible to minor adverse impacts on air quality because the projects are small in areal extent and best management practices (such as watering and seeding for erosion control) would be implemented to reduce construction-related impacts.

The type of impacts for forest removal operations would be similar to those described under alternative B, although the extent of forest removal would be smaller. There would be a localized short-term decrease in air quality as a result of dust, particulates, and emissions produced by construction equipment. This impact would be negligible because the disturbed area would be relatively small. Forest removal operations are expected to be done in phases, which would limit the amount and extent of construction activities occurring at any time.

Closure of roads through the park to heavy commuter traffic would result in a long-term negligible improvement in local air quality along those road corridors within the park. Rerouted traffic would contribute to emissions along roads outside the park, which is being considered as part of the Battlefield Bypass study. The redistribution of vehicular traffic would not be expected to have an adverse impact on the County's ability to comply with National Ambient Air Quality Standards; therefore, the adverse impacts to air quality in the region would be expected to be minor and long-term.

Cumulative Impacts. The cumulative impacts would be the same as described for alternative B. The construction-related activities and forest removal operations under alternative C, when combined with other past, present, and reasonably foreseeable future projects such as Manassas National Battlefield Park Bypass, I-66 Improvements, and Tri-County Parkway,

would have an adverse cumulative impact on air quality. Traffic congestion and fugitive dust during construction would add to the localized and short-term impacts on air quality. The incremental impact associated with implementation of any of the proposed activities under alternative C would be expected to be small and would not have a noticeable contribution to the cumulative impact.

The magnitude of impacts on air quality resulting from the other road improvement projects and redistributing the commuter and commercial traffic outside the park is being evaluated in more detail as part of the Battlefield Bypass study and the Tri-County Parkway Study. The cumulative impact depends on the final route selection. However, the impact is likely to be minor, long-term and adverse; therefore, the overall cumulative impact would likely be minor.

Conclusion. Impacts to local air quality during construction and landscape rehabilitation would range from negligible to minor, and would be short-term and adverse. Closure of U.S. Route 29 and VA Route 234 to commuter and commercial traffic would result in a localized reduction in vehicle-related air pollutants along the portions of these routes that fall within park boundaries. The result would be a negligible long-term beneficial impact to air quality within the park. The potential effects of rerouting traffic from the road closures are discussed in more detail in the Battlefield Bypass study. This long-term impact is anticipated to be adverse and minor. Cumulative impacts on air quality would be adverse and minor.

Additional mitigation measures could further minimize the construction-related short-term impacts to air quality. Such measures could include (but are not limited to) dust control, pollution control devices on construction equipment, and the use of low polluting fuels.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

SOUNDSCAPE

Methodology

The NPS' *Management Policies* state that the National Park Service will strive to preserve the natural quiet and natural sounds associated with the physical and biological resources of parks. Section 4.9 of *Management Policies* requires the rehabilitation of degraded soundscapes to the natural condition whenever possible, and the protection of natural soundscapes from degradation because of noise (undesirable human-caused sound). The National Park Service is specifically directed to "take action to prevent or minimize all noise that, through frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored" (*Management Policies*, Section 4.9).

Noise can adversely affect park resources by modifying or intruding on the natural soundscape, and can also indirectly impact resources by interfering with sounds important for animal communication, navigation, mating, nurturing, predation, and foraging functions. Noise can also adversely impact park visitor experiences by intruding on or disrupting experiences of solitude, serenity, tranquility, contemplation, or a completely natural or historical environment. The methodology used to assess noise impacts in this document is consistent with the NPS' *Management Policies* and Director's Order #47, *Soundscape Preservation and Noise Management*.

Definition of Intensity Levels

Analyses of the potential intensity levels of impacts on the soundscape were derived from the available literature on the Manassas National Battlefield Park. The thresholds of change for the intensity of impacts on soundscape are defined as follows:

- *Negligible:* Effects on the natural sound environment would be at or below the level of detection and such changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience or to biological resources.
- *Minor:* Effects on the natural sound environment would be detectable, although the effects would be localized, and would be small and of little consequence to the visitor experience or to biological resources.
- *Moderate:* Effects on the natural sound environment would be readily detectable and localized, with consequences to the visitor experience or to biological resources at the regional level.
- *Major:* Effects on the natural sound environment would be obvious and would have substantial consequences to the visitor experience or to biological resources in the region.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors or the length of construction activities. A long-term impact would last more than one year and would be more permanent in nature.

Alternative A—Continuing Current Management Practices (No-Action)

Under the no-action alternative, U.S. Route 29 and VA Route 234 would remain open to commuter and commercial traffic through the park. The battlefield and historic resources along U.S. Route 29 and VA Route 234 would continue to be adversely affected from noise generated from vehicular traffic.

When noise levels were compared to land-use compatibility guidelines, the noise levels were found to be above the generally accepted threshold for cultural activities and city parks. The desired soundscape of a battlefield setting is tranquil, peaceful, and still. This setting is desired to allow the visitor to imagine the series of historical events that took place on the battlefield. The noise from vehicular traffic compromises this setting and the visitor experience. Over the next 20 years, this condition and noise level may worsen as traffic levels on I-66, U.S. Route 29, and VA Route 234 increase. Therefore, the no-action alternative would have a moderate long-term adverse impact on the park's soundscape.

Cumulative Impacts. Other past, present, and reasonably foreseeable future projects, such as the proposed road projects described in the cumulative impact scenario, would have short-term adverse impacts on the soundscape from construction activities and long-term adverse impacts from noise generated by vehicles on the new roads. When these noise impacts were combined with the noise impacts from vehicular traffic at the park, the cumulative adverse impact would be long-term moderate and adverse.

If the roads were not closed to local commuter traffic, as is the case under alternative A, the Manassas National Battlefield Bypass and other regional road projects would be expected to displace some of the traffic on U.S. Route 29 and VA Route 234 to other roads. This displacement would lessen traffic in some areas, but would not reduce traffic levels on the park roads to the extent that noise would be reduced to acceptable levels. Therefore, the noise generated from traffic would be expected to continue if the National Park Service did not restrict use of the roads.

The overall cumulative impact to noise would be expected to be moderate, with the no-action alternative incremental contribution being moderate. However, the degree of the impact is dependent on the outcome of each road project.

Conclusion. Noise generated from traffic on U.S. Route 29 and VA Route 234 during peak travel periods would continue to have a moderate long-term adverse impact on the park's soundscape. A moderate long-term adverse cumulative impact would occur. Because there would be no major adverse impacts to resources or values, there would be no impairment of the park's resources or values.

Alternative B—The Two Battles of Manassas (Preferred Alternative)

Removal of the bridge over Bull Run on U.S. Route 29, the construction of the new bridge and access, and other construction-related activities associated with improving visitor services under alternative B would have a localized adverse impact on the soundscape caused by noise generated by construction equipment and activities. The adverse impact would be short-term and negligible. Long-term adverse impacts on the soundscape from the new contact station and other small projects would be negligible because park visitation, visitor patterns, and use would not increase to a point that would have a noticeable effect on the soundscape.

Under alternative B, the National Park Service would control access would restrict commuter and commercial traffic on U.S. Route 29 and VA Route 234. The controlled access would greatly lower the traffic volumes on the roads. In addition, speed limits within the park would be reduced to 25 miles per hour. As a result, noise levels generated from vehicular and truck traffic would also be reduced.

The controlled access and reduced speeds would help achieve the desired soundscape of the park. The desired soundscape of a battlefield is tranquil, peaceful, and still, where visitors can imagine the series of historical events that took place on the battlefield. Thus, the road closures and reduced speeds would have a moderate long-term beneficial impact on the soundscape of the park. Controlled access and the diversion of vehicles around the park would likely have a moderate adverse impact on noise outside the park; however, the intensity of the impact would depend on the route selected. Noise-associated impacts outside the park are being considered as part of the environmental review for the Battlefield Bypass study.

There would be an adverse localized short-term impact on the soundscape caused by noise generated during forest removal operations. This impact would be minor because the length of construction and noise generated would be relatively small. Forest removal operations would be performed in phases, which would limit the amount and extent of construction activity occurring at any time.

Cumulative Impacts. Other past, present, and reasonably foreseeable future projects such as the road projects described in the cumulative impact scenario would have short-term adverse impacts on the soundscape from construction activities. When these impacts were combined with the construction-related impacts of alternative B, the cumulative adverse impact would be short-term and minor. In the long term, the impact of alternative B on soundscape would be relatively beneficial because of the reduction in noise resulting from the decrease in vehicular traffic in the park. No long-term cumulative impacts on the soundscape would occur because alternative B would have no long-term adverse impacts on the soundscape and because no long-term impacts were identified in the cumulative impact scenario.

Conclusion. Controlled access and reduced speed limits within the park would have a moderate long-term beneficial impact on the soundscape. Negligible to minor short-term adverse impacts on the soundscape would occur during construction activities to upgrade visitor services areas and during forest removal operations. Only short-term minor cumulative impacts on the soundscape would occur.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of

Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

Alternative C—The Defining Moments of the Battles of Manassas

Relocating the visitor center off Henry Hill to a new location to the east of Stone Bridge would help rehabilitate the soundscape of the battlefield resource at Henry Hill and would introduce a new noise source at another location in the park. Additional study for the relocation of the visitor center would take into consideration the potential noise impacts to other nearby resources. Construction activities associated with building a new visitor center would have minor short-term adverse impacts on the soundscape. In the long term, the new visitor center and other improvements proposed under alternative C would improve the soundscape on the battlefield by removing the visitor center from the battlefield. By relocating visitor-related sounds to an area of the park removed from the major sites of battle, the activities under alternative C would be more compatible and desirable based on the park's purpose to preserve the story of the two battles of Manassas. Therefore, a minor long-term beneficial impact would occur on the park's soundscape.

Under alternative C, the National Park Service would control access on U.S. Route 29 and VA Route 234 and restrict commuter and commercial traffic. The controlled access would greatly lower the traffic volumes on the roads within the park. In addition, speed limits within the park would be reduced. As a result, noise levels generated from vehicular and truck traffic would also be reduced. The controlled access and reduced speeds would help achieve the desired soundscape of the park. The desired soundscape of a battlefield setting is tranquil, peaceful, and still, where visitors can imagine the series of historical events that took place on the battlefield. Thus, the road closures and reduced speeds would have a moderate long-term beneficial impact on the soundscape.

Impacts would be similar to those described under alternative B, although the extent of construction and forest removal operations would be smaller. There would be a localized short-term impact on the soundscape caused during the forest removal. This impact would be negligible to minor because the length of construction and noise generated would be relatively small. Forest removal operations would be performed in phases, limiting the amount and extent of construction activities occurring at any time.

Cumulative Impacts. The cumulative impact would be the same as described for alternative B. Other past, present, and reasonably foreseeable future projects such as the road projects described in the cumulative impact scenario would have short-term adverse impacts on the soundscape from construction activities. When these impacts were combined with the construction-related impacts of alternative C, the cumulative adverse impact would be short-term and minor. In the long term, the impact of alternative C on soundscape would be beneficial because of the reduced noise resulting from decreased vehicular traffic in the park. No long-term impacts to the soundscape were identified in the cumulative impact scenario; therefore, no long-term cumulative impacts on the soundscape would occur.

Conclusion. Controlled access and reduced speed limits within the park would have a moderate long-term beneficial impact on the soundscape. Negligible to minor short-term adverse impacts on the soundscape would occur during construction activities to upgrade the visitor services areas and implement forest removal operations. Minor short-term cumulative impacts on noise would occur.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of

Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

VEGETATION AND WILDLIFE

Methodology

In the impact assessment for vegetation and wildlife, the National Park Service focused on changes to the levels of populations of species and the effects on habitat and natural communities. The National Park Service also considered the physical impacts associated with any new developmental plans and anticipated visitor uses. The context of the evaluation was the park and surrounding area. For this programmatic study, the impacts discussed are qualitative and, in most cases, additional planning and environmental analysis would be conducted to determine site-specific impacts on vegetation and wildlife.

Definition of Intensity Levels

Analyses of the potential intensity of impacts to vegetation and wildlife were derived from the available literature on Manassas National Battlefield Park and professional judgment of the park staff. The thresholds of change for the intensity of impacts on vegetation and wildlife are defined as follows:

For vegetation:

- *Negligible*: Individual native plants may occasionally be affected, but no measurable or perceptible changes in plant community size, type, integrity, or continuity would occur.
- *Minor:* Impacts on native plants are measurable or perceptible and localized within a relatively small area. The overall viability of the plant community would not be affected and, if left alone, would recover.
- *Moderate:* Impacts on native plants would cause a change in the plant community (e.g., abundance, distribution, quantity, or quality); however, the impact would remain localized.
- *Major:* Impacts on native plant communities would be substantial and highly noticeable, and would affect a sizable portion of affected community type in or outside the park. Mitigation measures required to offset the adverse effects would be extensive and their success would not be guaranteed.

For wildlife:

- *Negligible*: Wildlife and habitats would not be affected or the effects would be at or below the level of detection, and the changes would be so slight that there would not be any measurable or perceptible consequence to the wildlife species populations.
- *Minor:* Impacts on wildlife and habitats would be detectable, although the effects would likely be localized, small, and of little consequence to the species' population. Mitigation measures, if needed to offset adverse effects, would be simple and successful.
- *Moderate*: Impacts on wildlife and habitats would be readily detectable and localized, with consequences at the population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.
- *Major*: Impacts on wildlife and habitats would be obvious and would have substantial consequences to wildlife populations in the region. Extensive mitigation measures may be needed to offset adverse affects.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors or the length of construction activities. A long-term impact would last more than one year and would be more permanent in nature.

Alternative A—Continuing Current Management Practices (No-Action)

Under the no-action alternative, the National Park Service would continue with current management practices, including the present use of the facilities. Controlled access into the park would not be implemented. The visitor center and contact station would not change. The National Park Service would conduct small-scale, periodic clearing activities to maintain the battlefield landscape. Clearing would be achieved using a variety of potential methods, including mechanical methods and prescribed fire. These small-scale activities would have little effect on plant populations in the park because the areas affected would be small. The activities would not displace or alter habitat in a way that affects wildlife populations because the park staff would avoid such areas. Therefore, negligible adverse impacts on vegetation and wildlife would occur.

Cumulative Impacts. The small clearing activities under alternative A, when combined with other past, present, and reasonably foreseeable future projects such as pending road construction projects, would have a moderate adverse cumulative impact on vegetation and wildlife. The pending road projects have the potential to have moderate impacts on vegetation and wildlife; however, the degree of the impact is dependent on the final route selection for each project. The incremental impact associated with implementation of alternative A would be small. Overall, the cumulative impact would be moderate long-term and adverse.

Conclusion. Negligible adverse impacts on vegetation and wildlife would occur. A moderate adverse cumulative impact could occur; however, the incremental impact associated with alternative A would be small. Because there would be no major adverse impact to resources or values, there would be no impairment of the park's resources or values.

Alternative B—The Two Battles of Manassas (Preferred Alternative)

Changes at the Second Manassas visitor contact station, and the proposed new access road and improved parking area at Stuart's Hill would have minor short-term and long-term adverse impact on vegetation and wildlife because some trees would be removed and some wildlife would be temporarily displaced during construction. Additional environmental evaluations and field studies would be required for implementation. The impact on vegetation and wildlife would be long-term adverse and minor because of the potential removal of vegetation for the new road and improved parking. The National Park Service would practice avoidance and minimization to the extent practicable during the planning and design and then develop appropriate mitigation to minimize impacts. There would be beneficial impacts to vegetation from rehabilitation of the existing roadbed.

The closure of U.S. Route 29 and VA Route 234 to heavy commuter traffic would have a beneficial impact on the wildlife in the park. The reduction in vehicular and truck traffic through the park would reduce the noise and human activity that discourages wildlife use near the road. Travel speeds would also be reduced throughout the park. With the reduction of traffic and travel speeds, the number of animals killed by vehicles would likely be reduced. A minor long-term beneficial impact would occur on wildlife within the park.

The proposed access road and bridge would require the destruction of wildlife habitat, removal of vegetation, and displacement of some wildlife species. The degree of impact depends on the future location of the road and bridge; however there is no location along the Bull Run stream valley where total avoidance of impacts to forested area, wetlands, and wildlife habitat could occur. The long-term adverse impacts associated with the new access road and bridge would be moderate.

The National Park Service would practice avoidance and minimization to the extent

feasible during planning and design to develop appropriate mitigation to minimize impacts. Prior to implementation, the National Park Service would assess the potential impacts and evaluate the potential alternatives in accordance with the National Environmental Policy Act, Director's Order #12, and the NPS' *Management Policies*.

Diversion of traffic and changes in traffic levels on other roads outside the park are being considered in the Battlefield Bypass study. At the time of this evaluation, the potential effects on wildlife of closing the roads outside the park are uncertain, because many variables that need to be considered, such as location and design of the bypass, surrounding habitat, and wildlife migration patterns and populations. However, as a result of changes to traffic flows and levels, potential long-term adverse impacts to wildlife would likely range from negligible to minor.

Rehabilitation of portions of the historic landscape would result in the phased removal of approximately 327 acres of second-growth forest, which would be converted to open fields. Map 4-1 shows the extent of proposed forest removal. Most of this acreage consists of oak–hickory or Virginia pine forest with a small portion of loblolly pine, white pine, and mixed forest. Approximately 82 acres of open fields would be allowed to regenerate through natural succession back to oak-hickory forest. In the long term, there would be a net loss of 245 acres of forest. The clearings will be maintained using a variety of methods, potentially including mechanical methods and prescribed fire. These acreages are estimates and are presented for comparison of the alternatives only. The cleared forestland would be converted to early successional habitats such as grassland and/or scrubland.

Rehabilitation of the historic landscape would benefit some species of migratory birds and adversely affect others. The approximately 327 acres of forested habitat to be removed represents some 15 percent of the forested habitat within the park. The *net* loss of 245 forested acres represents approximately 11 percent of the park's total forested acreage. This newly cleared land would be managed as open fields. This would create additional habitat for species that prefer open fields or edge habitat between forests and fields, including small mammals, such as mice and voles, and birds, including the prairie warbler, field sparrow, and several species of hawks.

The 82 acres of open field allowed to return to woodlands would expand the park's existing woodlands and provide habitat for woodland species such as squirrels, woodpeckers, and raccoons. Species that use edge habitat between forests and fields would also benefit. In the short-term, this regenerating habitat would favor early successional species. As tree regeneration begins to dominate the sites, birds such as the yellow-breasted chat, common yellowthroat, indigo bunting, and prairie warbler would likely occupy the sites. With canopy closure and development of more mature stands, canopy nesters such as eastern wood-pewees would likely occur. The relatively small size of the regeneration areas would minimally expand the existing woodlands, which may not appreciably enhance breeding habitat for area-sensitive, forest-interior birds.

The net loss of forests would impact area-sensitive, forest-interior species, whose populations would likely decrease or be displaced through direct loss of forest habitat, increase in edge habitat, and increase in edge effects. There could be increased competition with edge species for food, nest sites, and space. An increase in the proportion of edge to forest interior is likely to lead to higher nest parasitism and nest predation. Nests along forest edges and in small forest tracts experience higher rates of loss from foxes, raccoons, cats, dogs, blue jays, and other predators.

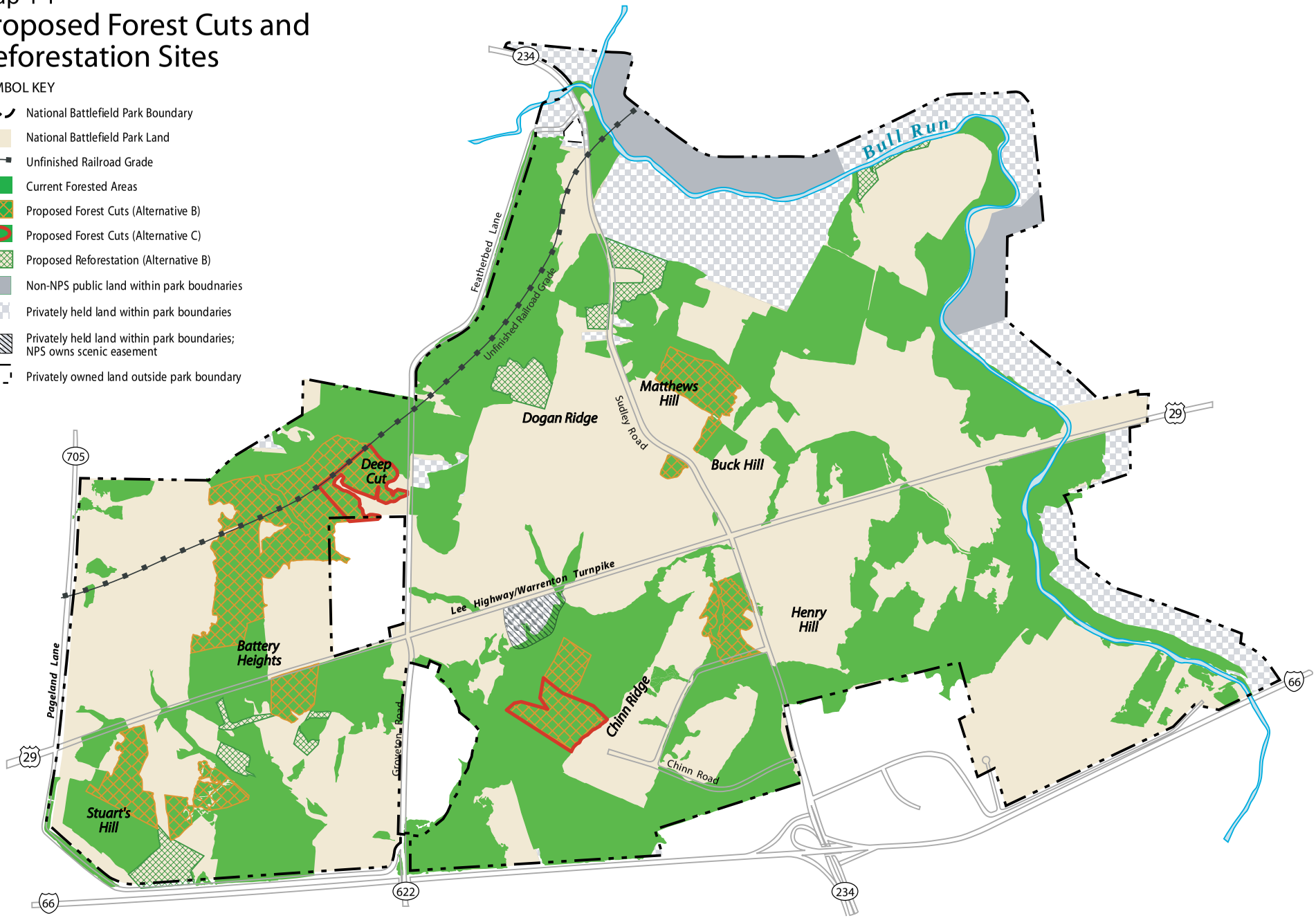
Overall, the reduction of woodlands by mechanical methods or with prescribed fire would result in a minor change in the area of vegetative or wildlife communities within the park as a whole. However, based on the anticipated acreage of woodland cleared,

Map 4-1

Proposed Forest Cuts and Reforestation Sites

SYMBOL KEY

- National Battlefield Park Boundary
- National Battlefield Park Land
- Unfinished Railroad Grade
- Current Forested Areas
- Proposed Forest Cuts (Alternative B)
- Proposed Forest Cuts (Alternative C)
- Proposed Reforestation (Alternative B)
- Non-NPS public land within park boudnaries
- Privately held land within park boundaries
- Privately held land within park boundaries; NPS owns scenic easement
- Privately owned land outside park boundary



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minor long-term adverse impacts would occur from the disruption of the habitat.

Although these acreages are representative of the magnitude of change expected, some further refinement of the actual boundaries of the historic scene rehabilitation areas would likely occur based on more precise field surveys. The National Park Service would conduct additional environmental analysis and documentation prior to proceeding with implementation in each resource area. Bottomland forests and riparian vegetation within the perimeters of designated cut areas would be maintained, which would minimize the impacts on bird and other species that use this habitat.

Cumulative Impacts. When combined with other past, present, and reasonably foreseeable future projects, the construction-related activities under alternative B would have a short-term adverse cumulative impact on vegetation and wildlife. The incremental impacts associated with alternative B would be small. The Manassas National Battlefield Park Bypass, Tri-County Parkway, and other nearby road projects have the potential to have adverse impacts on forested areas and associated wildlife because of clearing and construction activities to build the new roads. Collectively, the cumulative impact would be anticipated to be moderate long-term and adverse.

Studies support the finding that grasslands are declining at higher rates than forested lands. In Virginia, open, idle grasslands have been reduced by 55 percent since 1945 (Franzreb, K. E. and K. V. Rosenberg 1997). The conversion to grassland would thereby help to offset the impacts of forest removal. While the impacts of this removal would be noticeable within the park itself, the regional value of the newly created grasslands would be such that the overall regional impacts to vegetation and wildlife would be minor.

Conclusion. Vegetation and wildlife would experience both beneficial and adverse impacts, relating to habitat modifications and changes in traffic patterns in the park. Specifically,

- The impact on vegetation and wildlife at Stuart's Hill would be long-term adverse and minor because of the potential removal of vegetation to construct the road and improve parking. There would be beneficial impacts to vegetation from rehabilitation of the existing roadbed.
- The reduction of traffic and travel speeds would reduce the number of animals killed by vehicles, which would be a minor long-term beneficial impact.
- The long-term adverse impacts associated with the new access road and bridge on U.S. Route 29 would be moderate.
- Potential long-term adverse impacts to wildlife from diversion of traffic and changes in traffic levels on other roads outside the park would likely range from negligible to minor.
- The reduction of woodlands would have a minor long-term adverse impact on forest species and a minor long-term beneficial impact on species that prefer grasslands and edge habitats.
- Collectively, the cumulative impact would be minor to moderate long-term and adverse.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

Alternative C—The Defining Moments of the Battles of Manassas

The construction of a new visitor center to the east of Stone Bridge would have adverse

impacts on vegetation and wildlife. In general, the new visitor center and associated access road and bridge would require the destruction of wildlife habitat, removal of vegetation, and displacement of wildlife species. The degree of the impact would depend on the future location of the visitor center, road, and bridge; however, there is no location along the Bull Run stream valley where total avoidance of impacts to forested areas and wildlife habitat could occur. A moderate long-term adverse impact is likely.

The National Park Service would practice avoidance and minimization to the extent feasible during planning and design to develop appropriate mitigation to minimize impacts. Prior to implementation, the National Park Service would assess the potential impacts and evaluate the potential alternatives in accordance with the National Environmental Policy Act, Director's Order #12, and the NPS' *Management Policies*. Removal of the Henry Hill visitor center would allow rehabilitation of that area, most likely to open fields that would reflect the historic landscape. This would result in a negligible long-term beneficial impact on species that use grassland habitats.

The closure of U.S. Route 29 and VA Route 234 to heavy commuter traffic would have a beneficial impact on the wildlife at the park. The reduction in vehicular and truck traffic through the park would reduce the noise and human activity that discourages wildlife use near the road. Travel speeds would also be reduced throughout the park. With the reduction of traffic and travel speeds, the number of animals killed by vehicles would likely be reduced. A minor long-term beneficial impact would occur on wildlife.

Diversion of traffic and changes in traffic levels on other roads outside the park are being considered in the Battlefield Bypass study. At the time of this evaluation, the potential effects on wildlife of closing the roads outside the park are uncertain, because many variables need to be considered, such as location and design of the bypass, surrounding habitat, and wildlife migration patterns and populations. However, as a result of changes to traffic flows and levels, potential long-term adverse impacts to wildlife would likely range from negligible to minor.

The proposed new access road and improved parking area at Stuart's Hill would have minor short-term and long-term adverse impact on vegetation and wildlife because some trees would be removed and some wildlife would be temporarily displaced during construction. Additional environmental evaluations and field studies would be required for implementation. The impact on vegetation and wildlife would be long-term adverse and minor because of the potential removal of vegetation for the new road and improved parking. The National Park Service would practice avoidance and minimization to the extent practicable during the planning and design and then develop appropriate mitigation to minimize impacts. There would be beneficial impacts to vegetation from rehabilitation of the existing roadbed.

Creation of view corridors would result in the removal of approximately 72 acres of second-growth forest to be converted into open fields. Map 4-1 shows the areas of forest removal. These acreages are estimates and are presented for comparison of the alternatives only. Bottomland forests and riparian vegetation within the perimeters of designated cut areas would be maintained. Acreage rehabilitated to open fields would provide habitat for mice, voles, hawks, deer, foxes, or other species that prefer open fields or edge habitat between forests and fields. The clearings will be maintained using a variety of methods, potentially including mechanical methods and prescribed fire.

Overall, the reduction of woodlands by mechanical methods or with prescribed fire would have a negligible to minor change in the area of vegetative or wildlife communities within the park as a whole. However, based on the anticipated acreage of woodland cleared, negligible to minor long-term adverse impacts would occur from the disruption of the habitat.

Cumulative Impacts. When combined with other past, present, and reasonably foreseeable future projects, the construction-related activities under alternative C would have an adverse cumulative impact on vegetation and wildlife. The incremental impacts associated with alternative C would be small. The Manassas National Battlefield Park Bypass, Tri-County Parkway, and other nearby road projects have the potential to have adverse impacts on forested areas and associated wildlife because of clearing and construction activities to build the new roads. Collectively, the cumulative impact would be anticipated to be moderate long-term and adverse.

Various studies support the finding that grasslands are declining at higher rates than forested lands. In Virginia, open, idle grasslands have been reduced by 55 percent since 1945 (Franzreb, K. E. and K. V. Rosenberg 1997). The conversion from forest to grassland would help to offset the impacts of forest removal. The small scale of this removal (72 acres, or less than 5 percent of the park's forested area) would be only somewhat noticeable within the park itself. The value of the newly created grasslands would be such that the overall long-term regional impacts to vegetation and wildlife would be minor.

Conclusion. Vegetation and wildlife would experience both beneficial and adverse impacts, relating to habitat modifications and changes in traffic patterns in the park. Specifically,

- The long-term adverse impacts associated with the new visitor center, access road, and bridge would be moderate.
- The reduction of traffic and travel speeds would reduce the number of animals killed by vehicles, which would be a minor long-term beneficial impact.
- Potential long-term adverse impacts to wildlife from diversion of traffic and changes in traffic levels on other roads outside the park would likely range from negligible to minor.
- The impact on vegetation and wildlife at Stuart's Hill would be long-term adverse and minor because of the potential removal of vegetation to construct the road and improve parking. There would be beneficial impacts to vegetation from rehabilitation of the existing roadbed.
- The reduction of woodlands would have a negligible to minor long-term adverse impact on forest species and a negligible to minor long-term beneficial impact on species that prefer grasslands and edge habitats.
- Collectively, the cumulative impact would be anticipated to be minor to moderate long-term and adverse.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

THREATENED, ENDANGERED, AND RARE SPECIES AND NATURAL COMMUNITIES

Definition of Intensity Levels

Analyses of the potential intensity of special status species were derived from the available literature on Manassas National Battlefield Park and previous consultation or studies involving the U.S. Fish and Wildlife Service and Virginia Department of Conservation and Recreation. The thresholds of change for the intensity of impacts on special status species are defined as follows:

- *No effect:* The action would cause no effect on the special status species or critical habitat.

- *May effect but is not likely to adversely affect*: The action would be expected to result in discountable effects on a species or critical habitat (that is, extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated), or it would be completely beneficial.
- *Likely to adversely affect:* The action would likely result in a direct or indirect adverse effect on a species or critical habitat, and the effect would not be discountable or completely beneficial.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors or the length of construction activities. A long-term impact would last more than one year and would be more permanent in nature.

These definitions are consistent with the language used to determine effects on threatened and endangered species under Section 7 of the Endangered Species Act.

Alternative A—Continuing Current Management Practices (No-Action)

Under the no-action alternative, current management practices would have no effect on threatened, endangered, or rare species or their habitats. No actions under the current management practices were identified now or over the next 20 years that would have an effect on threatened and endangered species because no supporting habitats would be disturbed.

Cumulative Impacts. There would be no cumulative impact because there would be no impacts on threatened, endangered, or rare species or their habitats as a result of maintaining current management practices.

Conclusion. The no-action alternative would have no effect on threatened, endangered, or rare species or their habitats. No cumulative impact would occur. Because there would be no major adverse impact to resources or values, there would be no impairment of the park's resources or values.

Alternative B—The Two Battles of Manassas (Preferred Alternative)

There are populations of state-listed rare plant species near segments of existing trails and other portions of the park that could be susceptible to disturbance from trail work or other construction. Trail work would be accomplished without disturbing these populations, although slight realignment of trails may be necessary. Therefore, it would have no effect on species of special concern. Additional environmental studies would be conducted prior to work outside the original footprint of the existing trails at the park.

Transportation improvements would have no effect on threatened, endangered, or rare species or their habitats. This would occur because, through further planning and environmental analysis for the proposed transportation improvements, such as the bridge removal, the National Park Service would practice avoidance to the greatest extent possible.

Approximately 327 acres of forested habitat would be removed and managed as open fields to rehabilitate the cultural landscape. This would create additional habitat for species that prefer open fields or edge habitat between forests and fields. The only area-sensitive forest species known to occur within the cut areas is the wood thrush, which occurs in relatively small woodlands.

No impacts to important natural communities would occur from cultural landscape rehabilitation. No known populations of state-listed rare plant species are within the forest removal areas. However, some populations of these species occur in open fields adjacent to one area to be cleared. Clearing limits and access routes would be established and clearly marked or fenced to avoid these populations. Best management practices, including erosion control measures, would be implemented to mitigate possible indirect impacts to these populations from runoff from disturbed areas. Acreage converted to open fields would provide additional potential habitat for the state-listed rare species that are associated with

these open habitats. These species include hairy beardtongue and blue-hearts.

The proposed actions described in alternative B would have no effect on threatened, endangered, or rare species, and are not likely to adversely affect their habitats. Consequently, they would have no effect on species populations at the park because the habitat is still abundant.

Historic landscape modification would benefit some species of migratory birds and adversely affect others, with an overall net loss of forest habitat and a concomitant net gain of open fields. These actions may affect but are not likely to adversely affect species that prefer open fields or edge habitat, including the prairie warbler and field sparrow, which are two species of concern. Net loss of woodlands is not likely to adversely affect habitat suitable for forest species, particularly area-sensitive species, which include the Acadian flycatcher and wood thrush. Overall, the loss of woodlands may affect but is not likely to adversely affect populations of the species at the park because the habitat is still abundant.

Cumulative Impacts. When combined with other past, present, and reasonably foreseeable future projects, the construction-related activities under alternative B may affect but are not likely to adversely affect threatened and endangered species. The incremental impacts associated with alternative B would be small. The Manassas National Battlefield Park Bypass, Tri-County Parkway, and other nearby road projects have the potential to have adverse impacts on rare, threatened, and endangered species and associated habitat because of clearing and construction activities to build the new roads. Collectively, the cumulative impact would be anticipated in the long term to affect but not likely adversely affect threatened and endangered species.

Conclusion. The proposed actions described in alternative B would have no effect on threatened, endangered, or rare species and may affect but are not likely to adversely affect their habitats, because no supporting habitats would be disturbed. Forest removal to rehabilitate the historic landscape may affect but is not likely to adversely affect species that prefer open fields or edge habitat, including two species of concern, the prairie warbler and field sparrow. Woodland species, including the Acadian flycatcher and wood thrush, may be affected, but are not likely to be adversely affected. The cumulative impact would affect but not likely adversely affect threatened and endangered species.

Because this alternative may affect but is not likely to adversely affect a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

Alternative C—The Defining Moments of the Battles of Manassas

There are some populations of state-listed rare plant species near segments of existing trails that could be susceptible to disturbance from trail work. Trail work would be accomplished without disturbing these populations, although slight realignment of trails may be necessary. Therefore, it would have no effect on species of special concern. Additional environmental study would be conducted prior to trail work outlined for alternative C.

Additional environmental analysis would be conducted prior to selecting a site for the new visitor center site. The National Park Service would fully consider the potential impacts on threatened, endangered, or rare species or their habitats and practice avoidance to the extent feasible. Best management practices, including erosion control measures, would be implemented.

Transportation improvements would have no effect on threatened, endangered, or rare species or their habitats because, through

further planning and environmental analysis for the proposed transportation improvements, such as the bridge removal and development of the new access road and bridge in a different location, the National Park Service would practice avoidance to the greatest extent possible.

Approximately 72 acres of forested habitat, less than 5 percent of the forested habitat within the park, would be removed and managed as open fields to provide view corridors. This would create limited additional habitat for species that prefer open fields or edge habitat between forests and fields. There would be a minor benefit to these species, such as the prairie warbler. These impacts would not be as extensive under this alternative as they would be in alternative B, because of the relatively limited removal of woodlands. The only area-sensitive forest species known to occur within the cut areas is the wood thrush, which does occur in relatively small woodlands. As a result, this alternative may affect, but is not likely to adversely affect this species.

No impacts to important natural communities would occur. No known populations of state-listed rare plant species are within the forest removal areas. However, some populations of these species occur in open fields adjacent to one area to be cleared. Clearing limits and access routes would be established and clearly marked or fenced to avoid these populations. Best management practices, including erosion control measures, would be implemented to mitigate possible indirect impacts to these populations from runoff from disturbed areas. Acreage converted to open fields would provide additional potential habitat for state-listed rare species associated with these open habitats, which include hairy beardtongue and blue-hearts.

Cumulative Impacts. When combined with other past, present, and reasonably foreseeable future projects, the construction-related activities under alternative C may affect but are not likely to adversely affect threatened and endangered species. The incremental impacts associated with alternative C would be small. The Manassas National Battlefield Park Bypass, Tri-County Parkway, and other nearby road projects have the potential to have adverse impacts on rare, threatened, and endangered species and associated habitat because of clearing and construction activities to build the new roads. Collectively, the cumulative impact would be anticipated in the long term to affect but not likely adversely affect threatened and endangered species.

Conclusion. The proposed actions described in alternative C may affect but are not likely to adversely affect threatened, endangered, or rare species or their habitats because no supporting habitats would be disturbed. Forest removal to create view corridors may affect but is not likely to adversely affect the prairie warbler, which prefers open fields or edge habitat. Woodland species, including wood thrush, may be affected, but are not likely to be adversely affected. The cumulative impact would affect but not likely adversely affect threatened and endangered species.

Because this alternative may affect but is not likely to adversely affect a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

WATER RESOURCES (WATER BODIES, WATER QUALITY, WETLANDS, AND FLOODPLAINS)

Methodology

The impacts discussed for water resources are qualitative because the actions described under each alternative are conceptual at this stage of the planning process. Additional planning and environmental analyses would be conducted to determine site-specific impacts as more detailed plans are developed.

Definition of Intensity Levels

Analyses of the potential intensity of water resources were derived from the available literature on Manassas National Battlefield Park. The thresholds of change for the intensity of impacts on water resources are defined as follows:

- *Negligible*: An action would have no measurable or detectable effect on the quality, functions, or values of water bodies, wetlands, floodplains, or water quality. The impact would be localized and not measurable or at the lowest level of detection.
- *Minor:* An action would have measurable effects on the quality, functions, or values of water bodies, wetlands, floodplains, or water quality. The impact would be localized and slight but detectable.
- *Moderate:* An action would have clearly detectable effects on the quality, functions, or values of water bodies, wetlands, floodplains, or water quality. The impact would be readily apparent and appreciable.
- *Major:* An action would have substantial effects on the quality, functions, or values of water bodies, wetlands, floodplains, or water quality. The impact would be severe and highly noticeable.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors. A long-term impact would last more than one year and would be more permanent in nature.

Alternative A—Continuing Current Management Practices (No-Action)

Under the no-action alternative, the National Park Service would continue current management practices. Ongoing management activities, such as small-scale scene rehabilitation, could have adverse impacts on water resources from sediment production during forest removal or construction activities. With best management practices, the long-term adverse impacts would be negligible because the area of disturbance would be a sufficient distance from any water resources, and the indirect effects of sediment production would be minimized through the use of best management practices such as silt fencing.

Cumulative Impacts. Other past, present, and reasonably foreseeable future projects, such as the road projects described in the cumulative impact scenario, could have moderate long-term adverse impacts on water resources from construction activities, depending on the final corridor selected for each road alignment. Alternative A would add a moderate incremental impact. When these impacts were combined with the construction-related impacts of alternative A, the cumulative adverse impact would be long-term and moderate.

Conclusion. The no-action alternative would have long-term negligible adverse impacts on water resources. The cumulative adverse impact would be long-term and moderate. Because there would be no major adverse impact to resources or values, there would be no impairment of the park's resources or values.

Alternative B—The Two Battles of Manassas (Preferred Alternative)

The new access road and improved parking lot at Stuart's Hill could have an adverse impact on water resources. The proposed new road would not directly affect wetlands or floodplains, but sediment runoff into nearby water resources could occur. With the use of sediment and erosion control measures, the adverse impact would be short-term and negligible.

Transportation- related improvements under alternative B would have limited impact on the park's waters, wetlands, or floodplains. The removal of commuter and truck traffic, with associated reductions in pollution from those vehicles, from the portions of U.S. Route 29 and VA Route 234 that run through the park would have a long-term beneficial impact to water resources by reducing the amount of

polluted runoff that would reach these resources.

The removal of the U.S. Route 29 bridge over Bull Run would have a minor long-term beneficial impact to the stream and floodplain and minor short-term adverse impacts during demolition. Minor sediment erosion would occur, although appropriate sediment and erosion control practices could make the adverse impacts to Bull Run negligible. Additional environmental analysis and documentation would be conducted by the National Park Service prior to removal of the bridge.

A new road and bridge over Bull Run would be built to connect U.S. Route 29. This action would have moderate long-term adverse impacts on the stream, floodplain, and, potentially, wetlands. These impacts could include a localized decrease in quality and modification of floodplain processes.

The location of the new access roads would depend on the alignment of the proposed Battlefield Bypass. An additional study would be conducted prior to selecting any location and alignment. The National Park Service would practice avoidance and minimization to the extent feasible during the planning and design, and would then develop appropriate mitigation to minimize impacts. Prior to making any decisions or implementation, the National Park Service would assess the potential impacts and evaluate the potential alternatives in accordance with the National Environmental Policy Act, Director's Order's #12, and the NPS' *Management Policies*.

