

National Park Service
U.S. Department of the Interior

Fredericksburg & Spotsylvania National Military Park
Virginia



Interpret and Access Historic Ruins and Resources

Environmental Assessment





United States Department of the Interior

NATIONAL PARK SERVICE

Fredericksburg and Spotsylvania

National Military Park

120 Chatham Lane

Fredericksburg, Virginia 22405



L76

July 23, 2003

Dear Friends of Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park:

Enclosed is the Environmental Assessment (EA) for Fredericksburg and Spotsylvania National Military Park's line item construction project, "Interpret and Access Historic Ruins and Resources." This document has been prepared by the National Park Service (NPS). The project proposes to establish an interpretive setting at Sunken Road in Fredericksburg Battlefield, restore and improve portions of the Fredericksburg National Cemetery, and improve access to and interpret civilian sites throughout the park. This action would improve visitor experience and circulation, protect natural and cultural resources within the park, more accurately convey the historical significance of the civilian battlefield sites to visitors, and support a more coherent and expanded interpretation of the Civil War.

Two alternatives were considered: a no-action alternative and the NPS Preferred Alternative. These alternatives are briefly described below:

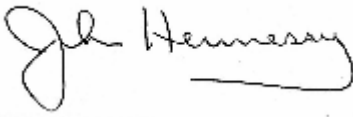
1. The no-action alternative would continue the present management action, operations, and conditions of the historic ruins and resources. Existing interpretive signage and site markings would remain. Current, marginally successful, stabilization practices at Fredericksburg National Cemetery would continue. Historic structure markings signage would continue to vary by site. Social trails would continue to proliferate.
2. NPS Preferred Alternative involves three components:
 - a. Establish an interpretive setting at the Sunken Road
 - b. Restore Fredericksburg National Cemetery
 - c. Access, stabilize, and interpret civilian sites throughout the park by:
 - 1 Providing a setting that supports interpretive goals and provides a context for, rather than degrades extant historic and archeological resources.
 - 2 Formalizing circulation and visitor access to reduce resource degradation.
 - 3 Providing universal access for visitors to the core historic area.
 - 4 Providing relevant, on-site media.
 - 5 Providing the most benefit to the surrounding community and the National Park Service.

We are providing this document for public review and comment. The public comment period closes 45 calendar days after the date at the top of this letter. If you wish to comment on the environmental assessment, you may mail comments to the name and address below. Our practice is to make comments, including names and home addresses of respondents available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. **If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment.** We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Please address your comments to:

Superintendent
Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park
120 Chatham Lane
Fredericksburg, VA 22405-2508

Sincerely,

A handwritten signature in black ink, appearing to read "John Hennessy". The signature is written in a cursive style with a long horizontal line extending from the end.

John Hennessy
Acting Superintendent

Enclosure

**U.S. Department of the Interior
National Park Service
Interpret and Access Historic Ruins and Resources
Environmental Assessment**

**Fredericksburg & Spotsylvania National Military Park
Fredericksburg, Virginia
July 21, 2003**

Proposed Action:

The National Park Service is proposing to stabilize historic resources and improve interpretation at Sunken Road, the Fredericksburg National Cemetery, and many of the 25 civilian sites at Fredericksburg & Spotsylvania National Military Park to more accurately convey their historical significance to visitors and to support a more coherent and expanded interpretation of the Civil War. This would improve visitor experience and circulation, rehabilitate cultural landscapes, and protect natural and cultural resources within the park. This work would include establishing an interpretive setting at Sunken Road in Fredericksburg Battlefield; restoring and improving portions of the Fredericksburg National Cemetery; and accessing, stabilizing, and interpreting civilian sites throughout the park. This document assesses the impacts related to the proposed action, which include negligible, minor, and moderate impacts to soils and topography, vegetation, wildlife and wildlife habitat, archeological resources, cultural landscapes, historic structures, visual resources, visitor experience, circulation and site access, and park operations and infrastructure.

For Further Information Contact:

Fredericksburg & Spotsylvania National Military Park
120 Chatham Lane
Fredericksburg, VA 22405

Note to Reviewers and Respondents:

If you wish to comment on the Environmental Assessment, you may mail comments to the name and address below. Please note that names and addresses of people who comment become part of the public record. If you wish for us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

Superintendent
Fredericksburg & Spotsylvania National Military Park
120 Chatham Lane
Fredericksburg, VA 22405

Comments submitted via electronic mail may be addressed to gregg_kneipp@nps.gov.