No seasonally flooded bottomland forests, including riparian stream corridors and seasonally flooded depressions or pools, would be affected by construction or historic scene rehabilitation proposals. Riparian buffers would be maintained along all streams to mitigate potential bank erosion and channel siltation from forest removal areas. Forest removal operations would also incorporate Virginia Department of Forestry best management practices to avoid erosion problems, particularly where disturbance would occur on slopes. No new construction or historic scene rehabilitation proposals would occur within 100-year floodplains. The adverse impact on water resources would be short-term and negligible.

Existing structures within the 100-year floodplains that would continue to be preserved under the alternative include the Stone House and Thornberry House. Continued preservation of these historic structures, whose locations are integral to their significance, is considered an excepted action under National Park Service guidelines for compliance with Executive Order 11988, "Floodplain Management." Preservation and maintenance activities would have a negligible impact on water resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable future projects, such as the road projects described in the cumulative impact scenario, could have moderate long-term adverse impacts on water resources from construction activities, depending on the final corridor selected for each road alignment. Alternative B would add a moderate incremental impact. When these impacts were combined with the construction-related impacts of alternative B, the cumulative adverse impact would be long-term and moderate.

Conclusion. Water resources would experience both beneficial and adverse impacts. Specifically,

- The new Stuart's Hill access road would have short-term negligible adverse impacts.
- Transportation-related improvements would have a long-term beneficial impact by reducing the volume of polluted runoff that would reach water resources in the park.
- The removal of the U.S. Route 29 bridge would likely have a minor long-term beneficial impact on the floodplain and stream and negligible short-term adverse impacts during demolition.

- The new bridge over Bull Run and its associated approach roads would have moderate long-term adverse impacts on the floodplain, stream, and potentially wetlands.
- The cumulative adverse impact would be long-term and moderate.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

Alternative C—The Defining Moments of the Battles of Manassas

Under alternative C, the National Park Service would construct a new visitor center to the east of Stone Bridge. Appropriate sediment and erosion control practices would mean that the construction of the visitor center would likely have a negligible adverse impact on water resources, specifically Bull Run and its associated wetlands and floodplains. However, the new visitor center would require a new bridge over Bull Run and associated approach roads to connect the visitor center with U.S. Route 29.

The new bridge and approach road would have moderate long-term adverse impacts on the stream, the floodplain, and, potentially wetlands. The location of the new visitor center and access roads would depend on the alignment of the proposed Battlefield Bypass. An additional study would be conducted prior to selecting any location and alignment. The National Park Service would practice avoidance and minimization to the extent feasible during the planning and design, and would then develop appropriate mitigation to minimize impacts. Prior to making any decisions or implementation, the National Park Service would assess the potential impacts and evaluate the potential alternatives in accordance with the National Environmental Policy Act, Director's Order #12, and the NPS' *Management Policies*.

The removal of commuter and truck traffic, which would reduce pollution from those vehicles, from the portions of U.S. Route 29 and VA Route 234 that run through the park would have a long-term beneficial impact to water resources by reducing the amount of polluted runoff that would reach these resources. The removal of the existing U.S. Route 29 bridge would have a long-term beneficial impact to the stream and floodplain and minor short-term adverse impacts during demolition. Minor sediment production would occur. However, through appropriate sediment and erosion control practices, the adverse impacts to Bull Run would be negligible. Additional environmental analysis and documentation would be conducted by the National Park Service prior to removal of the bridge.

The new access road and improved parking lot at Stuart's Hill could have an adverse impact on water resources. The proposed new road would not directly affect wetlands or floodplains, but sediment runoff into nearby water resources could occur. With the use of sediment and erosion control measures, the adverse impact would be short-term and negligible.

No seasonally flooded bottomland forests, including riparian stream corridors, and/or seasonally flooded depressions or pools would be affected by construction or historic scene rehabilitation proposals. Riparian buffers would be maintained along all streams to mitigate potential bank erosion and channel siltation from forest removal areas. Forest removal operations would also incorporate Virginia Department of Forestry best management practices to avoid erosion problems, particularly where disturbance would occur on slopes. No new construction or historic scene rehabilitation proposals would occur within 100-year floodplains. The

adverse impact on water resources would be short-term and negligible.

Existing structures within the 100-year floodplains that would continue to be preserved under the alternative include the Stone House and Thornberry House. Continued preservation of these historic structures, whose locations are integral to their significance, is considered an excepted action under National Park Service guidelines for compliance with Executive Order 11988, "Floodplain Management." Preservation and maintenance activities would have a negligible impact on water resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable future projects such as road projects described in the cumulative impact scenario could have moderate long-term adverse impacts on water resources from construction activities depending on the final corridor selected for each road alignment. Alternative C would add a moderate incremental impact. When these impacts are combined with the construction-related impacts of alternative C, the cumulative adverse impact would be anticipated to be long-term and moderate.

Conclusion. Water resources would experience both beneficial and adverse impacts. Specifically,

- Transportation-related improvements would have a long-term, beneficial impact by reducing the volume of polluted runoff that would reach water resources in the park.
- The removal of the U.S. Route 29 bridge would likely have a minor long-term beneficial impact on the floodplain and stream and negligible short-term adverse impacts during demolition.
- The new visitor center, new bridge over Bull Run, and its associated approach roads would have moderate long-term adverse impacts on the floodplain, stream, and potentially wetlands.
- The new Stuart's Hill access road would have short-term negligible adverse impacts.
- The cumulative adverse impact would be long-term and moderate.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to its natural or cultural integrity or to opportunities for its enjoyment; or (3) identified as a goal in its general management plan or other relevant National Park Service planning documents, the park's resources or values would not be impaired.

IMPACTS ON CULTURAL RESOURCES

CULTURAL RESOURCES LISTED, OR ELIGIBLE TO BE LISTED, IN THE NATIONAL REGISTER OF HISTORIC PLACES

Potential impacts to cultural resources (archeological resources, historic structures, and cultural landscapes) either listed in or eligible to be listed in the National Register of Historic Places were identified and evaluated in accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 *Code of Federal Regulations* 800, Protection of Historic Properties). This was accomplished by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are National Register-listed or -eligible; (3) applying the criteria of adverse effect to affected resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council's regulations, a determination of adverse effect or no adverse effect must be made for affected National Register-listed or -eligible cultural resources. An adverse effect occurs whenever an action alters directly or indirectly any of the characteristics of a cultural resource that qualify it for inclusion in the National Register. This would include diminishing the integrity (the extent to which a resource retains its historic appearance) of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 *Code of Federal Regulations* 800.5(a)(1)). A determination of no adverse effect means there is an effect, but the effect would not meet the criteria of adverse effect (36 *Code of Federal Regulations* 800.5(b)).

In this *General Management Plan / Environmental Impact Statement*, the criteria for characterizing the severity or intensity of impacts to National Register-listed or -eligible archeological resources, prehistoric or historic structures, and cultural landscapes are the Section 106 determinations of effect: adverse effect or no adverse effect.

MUSEUM COLLECTIONS

Potential impacts to museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens) are described in terms of context (are the effects site-specific, local, or even regional?), duration (are the effects short-term, lasting less than a year; long-term, lasting more than a year; or permanent?) and intensity (is the degree or severity of effects negligible, minor, moderate, or major?). The definitions of impact intensity for museum collections follow:

- *Negligible*: Impact is at the lowest levels of detection — barely measurable with no perceptible consequences, either adverse or beneficial.
- *Minor:* Would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation.
- *Moderate:* Would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.
- *Major:* Would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION)

Archeological Resources

Archeological resources adjacent to or easily accessible from public access areas would be vulnerable to surface disturbance, inadvertent damage, and vandalism. Soil compaction, a loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence would result. Continued ranger patrol and increased emphasis on visitor education would help discourage inadvertent disturbance of cultural remains and vandalism. Any sites or areas with archeological resources that were subject to continued degradation could be closed to visitor access to better protect the resources. Few, if any, adverse effects would be anticipated.

The limited construction associated with implementation of alternative A (small parking areas and short loop trails and the installation of interpretive displays) could potentially impact archeological resources. Archeological surveys would precede any construction, and known archeological resources would be avoided to the greatest extent possible. If National Register-listed or -eligible archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Virginia State Historic Preservation Officer. Any construction-related impacts to such archeological resources would be adverse; however, because archeological resources would be avoided to the greatest extent possible, no adverse impacts are anticipated.

Cumulative Impacts. The construction of U.S. Route 29 and VA Route 234, and the development of the Manassas visitor center and other park infrastructure, may have adversely impacted archeological resources because of disturbance during excavation and construction activities.

The development and expansion of communities near the park may have disturbed archeological resources outside park boundaries. The continuation of such development could result in future adverse impacts to archeological resources. Other present and reasonably foreseeable actions occurring throughout the region, such as construction of the Tri-County Parkway, Battlefield Bypass, and other road projects, also have the potential to disturb archeological resources outside the park's boundaries. Impacts to National Register-listed or -eligible archeological resources that could not be avoided would be adverse.

Actions associated with implementation of alternative A could potentially impact archeological resources at the park. Few if any adverse effects to archeological resources are anticipated from inadvertent damage or vandalism. However, if National Register-listed or -eligible archeological resources could not be avoided during the construction of parking areas, trails, and interpretive displays, the impacts to such archeological resources would be adverse. Because significant archeological resources would be avoided to the greatest extent possible during implementation of alternative A, the actions associated with the alternative would be expected to contribute only minimally, if at all, to the adverse impacts of other past, present, or reasonably foreseeable actions.

The cumulative impact of this alternative in conjunction with development occurring outside the park would be adverse. However, any adverse impacts to archeological resources resulting from implementation of alternative A would be a very small component of that cumulative impact.

Conclusion. Few if any adverse effects to archeological resources are anticipated because of inadvertent disturbance or vandalism. Avoidance of National Register-listed or eligible archeological resources during construction would result in no adverse impacts to archeological resources. If significant archeological resources could not be avoided during construction, the impacts to such resources would be adverse. A memorandum of agreement, in accordance

with 36 *Code of Federal Regulations* Part 800.6, *Resolution of Adverse Effects*, would be negotiated between the staff of Manassas National Battlefield Park and the Virginia State Historic Preservation Officer. The memorandum of agreement would stipulate how the adverse effects would be mitigated.

The actions associated with alternative A would to contribute only minimally, if at all, to the adverse impacts of other past, present, or reasonably foreseeable actions. Although the cumulative impact would be adverse, any adverse impacts to archeological resources resulting from implementation of alternative A would be a very small component of the cumulative impact.

Because there would be no adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Historic Structures and Cultural Landscapes

To appropriately preserve and protect National Register-listed or -eligible historic structures and cultural landscapes, all stabilization and preservation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Consequently, stabilization and preservation would have no adverse effects on historic structures and cultural landscapes.

Preparation of historic structure reports or cultural landscape reports, as appropriate, would precede the rehabilitation of National Register-listed or -eligible historic structures or cultural landscapes, and any rehabilitation would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during the rehabilitation of historic structures would be evaluated to determine their value to the park's museum collections and/or for their comparative use in future preservation work. Rehabilitation would have no adverse effects on historic structures or cultural landscapes.

Careful design would ensure that the construction of small parking areas and loop trails, as well as the installation of interpretive displays, would minimally affect the scale and visual relationships among landscape features. In addition, the topography, vegetation, and land use patterns of landscapes would remain largely unaltered. No adverse impacts would be anticipated.

Continued uncontrolled access to U.S. Route 29 and VA Route 234 by commuter traffic and commercial trucks would cause dissonant sights and sounds to intrude on the battlefield landscape. Impacts to both the cultural landscape would be adverse.

Cumulative Impacts. Over the years, historic structures in Manassas National Battlefield Park have been adversely impacted by the wear and tear associated with visitor access, natural processes such as weathering and erosion, and development. Construction of U.S. Route 29 and VA Route 234, the development of the Manassas visitor center and other park infrastructure, erosion, and the growth of woodlands in what were once grasslands and scrublands have also adversely affected the park's cultural landscapes, resulting in the alteration of landscape elements such as topography, spatial organization, land use patterns, and vegetation.

As described above, the impacts associated with implementation of alternative A would primarily result in no adverse effects to the park's historic structures and cultural landscapes. Because the actions associated with alternative A would contribute only minimal adverse impacts to the adverse impacts of other past, present, or reasonably foreseeable actions, the adverse impacts of alternative A

would be a small component of the adverse cumulative impact.

Conclusion. There would be no adverse effects associated with either the preservation and rehabilitation of historic structures and cultural landscapes or the construction of small parking areas, loop trails, and interpretive displays. Continued uncontrolled access to U.S. Route 29 and VA Route 234 by commuter traffic and commercial trucks would intrude on the battlefield landscape. Because the actions associated with alternative A would contribute only minimal adverse impacts to the adverse impacts of other past, present, or reasonably foreseeable actions, the adverse impacts of alternative A would be a small component of the adverse cumulative impact.

Because there would be no adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Museum Collections

Manassas National Battlefield Park's museum collections, both onsite and offsite, would continue to be adequately inventoried, accessioned, and protected according to NPS standards. Because onsite storage facilities are nearing capacity, eventually more of the park's museum collections would need be moved to an offsite facility, such as the Museum Research Center in Landover, Maryland (where the bulk of the park's museum collections are stored). The utmost care would be exercised during the packing, moving, and unpacking of all collections; therefore, potential impacts to museum collections associated with the risk involved in moving artifacts and archives would be negligible and short-term.

Moving additional artifacts and archives from the park to a facility outside the park would be less convenient for park staff that require use of the collections for research. This would result in a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research.

Cumulative Impacts. Manassas National Battlefield Park's museum collections would continue to be adequately stored and protected according to NPS standards, both onsite and offsite. In the future, more of the park's museum collections would have to be moved to an offsite repository for adequate curation, storage, and research. Prior to the establishment of the park in 1940, artifacts and archives associated with the Battles of First and Second Manassas may not have received the care and protection such resources are accorded today. Adverse impacts would have been long-term and of minor to moderate intensity.

Implementation of alternative A would potentially contribute both minor to moderate adverse and beneficial impacts to the minor to moderate adverse impacts of other past, present, and reasonably foreseeable actions. The cumulative impact to museum collections, however, would be beneficial long-term and of minor to moderate intensity.

Conclusion. Museum collections would continue to be adequately stored and protected according to NPS standards, both onsite and offsite. Moving artifacts and archives from the park to a facility outside the park would be less convenient for park staff members who require use of the collections for research, which would be minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research. The cumulative impact to museum collections would be beneficial long-term and of minor to moderate intensity. The implementation of alternative A would not result in impairment of park resources.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

Archeological Resources

Archeological resources adjacent to or easily accessible from public access areas would be vulnerable to surface disturbance, inadvertent damage, and vandalism. Soil compaction, a loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence would result. Continued ranger patrol and increased emphasis on visitor education would help discourage inadvertent destruction of cultural remains and vandalism, and any sites or areas with archeological resources that are subject to continued degradation could be closed to visitor access to better protect the resources. Few if any adverse effects would be anticipated.

A number of actions associated with implementation of alternative B could potentially impact archeological resources. These include

- constructing new visitor facilities at the Brawner Farm
- constructing a new access road and bridge over Bull Run
- landscape rehabilitation
- installation of underground utilities for new facilities
- development of automobile/bicycle tour routes, parking areas, hiking and equestrian trails and restrooms
- building a new access road to park facilities at Stuart's Hill

Archeological surveys would precede any construction, and known archeological resources would be avoided during construction to the greatest extent possible. If National Register-listed or -eligible archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Virginia State Historic Preservation Officer. Any construction-related impacts to such archeological resources would be adverse. However, because archeological resources would be avoided to the greatest extent possible, no adverse impacts are anticipated.

Prior to the removal of the U.S. Route 29 bridge, and before the clearing of trees for landscape rehabilitation, surveys for archeological resources would be designed and conducted in consultation with the Virginia State Historic Preservation Officer. Significant archeological resources would be left *in situ* if possible. If disturbance of such resources was unavoidable, the excavation, recordation, and mapping of the resources would be completed before the removal of the structures or trees, to ensure that significant archeological data that otherwise would be lost is recovered and documented. Impacts to any National Register-listed or -eligible archeological resources would be adverse.

The extent of archeological resources associated with the Battles of First and Second Manassas in the four tracts of land (Davis Tract, Stonewall Memory Garden Tract, Conservation Trust Parcel, and Dunklin Monument) proposed for acquisition by the park is unknown. However, transfer of this land to the National Park Service would ensure that any archeological resources discovered would be accorded the protection of federal preservation law, including Section 106 of the National Historic Preservation Act, as amended in 1992 (16 *United States Code* 470 *et seq*.), which would result in a beneficial effect.

Cumulative Impacts. The construction of U.S. Route 29 and VA Route 234, and the development of the Manassas visitor center and other park infrastructure, may have adversely impacted archeological resources because of disturbance during excavation and construction activities.

The development and expansion of communities near the park may have disturbed archeological resources outside park boundaries. The continuation of such development could result

in future adverse impacts to archeological resources. Other present and reasonably foreseeable actions occurring throughout the region, such as construction of the Tri-County Parkway, Battlefield Bypass, and other road projects, also have the potential to disturb archeological resources outside the park's boundaries. Impacts to National Register-listed or -eligible archeological resources that could not be avoided would be adverse.

Actions associated with implementation of alternative B could potentially impact archeological resources at the park. Few, if any, adverse effects to archeological resources are anticipated from inadvertent damage or vandalism. If, however, National Register-listed or -eligible archeological resources could not be avoided during the removal and construction of the U.S. Route 29 bridge, or during the removal of trees for landscape rehabilitation, the impacts to such archeological resources would be adverse. Because significant archeological resources would be avoided to the greatest extent possible during implementation of alternative B, the actions associated with the alternative would be expected to contribute only minimally to the adverse impacts of other past, present, or reasonably foreseeable actions. Although the cumulative impact would be adverse, any adverse impacts to archeological resources resulting from implementation of alternative B would be a small component of that cumulative impact.

Conclusion. If significant archeological resources could not be avoided during construction, the impacts to such resources would be adverse. A memorandum of agreement, in accordance with 36 *Code of Federal Regulations* Part 800.6, *Resolution of Adverse Effects*, would be negotiated between the staff of Manassas National Battlefield Park and the Virginia State Historic Preservation Officer. The memorandum of agreement would stipulate how the adverse effects would be mitigated.

The actions associated with alternative B would be expected to contribute only minimally to the adverse impacts of other past, present, or reasonably foreseeable actions. Although the cumulative impact would be adverse, any adverse impacts to archeological resources resulting from implementation of alternative B would be a small component of that cumulative impact.

Because there would be no adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Historic Structures and Cultural Landscapes

To appropriately preserve and protect National Register-listed or -eligible historic structures and cultural landscapes, all stabilization and preservation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Consequently, stabilization and preservation would have no adverse effects on historic structures and cultural landscapes.

Historic structures could suffer increased wear and tear from higher levels of visitation, but monitoring the carrying capacity of historic structures could result in the imposition of visitation levels or constraints that would contribute to the stability or integrity of the resources without unduly hindering interpretation for visitors. Unstaffed or minimally staffed structures could be more susceptible to vandalism. Continued ranger patrol and increased emphasis on visitor education would help discourage inadvertent harm to or vandalism of historic structures. Any structures subject to continued degradation could be closed to visitor access to better protect the resources. Few, if any, adverse effects would be anticipated.

Preparation of historic structure reports or cultural landscape reports, as appropriate, would precede the rehabilitation of National Register-listed or -eligible historic structures or cultural landscapes, and any rehabilitation would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during the rehabilitation of historic structures would be evaluated to determine their value to the park's museum collections and/or for their comparative use in future preservation work. Rehabilitation would have no adverse effects on historic structures or cultural landscapes.

As noted above, preparation of a cultural landscape report would precede the rehabilitation of the battlefield landscape. Clearing trees in areas that were not forested during either battle and returning the landscape to grasslands and/or scrubland would convert the landscape to more of a semblance of its historic appearance. Vistas of the battlefield would again show the relationship of hills, ridges, and water features to the positions of the embattled Union and Confederate troops, and would contribute to a better understanding of both battles by the visitor. There would be no adverse impacts to cultural landscapes.

Removing the U.S. Route 29 bridge over Bull Run would eliminate a modern intrusion from the viewshed of the stone bridge and the battlefield landscape. Removal of the bridge would have a beneficial effect on the cultural landscape.

Any new construction for a Second Manassas visitor contact station at the Brawner Farm and a new access road and bridge over Bull Run would be carefully sited to be as visually unobtrusive as possible and to minimally affect the scale and visual relationships among character-defining landscape features. Sensitive design of the new facilities, the use of appropriate materials and colors in construction, and select plantings of native vegetation as visual buffers, if necessary, would permit new facilities to be as compatible as possible with the historic landscape. No adverse effects would be anticipated.

Careful design would ensure that the rehabilitation of parking areas and 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 any historic district or cultural landscape would remain largely unaltered, resulting in no adverse effects.

The under-grounding of utilities for new facilities would have minimal, if any, effect on the existing topography, spatial organization, or land use patterns of historic sites or cultural landscapes. Once the underground utility line was installed and the trench was backfilled, the disturbed ground would be restored to its pre-construction contour and condition and revegetated as necessary. There would be no adverse impacts to cultural landscapes.

Restricting access to U.S. Route 29 and VA Route 234 by commuter traffic and commercial trucks would reduce dissonant sights and sounds that currently intrude on the battlefield landscape. Restricting commuter traffic and commercial truck access to U.S. Route 29 and VA Route 234 would result in a beneficial impact to cultural landscapes.

Cumulative Impacts. Over the years, historic structures in Manassas National Battlefield Park have been adversely impacted by the wear and tear associated with visitor access, natural processes such as weathering and erosion, and development. Construction of U.S. Route 29 and VA Route 234, the development of the Manassas visitor center, and other park infrastructure, erosion, and the growth of woodlands in what were once grasslands and scrublands have also adversely affected the park's cultural landscapes, resulting in the alteration of landscape elements such as topography, spatial organization, land use patterns, and vegetation.

As described above, the impacts associated with implementation of alternative B would primarily result in no adverse effects to the park's historic structures and cultural landscapes. Because the actions associated with alternative B would contribute only minimal, if any, adverse impacts to the adverse impacts of other past, present, or reasonably foreseeable actions, the adverse impacts of alternative B would be a very small component of the adverse cumulative impact.

Conclusion. Carefully siting and designing new construction for a Second Manassas visitor contact station at the Brawner Farm and for a new access road and bridge over Bull Run would permit new facilities to be as compatible as possible with the historic landscape, and no adverse effects would be anticipated. There would be no adverse effects associated with either the preservation and rehabilitation of historic structures and cultural landscapes or the construction of small parking areas, loop trails, and interpretive displays. Clearing trees from areas that were not forested during either battle and returning the landscape to more of a semblance of its historic appearance would contribute to a better understanding of both battles by the visitor. Restricting access to U.S. Route 29 and VA Route 234 by commuter traffic and commercial trucks would have a beneficial impact on historic structures and cultural landscapes.

Because there would be no adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Museum Collections

Manassas National Battlefield Park's museum collections, both onsite and offsite, would continue to be adequately inventoried, accessioned, and protected according to NPS standards. Because onsite storage facilities are nearing capacity, eventually more of the park's museum collections would need be moved to an offsite facility, such as the Museum Research Center in Landover, Maryland (where the bulk of the park's museum collections are stored). The utmost care would be exercised during the packing, moving, and unpacking of all collections; therefore, potential impacts to museum collections associated with the risk involved in moving artifacts and archives would be negligible and short-term.

Moving additional artifacts and archives from the park to a facility outside the park would be less convenient for park staff that require use of the collections for research. This would result in a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research.

Cumulative Impacts. Manassas National Battlefield Park's museum collections would continue to be adequately stored and protected according to NPS standards, both onsite and offsite. In the future, more of the park's museum collections would have to be moved to an offsite repository for adequate curation, storage, and research. Prior to the establishment of the park in 1940, artifacts and archives associated with the Battles of First and Second Manassas may not have received the care and protection such resources are accorded today. Adverse impacts would have been long-term and of minor to moderate intensity.

Implementation of alternative B would potentially contribute both minor to moderate adverse and beneficial impacts to the minor to moderate adverse impacts of other past, present, and reasonably foreseeable actions. The cumulative impact to museum collections, however, would be beneficial long-term and of minor to moderate intensity.

Conclusion. Museum collections would continue to be adequately stored and

protected according to NPS standards, both on-site and off-site. Moving artifacts and archives from the park to a facility outside the park would be less convenient for park staff members who require use of the collections for research, which would be a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research. The cumulative impact to museum collections would be beneficial long-term and of minor to moderate intensity. The implementation of alternative B would not result in impairment of park resources.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

Archeological Resources

Archeological resources adjacent to or easily accessible from public access areas would be vulnerable to surface disturbance, inadvertent damage, and vandalism. Soil compaction, a loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence would result. Continued ranger patrol and increased emphasis on visitor education would help discourage inadvertent destruction of cultural remains and vandalism, and any sites or areas with archeological resources that are subject to continued degradation could be closed to visitor access to better protect the resources. Few if any adverse effects would be anticipated.

A number of actions associated with implementation of alternative C could potentially impact archeological resources. These include

- constructing a new visitor center east of the Stone Bridge, including a new access road and bridge over Bull Run
- landscape rehabilitation
- installation of underground utilities for new facilities
- the development of hiking and equestrian trails, restrooms, and picnic areas
- building a new access road to park facilities at Stuart's Hill

Archeological surveys would precede any construction, and known archeological resources would be avoided during construction to the greatest extent possible. If National Register-listed or -eligible archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Virginia State Historic Preservation Officer. Any construction-related impacts to such archeological resources would be adverse. However, because archeological resources would be avoided to the greatest extent possible no adverse impacts are anticipated.

Prior to the removal of the existing visitor center at Henry Hill, the U.S. Route 29 bridge, and the parking area at Battery Heights, and before the clearing of trees for landscape rehabilitation, surveys for archeological resources would be designed and conducted in consultation with the Virginia State Historic Preservation Officer. Significant archeological resources would be left *in situ* if possible. If disturbance of such resources was unavoidable, the excavation, recordation, and mapping of the resources would be completed prior to the removal of the structures or trees, to ensure that significant archeological data that otherwise would be lost is recovered and documented. Impacts to any National Register-listed or -eligible archeological resources would be adverse.

The extent of archeological resources associated with the Battles of First and Second Manassas in the four tracts of land (Davis Tract, Stonewall Memory Garden Tract, Conservation Trust Parcel, and Dunklin Monument) proposed for acquisition by the park is unknown. However, transfer of this land to the National Park Service would ensure that any archeological resources discovered would be accorded the protection of federal preservation law, including Section 106 of the National Historic Preservation Act, as

amended in 1992 (16 *United States Code* 470 *et seq.*), which would result in a beneficial effect.

Cumulative Impacts. The construction of U.S. Route 29 and VA Route 234, and the development of the Manassas visitor center and other park infrastructure, may have adversely impacted archeological resources because of disturbance during excavation and construction activities.

The development and expansion of communities near the park may have disturbed archeological resources outside park boundaries. The continuation of such development could result in future adverse impacts to archeological resources. Other present and reasonably foreseeable actions occurring throughout the region, such as construction of the Tri-County Parkway, Battlefield Bypass, and other road projects, also have the potential to disturb archeological resources outside the park's boundaries. Impacts to National Register-listed or -eligible archeological resources that could not be avoided would be adverse.

Actions associated with implementation of alternative C could potentially impact archeological resources at the park. Few, if any, adverse effects to archeological resources are anticipated from inadvertent damage or vandalism. If, however, National Register-listed or -eligible archeological resources could not be avoided during construction activities, the removal of existing structures, or during the removal of trees for landscape rehabilitation, the impacts to such archeological resources would be adverse. Because significant archeological resources would be avoided to the greatest extent possible during implementation of alternative C, the actions associated with the alternative would be expected to contribute only minimally to the adverse impacts of other past, present, or reasonably foreseeable actions. Although the cumulative impact would be adverse, any adverse impacts to archeological resources resulting from implementation of alternative C would be a small component of that cumulative impact.

Conclusion. If significant archeological resources could not be avoided during construction, the impacts to such resources would be adverse. A memorandum of agreement, in accordance with 36 *Code of Federal Regulations* Part 800.6, *Resolution of Adverse Effects*, would be negotiated between the staff of Manassas National Battlefield Park and the Virginia State Historic Preservation Officer. The memorandum of agreement would stipulate how the adverse effects would be mitigated.

The actions associated with alternative C would be expected to contribute only minimally to the adverse impacts of other past, present, or reasonably foreseeable actions. Although the cumulative impact would be adverse, any adverse impacts to archeological resources resulting from implementation of alternative C would be a small component of that cumulative impact.

Because there would be no adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Historic Structures and Cultural Landscapes

To appropriately preserve and protect National Register-listed or -eligible historic structures and cultural landscapes, all stabilization and preservation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Consequently, stabilization and preservation would have no adverse effects on historic structures and cultural landscapes.

Historic structures could suffer increased wear and tear from higher levels of visitation, but

monitoring the carrying capacity of historic structures could result in the imposition of visitation levels or constraints that would contribute to the stability or integrity of the resources without unduly hindering interpretation for visitors. Unstaffed or minimally staffed structures could be more susceptible to vandalism. Continued ranger patrol and increased emphasis on visitor education would help discourage inadvertent harm to or vandalism of historic structures. Any structures subject to continued degradation could be closed to visitor access to better protect the resources. Few, if any, adverse effects would be anticipated.

Preparation of historic structure reports or cultural landscape reports would precede the rehabilitation of National Register-listed or -eligible historic structures or cultural landscapes, and any rehabilitation would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during the rehabilitation of historic structures would be evaluated to determine their value to the park's museum collections and/or for their comparative use in future preservation work. Rehabilitation would have no adverse effects on historic structures or cultural landscapes.

As noted above, preparation of a cultural landscape report would precede the rehabilitation of the battlefield landscape. Clearing trees in areas that were not forested during either battle and returning the landscape to grasslands and/or scrubland would convert the landscape to more of a semblance of its historic appearance. Vistas of the battlefield through the clearings would again show the relationship of hills, ridges, and water features to the positions of the embattled Union and Confederate troops, and would contribute to a better understanding of both battles by the visitor. There would be no adverse impacts to cultural landscapes.

Removal of the visitor center at Henry Hill and the U.S. Route 29 bridge over Bull Run would eliminate modern intrusions from the battlefield landscape, and return the landscape to more of a semblance of its historic appearance. There would be no adverse impacts to cultural landscapes.

The new visitor center east of the Stone Bridge, including a new access road and bridge over Bull Run, would be carefully sited to be as visually unobtrusive as possible, and to minimally affect the scale and visual relationships among character-defining landscape features. Sensitive design of the new structures, the use of appropriate materials and colors in construction, and select plantings of native vegetation as visual buffers, if necessary, would permit new structures to be as compatible as possible with the historic landscape. No adverse effects would be anticipated as a result of the construction of a new visitor center east of the stone bridge.

Careful design would ensure that the rehabilitation of parking areas and 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 any historic district or cultural landscape would remain largely unaltered, resulting in no adverse effects.

The undergrounding of utilities for new facilities would have minimal, if any, effect on the existing topography, spatial organization, or land-use patterns of historic sites or cultural landscapes. Once the underground utility line was installed and the trench was backfilled, the disturbed ground would be restored to its preconstruction contour and condition and revegetated as necessary. There would be no adverse impacts to cultural landscapes.

Restricting access to U.S. Route 29 and VA Route 234 by commuter traffic and commercial trucks would reduce dissonant sights and sounds that currently intrude on the battlefield landscape. Restricting commuter traffic and commercial truck access to U.S. Route 29 and VA Route 234 would result in a beneficial impact to cultural landscapes.

Cumulative Impacts. Over the years, historic structures in Manassas National Battlefield Park have been adversely impacted by the wear and tear associated with visitor access, natural processes such as weathering and erosion, and development. Construction of U.S. Route 29 and VA Route 234, the development of the Manassas visitor center, and other park infrastructure, erosion, and the growth of woodlands in what were once grasslands and scrublands have also adversely affected the park's cultural landscapes, resulting in the alteration of landscape elements such as topography, spatial organization, land use patterns, and vegetation.

As described above, the impacts associated with implementation of alternative C would primarily result in no adverse effects to the park's historic structures and cultural landscapes. Because the actions associated with alternative C would contribute only minimal, if any, adverse impacts to the adverse impacts of other past, present, or reasonably foreseeable actions, the adverse impacts of alternative C would be a small component of the adverse cumulative impact.

Conclusion. Carefully siting and designing the new visitor center east of the Stone Bridge, including a new access road and bridge over Bull Run would permit new facilities to be as compatible as possible with the historic landscape, and no adverse effects would be anticipated. There would be no adverse effects associated with either the preservation and rehabilitation of historic structures and cultural landscapes or the construction of small parking areas, loop trails, and interpretive displays. Clearing trees from areas that were not forested during either battle and returning the landscape to more of a semblance of its historic appearance would contribute to a better understanding of both battles by the visitor. Restricting access to U.S. Route 29 and VA Route 234 by commuter traffic and commercial trucks would have a beneficial impact on historic structures and cultural landscapes.

Because there would be no adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the Secretary of Interior's order establishing Manassas National Battlefield Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Museum Collections

Manassas National Battlefield Park's museum collections, both onsite and offsite, would continue to be adequately inventoried, accessioned, and protected according to NPS standards. Because onsite storage facilities are nearing capacity, eventually more of the park's museum collections would need to be moved to an offsite facility such as the Museum Research Center in Landover, Maryland (where the bulk of the park's museum collections are stored). The utmost care would be exercised during the packing, moving, and unpacking of all collections; therefore, potential impacts to museum collections associated with the risk involved in moving artifacts and archives would be negligible and short-term.

Moving additional artifacts and archives from the park to a facility outside the park would be less convenient for park staff who require use of the collections for research. This would result in a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research.

Cumulative Impacts. Manassas National Battlefield Park's museum collections would continue to be adequately stored and protected according to NPS standards, both onsite and off-site. In the future more of the park's museum collections would have to be moved to an off-site repository for adequate curation, storage, and research. Prior to the establishment of the park in 1940, artifacts and archives associated with the Battles of First and Second Manassas may not have received the

care and protection such resources are accorded today. Adverse impacts would have been long-term and of minor to moderate intensity.

Implementation of alternative C would potentially contribute both minor to moderate adverse and beneficial impacts to the minor to moderate adverse impacts of other past, present, and reasonably foreseeable actions. The cumulative impact to museum collections, however, would be beneficial, long-term, and of minor to moderate intensity.

Conclusion. Museum collections would continue to be adequately stored and protected according to NPS standards, both on-site and off-site. Moving artifacts and archives from the park to a facility outside the park would be less convenient for park staff members who require use of the collections for research, which would be a minor adverse long-term impact. However, there would be minor to moderate beneficial impacts associated with providing more space for adequate curation, storage, and research. The cumulative impact to museum collections would be beneficial long-term and of minor to moderate intensity. The implementation of alternative C would not result in impairment of park resources.

IMPACTS ON TRANSPORTATION

METHODOLOGY

In the impact analysis for transportation, the National Park Service considered the potential effects of the proposed controlled access measures, such as gates, entrance stations, signs, and road closures, and transportation improvements on internal circulation patterns, safety, and traffic operations within the park. Only broad judgment can be made on the potential direct and secondary impacts on traffic outside the park boundaries. These potential impacts are being evaluated in detail as part of the Battlefield Bypass study. As a result, the implementation of any controlled access or road closures is dependent on the outcome of the Battlefield Bypass study, and additional analysis would be needed to further supplement the transportation analysis in this *General Management Plan*.

Unless specified, this impact analysis refers to the proposed transportation-related actions collectively as transportation improvements. With a large-scale plan such as a general management plan, future implementation proposals would typically be tiered (procedurally connected) to the broad-scale general management plan, and additional planning and environmental analysis would be conducted in accordance with the National Environmental Policy Act, Director's Order #12, and the NPS' *Management Policies*. This is especially true with the transportation improvements and controlled access measures described under alternative B and alternative C. As a result, this analysis is primarily qualitative and is designed to provide the park superintendent with overall management direction. Effects of transportation improvements are also considered under other impact topics, including soundscape, the socioeconomic environment, and visitor experience.

DEFINITION OF INTENSITY LEVELS

Analyses of the potential intensity of transportation (traffic) were derived from various studies and information available on the traffic conditions at the Manassas National Battlefield Park such as the *Manassas National Battlefield Park Bypass Study Existing Conditions Report* (FHWA 2002), and the *Manassas National Battlefield Park Transportation Study* (NPS 1996). Definitions for the thresholds of change for the intensity of impacts on transportation are as follows:

- *Negligible:* Effects would not be considered detectable and would have no discernible effect on traffic flow and/or traffic safety conditions.
- *Minor:* Effects on traffic flow and/or traffic safety conditions would be slightly detectable but not expected to have an overall effect on those conditions.
- *Moderate:* Effects would be clearly detectable and could have an appreciable effect on traffic flow and/or traffic safety conditions.
- *Major:* Effects would be substantial, with a highly noticeable influence on traffic flow and/or traffic safety conditions and could permanently alter those conditions.
- *Duration:* A short-term impact would last less than one year and would affect only one season's, or the length of construction activities, use by visitors. A long-term impact would last more than one year and would be more permanent in nature.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION)

Under the no-action alternative, the National Park Service would not control access on or close U.S. Route 29 or VA Route 234. The traffic signal at the intersection of U.S. Route 29 and VA Route 234 would remain in place

because of heavy traffic volumes. The traffic flow and operations would continue to be adversely impacted by existing conditions.

Levels of service are described by a letter designation ranging from "A" to "F," with level of service "A" representing essentially uninterrupted flow, and level of service "F" representing a breakdown of traffic flow with excessive congestion and delay. The signalized intersection capacity analysis results in an overall level of service, representative of all movements through the intersection. Level of service "D" or better is typically considered acceptable in most metropolitan areas. Under alternative A, the intersection of U.S. Route 29 and VA Route 234 would continue to operate at Level of Service "F."

As northern Virginia and Prince William County populations continue to grow, commuter traffic volumes and traffic operations on U.S. Route 29 and VA Route 234 would be expected to worsen unless a bypass is constructed, alternate routes outside the park are improved, or other controlled access measures are implemented. As the bypass alternatives are further refined, the traffic modeling for each alternative would predict the impacts of the bypass on traffic volumes on U.S. Route 29 and VA Route 234 within the park. It is anticipated that the bypass alone would reduce traffic volumes on U.S. Route 29 and VA Route 234 but not to the level that would be acceptable to the motorists. Therefore, additional control access measures would be needed to achieve the desired traffic levels and operations. Under the no-action alternative, commuter and truck traffic would continue to have a major long-term adverse impact on transportation within the park. Traffic would cause excessive delays for, and could pose a safety threat to, park visitors in automobiles, on bicycle, or on foot, especially during peak periods.

Cumulative Impacts

The projects described in the cumulative impact scenario would all have beneficial impacts on transportation in the park because, taken together, they would increase regional mobility while creating a small potential reduction of traffic volumes on park roadways. Alternative A does not propose any additional projects that would create cumulative impacts. Therefore, no cumulative transportation impacts would occur under alternative A.

Conclusion

Under alternative A, the continually rising levels of non-park commuter and commercial traffic would continue to have a major long-term adverse impact on transportation within the park. It would cause excessive delays for, and could pose a safety threat to park visitors in automobiles, on bicycle, or on foot, especially during peak periods. No cumulative impacts would occur.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

Under alternative B, the National Park Service would implement traffic control measures to eliminate commuter traffic in the park. For the purposes of this alternative, the National Park Service considered a scenario that included the construction of gates, entrance stations, or some other form of control in the following locations:

- on VA Route 234 north of the Northern Virginia Community College entrance
- along VA Route 234 north of VA Route 622 (Featherbed Lane)
- along U.S. Route 29 east of VA Route 705 (Pageland Lane)
- along U.S. Route 29 west of the eastern park boundary

The National Park Service would remove the existing U.S. Route 29 bridge over Bull Run and develop a new road and bridge over Bull Run south of the current location. The new access road would include a controlled access point.

Controlling access into the park on VA Route 234 north of the Community College would eliminate commuter traffic and facilitate greater contact between park staff and visitors.

As a result, the access control facility would likely be in the form of an entrance station. In addition, an entrance station may be desirable at the other park entrances. Under this scenario, all commuter traffic would be expected to be diverted to other roadways outside the park because of the controlled access measures at each of the three major entrances into the park.

A bypass and combination of measures described above could be successful in reducing commuter traffic in the park. Therefore, phased implementation of controlled measures is being considered by the National Park Service. Additional study would be performed to determine the appropriate control devices and measures. This section provides the National Park Service with general management direction that the controlled access at entry points would be used to achieve the elimination of commuter traffic within the Park.

Under the controlled access scenario at the four major entrances, a level of service "B" or better would be achieved on the road and at each intersection. Implementation of controlled access would have a major direct long-term beneficial impact on traffic operations. The level of service would increase from "F" to "B." In addition, these improvements would have an indirect beneficial long-term impact to the visitor experience and pedestrian and motorist safety within the park from decreased traffic volumes. The reduction in traffic volumes would increase the visitor carrying capacity at the park, which may allow the park to receive increased visitation and, therefore, increased revenues.

The placement of an entrance station on the south end of the park on VA Route 234 would require provisions to minimize the potential impacts associated with queuing of automobiles. Based on a preliminary review, the queue scenario during peak visitation would require that the National Park Service make provisions for an additional gate or entrance to minimize the delays to community college and nearby commercial properties south of the park. It is estimated that the queue for a one-lane entrance station could create considerable backups that would impact the operation of other roads, and could adversely impact nearby residences and businesses. Additional study would be required during the design of any controlled access on VA Route 234. However, the preliminary investigation indicates that provisions for a second lane would be necessary to handle the incoming traffic during peak visitation periods. It is anticipated that through future planning and design, the impacts on transportation would be minimized to have a negligible adverse impact on the nearby college and businesses.

The U.S. Route 29 bridge over Bull Run would be removed and a new road and bridge over Bull Run would be developed. Because the new access road would include a controlled access point, there would be no increase in commuter traffic volumes associated with the new access route and bridge. The removal of the U.S. Route 29 bridge over Bull Run would help rehabilitate the cultural landscape and historic setting of the Stone Bridge by eliminating the modern highway bridge from the Stone Bridge viewshed. The development of the new access road and entrance station would be part of the phased approach to reduce commuter traffic in the park and would have a major direct long-term beneficial impact on transportation in the park. The removal of the existing modern highway bridge and development of the new access road and bridge in a different location would be an irreversible commitment of resources and is called out as such at the end of this "Environmental Consequences" chapter.

Other transportation improvements would have a beneficial impact on traffic flow, circulation, and operation as well as visitor safety. These actions include:

- eliminating the traffic signal at the intersection of U.S. Route 29 and VA Route 234
- reducing speed limits to 25 miles per hour
- designating bicycle lanes along primary roads

- placing another four-way stop sign and pedestrian crossing signs at intersections with secondary roads and trail routes
- replacing orientation and directional signs

The transportation improvements proposed under alternative B would have a long-term moderate beneficial impact on transportation systems, thereby improving motorist and pedestrian safety in the park.

Cumulative Impacts

The transportation improvements under alternative B, when combined with other past, present, and reasonably foreseeable future projects, would have a beneficial cumulative impact on transportation. The incremental impacts associated with alternative B would be moderate. The transportation improvements identified in the Battlefield Bypass study, Tri-County Parkway study, I-66 study, and VA Route 234 Bypass North study would have beneficial impacts on transportation because of increased capacity of the regional roadway network surrounding the park. Collectively, the cumulative impact would be major long-term and beneficial.

Conclusion

The controlled access measures under alternative B would have a major long-term beneficial impact on transportation within the park because of the reduction in commuter and truck traffic in the park. The controlled access measures and transportation improvements would also result in a long-term moderate beneficial impact on motorist and pedestrian safety. The impacts on transportation operations and congestion from the closure of the roads are being considered under the Battlefield Bypass study. The National Park Service would conduct additional planning and environmental analysis prior to choosing a preferred method for controlling access into the park and closing the roads to the public. Additional public outreach would be part of the planning process. Cumulatively, the transportation improvements would have a major long-term beneficial cumulative impact on the regional transportation system when added to other regional transportation projects in the immediate vicinity of the park.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

Under alternative C, many of the proposed transportation improvements, such as controlled access at four entrances and removal of the U.S. Route 29 bridge over Bull Run, would be the same as alternative B. Therefore, the impacts from these actions would be the same as alternative B.

One exception is the proposed visitor center near the new access road and bridge over Bull Run on the east side of the park. Potential transportation impacts associated with a new visitor center would depend on the specific location of the visitor center. Additional study would be conducted to further assess the potential effects of a new visitor center and new access point on transportation.

Cumulative Impacts

The cumulative impact would be the same as described for alternative B. The transportation improvements under alternative C, when combined with other past, present, and reasonably foreseeable future projects, would have a beneficial cumulative impact on transportation. The incremental impacts from alternative C would be moderate. The transportation improvements identified in the Battlefield Bypass, Tri-County Parkway, I-66, and VA Route 234 Bypass North studies would have beneficial impacts on transportation because of increased capacity of the regional roadway network surrounding the park. Collectively, the cumulative impact would be major long-term and beneficial.

Conclusion

Overall, controlled access measures would have a major long-term beneficial impact on transportation in the park by eliminating commuter and commercial traffic and dramatically reducing traffic volumes. The

transportation improvements when added to other proposed projects would have a major long-term beneficial cumulative impact on transportation.

IMPACTS ON THE SOCIOECONOMIC ENVIRONMENT

METHODOLOGY

The analysis focused primarily on the potential impacts to residents who require access through the park to get to their homes. Further study would be performed by the National Park Service to determine the specific type and location of controlled access, such as gates, entrance stations, and/or signs.

For this programmatic study, the impacts discussed are qualitative. Additional planning and environmental analysis would be conducted to determine site-specific impacts on the socio-economic environment. As part of the Battlefield Bypass study, the Federal Highway Administration and the National Park Service are considering the potential impacts to the socioeconomic environment outside park boundaries resulting from the closure of U.S. Route 29 and VA Route 234 to heavy commuter traffic.

DEFINITION OF INTENSITY LEVELS

Definitions for the thresholds of change for the intensity of impacts on socioeconomics are as follows:

- *Negligible:* Impacts on socioeconomic conditions would be below or at the level of detection. The impact would be localized and not measurable or at the lowest level of detection.
- *Minor:* Impacts on socioeconomic conditions would be slight but detectable.
- *Moderate:* Impacts on socioeconomic conditions would be readily apparent and would result in changes to socioeconomic conditions on a local scale.
- *Major:* Impacts on socioeconomic conditions would be readily apparent, resulting in demonstrable changes to socioeconomic conditions in the region.
- *Duration:* Short-term impacts are temporary in duration and typically are transitional effects associated with implementation of an action, such as construction activities, and end in less than one year. Long-term impacts may have a permanent effect on the socioeconomic environments and their effect extends beyond one year.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION)

Under the no-action alternative, there would be no change in the ability of an individual to access residential areas or private or public facilities in or adjacent to the park boundaries. There would be no change to local businesses that use U.S. Route 29 and VA Route 234 to transfer goods and commodities. Therefore, the impact to the socioeconomic environment would be negligible.

Cumulative Impacts

Negligible cumulative impacts would occur because there would be a negligible change to the socioeconomic environment caused by the no-action alternative.

Conclusion

The no-action alternative would have negligible impacts to the socioeconomic environment. Cumulative impacts would be negligible.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

Under the controlled access scenario described in the transportation section, residents would be required to enter their properties through some method of controlled access such as a gate or entrance station. The National Park Service would make special provisions for residents who require access through the park to get to their property. These provisions would give the residents and

their guests and service providers the ability to use the gates as needed for the purposes of accessing their home and/or property. It is anticipated the effects on residents would be the equivalent to living within a gated residential community. The inconvenience to residents is estimated on average to be less than 30 seconds each time someone has to use the gate. The long-term adverse impacts to these residents would be negligible.

The time associated with using the gate would be offset by eliminating the delays associated with current traffic conditions within the park. For instance, during peak commuter traffic, residents currently have to wait through as many as two to three traffic signal cycles (up to two minutes) to pass through the intersection of VA Route 234 and U.S. Route 29. Under alternative B, commuter traffic would be substantially reduced with levels of service at major intersections and roads within the park improving to level of service "B" or better. Overall, the controlled access measures would have long-term beneficial impacts on the social setting because of decreased delays at intersections and reduced traffic volumes on the state and U.S. routes in the park.

The implementation of gates or controlled access would provide residents the security benefits that are typically associated with a gated community. Controlled access would eliminate access to property within the park boundaries for individuals who do not have permission or purpose.

Special provisions would be made for expedited park access for emergency response vehicles. In most cases, response times would be shorter than current conditions because the commuter traffic within the park would be eliminated. The overall effect would be negligible.

The Manassas National Battlefield Park is served primarily by Stonewall Jackson Volunteer Fire Department, Station 11, at 7814 Garner Drive, Manassas. The station is approximately 1.7 miles from the southern entrance on VA Route 234 and approximately 3 miles from the central area of the park. The response time is approximately 5 minutes, but may be greater depending on traffic congestion on the roads. The response time would not be expected to change because of the development of controlled access points on VA Route 234 and U.S. Route 29 because reduced traffic congestion (made possible by the bypass) would offset any additional time necessary to enter through the controlled access points. The overall effect would be negligible.

Road closures and controlled access would have adverse impacts on nearby local businesses that use U.S. Route 29. The impacts would depend on the location of a bypass and are therefore being considered as part of the Battlefield Bypass study. The impacts associated with controlled access would be minor if a bypass route was provided and would likely affect only a few businesses.

Other proposed actions under alternative B such as orientation and visitor services, cultural landscape rehabilitation, and preservation and maintenance of historic structures would have a negligible adverse impact to residents or businesses within or adjacent to the park boundaries.

Cumulative Impacts

When combined with other past, present, and reasonably foreseeable future projects such as pending road construction projects, the socioeconomic impacts of alternative B would have adverse cumulative impacts. The socioeconomic impacts largely depend on the alternatives selected for each pending road project. However, the impacts would likely be minor because of the potential impacts on only a few residents. The incremental impacts associated with implementation of alternative B would be expected to be small. Therefore, the cumulative impacts would be anticipated to be minor.

Conclusion

Implementation of alternative B would have negligible long-term adverse impacts on

residents living within the new controlled-access area because of the delays associated with controlled access measures. The impacts could be offset by the benefits of the reduction in traffic and associated delays at the intersections within the park. In addition, there would be an added security benefit to residents, similar to living within a gated area. Negligible impacts to emergency response would occur. A few businesses could experience minor adverse long-term impacts. Minor, adverse cumulative impacts would occur.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

Under alternative C, the proposed transportation improvements, such as controlled access at entrances would be the same as for alternative B. Therefore, the impacts on the socioeconomic environment would be to the same as those described for alternative B.

Cumulative Impacts

When combined with other past, present, and reasonably foreseeable future projects such as pending road construction projects, the socioeconomic impacts of alternative C, would have adverse cumulative impacts. The socioeconomic impacts would largely depend on the alternatives selected for each pending road project. However, the impacts would likely be minor because of the potential impacts on only a few residents. The incremental impacts associated with implementation of alternative B would be expected to be small. Therefore, the cumulative impacts would be anticipated to be minor.

Conclusion

Implementation of alternative C would have negligible long-term adverse impacts on residents living within controlled access area because of the delays associated with the new controlled-access measures and removal of the U.S. Route 29 bridge over Bull Run. The impacts would be offset by the reduction in traffic and associated delays at the intersections within the park. In addition, there would be an added security benefit to residents, similar to living within a gated area. Negligible impacts to emergency response would occur. The National Park Service would conduct additional planning and environmental analysis prior to implementation. Minor, adverse cumulative impacts would occur.

IMPACTS ON RECREATION

METHODOLOGY

In the impact assessment for recreation, the National Park Service focused on changes to the levels of recreational opportunities for Manassas National Battlefield Park visitors. The National Park Service also considered the physical impacts associated with any new developmental plans and anticipated visitor uses. The context of the evaluation was the park and immediate surrounding area.

DEFINITION OF INTENSITY LEVELS

Analyses of the potential intensity levels resulting from each alternative on recreation were derived from the available information from the park, Prince William County, and regional agencies in northern Virginia. Definitions for the thresholds of change for the intensity of impacts on recreation are as follows:

- *Negligible:* The impact is localized and not measurable and would not have a noticeable effect on the level of recreation opportunities or recreation facilities available for public use.
- *Minor:* The impact is localized but detectable and would have a slight effect on the level of recreation opportunities or facilities available for public use.
- *Moderate:* The impact is readily apparent and appreciable and would result in a noticeable increase or reduction in the level of recreation opportunities or facilities available for public use.
- *Major:* The impact is severe and highly noticeable. The impact would result in a permanent loss or gain of recreation opportunities or facilities available for public use.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors or the length of construction activities. A long-term impact would last more than one year and would be more permanent in nature.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION)

Under the no-action alternative, there would be no change to recreational opportunities or facilities available at the park or at nearby parks. Current management practices would maintain the recreational opportunities such as hiking and horseback riding at the park. Outside the park, current management practices would have no effect on recreational opportunities at nearby parks, ball fields, and other recreational areas. Therefore, there would be a negligible long-term impact on recreation.

Cumulative Impact

A negligible impact on recreation would occur; therefore, the cumulative impact would be negligible.

Conclusion

A negligible impact on existing or future recreational opportunities or facilities would occur. Cumulative impacts would be negligible. There would be no impairment to park resources or values.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

The new access road and improved parking as well as a new equestrian trial at Stuart's Hill would enhance recreational facilities at the park. As a result of new trails, alternative B would have a minor long-term beneficial impact on recreation.

Cumulative Impact

The picnic area construction as part of the Stuart's Hill Tract rehabilitation had

recreational benefits to the park. This project, in combination with alternative B would have long-term beneficial impacts to the park. The incremental impact from alternative B would be minor, and the overall cumulative impact would be minor and beneficial.

Conclusion

Alternative B would have a minor long-term beneficial impact from the addition of and/or improvements to new hiking and bridle trails. A minor beneficial cumulative effect on recreation would occur. There would be no impairment to park resources or values.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

The new access road and improved parking as well as a new equestrian trail at Stuart's Hill would enhance recreational opportunities. As a result of new trails, alternative C would have a minor long-term beneficial impact on recreation.

Cumulative Impact

The cumulative impacts would be the same as described for alternative B. The picnic area construction as part of the Stuart's Hill Tract rehabilitation had recreational benefits to the park from the addition of the picnic area. This project in combination with alternative C would have long-term beneficial impacts to the park. The incremental impact from alternative C would be minor, and overall, the cumulative impact would be minor and beneficial.

Conclusion

Alternative C would have a minor long-term beneficial impact from the addition of and/or improvements to new hiking and bridle trails. A minor beneficial cumulative effect on recreation would occur. There would be no impairment to park resources or values.

IMPACTS ON VISITOR EXPERIENCE

METHODOLOGY

This impact analysis considers various aspects of visitor experience and use at Manassas National Battlefield Park. Topics include the effects on visitors' ability to experience the park's primary resources and their natural and cultural settings, including vistas, natural sounds and smells, and wildlife; overall visitor access to the park; the freedom to experience resources at one's own pace; education and interpretive opportunities; and access for people with disabilities. The analysis is based on how visitor use and experiences would change with the way management prescriptions were applied in the alternatives. The analysis is primarily qualitative rather than quantitative because of the conceptual nature of the alternatives.

DEFINITION OF INTENSITY LEVELS

The thresholds of change for the intensity of impacts on visitor experience are defined as follows:

- *Negligible:* Any change would not be perceptible or would be barely perceptible by most visitors.
- *Minor:* Changes would occur in a few visitors' experiences that would be noticeable, but would result in little distraction or improvements in the quality of the experience.
- *Moderate:* Changes would occur in a large number of visitors' experiences that would result in a noticeable decrease or improvement in the quality of the experience. This would be indicated by a temporary change in frustration level or inconvenience.
- *Major:* There would be a substantial improvement or a severe drop in the quality of many visitors' experience, such as the addition or elimination of a recreational opportunity or a permanent change to an area.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors. A long-term impact would last more than one year and would be more permanent in nature.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION)

Visitors would continue to experience major long-term adverse impacts because of heavy volumes of commuter and commercial truck traffic through the park. Drivers of non-park traffic attempting to get through the park as quickly as possible would continue to conflict with the slower-moving park traffic. Park visitors are usually looking for the visitor center, headquarters, and various automobile tour stops throughout. The faster-moving non-park traffic is distracting and potentially dangerous to park visitors attempting to locate park facilities, and often creates problems for visitors who wish to make the frequent stops and turns necessary to access the many park facilities and interpretive sites. In addition, the noise of existing traffic volumes would continue to encroach on the peaceful and solemn setting of the battlefield.

Visitor exposure to and understanding of the Battle of Second Manassas has continued to improve over the years, especially with the additions of the Stuart's Hill and Brawner Farm tracts. Park staff has also enhanced interpretation of the battle via a separate automobile tour route and the establishment of the Stuart's Hill visitor contact station. However, the Battle of First Manassas still receives greater visitor attention because of the location of the Henry Hill visitor center near the main entrance to the park, the location of the visitor center on one of the main battle sites of First Manassas, and the difficulty of traversing the park roads because of the aforementioned traffic situation.

Park visitors would continue to have a good understanding of the two battles, but they would lack a comprehension of the overall importance of the two engagements within the context of the Civil War. In addition, they would not have an overview of the Civil War, such as the rationale for the war, the overall strategies of the two armies, and the factors that led to the culmination of the conflict. The existing condition of the historic landscape, which is noticeably different from the wartime era, would continue to influence visitor understanding of the battles.

Cumulative Impacts

The potential impacts on visitor experience is highly dependent on the corridor selected for each transportation project identified in the cumulative impact scenario. The Battlefield Bypass, I-66, and VA Route 234 Bypass North projects are expected to be close to, abut, or even in some cases, transverse park property, depending on the alternate selected. These projects could have an adverse impact on the visitor experience from increased noise and changes to the viewshed. With proper planning and mitigation, the adverse impact on the visitor experience would be expected to be minor. In combination with the impacts of the no-action alternative, the cumulative impact would be moderate long-term and adverse.

Conclusion

Visitor experience and use would continue to be adversely impacted by heavy volumes of commuter and commercial traffic. The interpretation of the two battles has improved substantially over the years, but visitor focus would remain on First Manassas because of the location of the visitor center and the heavy volumes of non-park vehicles that inhibit viewing many of the Second Manassas sites. Park visitors would not have an understanding of the importance of the two battles in context of the Civil War or an overview of the Civil War in general. In addition, the failure to rehabilitate major components of the historic landscape to their wartime appearance would continue to hamper the visitor understanding of the battles. As a result of these factors, and primarily because of the conflicts between park visitors and non-park traffic, a major long-term adverse impact would occur to the visitor experience and use. Cumulative impacts would be moderate long-term and adverse.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

Visitors' exposure to and understanding of both battles of Manassas would be enhanced with the Second Manassas visitor contact station at Stuart's Hill (and eventually Brawner Farm), and the continued use of the Henry Hill visitor center. The interpretive materials at the Henry Hill visitor center would focus on the overall importance and strategy of the First Battle, while the Second Battle would be interpreted at a separate visitor contact station. Reduced vehicular traffic in the park and a new access road to Stuart's Hill and improvements to the parking lot would greatly facilitate use of and access to the picnic area at Stuart's Hill and the Second Manassas visitor contact station until the contact station is moved to Brawner Farm.

As a result, the Second Manassas automobile and bicycle tour route and hiking trails would receive greater levels of visitor use. Correspondingly, those visitors interested in First Manassas would be able to focus on this battle and could follow the automobile tour route created under this alternative. Visitors to both battle sites would be exposed to revised wayside exhibits that focus on the importance of each engagement and an overview of these important battles.

The enhancements associated with improvements at the visitor center, visitor contact station, tour routes, trails, and other interpretive materials collectively would have a long-term beneficial impact of moderate intensity on the visitor experience.

There would be a major long-term beneficial impact to visitor experience from the removal of the heavy volumes of commuter and commercial truck traffic from the park. Park

visitors would be able to drive on the park roads at their own pace without being concerned about fast-moving, non-park traffic. Visitors would be able to easily locate park facilities and key interpretive sites, and there would be substantially less noise because of reduced traffic volumes. The lower noise levels would be more compatible with the desired cultural and park land use.

The rehabilitation of the cultural landscape to the wartime era would greatly enhance the visitor understanding of the two battles. Improved views to and from the battlefield would enable the visitor to better visualize the series of historic events that took place on the battlefields. The rehabilitation of the cultural landscape would have a moderate long-term beneficial impact on the visitor experience. The loss of forested area would have negligible impacts on the visitor experience because the removed area represents a small portion of the park's forest.

The preservation and in some cases rehabilitation of historic structures and sites would ensure that the resources are preserved for future generations to enjoy. A moderate long-term beneficial impact on visitor experience would occur.

The new access road and improved parking and a new equestrian trial at Stuart's Hill would enhance the visitor experience.

Cumulative Impacts

The Battlefield Bypass, I-66 study, Tri-County Parkway, and VA Route 234 Bypass North projects would increase regional mobility and help reduce traffic volumes in the park. Increased mobility and reduced delays within the park would improve the visitor experience. Under alternative B, the controlled access and other improvements would also enhance the visitor experience by ensuring that traffic within the park was almost entirely composed of park visitors. Under alternative B, transportation improvements inside and outside the park would have a moderate beneficial cumulative impact on the visitor experience.

Conclusion

A major long-term beneficial impact would occur for visitor experience at Manassas National Battlefield Park from the implementation of alternative B. Visitor experience and use would be substantially improved from the removal of all commuter and commercial truck traffic from the portions of U.S. Route 29 and VA Route 234 that are within the park. Interpretation of the two battles as distinct military events would greatly enhance visitor understanding. Revising the wayside exhibits to focus on the importance of each engagement within the overall war and an overview of these important battles would also add to the visitors' knowledge. In addition, the rehabilitation of the cultural landscape to the wartime era and preservation of historic structures would greatly improve the visitor understanding of the two battles. A moderate beneficial cumulative impact would occur for visitor experience.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

Visitor exposure to and understanding of the Civil War, an overview of both battles, and the context of the battles in relationship to the Civil War would be enhanced with the new visitor center and revised interpretive media. The construction of the new visitor center would educate visitors about the overall causes of the Civil War, the strategies of the armies, and the approaches that resulted in the conclusion of the war. The impacts of the battles on local families, including African American families and communities, would be interpreted. At both battle sites, visitors would also be exposed to revised wayside exhibits that focus on the overview of these important engagements, their context in relationship to the battle, and the overall story of the Civil War. Thus, visitors would gain a much greater understanding of the Civil War and the impacts of the battles of Manassas.

There would be a major long-term beneficial impact to visitor experience from the removal of the heavy volumes of commuter and

commercial truck traffic from the park. Park visitors would be able drive on park roads at their own pace without being concerned about fast-moving, non-park traffic. They would be able to easily locate park facilities and key interpretative sites, and there would be substantially less noise associated with the lower traffic volumes. The lower noise levels would be more compatible with the desired cultural and park land use.

The development of important view corridors to key battlefield sites would enhance the visitor understanding of the two battles.

Preservation of all wartime structures would facilitate comprehension of components of the engagements. Preservation, stabilization, and in some case rehabilitation would ensure that the resources were preserved for future generations to enjoy. A moderate long-term beneficial impact on the visitor experience would occur.

The new access road and improved parking and a new equestrian trial at Stuart's Hill would enhance the visitor experience.

Cumulative Impacts

The cumulative impact would be the same as described for alternative B. The Battlefield Bypass, I-66 study, Tri-County Parkway, and VA Route 234 Bypass North projects would increase regional mobility and help reduce traffic volumes in the park. Increased mobility and reduced delays within the park would improve the visitor experience. Under alternative C, the controlled access and other improvements would also improve the visitor experience. The transportation improvements resulting in increased mobility in combination with eliminating commuter and commercial traffic would have a moderate beneficial cumulative impact on the visitor experience.

Conclusion

A major long-term beneficial impact would occur for visitor experience at Manassas National Battlefield Park from the implementation of alternative C. The visitor experience would be substantially improved by the removal of all commuter and commercial traffic from the portions of U.S. Route 29 and VA Route 234 that are in the park. Visitor exposure to and understanding of the Civil War, an overview of both battles, and the context of the battles in relationship to the Civil War would be enhanced with revised exhibits and interpretive media. In addition, the development of important view corridors to key battlefield sites and rehabilitation of historic sites would enhance visitor understanding of the two battles. A moderate beneficial cumulative impact would occur for visitor experience.

IMPACTS ON PARK OPERATIONS AND MAINTENANCE

METHODOLOGY

For the purposes of this analysis, park operations refer to the quality and effectiveness of the infrastructure, such as maintenance areas, roads, and administrative facilities, used to operate the park and the ability to maintain the park's infrastructure to protect and preserve vital resources and provide for an effective visitor experience. This includes an analysis of the condition and usefulness of the facilities and developed features used to support the operations of the park.

DEFINITION OF INTENSITY LEVELS

The thresholds of change for the intensity of impacts on park operations and maintenance are defined as follows:

- *Negligible:* Park operations would not be affected or the effect would be at low levels of detection and would not have an appreciable effect on park operations.
- *Minor:* Impacts would be detectable and would be of a magnitude that would not have an appreciable effect on park operations.
- *Moderate:* Impacts would be readily apparent and would result in substantial change in park operations in a manner noticeable to the staff and public.
- *Major*: Impacts would be readily apparent, would result in a substantial change in park operations in a manner noticeable to staff and the public, and would be markedly different from recent operations.
- *Duration:* A short-term impact would last less than one year and would affect only one season's use by visitors. A long-term impact would last more than one year and would be more permanent in nature.

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION)

Under the no-action alternative, there would not be a noticeable change in the level of staffing and the use of facilities at the park. Traffic levels within the park would adversely affect park operation because of delays during peak hours along U.S. Route 29 and VA Route 234, and at their intersection. This impact would be minor long-term and adverse.

Cumulative Impact

No other projects within the cumulative impact scenario were identified that would have an adverse impact on park operations and maintenance; therefore, negligible cumulative impact would occur.

Conclusion

The traffic in the park would continue to have a minor long-term adverse impact would occur for park operations. Negligible cumulative impacts would occur.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

Under alternative B, the National Park Service would update the interpretive displays, exhibits, programs, and orientation at the Henry Hill visitor center to focus on the story of First Manassas. A separate, fully staffed visitor contact station would focus on Second Manassas. New exhibits and interpretive programs would tell the story of Second Manassas.

The updated interpretive materials and revised interpretative focus at each visitor facility would require a minor short-term change in staff activities. The change would occur gradually over time as additional support or funding became available. The Second

Manassas visitor contact station would require added maintenance, protection, and interpretation. The long-term impact on park operations would be minor and adverse.

The new access road and improved parking at Stuart's Hill would provide safer access the facilities for both visitors and park staff.

Under alternative B, the controlled access into the park and the change in ownership of the portions of U.S. Route 29 and VA Route 234 in the park would have an adverse impact on park operations. One of the concepts for controlling access at the entry points to the park includes entrance gates staffed by a park employee. Currently, the park does not have staff identified or available to fill these posts. However, entrance gates would allow the park to collect entry fees, which in turn could support these new positions.

Currently, visitors can enter the park and view many resources without having contact with park staff or volunteers. The proposed contact stations would result in more contact between visitors and park staff, which would facilitate early orientation to the park. The National Park Service would have to commit additional staff and funding to maintain the newly acquired roads within the park. Alternative B would have a moderate long-term adverse impact on park operations and would result in a long-term change in park operations.

Cumulative Impact

No other projects within the cumulative impact scenario were identified that would have an impact on park operations and maintenance; therefore, no cumulative impact would occur.

Conclusion

Alternative B would have minor and moderate long-term adverse impacts on park operations and maintenance because of changed operations associated with a visitor contact station for Second Manassas, new interpretive programs, change in ownership of the roads, and controlled access into the park. Negligible cumulative impacts would occur.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

Under alternative C, the National Park Service would relocate the visitor center off Henry Hill and would construct a new visitor center to service the park. The visitor center would have interpretive displays, exhibits, programs, and orientation focused on the comprehensive story of the Civil War. The updated interpretive materials and revised interpretative focus would require a minor short-term change in staff activities. The change would occur gradually as additional support or funding became available. The long-term impact on park operations and maintenance would be minor and adverse.

Under alternative C, the controlled access into the park and the change in ownership of the roads would have an adverse impact on park operations. Currently, the park does not have staff identified or available to service the proposed entrance stations. However, entrance gates would allow the park to collect entry fees, which in turn could support these new positions.

Currently, visitors can enter the park and view many resources without having contact with park staff or volunteers. The proposed contact stations would result in more contact between visitors on park staff, which would facilitate early orientation to the park. With the change in ownership of the roads, the National Park Service would have to commit staff and funding to maintain the roads within the park. Alternative C would have a moderate adverse impact on park operation and would result in a long-term change in park operations.

Cumulative Impact

No other projects within the cumulative impact scenario were identified that would have an adverse impact on park operations and maintenance; therefore, no cumulative impact would occur.

Conclusion

Alternative C would have minor and moderate long-term adverse impacts on park operations and maintenance because of changes in operations associated with the new visitor center, new interpretive programs, park acquisition of U.S. Route 29 and VA Route 234, and controlled access into the park. Negligible cumulative impact would occur.

UNAVOIDABLE ADVERSE IMPACTS

ALTERNATIVE A—CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION ALTERNATIVE)

Visitor safety and experience continues would continue to be seriously compromised by heavy volumes of commuter and commercial truck traffic. The interpretation of the two battles has improved substantially over the years, but visitor focus would remain primarily on First Manassas because of the location of the visitor center, the content of its interpretive programs, and the heavy volumes of non-park traffic that inhibits viewing many of the Second Manassas sites. In addition, the failure to rehabilitate major components of the historic landscape to their wartime appearance would continue to prevent visitors from understanding the comprehensive story of the battles.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

The scene rehabilitation would have an unavoidable long-term adverse impact on the net area of woodlands at the park, but is necessary to rehabilitate the battlefield landscape.

The new bridge and access road across Bull Run would have unavoidable adverse impacts on water resources.

Controlled access into the park would have unavoidable adverse impacts on commuters and nearby businesses and residents that use the road to transport goods and services.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

There would be a small decrease in the woodlands within the park from forest cutting performed to establish view corridors.

The new bridge and access road across Bull Run would have unavoidable adverse impacts on water resources.

The construction of a new visitor to the east of Stone Bridge would have an unavoidable adverse impact on vegetation.

Controlled access into the park would have unavoidable adverse impacts on commuters and nearby businesses that use the road to transport goods and services.

RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

ALTERNATIVE A— CONTINUING CURRENT MANAGEMENT PRACTICES (NO-ACTION ALTERNATIVE)

Under the no-action alternative, there would be no short-term use of the environment that would encroach on the maintenance and enhancement of long-term productivity.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

Under alternative B, there would be a net loss of 245 acres of woodlands and a concomitant net gain of open fields resulting from historic landscape rehabilitation. The scene rehabilitation would greatly enhance the visitor understanding of the two battles. However, there would be a negligible to minor long-term loss of biological productivity from the loss of forest.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

Under the proposed action, there would be the loss of approximately 72 acres of woodlands and a concomitant net gain of open fields resulting from historic landscape rehabilitation. The scene rehabilitation would greatly enhance the visitor understanding of the two battles. However, there would be a negligible long-term loss of biological productivity from the loss of forest. In addition, the construction of a new visitor center would involve land disturbance and impacts to vegetation, which would reduce biological productivity but would enhance the visitor's understanding of the Civil War, adding long-term productivity to the battlefield resource.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

ALTERNATIVE A—NO-ACTION ALTERNATIVE

There would be no irreversible and irretrievable commitment of resources.

ALTERNATIVE B—THE TWO BATTLES OF MANASSAS (PREFERRED ALTERNATIVE)

In Alternative B, the removal of the U.S. Route 29 bridge over Bull Run and construction of a new access road and bridge over Bull Run would be an irreversible commitment of resources.

ALTERNATIVE C—THE DEFINING MOMENTS OF THE BATTLES OF MANASSAS

In alternative C the construction of a new visitor center east of Stone Bridge, with a new access road and bridge over Bull Run, would be an irreversible commitment of resources.

CONSULTATION AND COORDINATION

PUBLIC MEETINGS, SECTION 106 CONSULTATION, AND INTERAGENCY COORDINATION

PUBLIC MEETINGS

This *General Management Plan / Environmental Impact Statement* was developed with the participation of governmental agencies, nongovernmental organizations, and members of the public at large. Formal public participation began in March 1996, when the park superintendent sent a letter to more than 800 people and groups on the park's initial mailing list. This letter described the effort to develop a new general management plan for the park and invited all addressees to participate in the project.

The invitation announced the first round of public meetings, to be held at the visitor center on March 18 and 20, 1996, and also included a mail-back comment form. The comment form asked recipients to describe any issues and concerns they had about the park, as well as their ideas for the future of the battlefields. The letter was also posted on the park's Internet site and electronic comments were encouraged. In addition, the meetings were announced in local newspapers, on local television, and in the *Federal Register*

The first public meetings provided attendees with the opportunity to learn about the planning effort, ask questions, and voice their ideas about the park. The mail-back comment form was also distributed at the public meetings. More than 100 people attended the meetings and more than 250 comment forms and electronic responses were received.

Additional informal meetings were held during this first round of public participation. The project was discussed with groups associated with the park, including the Bull Run Civil War Roundtable and the Battlefield Equestrian Society. The project team also met with groups that expressed interest in specific aspects of the plan, such as the Prince William Bicycle Association, the Friends of Manassas National Battlefield Park, and the Prince William Wildflower Society.

From the meetings and comment forms, the project team learned that respondents cared deeply about the battlefields and were concerned with almost every aspect of the park, including traffic, trails, adjacent development, historic buildings, visitor facilities, interpretation, the natural environment, partnerships, the historic scene, and recreational uses.

The responses, along with the results of the park's data gathering study, provided a range of major issues facing the future of the park. The project team next reviewed past Congressional legislation that shaped the park and examined the important battlefield resources and stories. Collectively, this information helped the project team develop goals for the park's future and preliminary alternatives to achieve those goals.

To help communicate ongoing planning issues, and encourage further public participation, a newsletter was distributed based on the park mailing list, and anyone expressing interest in the process. The first newsletter, sent in January 1997, re-stated the preliminary goals and alternatives, to make sure they addressed the ideas discussed during the first round of public participation.

On February 10 and 11, 1997, public meetings were held at the park visitor center. As with the first round of public meetings, the meetings were publicized in local papers, and the newsletter and meeting announcement were posted on the park's Internet page. An article was included in the *Civil War News* to encourage participation by the Civil War community. Meeting participants were invited to respond to the goals and help the planning team refine the preliminary alternatives and/or develop new alternatives. Ideas from these meetings and the responses were used to refine the alternatives and develop the draft plan.

As the draft general management plan was being prepared in 1997, the project team continued to meet with interested groups and study the impacts of the alternatives. The National Park Service contracted with Virginia Natural Heritage to study areas identified in the alternatives where woodlands would be removed and the historic field patterns would be rehabilitated to ensure threatened and endangered species would not be impacted. The National Park Service also contracted with Robert Peccia and Associates to supplement the traffic modeling provided by the Virginia Department of Transportation in the U.S. Route 29 study to understand the impacts of relocating through traffic from the park.

In 2000, the National Park Service put the general management plan process on hold to concentrate on separate, but related, transportation concerns. This included the Battlefield Bypass, which would re-route U.S. Route 29 and VA Route 234 around the park, removing commuter traffic from these roads within park boundaries. The environmental impact study for the bypass began in 2001, and a preferred alternative was selected in 2005.

Public meetings for the Manassas National Battlefield general management plan resumed in 2002 with a public focus group meeting, designed specifically to address issues surrounding transportation and circulation in the park. This meeting occurred on December 5, 2002, with 18 individuals in attendance. A new newsletter was sent to the mailing list in the fall of 2003. A total of 60 written and electronic comments were received.

SECTION 106 CONSULTATION

Agencies that have direct or indirect jurisdiction over historic properties are required by Section 106 of the National Historic Preservation Act of 1966, as amended (16 *United States Code* 470, et seq.) to take into account the effect of any undertaking on properties eligible for the National Register of Historic Places. To meet the requirements of 36 Code *of Federal Regulations* 800, the National Park Service sent letters to the Virginia Department of Historic Resources (the state historic preservation office) and the Advisory Council on Historic Preservation, inviting their participation in the planning process. Both offices were sent copies of all project newsletters with a request for comments. The Virginia Department of Historic Resources was invited to all public meetings and was provided with a copy of the *Draft General Management Plan / Environmental Impact Statement*. Their comments are shown in the comment letters later in this section.

Table 5-1 lists the cultural resources present at Manassas National Battlefield Park, the treatment and use of each resource, and the presumed need for any future review by the state historic preservation officer and/or the Advisory Council on Historic Preservation.

INTERAGENCY COORDINATION

Coordination with federal, state, and local agencies began concurrently with the public information program. Government agencies such as the Virginia Department of Historic Resources, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, Virginia Department of Transportation, Virginia Department of Conservation and Recreation, and nearby jurisdictions received the park superintendent's initial letter in March 1996.

These organizations were invited to attend all public meetings. Special briefings were also held with elected officials and staff from Fairfax and Prince William Counties. Throughout the process (from 1996 through the present), government agencies were also invited to participate in a routine series of interagency coordination meetings. The attached letter to the Virginia Department of Historic Resources is one example of the project team's coordination efforts.

In addition, representatives from the park's general management planning team participated in coordination meetings for the Battlefield Bypass study.

Table 5-1: GMP Actions Requiring Section 106 Compliance	
Alternative A	
***General Management Plan* Action**	**Compliance Requirements**
Rehabilitate Brawner Farm House, while preserving the structure to accommodate internal visitation and interpretation.	Project underway.
Alternative B	
***General Management Plan* Action**	**Compliance Requirements**
Move the interpretation of Second Manassas to a visitor contact station at Brawner Farm and accommodate year-round visitation. Examine options to develop a new entry road and improve parking facilities at Stuart's Hill to minimize the visual impact of the high-voltage transmission lines in that quadrant of the park.	Requires further state historic preservation officer (SHPO) and Advisory Council on Historic Preservation (ACHP) review.
Request the following boundary adjustments: ● The 136-acre Davis Tract, ● The 43-acre Stonewall Memory Garden Tract, ● The 0.75 acre Conservation Trust parcel, and ● The 6-acre Dunklin Monument tract.	No SHPO or ACHP review required.
Rehabilitate the landscape to its wartime appearance: ● Remove approximately 327 acres of existing forest and manage that land as grassland or open field. ● Allow approximately 82 acres of existing grassland and open fields to regenerate to forest through natural succession.	Requires further SHPO and ACHP review.
Remove the existing Brawner Farm and Battery Heights parking areas along U.S. Route 29.	Requires further SHPO and ACHP review.
Develop the First Manassas automobile/bicycle tour (interpretive materials only—no new roadway needed).	No SHPO or ACHP review required. To be carried out after the completion of the Manassas National Battlefield Park Bypass.
Upgrade trails and interpretive media as needed on the First Manassas Hiking Trail.	Requires further SHPO and ACHP review.
Develop the Second Manassas automobile/bicycle tour (interpretive materials only—no new roadway needed).	No SHPO or ACHP review required. To be carried out after the completion of the Manassas National Battlefield Park Bypass.
Develop the Second Manassas hiking trail by upgrading existing trails, creating new trails, and providing interpretive materials.	Requires further SHPO and ACHP review.
Upgrade the Lucinda Dogan House to accommodate year-round visitation. Rehabilitate the structure's appearance by removing nonconforming structural elements and outbuildings.	Requires further SHPO and ACHP review.

Table 5-1: GMP Actions Requiring Section 106 Compliance	
Alternative B (Continued)	
***General Management Plan* Action**	**Compliance Requirements**
Create a "ghosted" outline of the Robinson House ruins.	Requires further SHPO and ACHP review.
Transfer the portions of U.S. Route 29 and VA Route 234 inside the park to NPS jurisdiction and close these roads to non-park traffic: Remove the existing U.S. Route 29 Bridge over Bull Run. and mark bicycle lanes on primary roads throughout the park.	Requires further SHPO and ACHP review. To be carried out after the completion of the Manassas National Battlefield Park Bypass.
Design and develop a new recreation area off Groveton Road.	Requires further SHPO and ACHP review.
Develop a new equestrian trail near Stuart's Hill.	Requires further SHPO and ACHP review.
Alternative C	
***General Management Plan* Action**	**Compliance Requirements**
Construct a new visitor center, parking area, and access roadways to the east of Stone Bridge and Bull Run.	Requires further SHPO and ACHP review.
Remove the existing visitor center at Henry Hill.	Requires further SHPO and ACHP review.
Develop interpretive displays at Brawner Farm (a less extensive action than in Alternative B). Examine options to develop a new entry road and improve parking facilities at Stuart's Hill to minimize the visual impact of the high-voltage transmission lines in that quadrant of the park.	Requires further SHPO and ACHP review.
Request the following boundary adjustments: ● The 136-acre Davis Tract, ● The 43-acre Stonewall Memory Garden Tract, ● The 0.75 acre Conservation Trust parcel, and ● The 6-acre Dunklin Monument tract.	No SHPO or ACHP review required.
Upgrade key interpretive sites throughout the park for moderate to high visitor use. Sites include Brawner Farm, Chinn Ridge, Deep Cut/Unfinished Railroad, Groveton, Henry Hill, Matthews Hill, Portici, Sudley, Stone Bridge, and Stone House. ● Develop extensive interpretive materials at each site. ● Upgrade parking facilities and loop trails at each site.	Requires further SHPO and ACHP review.

Table 5-1: GMP Actions Requiring Section 106 Compliance	
Alternative C (Continued)	
***General Management Plan* Action**	**Compliance Requirements**
Using existing trails, develop two separate 5-mile-long hiking trails for the Battles of First and Second Manassas.	No SHPO or ACHP review required.
Restore important wartime view corridors by removing approximately 72 acres of existing forest and managing that land as grassland or open field.	Requires further SHPO and ACHP review.
Remove the modern residence and outbuildings from the Groveton area.	Requires further SHPO and ACHP review.
Upgrade the Lucinda Dogan House to accommodate year-round visitation. Rehabilitate the structure's appearance by removing nonconforming structural elements and outbuildings.	Requires further SHPO and ACHP review.
Remove the existing Brawner Farm and Battery Heights parking areas along U.S. Route 29.	Requires further SHPO and ACHP review.
Transfer the portions of U.S. Route 29 and VA Route 234 to NPS jurisdiction and close these roads to non-park traffic: ● Construct a new bridge and approach roads to the south of the existing bridge's location. ● Remove the existing U.S. Route 29 Bridge over Bull Run. ● Install access control facilities at the park's remaining entrances along U.S. Route 29 and VA Route 234. Special provisions would be made for in-holders and their guests and service providers, and for emergency vehicles. ● Remove signalization, turn lanes, and excess pavement from the intersection of U.S. Route 29 and VA Route 234. ● Reduce speed limits to 25 miles per hour. ● Designate and mark bicycle lanes on primary roads throughout the park.	Requires further SHPO and ACHP review. To be carried out after the completion of the Manassas National Battlefield Park Bypass.
Design and develop a new recreation area off Groveton Road.	Requires further SHPO and ACHP review.
Develop a new equestrian trail near Stuart's Hill.	Requires further SHPO and ACHP review.

IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Manassas National Battlefield Park
12521 Lee Highway
Manassas, Virginia 20109-2005

August 11, 2004

Ms. Kathleen S. Kilpatrick, Director
Department of Historic Resources
Commonwealth of Virginia
2801 Kensington Avenue
Richmond, Virginia 23221-2470

Subject: General Management Plan for Manassas National Battlefield Park, Virginia

Dear Ms. Kilpatrick:

The National Park Service continues to work toward the completion of a draft General Management Plan/Environmental Impact Statement (GMP/EIS) for Manassas National Battlefield Park. A general management plan, as you know, determines the best course of management for each park, based on the park's purpose and significance, the interrelationships that exist among the park's resources and values, the range of public interests, knowledge of best practices, and other factors. This approach helps ensure that the decisions made through general management planning are widely supported and sustainable over time. The draft GMP/EIS being developed for Manassas National Battlefield Park will guide decision making at the park for the next 15-20 years.