Contents

1	Introduction: Purpose & Need	1
1.1	Introduction	1
1.2	Project Background	1
1.2.1	History and Significance of the Park	1
1.2.2	Project Site Description.....	5
1.2.3	Relationship to Other Plans	6
1.3	Purpose and Need for Action.....	9
1.4	Planning Issues	11
1.5	Impact Topics	12
1.6	Impact Topics Considered but Dismissed from Detailed Analysis	14
2	Alternatives	19
2.1	Introduction	19
2.2	No Action Alternative	19
2.2.1	Sunken Road	19
2.2.2	Fredericksburg National Cemetery	20
2.2.3	Civilian Sites	20
2.3	NPS Preferred Alternative (Proposed Action).....	20
2.3.1	Sunken Road	21
2.3.2	Fredericksburg National Cemetery	25
2.3.3	Civilian Sites	26
2.3.4	Sustainability.....	35
2.3.5	Mitigation.....	36
2.4	Alternatives Considered but Dismissed	36
2.4.1	Sunken Road	36
2.4.2	Fredericksburg National Cemetery	37
2.4.3	Civilian Sites	37
2.5	Environmentally Preferred Alternative	37

3	Affected Environment	41
3.1	Introduction	41
3.2	Physical and Natural Resources.....	41
3.2.1	Soils and Topography	41
3.2.2	Vegetation.....	43
3.2.3	Wildlife and Wildlife Habitat.....	45
3.3	Cultural Resources	46
3.3.1	Archeological Resources	46
3.3.2	Historic Structures.....	50
3.3.3	Cultural Landscapes	51
3.4	Visual Resources.....	54
3.5	Visitor Use and Experience	56
3.6	Circulation and Site Access	57
3.7	Park Operations and Infrastructure.....	59
4	Environmental Consequences.....	61
4.1	Introduction	61
4.2	Methodology for Assessing Impacts	61
4.3	Physical and Natural Resources.....	65
4.3.1	Soils and Topography	65
4.3.2	Vegetation.....	69
4.3.3	Wildlife and Wildlife Habitat.....	73
4.4	Cultural Resources	77
4.4.1	Archeological Resources	77
4.4.2	Historic Structures.....	80
4.4.3	Cultural Landscapes	82
4.5	Visual Resources.....	85
4.6	Visitor Use and Experience	88
4.7	Circulation and Site Access	92
4.8	Park Operations and Infrastructure.....	95
5	Consultation & Coordination	99
5.1	Introduction	99
5.2	Brief History of Planning and Public Involvement	99
5.3	Interagency Coordination.....	100
5.4	Federal Consistency Determination.....	100
5.5	List of Recipients	101

References

Acronyms	103
Bibliography.....	104
List of Preparers, Contributors, and Reviewers.....	107

Appendices

- A Correspondence
- B List of Classified Structures

Figures

Figure Number	Description	Page Number
1	Fredericksburg and Spotsylvania National Military Park	3
2	Fredericksburg National Cemetery and Sunken Road	7
3	Sunken Road – Proposed Improvements	23
4	Sunken Road – North End Barrier	24
5	Sunken Road – Trolley Drop-off/Accessible Parking	27
6	Historic Structure Marking (typical)	28
7	Exhibit Area and Trail Surface Treatment (typical).....	31
8	Jackson Shrine	32
9	Chancellorsville Inn Site.....	33
10	Old Salem Church.....	34

Tables

Table	Description	Page Number
1	Civilian Site Improvements.....	29
2	Summary of Environmental Consequences	39

1 Introduction: Purpose & Need

1.1 Introduction

The National Park Service (NPS) is proposing to stabilize historic resources and improve interpretation and access at Sunken Road, the Fredericksburg National Cemetery, and many of the 25 civilian sites at Fredericksburg & Spotsylvania National Military Park (FRSP) to more accurately convey their historical significance to visitors and to support a more coherent and expanded interpretation of the American Civil War. This would improve visitor experience and circulation, rehabilitate cultural landscapes, and protect natural and cultural resources within the park.

Serving approximately 455,866 visitors per year, FRSP protects, preserves, and interprets seven individual units: Chatham, Fredericksburg Battlefield, Salem Church Battlefield, Chancellorsville Battlefield, Wilderness Battlefield, Spotsylvania Court House Battlefield, and the Stonewall Jackson Shrine (Figure 1). Located in Spotsylvania County, Virginia, along Interstate 95 between Washington, D.C., and Richmond, Virginia, these units are contained within FRSP's legally authorized acreage of 8,506, of which 7,400 acres are now under federal fee ownership or easement.

This Environmental Assessment (EA) analyzes the proposed action and alternatives and their impacts on the natural, cultural, and human environment. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9); and *NPS Director's Order 12* (DO-12): *Conservation Planning, Environmental Impact Analysis, and Decision-making*. Compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended (36 CFR 800) is being completed separately but concurrently.

1.2 Project Background

1.2.1 History and Significance of the Park

Congress created legislation establishing FRSP on February 14, 1927, in order to “commemorate the Civil War battles of Fredericksburg, Spotsylvania Court House, Wilderness, and Chancellorsville ... and

to mark and preserve for historical purposes the breastworks, earthworks, gun emplacements, walls, or other defenses or shelters ... used by the armies ... and together also with such additional land as the Secretary of War may deem necessary for monuments, markers, [and] tablets ... and to carry out the general purpose of this act ... [and] to make the historical points accessible” (44 Stat. 1091).