To date, the park's draft GMP/EIS contains three alternatives, including a no-action alternative. These are Alternative A, *Continuing Current Management Practices,* which is the no-action alternative; Alternative B, *The Two Battles of Manassas – A Comprehensive Understanding of Each Battle*, which is the alternative preferred by the National Park Service; and Alternative C, *The Defining Moments of the Battles – An Understanding of the Principal Events.* Later this year, a copy of the document will be submitted to you for your review and comment, in accordance with stipulation VI., E of the 1995 *Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.*

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Your comments and concerns are important in determining the future of Manassas National Battlefield Park. Because this general management plan has been under development for several years, I would be happy to arrange a time for you and members of your staff to tour the park and become reacquainted with the many issues affecting the park. If you would like to arrange such a meeting, or if you have any questions or concerns, please contact me at the above address, e-mail me at Robert_Sutton@nps.gov, or telephone me at 703-754-1861.

Sincerely,

Robert K. Sutton
Superintendent

RESPONSES TO COMMENTS

The review period for the *Draft General Management Plan / Environmental Impact Statement* was between December 30, 2005 and February 28, 2006. Two public meetings were held on February 8 and 9, 2006 at the park visitor center at Henry Hill. Thirteen people attended one meeting and seven people attended the other meeting.

During the public comment period, 28 comments were received from 28 state and federal agencies, organizations, and individuals. In general, respondents supported the management efforts described in the *Draft General Management Plan / Environmental Impact Statement*. The six respondents who expressed a preference supported the implementation of alternative B. Specifically respondents expressed support for reducing traffic flow within the park and improving the visitor experience. One respondent also noted that alternative B would provide benefits for wildlife, particularly birds.

One respondent expressed a preference for the no-action alternative. The Environmental Protection Agency supported the no-action alternative with construction of the Battlefield Bypass.

The Virginia state historic preservation officer has indicated her support for alternative B, the preferred alternative, as modified in this final plan. The Virginia office of the U.S. Fish and Wildlife Service agrees that the actions proposed in the *General Management Plan* would not adversely affect federally listed species or federally designated critical habitat because no federally listed species are known to occur in the project area. Please see appendix E for additional information.

The National Environmental Policy Act requires the National Park Service to respond to substantive comments. Substantive comments are those that (1) question the accuracy of the information/data provided, (2) question the adequacy of the environmental analysis, (3) present reasonable alternatives to those presented in the draft document, or (4) cause changes or revisions in the preferred alternative.

Most of the comments received referred to actions in the park that are part of daily operations or would be relevant during implementation of the actions proposed in this plan. These comments addressed topics such as automobile tour routes, alternative transportation planning, park signs, trail improvements, battle reenactments, and landscape rehabilitation in specific locations. Because a general management plan is a programmatic document designed to provide guidance in relation to park management goals and how to achieve desired future conditions, issues related to the daily management of the park are not directly addressed in a general management plan. Most of these comments will be considered during planning and implementation of the proposed actions.

A few commenters suggested actions that are against NPS policy, are contrary to the goals of the park, or are covered under other plans. For example, it was suggested that the park have battle reenactments. Reenactments are prohibited by NPS policy and will not be considered (see the NPS' *Management Policies*, Section 7.5.9).

Several respondents on the *Draft General Management Plan / Environmental Impact Statement* included comments relevant to the Manassas National Battlefield Park Bypass Study. These comments have not been addressed, as they are outside the scope of the *General Management Plan / Environmental Impact Statement*. Fairfax County also expressed concern regarding other transportation issues connected to the closure of U.S. Route 29 to commuter and commercial truck traffic. Because these issues involve transportation impacts outside the park, these issues are beyond the scope of this document and will be addressed as part of the Battlefield

Bypass environmental impact statement. Additional information related to the Battlefield Bypass can be found at http://www.battlefieldbypass.com

COMMENTS THAT RESULTED IN A CHANGE TO THE FINAL DOCUMENT

The National Park Service received a number of substantive comments that suggested changes to the *Draft General Management Plan / Environmental Impact Statement* to address factual errors. These included a comment from the County of Fairfax, Virginia. The county noted that the description of the current land use on the east side of the park was incorrect. The *Draft General Management Plan / Environmental Impact Statement* stated that construction of the proposed visitor center in alternative C would result in negligible to minor impacts on land use, based on the high level of development already present in this area. The county indicated that this area is one of the least-densely developed parts of the county. The description of the land use outside the east boundary has been revised accordingly.

Implementation of the action alternatives proposed in this *General Management Plan / Environmental Impact Statement* would be unlikely to have a greater than minor impact on surrounding land uses outside the park boundary. The development of a new visitor center on the eastern boundary of the park is not part of the preferred alternative. If, in the future, the National Park Service determines that development of a new visitor center would be beneficial to management of Manassas National Battlefield Park, additional planning and environmental compliance would be completed as necessary.

The Commonwealth Transportation Board approved the development of a Battlefield Bypass contingent on the mitigation of traffic impacts resulting from the bypass. Within the park, the board was concerned about the impact on emergency access if the modern highway bridge on U.S. Route 29 was removed. Fairfax County also expressed concern about emergency access.

To address this concern, the preferred alternative was modified. As in alternative C, the modern highway bridge on U.S. Route 29 would be removed. A new bridge and access road would be constructed south of the modern bridge in a location with fewer adverse impacts on the cultural landscape, visitor experience, and interpretation. These impacts were addressed in the *Draft General Management Plan / Environmental Impact Statement* as part of alternative C. A detailed discussion of the changes to alternative B was incorporated into the "Alternatives, including the Preferred Alternative" chapter of this document.

Replacing the U.S. Route 29 bridge would benefit the cultural resources in the park by removing the modern structure from a site that played a key role in the Battles of First and Second Manassas. Removing the bridge would also allow for more complete interpretation of the site and would enhance visitor experience and safety in the area.

The environmental impacts and costs of the new access road and bridge are addressed in this document (see the "Environmental Consequences" section and appendix D) because these facilities would be within park boundaries. However, because these changes are related to mitigation measures associated with the Battlefield Bypass study, implementation of these actions would occur in conjunction with the development of the Battlefield Bypass.

The Coalition for Smarter Growth suggested that consideration should have been given to an action alternative that did not include the construction of a bypass around the park. The National Park Service has determined that such an alternative would be contrary to a Congressional mandate and the management goals for Manassas National Battlefield Park. The National Park Service believes an adequate range of alternatives was considered in the *Draft General Management Plan /*

Environmental Impact Statement. Additional text has been developed to clarify the matter and is included under the heading "Alternative Considered but Eliminated from Further Analysis" in the "Alternatives, including the Preferred Action" chapter of this document.

OTHER COMMENTS RECEIVED

The National Park Service received a number of comments that did not result in changes to the final document. These comments are addressed here in an effort to clarify how issues related to management of the park.

Several respondents suggested developing additional roads to increase visitor access to resources in the park, particularly for visitors with limited mobility. The National Park Service is committed to providing visitors with appropriate access and an opportunity to experience park resources in accordance with the Architectural Barriers Act Accessibility Standards (ABAAS).

Many of the venues in the park are currently accessible to visitors with limited mobility. In developing and implementing this *General Management Plan*, the National Park Service must strike a balance between important but sometimes conflicting resources or values. For example, when developing the alternatives, the park staff had to weigh the tradeoffs between the preservation and protection of the park's cultural and natural resources; the enhancement of visitor experience and safety, including accessibility; and the park's operational concerns.

Virtually the entire park is within the cultural landscape, as reflected in the management zoning for the action alternatives. Hence, the character of the battlefield could be diminished if more areas of the battlefield were made accessible. While it is unlikely that additional roads would be developed, the park staff would consider ways to improve accessibility to buildings and structures and the landscape in the park while minimizing impacts to park resources.

Several respondents made comments relative to management of specific resources. These included wetlands and other habitats, and the management of fire and hazardous resources. The importance of the habitat (including wetlands) in the park has increased over time as the region had become more developed. Management of these important resources must be balanced with the purpose and significance of the park as a battlefield. The National Park Service would continue to consult with federal, state, and local agencies, as appropriate, during implementation of this plan to minimize any adverse impacts associated with the proposed action on natural resources in the park. In addition, implementation of this plan does not change management actions related to fire management, which are guided by the park's fire management plan. Similarly, the National Park Service will continue to comply with appropriate laws and policies relative to management of hazardous materials. No actions under this plan would change the park's current management practices in either of these areas.

Commenters were generally supportive of the landscape rehabilitation measures proposed in the general management plan. Some concern was expressed by the Environmental Protection Agency, the Virginia Department of Game and Inland Fisheries, and Virginia Department of Conservation and Recreation over the total acreage of forested area to be cut under the preferred alternative. These entities provided detailed comments related to specific proposed timber cuts.

The general management plan is a programmatic level document and these comments go beyond the scope of the document. The National Park Service recognizes that the park contains important woodland habitat. Management actions related to natural resources in the park must be balanced with the park mission. Based on previous projects, the National Park Service believes it can successfully meet goals relating to restoration of the battlefield landscape of the park while protecting the important

natural resources of the park. For example, the National Park Service consulted with the Department of Conservation and Recreation, Division of Natural Heritage regarding timber cuts to reestablish historic sight lines on the Brawner Farm. This consultation enabled the National Park Service to preserve two timber stands identified as pristine woodland by the Division of Natural Heritage. The proposed cuts are the minimum necessary to achieve the park goal of reestablishing these lines for visitor understanding of the evolution of the battle. The National Park Service would continue to work with the Division of Natural Heritage and other state and local government entities as necessary during implementation of this *General Management Plan*.

Other reviewers expressed concern over the potential impacts of the closures of VA Route 234 and U.S. Route 29 prior to the development of the bypass. As stated in alternative B, the preferred alternative, these roads would remain open to through traffic until a Battlefield Bypass was complete. Once the bypass was complete, the National Park Service would assume management of these roads. The speed limit on the non-bypass VA Route 234 and U.S. Route 29 would be reduced at that time to enhance visitor experience and safety in the park.

Under the preferred alternative, the National Park Service proposes to install entrance stations to control access into the park. As noted in the *Draft General Management Plan / Environmental Impact Statement*, the National Park Service would continue to work with residents in the park who could be affected by installation of the entrance stations.

One respondent noted that the new visitor center at Stone Bridge proposed under alternative C should also be included under alternative B because it would "greatly increase the visual and physical enhancement and understanding of both battles." The visitor center proposed under alternative C was not included under alternative B because of the associated costs. The benefits from an interpretative standpoint do not offset the costs associated with the new building (appendix D).

Several reviewers expressed opposition to removing the modern bridge on U.S. Route 29 at the east end of the park and building a new bridge farther downstream. The National Park Service believes that a new bridge would benefit the cultural resources in the park by removing the modern structure from a site that played a key role in the Battles of First and Second Manassas. In addition, removal of the bridge would allow for more complete interpretation of the site and would enhance visitor experience and safety in the area.

The environmental impacts and costs of the new access road and bridge have been addressed here because these actions would occur within park boundaries. However, because these changes are related to mitigation measures within the Battlefield Bypass study, implementation of these actions would occur in conjunction with the Battlefield Bypass.

One respondent questioned the validity of the park's estimate of the number of people who visit the battlefield on an annual basis. The estimates cited in this plan were calculated by the Public Use Statistics Office, which coordinates visitor counting protocols systemwide and provides visitation statistics for areas administered by the National Park Service. The estimates are calculated based on park-specific information and are collected in several ways. Park staff count the actual number of people who enter the visitor center on a daily basis. This count reflects both visitors who pay an entrance fee as well as school groups, children under age 16, and annual pass holders who do not pay an entrance fee. The park also has several traffic counters located on roads leading to trailheads to track recreational use by hikers, joggers, horse trail users, and other individuals who visit the park throughout the year without entering the main visitor center. When the visitor use statistics are calculated, the National Park Service model is able to account for vehicles that enter and exit from the same gate as well as the possibility of multiple people in the same vehicle. In this way

the visitation estimates include both one-time visitors and repetitive seasonal visitation. The needs of both groups are addressed in the final general management plan.

Following are reproductions of the comment letters received that included substantive comments or those received from federal agencies and state or local governments.

COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

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July 14, 2006

Robert K. Sutton, Superintendent
United States Department of the Interior
National Park Service
Manassas National Battlefield Park
12521 Lee Highway
Manassas, Virginia 20109

Re: Draft General Management Plan/Environmental Impact Statement
Manassas National Battlefield Park
DHR File Number 2004-1264

Dear Mr. Sutton:

I appreciate your taking the time today to explain the need for a modification to the Park's preferred alternative, Alternative B, as presented in the Draft General Management Plan/Environmental Impact Statement, as a result of the Resolution of the Commonwealth Transportation Board (CTB) dated June 15, 2006. We have previously expressed to you our support for Alternative B, which we agree best fits the Park's mission of interpretation. This letter provides our strong support for the Park's selection of Alternative B, modified.

We are very pleased to learn that the CTB has approved closing Routes 29 and 234 through the Park and the transfer of seven miles of road to National Park Service jurisdiction, upon the completion of the Manassas National Battlefield Park Bypass and any other necessary transportation system improvements We understand, however, that this approval is subject to certain conditions, among them that any closure would provide for the reopening of Routes 29 and 234 to through traffic in certain emergency situations. To accomplish this goal a new bridge over Bull Run and approach roads will need to be constructed as described in Alternative C. The park's preferred alternative then can be described as a combination of Alternatives B and C.

I would like to take this opportunity to reiterate our appreciation for the care and thoroughness with which the Draft General Management Plan has been prepared. From a compliance perspective we particularly appreciate Table 5-1 and the attention given to future studies. For example, the draft states that the Park would rehabilitate the battlefield and cultural landscape to the greatest extent feasible through best management practices. This process would be preceded by preparation of a

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Capital Region Office
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Tidewater Region Office
14415 Old Courthouse Way, 2nd Floor
Newport News, VA 23608
Tel: (757) 886-2807
Fax: (757) 886-2808

Roanoke Region Office
1030 Penmar Ave., SE
Roanoke, VA 24013
Tel: (540) 857-7585
Fax: (540) 857-7588

Winchester Region Office
107 N. Kent Street, Suite 203
Winchester, VA 22601
Tel: (540) 722-3427
Fax: (540) 722-7535

cultural landscape report. We are confident that any such clearing will be balanced with the concerns expressed by the natural resource agencies for the current plant and animal communities and vistas opened judiciously to balance both types of resources.

We look forward to receiving the revised maps showing the modified Alternative B. If you have any questions concerning our comments, please do not hesitate to contact me at (804) 367-2323, ext. 112; fax (804) 367-2391; e-mail ethel.eaton@dhr.virginia.gov.

Sincerely,

Ethel R. Eaton

Ethel R. Eaton, Ph.D., Manager
Office of Review and Compliance

c. Ray Brown, Cultural Resource Management Specialist
Erin Flanagan, Community Planner

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

RM 2/28
mail/fax to Erin

RECEIVED
FEB 27 2006

February 23, 2006

Mr. Robert K. Sutton
Superintendent
Manassas National Battlefield Park
12521 Lee Highway
Manassas, Virginia 20109-2005

Re: Manassas National Battlefield Park Draft General Management Plan/Environmental Impact Statement (CEQ # 20050543)

Dear Mr. Sutton:

In accordance with the National Environmental Policy Act of 1969 and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft General Management Plan/Environmental Impact Statement (GMP/EIS) for the Manassas National Battlefield Park. As a result of this review, EPA has assigned this Draft Environmental Impact Statement (DEIS) a rating of EC-2 (Environmental Concerns/Insufficient Information), which indicates that we have environmental concerns regarding the proposal and that there is insufficient information in the document to fully assess the environmental impacts of the project. EPA is primarily concerned with the impacts to vegetation and wildlife, wetlands, transportation, and the local community. A copy of EPA's ranking system is enclosed for your information.

EPA understands that the purpose of the GMP/EIS is to ensure resource preservation and enhanced visitor experience at the Manassas National Battlefield Park. The National Park Service (NPS) proposed three alternatives in the GMP/EIS to provide a framework for decision making on visitor use and management of natural and cultural resources and development; they are: Alternative A (No Action), Alternative B (Preferred Alternative--The Two Battles of Manassas), and Alternative C (Defining Moments of the Battles of Manassas).

Alternative A is a continuation of current management direction and trends at the park and serves as a baseline measurement for comparing the resource conditions and visitor experience prescribed by the two alternatives. Alternative B focuses on interpreting the two battles of Manassas as distinct military events to provide a comprehensive understanding of each battle. This would involve two separate visitor areas, the Henry Hill Visitor Center and the Stuart's Hill Visitor Contact Station; removal of U.S. Route 29 Bridge over Bull Run; addition of controlled access facilities at the park's three remaining entry points; separate, chronological, sequential auto and bicycle tours would be developed for each battle; removal of approximately 327 acres of forested habitat; possibly moving all interpretation of the Second Manassas Battle to an expanded facility at Brawner Farm in the future. Alternative C focuses on the interpretation of the general events of the battles to allow for an understanding of the principal events by

encouraging visitors towards one major visitor center and multiple interpretive sites. This would entail removal of the existing Henry Hill Visitor Center; proposed construction of a new visitor center near Stone Bridge; removal of existing U.S. Route 29 Bridge over Bull Run and construction of a new bridge over Bull Run and associated access roads which poses impacts to Bull Run, its floodplain, and associated wetlands; and removal of 72 acres of forested area.

EPA would like to comment on the GMP/EIS and Alternative A (No Action). Although it is understood that Alternative A serves primarily as a baseline from which the other two action alternatives are compared, EPA is concerned that the No Action alternative does not adequately anticipate the planned closure of U.S. Route 29 and VA Route 234. In particular, Alternative A assumes that the main roads within the park (U.S. Route 29 and VA Route 234) would remain open to commuter and truck traffic. However, concurrent with this GMP/EIS effort, the Federal Highway Administration and the National Park Service have completed the Manassas National Battlefield Park Bypass Draft Environmental Impact Statement (Bypass Study). Regardless of the specific alignment selected, the bypass will allow for the eventual closure of U.S. Route 29 and VA Route 234 within the park to through traffic. As a result, Alternative A does not assume the presence of a finished Battlefield Bypass which would result in the closure of U.S. Route 29 and VA Route 234. Thus, if Alternative A (No Action) is the selected alternative, EPA questions whether it fully addresses the impacts associated with the closure of theses roads through the park. Conversely, an Alternative A (with road closures) would be an environmentally preferred alternative compared to the proposed action alternatives as it would eliminate significant environmental impacts.

The following comments are offered for your consideration. They reflect the impacts associated specifically with Alternative B (preferred alternative) and are also applicable to Alternative C.

Vegetation and Wildlife

As described in Alternative B (the preferred alternative), rehabilitation of portions of the historic landscape would result in the phased removal of approximately 327 acres of second growth forest, which would be converted to open fields. The specific terrestrial species removed as well as its location should be depicted on a map–specifically, those rare and significant habitats that occur in Manassas National Battlefield Park as identified on page 83 (upland depression swamp forest, oak-hickory forest, eastern white pine forest, and piedmont mountain swamp forest).

It is noted on page 115 that "The clearings will be maintained using a variety of potential methods, including mechanical methods as well as prescribed fire." The DEIS should discuss exactly where the prescribed fires would occur, provide a description of the surrounding areas (in particular, identify proximity to privately held lands), and provide safety precautions as well as the frequency of method necessary to maintain the cleared areas.

The DEIS does not clearly address whether the new Visitor Contact Station planned at the Brawner Farm in the future (under Alternative B) would involve tree clearing. Could this action affect the historic woodlot, known as Brawner Woods or Gibbon's Woods? If so, the approximate acres of tree clearing could be underestimated in the DEIS. If the approximate 327 acres of forested removal includes this area, it should be stated in the FEIS. If not, the FEIS should estimate the total quantity of trees proposed for removal as well as identify the types of trees affected. It is also suggested that Brawner Farm be depicted on Map 4-1 (Proposed Forest Cuts and Reforestation Sites).

The DEIS states that approximately 82 acres of open fields would be allowed to regenerate through natural succession back to oak-hickory forest. It is assumed that the areas identified on Map 4-1 as "Proposed Reforestation (Alternative B)" represent the 82 acres allowed for tree regeneration. If different, please indicate so. Thus, the total acreage of tree removal is approximately 245 acres (unless Brawner Farm needs to be added). It is suggested that the NPS plant the oak-hickory trees on the 82 acres to speed up the reforestation rather than wait for tree regeneration.

Removal of the forested area would impact interior trees. As a result, these existing interior trees become new "edge" trees. Exposure to root damage from clearing activity and their "top-heaviness" combined with their newly unprotected condition, could cause them to be susceptible to wind damage. This factor could contribute to tree mortality. Thus, the potential to lose even more forested resources exists. The NPS should address this issue and take measures to observe the newly formed "edge" trees as well as to propose to mitigate for any additional losses incurred. The impact to interior forest areas also impacts sensitive species that inhabit these areas. The wildlife that are accustomed to interior forest habitat are now at risk. It is suggested that the NPS address this impact to affected wildlife.

It is recommended that a complete description of the terrestrial habitat resources in the study area and its location in the park be provided. The composition and characteristics of each community type should be summarized and the functions and total acreage indicated. In addition, the species should be mapped relative to habitat locations and species density. To determine the baseline value of the habitat and the severity of the potential impacts from the proposed alternatives, EPA recommends that a baseline Habitat Evaluation Procedure (HEP) be completed on the study area using the U.S. Fish and Wildlife Services's Habitat Evaluation Procedure. When the impacts of the wildlife and terrestrial habitat are unavoidable, the HEP will help to determine the type of mitigation measures which would be considered appropriate for the potential impacts.

The DEIS did not address forest mitigation. Because of the considerable amount of forest habitat removed, EPA suggests that mitigation be addressed in the FEIS. The FEIS should also include an analysis for forest fragmentation specifically associated with Alternative B. The analysis should also include potential impacts on species with wide home ranges. Measures to avoid potentially adverse impacts to these resources should be evaluated and implementation and

mitigation plans to minimize impacts should be developed. Specifically, the FEIS should address whether the build alternatives could be implemented with no or partial forest clearing and still meet the purpose and need. Where such impacts cannot be avoided, adequate compensation developed through habitat assessment should be implemented. A mitigation plan is recommended to address the loss of forested resources.

As noted on pages 54 and 63, a boundary adjustment to the park would be necessary for Alternatives B and C to include four tracts of land: The Davis Tract, The Stonewall Memory Garden Tract, The Conservation Trust Parcel, and the Dunklin Monument Tract. The DEIS should identify these four tracts on Maps 2-3 and 2-5. These areas should be described more fully as well as address and consider the potential for forest mitigation within these boundaries, if feasible.

The DEIS states that to minimize the environmental impact of the tree clearings proposed for Alternatives B and C, the NPS would employ best management practices for each phase of the clearings." The best management practices should be described in the FEIS.

Wetlands

It is stated in the DEIS that the new bridge and access road proposed in Alternative C would have to cross and impact Bull Run, its floodplains, and associated wetlands which would be far greater than the impacts to natural resources impacted by Alternative B, specifically forest removal. The EIS should quantify the number and kind of wetlands at risk as well as analyze the functional values of impacted wetlands to support its claim and compare the natural resources impacted between the two action alternatives. It appears that some of the forest area to be cleared may also contain forested wetlands. If this is true (or not) the issue should be discussed in the FEIS.

Transportation/Local Community

The proposed action alternatives presume a future where the Battlefield Bypass is in place, and park roads (U.S. Route 29 and VA Route 234) are closed to through traffic and are **used primarily for park purposes. The FEIS should include within the Transportation Section** Map F-1: Bypass Study Alternative to show where the U.S. Route 29 and VA Route 234 bypass alternatives are and disclose and discuss the impacts to the park resources from each alternative. Since the closing of U.S. Route 29 and VA Route 234 are essential to both action alternatives, the FEIS should also discuss the costs and impacts of this action.

In reference to Alternative B (and Alternative C), removal of the U.S. Route 29 bridge over Bull Run, page 143 states that "Only a few residents would experience an inconvenience from having to use an alternative route, and the additional traveling distance would be less than 5 miles." The FEIS should quantify the number of residents that would be inconvenienced. In addition, "Impacts of this closure to residents living outside of the park are discussed in the

Bypass Study." It would be helpful if the FEIS provided a brief synopsis of the impact to residents living outside of the park as well as a general overview of public opinion to have a better understanding of the impact to the local community.

Miscellaneous

On Page 64 under ESTIMATED COSTS, the text reads "Alternative B would cost...." However, the text should read "Alternative C" instead of Alternative B since the discussion refers to Alternative C.

Page 130, third paragraph, states that "Prior to the relocation of the existing visitor center at Henry Hill...." Relocation of Henry Hill is proposed for Alternative C not Alternative B. The discussion in this section refers to Alternative B.

Thank you for the opportunity to review and comment on this project. If you need additional assistance, the staff contact for this project is Karen DelGrosso; she can be reached at 215-814-2765.

Sincerely,

William Arguto
NEPA Team Leader

Enclosure

Environmental Impact Statement (EIS) Rating System Criteria

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

LO (Lack of Objections) - The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

EC (Environmental Concerns) - The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

EO (Environmental Objections) - The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:

1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;
2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;
3. Where there is a violation of an EPA policy declaration;
4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or
5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts..

EU (Environmentally Unsatisfactory) - The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis:
2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or
3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

RATING THE ADEQUACY OF THE ENVIRONMENTAL IMPACT STATEMENT (EIS)

1 (Adequate) - The draft EIS adequately sets forth the environmental impacts(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

2 (Insufficient Information) - The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.

3 (Inadequate) - The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
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March 7, 2006

Robert K. Sutton, Ph.D.
Superintendent
Manassas National Battlefield Park
National Park Service
12521 Lee Highway
Manassas, Virginia 20109

RE: Manassas National Battlefield, Draft General Management Plan/
Environmental Impact Statement
DEQ-06-031F

Dear Dr. Sutton:

The Commonwealth of Virginia has completed its review of the above Draft General Management Plan/Environmental Impact Statement (hereinafter "Draft Plan/EIS"). The Department of Environmental Quality is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act and responding to appropriate federal officials on behalf of the Commonwealth. The Department is also the lead agency for coordinating Virginia's review of federal consistency determinations prepared pursuant to the Coastal Zone Management Act and the Virginia Coastal Resources Management Program. The following state agencies, regional planning district commission, and locality participated in this review:

Department of Environmental Quality (hereinafter "DEQ")
Department of Game and Inland Fisheries
Department of Agriculture and Consumer Services
Department of Conservation and Recreation
Department of Transportation
Marine Resources Commission
Department of Aviation
Virginia Outdoors Foundation
Northern Virginia Regional Commission
Fairfax County.

Robert K. Sutton, Ph.D.
Page 2

In addition, the Department of Historic Resources and Prince William County were invited to comment.

Description of Action

The National Park Service has prepared a plan to guide management of the Manassas National Battlefield Park for the next 15-20 years. The Draft Plan and EIS analyze three alternatives:

- Alternative A, status quo management (Draft Plan/EIS, pages 32, 37-44).
- Alternative B focuses on interpreting the two Battles of Manassas as distinct military events. The visitor center at Henry Hill would orient visitors to the Park as a whole while focusing on the First Battle of Manassas. A separate visitor center will focus on the Second Battle of Manassas (Draft Plan/EIS, pages 45-54). In addition, the existing U.S. Route 29 bridge over Bull Run would be removed, while the portions of U.S. Route 29 and State Route 234 within the Park would be transferred to the Park Service and their access restricted (Draft Plan/EIS, page 53).
- Alternative C focuses on the "watershed" events of the battles, using one major visitor center and multiple interpretive sites. A new visitor center would be constructed near Stone Bridge, and the visitor center at Henry Hill would be removed (Draft Plan/EIS, pages 55-64). In addition, the existing U.S. Route 29 bridge over Bull Run would be removed and replaced at a new location, while the portions of U.S. Route 29 and State Route 234 within the Park would be transferred to the Park Service and their access restricted (Draft Plan/EIS, page 62).

Alternative B is identified as the preferred alternative and also the environmentally preferable alternative (Draft Plan/EIS, pages 65-66).

Copies of the document were provided to us by the National Park Service's Denver Service Center.

Environmental Impacts and Mitigation

1. Natural Heritage Resources. The Department of Conservation and Recreation has searched its Biotics Data System for occurrences of natural heritage resources in the Park. "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.

(a) Mapping and Inventory. The Department of Conservation and Recreation (DCR) has conducted extensive biological and vegetation inventories at Manassas National Battlefield Park, and its understanding of natural communities has increased greatly since the 1997 inventory. The forest communities of the Park were inventoried and mapped in 2002, and vegetation of the entire Park is being mapped as part of the NCR (National Capital Region) Parks Vegetation Mapping Project.

In regard to the discussion in the Draft Plan/EIS of rare, threatened, and endangered species and natural communities (page 83), additional occurrences of significant natural communities (acidic oak-hickory forest, basic oak-hickory forest, upland depression swamp) and an additional occurrence of the state-listed rare plant *Stachys pilosa* var. *arenicola* will soon be entered into the Virginia Natural Heritage Program data base. This update results from additional inventory work during the NCR Parks Vegetation Mapping Project.

(b) Consultation. The Department of Conservation and Recreation's Division of Natural Heritage wishes to provide input to the Park on areas where changes in vegetative cover are proposed, as well as recommended plantings. See "Regulatory and Coordination Needs," item 6, below.

(c) Concerns and Recommendations. The Department of Conservation and Recreation (DCR) expresses several concerns relative to different areas of activity under Alternative B.

(i) Stuarts Hill/Cundiff House Forest Cut Area. The forested upland depression swamp, containing an occurrence of Marsh hedgenettle, (*Stachys pilosa* var. *arenicola*), are located at the east foot of Stuarts Hill in the ecotone between the forest that is proposed for removal and the open fields. DCR recommends avoiding harvest of the wooded depression with Marsh hedgenettle, to keep the community intact. This cut needs to be planned to protect this community and rare plant population, as well as to provide ample buffer to militate against invasion of weeds that will become rampant in this area following canopy removal.

(ii) Forest Cut Area south of Route 29 and Battery Heights. DCR has major concerns about the direct and/or indirect impacts of this forest removal on an Upland Depression Swamp occurrence located either within or immediately adjacent to the cut (the map is too coarse-scaled to tell). This community needs to be protected with an ample buffer provided between the clearcut area and both the wetland and an old, fine example of Basic Oak-Hickory Forest.

(iii) Henry Hill/Chinn Branch Forest Cut Area. DCR has some concerns about this cut that were provided to the Park in its 1997 Natural Heritage Inventory report. Park Service data provided to DCR's Natural Heritage Program indicates that at least some of the area lying between the loop road and the ravine on the east side of Chinn Branch was forested during the Civil War. However, the precise boundary between historical and non-historical forest could not be determined, either from the map provided or through field reconnaissance. The slopes in this area are rather steep and the quality of the Acidic Oak-Hickory Forest is good. Therefore, DCR recommends that this hardwood stand be excluded from that cut.

(iv) Brawner Farm/Deep Cut Forest Cut Area. DCR's Division of Natural Heritage has already provided extensive comments and consulted with the Park on this project (see, inter alia, the Commonwealth's comments on the Park Service's EA for the Brawner Farm/Deep Cut project, DEQ-05-276F, comments mailed November 29, 2005). Restoration of native Piedmont Prairie vegetation would be highly desirable in this area following forest removal, and should benefit the occurrence of the rare plant Buffalo clover, (*Trifolium reflexum*). DCR also recommends strict adherence to erosion and sediment control practices, since these are critical to protecting Appalachia quillwort (*Isoetes appalachiana*) found in small streams of this area.

(d) Natural Heritage Species, by Cut Area. Additional information on natural heritage species found in the proposed cut areas of Alternative B is provided as follows, by the Department of Conservation and Recreation.

(i) Stuarts Hill/Cundiff House. Marsh hedgenettle can be found, typically in the western region of the U.S., and adventives eastward. Known to have hairs on the stem, leaves are distinctly longer about 2-4 cm wide, shaped as lance-ovate or broadly oblong to ovate, but scarcely stouter than those of the sides (Cronquist & Gleason, 1993).

(ii) Forest Cut Area south of Route 29 and Battery Heights. Typically thinly forested, upland depression swamp communities occur in seasonally flooded upland areas on hardpan soils in the Piedmont region (Van Alstine et al, 1999). The forest canopy is usually dominated by willow oak (*Quercus phellos*) and overcup oak (*Quercus lyrata*), the presence of which often indicates mafic substrates. Other frequent trees are red maple (*Acer rubrum*) and sweet gum (*Liquidambar straciflua*). The shrub and herb layers are typically sparse but may include species such as possum haw (*Ilex decidua*), greenbriar (*Smilax rotundifolia*), sedges (*Carex*) and *Sphagnum* species (Schafale and Weakley, 1990). The composition of this rare community type is maintained by its

hydrology; therefore, anything that alters the natural hydrology of the area is a serious threat to upland depression swamp communities.

Occurring primarily in the Piedmont region, basic oak-hickory forest communities are found on dry to dry-mesic slopes, ridges, and upland flats on circumneutral soils rich in base cations, particularly calcium and/or magnesium (Schafale and Weakley, 1990). As the name implies, oaks (*Quercus* spp.) and hickories (*Carya* spp.) are the dominant tree species, forming open to semi-open canopy conditions. As with most communities on basic soils, the understory, shrub and herbaceous layers tend to be very species-rich with many basicophiles represented (Van Alstine et al, 1999). Typical species include eastern red bud (*Cercis canadensis*), American hazelnut (*Corylus americana*), American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), eastern hop-hornbeam (*Ostrya virginiana*), limestone goldenrod (*Solidago sphaceleta*), wild hydrangea (*Hydrangea arborescens*), and Virginia creeper (*Parthenocissus quinqefolius*), among many others. Threats to occurrences of basic oak-hickory forest communities include logging, development, and infestation by the gypsy moth (Fleming et al., 2005).

(iii) Henry Hill/China Branch Forest Cut Area. Acidic Oak-Hickory Forests are ecologically intermediate between species-rich Basic Oak-Hickory Forests and floristically depauperate Oak/Heath Forests. They occupy less fertile soils and have lower species richness and more ericaceous shrubs than do Basic Oak-Hickory Forests. They are distinguished from Montane Oak-Hickory Forests by their restriction to low-elevation or submontane habitats and corresponding composition consisting mostly of species that do not occur at higher elevations. Many contemporary stands of Acidic Oak-Hickory Forests are suffering from the effects of fire exclusion, including poor oak recruitment and the invasion of understories by fire-intolerant mesophytic species such as red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), and blackgum (*Nyssa sylvatica*) (Fleming, et al, 2005).

(iv) Brawner Farm/Deep Cut Forest Cut Area. Buffalo clover, a state-listed rare herb, typically inhabits open woods, openings and roadsides (Radford, et al, 1968). In Virginia, buffalo clover is currently known in three locations in the coastal plain and piedmont regions.

Appalachia quillwort is widely distributed in the eastern United States, although it appears to be most frequently found at lower to middle elevation areas of the Appalachian Mountains in Pennsylvania. This plant is found to be emergent in aquatic habitat, shallow water of lakes ponds, and river shores.

Leaves tend to extend to 30 cm long. Megaspores irregularly reticulate with more or less uneven ridges (Rhoads & Block, 2000).

2. Threatened or Endangered Plant and Insect Species. Under a Memorandum of Agreement between DCR and the Department of Agriculture and Consumer Services (VDACS), DCR represents VDACS in commenting on project impacts on state-listed endangered or threatened plant or insect species. DCR finds that the project would not affect such species. However, VDACS recommends that a survey for such species known to occur in Northern Virginia should be conducted before any disturbance of existing natural resources takes place, such as the disturbances anticipated in Alternative C (Draft Plan/EIS, pages 113-122).

3. Wildlife Resources.

(a) Agency Jurisdiction. The Department of Game and Inland Fisheries, as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state or federally listed endangered or threatened species, but excluding listed insects. The Department (hereinafter "DGIF") is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 et seq.), and provides environmental analysis of projects or permit applications coordinated through the Department of Environmental Quality and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce, or compensate for those impacts.

(b) Findings. DGIF records do not indicate the presence of any endangered or threatened wildlife species subject to the Department's jurisdiction in the project area. However, the Draft Plan/EIS fails to mention that a pair of Hensley's sparrows (listed by the federal government as a species of concern and by the state government as a threatened species) was observed in the project area during 2005. This information should be included in the Final Plan/EIS. The Department of Game and Inland Fisheries requests information regarding this occurrence; see "Regulatory and Coordination Needs," item 1, below.

(c) Analysis and Recommendations. It appears from the Draft Plan/EIS that Alternative B, the Preferred Alternative, which attempts to recreate battlefield conditions of 1861-1862, involves clearing or removal of approximately 327 acres of mature, second-growth forest, and the regeneration of 82 acres (Draft Plan/EIS, pages 51-52); this makes a net loss of 245 acres of forest. In contrast,

Alternative C would not attempt to recreate the historic landscape but would create view corridors through clearing of approximately 70 acres of trees, including 40 acres at the current Deep Cut corridor (Draft Plan/EIS, page 61). Cleared areas would be managed as open fields, grasslands, and shrublands.

(i) Forest Losses. The Department of Game and Inland Fisheries is concerned that the net loss of 245 acres of mature forest under the Preferred Alternative (identified as the environmentally preferable alternative; see "Project Description," above) would adversely affect forest wildlife, particularly songbirds. The Draft Plan/EIS indicates that maintaining the cleared areas as grassland would partially offset these impacts (Draft Plan/EIS, page 115). DGIF agrees that the conversion to grassland could benefit early successional species, such as Hensley's sparrows. However, the ability of the Park to contribute to viable populations of these species is uncertain. Accordingly, DGIF recommends a formal assessment that more thoroughly addresses the positive and negative impacts of the proposed land conversion upon wildlife. This assessment could be part of the Final Plan/EIS or a separate document.

As stated in the Draft Plan/EIS (page 83), the Park is becoming a natural oasis for wildlife as the surrounding region becomes urbanized. For this reason, the recommended assessment should also examine the regional importance of the Park for the long-term preservation of wildlife, taking into account projected changes in land use and land cover inside the Park (under the General Management Plan alternatives) and outside as well.

The Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance indicates that implementation of Alternative B would substantially reduce the forest cover in the Park, which is inconsistent with the general performance criteria in the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-120) even if the 100-foot buffer is maintained as forested. Alternative C contemplates less impact on forested areas and would therefore better comply with the Regulations by saving indigenous vegetation to the maximum extent practicable. See also item 7, below.

(ii) Grassland and Shrubland Management. Due to the proposed land cover conversion, the Department of Game and Inland Fisheries recommends development of a grassland/shrubland management plan for the Park. Species such as Hensley's sparrow require large fields (at least 100 acres) consisting of tall, dense grass, a well-developed litter layer, standing dead vegetation, and sparse woody vegetation or none at all. Shrubland species, such as brown thrashers, will use strips of appropriate habitat that is at least 30 feet wide.

The Department is willing to assist the Park Service with development of this plan. See "Regulatory and Coordination Needs," item 1, below.

(iii) Vegetation Removal Precautions: Time-of-Year Restrictions. All logging, clearing, cutting, pesticide application, and other vegetation removal activities should be conducted outside of the nesting season for most birds. The nesting season is approximately April through August. Vegetation removal, accordingly, should take place between September and March of each year.

(iv) Mowing and Burning of Grassland. Mowing and burning activities should be conducted in early spring rather than late summer, in order to provide winter habitat for grassland birds.

(v) Streamside Buffers. The Department of Game and Inland Fisheries understands that 50-foot streamside buffers are proposed in areas where the forest is to be removed. To minimize potential adverse impact upon aquatic and riparian wildlife species, the Park Service should observe 100-foot buffers on each side of any stream, according to the Department; buffers of 300 feet or more would be better, because smaller buffers will result in adverse impacts upon fish and wildlife resources.

(d) Additional Wildlife Information. The Department of Game and Inland Fisheries maintains a data base of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters. This data base may contain information not available from the DCR Biotics Data System (see item 1, above). The data base is at the following web site:

http://www.dgif/virginia.gov/wildlife/info_map/index.html

Questions on the data base may be directed to the Department of Game and Inland Fisheries (Shirl Dresser, telephone (804) 367-6913).

4. Outdoor Recreation.

(a) Trails. The Department of Conservation and Recreation notes that while the Draft Plan/EIS makes reference to the Park's relationship to its neighbors and the surrounding communities, no effort is made to connect Park trails with other trails in the region. The Park Service should make efforts to attract visitors who choose to visit by foot or bicycle, through the development of connector trails to existing and proposed trail systems outside the Park. Similarly, an effort should be made to ensure that a non-motorized option is available for people wishing to visit the Park's sites by bicycle or on foot.

According to Fairfax County, the County's Park Authority is completing the draft Sully Woodlands Regional Master Plan. The County expects that this Plan will recommend trail connections and the development of coordinated interpretive opportunities with the Park. Accordingly, the County recommends that the Park Service provide trail connections across Bull Run from the proposed First Manassas Automobile and Bicycle tour route and the existing interpretive hiking routes and equestrian trails to Sully Woodlands.

(b) Road Closures. The proposal to close major secondary roads through the Park, and to detour the commuter and daily traffic around it, is the best solution for the long-term protection of the Park and the Park experience, according to the Department of Conservation and Recreation. For the time being, the Department of Conservation and Recreation supports use of private motor vehicles in the Park, but it hopes that in the future a "people mover" of some type could be used to bring visitors through the Park.

The Department of Transportation indicates precautions in regard road closures (see item 12(a), below), and Fairfax County wishes to retain the capability of U.S. Route 29 as an emergency evacuation highway (see item 12(b), below).

5. Park Land Planning. Alternatives B and C both propose acquisition of several tracts of land which, though presently outside Park boundaries, are important to the history of the Battlefield (Draft Plan/EIS, pages 54 and 63, "Boundary Adjustments" headings). The largest of these is the Davis Tract, covering 136 acres. The Civil War Preservation Trust acquired this property with the aid of a federal grant under the National Battlefield Protection Program. One of the stipulations was that the Trust must grant an easement on the property to a third party to ensure its protection from uses incompatible with battlefield preservation. The Virginia Outdoors Foundation holds the easement on the Davis Tract (VOF control number PWM-962) until such time as the Tract can be transferred to the National Battlefield Park (Ellis/Grayson, 3/3/06).

The Foundation urges continued recognition of the Davis Tract as an integral part of the Manassas Battlefield (Ellis/Grayson, 3/3/06).

6. Solid and Hazardous Waste Management. According to DEQ's Waste Division, the Draft Plan/EIS did not address solid waste issues and sites or hazardous waste issues and sites.

(a) Findings. DEQ's Waste Division conducted a cursory review of its data files and found that the Park is listed in the U.S. Environmental Protection

Agency's RCRA (Resource Conservation and Recovery Act) Hazardous Waste data base as a conditionally exempt, small-quantity generator of hazardous waste (EPA identification number VA8142300963). The following web site may be helpful in locating additional information for this identification number:

- http://www/epa.gov/echo/search_by_permit.html

(b) Pollution Prevention. DEQ encourages the Park Service to follow pollution prevention principles in all construction projects. These principles include reduction of waste materials at the source, re-use of materials, and recycling of waste materials to the greatest extent practicable.

7. Chesapeake Bay Preservation Areas. The following guidance is provided for development activities contemplated under any of the alternatives. The Chesapeake Bay Preservation Act (*Virginia Code* sections 10.1-2100 et seq.) contemplates that local governments within Tidewater Virginia will designate Resource Management Areas landward of areas qualifying as Resource Protection Areas, pursuant to the Act and to the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-10 et seq.) administered by the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance. Activities in Resource Management Areas are subject to lesser limitation than activities in Resource Protection Areas.

(a) Resource Management Areas. Both Fairfax and Prince William Counties have enacted a jurisdiction-wide Chesapeake Bay Resource Management Area designation. This requires that all development activities comply with the stormwater quality requirements of the local stormwater ordinance. This designation also means that the Plan must be consistent with the general performance criteria of the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-120).

(i) Requirements for Development Activities under the General Performance Criteria. Activities must:

- disturb no more land than necessary to provide for the proposed use;
- save indigenous vegetation to the maximum extent practicable consistent with the proposed use;
- have a soil and water quality conservation assessment for lands retained in agriculture; and

- adhering to water quality protection procedures prescribed by the Department of Forestry's Best Management Practices, especially with regard to timber harvesting.

(ii) Buffer Retention. Activities in Resource Management Areas that are subject to the general performance criteria must retain the 100-foot buffer between the activity and any wetlands, streams, or other lands fitting the description of Resource Protection Area (see item 7(b), below).

(iii) Erosion and Sediment Control. All activities involving a land disturbance of 2,500 square feet or more must comply with the requirements of the Erosion and Sediment Control Law (*Virginia Code* sections 10.1-560 et seq.).

(iv) Stormwater Management. All land-disturbing activities must also meet stormwater management criteria consistent with the water quality protection provisions of the Virginia Stormwater Management Regulations (4 VAC 3-20 et seq.; see 4 VAC 3-20-71).

(b) Resource Protection Areas. In addition to the general performance criteria for Resource Management Areas (above), areas that are designated as Resource Protection Areas pursuant to the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-130). Of particular importance is 9 VAC 10-20-130.3, which states:

> To minimize the adverse effects of human activities on the other components of the Resource Protection Area, state waters, and aquatic life, a 100-foot wide buffer of vegetation that is effective in retarding run-off, preventing erosion, and filtering non-point source pollution from runoff shall be retained if present and established where it does not exist.

(c) Guidance on Forest Clearing. The forest clearing intended to reconstruct the historic scene must avoid the 100-foot riparian buffers along all water bodies with perennial flows. In addition, all forestry activity must be consistent with the *Virginia Forestry Best Management Practices for Water Quality* in order to be consistent with the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-10 et seq.).

(d) Removal of Route 29 Bridge. The removal of the Route 29 bridge proposed in Alternatives B and C would be an exempt activity under the Regulations (9 VAC 10-20-150.B.1., provided that the demolition would be in accordance with the following:

- regulations promulgated pursuant to the Erosion and Sediment Control Law (*Virginia Code* sections 10.1-560 et seq.); and

- an erosion and sediment control plan and a stormwater management plan approved by the Department of Conservation and Recreation's Division of Soil and Water conservation; or

- local water quality protection criteria at least as stringent as the foregoing state requirements.

Removal of the bridge would cause temporary impacts to Bull Run, even with erosion and sediment controls in place.

(e) New Visitor Center. According to the Draft Plan/EIS, the Park Service would retain the existing visitor centers under Alternative B (pages 45-46), but it would remove the Henry Hill Visitor Center and construct a new Stone Bridge visitor center near the eastern boundary of the Park under Alternative C. The new visitor center would require a new access road and bridge over Bull Run (pages 55-56). These activities would increase the amount of impervious surface, somewhat offset by the removal of the Henry Hill Visitor Center, if Alternative C were chosen. The Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance recommends that the Park Service reconsider placing the visitor center along either of the Route 234 entrances, the southern Route 622 entrance, or the western Route 29 entrance to the Park.

Fairfax County also raises concerns about this Visitor Center. See item 14(b), below.

8. Air Quality. DEQ's Division of Air Program Coordination states that the long-range impact of the Plan on air quality in the Park would be beneficial. However, in an area of ozone non-attainment, any construction activities under the Plan should include precautions to restrict emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), the precursors of atmospheric ozone (O_3). With regard to construction activities, the following advice is offered.

(a) Fugitive Dust Control. During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. These include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;

- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

(b) Open Burning. If construction activities include the burning of construction or demolition material or land-clearing debris, this activity must meet the requirements under 9 VAC 5-40-5600 et seq. of the Regulations for open burning, and it may require a permit (see "Regulatory and Coordination Needs," item 2, below). The Regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. The Park Service should contact Prince William or Fairfax County officials, as appropriate, to determine what local requirements, if any, exist. The model ordinance includes, but is not limited to, the following provisions:

- All reasonable effort shall be made to minimize the amount of material burned, with the number and size of the debris piles;
- The material to be burned shall consist of brush, stumps and similar debris waste and clean burning demolition material;
- The burning shall be at least 500 feet from any occupied building unless the occupants have given prior permission, other than a building located on the property on which the burning is conducted;
- The burning shall be conducted at the greatest distance practicable from highways and air fields;
- The burning shall be attended at all times and conducted to ensure the best possible combustion with a minimum of smoke being produced;
- The burning shall not be allowed to smolder beyond the minimum period of time necessary for the destruction of the materials; and
- The burning shall be conducted only when the prevailing winds are away from any city, town or built-up area.

(c) Fuel-burning Equipment. Fuel-burning equipment may require an air pollution control permit, depending on its capacities and its potential to emit air pollutants. See "Regulatory and Coordination Needs," item 2, below.

9. Natural Area Preserves. According to the Department of Conservation and Recreation, there are no state Natural Area Preserves in the vicinity of the Park.

10. Water Quality and Wetlands.

(a) Water Quality and Wetland Impacts. According to DEQ's Northern Virginia Regional Office, only Alternative C contemplates direct impacts to surface waters. However, based on Maps 3-2 (page 86) and 4-1 (page 119) in the Draft Plan/EIS, both action alternatives (B and C) contemplate forest clearing in areas that appear to include wetlands. DEQ considers the conversion of one wetland type to another (i.e., forested wetland to emergent wetland) to be a wetland impact. Fairfax County, citing the same maps, notes that wetland and riparian areas would both be affected by forest clearing, and that the Draft Plan/EIS makes inconsistent statements on this subject (see pages 66, 67, and 116 of the document, and page 5 of the County's comments, enclosed).

(b) Wetland Delineation. DEQ's Northern Virginia Regional Office recommends that the Park Service conduct a wetland delineation of the proposed project areas, because the Park Service's review of National Wetland Inventory maps does not cover legal boundaries of wetlands or stream channels with precision. The boundaries of wetlands and stream channels regulated by the Virginia Water Protection Permit are determined by wetland delineations that are confirmed by the Army Corps of Engineers, Norfolk District. The Park Service would need to obtain such confirmation from the Corps; see "Regulatory and Coordination Needs," item 5, below.

(c) Wetland Mitigation Guidance. For any construction projects, DEQ recommends that stream and wetland impacts be avoided to the maximum extent practicable. To minimize unavoidable impacts to wetlands and waterways, DEQ recommends the following practices:

- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable;
- Erosion and sedimentation controls should be designed in accordance with the most current edition of the *Virginia Erosion and Sediment Control Handbook* (available from the Department of Conservation and Recreation's Potomac Watershed Office (telephone (540) 347-6420). These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to State waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in

accordance with the cover type (emergent, scrub-shrub, or forested). The applicant should take all appropriate measures to promote re-vegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.

- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats, geotextile fabric in order to prevent entry in State waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.
- All non-impacted surface waters within the project or right-of-way limits that are within 50 feet of any clearing, grading, or filling activities should be clearly flagged or marked for the life of the construction activity within that area. The project proponent should notify all contractors that these marked areas are surface waters where no activities are to occur.
- Measures should be employed to prevent spills of fuels or lubricants into state waters.

(d) Virginia Water Protection Permit. A Virginia Water Protection Permit will be required if Alternative C is pursued, or if impacts to surface waters are proposed (see the Virginia Water Protection Permit Program Regulations, 9 VAC 25-210-50). Additional guidance appears in "Regulatory and Coordination Needs," item 5, below.

11. Historic Structures and Archaeological Resources. To ensure compliance with section 106 of the National Historic Preservation Act, as amended, the Park Service must coordinate with the State Historic Preservation Office, which in Virginia is the Department of Historic Resources. See "Regulatory and Coordination Needs," item 5, below.

12. Roads and Traffic. According to the Virginia Department of Transportation (VDOT), Alternatives B and C involve closing U.S. Route 29 and State Route 234, both of which presently traverse the Battlefield. The Park Service and the Federal Highway Administration conducted a study of potential bypass routes around the Battlefield that, if accepted, will allow the transfer of Routes 29 and 234 within the Park to the Park Service and their eventual closure to through traffic (see Draft Plan/EIS, page 6).

Fairfax County notes that from its standpoint, Alternative B would involve the closure of the U.S. Route 29 bridge over Bull Run without a replacement; Alternative C would involve the same, but with a bridge replacement. See sub-section (b), below.

(a) Timing of Proposed Closure with Regard to Traffic Needs. According to VDOT, closing Routes 29 and 234 before an operational bypass is constructed would not be acceptable because of the traffic impacts such a closing would have upon Interstate Route 66, the only nearby arterial road. Fairfax County also indicates that alternative replacement roads should be completed and opened to traffic as a prerequisite to closure of Route 29 or Route 234 through the Park. At this time, according to VDOT, Route 66 is the subject of a widening project to accommodate the severe daily congestion. Accidents at the signalized intersection of Routes 29 and 234 have been reduced by the recent construction of left turn lanes. VDOT states that Route 29, even through the Battlefield, is on the National Highway System and was designated as a "Congressional High Priority" road.

(b) Emergency Purposes of U.S. Route 29. According to Fairfax County, the existing Route 29 should remain available for emergency evacuation purposes even if through traffic is ultimately re-routed for normal operations. The Draft Plan/EIS indicates that closure of the existing Route 29 bridge over Bull Run and construction of a new bridge, as contemplated in Alternative C, would give rise to adverse environmental impacts (page 66). For this reason, Fairfax County believes that the Park Service should consider keeping the existing bridge, or, if it must be removed, constructing a new replacement bridge in a way that preserves U.S. Route 29 as a viable rapid emergency evacuation route.

(c) Relationship of Alternative Plans to New Bypass Roads. Fairfax County indicates that because both Alternatives B and C are predicated on the closure of Routes 29 and 234 to through traffic and the routing of such traffic onto a new Battlefield bypass, it would be premature to take action in favor of either of these alternatives until the overall impacts of a Battlefield bypass project and the two alternatives can be considered comprehensively. A different approach would be to develop interim management schemes for Alternatives B and C that would (1) allow the Park Service to move forward with activities unrelated to the road closures, and (b) recognize the need to keep the existing routes open until issues associated with the proposed Battlefield bypass are resolved and the new road is opened. See also item 14(a), below.

13. Aviation. The Department of Aviation, mindful of the proximity of the Manassas Regional Airport, recommends the following precautions associated with any developments pursuant to the Plan:

- Part 77 penetrations at the airport should be prohibited. (This refers to Federal Aviation Regulations, Part 77, which regulates man-made or natural objects vertically intruding into the flight path to or from the ends of an airport runway) (Ellis/McCrea, 3/6/06).

- The congregation of large numbers of people in the approach and departure corridors of the airport should be avoided; and

- Development activities should not cause glare, large quantities of dust or smoke, attract large numbers of birds, or pose hazards to air navigation.

14. Local and Regional Comments.

(a) Planning and Environmental Review Process. Fairfax County recommends that if one or more interim management options cannot be developed to accommodate a comprehensive look at the overall impacts of a Battlefield bypass project and Alternatives B and C as proposed in the Draft Plan/EIS (see item 11(c), above), then the Park Service should delay adoption of a new management plan for the Park until the Park Service can resolve issues with the Fairfax County Park Authority, complete additional traffic studies, allow citizen involvement, and coordinate the studies and review process with Fairfax County.

(b) Visitor Center Siting and Design. Fairfax County recommends that the Park Service consider Fairfax County's Chesapeake Bay Preservation Ordinance (see item 7, above), its Water Supply Protection Overlay District, and its Environmental Quality Corridor policy in any siting and design decisions for a new visitor center, in the event a location in Fairfax County is pursued. The Fairfax County area in and near the Park is located in a larger area that was re-zoned in 1982 for five-acre lot residential development in order to protect the Occoquan Reservoir, one of the County's primary sources of drinking water (see item 10(c), above). The County staff would welcome coordination relative to the locations of Resource Protection Areas and Environmental Quality Corridors, as well as stormwater management best management practices. See "Regulatory and Coordination Needs," item 4, below.

Fairfax County indicates that the Draft Plan/EIS incorrectly characterizes the potential impacts of a new visitor center under Alternative C. The document

states that "negligible impacts would be expected because the surrounding area is already quite built up commercially" (page 27). The areas of Fairfax County immediately east of Bull Run near Route 29 are generally rural in character, except for an industrial area including the Luck Stone Quarry, and the County's Comprehensive Plan recommends low-density residential development and public parkland for the area. A visitor center with extensive parking and traffic flow would create a marked contrast with the area and conflict with the Comprehensive Plan, as would extension of sewer service into the area. (See also item 7(e), above).

Regulatory and Coordination Needs

1. *Wildlife Resources.* We recommend that the Park Service contact the Department of Game and Inland Fisheries to provide information concerning the reported sighting of a pair of Hensley's sparrows in the past year (see "Environmental Impacts and Mitigation," item 2(b), above). The information should include:

- The location where the sparrows were observed;
- The habitat associated with the location; and
- Any evidence of breeding.

The Park Service should provide this information to the Department of Game and Inland Fisheries (4010 West Broad Street, Richmond, Virginia 23230). Questions may be addressed to the Department (Jeff Cooper, Wildlife Diversity Biologist, telephone (540) 899-4169; Sergio Harding, Inter-agency Bird Coordinator, telephone (804) 367-0143; or Andy Zadnik, Environmental Services Section Biologist, telephone (804) 367-2733).

Similarly, DGIF requests that the Park Service coordinate efforts with the staff listed above relative to development of a management plan for grassland and shrubland in the Park (see "Environmental Impacts and Mitigation," item 2(c)(ii), above).

2. *Air Quality Regulation.* Permits may be needed for fuel-burning equipment if any is used in construction or operation of facilities contemplated under the Plan. DEQ's Northern Virginia Regional Office (Mr. Terry Darton, Air Permits Manager, telephone (703) 583-3845) should be contacted to inquire about permitting needs. The same Office should be contacted to determine whether an open burning permit is required.

3. Solid and Hazardous Waste Management. DEQ provides the following guidance relative to any construction, demolition, or renovation projects undertaken pursuant to the General Management Plan, once it is put in final form and adopted.

(a) Contamination. Any soil suspected of contamination, or wastes that are generated, must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations. These include, but are not limited to, the Virginia Waste Management Act (*Virginia Code* sections 10.1-1400 et seq.), the Virginia Hazardous Waste Management Regulations (9 VAC 20-60), and the Virginia Solid Waste Management Regulations (9 VAC 20-80). (See the enclosed DEQ memo, Brockman to Ellis, dated February 17, 2006 for additional citations.)

(b) Demolition of Structures. Any structure to be demolished should be checked for asbestos-containing materials and lead-based paint prior to its demolition. If asbestos-containing materials are found, the Park Service must follow the requirements of the Solid Waste Management Regulations (9 VAC 20-80-640) as well as federal regulations (see the memo referenced above). If lead-based paints are found, the Park Service must follow the requirements of the Hazardous Waste Management Regulations (9 VAC 20-60-261) in addition to other applicable requirements.

Questions on asbestos abatement may be directed to the Department of Labor and Industry (Ronald Graham, telephone 786-5074). Questions on abatement of lead-based paint may be directed to the Department of Professional and Occupational Regulation (telephone 367-8595).

4. Chesapeake Bay Preservation Act. To ensure that activities carried out under the Plan are consistent with the Chesapeake Bay Preservation Area requirements of Fairfax County and Prince William County, the Park Service may contact the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance (Alice Baird, telephone (804) 225-2307). In addition, Fairfax County staff can provide guidance on the locations of Resource Protection Areas and Environmental Quality Corridors, as well as on stormwater management. The Park Service is invited to contact the County's Department of Planning and Zoning (Noel Kaplan, telephone (703) 324-1380).

5. Historic Structures and Archaeological Resources. To ensure that activities carried out under the Plan are consistent with section 106 of the National Historic Preservation Act, the Park Service should contact the

Department of Historic Resources (Dr. Ethel Eaton, Manager of Review and Compliance, telephone (804) 367-2323, extension 112).

6. Water and Wetland Regulation. As indicated above ("Environmental Impacts and Mitigation," item 10), DEQ recommends that the Park Service conduct a wetland delineation for all areas in which wetland impacts are proposed or might result from activities under the adopted Plan. The delineation should be confirmed by submitting the report on it to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Branch
803 Front Street
Norfolk, Virginia 23510.

Questions on this process may be directed to the Corps (Bob Hume, telephone (757) 201-7657).

The Virginia Water Protection Permit process should be initiated for any wetland or surface water impacts. The Park Service should contact DEQ's Northern Virginia Regional Office (John Bowden, telephone (703) 583-3880) regarding the Joint Federal-State Permit Application (JPA) document and process.

7. Subaqueous Lands Encroachment. In the event any development activities under the Plan are likely to encroach in, on, or over state-owned rivers, streams, or creeks, the proponent will need to apply for an encroachment permit from the Marine Resources Commission. The vehicle for this application is the JPA mentioned above (preceding item). Questions on this permit requirement may be directed to the Commission (Ben McGinnis, telephone (757) 247-2200).

8. Natural Heritage Coordination. The Department of Conservation and Recreation's Division of Natural Heritage would like to provide detailed input to the Park Service on specific areas where changes in vegetation cover are proposed (particularly Forest Cut areas) as the projects come up for implementation. Similarly, the Park Service should consult with the Division to determine which forest community is likely to occupy a particular site as a result of long-term successional processes. This will aid the Park Service in ensuring that plantings within re-forestation areas are consistent with the composition of indigenous forest communities. The Park Service may contact the Department of Conservation and Recreation's Division of Natural Heritage (Rene` Hypes, telephone (804) 371-2708) for this guidance and input.

9. Federal Consistency under the Coastal Zone Management Act. Pursuant to the Coastal Zone Management Act of 1972, as amended, the Park Service is required to determine the consistency of its activities affecting Virginia's coastal resources or coastal uses with the Virginia Coastal Resources Management Program (VCP) (see section 307(c)(1) of the Act and the Federal Consistency Regulations at 15 CFR Part 930, sub-part C, section 930.34). This involves an analysis of the activities in light of the Enforceable Policies of the VCP (first enclosure), and submission of a consistency determination reflecting that analysis and committing the Park Service to comply with the Enforceable Policies. In addition, we invite your attention to the Advisory Policies of the VCP (second enclosure). The federal consistency determination may be provided as part of the documentation concluding the NEPA process, or independently, depending on your agency's preference. Section 930.39 gives content requirements for the consistency determination. If you need clarification of these comments, please contact DEQ's Office of Environmental Impact Review (Charles Ellis, telephone (804) 698-4488).

Thank you for the opportunity to review this document. Detailed comments from reviewers are attached for your information. If you have questions, please feel free to call me (telephone (804) 698-4325) or Charles Ellis of this Office (telephone (804) 698-4488).

Sincerely,

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures
Cc: (next page)

Robert K. Sutton, Ph.D.
Page 22

cc: Andrew K. Zadnik, DGIF
Keith R. Tignor, VDACS
Scott Bedwell, DCR
Allen R. Brockman, DEQ-Waste
Kotur S. Narasimhan, DEQ-Air
John D. Bowden, DEQ-NVRO
Mary T. Stanley, VDOT
Tony Watkinson, MRC
Roger W. Kirchen, DHR
Alice R. T. Baird, DCR-DCBLA
Katherine K. Mull, NVRC
Leslie Grayson, VOF Warrenton
R. Scott Denny, VDA
Craig S. Gerhart, Prince William County
Erin K. Flanagan, DOI-NPS-DSC

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Resources Management Program (VCP)

a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC); Virginia Code sections 28.2-200 to 28.2-713 and the Department of Game and Inland Fisheries (DGIF); Virginia Code sections 29.1-100 to 29.1-570.

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities; Virginia Code sections 3.1-249.59 to 3.1-249.62.

b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1200 to 28.2-1213.

c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(1) The tidal wetlands program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1301 through 28.2-1320.

(2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands --both tidal and non-tidal; Virginia Code section 62.1-44.15:5 and Water Quality Certification pursuant to section 401 of the Clean Water Act.

Attachment 1, page 2

d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1400 through 28.2-1420.

e. Non-point Source Pollution Control – (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation; Virginia Code sections 10.1-560 et.seq.).

(2) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater (see i) Virginia; Virginia Code sections 10.1-2100 through 10.1-2114 and 9 VAC10-20 et seq.

f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code section 62.1-44.15. Point source pollution control is accomplished through the implementation of:

(1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.

(2) The Virginia Water Protection Permit (VWPP) program administered by DEQ; Virginia Code section 62.1-44.15:5 and Water Quality Certification pursuant to section 401 of the Clean Water Act.

g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code sections 32.1-164 through 32.1-165).

h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code sections 10-1.1300 through 10.1-1320).

(i) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code sections 10.1-2100 through 10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative Code 9 VAC 10-20-10 et seq.

Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:

a) Wetlands
b) Aquatic Spawning, Nursery, and Feeding Grounds
c) Coastal Primary Sand Dunes
d) Barrier Islands
e) Significant Wildlife Habitat Areas
f) Public Recreation Areas
g) Sand and Gravel Resources
h) Underwater Historic Sites.

b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:

i) Highly Erodible Areas
ii) Coastal High Hazard Areas, including flood plains.

c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:

i) Commercial Ports
ii) Commercial Fishing Piers
iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged. Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

i) water access-dependent activities;
ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

attachment 2, page 2

Advisory Policies for Shorefront Access Planning and Protection

a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.

b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.

d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.

f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

Ellis,Charles

From: Andrew Zadnik [Andrew.Zadnik@dgif.virginia.gov]
Sent: Wednesday, February 01, 2006 12:36 PM
To: Ellis,Charles
Cc: nhreview@dcr.virginia.gov; ProjectReview.Richmond_PO.DGIF@dgif.virginia.gov
Subject: Draft Manassas Battlefield General Management Plan - EIS

Charlie,

I don't know if you're coordinating comments on this or not, but I received a notice from the NPS, so I thought I'd put something together and respond through the NPS website. Use these comments as you wish. Thanks.

This project involves development of a General Management Plan (GMP) for Manassas National Battlefield Park. The approved plan will help managers make decisions for the next 15 - 20 years. Three alternatives are considered in the draft Environmental Impact Statement (EIS) - a "no action" alternative and 2 "action" alternatives (B and C). Under the Preferred Alternative (B), rehabilitation of the historic landscape would be critical. This would involve the phased removal of approximately 327 ac of mature second growth forest and the natural regeneration of 82 ac of forest (a net loss of 245 ac of forest). Alternative C would result in the removal of 72 ac of forest. Under both alternatives, the cleared areas are proposed to be managed as open fields, grasslands, and shrublands.

Our records do not document the presence of any Threatened or Endangered wildlife resources under our jurisdiction to occur within the project area. While not mentioned in the draft EIS, we understand that a pair of Henslow's sparrows (Federal Species of Concern/State Threatened) was reported on site in 2005. This information should be included in the final EIS. Furthermore, we request information regarding this occurrence, including location, habitat association, and any evidence of breeding.

We are concerned that the net loss of 245 acres of mature forest, under the Preferred Alternative, may result in an adverse impact upon forest dwelling wildlife, particularly songbirds. According to the draft EIS (Page 115), to partially offset the impacts of forest removal, the cleared areas would be maintained as grassland. We agree that this conversion could benefit early successional species, such as Henslow's sparrows. However, we are unsure as to the ability of the park to contribute to viable populations of these species. We recommend a formal assessment that more thoroughly addresses the positive and negative impacts of the proposed land conversion on wildlife. This assessment could be part of the final EIS or a separate document. As stated on Page 83 of the draft EIS, this park is increasingly becoming a natural oasis as the surrounding region becomes urbanized. Therefore, this assessment should examine the regional importance of this park for the long-term preservation of wildlife, taking into account projected changes in land use/land cover inside (under the GMP alternatives) and outside of the park.

Due to the proposed land cover conversion, we also recommend development of a grassland/shrubland management plan for the park. We note that species such as Henslow's sparrows require large fields (at least 100 acres) consisting of tall, dense grass, a well-developed litter layer, standing dead vegetation, and sparse or no woody vegetation. Shrubland species, such as brown thrashers, will utilize strips of appropriate habitat that is at least 30 ft wide. We are willing to assist with development of this plan. Please contact me, VDGIF Wildlife Diversity Biologist Jeff Cooper (540-899-4169), or VDGIF Interagency Bird Coordinator Sergio Harding (804-367-0143) for more information.

We recommend that all logging, clearing, cutting, pesticide application, and other vegetation removal activities be conducted outside of the nesting season for most birds, roughly April through August. Grassland mowing and burning should be conducted in early spring rather than late summer in order to provide winter habitat for grassland birds.

Within the forest removal areas, we understand that riparian buffers will be maintained along all streams to mitigate potential bank erosion and channel siltation. We recommend that these buffers be at least 100 ft to each side of the streams, and ideally 300+ ft. Smaller buffers will result in adverse impacts upon fish and wildlife resources.

The VDGIF maintains a comprehensive database containing up-to-date information on fish and wildlife resources in Virginia. This is called the Virginia Fish and Wildlife Information Service (VAFWIS). We recommend use of the VAFWIS during the initial stages of any project in order to identify critical wildlife resources that may be impacted. Basic access to the VAFWIS is via our website, http://vafwis.org/WIS/ASP/default.asp. Subscriptions to the VAFWIS, which allow a greater level of access, also are available. Alternatively, an Initial Project Review by our VAFWIS staff can be conducted upon request. For more information, please contact Shirl Dressler (804-367-6913).

Thank you,

Andrew K. Zadnik
Environmental Services Section Biologist
Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230

(804) 367-2733
(804) 367-2427 (fax)

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

RECEIVED
FEB 28 2006
DEQ-Office of Environmental Impact Review

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Statements in the project document concerning endangered species were reviewed and compared to available information. A survey for endangered and threatened species known to occur in the northern Virginia region should be conducted prior to any disturbance to existing natural resources, such as those anticipated in Alternative C in the EIS.

(signed) (Keith R. Tignor) (date) February 24, 2006

(title) Endangered Species Coordinator

(agency) VDACS, Office of Plant and Pest Service

PROJECT # 06-031F **8/98**

L. Preston Bryant, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street, Suite 326
Richmond, Virginia 23219-2010
(804) 786-2556 FAX (804) 371-7899

MEMORANDUM

DATE: March 1, 2006

TO: Mr. Charles H. Ellis, III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Va. 23219
chellis@deq.state.va.us
(804) 698-4488

FROM: Robert Munson, Planning Bureau Manager
Virginia Department of Conservation and Recreation

SUBJECT: DEQ-06-031F: DOI/NPS – Manassas National Battlefield Park Draft GMP

The Department of Conservation and Recreation has reviewed the draft GMP and has the following comments for your consideration. We support those measures that will best restore the significant setting of the park while allowing the visiting public to understand the events that took place during both battles. We support use of private vehicles in the interim, but hope that in the future a "people mover" of some sort could be used to bring visitors through the park.

We also note that while reference is made to the park's relationship to its neighbors and the surrounding communities, no effort is made to connect park trails with those in the region. Efforts should be made to attract visitors who choose to come by foot or bicycle through the development of connector trails to existing and proposed trails systems outside of the Park. Likewise, an effort should be made to ensure that a non-motorized option for visiting the park's sites exists for persons wishing to tour the park by bicycle or on foot.

The proposal to close major state secondary roads through the park and to detour the commuter and daily traffic around the park is the best solution for the long-term protection of the park and the park experience.

The Department of Conservation and Recreation (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.

General Comments

Our general understanding of natural communities has increased greatly since the 1997 inventory. In addition, the forest communities of the Park were inventoried and mapped in 2002, and vegetation of the entire Park is currently being mapped as part of the NCR Region Vegetation Mapping Project. As a result, we would like to provide the Park with detailed input on specific areas where changes in vegetation cover are proposed (particularly Forest Cut Areas), as these projects come up for implementation.

On page 83 of the general management plan in regards to the Rare, Threatened and Endangered Species and Natural Communities, additional occurrences of significant natural communities (Acidic Oak-Hickory Forest, Basic Oak-Hickory Forest, Upland Depression Swamp) and an additional occurrence of the state-rare plant Stachys pilosa var. arenicola will soon be entered into the VANHP (Virginia Natural Heritage Program) database. This update is the result of additional inventory work conducted during the NCR Parks Vegetation Mapping Project.

DCR recommends that any plantings within the re-forestation areas should be consistent with the composition of indigenous forest communities of the area. Consult with VANHP to determine which forest community is likely to occupy a particular site as the result of long-term successional processes.

Preferred Alternative B:

Stuarts Hill / Cundiff House Forest Cut Area:

The forested upland depression swamp, containing an occurrence of Marsh hedgenettle, (*Stachys pilosa var. arenicola,* G5/S1/NL/NL), are located at the east foot of Stuarts Hill in the ecotone between the forest that is proposed for removal and the open fields. DCR recommends avoiding harvest of the wooded depression with Marsh hedgenettle, to keep community intact. This cut needs to be planned to protect this community and rare plant population, as well as provide ample buffer to mitigate against invasion of weeds that will become rampant in this area following canopy removal.

Marsh hedgenettle can be found, typically in the western region of the U.S., and adventives eastward. Known to have hairs on the stem, leaves are distinctly longer about 2-4 cm wide, shaped as lance-ovate or broadly oblong to ovate, but scarcely stouter than those of the sides (Cronquist & Gleason, 1993).

Forest Cut Area south of U.S. Rt. 29 and Battery Heights:

DCR has major concerns about the direct and/or indirect impacts of this forest removal on an Upland Depression Swamp occurrence located either within or immediately adjacent to the cut (the map is too coarse-scaled to tell). This community needs to be protected with an ample buffer provided between the clearcut area and both the wetland and an old, fine example of Basic Oak-Hickory Forest.

Typically thinly forested, upland depression swamp communities occur in seasonally flooded upland areas on hardpan soils in the Piedmont region (Van Alstine et al, 1999). The forest canopy is usually dominated by willow oak (*Quercus phellos*) and overcup oak (*Quercus lyrata*), the presence of which often indicates mafic substrates. Other frequent trees are red maple (*Acer rubrum*) and sweet gum (*Liquidambar straciflua*). The shrub and herb layers are typically sparse but may include species such as possum haw (*Ilex decidua*), greenbriar (*Smilax rotundifolia*), sedges (*Carex*) and *Sphagnum* species (Schafale and Weakley, 1990). The composition of this rare community type is maintained by its hydrology; therefore, anything that alters the natural hydrology of the area is a serious threat to upland depression swamp communities.

Occurring primarily in the Piedmont region, basic oak-hickory forest communities are found on dry to dry-mesic slopes, ridges, and upland flats on circumneutral soils rich in base cations, particularly calcium and/or magnesium (Schafale and Weakley, 1990). As the name implies, oaks (*Quercus* spp.) and hickories (*Carya* spp.) are the dominant tree species, forming open to semi-open canopy conditions. As with most communities on basic soils, the understory, shrub and herbaceous layers tend to be very species rich with many basicophiles represented (Van Alstine et al, 1999). Typical species include eastern red bud (*Cercis canadensis*), American hazelnut (*Corylus americana*), American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), eastern hop-hornbeam (*Ostrya virginiana*), limestone goldenrod (*Solidago sphaceleta*), wild hydrangea (*Hydrangea arborescens*), and Virginia creeper (*Parthenocissus quinqefolius*), among many others. Threats to occurrences of basic oak-hickory forest communities include logging, development, and infestation by the gypsy moth (Fleming et al., 2005).

Henry Hill / Chinn Branch Forest Cut Area:

DCR has some concerns about this cut that were provided to the Park in our 1997 Natural Heritage Inventory report. Park Service data provided to VANHP indicates that at least some of the area lying between the loop road and the ravine on the east side of Chinn Branch was forested during the Civil War. However, the precise boundary between historical and non-historical forest could not be determined, either from the map provided or field reconnaissance. The slopes in this area are rather steep and the quality of the Acidic Oak-Hickory Forest is good. Therefore, DCR recommends that this hardwood stand be excluded from that cut.

Acidic Oak-Hickory Forests are ecologically intermediate between species-rich Basic Oak-Hickory Forests and floristically depauperate Oak/Heath Forests. They occupy less fertile soils and have lower species-richness and more ericaceous shrubs than do Basic Oak-Hickory Forests. They are distinguished from Montane Oak-Hickory Forests by their restriction to low-elevation or submontane habitats and corresponding composition consisting mostly of species that do not occur at higher elevations. Many contemporary stands of Acidic Oak-Hickory Forests are suffering from the effects of fire exclusion, including poor oak recruitment and the invasion of understories by fire-intolerant mesophytic species such as red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), and blackgum (*Nyssa sylvatica*) (Fleming et al., 2005).

Brawner Farm / Deep Cut Forest Cut Area:

VANHP has already provided extensive comments and consulted with the Park on this project. Restoration of native Piedmont Prairie vegetation would be highly desirable on this area following forest removal, and should benefit the occurrence of the rare plant Buffalo clover, (*Trifolium reflexum*, G5/S1/NL/NL). DCR also recommends strict adherence to erosion and sediment control practices are critical to protecting Appalachia quillwort, (*Isoetes appalachiana,* G4/S2?/NL/NL), found in small streams of this area.

Buffalo clover, a state rare herb, typically inhabits open woods, openings and roadsides (Radford et. al., 1968). In Virginia, buffalo clover is currently known from three locations in the coastal plain and piedmont regions.

Appalachia quillwort, widely distributed in the eastern United States, although it appears to be most frequently found at lower to middle elevation areas of the Appalachian Mountains in Pennsylvania. Is found to be emergent in aquatic habitat, shallow water of lakes ponds, and river shores. Leaves tend to extend to 30 cm long. Megaspores irregularly reticulate with more or less uneven ridges (Rhoads & Block, 2000).

Under a Memorandum of Agreement, DCR represents the Virginia Department of Agriculture and Consumer Services (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.

In addition, our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. 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, which may contain information not documented in this letter. Their database may be accessed from http://www.dgif.virginia.gov/wildlife/info_map/index.html, or contact Shirl Dressler at (804) 367-6913.

DCR's Division of Chesapeake Bay Local Assistance has reviewed the Manassas National Battlefield Park Draft GMP and offers the following comments:

Prince William County has designated its entire jurisdiction as a Chesapeake Bay Resource Management Area and therefore the proposed general management plans must be consistent with the general performance criteria of the *Chesapeake Bay Preservation Area Designation and Management Regulations* (Regulations) 9 VAC 10-20-120 et seq. This would include disturbing no more land than necessary to provide for the proposed use, **saving indigenous vegetation to the maximum extent practicable** consistent with the proposed use, having a soil and water quality conservation assessment for lands retained in agriculture, and adhering to water quality protection procedures prescribed by the Virginia Department of Forestry best management practices especially with regard to timber harvesting. The use would be a change from silviculture, so the 100-foot buffer must be retained. All land disturbing activity exceeding 2,500 square feet shall comply with the requirements of the local erosion and sediment control ordinance. Additionally, stormwater management criteria consistent with the water quality protection provisions (§ 4 VAC 3-20-71) of the Virginia Stormwater Management Regulations (§ 4 VAC 3-20) shall be satisfied for all land-disturbing activity.

In addition to the general performance criteria for Resource Management Areas (RMAs), those areas that are designated as Resource Protection Areas (RPAs) shall be consistent with the development criteria for RPAs (§ 9 VAC 10-20-130), especially with respect to 9 VAC 10-20-130 3 that states, "To minimize the adverse effects of human activities on the other components of the Resource Protection Area, state waters, and aquatic life, a **100-foot wide buffer of vegetation** that is effective in retarding run-off, preventing erosion, and filtering nonpoint source pollution from runoff **shall be retained if present** and established where it does not exist."

The historic scene reconstruction activity (forest clearing) must avoid the 100-foot riparian buffers along all water-bodies with perennial flow and all forestry activities must be consistent with the *Virginia Forestry Best Management Practices for Water Quality* in order to be consistent with the *Chesapeake Bay Preservation Designation and Management Regulations*. The removal of the Route 29 bridge would be an exempt activity under 9 VAC 10-20-150 B 1 provided that the demolition would be in accordance with (i) regulations promulgated pursuant to the Erosion and Sediment Control Law (§ 10.1-560 et seq. of the Code of Virginia) and the Stormwater Management Act (§ 10.1-603.1 et seq. of the Code of Virginia), (ii) an erosion and sediment control plan and a stormwater management plan approved by the Virginia

Department of Conservation and Recreation, or (iii) local water quality protection criteria at least as stringent as the above state requirements.

Alternative B, while being the NPS preferred alternative, substantially reduces the forested cover within the park even if the 100-foot buffer is maintained as wooded, which is inconsistent with general performance criteria (9 VAC 10-20-120 et seq) of the *Chesapeake Bay Preservation Act & Regulations*. Alternative C provides less impact on the wooded areas and therefore better complies with the *Chesapeake Bay Preservation Act & Regulations* with respect to saving indigenous vegetation to the maximum extent practicable. Both alternatives propose removal of the Route 29 bridge which would cause temporary impacts to Bull Run even with erosion and sediment control practices in place. Alternative C placement of a new Visitor's Center on the East side of Bull Run would increase the impact by requiring a new bridge crossing as well, although some of the increase in impervious surface would be off-set by the removal of the Henry Hill Visitor Center. It appears that the better solution would be to use the Alternative C historic landscape rehabilitation proposal with an alternative site for the entrance to the park and Visitor Center that would not have an impact upon Bull Run by requiring placing a bridge over Bull Run. The Park Service should reconsider the location of the Visitor's Center along either of the Route 234 entrances, the southern Route 622 entrance, or the western Route 29 entrance to the park.

Thank you for the opportunity to comment on this project.

Sincerely,

Robert S. Munson
Planning Bureau Manager

Literature Cited

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

MEMORANDUM

TO: Charles H. Ellis, III, Environmental Program Planner

FROM: Allen Brockman, Waste Division Environmental Review Coordinator

DATE: February 17, 2006

COPIES: Sanjay Thirunagari, Waste Division Environmental Review Manager; file

SUBJECT: Manassas National Battlefield Park Draft General Management Plan—DEQ Project # 06-031F

The Waste Division has completed its review of the Draft General Management Plan for Manassas National Battlefield Park. We have the following comments concerning the waste issues associated with this project:

Neither solid waste issues and sites nor hazardous waste issues and sites were addressed in the report. Nor did the report include a search of waste-related data bases. The Waste Division conducted a cursory review of its data files and determined that the facility is listed in EPA's RCRA Hazardous Waste database as a conditionally exempt, small quantity generator of hazardous waste: MANASSAS NATIONAL BATTLEFIELD PARK (EPA ID: VA8142300963). The following website may prove helpful in locating additional information for this identification number: http://www.epa.gov/echo/search_by_permit.html.

Any soil that is suspected of contamination or hazardous or solid wastes that are generated, transported, disposed, stored, or treated, as defined in the Virginia Solid and Hazardous Waste Regulations must be tested and handled in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Any structures to be demolished, removed, or renovated should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to those activities. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Allen Brockman at (804) 698-4468.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Charles H. Ellis III **DEQ - OEIA PROJECT NUMBER: 06 – 031F**

RECEIVED
FEB 03 2006
DEQ-Office of Environmental Impact Review

PROJECT TYPE: ☐ STATE EA / EIR / FONSI **X FEDERAL EA / EIS** ☐ SCC

☐ CONSISTENCY DETERMINATION/CERTIFICATION

PROJECT TITLE: MANASSAS NATIONAL BATTLEFIELD PARK DRAFT GENERAL MANAGEMENT PLAN

PROJECT SPONSOR: DOI / NATIONAL PARK SERVICE

PROJECT LOCATION: X OZONE NON ATTAINMENT AREA

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: **X CONSTRUCTION**
☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. **X 9 VAC 5-40-5600 et seq. – Open Burning**
5. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

Long range impact of the project on the air quality with in the park area is beneficial. However, being in an area of ozone non-attainment, all precautions are necessary to restrict the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) during construction. Closure of commuter traffic on Route 234 and 29 with in the park area is subject to satisfactory acceptance of the concerned Bypass Study.