Events at the four battlefields at FRSP (Fredericksburg, Chancellorsville, Wilderness, and Spotsylvania Court House) resulted in more than 110,000 casualties in two years, making it the bloodiest ground in North America. Despite this catastrophic loss of human life, it is important to remember the region not as a place of loss but as a place “where uncommon valor was commonplace” (FRSP 2003). Some of the greatest leaders of men in our nation’s history came together here: Ulysses S. Grant, Robert E. Lee, and Stonewall Jackson led their troops through victory and defeat on these grounds.

The Battle of Fredericksburg began on December 11, 1862, when Union General Ambrose Burnside’s army left its position on Stafford Heights, overlooking Fredericksburg, and crossed the Rappahannock River into the city. Lee’s army had already secured the high ground on the west end of the city and rained artillery down on the Union army and civilians who remained within the city. On December 13, Burnside ordered two individual attacks on Prospect Hill and Marye’s Heights. The Union army briefly penetrated the Confederate defenses at Prospect Hill but was quickly repelled. Marye’s Heights was the scene of some of the most severe fighting during the Battle of Fredericksburg and was even more ruinous for the Union army, as Confederates, using the stone wall along Sunken Road for protection, slaughtered their attackers.

After the Union disaster at Fredericksburg, President Lincoln replaced Burnside with General Joseph Hooker. Hooker quickly moved his men back across the Rappahannock River, sending some of his troops through Fredericksburg, to the Chancellorsville crossroads before being stopped by the Confederate army. As Lee’s army moved to confront the oncoming Union soldiers, Hooker ordered a defensive line to be formed. Stonewall Jackson identified a weakness along the right flank of this line and boldly marched his men around the Union line for a surprise attack on the edge. This move led to the Union defeat and retreat back across the river. Despite this victory, the Confederate army suffered a great loss on the battlefield. Shot mistakenly by some of his own soldiers, Stonewall Jackson was taken to a hospital where his injured arm was amputated. Upon hearing of Jackson’s condition, Lee said, “He has lost his left arm, but I have lost my right arm” (FRSP 2003). Jackson was then transported to Guinea Station where he died a few days later. The Fairfield plantation office, now known as the “Jackson Shrine”, marks the site of his passing.

Riding the momentum of its victory at Chancellorsville, the Confederate army pushed north. This movement, however, was cut short at Gettysburg, Pennsylvania. Following the battle at Gettysburg, the war eventually returned to the Fredericksburg area on May 5, 1864. The Battle of the Wilderness, so named because the fighting took place in a complex web of thickets and undergrowth, would be the first of many encounters between Lee’s army and Union soldiers led by Ulysses S. Grant. Both sides claimed victories during the battle, but the standoff was broken when Grant moved his forces toward Spotsylvania Court House on May 7.