K.S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis

DATE: February 3, 2006

Ellis,Charles

From: Bowden,John
Sent: Thursday, February 23, 2006 10:56 AM
To: Ellis,Charles
Subject: Draft EIS #06-031F

NVRO comments regarding the Manassas National Battlefield Park Draft General Management Plan project sponsored by DOI/National Park Service are as follows:

The U.S. National Park Service (NPS) proposes to develop a General Management Plan to define the direction of the management of Manassas National Battlefield Park for the next 15-20 years. The Environmental Impact Statement (EIS) describes three alternatives with varying degrees of impacts proposed to surface waters (i.e. wetlands, streams, ponds) regulated by the Virginia Department of Environmental Quality (DEQ). Alternative A proposes no action and therefore proposes no impacts to surface waters. Alternative B is the preferred alternative and proposes no impacts to surface waters. Alternative C proposes impacts to surface waters. Based upon review of Map 3-2 and 4-1 of the EIS, both Alternatives B and C propose forest cuts to restore the historic landscape in areas that appear to also contain wetlands. Please note that the conversion of one wetland type to another (i.e. forested wetland to emergent wetland), is considered an impact by DEQ.

DEQ recommends conducting a wetland delineation of the proposed project area as the EIS indicated that the presence of surface waters was determined by reviewing National Wetland Inventory Maps. The National Wetland Inventory Maps do not represent the legal boundaries of wetlands and stream channels, and these maps are often significantly inaccurate. The actual boundaries of wetlands and stream channels regulated by the Virginia Water Protection (VWP) Permit Program are determined by a wetland delineation that is confirmed by the United States Army Corps of Engineers (USACE). NPS would need to contact the USACE to receive confirmation of the wetland delineation.

If Alternative C is pursued or if impacts to surface water are proposed, a VWP permit from DEQ will be required for the proposed impacts in accordance with 9 VAC 25-210-50 of the VWP Permit Program regulations. Upon receipt of a Joint Permit Application for the proposed surface water impacts, DEQ-VWP Permit staff will review the proposed project in accordance with VWP permit program regulations and current VWP permit program guidance.

John D. Bowden
Deputy Regional Director
Department of Environmental Quality
Northern Virginia Regional Office
(703) 583-3880
jdbowden@deq.virginia.gov

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

This will acknowledge receipt of your transmittal letter with enclosures requesting Commission review of the above-referenced project.

Please be advised that the Marine Resources Commission, pursuant to Section 28.2-1204 of the Code of Virginia, has jurisdiction over any encroachments in, on, or over any State-owned rivers, streams, or creeks in the Commonwealth. Accordingly, if any portion of the subject projects involves any encroachments channelward of ordinary high water along natural rivers and streams, a permit may be required from our agency.

(signed) Benjamin A. McGinnis (date) 02/22/06

(title) Environmental Engineer

(agency) Marine Resources Commission

PROJECT # 06-031F **8/98**

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FEB 16 2006
DEQ-Office of Environmental Impact Review

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000
VirginiaDOT.org

GREGORY A. WHIRLEY
ACTING COMMISSIONER

February 14, 2006

Mr. Charles H Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: Manassas National Battlefield Draft General Management Plan

Dear Mr. Ellis:

Mr. Robert McDonald of the Virginia Department of Transportation has reviewed the draft General Management Plan (GMP) prepared by the National Park Service. The GMP outlines the existing conditions for visitor experience at the Manassas National Battlefield and describes the pros and cons of the two "build" alternatives considered. In terms of transportation impacts, the "no-action" alternative, which the National Park Service does not recommend, has virtually no impacts on our transportation network. The other two alternatives involve closing US 29 and Virginia Route 234, two arterials that presently traverse the Battlefield.

As the GMP correctly states, FHWA conducted a study of potential bypass routes around the Battlefield. Should one of those alignments be acceptable to the Commonwealth, US 29 and VA 234 might be closed so that present through traffic would be routed around the Battlefield instead of through it. Also, as correctly stated in the GMP, a heavy volume of traffic uses those roads – not only commuters but also commercial vehicles such as trucks from nearby Luck Stone Quarry. Closing those roads before an operational bypass is constructed is not acceptable due to the traffic impacts such closing would put on I-66, the only nearby arterial. Currently, I-66 is under construction to widen the facility due to the severe daily congestion it experiences. Accidents at the signalized intersection of US 29 and VA 234, cited in the GMP, have been reduced by the recent construction of left-turn lanes on all four legs of that intersection. As a final note, US 29, even through the Battlefield, is on the National Highway System and was designated as a "Congressional High Priority" road.

100 YEARS OF TRANSPORTATION EXCELLENCE
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Thank you for the opportunity to comment on this project.

Sincerely,

Mary T. Stanley

Mary T. Stanley
Environmental Engineer
Virginia Department of Transportation
(804) 786-0868

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FEB 03 2006
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COMMONWEALTH of VIRGINIA

Randall P Burdette
Director

Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250-2422

V/TDD • (804) 236-3624
FAX • (804) 236-3635

February 2, 2006

Mr. Charles H. Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

RE: Federal Project # 06-031F, Manassas National Battlefield Park Draft General Management Plan

Dear Mr. Ellis:

Thank you for providing the Virginia Department of Aviation with a draft copy of the Manassas National Battlefield Park Draft General Management Plan. Following our review staff compiled the following comments.

General Comments

1. Any proposed development at the Manassas Battlefield Park should prohibit any Part 77 penetrations at the Manassas Regional Airport.

2. Any proposed development should avoid the congregation of large numbers of people in the approach and departure corridors at the Manassas Regional Airport.

3. Any proposed action should not include any development that would create glare, cause large quantities of dust or smoke, attract a large number of birds or pose any hazard to air navigation with regard to aircraft landing or departing the Manassas Regional Airport

If you have any questions regarding these comments please contact me at (8043) 236-3632 at extension 110.

Sincerely,

S. Scott Denny
Senior Aviation Planner

3060 Williams Drive, Suite 510
Fairfax, Virginia 22031
www.novaregion.org

nvrc

Northern Virginia Regional Commission

Voice: 703-642-0700
Fax: 703-642-5077

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Hon. William T. Druhan, Jr.

Town of Vienna
Hon. M. Jane Seeman

(as of August 29, 2005)

February 22, 2006

Mr. Charles H. Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: Manassas National Battlefield Park, Federal Project # 06-031F

The Northern Virginia Regional Commission (NVRC) staff has reviewed the application described above. It should be noted that the Manassas National Battlefield Park lies within the Occoquan River watershed. The Occoquan Reservoir in combination with the Potomac River supplies drinking water for 1.2 million people in Northern Virginia, and is an integral component of the Potomac River and Chesapeake Bay drainage basins.

Special attention should be given towards erosion and sedimentation controls during any land disturbing activities. For post-construction stormwater quality management, the developing agency must adhere to the *post-development* water quality requirements set forth by the Virginia Stormwater Management Regulations.

Please be advised that the counties of Fairfax and Prince William have enacted a jurisdiction-wide Chesapeake Bay Resource Management Area (RMA) designation. This RMA designation requires that all development must comply with the local ordinance's stormwater quality requirements.

While certain activities are exempt from Resource Protection Area (RPA) requirements, staff recommends that activities associated with the "rehabilitation of historic vegetation patterns" comply with Virginia's Chesapeake Bay Regulations which include 100 foot wide vegetated buffers landward of RPA resources.

We would also suggest that, where possible, opportunities for retrofit of existing stormwater quantity facilities to stormwater **quality** facilities through any new construction activities should be explored, particularly infiltration practices associated with the principles of Low Impact Development.

Thank you for this opportunity to participate in the intergovernmental review process.

Sincerely,

Katherine K. Mull

Katherine K. Mull
Senior Environmental Planner

Project: Draft General Management Plan for Manassas Battlefield National Park
Sponsor: Department of the Interior/National Park Service

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

February 28, 2006

Dr. Robert K. Sutton, Superintendent
Manassas National Battlefield Park
12521 Lee Highway
Manassas, VA 20109-2005

Dear Dr. Sutton:

Thank you for providing us with the opportunity to submit comments on the Draft General Management Plan/Environmental Impact Statement for Manassas National Battlefield Park. County staff has reviewed this document and, through this letter, is transmitting its comments.

The Draft General Management Plan/EIS presents three alternatives. Alternative A, the "No Action" alternative, would continue current management efforts at the park. The main roads in the park (U.S. Route 29 and Virginia Route 234) would remain open to through traffic.

Alternative B, the preferred alternative, would focus the visitor experience on the two individual battles and would orient separate visitor contact areas for each battle. In order to recreate the landscape that existed at the time of the two battles, approximately 327 acres of forested land within various areas of the park would be cleared in favor of an open grassland or shrub cover, and approximately 82 acres of open field and grassland areas would be reforested through natural succession. None of the clearing would occur near Fairfax County; indeed, approximately five acres of land along Bull Run would be restored to a forested condition. Existing roads through the park would be closed to through traffic, which would be routed around the park on the Battlefield Bypass (which itself has been the subject of a separate Environmental Impact Statement review and is not subject to this document). Most importantly from the standpoint of Fairfax County, the existing U.S. Route 29 bridge over Bull Run would be removed and would not be replaced.

Alternative C would focus the visitor experience on key "defining" events of the battles as opposed to a focus on the two distinct battles. The existing visitor center would be removed and replaced by a new visitor center near Stone Bridge and the eastern park boundary; maps within the document identify the location of the new visitor center east of Bull Run, in Fairfax County, although it is clear from the document that neither a specific site nor a design concept have been determined—the need for a feasibility study is recognized on page 56 of the document, and page 124 notes that the siting decision will depend, at least in part, on the alignment that is selected for the Battlefield Bypass. The existing U.S. Route 29 bridge over Bull Run would be removed but would be replaced with a new bridge; Map 2-6 indicates that the new bridge would be located to the south of the current bridge. Traffic on this road, as well as on Virginia Route 234, would be

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limited through controlled access points; through traffic would be routed along the aforementioned Battlefield Bypass. Approximately 72 acres of trees would be cleared to provide for "view corridors."

Our comments focus on two issues of primary concern to Fairfax County: (1) transportation considerations associated with the possible removal of the U.S. Route 29 bridge over Bull Run and the closure of Routes 29 and 234 to through traffic; and (2) for Alternative C, the possible location of a new visitors center within Fairfax County, near Stone Bridge.

Transportation Issues

Both Alternative B and Alternative C assume the construction of the Manassas National Battlefield Park Bypass, the prohibition of through traffic on U.S. Route 29 and Virginia Route 234, and the removal of the existing U.S. Route 29 bridge over Bull Run at the entrance to the Park. However, only Alternative C includes the provision of a new replacement bridge for Route 29.

U.S. Route 29 now functions as a key direct route that could be needed for rapid emergency evacuation. In his December 5, 2005 letter to the Federal Highway Administration (pertaining to the proposed Manassas National Battlefield Bypass), Gerald E. Connolly, Chairman, Fairfax County Board of Supervisors, conveyed the Board's position that "*...existing Route 29 should remain available for emergency evacuation purposes even if through traffic is ultimately rerouted for normal operations.*" As noted on page 66 of the document, the construction of a new bridge across Bull Run would have adverse environmental consequences; for this reason, consideration should be given to retaining the existing bridge. Should, however, it be determined, either for Alternative B or Alternative C, that the existing Route 29 bridge over Bull Run ought to be removed, then a new replacement bridge should be constructed in such a way as to preserve U.S. Route 29 as a viable rapid emergency evacuation route.

Furthermore, while the December 5, 2005 letter conveyed the support of the Fairfax County Board of Supervisors for *refined* Alternative D as the preferred location corridor for a four-lane limited access roadway for the Manassas National Battlefield Bypass, the letter also stated that "*...support for this location corridor should not be construed, however, as support for the closure of Routes 29 or 234 through the Battlefield Park until and unless sufficient analysis has been completed and alternative replacement facilities have been completed and opened to traffic.*" The letter cited the Board's understanding that additional analysis would be forthcoming, including a thorough review of the refined Alternative D recommendation, additional information on the transportation effects on local roadways, a reanalysis of traffic impacts of the Battlefield Bypass assuming the selected "West Two CBA" alignment for the Tri-County Parkway, provisions for additional citizen participation and input, and the resolution of outstanding Fairfax County Park Authority issues. These issues should be resolved satisfactorily before any decision is made regarding the closure of Route 29 or Route 234 to through traffic.

Both Alternative B and Alternative C are predicated on the closure of Routes 29 and 234 to through traffic and the routing of through traffic onto a new Battlefield Bypass. The environmental impacts associated with the Battlefield Bypass are, therefore, directly related to these two alternatives, and these impacts should be recognized and considered in the adoption of a management alternative for the park. For this reason, we feel that it would be premature to take action in favor of either Alternative B or C until the overall impacts of the Battlefield Bypass project and these two alternatives can be considered comprehensively. An alternative approach would be the development of interim management alternatives for Alternative B and Alternative C that would (1) allow the park to move forward with management activities that are unrelated to the need for road closures; and (2) recognize the need to keep existing Routes 29 and 234 open to through traffic until all issues associated with the proposed Battlefield Bypass are resolved and the new highway is constructed and operational (i.e., the interim alternatives would not be predicated on road closures). If one or more interim management options cannot be developed, we would recommend a delay in action on the adoption of a management plan for the park until the process outlined in the December 5, 2005 letter from Chairman Connolly (relating to the Battlefield Bypass) has been completed (resolution of issues with the Fairfax County Park Authority, citizen involvement, completion of additional traffic studies, and coordination and review of these studies with Fairfax County).

Alternative C Visitor Center

Page 27 of the document states: "The relocation of the visitor center to the east side of the park in alternative C could have a localized impact on the land use of adjacent properties. However, only negligible impacts would be expected because the surrounding area is already quite built up commercially. Overall, the alternatives proposed would have negligible impacts on land use." We take issue with this statement, as the areas in Fairfax County immediately east of Bull Run near U.S. Route 29 are generally rural in character (with the exception of an industrial area including and near the Luck Stone Quarry) with some of the lowest development densities in Fairfax County. In keeping with this character, Fairfax County's Comprehensive Plan contains the following guidance for the Stone Bridge Community Planning Sector (page 66 of the Bull Run Planning District section of the Area III Plan, as amended through June 20, 2005), which includes the area in question:

1. *The land on the southwest perimeter of the County, adjacent to Loudoun County and Prince William County, lying generally along Bull Run and the public parkland associated with Bull Run has remained for the most part open and undeveloped and has a rural character. It is planned for residential development at .1-.2 dwelling unit per acre and public parkland. This is in conformance with the findings of the Occoquan Basin Study. The present very low density development which characterizes this area should remain intact to protect its natural wildlife and water quality.*

2. *Non-residential uses requiring special exception or special permit approval should be rigorously reviewed. In general, these uses, if permitted at all,*

> *should only be located at the boundary of Low Density Residential Areas and Suburban Neighborhoods or where their impact on existing residences is minimal. These uses should be granted only if the following conditions are met:*
>
> - *Access for the use is oriented to an arterial roadway;*
> - *The use is of a size and scale that will not adversely impact the character of the area in which it is located; and*
> - *The use is designed to mitigate impacts on the water quality of the Occoquan Reservoir.*

A visitor center with extensive parking and traffic flow could create a marked contrast with the existing character of this area and could conflict with the Comprehensive Plan guidance cited above. Absent more specific guidance regarding the location, design, water quality controls, protection of undisturbed open space, screening and buffering that would be associated with a new visitor center, we feel that any statements regarding land use impacts of Alternative C would be premature.

Another critical issue pertaining to a new visitor center east of Bull Run is wastewater disposal. Areas in and near the Battlefield Park in Fairfax County are outside of the county's Approved Sewer Service Area. Extensions of sanitary sewer lines into this area would conflict with the Comprehensive Plan and long-established county policy regarding sewer service. Further, soils in this area are generally poorly suited for septic systems. It is difficult, therefore, to conceive of a site near Stone Bridge that could accommodate a visitor center without creating substantial conflicts with county policy.

We would further advise the National Park Service to incorporate considerations of Fairfax County's Chesapeake Bay Preservation Ordinance, Water Supply Protection Overlay District and Environmental Quality Corridor policy into any siting and design decisions for a new visitor center, should a location in Fairfax County be pursued. The area in and near the park in Fairfax County is located within a larger area that was rezoned in 1982 for five-acre lot residential development in order to protect the Occoquan Reservoir (one of the county's primary sources of drinking water). County staff is available to provide guidance regarding the locations of Resource Protection Areas and Environmental Quality Corridors and would welcome coordination with the National Park Service regarding these issues. We would also welcome coordination regarding stormwater management best management practices. Stormwater management BMPs and Resource Protection Area protection consistent with Prince William County's requirements should be pursued if a new visitor center will be located within Prince William County.

Finally, Fairfax County's Zoning Ordinance recognizes the historic significance of Stone Bridge through its establishment of the Bull Run Stone Bridge Historic District. Obviously, the

protection of the historic integrity of this area is of vital concern to the National Park Service, and we trust that any proposal to construct a new visitor center would be sensitive to this concern; page 136 of the document clearly commits to sensitivity in the siting and design of the facility. That being said, we recommend that, if the new visitor center is to be constructed within this Overlay District, conceptual and detailed development plans be provided to the county's Architectural Review Board for review and recommendation prior to any plan approval by the National Park Service.

The document does not identify potential sites for a new visitor center; there is only a concept as to the general location of the facility somewhere near the eastern park boundary. If this idea is to be pursued further, we encourage the National Park Service to identify potential sites and coordinate with us in evaluating feasibility issues.

Other Comments

The Manassas National Battlefield Park is located within the watershed of the Occoquan Reservoir, which is one of Fairfax County's, and the region's, major sources of drinking water. The undeveloped character of the park serves to provide substantial water quality benefits; we encourage park managers to further the park's environmental stewardship function through careful attention to erosion and sediment control for any land that will be temporarily denuded (e.g., clearing of forested areas, possible clearing and grading for a new visitor center, bridge removal; possible construction of a new bridge over Bull Run), the provision of stormwater management best management practices for any development that is pursued (e.g., parking areas), and land management efforts that serve to ensure the retention of desired cover types while minimizing the use and runoff of fertilizers and pesticides.

On page 66 of the document, it is noted that the forest clearing for Alternative B "would not be implemented in riparian and wetland areas." Yet a perusal of Map 4-1 (which identifies areas to be cleared) and Map 3-2 (which identifies water resources and wetlands) suggests that such impacts may occur in places. Further, while page 67 commits to the retention of riparian buffers along all streams, it indicates that some of these buffers may be maintained as shrub/grass buffers (although it is not stated if any riparian forest areas will be converted to a shrub/grass cover). Page 116 states that "riparian vegetation within the perimeters of designated cut areas would be maintained." Clarification should be provided, and efforts should be taken to avoid clearing of trees along streams to the extent possible.

Fairfax County Park Authority staff has noted that the Park Authority is currently completing the draft Sully Woodlands Regional Master Plan, which is anticipated to be available for public review in mid-March. It is anticipated that the draft plan will recommend trail connections and the development of coordinated interpretive opportunities with the Manassas National Battlefield Park. Consistent with this recommendation, we recommend that the National Park service provide trail connections across Bull Run from the proposed First Manassas Automobile and

Bicycle tour route and the existing interpretive hiking routes and equestrian trails to Sully Woodlands.

I again thank you for providing us with the opportunity to review and comment on proposed changes at the Manassas National Battlefield Park. I encourage you to coordinate with Noel Kaplan, Senior Environmental Planner, Department of Planning and Zoning, on the issues identified in this letter. Noel can be reached at 703-324-1380.

Sincerely,

Anthony H. Griffin
County Executive

AHG/NHK

cc: Board of Supervisors
Robert A. Stalzer, Deputy County Executive
James P. Zook, Director, Department of Planning and Zoning
Katharine D. Ichter, Acting Director, Department of Transportation
Michael A. Kane, Director, Fairfax County Park Authority

Coalition for Smarter Growth
Choices for our communities
Choices for our region

Dr. Robert K. Sutton, Superintendent,
Manassas National Battlefield Park
12521 Lee Highway
Manassas, VA 20109-2005

Dear Superintendent Sutton:

The Coalition for Smarter Growth, a network of major regional environmental and smart growth organizations, submits the following comments regarding the Draft Environmental Impact Statement for the General Management Plan update for Manassas National Battlefield Park. We also wish to incorporate the comments that we previously submitted to the DEIS for the proposed Battlefield Bypass.

The DEIS for the GMP treats the Battlefield Bypass as an integral component of Alternatives B and C, linked to the closure of Routes 29 and 234 through the park. The GMP is dependent upon and built around those road closures. Therefore the impacts of the Battlefield Bypass should be fully accounted for in the DEIS. Yet, while accounting for the potential positive impacts of the closure of these roads and the construction of the bypasses, the DEIS for the GMP completely fails to account for the potential adverse impacts of the new bypass on the Battlefield. This gives an incomplete picture of Alternatives B and C.

In addition, another alternative should have been considered for the GMP that did not involve bypass highways, but instead included a range of solutions as delineated in our comments on the Battlefield Bypass DEIS. Those solutions would include local road upgrades such as shoulders and roundabouts that could handle local traffic and be constructed to protect the historic landscape as has proven successful in the United Kingdom.

The Battlefield Bypass would run parallel to Pageland Road and include an elevated interchange according to the DEIS for that project. Moreover, the north-south alignment for the Battlefield Bypass has become the corridor of choice for the Tri-County Parkway and the 234 Bypass. These would also add yet another segment to the proposed Western Transportation Corridor that would initially link to the 234 upgrade to I-95 and north to Route 7, but has been proposed to include Potomac River Bridge crossings at either end. This outer beltway and the multiple purposes proposed for the narrow Pageland Road corridor could mean a road that is not four lanes, but at least six lanes, and would carry heavy truck traffic. Yet, none of this would be a foregone conclusion if the National Park Service and the Manassas Battlefield Park were to make a stronger case about the negative impacts of these highways. Those negative impacts are entirely missing from the analysis in the DEIS for the GMP and inadequately addressed in the DEIS's for the Battlefield Bypass and Tri-County Parkway.

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There are a number of issues and impacts that are not considered by the DEIS for the GMP and we request their inclusion and analysis.

1) The DEIS states as a major goal of the GMP to maintain "the rural and agrarian character of views outside the park" and to minimize "modern intrusions into the historic landscape." Yet major highway bypasses, especially along the western boundary would destroy the rural and agrarian character of the Pageland Road corridor, harm the views from the western side of the Battlefield, and certainly constitute a modern intrusion into the historic landscape.
2) The DEIS acknowledges the negative impact of commercial development on the southern boundary of the Park, development which followed the construction of I-66. Yet, it does not analyze induced development along the new N-S and E-W bypass corridors.
3) The DEIS claims that "overall the alternatives proposed would have negligible impacts on land use. Therefore, land use was dismissed as an impact topic." Yet, I-66 contributed to land development on the southern boundary and the Battlefield Bypass as included in Alternatives B and C would do the same to the western and northern boundaries of the Battlefield. Potential changes to land use in these areas and their impact on the Battlefield environment should certainly be considered.
4) The purposes of the GMP include more thorough interpretation of the Second Battle of Manassas including the opening battle at the Brawner Farm and the nearby Stuart's Hill. This battle took place adjacent to Pageland Road and certainly must have included Confederate troop movements from areas which would be bisected by the Battlefield Bypass.
5) The DEIS acknowledges the impact of sound from I-66 outside the southern boundary of the park, but not the impact of sound from heavy trucks and other vehicles on the Battlefield Bypass.
6) The DEIS includes no discussion of the expanded historic district west of Pageland Road, historic resources in that district or the impact of the bypasses on those resources. It does mention significant troop movement near Pageland and the Warrenton Turnpike, an area shown in the Battlefield Bypass DEIS to be very close to major interchange expansion for the Battlefield Bypass. A program to use conservation easements and other measures to protect and link the Battlefield to Conway Robinson State Forest would protect historic areas and preserve the setting and tranquility of the site of the Second Battle of Manassas.
7) The Battlefield is acknowledged as a unique habitat protecting wildlife in the face of significant regional development, yet the wildlife benefits of providing a connected corridor to the 400 acre Conway Robinson State Forest (located just ¼ mile west of the Battlefield) are not acknowledged nor is the harm to wildlife moving between these areas considered. Movement is certainly easier across a two lane road than a four to six lane highway.
8) The Battlefield Bypass and Tri-County Parkway are described as part of a major long-term improvement for traffic, yet this is not substantiated. In fact those studies show little change in traffic and actual increases in vehicle miles traveled. Induced development could in fact worsen traffic in the park environment.
9) Without binding commitments to close the roads through the park, the addition of the Battlefield Bypass and other highways would in fact magnify the negative impacts.

The Battlefield Bypass (and Tri-County Parkway) is described as part of Alternatives B and C, therefore their negative impacts must be accounted for and additional road alternatives considered.

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The DEIS for the GMP tells an incomplete story of conditions and potential changes to the western side of the Battlefield that would result from construction of these highways.

We urge the NPS and MNBP to support alternatives to four and six lane highways around the Battlefield and to consider these alternatives in the GMP analysis.

Thank you.

Sincerely,

(via email; verify at 202-244-4408 ext 3#)

Stewart Schwartz
Executive Director

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LIST OF AGENCIES AND ORGANIZATIONS TO WHICH THIS DOCUMENT WAS SENT

FEDERAL AGENCIES

Advisory Council on Historic Preservation
Federal Highway Administration
Federal Transit Administration
U.S. Army Corps of Engineers, Norfolk District
U.S. Department of Agriculture
- Natural Resources Conservation Service
- U.S. Forest Service

U.S. Department of Commerce
- National Oceanic & Atmospheric Administration, National Marine Fisheries Service, Northeast Region

U.S. Department of the Interior
- Fish and Wildlife Service, Virginia Field Office
- National Park Service
- Office of Environmental Policy and Compliance
- Office of Environmental Project Review

U.S. Environmental Protection Agency

U.S. SENATE

The Honorable Mr. James Webb
The Honorable Mr. John Warner

U.S. HOUSE OF REPRESENTATIVES

The Honorable Mr. Tom Davis
The Honorable Mr. Frank Wolf

STATE OFFICIALS

The Honorable Tim Kaine, Governor of the Commonwealth of Virginia
The Honorable Charles Colgan, Senator, Virginia General Assembly
The Honorable Robert Marshall, House Member, Virginia General Assembly

STATE AGENCIES

Virginia Department of Aviation
Virginia Department of Environmental Quality
Virginia Department of Forestry
Virginia Department of Game and Inland Fisheries
Virginia Department of Historic Resources (State Historic Preservation Office)
Virginia Department of Transportation
Virginia Marine Resources Commission
Virginia Outdoor Foundation

REGIONAL AGENCIES AND ORGANIZATIONS

National Capital Planning Commission
Northern Virginia Regional Commission
Northern Virginia Regional Park Authority
Northern Virginia Soil and Water Conservation District
Northern Virginia Transportation Authority

COUNTY AND LOCAL AGENCIES AND OFFICIALS

Fauquier County Administrator
Fairfax County
- Board of Supervisors
- Department of Planning and Zoning
- Department of Transportation

Loudoun County
- Administrator
- Board of Supervisors
- Director of Transportation

Prince William County
- Board of Supervisors
- Department of Public Works
- Soil and Water Conservation District
- Transportation Division

Manassas, Virginia, local government
Manassas Park, Virginia, local government
Town of Haymarket, local government

ORGANIZATIONS AND BUSINESSES

Bull Run Civil War Roundtable
Civil War Preservation Trust
Coalition for Smarter Growth
Gate Post Estates Home Owners Association
National Trust for Historic Preservation
Piedmont Environmental Council
Sudley Springs-Catharpin Civic Association

APPENDIXES, BIBLIOGRAPHY, PREPARERS, AND INDEX

APPENDIX A: DESCRIPTION OF RESOURCES

BRAWNER FARM

Near the western edge of the park, the Brawner Farm area witnessed the initial fighting in the Battle of Second Manassas. The most prominent landmark on the wartime landscape was the residence of tenant farmer John Brawner and his family. The present structure, which was likely built or added to after the Civil War, now occupies part of the site overlooking the Warrenton Turnpike (present day U.S. Route 29). The two-story structure is in good condition. None of the farmstead's ancillary structures remain, but archeological traces dot the grounds.

Across much of the farm, evidence of historic field patterns remains, with cedar rows denoting the location of fence lines. A mixed pine and hardwood forest covers most of the once-cleared fields in the eastern portion of the farm. The historic woodlot, known variously as Brawner Woods or Gibbon's Woods, nevertheless is a discernible hardwood stand in the southeastern corner of the farm adjacent to U.S. Route 29. The location of the wartime orchard, however, is unknown, although remnants of two later orchards exist northeast and east of the house. In addition to the unimproved driveway, a new access road off Pageland Lane provides access to the Brawner Farm. The access road leads to a loop parking area, and a pedestrian trail extends from the parking lot to the house.

In a valley west of the farmstead lie the headwaters of Youngs Branch. Beyond the stream the ground rises to a clear ridge, where Confederate artillery and infantry advanced during the August 28 battle in a successful effort to force the Federals to withdraw. Northeast of the farmstead, rising ground forms a spur of Stony Ridge that served as the position of S. D. Lee's Confederate artillery on August 30. Five Civil War-era cannon, spread across the ridge crest, mark the artillery battalion's position and serve as an interpretive aid. To the east, the postwar forest growth has reduced the clear field of fire to approximately 100 yards, entirely blocking key battlefield views toward the Deep Cut and Battery Heights. To the west, meanwhile, the open fields preserve the historic vista to the Bull Run Mountains, with Hopewell Gap clearly visible and Thoroughfare Gap somewhat obscured but still discernible. This view to the gaps provides an opportunity to interpret the Confederates' movement to the battlefield.

BULL RUN

Bull Run, the principal tributary of the Occoquan River, flows along the eastern edge of the battlefield. Its steep banks and bluffs formed a natural defensive barrier for Confederate forces early in the war. Physical evidence of the Confederate defensive line survives in the form of scattered earthworks along the bluffs overlooking Bull Run. These earthworks include a shallow lunette used as an artillery position by Heaton's section of Rodger's Loudoun Artillery and rifle pits near Lewis Ford occupied by the 19th Virginia and Schaeffer's Battalion. The rugged terrain of the valley channeled troop movements to established crossing points such as Poplar Ford, Lewis Ford, and Balls Ford. Traces of the fords remain and are accessible by trail. Other stream crossings in the Sudley and Stone Bridge areas are described below.

CHINN RIDGE

Southwest of the intersection of the Warrenton Turnpike and the Sudley-Manassas Road, Chinn Ridge was the scene of major fighting in both battles. In each battle, Confederate counterattacks made control of this ridge a key component of Southern success. The most important wartime feature on the ridge was the plantation residence of Benjamin T. Chinn. Known as Hazel Plain, the frame house stood two-and-a-half stories tall on a sandstone foundation at the crest of the ridge, where it overlooked the length of the ridge and the valley of Chinn Branch. Despite

its exposed position on the battlefield, the house survived the war, and eventually succumbed to the ravages of time and the elements in the 20th century. In 1950 the NPS razed the house, and only the foundation and chimney bases remain intact.

In addition to the house foundation, archeological traces of the numerous ancillary structures survive on the ridge and its southeastern slope. A 1983 archeological survey identified more than a dozen features associated with the plantation, mostly in the yard and fields east-southeast of the house site. Two notable features are down slope in the valley of Chinn Branch. About 200 yards east of the house site, the Hooe Family Cemetery is the burial ground of the family who built and owned Hazel Plain from 1809 to 1836. The headstones fell victim to vandalism in the 1950s and 60s, and none remain within the stone cemetery walls today. Meanwhile to the northeast across Chinn Branch, Chinn Spring is still evident, albeit somewhat overgrown.

Landscape patterns remain largely intact in the vicinity of the Chinn House site, with the grounds divided into unequal quarters and bordered by cedar rows marking historic fence lines. The southern grounds in particular display a high level of organization, with terraced lawns or gardens flanking the house on the west and east. Just north of the house site, the historic farm lane that bisects the grounds is now an asphalted park road giving access to VA Route 234 at the park's southern boundary. A nonhistoric park road intersects with the old road east of the house site and extends first northward along Chinn Branch and then eastward to a junction with VA Route 234. Traces of other historic roads remain in the woods west and southwest of the house site. Of particular note are the well-worn traces of Comptons Lane, which runs parallel to a modern park trail.

The only commemorative element on the Chinn Ridge landscape proper is a granite boulder bearing a bronze plaque honoring Col. Fletcher Webster, who fell leading the 12th Massachusetts at Second Manassas. The Webster Monument is about 400 yards north-northeast of the Chinn House site.

The crest of Chinn Ridge proper remains mostly clear and reflects its historic appearance, except for a postwar grove around the Webster Monument. The slopes of the ridge, however, bear considerable postwar forest growth that hinders interpretive efforts. To the west, an extensive forest covers the undulating slope of the ridge, obscuring the position of Kerns' Union battery and blocking the view of the New York monuments to the west. Recent forest growth in the Chinn Branch valley entirely obstructs the view of Henry Hill, while scattered woods on the northern extremity of the ridge conceal the historic Stone House intersection.

CUNDIFF

In the southwestern part of the park, the Cundiff plantation, Meadowville, was the scene of much activity during the Battle of Second Manassas. Its position on the Warrenton Turnpike opposite the Brawner Farm placed the property in the midst of the action on August 28, and Union forces occupied the area, using the house as a temporary hospital. Union and Confederate forces skirmished in the area the following day, and on August 30, Confederate forces positioned here launched a massive counterattack.

Today, only foundations mark the site of the Cundiff dwelling at Meadowville. The original house, part of which dated to the late 18th century, did not survive the war, and a later house built on the same site in the 1940s was razed prior to NPS acquisition. The archeological features of the domestic complex also include the remains of at least one outbuilding east of the house site. A driveway provides access to the house site and roughly follows the route of the historic Meadowville Lane. South of the house site, however, no visible trace remains of the wartime farm lane.

The central portion of the plantation landscape lay mostly in open fields, with

woodlots toward the periphery. However, modern forest growth covers much of the area today, blocking historic views from Stuart's Hill to the west, and covering much of the ground where Confederate forces deployed during Second Manassas. Evidence of historic field patterns exists in the form of remnant fence lines. Although a few of the extant fence lines may date to the war period, most are from the 1871 partition of Meadowville.

DOGAN RIDGE

Spreading northwest from the intersection of U.S. Route 29 and VA Route 234, the Dogan Ridge area was the scene of important action during both battles. During First Manassas, Union troops advancing onto the ridge threatened the Confederate line on neighboring Matthews Hill, and Northern artillerists shelled Southern positions on Henry Hill from the cleared crest of the main ridgeline. At Second Manassas, the property became a staging area for Union attacks against the Confederates' Unfinished Railroad position, while the high ground again served as a key artillery position.

Beginning at the Sudley-Manassas Road opposite Matthews Hill, Dogan Ridge extends southwestward as an extension of the Matthews ridgeline. The most prominent feature on the wartime landscape was the farmstead of John Dogan, on the southwestern portion of the ridge. Known as Rosefield, the Dogan House stood on the crest of the ridge overlooking the Warrenton Turnpike about 80 yards to the south. Built in the 1790s, the original house was one of several Carter family residences in the area until Dogan acquired the property in the 1840s. The antebellum dwelling burned during the Civil War; a new house, constructed in the 1880s, now stands on the approximate site and serves as a marker for the wartime structure.

No visible evidence exists of the farmstead's outbuildings, which lay west of the house, or of the wartime orchard to the southwest. The original farm lane does survive in part, extending as a driveway from the postwar house southeast to the Warrenton Turnpike, but the lane running northward to VA Route 234 is no longer extant. Both adjacent highways generally follow their wartime alignments, except for a section of VA Route 234 north of the main ridge. North of the ridge, the modern highway follows a new alignment immediately to the east of the well-defined bed of the original road.

Throughout much of the property, continued agricultural use has helped preserve historic vegetation patterns, with open fields predominating on the main Dogan Ridge and parallel ridgelines to the northwest. However, dense rows of cedar and scrub growth have sprung up along historic fence lines, effectively shutting off views to Henry Hill, Matthews Hill, and the Groveton area. In the northern and western areas of the Dogan farm, wood lines appear little changed from the war period. As in the 1860s, the woodlots on the periphery of the farm merge with the larger Groveton Woods that extended north and northeast along the Groveton-Sudley Road (now Featherbed Lane) and the Unfinished Railroad.

GROVETON

The tiny village of Groveton sat at the junction of the Warrenton Turnpike (now U.S. Route 29) with the Groveton-Sudley Road (now Featherbed Lane). Groveton witnessed key events during each day of fighting at Second Manassas and, in early accounts of the actions, even lent its name to the engagement. Historic maps and documentary evidence place the village proper on the northwest and southwest corners of the intersection, with a tavern, wheelwright shop, and blacksmith shop among the cluster of structures. Few traces of the crossroads community remain today, but recent structures evoke the historic setting.

The most important remnant of the Groveton area is the Lucinda Dogan House, at the northwest corner of the intersection. Part of the adjacent Dogan family plantation known as Peach Grove, the one-and-a-half story log building originally served as an overseer's

house. In 1860, the structure became the Dogans' primary residence after the main plantation house burned. Veterans of Second Manassas later became welcome guests in the Dogan home, and the family participated in dedication ceremonies for the nearby New York monuments in 1906. The Prince William County Chamber of Commerce purchased the house and its immediate grounds in 1947 and donated the property to the park in 1949. NPS completed rehabilitation of the building in 1961. The house is one of only three wartime buildings within the park boundaries.

Just west of the Lucinda Dogan House and outside the park boundary, a two-story frame structure may contain the historic Dogan tavern, which stood on the site in the 1860s. No other vestige of the historic Groveton village survives, although archeological remains may exist. The tavern structure and the rest of the northwest corner of the Groveton intersection fall within the Stonewall Memory Gardens, a privately owned 84-acre landscaped cemetery.

In addition, the cemetery property contains two other historic sites related to Groveton. The Peach Grove domestic complex stood on a knoll about 350 yards northwest of the village intersection. Although nothing remains of the house, and a modern cemetery office building now occupies the approximate site. The family burial ground survives nearby and is marked by a bronze tablet on a brick base. Meanwhile, the location of the wartime Groveton School House is not certain, but the structure may have stood about 400 yards north of the intersection, just within the northeast boundary of the cemetery property. Most of the remainder of the Peach Grove property falls within NPS boundaries and includes the Battery Heights area. Located on a ridge west of the modern cemetery, Battery Heights served as an important artillery position during Second Manassas. It was occupied by Federals on August 28 and by Confederates on August 30.

No trace of the historic village exists south of the Warrenton Turnpike, although several structures stood in the southwest corner of the intersection. To the south and facing the wartime Lewis Lane (now Groveton Road) is a two-story stone dwelling dating to 1918. Originally built as a school, the structure later underwent remodeling as a residence and now serves as housing for park staff.

Several notable commemorative features lie east of the Groveton crossroads. About 275 yards east of the Lucinda Dogan House, the Groveton Confederate Cemetery occupies a landscaped knoll overlooking Dogan Branch. Established in the late 1860s, the cemetery contains the remains of at least 266 Confederate soldiers who fell in the Manassas battles. Of these burials, only two are fully identified by headstones. The cemetery also contains a stone obelisk erected in 1904 to honor the fallen Confederates. Thirteen stone markers encircle the monument, each bearing the name of a Confederate or border state. Other early 20th century improvements include a wrought iron perimeter fence and gate, dating to 1901, and a sidewalk constructed the same year as the obelisk.

Across the Warrenton Turnpike on an extension of the cemetery ridge is the 14th Brooklyn Monument. Erected by the State of New York in 1906, the granite monument with bronze seal and plaque honors the 14th Brooklyn at the regiment's position at Second Manassas. This monument is surrounded by an iron enclosure. On the crest of a nearby ridge are granite monuments bearing bronze seals and plaques in honor of the 5th and 10th New York Infantry. Both regiments were overwhelmed in the Confederates' August 30 assault. Iron enclosures also surround these New York Monuments, and an iron gate stands at the entrance to the access road off the Warrenton Turnpike. Because of the widening of the access road, known as New York Avenue, the iron gate is no longer functional. Across the highway, a later monument stands at the western end of the cemetery parking lot. Consisting of a bronze plaque on a sandstone base, the 1928 Groveton Monument commemorates the Second Manassas or Groveton battle. Two other monuments on the

Dogans' Peach Grove property are described in the section on the Unfinished Railroad.

The 1860s road network appears largely intact, with U.S. Route 29, Featherbed Lane, and Groveton Road mostly corresponding to their wartime alignments. The lone exception is a short stretch of U.S. Route 29 east of the Groveton Confederate Cemetery, where a narrow trace and stone abutments mark the old crossing of Dogan's Branch immediately upstream from the modern highway. The roads, while generally on their old beds, are not at the 1860s grade, as the state cut into the historic grade to minimize the undulations of the road surface. Despite the improvements, the modern roads have the appearance of rural byways and lend much to the historic scene at Groveton.

The landscape of the Groveton area still possesses much of its open character, with open fields predominating east of the crossroads and also at Battery Heights to the west of the Stonewall Memory Gardens. Within the modern cemetery, however, the battlefield landscape has undergone noticeable change, including the addition of modern structures, a road network, and a pond. More importantly, modern forest growth covers the northern portions of the cemetery tract that the Dogans maintained as pastures in the 1860s. Although outside NPS boundaries, this forest encroachment markedly hinders interpretation of Second Manassas, entirely obstructing views of the Deep Cut attack zone from Groveton and Battery Heights and contributing to the forest obstacles blocking the historic vista from the Brawner Farm. Much of this area was clear as recently as the 1940s.

HENRY HILL

Situated southeast of the intersection of the Warrenton Turnpike and the Sudley-Manassas Road, Henry Hill served as the stage for some of the most dramatic events of both battles of Manassas. Confederate forces turned the tide of battle here at First Manassas, and at Second Manassas, Federal defenders made a tenacious stand that allowed the Union army to withdraw safely from the field. The area of Henry Hill comprises portions of the historic Henry and Robinson farms, and although neither wartime dwelling survives, the remains of these farmsteads serve as important battlefield landmarks today. The hill also is presently the site of the park's visitor center.

The Henry farmstead, known also as Spring Hill, saw the heaviest fighting at First Manassas and suffered accordingly. Artillery fire during the battle left the owner, Judith Carter Henry, dead and her house severely battered. Confederate troops scavenging for wood later dismantled the structure, leaving only part of the chimney standing by the time of Second Manassas. Toward the close of the second battle, Union troops formed a defensive line on the western slopes of the hill and within the roadbed of the Sudley-Manassas Road to the west of the house site. VA Route 234 here generally follows its wartime alignment within a steep-banked roadbed. An abandoned stretch of the original roadbed extends southward from the wood line south of the visitor center driveway to the park boundary.

A two-story frame house, built by the Henry family in 1870 and later enlarged, now occupies the site of the original one-and-a-half story residence. A postwar frame shed of undetermined age stands immediately to the north of the house. The Henry House has been rehabilitated, and the shed has been converted into public restrooms. To the west of the house, an iron enclosure surrounds the family burial plot, which includes the marked graves of Mrs. Henry and two of her adult children who died after the war. The gravestones, although weathered, remain in fair and legible condition.

A gated and partly graveled driveway, presumably on the bed of the original farm lane, provides access to the farmstead from the Sudley-Manassas Road. Traces of the farm lane also appear in the fields northeast and east of the house, extending into the woods on the southeastern part of the farm. Within the woods the deeply worn farm trace survives as

part of a hiking trail. This trace figured prominently in First Manassas as the route that Jackson's Virginians—and many Confederate reinforcements—followed into battle on Henry Hill. The trace terminates at its intersection with an historic farm road now known as Rock Road. This latter road, also part of the Confederate march route, generally follows a north-south alignment, running from U.S. Route 29 to Vandor Lane (postwar) and skirting past the eastern slopes of Henry Hill. Surfaced with gravel in the 20th century, Rock Road is currently a component of the park's hiking trail system.

Northeast of the Henry farm lay the remains of the Robinson farmstead, the scene of important fighting during the first battle and a victim of looting during the second battle. The original one-and-a-half story frame house, the residence of freedman James Robinson, survived the war intact. The Robinson family, however, constructed additions onto their wartime home in the 1870s and 80s and later razed the original part of the house to allow the construction of a new addition in 1926. The completed two-story house stood until the structure was destroyed by arson in 1993. NPS dismantled the ruined building and a modern shed the following year. The red sandstone foundation of the 1871/1926 house comprises the only visible remains. The original farm lane still serves as the driveway onto the property, providing access from U.S. Route 29 north of the site. Both the fence-lined drive and the worn roadbed of the turnpike served as Confederate defensive positions during First Manassas.

After the battles, the Henry Hill area became the focus for commemorative activities, as veterans and their descendants erected memorials and markers on the battlefield. The earliest monument was an 1861 shaft honoring Confederate Col. Francis Bartow, who was killed at First Manassas. Remains of this monument (perhaps the earliest Civil War monument anywhere) and an intact 1936 granite monument with a bronze plaque also in his honor are in the hollow southeast of the Henry House, presumably at the spot where he fell. Just east of the Henry House stands an 1865 brownstone obelisk erected by Union soldiers to honor their fallen comrades at First Manassas. Veterans of the 7th Georgia Infantry later marked their regiment's positions in the 1861 battle with numerous stones, two of which survive on Henry Hill. One marker is south of the Henry House, and the other is positioned in a clearing 600 yards to the east. Members of the United Daughters of the Confederacy erected a granite monument in 1939 to mark the area of Brig. Gen. Barnard Bee's mortal wounding in the first battle, and the Commonwealth of Virginia commissioned an equestrian statue of Brig. Gen. (later Lt. Gen.) Thomas J. "Stonewall" Jackson to commemorate his stand on Henry Hill in 1861. The 1940 Jackson statue and the nearby Bee monument are on the crest of the hill roughly 200 yards southeast of the Henry House. All of the surviving, intact monuments are in fair to good condition.

The visitor center, erected in 1942 and later enlarged, stands on the hill about 200 yards south of the Henry House and serves as the center of interpretive activity in the park. Despite the presence of the modern visitor center, the landscape retains much of its historic character, with the configuration of field and forest generally corresponding to the hill's wartime appearance. The placement of artillery pieces along Jackson's line and at Ricketts and Griffin's battery positions enhances the hill's evocative power. The open plateau where the heaviest fighting occurred in the first battle affords commanding vistas of much of the 1861 battlefield, with Van Pelt Hill to the northeast and Matthews Hill to the north in clear view and the Bull Run Mountains (with Hopewell Gap) visible in the distance to the north-northwest. Modern forest growth to the west and northwest, however, now largely obscures views of neighboring Chinn Ridge and Dogan Ridge. These important battlefield areas were visible from Henry Hill as recently as the 1950s.

LEWIS

Southwest of Groveton, the Lewis plantation, Brownsville, saw significant action during the Battle of Second Manassas. Caught between the main lines of the contending armies, the property witnessed considerable skirmishing on August 29-30. Union artillery unlimbered on the high ground near the Lewis House on August 29, and during much of the battle Union skirmishers maintained positions along Lewis Lane (now Groveton Road). On the 30th, Confederate forces under Maj. Gen. James Longstreet swept over the plantation in a massive assault on Union positions to the east.

The ruins of the Lewis family's domestic complex form the most important historic feature left on the landscape. Despite the military activity, the Lewis House—known as Brownsville or Folly Castle—survived the Civil War but was destroyed by fire in 1900. Later dwellings erected in the early 1900s and in 1940 used the foundations and building materials of the earlier house.

The foundations of the 1940 house and its predecessors occupy a knoll south of Youngs Branch and west of the junction of Lewis Lane and modern-day Pageland Lane. Archeological evidence of other structures remains in the yard to the north of the house site, while a cemetery and spring lie to the northeast. South of the house site, the extant driveway generally follows the path of the original farm lane sometimes referred to as Lewis Lane.

The 1940 dwelling survived until its demolition as part of the William Center project in 1988. Before being aborted in 1988, the William Center project erased many important landscape features, impacting approximately 100 acres. The William Center development obliterated much of Lewis Lane, as well as large portions of the tract north of Youngs Branch. Most notable among the alterations was the partial destruction of the central ridge that helped conceal Confederate positions in the western part of the tract. The William Center project re-configured the drainage network, added roads, altered surrounding hydrology and filled in wetland areas.

Between June and November 2003, a partnership between the park and the Smithsonian Institution rehabilitated the area disturbed by the William Center project. This partnership was aided by the presence of unusually detailed topographic and hydrologic maps of the area—produced only a decade after the battles. With this information in hand, the Lewis area was re-graded to its 1862 contours. Approximately 45 acres of wetlands were restored and upland areas were planted in native warm season grasses, creating a habitat type that is rapidly dwindling in Virginia. The area now bears much resemblance to its wartime appearance –the re-grading and re-positioning of this section of the park is now considered to be within one meter of the contours present during the Battle of Second Manassas.

MATTHEWS HILL

Located one mile north of Henry Hill on the Sudley-Manassas Road, the Matthews Hill area was the stage of important action in both battles, particularly First Manassas. On Matthews hill the Union turning column first encountered Confederate resistance in the first battle, while in both battles Confederate troops pursued retreating Federals through the area.

The partially cleared landscape recalls the site's wartime appearance, with sweeping vistas to the west toward Dogan Ridge and to the south toward the Henry Hill engagement area. A line of cannon on the crest indicates a Union battery position during First Manassas and aids in telling the battle story. South along the vista a draw separates the main hill from Buck Hill, which forms the lower shoulder of the ridge. The latter hill served as a Confederate artillery position in First Manassas and as the site of Major General John Pope's headquarters during Second Manassas. The cleared summit of Buck Hill affords a panoramic view of much of the battlefield, encompassing Henry Hill, Matthews Hill, Van Pelt Hill, and Dogan

Ridge, as well as portions of Chinn Ridge now draped in modern forest.

East of the Matthews Hill vista, 20th century forest growth shrouds the landscape, covering fully one-half of the engagement area on the crest and the site of the Matthews' farmstead. A key landmark on the wartime landscape, the one-and-a-half story Martin Matthew House survived the war but fell into ruin during the early 1900s. Only foundations remain from the house, while depressions and scattered traces mark the location of outbuildings. The entire site now lies in a thick pine woods. A horse trail skirts the area, posing a potential impact to the archeological features of the site.

Near the Matthews site, the stone Stovall Marker constitutes the only commemorative feature in the area. Erected in the late 19th century, the marble marker originally indicated the site where Georgia soldier George T. Stovall fell during the first battle. Only partially intact, the marker has since been moved and only approximates the site today.

PITTSYLVANIA

The Carter plantation, Pittsylvania, occupies the northeastern corner of the park, and was the scene of important troop movements during both battles. Confederate forces briefly took up positions here in marching from the Stone Bridge to Matthews Hill during First Manassas, and Union troops later maneuvered and retreated over the area. At the close of Second Manassas, Union forces withdrew through the property again and left destruction in their wake.

The most prominent wartime element of the landscape is the Carter family's domestic complex. Built in the 1760s, the family's residence at Pittsylvania formed the nucleus of their once-extensive holdings in the area. The plantation, however, fell into decline before the war, and Union troops burned the house following Second Manassas, leaving only the ruined foundation to mark the site. Around the house ruins, remnants of other structures litter the area, including the foundation of a postwar house known as Pittsylvania II. Built in the late 19th century, the later house occupied the yard south of the original house site until its demolition in 1970.

Beyond a formal lawn area, still evident to the south of the house site, sits the Carter family cemetery. Partially surrounded by a late 19th century dry-laid stone wall, the cemetery contains an unknown number of graves, some of which are marked by fieldstones. Another burial ground, for the Carter slaves, lay unmarked a short distance to the northwest, where shallow depressions indicate grave sites. South of Pittsylvania, the Maggie Lewis House occupied low ground near Youngs Branch, but no visible trace exists of the wartime dwelling of this African American woman.

The Pittsylvania area today bears little resemblance to its historic appearance, as successional forests have reclaimed much of the clear ground, including the site of the Carter house. The modern forest blocks significant views to Matthews Hill to the west and to Poplar Ford on Bull Run to the northeast. Other alterations include postwar farmsteads in the cleared areas northeast and southeast of the Carter house site. Nevertheless, some historic field patterns and portions of the farm road network remain evident. A postwar farm lane extends northward from U.S. Route 29 and, northeast of the house site, approximates the route of the road to Poplar Ford. Elsewhere, park trails partly follow routes analogous to period farm lanes linking Pittsylvania to Van Pelt Hill and Farm Ford to the east and to VA Route 234 to the west.

PORTICI

Occupying the southeastern corner of the park, Portici was the wartime plantation of the Francis W. Lewis family and the setting for important activity in both battles. Here, Confederate Gen. Joseph E. Johnston set up his battlefield command post at the height of the first battle, while at the close of the second battle, Union and Confederate cavalry clashed on the property in a brief but violent exchange.

The most notable feature on wartime landscape was the Lewis residence, Portici, which stood on a ridge overlooking the Old Warrenton, Alexandria, and Washington Road (now Balls Ford Road) and the valley of Bull Run. A full English cellar and a pair of massive brick chimneys were among the distinctive features of the 1820 plantation manor. The house survived the Battle of First Manassas, when it served as Johnston's headquarters and as a field hospital, but was destroyed by fire sometime following the second battle (the date of its destruction is uncertain). An archeological investigation of the property during the late 1980s uncovered the ruins of the domestic complex, including the debris-filled remains of the cellar, but only scattered bricks and a lone wayside mark the site of Portici today.

Scattered across the property are the remains of other dwelling sites related to the extended Lewis family, none of which were standing during the Civil War. Among the notable archeological features are the remains of Pohoke, which had been the seat of the plantation prior to the construction of Portici. The earlier house stood on a ridge north of the site of Portici, but no visible trace survives above ground. Several post-Civil War house sites dot the landscape, including Portici II and Portici III, both family dwellings that successively occupied the same site on a low ridge southeast of Portici. Portici III, also known as the F. Lewis/Wheeler House, stood on that site until the NPS removed the dilapidated structure to restore the setting of the 1862 cavalry engagement.

Other Lewis family sites include the Ball Family Cemetery, which lies on a hill near the site of Pohoke and contains the remains of the Lewis' forebears. Five pairs of head- and footstones and several fieldstone markers designate the known burial sites. A stone wall, reconstructed in the 1930s, serves to protect the remaining grave markers, but the cemetery may extend beyond the walled area.

Among the notable military features on the property are the remnants of camp huts and structures built and occupied by Confederate troops in the winter of 1861-62. Federal soldiers briefly occupied the camp after the Confederates abandoned the site in March 1862. On a wooded hill west of Portici, the Confederate winter campsite straddles the park boundary and is the only known wartime campsite within the park. In recent years the site has suffered from relic hunting activity as well as the effects of the development of the adjacent Battlefield Business Park.

The gently rolling landscape lies mostly in open fields, reflecting its two centuries of agricultural use. The high ground at the Portici house site still offers expansive views of the countryside to the south, now cluttered with suburban sprawl. Nevertheless, the open vista at Portici provides the only opportunity to interpret the Confederates' movement from the Manassas Junction area during First Manassas. To the east, however, a thick belt of woods along Bull Run blocks the historic view of the Federals' approach on the Warrenton Turnpike. These woods also screen from sight a large quarry operation. Along the western boundary of the property, a thin body of woods covers the site of the Confederate winter camp and helps to conceal part of the neighboring business park.

From VA Route 234, the modern Battleview Parkway extends through the business park to Vandor Lane (also postwar) on the park's southern boundary and provides vehicular access to the Portici area. Just south of the park boundary, Interstate 66 cuts a wide swath across the historic landscape, partially severing the plantation's historic connection to the Old Warrenton, Alexandria and Washington Road (modern-day balls Ford Road) and slicing through part of the area of the 1862 cavalry engagement. An abandoned stretch of the historic road survives in the southeastern portion of the property and extends to Balls Ford on Bull Run.

In the western portion of the tract, an historic farm road, now known as Rock Road, continues in use as a fire road and park trail. During First Manassas, Confederates advanced

to the Henry Hill area along this route, and Confederate President Jefferson Davis rode forward to Holkums Branch and encountered Stonewall Jackson after the fighting.

STONE BRIDGE

Marking the eastern entry to the park, the Stone Bridge area was the site of the opening shots of First Manassas and the primary route of retreat for Federals at Second Manassas. Originally constructed as part of the Warrenton Turnpike in the 1820s, the Stone Bridge was the primary wagon crossing over Bull Run. Although the bridge survived the fighting in 1861, the span lay in ruins by the time of Second Manassas: Confederates destroyed the bridge during their withdrawal from Bull Run in March 1862. Subsequently, a wooden bridge employed the old stone abutments, and a new stone bridge was constructed on the site in the 1880s.

Today the reconstructed Stone Bridge remains one of the park's most recognized features. Repointed and extensively repaired in 1990, the bridge is generally in good condition. Traces of the Warrenton Turnpike also survive at the approaches to the bridge. On the eastern approach to the bridge, the trace remains as a grass trail maintained for handicapped access, while to the west, a gravel pedestrian trail occupies the old roadbed that covers part of the historic road. The trace resumes west of the parking lot and is interrupted by the berm containing modern U.S. Route 29. Periodic flooding from Bull Run impacts portions of the trace west of the bridge. Upstream from the Stone Bridge was the site of Farm Ford, an important crossing point for Federals during First Manassas. The ford has fallen into disuse since the war and a site marker points to its general location along the hiking trail north of the bridge.

Notable terrain features in the area include Bull Run, which loops through the area, the steep bluffs along the stream's eastern (Fairfax County) bank, and a broad floodplain extending west from the bridge to Van Pelt Hill. Historically, the slope of Van Pelt Hill as well as much of the floodplain lay bare: Confederates felled the trees to allow for clear fields of fire for artillery. Forest growth has since reclaimed the clear-cut area, obscuring the view of the bridge and its approaches.

STONE HOUSE

One of only three rehabilitated wartime buildings within the park, the Stone House, is also one of the park's most recognized landmarks. Its location at the junction of the Warrenton Turnpike and the Sudley-Manassas Road helped determine its use. Built in the second quarter of the 19th century, the two-and-a-half story building has served variously as a tavern, post office, and residence. During the Civil War, the house sheltered Union wounded in both Manassas engagements and graffiti in an upstairs room provides graphic evidence of its occupation. Acquired in 1949 and rehabilitated in the 1960s, the Stone House has become a key interpretive site.

The surrounding landscape aids the interpretation of the site. The well in the front yard dates to the war and is the only other period feature on the grounds. To the north the abrupt slope of Buck Hill rises to the site of Pope's headquarters during Second Manassas. At the foot of Buck Hill, a 1928 bronze tablet memorializing First Manassas forms the only commemorative feature on the landscape. Meanwhile to the south and across the Warrenton Turnpike, Youngs Branch threads its way through a floodplain past the foot of Henry Hill.

Modern U.S. Route 29 and VA Route 234 occupy the roadbeds of the wartime Warrenton Turnpike and the Sudley-Manassas Road, respectively, which meet just west of the house at a historically significant intersection. South of the junction, VA Route 234 continues for a short distance on a new alignment, but the bed of the old road is discernible at Youngs Branch. Despite asphalt surfaces and the presence of a traffic signal, the two roads retain their rural character, and the intersection evokes the appearance of a country crossroads, allowing the public to appreciate the historic

setting with minimal intrusions. Heavy through traffic does compromise the visitor experience here, forming the gravest threat to the historic scene at the Stone House. Modern improvements to the intersection include the following:

- Installation of mast-arm mountings for traffic signals
- Addition of left turn lanes to all four legs of the intersection;
- Relocation of the parking lot to the East side of Stone House
- Burying of utility lines
- Alteration of the grade of VA Route 234 going up Buck Hill
- Addition of curbs and drains
- Addition of a pedestrian bridge over Young's Branch
- Addition of pedestrian crosswalks across U.S. Route 29

STUART'S HILL

Located in the southwestern corner of the park, Stuart's Hill was the site of Gen. Robert E. Lee's headquarters during the Battle of Second Manassas. With its summit and eastern slopes cleared, the hill, among the highest points on the battlefield, allowed the Confederate commander to observe troop movements as well as maintain communications with his wing commanders from a signal station near the crest. Today, successional forest growth obscures the sweeping vistas of the 1860s, hindering the park's efforts to interpret the site's historic importance. A narrow corridor on the northeast slope of the hill provides a vista to the neighboring Brawner Farm. Otherwise, dense woods cover the hill's eastern slopes.

At the time of the war, the nearby Cundiff plantation, Meadowville, encompassed much of Stuart's Hill, including the area of Lee's headquarters. Although most development associated with the plantation lay east of the hill, wartime accounts describe the ruins of a structure on the crest. No visible trace remains of this building, but stone piles on the slopes of the hill mark the borders of wartime fields. Other remnant fence lines on the property date to the 1871 partition of the plantation.

To the west, modern development has disturbed the historic setting, but a thin body of forest helps screen the intrusions from view of the crest. A modern park headquarters and interpretive facility now occupies the western slope, and a nonhistoric gravel drive provides vehicular access to the site. At the foot of the western slope lie a string of ponds where Union Brig. Gen. Rufus King and some of his men paused to rest before the Brawner Farm engagement on August 28. Although the ponds are of recent origin, they occupy the area of a pool of water where King and others found refreshment. To the northwest is the key intersection of the Warrenton Turnpike and Pageland Lane, both important corridors of military movement during the battle. The gravel-surfaced Pageland Lane retains the feel of a country byway, but the Warrenton Turnpike at this junction is now the modern four-lane divided U.S. Route 29.

SUDLEY

Situated at the confluence of Catharpin Run and Bull Run, the wartime community of Sudley was the scene of major events in each battle. The village lay along the route of Federal advance and retreat at First Manassas, and major action occurred in the area during Second Manassas, when the community marked the left flank of the Confederate line. Although little remains the war period, the extant structures and archeological sites provide a sense of the 1860s landscape.

Adjacent to the park boundary on the Sudley-Manassas Road, Sudley Church remains a focal point for the community. Founded in the early 19th century to serve the area's growing Methodist population, Sudley Church later became a temporary hospital for Union wounded at First Manassas. Although the present structure bears no resemblance to the wartime building, the 1920s edifice occupies

the same site and serves as a key battlefield landmark today. The church's cemetery lies immediately to the south and contains the graves of numerous residents associated with the park story. The recent expansion of the cemetery, however, occupies land acquired from the park in the 1980s and may impact the historic appearance of the setting.

Across VA Route 234 to the northeast and on park lands, the building known as the Thornberry House lies atop a knoll overlooking the stream confluence. According to historic maps and documentary evidence, several structures occupied the property during the battles and served as overflow shelter for the Union wounded at Sudley Church. Recent research suggests that the south block of the present day one-and-a-half story building was constructed prior to the Civil War. The north block and lean-to shed were added later, although their date is uncertain. Portions of the building housed local post office operations at the turn of the century. NPS has completed rehabilitation of the Thornberry House to permit future public access to the building's interior. The structure is one of only three wartime buildings within the park.

Archeological features mark the location of other structures and features that comprised the wartime village. North of Thornberry House, on privately owned land across Catharpin Run, a stone pile marks the site of the historic spring house that adjoined Sudley Springs Ford. Union troops passed this feature on their march onto the battlefield at First Manassas. South of the Thornberry House, the ruins of the Amos Benson House lie adjacent to a pronounced cut of the Unfinished Railroad. The Bensons, parishioners of Sudley Church, helped tend to Union wounded at First Manassas, and their home, known as Christian Hill, became a battlefield landmark. After Benson and his wife died, the house fell into ruin early in the 20th century. Across the railroad cut from the Benson site, numerous disinterred soldiers' graves dot the ground.

Outside the park, remnants of the historic Sudley Mill complex and its adjacent millrace lie north of Catharpin Run upstream from the modern crossing of VA Route 234. Few other traces remain on park land. No visible ruins survive from several nondescript structures that lay across the Sudley-Manassas Road from the church. These structures may have been moved to form the present Thornberry House. One farmstead, identified as the Cushing Farm, lay south of the church in the area of the cemetery expansion, but nothing remains above ground from the farmstead. Farther south beyond the Unfinished Railroad, foundations and depressions mark the site of a 19th century farmstead. Traditionally identified as the wartime house site of Mahala Dean, a free African American, the features may date to a postwar farm.

Evidence of the wartime transportation network in the Sudley area abounds despite some 20th century alterations. Modern VA Route 234 occupies much of the roadbed of the historic Sudley-Manassas Road south of the church. To the north, however, the highway follows a new alignment slightly west of the wartime road, and the historic route continues onto park land as a well-defined trace. The trace terminates at Sudley Springs Ford on Catharpin Run. Beyond the stream the road continued north to Sudley Ford, where the Union turning column crossed Bull Run at First Manassas. The site of Sudley Ford, on private land, falls partly within the Cedar Crest Country Club.

Approaching from the west, the route of the historic Groveton-Sudley Road (now Featherbed Lane) also follows a new course through the Sudley area and intersects the Sudley-Manassas Road just north of the church. An abandoned stretch of the wartime road continues as a trace running northward to the site of the Sudley Mill complex. Meanwhile to the south, the cuts and fills of the Unfinished Railroad slice through the Sudley area and now form part of the park's trail system. (This feature is described in more detail below.)

The landscape in the Sudley area is somewhat more wooded today than in the 1860s. Across the Sudley-Manassas Road from the church, woods now blanket the former Benson property. To the southwest, forest growth covers a rocky knoll that South Carolina troops held during Second Manassas.

UNFINISHED RAILROAD

Extending across the northwestern portion of the battlefield, the Unfinished Railroad saw some of the heaviest fighting of the Battle of Second Manassas. Dubbed the Independent Line of the Manassas Gap Railroad, the line lay incomplete at the outset of war, with only the graded rail bed in place. The cuts and fills of the rail bed served as a defensive position for Stonewall Jackson's Confederates during the battle and a focus of Union assaults. Today the graded bed of the Unfinished Railroad remains intact along its two-mile course through the park. In addition to the cuts and fills of the roadbed, an abandoned quarry lies adjacent to the railroad just east of Pageland Lane on the park's western border. Remnants of stone piers for a planned trestle over Bull Run also survive at the park's eastern border, where the railroad crosses into a private golf course.

Along most of the railroad's path through the battlefield, park trails run over and along the rail bed, causing soil compaction and erosion in numerous places. In some areas, trail construction has altered the appearance of the resource to accommodate pedestrian use. Still, the most notable change to the historic setting is in the ground cover. Successional forests have replaced open fields, particularly west of Featherbed Lane, which bisects the rail bed. Postwar forest growth in this area almost entirely obscures the key terrain where the Union attack on the railroad's Deep Cut occurred, completely blocking historic views from the Brawner Farm area. The recent vista at the Deep Cut is far too narrow to convey the historic appearance of this important landscape. East of Featherbed Lane the terrain generally retains its wooded character, with the wartime Groveton Woods covering much of the area of the railroad just east of the road. Farther to the east, however, woods now cover the rocky knoll near Sudley, where Maxcy Gregg's South Carolinians received heavy attacks on August 29.

Two commemorative features serve to highlight the fierce fighting in the Deep Cut area. Erected by Union troops in 1865, the Groveton Monument (also known as the Deep Cut Monument) sits adjacent to the Deep Cut and overlooks the slopes where Union troops struggled to advance. At the foot of the slope next to Schoolhouse Branch, the Cedar Pole Marker indicates the position of Berdan's Sharpshooters along the stream during the attack on the Confederates' Deep Cut position. The extant pole and sign are replacements for the postwar marker, originally installed by a Union veteran. Nearby, shallow depressions indicate the location of disinterred soldiers' graves from the battle. Other disinterred burial sites lay near the Unfinished Railroad in the Sudley area and north of the Brawner Farm.

VAN PELT

Overlooking the Stone Bridge and Bull Run, Van Pelt Hill was a strategic location during the Battle of First Manassas. Confederate forces deployed here to guard the stream crossing and maintained a signal station on the hilltop to communicate with their army's far-flung positions. Southern artillerists also unlimbered here to discourage Federals from advancing over the nearby bridge and cleared the hillside facing Bull Run to permit a clear field of fire.

The most prominent wartime feature was the farmstead of Abraham Van Pelt. Built in the 1850s, the Van Pelt House stood on the crest and withstood Union shelling in 1861. The house was destroyed by fire in 1932, and only depressions remain to mark the location. The remains include the backfilled site of the house and several ancillary structures. The trace of the wartime farm lane survives just west of the house site and extends south to the traces of the original Warrenton Turnpike. These traces survive south of U.S. Route 29, which cuts through the southern portion of Van Pelt Hill.

West of the hill, near Youngs Branch, the historic roadbed and the modern highway merge. An historic farm lane, now known as Rock Road, intersects the Warrenton Turnpike south of the farmstead and forms part of the park's trail system.

The Van Pelt landscape retains much of its open appearance. To the east, however, forest growth covers the slopes of the hill facing Bull Run. The vegetation blocks historic views of the stream and the nearby Stone Bridge and somewhat hinders interpretive efforts in this area.

APPENDIX B: DESCRIPTION OF BATTLE EVENTS

FIRST MANASSAS—JULY 21, 1861

Maps A-1 and A-2 depict the events of the Battle of First Manassas.

Confederate Headquarters and Defense of Bull Run

Confederate forces establish defensive positions along Bull Run protecting the strategic rail center of Manassas Junction and await approach of Union Army under Brig. Gen. Irvin McDowell. North of Lewis Ford, Southern defenders throw up rifle pits and gun emplacements along the stream. Confederate Gen. Joseph E. Johnston moves his headquarters to Portici at midday as the battle develops on the Confederate left.

Confederate Defense of Bull Run

Union forces advance along the Warrenton Turnpike and demonstrate at Stone Bridge, while a turning column marches north toward Sudley Ford. Union artillery direct initial shots at the Van Pelt House.

Confederate defenders under Col. Nathan Evans learn of Union turning movement and shift from Van Pelt Hill to vicinity of Pittsylvania to guard possible crossing at Poplar Ford before marching toward Matthews Hill to check Union advance. Union Col. William T. Sherman locates crossing at Farm Ford at mid-morning and directs his troops to ford Bull Run.

Union Advance and Retreat

Union turning column crosses Bull Run at Sudley Ford and begins to march south along Sudley Road, crossing Catharpin Run at Sudley Springs Ford en route. Union wounded later find shelter and treatment at temporary hospital at Sudley Church; neighboring structures (now comprising Thornberry House) provide overflow shelter. Union forces withdraw across Sudley Ford (as well as other crossing points) at close of battle.

Initial Fighting

Fighting erupts as Union turning column marches south on Sudley Road and encounters Evans' Confederates at Matthews Hill. The battle swells as Union troops spill onto Dogan Ridge and Confederate reinforcements arrive from Henry Hill.

Southern resistance collapses as Confederates retreat from positions on Matthews Hill and Buck Hill to Henry Hill. Union troops pursue to the vicinity of the Stone House, but a lull in the fighting gives the Confederates reprieve.

Core Fighting

Confederate reinforcements arrive on Henry Hill at midday, and Southern resistance coalesces on the line of Brig. Gen. Thomas J. Jackson's Virginians. Sporadic fighting continues near the Robinson House and on the northern area of Henry Hill while Union forces ready for a renewal of their advance.

Union forces resume their offensive as Federal batteries advance to Henry Hill and take positions around the Henry House. Artillery duel leads to stalemated battle, and Union Capt. Charles Griffin seeks the advantage by moving two of his guns toward Jackson's left flank. Confederate infantry seizes Griffin's two exposed guns, launching a struggle for the Union batteries and the control of Henry Hill. With reinforcements steadily arriving, the Confederates gain possession of Henry Hill.

Final Union Advance

In an effort to turn the Confederate position on Henry Hill, O. O. Howard's Union brigade advances to Chinn Ridge.

Along a line extending from Sudley Road to the Chinn House, Confederate forces sweep across Chinn Ridge and drive off Howard's brigade, leading to a general Union withdrawal from the field.

SECOND MANASSAS, AUGUST 28 -30, 1862

Maps A-3 and A-4 depict the events of the Battle of First Manassas.

Initial Fighting

Confederate forces under Maj. Gen. Thomas J. Stonewall Jackson find concealment on wooded slopes of Stony Ridge and observe Union movements across their front on August 28.

An isolated Union division under Brig. Gen. Rufus King marches first north on Pageland Lane, then east onto the Warrenton Turnpike, headed for Centreville.

Jackson's Confederates fire on King's column at the Brawner Farm and draw the Federals into battle.

Advancing first through the Brawner Woods (or Gibbon's Woods), King's infantry encounters Jackson's troops in the fields east of the Brawner House in a battle that lasts until dusk.

The combat intensifies as the battle lines spread onto the neighboring Lucinda Dogan Farm; at dark, King's Federals withdraw from the contested field.

Union Attacks

Union forces probe the slopes of Stony Ridge on August 29 and locate Jackson's Confederates aligned along the cuts and fills of the Unfinished Railroad.

In a series of piecemeal attacks on the Unfinished Railroad, Union troops pierce the Confederates' front but fail to dislodge the defenders from their strong position.

At dusk, Union troops probe westward on the Warrenton Turnpike and clash with a Confederate force advancing east of Groveton.

Union attacks resume on August 30, culminating in a major assault on Jackson's line at the Deep Cut of the Unfinished Railroad.

With the help of Confederate artillery near the Brawner Farm, Jackson's infantry repulses the Union assault at the Deep Cut.

CONFEDERATE HEADQUARTERS AND STAGING AREA

Gen. Robert E. Lee arrives on the battlefield during the late morning of August 29 and set up his headquarters on Stuart's Hill.

Maj. Gen. James Longstreet's Confederate forces deploy across the Cundiff and W. Lewis farms (Meadowville and Brownsville, respectively) and await orders.

Lee and Longstreet unleash a massive counterattack late in the day on August 30, as the Union assault on the Deep Cut collapses.

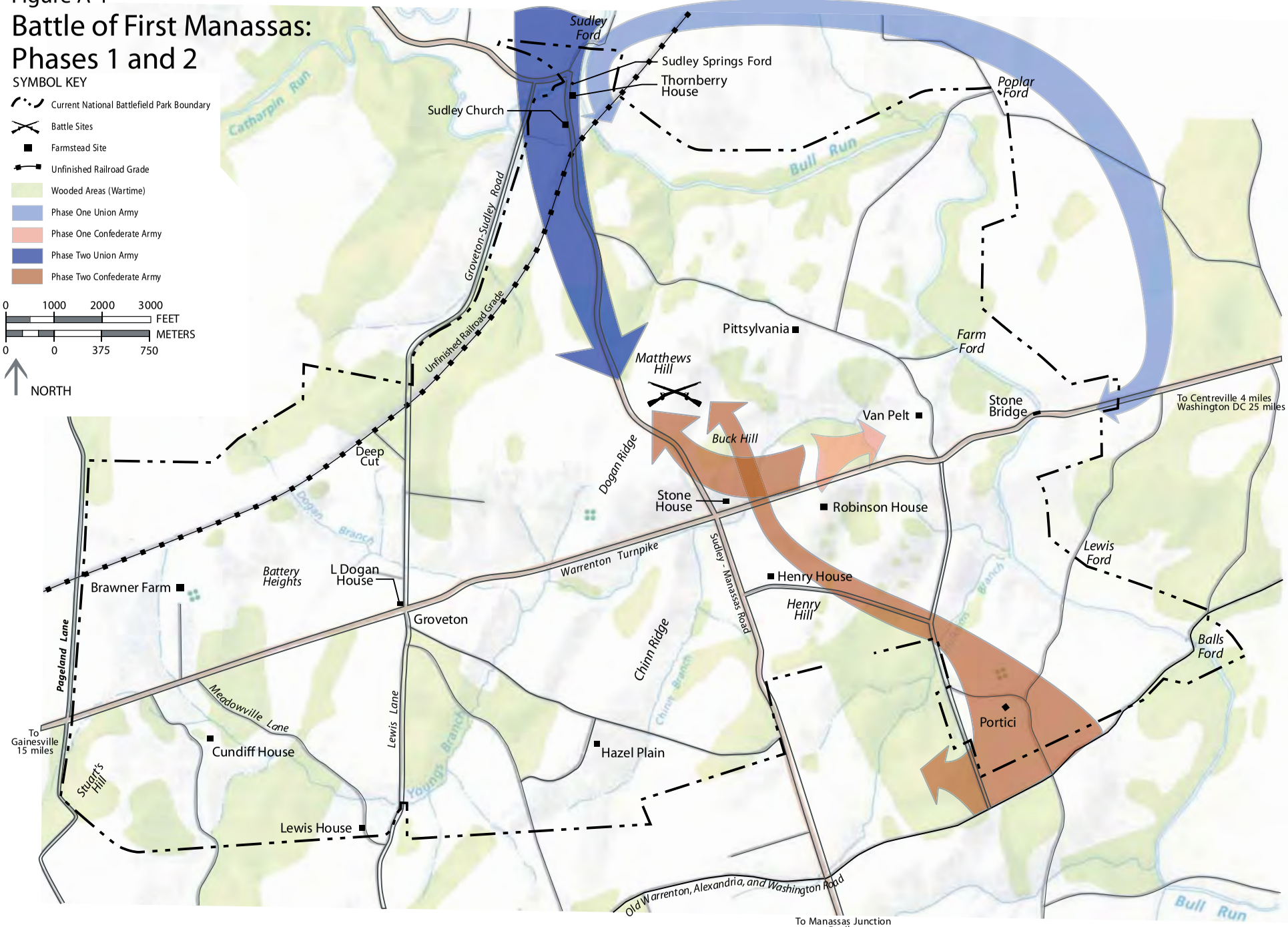
Union Headquarters and Staging Area

Maj. Gen. John Pope arrives on the battlefield at midday on August 29 and establishes his headquarters on Buck Hill.

Union artillery unlimbers on Dogan Ridge to support attacks on the Confederates along the Unfinished Railroad.

Figure A-1

Battle of First Manassas: Phases 1 and 2



U.S. Department of the Interior • National Park Service
DSC • October 2005 • 379•20122

Figure A-2

Battle of First Manassas: Phase 3 and Union Retreat

U.S. Department of the Interior • National Park Service
DSC • October 2005 • 379•20123

Figure A-3

Battle of Second Manassas: Phases 1 and 2

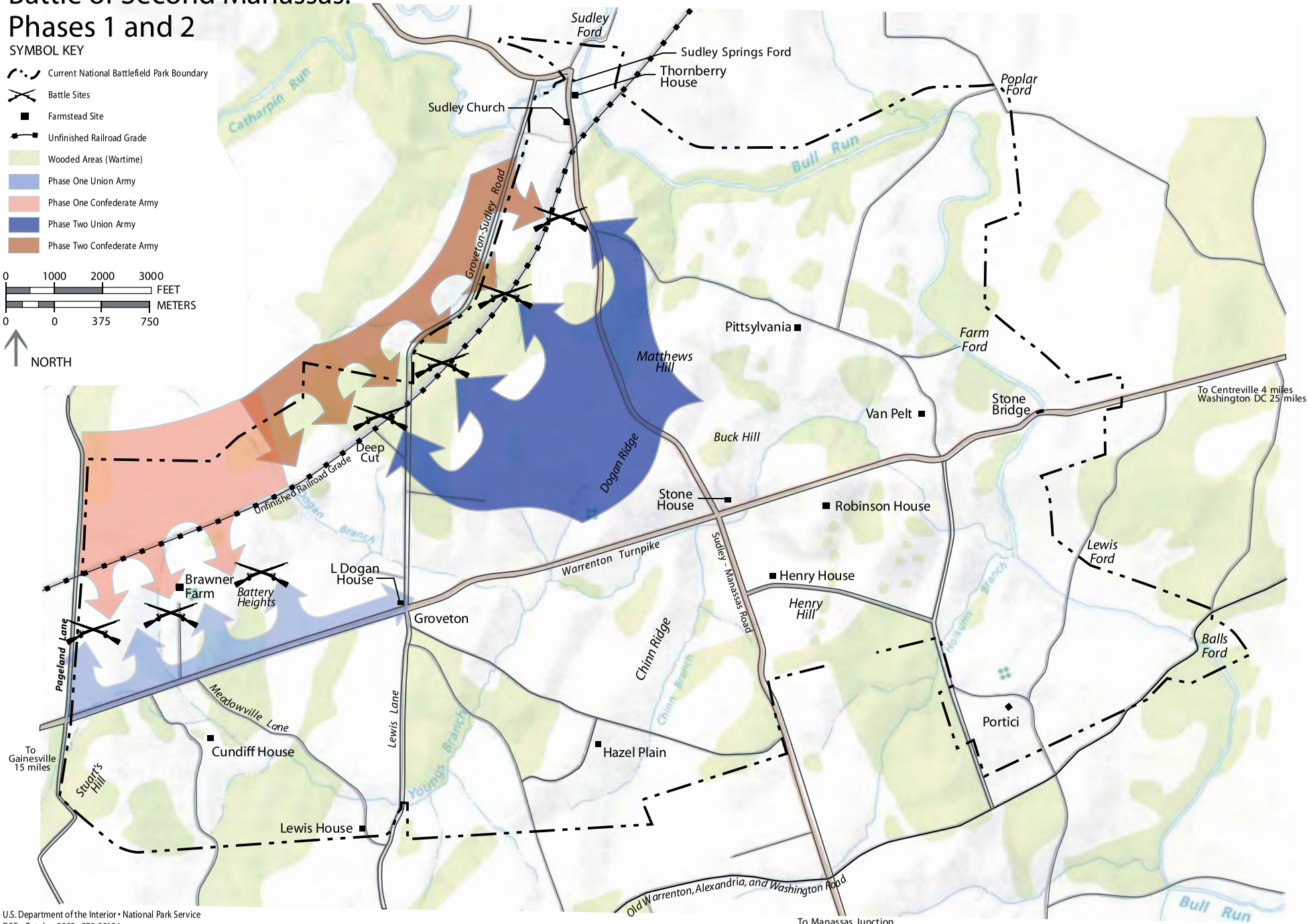


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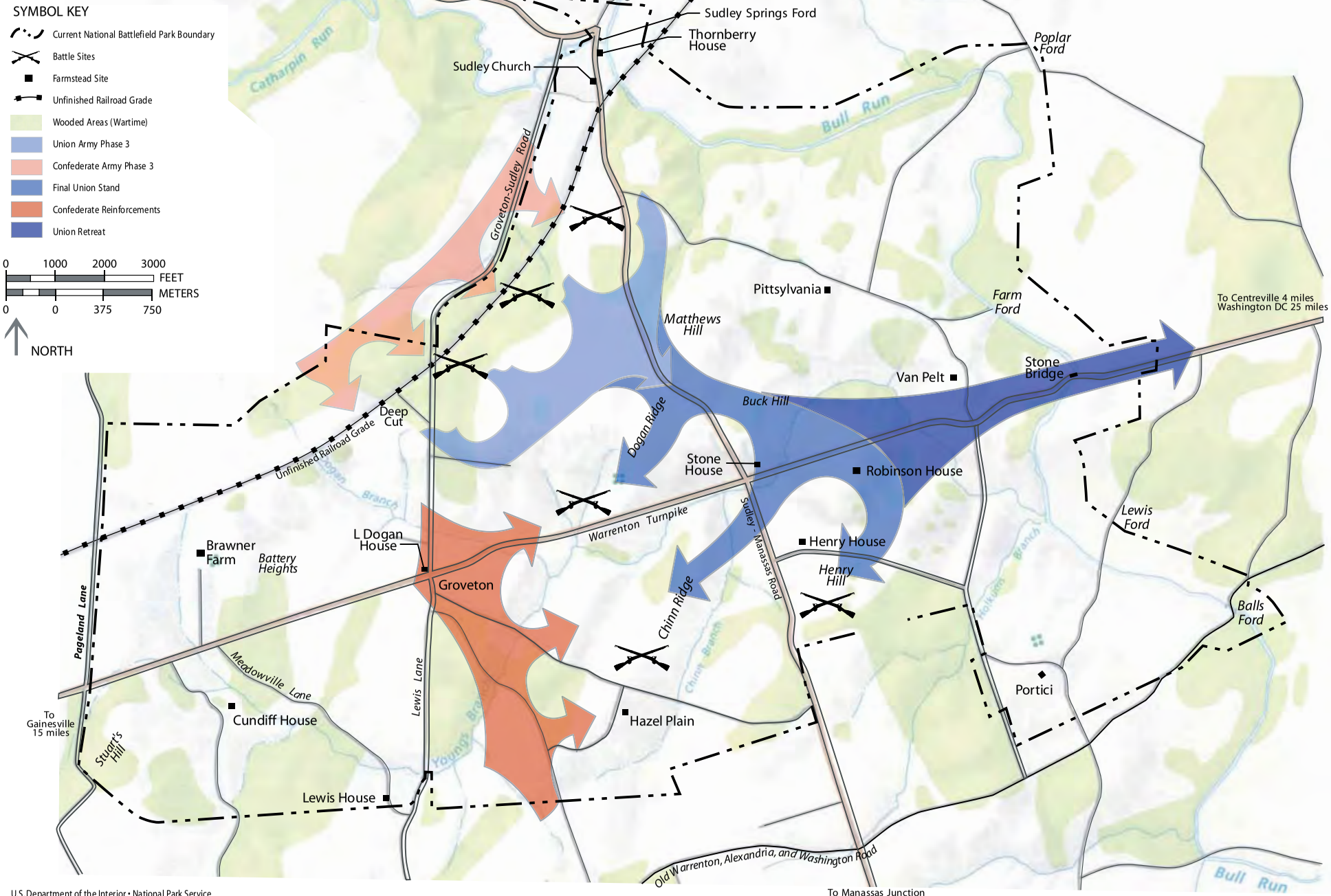
Figure A-4

Battle of Second Manassas: Phase 3 and Union Retreat



U.S. Department of the Interior • National Park Service
DSC • October 2005 • 379•20125

APPENDIX C: REVELANT LEGISLATION AND SPECIAL MANDATES

V. NATIONAL BATTLEFIELD PARKS

1. Manassas National Battlefield Park

Designation of area as a national historic site, to be known as Manassas National Battlefield Park: Order of May 10, 1940.....