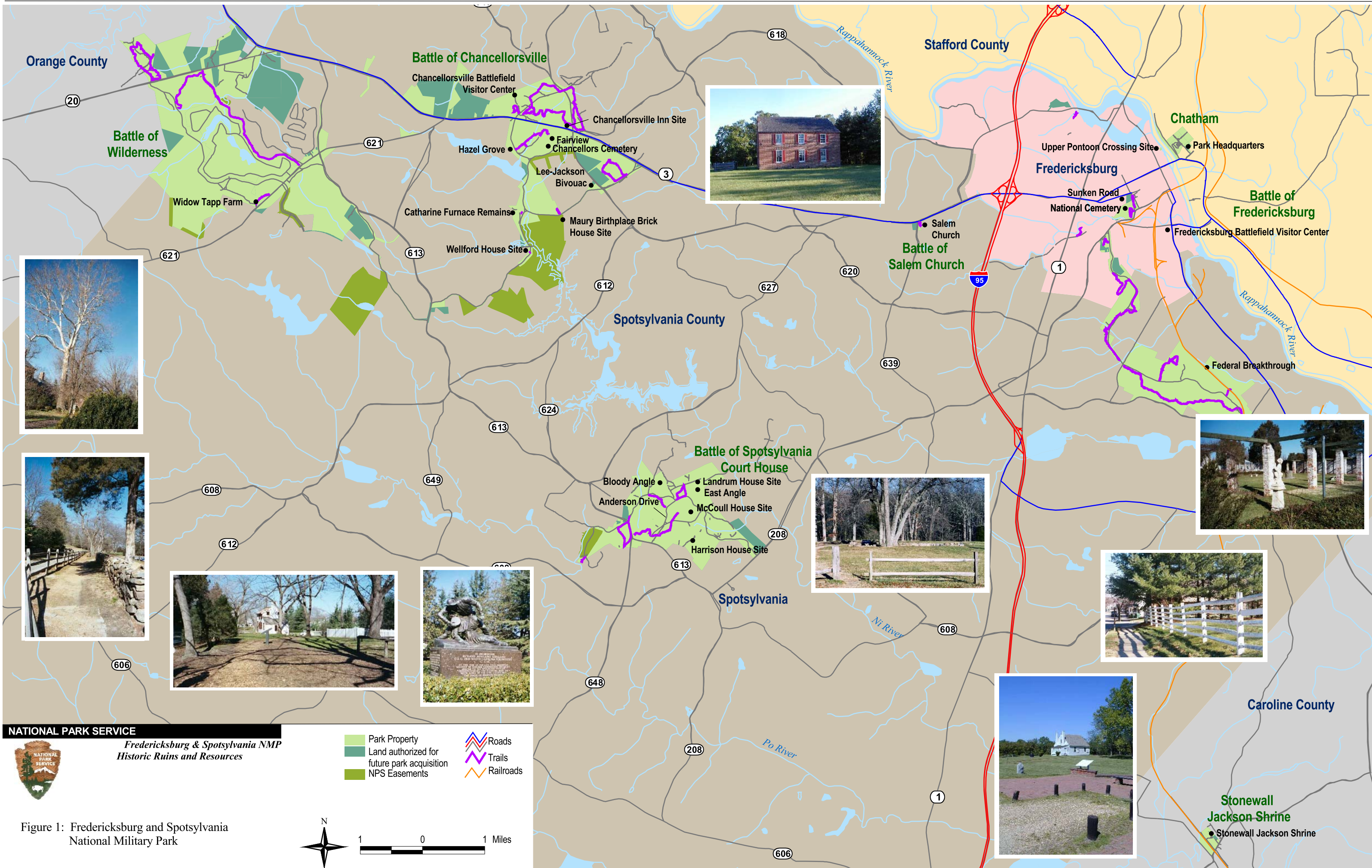


Figure 1: Fredericksburg and Spotsylvania National Military Park

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Spotsylvania Court House was decisively located as it controlled the shortest route to Richmond. The battle for this area included 20 hours of “the most intense hand-to-hand combat of the war” (FRSP 2003) during which the Union army ultimately seized the Confederate position. However, the Confederates were able to regroup near the Harrison House site and hold out for another week before the armies left the area. This battle may have initiated a turning point in the war and allowed for eventual Union victory (FRSP 2003).

1.2.2 Project Site Description

Sunken Road and Fredericksburg National Cemetery (Figure 2) constitute the heart of the Fredericksburg Battlefield unit. Receiving more than 250,000 visits per year, the unit is the most visited historic site within a 40 mile radius and thus at the center of the Fredericksburg region’s tourism economy. Sunken Road lies adjacent to the park’s primary Visitor Center and sits between two areas subject to intensive land acquisition efforts by the NPS – Willis Hill to the west and a series of houses on Willis Street to the east. Though owned by the NPS, Sunken Road has remained in use as a city street by virtue of retained access rights held by the city of Fredericksburg; however, in 2001, after years of consideration, the city agreed to donate its access rights to the park, clearing the way for the road to be closed to vehicular traffic, restored, and further interpreted.

Fredericksburg National Cemetery, the largest cemetery on any of America’s battlefields, covers 12 acres and contains the graves of over 15,000 veterans. The site falls off 90 feet from the top of the cemetery to Sunken Road, and this change in elevation is compensated for by the use of 13 turf terraces, which contain the graves of 967 Civil War soldiers.

The park includes at least 25 known civilian sites that collectively comprised the battlefield landscapes of 1862-64. During the Civil War, the Fredericksburg area was home to more than 20,000 civilians, many of them refugees, and these sites tell the story of the war from the civilian perspective. The civilian sites included in this project are scattered throughout FRSP and its various units and include Chancellorsville Inn, Hazel Grove/Fairview, Old Salem Church, Jackson Shrine, the Harrison House site, the McCoull House site, the Catharine Furnace site, Lee-Jackson Bivouac, Chancellorsville, Union Breakthrough, Bullock House, Wellford House, Spindle House, Landrum House, and Chatham (see Figure 1).

Several sites around the park, including the McCoull House site, the Chancellorsville Inn, and the Stevens and Innis Houses along Sunken Road, retain remains of historic-period structures, and the Innis House at Sunken Road and the office at the Chandler plantation (where Stonewall Jackson died) are intact historic structures from the Civil War period. Other sites are marked with interpretive signs that describe events that occurred there and its significance to the overall war. Many of these signs sit along park roads with small pull offs for visitors to stop and read. Some sites, such as the Chancellorsville Inn, Old Salem Church, Hazel Grove/Fairview, and the Harrison House, have space for visitors to park their cars and wander around the site.

While these sites commemorate a significant time or place, many of them have lost their historical character and setting. For example, Sunken Road is now a paved road above its historical elevation that until recently was open to vehicular traffic. Although the original stone wall lining the road had been

somewhat reduced prior to the Battle of Fredericksburg, it has been further reduced to such an extent that it no longer represents its historical context. In addition to this, the once open field between Fairview and the Chancellorsville Inn site is now wooded and does not portray the battlefield and vista that existed during the war. Such non-historic vegetation patterns have become a problem at many sites within the park and have impeded interpretation of wartime events.

In addition, the ability to understand the park through interpretive signs is limited. The signs are outdated and have deteriorated due to weathering over the years. Furthermore, access to and placement of these signs is limited by the vegetative growth that has developed around the park. Areas that were once open fields are now forests, making it hard for visitors to imagine artillery exchanges at the Chancellorsville Inn or troop movements at Bloody Angle. Additional interpretive hindrances exist within the park: many sites have limited or no formal pathways, and social paths (paths made by repeated foot traffic) have developed in multiple locations across sites. The lack of formal paths makes it difficult for visitors to understand the different aspects of a site, and in many cases, it also makes site investigation dangerous as the ground can be uneven or overgrown with vegetation. Improving trails and formalizing circulation around resources would enhance the park's presentation of the various sites.

Regardless of what remains or does not remain at these sites, their importance in our nation's history is undeniable. Whether one is paying respect at the Fredericksburg National Cemetery, recounting the Battle of Fredericksburg while walking along the stone wall at Sunken Road, or following the Confederate line of retreat at the Harrison House, it is the preservation and interpretation of these sites that is critical to the park's mission. In order to accomplish this mission, the park must ensure that these sites are not degraded. It must also strive to present the area as it existed during the Civil War and explain the significance of this presentation. Finally, all of this must be done in a consistent context that can be clearly presented to and understood by the visitor.

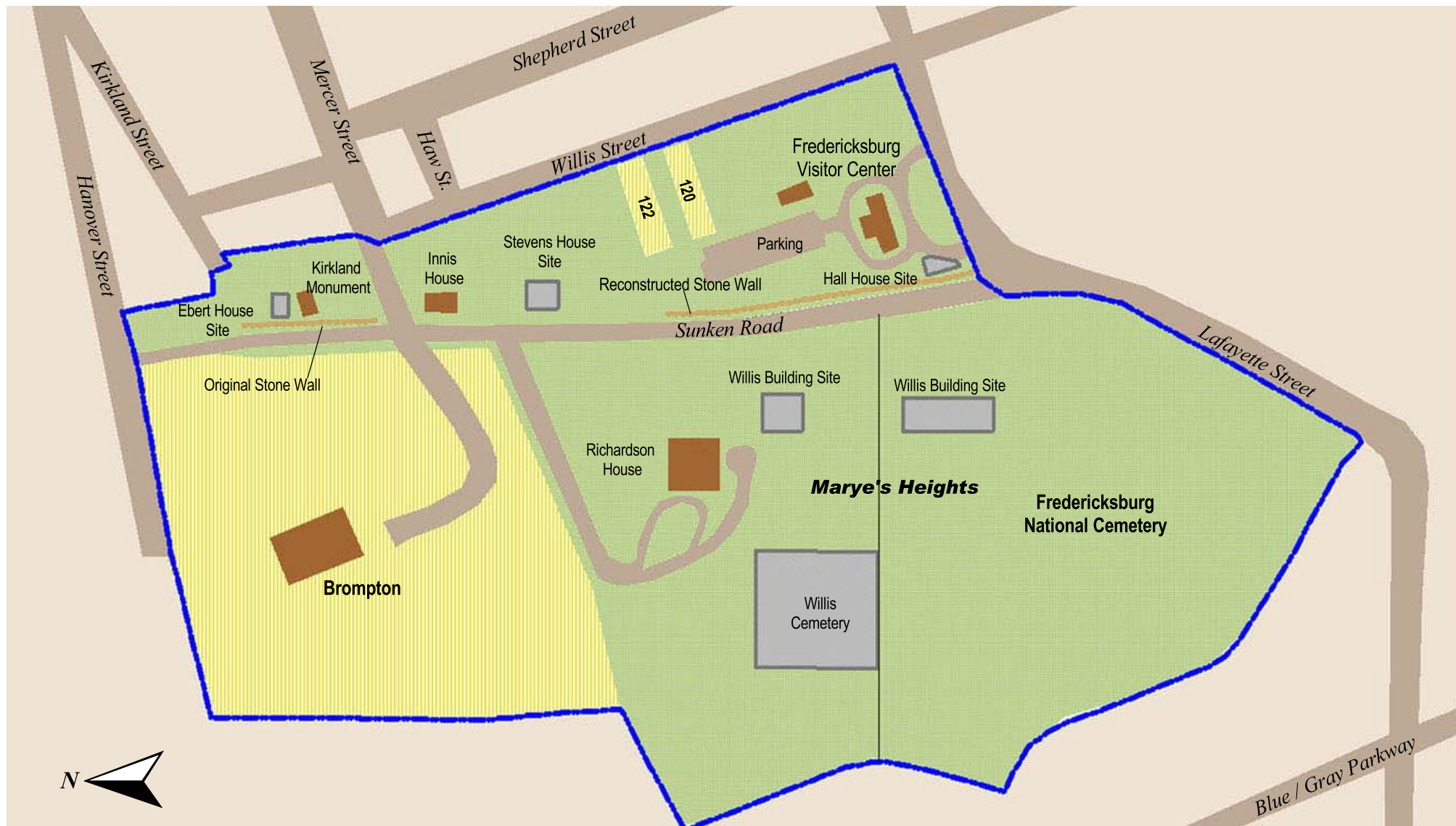
1.2.3 Relationship to Other Plans

General Management Plan

The current FRSP general management plan (GMP) was approved on August 28, 1986 (NPS 1986), to direct management, use, and development of the park for the ensuing 10 to 15 years. It identifies the park's mission as, "...to protect the historic resources associated with the four Civil War battles fought here, to convey the significance of these events in the continuum of history, to provide a setting for contemplation, and to inspire in the community and nation a commitment to preserve these places for future generations."