ORDER DESIGNATING THE MANASSAS NATIONAL BATTLEFIELD PARK, PRINCE WILLIAM COUNTY, VA.

[May 10, 1940—5 F. R. 1824]

WHEREAS the Congress of the United States has declared it to be a national policy to preserve for the public use historic sites, buildings and objects of national significance for the inspiration and benefit of the people of the United States; and

WHEREAS certain lands and structures in Manassas Magisterial District, Prince William County, Virginia, because of their historical importance as the battlefield site of the First and Second battles of Manassas during the war between the States, have been declared by the Advisory Board on National Parks, Historic Sites, Buildings and other monuments to be of national significance; and

WHEREAS title to the above-mentioned lands with the buildings and structures thereon is vested in the United States:

NOW, THEREFORE, I, Harold L. Ickes, Secretary of the Interior, under and by virtue of the authority conferred by section 2 of the act of Congress approved August 21, 1935 (49 Stat. 666), do hereby designate all those certain tracts or parcels of land, with the structures thereon, containing approximately 1,604,575 acres and situated in Manassas Magisterial District, Prince William County, Virginia, as shown upon the diagram hereto attached and made a part hereof, to be a national historic site, having the name "Manassas National Battlefield Park."

The administration, protection, and development of this area shall be exercised by the National Park Service in accordance with the provisions of the act of August 21, 1935, *supra*.

Warning is expressly given to all unauthorized persons not to appropriate, injure, destroy, deface or remove any feature of this park.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the official seal of the Department of the Interior to be affixed, in the City of Washington this 10th day of May 1940.

[SEAL]

HAROLD L. ICKES,
Secretary of the Interior.

2. Manassas National Battlefield Park

Boundaries established.....Act of April 17, 1954

An Act To preserve within Manassas National Battlefield Park, Virginia, the most important historic properties relating to the battles of Manassas, and for other purposes, approved April 17, 1954 (68 Stat. 56)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to establish satisfactory boundaries for the Manassas National Battlefield Park, in the State of Virginia, and to contain within such boundaries the important historic lands relating to the two battles of Manassas, the boundaries of such battlefield park hereafter shall contain that area which is bounded, in general, as follows: The south boundary of the park shall be the southernmost limits of the present federally owned lands in the south portion of the park; the east and northeast boundaries shall be that portion of the Bull Run Creek which extends from the south boundary of the park north and westward to the north boundary of the park as hereinafter prescribed; the southwest boundary shall be that portion of Compton's Lane from its nearest point adjacent to the south boundary and extending northwesterly to State secondary highway numbered 622; the west and northwest boundary shall be State secondary highway numbered 622, from the point where it connects with Compton's Lane and extending northward until it reaches the Sudley Church property; the north boundary shall be the northernmost limits of the present Federal park holdings in the immediate vicinity of the Sudley Church property. The boundaries of the park also may include not more than two hundred and fifty acres of land adjacent to the aforesaid west and north boundaries of the park, which land shall become a part of the park upon acquisition thereof by the United States: *Provided*, That the total acreage which may be acquired for the park pursuant to this Act shall not exceed one thousand four hundred acres. Such land or interests therein may be procured by the Secretary of the Interior in such manner as he may consider to be in the public interest.

Manassas National Battlefield Park. Boundaries.

For exchange purposes, particularly in connection with State and other highway developments, the Secretary is authorized to accept, on behalf of the United States, any non-Federal land or interests therein situated within the park area herein prescribed, and in exchange therefor to convey park land or interests therein of approximately equal value. (16 U.S.C. § 429b.)

NATIONAL BATTLEFIELDS

VIII. NATIONAL BATTLEFIELDS

1. Manassas

PUBLIC LAW 96-442—OCT. 13, 1980

94 STAT. 1885

Public Law 96-442
96th Congress

An Act

Oct. 13, 1980
[H.R. 5048]

To amend the Act entitled "An Act to preserve within Manassas National Battlefield Park, Virginia, the most important historic properties relating to the Battle of Manassas, and for other purposes", approved April 17, 1954 (68 Stat. 56; 16 U.S.C. 429b).

Manassas National Battlefield Park Amendments of 1980.
16 USC 429b note.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Manassas National Battlefield Park Amendments of 1980".

16 USC 429b.

SEC. 2. The Act entitled "An Act to preserve within the Manassas National Battlefield Park, Virginia, the most important historic properties relating to the battle of Manassas, and for other purposes", approved April 17, 1954 (16 U.S.C. 429b), is amended to read as follows: "That there is established as a unit of the National Park System in the Commonwealth of Virginia the Manassas National Battlefield Park, which shall contain within its boundaries the important historical lands relating to the two battles of Manassas The total area of the park shall not be greater than four thousand five-hundred and twenty-five acres. The boundaries of the park shall be the boundaries depicted on the map entitled 'Boundary Map, Manassas National Battlefield Park', dated October 1980, and numbered 379/80,009, which shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior. The Secretary shall publish in the Federal Register, as soon as practicable after the date of the enactment of this Act, but no later than one year from the effective date of this section, a detailed description and map of the boundaries. Notwithstanding section 7(c) of the Land and Water Conservation Fund Act of 1965 (91 Stat. 211), as amended (16 U.S.C. 460l), the Secretary may not make any changes in the boundaries of the park. The Secretary shall administer the park in accordance with laws, rules, and regulations applicable to the national park system.

Description.

Publication in Federal Register.

16 USC 460*l*-9.

Funding.
16 USC 429b-1.

"SEC. 2. (a) In order to effectuate the purposes of this Act, the Secretary is authorized to acquire by donation, purchase with donated or appropriated funds or exchange, any property or interests therein which are located within the boundaries of the park, except that property owned by the Commonwealth of Virginia or by any political subdivision thereof may be acquired only by donation.

"(b) With respect to areas within the 1954 boundaries of the park as identified on the map referred to in the first section of this Act, the Secretary may not acquire fee simple title to such areas without the consent of the owner so long as the lands continue to be devoted to a use which is the same as that in effect on September 1, 1980. Further, if the Secretary proposes to acquire fee simple title to such property because of a change in use, the owner of such property may seek a review of the proposed acquisition of his or her property and is entitled to a hearing on the record in accordance with section 554 of title 5 of the United States Code.

"(c) if the Virginia Department of Highways and Transportation determines that the proposed Route 234 bypass should be properly located between the Virginia Electric Power Company powerline easement and Route 705, the Secretary shall make available the land necessary for such bypass, subject to such revisions, terms, and conditions as the Secretary deems are necessary end appropriate to assure that such bypass is located, constructed, operated, and maintained in a manner consistent with the administration of the park.

Route 234 Bypass.

"(d) The Secretary may not close any State roads within the park unless action permitting the closing of such roads has been taken by appropriate officials of the Commonwealth of Virginia.

"SEC. 3. (a) Subsequent to the date of enactment of this section, the owner of improved property on the date of its acquisition by the Secretary may, as a condition of such acquisition, retain for himself and his heirs and assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term of not more than twenty-five years or for a term ending at the death of the owner or the death of the spouse of the owner, whichever is later. The owner shall elect the term to be reserved unless this property is wholly or partially donated to the United States, the Secretary shall pay the owner an amount equal to the fair market value of the property on the date of its acquisition less the value on such date of the right retained by the owner. If such property is donated (in whole or in part) to the United States, the Secretary may pay to the owner such lesser amount as the owner may agree to. A right retained pursuant to this section shall be subject to termination by the Secretary upon his determination that it is being exercised in a manner inconsistent with the purposes of this Act, and it shall terminate by operation of law upon the Secretary's notifying the holder of the right of such determination and tendering to him an amount equal to the fair market value of that portion of the right which remains unexpired.

Residential Property. 16 USC 429b-2.

"(b) No property owner who elects to retain a right of use and occupancy under this section shall be considered a displaced person as defined in section 101(6) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (84 Stat. 1894). Such owners shall be considered to have waived any benefits which would otherwise accrue to them under sections 203 through 206 of such Act.

42 USC 4601.

42 USC 4623-4626.

"SEC. 4. For purposes of this Act—

Definitions. 16 USC 429b-3.

"(1) The term 'improved property' means a detached, one-family dwelling, construction of which was begun before January 1, 979, which is use for noncommercial residential purposes, together with not to exceed three acres of land on which the dwelling is situated and together with such additional lands or interests therein as the Secretary deems to be reasonably necessary for access thereto, such lands being in the same ownership as the dwelling, together with any structures accessory to the dwelling which are situated on such land.

"(2) The term 'park' means the Manassas National Battlefield Park established under this Act.

"(3) The term 'Secretary' means the Secretary of the Interior.

"(4) The term 'owner' means the owner of record as of September 1, 1980.

16 USC 429b-4.

"SEC. 5. (a) In addition to sums heretofore expended for the acquisition of property and interests therein for the park from funds available for expenditure from the Land and Water Conservation Fund, as established under the Land and Water Conservation Fund Act of 1965, not more than a total of $8,700,000 may be expended for the acquisition of property and interests therein under this Act.

94 STAT. 1887
16 USC 460*l*-4 note.

"(b) it is the express intent of Congress that, except for property referred to in subsection 2(b), the Secretary shall acquire property and interests therein under this Act within two complete fiscal years after the date of the enactment of the Manassas National Battlefield Park Amendments of 1980.

Ante, p. 1885.
Effective date.
16 USC 429b-5.

"SEC. 6. (a) Authorizations of moneys to be appropriated under this Act from the Land and Water Conservation Fund for acquisition of properties and interests shall be effective on October 1, 1981.

"(b) Notwithstanding any other provision of this Act, authority to enter into contracts, to incur obligations, or to make payments under this Act shall be effective only to the extent, and in such amounts as are provided in advance in appropriation Act.".

Study.
16 USC 460cc note.

SEC. 3. (a) The Secretary of the Interior shall conduct a study to determine appropriate measure for the protection, interpretation and public use of the natural wetlands and undeveloped uplands of that portion of the Hackensack Meadowlands District identified as the DeKorte State Park on the official zoning maps of that District. The Secretary shall, in the course of the study, consult with and seek the advice of, representatives of interested local, State and other Federal agencies. As a part of the study, the Secretary shall determine the suitability and feasibility of establishing the area as a unit of the national park system, including its administration as a unit of Gateway National Recreation Area, together with alternative measures that may be undertaken to protect and interpret the resources of the area for the public. Not later than two complete fiscal years from the effective date of this Act, the Secretary shall transmit a report of the study, including the estimated development, operation, and maintenance costs of alternatives identified therein, to the Senate Committee on Energy and Natural Resources and the Committee on Interior and insular Affairs of the House of Representative, together with his recommendations for such further legislation as may be appropriate.

Report to congressional committees.

Appropriation authorization.

(b) There is authorized to be appropriated from amounts previously authorized to study lands for possible inclusion in the national park system not to exceed $150,000 to carry out the provisions of this Act.

Approved October 13, 1980.

LEGISLATIVE HISTORY:
HOUSE REPORT No. 96-490 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 96-968 (Comm. on Energy and Natural Resources).
CONGRESSIONAL RECORD:
Vol. 125 (1979): Oct. 9, considered and passed House.
Vol. 126 (1980): Sept. 29, considered and passed Senate, amended.
Sept. 30, House concurred in certain Senate amendments and in others with amendments.
Oct. 1, Senate concurred in House amendments.

NATIONAL BATTLEFIELDS

2. Manassas

PUBLIC LAW 100–647—NOV. 10, 1988 102 STAT. 3342

Public Law 100–647
100th Congress

An Act

To make technical corrections relating to the Tax Reform Act of 1986, and for other purposes.

Nov. 10, 1988
[H.R. 4333]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Technical and Miscellaneous Revenue Act of 1988.
26 USC 1 note.

SECTION 1. SHORT TITLE; ETC.

(a) SHORT TITLE.—This Act may be cited as the "Technical and Miscellaneous Revenue Act of 1988".

* * * * * * *

102 STAT. 3810

TITLE X—MANASSAS NATIONAL BATTLEFIELD PARK

Manassas National Battlefield Park Amendments of 1988.
Virginia.
Conservation.
16 USC 429b note.

SEC. 10001. SHORT TITLE.

This title may be cited as the "Manassas National Battlefield Park Amendments of 1988".

SEC. 10002. ADDITION TO MANASAS NATIONAL BATTLEFIELD PARK.

The first section of the Act entitled "An act to preserve within Manassas National Battlefield Park, Virginia, the most important historic properties relating to the battle of Manassas, and for other purposes", approved April 17, 1954 (16 U.S.C. 429b), is amended—

(1) by inserting "(a)" after "That"; and

(2) by adding at the end thereof the following:

"(b)(1) In addition to subsection (a), the boundaries of the park shall include the area, comprising approximately 600 acres, which is south of U.S. Route 29, north of Interstate Route 66, east of Route 705, and west of Route 622. Such area shall hereafter in this Act be referred to as the 'Addition'.

"(2)(A) Notwithstanding any other provision of law, effective on the date of enactment of the Manassas National Battlefield Park Amendments of 1988, there is hereby vested in the United States all right, title, and interest in and to, and the right to immediate possession of, all the real property within the Addition.

Real property.

"(B) The United States shall pay just compensation to the owners of any property taken pursuant to this paragraph and the full faith and credit of the United States is hereby pledged to the payment of any judgment entered against the United States with respect to the taking of such property. Payment shall be in the amount of the agreed negotiated value of such property or the valuation of such property awarded by judgment and shall be made from the permanent judgment appropriation established pursuant to 31 U.S.C. 1304. Such payment shall include interest on the value of such property which shall be compounded quarterly and computed at the rate applicable for the period involved, as determined by the Secretary of the Treasury on the basis of the current average market yield on outstanding marketable obligations of the United States of comparable maturities from the date of enactment of the Manassas

National Battlefield Park Amendments of 1988 to the last day of the month preceding the date on which payment is made.

"(C) In the absence of a negotiated settlement, or an action by the owner, within 1 year after the date of enactment of the Manassas National Battlefield Park Amendments of 1988, the Secretary may initiate a proceeding at anytime seeking in a court of competent jurisdiction a determination of just compensation with respect to the taking of such property.

Federal Register, publication.

Public information.

"(3) Not later than 6 months after the date of enactment of the Manassas National Battlefield Park Amendments of 1988, the Secretary shall publish in the Federal Register a detailed description and map depicting the boundaries of the Addition. The map shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

"(c) The Secretary shall not allow any unauthorized use of the Addition after the enactment of the Manassas National Battlefield Park Amendments of 1988, except that the Secretary may permit the orderly termination of all operations on the Addition and the removal of equipment, facilities, and personal property from the Addition.".

SEC. 10003. VISUAL PROTECTION.

Section 2(a) of the Act entitled "An Act to preserve within Manassas National Battlefield Park, Virginia, the most important historic properties relating to the battle of Manassas, and for other purposes", approved April 17, 1954 (16 U.S.C. 429b–1), is amended—

(1) by inserting "(1)" after "(a)"; and

(2) by adding at the end thereof the following:

"(2) The Secretary shall cooperate with the Commonwealth of Virginia, the political subdivisions thereof, and other parties as designated by the Commonwealth or its political subdivisions in order to promote and achieve scenic preservation of views from within the park through zoning and such other means as the parties determine feasible.".

16 USC 429b note.

SEC. 10004. HIGHWAY RELOCATION.

(a) STUDY.—The Secretary of the Interior (hereafter in this section referred to as the "Secretary"), in consultation and consensus with the Commonwealth of Virginia, the Federal Highway Administration, and Prince William County, shall conduct a study regarding the relocation of highways (known as routes 29 and 234) in, and in the vicinity of, the Manassas National Battlefield Park (hereinafter in this section referred to as the "park"). The study shall include an assessment of the available alternatives, together with cost estimates and recommendations regarding preferred options. The study shall specifically consider and develop plans for the closing of those public highways (known as routes 29 and 234) that transect the park and shall include analysis of the timing and method of such closures and of means to provide alternative routes for traffic now transecting the park. The Secretary shall provide for extensive public involvement in the preparation of the study.

(b) DETERMINATION.—Within 1 year after the enactment of this Act, the Secretary shall complete the study under subsection (a). The study shall determine when and how the highways (known as routes 29 and 234) should be closed.

(c) ASSISTANCE.—The Secretary shall provide funds to the appropriate construction agency for the construction and improvement of

the highways to be used for the rerouting of traffic now utilizing highways (known as routes 29 and 234) to be closed pursuant to subsection (b) if the construction and improvement of such alternatives are deemed by the Secretary to be in the interest of protecting the integrity of the park. Not more than 75 percent of the costs of such construction and improvement shall be provided by the Secretary and at least 25 percent shall be provided by State or local governments from any source other than Federal funds. Such construction and improvement shall be approved by the Secretary of Transportation.

State and local governments.

(d) AUTHORIZATION.—There is authorized to be appropriated to the Secretary not to exceed $30,000,000 to prepare the study required by subsection (a) and to provide the funding described in subsection (c).

Approved November 10, 1988.

LEGISLATIVE HISTORY—H.R. 4333 (S. 2238):
HOUSE REPORTS: No. 100-795 (Comm. on Ways and Means) and No. 100-1104 (Comm. of Conference).
SENATE REPORTS: No. 100-445 accompanying S. 2238 (Comm. on Finance).
CONGRESSIONAL RECORD, Vol. 134 (1988):
Aug. 4, considered and passed House.
Oct. 6, 7, S. 2238 considered in Senate.
Oct. 11, H.R. 4333 considered and passed Senate, amended.
Oct. 21, House and Senate agreed to conference report.

APPENDIX D: ESTIMATED COSTS

The purpose of the cost estimate in a general management plan is to provide a general sense of the cost to implement one alternative relative to other alternatives considered. The relative costs associated with each of the alternatives in this plan have not changed. However, how these costs are presented in this *Final General Management Plan* has been modified to reflect a change in NPS policy regarding presentation of costs in general management plans.

In the *Draft General Management Plan* there were three general components to the cost estimates – initial capital costs, annual operating costs, and replacement costs. Then the total life cycle costs — that is the cost of these actions spread over 20 years — were calculated to provide a sense of the total costs of managing the park over the life of the plan. To reflect the inherent uncertainty associated with the estimates, all costs were a range of -30/+50% of the calculated costs. However the range of costs was so broad it did not provide a simple way to compare costs across alternatives. And while consideration of costs is an important component of the decision-making process, there was concern that calculating the total life-cycle costs of an alternative would again imply a level of certainty relative to costs that does not exist.

To address these concerns in this *Final General Management Plan,* the relative costs associated with implementation of the alternatives are presented as a single number for each alternative. The costs no longer include life-cycle costs, and the revised cost table now includes information on deferred maintenance costs associated with each alternative. All costs were estimated based on 2005 dollars. The actual costs to implement the alternative could be higher or lower. For this reason these costs are not appropriate for budgeting purposes. The actual costs will be determined prior to implementation and will be based on the design of facilities and identification of detailed resource protection and visitor experience goals. The cost estimates presented represent the total costs of projects described in the alternatives. Potential cost-sharing opportunities with partners could reduce these overall costs. Approval of the general management plan does not guarantee that funding or staffing for proposed actions will be available. Full implementation of the approved general management plan may be many years in the future.

ONE-TIME COST ESTIMATES

Facility costs in this category are rough estimates and were developed based on the average cost of similar facilities. Actual costs for one-time facility and non-facility projects may be higher or lower depending on the final design, site conditions, and the contracting agency. These cost estimates do not include all items that will be listed in the more inclusive estimates to be developed in subsequent planning efforts. For example, the more inclusive estimates for the visitor center would include exhibits, furnishings, and landscaping. The results of the analysis along with notes on the assumptions are shown in table D-1.

Because of the generalized nature of these cost estimates, table D-1 only breaks down costs into general categories. Those categories and the items they include are listed below. Parenthetical notes indicate items that are only included in alternative (B) or (C):

- Park Enhancements: interpretive trails, bridle trails, forest cuts, and forest restoration.
- Recreation Zone Enhancements: picnic tables, grills, trash cans, water fountains, bicycle racks, restroom facilities, and landscaping.
- Transportation Enhancements: entrance stations and gates, intersection improvements and demolition, bridge demolition and construction, entry road construction, and horse trailer parking facility construction.

- Park Facility Enhancements: Stuart's Hill visitor contact station improvements (B), demolition of existing visitor center at Henry Hill (C), construction of new visitor center (C), and boundary adjustments.

ANNUAL COSTS

Annual costs include staff salaries and annual operating and maintenance costs.

DEFERRED MAINTENANCE

Deferred maintenance costs are those needed to improve park assets to NPS standards. The estimate in this *Final General Management Plan* is for the facilities that would be impacted in the alternatives.

BOUNDARY ADJUSTMENT

Land acquisition costs for the proposed boundary adjustement in alternative B and C are included in the cost presentation.

Table D-1: Range of Costs by Alternative			
	Alternative A	**Alternative B — NPS Preferred**	**Alternative C**
Total Annual Operating Costs	**$2,374,000**	**$3,454,000**	**$3,874,000**
Staffing - FTE[2]	32	50	57
One-Time Costs			
Deferred Maintenance [3]	$5,000,000	$5,000,000	$5,000,000
Facility and Non-facility Costs[4]	$3,445,065	22,646,162	38,885,879
Bridge and Road Construction[5]	0	$5,593,000	$5,593,000
Boundary Adjustment	0	$4,800,000	$4,800,000
Total One-Time Costs	**$8,445,065**	**$48,432,162**	**$64,671,879**

(1) Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including: utilities, supplies, staff salaries and benefits, leasing, and materials.
(2) Total full-time equivalent (FTE) employees are the number of staff required to maintain the assets of the park at a good level, provide acceptable visitor services, protect resources, and administer the park. The FTE staff would not necessarily be NPS employees. Park managers would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the park. FTE salaries and benefits are included in the annual operating costs.
(3) Deferred maintenance costs are those needed to improve park assets to a good condition based on NPS standards and calculating tools. These costs do not represent all maintenance in the park, just the facilities that would be affected during implementation of the alternative.
(4) Included here are one-time facility costs related to construction and non-facility costs related to natural and cultural resources management and visitor use projects. In the no-action alternative, one-time costs include only those costs already planned within existing programs and with an approved funding source.
(5) The costs associated with the demolition of the bridge on U.S. Route 29, construction of a new bridge, and the associated realignment of U.S. Route 29 are accounted for in the mitigation measures for the Battlefield Bypass and would likely be funded in a separate appropriation.

APPENDIX E: THREATENED, ENDANGERED, AND RARE SPECIES AND NATURAL COMMUNITIES

As part of this *General Management Plan and Environmental Impact Statement*, a request was made to the United States Department of the Interior Fish and Wildlife Service for information related to threatened, endangered, and rare plant and animal species and natural communities in and around Manassas National Battlefield Park. The Fish and Wildlife Service's response is included below.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, VA 23061

Date: 9-28-06

Project name: GENERAL MGT. PLAN/EIS MANASSAS NBP

Project number: ——— City/County FAIRFAX/PR. WILLIAM COS., 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 WILLIAM HESTER at (804) 693-6694, ext. 134.

Sincerely,

Karen L. Mayne

Karen L. Mayne
Supervisor
Virginia Field Office

FAIRFAX COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Haliaeetus leucocephalus[1]	Bald eagle	LT
VASCULAR PLANTS		
Aeschynomene virginica[2]	Sensitive joint-vetch	LT
Isotria medeoloides	Small whorled pogonia	LT

Species of Concern (No official Federal status)

INVERTEBRATES		
Elliptio lanceolata	Yellow lance	G2G3
Sphalloplana holsingeri	Holsinger's Groundwater Planarian	G1G2
Sphalloplana subtilis	Bigger's Groundwater Planarian	G1G2
Stygobromus kenki	Rock Creek groundwater amphipod	G2G3
Stygobromus phreaticus	Northern Virginia well amphipod	G2G3
Stygobromus sp. 15	A groundwater amphipod	G1
VASCULAR PLANTS		
Pycnanthemum torrei	Torrey's mountain-mint	G2
Sida hermaphrodita	Virginia mallow	G2G3

[1]Nesting occurs in this county; concentrated shoreline use has been documented on the Potomac River.
[2]This species has been documented in an adjacent county and may occur in this county.

August 4, 2005
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

PRINCE WILLIAM COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Haliaeetus leucocephalus	Bald eagle	LT
INVERTEBRATES		
Alasmidonta heterodon[1]	Dwarf wedgemussel	LE
VASCULAR PLANTS		
Aeschynomene virginica[1]	Sensitive joint-vetch	LT
Isotria medeoloides	Small whorled pogonia	LT
Ptilimnium nodosum[1]	Harperella	LE

Species of Concern (No official Federal status)

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK
INVERTEBRATES		
Elliptio lanceolata	Yellow lance	G2G3
Sigara depressa	Virginia Piedmont water boatmen	G1G2

[1]This species has been documented in an adjacent county and may occur in this county.

July 26, 2005
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

KEY FOR COUNTY LIST

LE - federally listed endangered.

LT - federally listed threatened.

PE - federally proposed endangered.

PT - federally proposed threatened.

EX - believed to be extirpated in Virginia.

LE(S/A) - federally listed endangered due to similarity of appearance to a federally listed species.

LT(S/A) - federally listed threatened due to similarity of appearance to a federally listed species.

C - candidate species; the U.S. Fish and Wildlife Service has enough information to list the species as threatened or endangered, but this action is precluded by other listing activities.

SOC - species of concern; those species that have been identified as potentially imperiled or vulnerable throughout their range or a portion of their range. These species are not protected under the Endangered Species Act.

G - global rank; the species rarity throughout its total range.

G1 - extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 - very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.

G3 - either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G_T_ - signifies the rank of a subspecies or variety. For example, a G3T1 would apply to a subspecies of a species that is very rare and local throughout its range or found locally in a restricted range (G3) but the subspecies warrants a rank of T1, critically imperiled.

G_Q - The taxon has a questionable taxonomic assingnment.

U.S. Fish & Wildlife Service

Bald Eagle

Haliaeetus leucocephalus

Description - The bald eagle occurs throughout the United States. It is a large bird-of-prey with dark brown plumage, a white head and tail, and a yellow bill, feet, and eyes. Juvenile eagles generally have a dark brown body, sometimes with white patches on the tail, belly, and underwings. The head and tail become completely white when full adult plumage is reached at four to five years of age.

Life History - The majority of Virginia's eagle population is found on the coastal plain. The bald eagle breeding season begins in mid-November when large nests are built (or the previous year's nest is repaired) usually in loblolly pine trees that are in close proximity to water. Eagles lay one to three eggs between mid-January and late March. In March, most eggs hatch and by June or July most young have fledged. However, the young will continue to use the nest for several weeks. In Virginia, during the summer and winter months, juvenile and nonbreeding adult eagles congregate along large rivers in areas with abundant food and little human disturbance. During the day, these eagles feed and perch along the river shoreline. In late afternoon, they move inland to roost either singly or communally. Roosts are typically located away from human disturbance and near water and a food source. Bald eagles feed primarily on fish, but will also eat carrion, waterfowl, small mammals, snakes, and turtles.

Conservation - The bald eagle was federally listed as an endangered species in the Chesapeake Bay Region on March 11, 1967. On July 12, 1995, the bald eagle was reclassified to threatened throughout the 48 lower states because the population had increased due to the banning persistent pesticides, habitat protection, and other recovery activities. On July 6, 1999, the bald eagle was proposed for removal from the list of endangered and threatened wildlife in the lower 48 states. This action was proposed because the available data indicated that this species has recovered. The recovery is due in part to habitat protection and management actions initiated under the Endangered Species Act. It is also due to reduction in levels of persistent pesticides occurring in the environment. If and when the eagle is no longer protected by the Endangered Species Act, it will still be protected by the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and state laws. Until the eagle is officially delisted, it will continue to receive protection pursuant to the Endangered Species Act. Bald eagles in the Chesapeake Bay are increasing. However, habitat destruction through urban and residential development and human disturbance in nesting, roosting, and foraging habitats continue to be a threat.

What You Can Do To Help - If you know of a bald eagle nest on or near property proposed for clearing, development, or logging please contact one of the following agencies for assistance:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

U. S. Fish and Wildlife Service
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694

References

U.S. Fish and Wildlife Service. 1990. Chesapeake Bay Region bald eagle recovery plan: first revision. Newton Corner, Massachusetts.

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U.S. Fish and Wildlife Service
Virginia Field Office
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http://www.fws.gov
August 1999

U.S. Fish & Wildlife Service

Dwarf Wedge Mussel

Alasmidonta heterodon

B. Windsor

Description - The dwarf wedge mussel has a spotty distribution in Atlantic coast drainage rivers and their tributaries from Canada to North Carolina. It is a small mussel whose shell rarely exceeds 1.5 inches in length. The shell outline is ovate or trapezoidal. The female shell is shorter, trapezoidal, and inflated in the back whereas the male shell is elongate, compressed, and ovate. The outer shell layer is brown to yellowish-brown, with greenish rays in young or pale-colored specimens. This mussel is unique in that it has two lateral teeth on its right valve and only one tooth on its left valve (opposite of all other North American mussel species).

Life History - The dwarf wedge mussel lives in shallow to deep rivers and creeks of various sizes where the current is slow to moderate. This mussel lives on muddy sand, sandy, and gravel stream bottoms that are nearly silt free. Like other freshwater mussels, this species is a filter feeder. It feeds on plankton collected from water that is passed over its gills. Reproduction occurs sexually. Females carry eggs in their gills. During spawning, the male releases sperm into the water column and the sperm is taken into the female through the gills. The resulting larvae (known as glochidia) are released from the female into the water column and must attach to a fish host to survive. While attached to the fish host, development of the glochidia continues. Once metamorphosis is complete, the juvenile mussel drops off the fish host and continues to develop on the stream bottom. Fish hosts for this species include the mottled sculpin (***Cottus bairdi***), slimy sculpin (***Cottus cognatus***), tessellated darter (***Etheostoma olmstedi***), and johnny darter (***Etheostoma nigrum***).

Conservation - The dwarf wedge mussel was federally listed as an endangered species on March 14, 1990. The decline of this species is due to human degradation of habitat and water quality which have resulted in the continuing decline and subsequent loss of this species from previously occupied habitat. Threats to the species include agricultural, domestic, organic, and industrial pollution; impoundments that destroy habitat and cause silt deposits, low oxygen levels, and fluctuations in water levels and temperatures of the flooded area; and erosion and siltation from land clearing and construction of bridges or roads.

What You Can Do To Help - If you reside on property that borders a stream or other waterway, avoid using chemicals or fertilizers. To help control erosion and reduce runoff, maintain a buffer of natural vegetation along streambanks. Install fencing to prevent livestock from entering streams to reduce trampling of mussels, siltation, and input of waste products. Protecting water quality is the most effective way to conserve mussels.

To find out more about the dwarf wedge mussel contact:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

References

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U.S. Fish & Wildlife Service

Sensitive Joint-Vetch

Aeschynomene virginica

© M. Rollins

Description - The sensitive joint-vetch is an annual legume native to the eastern United States. Populations currently exist in Maryland, New Jersey, North Carolina, and Virginia. The historical range for the species extended to Delaware and Pennsylvania. In Virginia, populations are found along the Potomac, Mattaponi, Pamunkey, Rappahannock, Chickahominy, and James Rivers and their tributaries. This plant usually attains a height of three to six feet in a single growing season, but may grow as tall as eight feet. The flowers are yellow, streaked with red and the fruit is a pod, turning dark brown when ripe.

Life History - The joint-vetch occurs in fresh to slightly brackish tidal river systems, within the intertidal zone where populations are flooded twice daily. It typically occurs at the outer fringe of marshes or shores; its presence in marsh interiors may be a result of nutrient deficiencies, ice scouring, or muskrat herbivory. The sensitive joint-vetch is found in localities where plant diversity is high and annual species are prevalent. Bare to sparsely vegetated substrates appear to be a habitat feature of critical importance for establishment and growth of this species. Plants flower from July through September and into October in some years. Fruits are produced from July through late October, concurrent with flowering.

Conservation - The sensitive joint-vetch was federally listed as a threatened species on June 19, 1992. Threats to the species include sedimentation, competition from non-native plant species, dams, dredging, filling, recreational activities, shoreline stabilization, shoreline structures, road and bridge construction, commercial and residential development, water withdrawal projects, water quality degradation, agricultural practices, introduced pest species, mining, timber harvest, over-visitation, declines in muskrat populations, rise in sea level (this may also be a result of natural cycles), and collection. Natural threats are often identified with disturbances, such as wave and ice action associated with severe storm events, competition, herbivory, channel migration, sea level rise and natural sedimentation processes. Adequate habitat conservation for this species will only be achieved through on-site protection of marshes supporting plant populations when coupled with protection of the natural ecological processes responsible for creating and maintaining habitat for the sensitive joint-vetch.

What You Can Do To Help - Avoid the use of herbicides in or near waterways. If you are planning construction or stabilization activities along the shoreline in one of the counties indicated on the attached map, please contact the U.S. Fish and Wildlife Service.

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U.S. Fish & Wildlife Service

Small Whorled Pogonia

Isotria medeoloides

Description - The small whorled pogonia is a herbaceous perennial orchid. It has a widely scattered distribution in the eastern United States along the Atlantic coast from Maine to Georgia with outlying occurrences in the midwest and Canada. This species has pale green, elliptical leaves, usually five or six, that grow in a single whorl at the top of a hairless, grayish-green stem. The one or two flowers per plant are yellowish-green, unscented, and form in the center of the whorl.

Life History - In Virginia, the small whorled pogonia is found in ordinary looking third-growth upland forests with an open understory and a closed canopy where the topography is typically moderately sloping or almost level. The plants are usually associated with decaying vegetative matter such as fallen trunks and limbs, leaf litter, bark, and tree roots. The pogonia is found in soils that are acidic sandy loams with low nutrient content. The flowers appear in late April to mid-May. The small whorled pogonia reproduces primarily through self-pollination and occasionally vegetatively. It is often confused with the Indian cucumber-root (*Medeola virginiana*) and the large whorled pogonia (*Isotria verticillata*). The Indian cucumber-root has deep green leaves with a stem that is thin, hairy, and wiry. The large whorled pogonia has a reddish-purple stem and dark green leaves; its flower is reddish-purple.

Conservation - The small whorled pogonia was federally listed as an endangered species on September 10, 1982. It was reclassified as threatened on November 7, 1994. This was possible because at the time of reclassification 61% of the viable populations had been protected. The small whorled pogonia and its habitat continue to be threatened, directly and indirectly, by residential and commercial development. The upland habitat where it is found is seldom protected by federal or state laws unless it occurs on federally-owned property. Without voluntary landowner protection many pogonia populations have been and will be destroyed. Other threats to this species are collection by plant enthusiasts and browsing by white-tailed deer and invertebrates.

What You Can Do To Help - If you find a plant that appears to be the small whorled pogonia, take note of the location and photograph the plant, if possible. Please do not remove the plant!

Contact one of the following agencies for assistance:

Virginia Department of Agriculture and Consumer Services
Office of Plant Protection
P.O. Box 1163
Richmond, Virginia 23209
(804) 786-3515

Virginia Department of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 3rd Floor
Richmond, Virginia 23219
(804) 786-7951

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694

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APPENDIX F: MANASSAS NATIONAL BATTLEFIELD PARK BYPASS ALTERNATIVE ROUTES

A wide range of improvement alternatives was considered for the Bypass Study. The alternatives were identified and evaluated through an iterative screening process in cooperation with citizens, localities, and State and federal agencies. Except for the no-action alternative, alternatives deemed not reasonably capable of meeting the identified needs for the study were eliminated from further consideration. While required by National Environmental Policy Act regulations, the no-action alternative was also studied in detail because it serves as a baseline for comparing the other alternatives.

The range of alternatives considered in detail encompasses the No-Action Alternative, and various build alternatives. The alternatives considered in detail are the No-Action Alternative (roads would remain open in the Park), and Candidate Build Alternatives A-G (Bypass Study, 2-1). Map A-5 shows these build alternatives, including the preferred alternative — alternative D, modified

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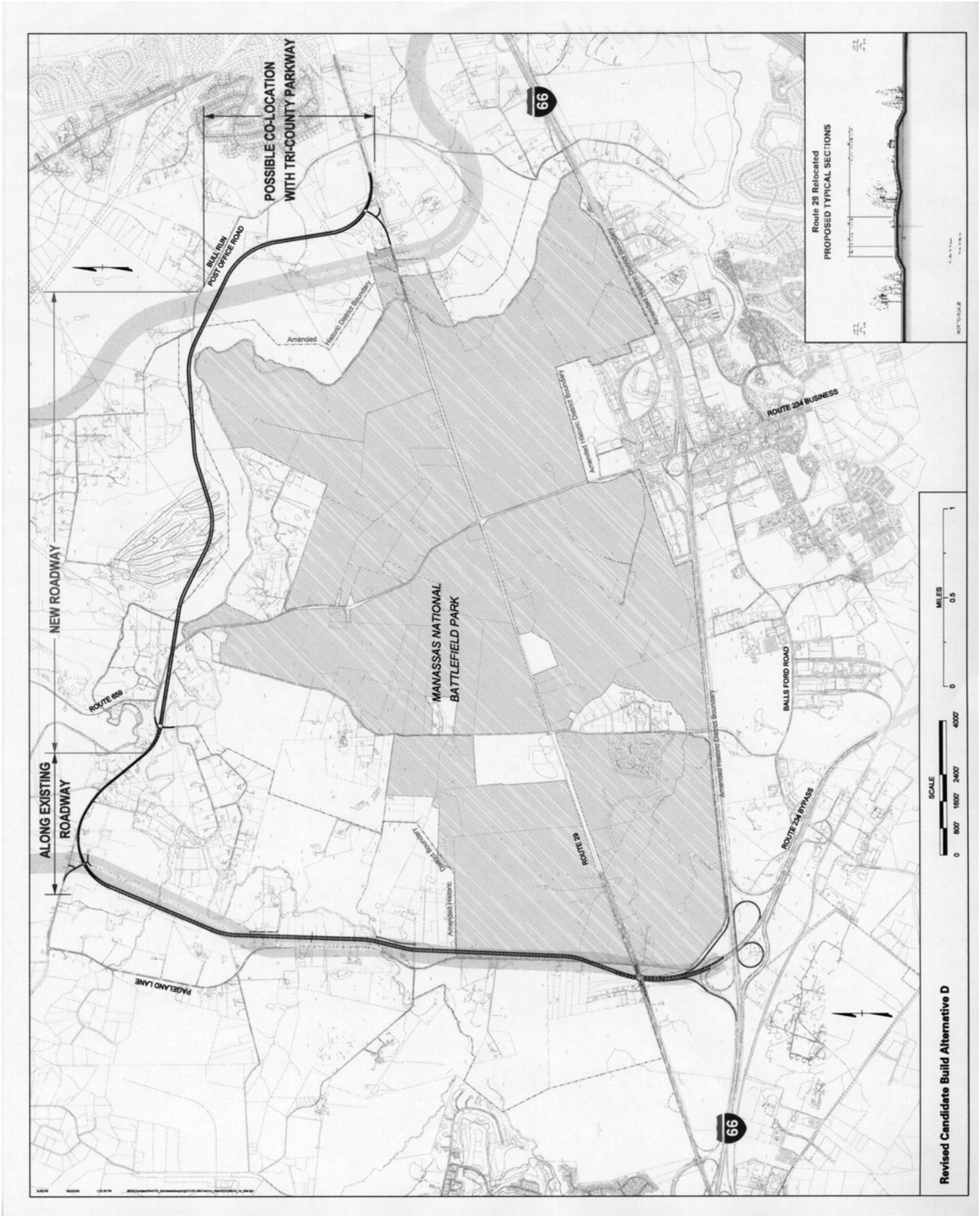
POSSIBLE CO-LOCATION
WITH TRI-COUNTY PARKWAY
BULL RUN
POST OFFICE ROAD
NEW ROADWAY
ALONG EXISTING
ROADWAY
ROUTE 659
PAGELAND LANE
MANASSAS NATIONAL
BATTLEFIELD PARK
ROUTE 29
Amended Historic District Boundary
Amended Historic District Boundary
Amended Historic District Boundary
Amended Historic District Boundary
Amended Historic District Boundary
ROUTE 234 BUSINESS
BALLS FORD ROAD
ROUTE 234 BYPASS
66
66
Route 29 Relocated
PROPOSED TYPICAL SECTIONS
SCALE
0 800' 1600' 2400' 4000'
MILES
0 0.5 1
Revised Candidate Build Alternative D

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