One of the points the GMP addresses is visitor confusion between the relationships of the four major battles. The plan addresses this confusion by calling for the clearing of non-historic ground cover that has invaded the park. This includes areas that were once open space and have now been filled in with thick vegetation, as well as areas that are now open and were once dense thickets. Included in this plan is the clearing of approximately 89 acres at the Chancellorsville Battlefield unit.

The GMP also notes poor circulation at various sites as being a cause of visitor confusion. The plan calls for improved signage to inform visitors, unite the sites, and thus improve circulation throughout the park.



- Park Land
- Land Authorized for Future Park Acquisition
- Existing Structure
- Archeological Sites

Not To Scale

NATIONAL PARK SERVICE

Fredericksburg & Spotsylvania NMP
Historic Runis and Resources



Figure 2: Fredericksburg National Cemetery and Sunken Road

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Long Range Interpretive Plan

The park's *Long Range Interpretive Plan* (LRIP) (NPS 2001) describes existing interpretation at the park, outlines a plan for improvements to the interpretive program, and details the conditions that would result from implementation of that plan. The interpretive plan seeks to create a situation in which visitors can walk the grounds and be oriented with the events that occurred in different regions of the park. This orientation would allow visitors to visualize the magnitude and sequence of the individual battles and place each of the major battles in context with the surrounding environment and the war as a whole, impressing upon the visitor the fact that the area was a war zone for more than two years.

Resource Management Plan

The *Resource Management Plan* (FRSP 1999) outlines the park's needs in both cultural and natural resource research and management. Identified needs related to the proposed project include monitoring and stabilizing historic structures, investigating and marking Civil War era road traces, and restoring historic ground cover.

1.3 Purpose and Need for Action

The overall purpose of this project is to stabilize historic resources and improve interpretation at Sunken Road, the Fredericksburg National Cemetery, and many of the 25 civilian sites at FRSP to more accurately convey their historical significance to visitors and to support a more coherent and expanded interpretation of the American Civil War. The project would help meet the park mission to protect historic resources associated with the four Civil War battles fought near Fredericksburg, convey the significance of those events in the continuum of history, provide a setting for contemplation and learning, and inspire in the community and nation a commitment to preserve these places for future generations.

1.3.1 Sunken Road

Although Sunken Road is owned by the NPS, Fredericksburg residents have used the one-way route as a shortcut between two major east-west arteries through the city for years. In 2001, after years of consideration, the city agreed to donate its access rights to the park, clearing the way for the road to be closed to traffic, restored, and opened to pedestrians visiting the park.

The proposed work at Sunken Road would enhance the interpretation of the site's role in the Battle of Fredericksburg by establishing a setting in which visitors could better see and understand how the road and adjacent structures figured into the battle. Thousands of men fought and died on and around Sunken Road, but the park cannot convey the magnitude of the road's history in its current condition. Modern intrusions, such as traffic around Sunken Road, overhead power lines, and obvious stormwater drains, detract from the site's historical context. Unimproved and unmarked trails around Sunken Road and associated structures, including the Innis House and Stevens House site, are not clearly defined for visitors and are not universally accessible. Also, the stone wall that historically existed along the road currently exists only in segments.

Inadequate and outdated interpretive waysides do not fully tell the story of the road and its importance in the battle and the war. At the Innis House, the most powerful aspect of the visitor experience is the bullet holes riddling the house's interior; however, the house is only open a few days a year due to staffing limitations, and few visitors ever see the interior. Improved signage would help to convey the role the house played in the battle without requiring access to the structure.

1.3.2 Fredericksburg National Cemetery

Within the cemetery, the severe slope of the terraces, along with their orientation to the sun, creates extremely poor growing conditions for grass. Loss of turf cover is widespread and has facilitated erosion of the slopes. Early preservation actions to halt this erosion included the installation of an irrigation system completed in 2000, but further action is needed to rehabilitate the turf cover. Establishment of an attractive and permanent turf cover would preserve the major landscape feature of the cemetery as well as the headstones.

Throughout the cemetery, many of the more than 7,000 headstones are falling over, and gravesites are settling. Currently, a number of headstones are approximately 15° from plumb and continue to worsen. The gravesites themselves have sunk approximately 6 inches from the surrounding ground. These conditions create a tripping hazard and complicate maintenance activities, as mowers must slow to a crawl while attempting to cut grass in the vicinity of sunken graves. Tilting headstones and sinking gravesites also compromise the visual integrity of the cemetery and do not show proper respect for the veterans buried there.

1.3.3 Civilian Sites

Interpretation of Civil War civilian sites has become part of a service-wide initiative in which the NPS is striving to go beyond traditional interpretation of battle strategy and tactics to tell untold stories and to reach broader constituencies. This project would address the historical imperative and the Congressional mandate to expand the scope of interpretation at Civil War sites by allowing visitors an alternative way to engage in the story of America's Civil War.

The Fredericksburg area was home to civilians and refugees, and the park includes at least 25 known civilian sites that collectively comprised the battlefield landscapes of 1862-64. These sites are typically characterized by makeshift site markings (such as log enclosures), an absence of identified visitor use area, and poor interpretation.

Circulation and Visitor Access. The official park brochure outlines a driving tour that connects all of the battlefield and civilian sites. The tour begins at the Fredericksburg Visitor Center and stops are marked sequentially on the map. At various tour stops, pathways from parking areas to ruins and sites are generally not clearly marked and visitors are free to choose their own paths to resources. This has left many sites riddled with social trails and footpaths, which are little more than areas where the grass has been worn down. In several cases, historic resources at these sites are in danger of degradation due to such uncontrolled visitor access.

Interpretive Media and Wayside Exhibits. Wayside exhibits are used throughout the park to interpret key events, structures, and landscape elements. Over the years, an assortment of varied wayside exhibit designs has developed, some of which are highly intrusive on the historic scene. Opportunities also have been overlooked to interpret sites that are not primary stops on the tour routes but, nonetheless, have interesting and important stories to tell.

Minimal and outdated interpretation is done at many of the civilian sites; nothing is done to collectively tell the civilian story. While the various types of information are useful, there is no interpretive media that gives visitors a visual overview of the battle events as they unfolded or which place them in the larger context of the Civil War. Further, many interpretive exhibits are dated, and some of the interpretive themes are not adequately conveyed.

Historic Scene Restoration. Portions of the four battlefields support non-historic ground cover, and some of the open fields of the Civil War period are now wooded. Because the most severe fighting took place in the open areas, battle events are difficult to interpret where forests have grown up. Many recent openings where dense thicket or forest prevailed historically also confuse interpretation. The GMP calls for reestablishing many of the historic open areas on park lands. In the Chancellorsville Battlefield unit, efforts to restore the historic landscape at Hazel Grove have improved the interpretive potential of the battlefield; however, two areas of non-historic wooded vegetation remain at Fairview.

1.4 Planning Issues

Issues and concerns affecting this proposal were identified from past NPS planning efforts, and input from environmental groups and state and federal agencies. Although many issues were recognized, the NPS has identified the following as the most important.

Accessibility. Pathways proposed in this project should be designed to lead visitors through the most historical aspects of the park and allow them the best vantage point to view the interpretive sites. Site accessibility should be designed in a way that is universally accessible to all visitors.

Drainage. Drainage is an existing concern at Sunken Road. The proposed work would aim to improve grading on the road so the drop inlets would be able to drain a storm event before flooding can occur. The timing of several elements of the project (including work at the cemetery and Fairview sites) would be critical to ensuring that the temporary loss of vegetation would not lead to increased runoff and drainage problems throughout the park.

Safety. Unstable paths are an important safety concern at FRSP where social paths continue to wear away and have developed ruts and unearthed roots that create tripping hazards. New paths should be designed with a focus on providing a safe means of reaching interpretive sites and historic resources. Roads adjacent to sites, such as Route 3, present another safety concern, as busy traffic passes very close to pedestrian paths and visitor use areas. Site improvements should include a means of keeping visitors from inadvertently wandering into or along the road.

1.5 Impact Topics

Specific impact topics were developed for discussion focus and to allow comparison of the environmental consequences of each alternative. The impact topics were identified based on federal laws, regulations, and Executive Orders; *NPS Management Policies 2001* (NPS 2000); NPS knowledge of resources; and site reconnaissance. They include: natural resources (soils and topography, vegetation, and wildlife and wildlife habitat), cultural resources (archeology, cultural landscapes, and historic structures), visual resources, visitor experience, circulation and site access, and park operations and infrastructure. A brief rationale for the selection of each impact topic is given below, and they are discussed in detail in “Chapter 3: Affected Environment.”

1.5.1 Natural Resources

NEPA policy calls for an examination of the impacts on all components of affected ecosystems. The NPS would ensure that the environmental costs and benefits of proposed operations, development, and resource management are fully evaluated before taking actions that may impact the natural resources of parks.

Soils and Topography

The project area is located near the transition between the Coastal Plain and Piedmont physiographic regions, and the geography of the area generally consists of gently rolling hills within the Piedmont Plateau. The area is composed of a variety of soil types with varying characteristics, including some soils considered to be prime farmland soils. Because the proposed action involves ground-disturbing activities in several locations, soils and topography are addressed as impact topics.

Vegetation

NPS policy is to protect the components and processes of naturally occurring vegetative communities, including the natural abundance, diversity, and ecological integrity of plants (NPS 2000). The proposed actions have the potential to affect vegetative communities; therefore, this impact topic is addressed in the EA.

Wildlife and Wildlife Habitat

Impacts to wildlife and wildlife habitat are closely tied to changes in vegetation cover and visitor use patterns. A large area of wooded vegetation would be removed, eliminating habitat for a variety of wildlife species. In addition, changes in visitor use patterns at the various sites are expected to result from this project and would impact wildlife. Wildlife and wildlife habitat is therefore considered as an impact topic.

1.5.2 Cultural Resources

The NHPA, NEPA, NPS Organic Act (16 USC 1-4), *NPS Management Policies 2001* (NPS 2000), NPS DO-12, and NPS DO-28: *Cultural Resources Management Guideline* require the consideration of impacts on cultural resources either listed in or eligible to be listed in the National Register of Historic Places (NRHP). Cultural resources affected by the proposed actions include archeological resources, cultural landscape, and historic structures.

Archeological Resources

Although the park lacks an archeological overview and assessment, preliminary surveys have identified at least 54 archeological sites. Several of the project sites contain historic-period archeological sites and isolated finds associated with the Civil War battles that took place in the area. Archeological resources are therefore considered as an impact topic.

Historic Structures

All the park's structures were recently surveyed during an update of its List of Classified Structures. This work evaluated 222 structures, nearly all of which are now listed on the NRHP and most of which are in fair condition and have good to fair documentation. Potential impacts to these would be identified.

Cultural Landscapes

As described by the NPS *Cultural Resource Management Guideline* (DO-28), a cultural landscape is “a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.” While the park recognized the presence of numerous areas with cultural landscapes that may meet National Register criteria, at present no reports documenting those resources exist. The park has neither a completed (Level II) cultural landscapes inventory nor a cultural landscape report for any areas within the park. The park contains portions of four major Civil War Battlefields – Fredericksburg, Chancellorsville, the Wilderness, and Spotsylvania Court House; as well as Chatham Manor, Salem Church, and the historic building in which Stonewall Jackson died. These historic sites are important for their association with important events that happened here during the Civil War; therefore, cultural landscapes are included as an impact topic.

1.5.3 Visual Resources

In the evaluation of scenic resources, both the visual character and the quality of a viewshed are considered. A viewshed comprises the limits of the visual environment associated with the proposed action. The proposed projects have the potential to impact the scenic quality of several sites at FRSP. Therefore, scenic resources are considered as an impact topic.

1.5.4 Visitor Experience

Enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks (NPS 2000). The NPS strives to provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the natural and cultural resources found in parks. The proposed projects were developed to enhance the visitor experience at the park by improving access and circulation to a number of sites, adding new interpretive exhibits, and restoring historic scenes.

1.5.5 Circulation and Site Access

The proposed projects include enhancements to the pedestrian circulation system throughout the park. Improved access is a major element of the project; therefore, circulation and site access is included as an impact topic.

1.5.6 Park Operations and Infrastructure

The proposed projects include minor infrastructure improvements and would affect park operations in terms of maintenance and interpretive staff requirements. Park operations and infrastructure are therefore included as impact topics.

1.6 Impact Topics Considered but Dismissed from Detailed Analysis

The following impact topics and environmental considerations were identified but eliminated from further analysis because they do not apply to the proposed alternatives or the existing conditions at the project area.

1.6.1 Natural and Physical Resources

Chesapeake Bay Considerations

Chesapeake Bay Preservation Areas are those areas that may contribute to the pollution of the Chesapeake Bay watershed. Such areas are divided into three categories: Resource Protection Areas, Resource Management Areas, and Intensely Developed Areas. Construction within these areas is limited and regulated to ensure that nonpoint source pollution is remediated and the project does not lead to an increase in pollution. The project area is not within a Chesapeake Bay Preservation Area.

Water Quality

The *NPS Management Policies 2001* require protection of water quality consistent with the Clean Water Act. Park-owned lands are drained by the Rapidan, Rappahannock, Po, Ni, and York Rivers as well as various small streams; however, areas impacted by this project contain no surface waters. Water quality was therefore eliminated from consideration as an impact topic.

Wetlands

Executive Order 11990 (*Protection of Wetlands*) and NPS 77-1: *Wetland Protection* require an examination of impacts to wetlands. There are no jurisdictional or NPS-defined wetlands within the project area. Therefore, wetlands were dismissed as an impact topic.

Floodplains

Executive Order 11988 (*Floodplain Management*) and NPS 77-2: *Floodplain Management* require examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. The project area is located within an area that is not subject to normal flooding from a 100-year flood. The proposed action would not affect floodplain functions or values.

Geology

The park has current data on the region's geology. The restoration of park resources would not impact geologic resources in the project area or elsewhere in the park.

Special Status Species

The Virginia Department of Conservation and Recreation's Division of Natural Heritage (VDNH) (VDNH 2003) and the Virginia Department of Game and Inland Fisheries (VDGIF) (VDGIF 2003) identified the potential for special status species to inhabit the project area (see correspondence in Appendix A). These species include:

- Cerulean warbler (*Dendroica cerulean*) – federal species of concern
- Tricolored heron (*Egretta tricolor*) – state species of concern
- Alewife (*Alosa pseudoharengus*) – anadromous fish
- Small whorled pogonia (*Isotria meleoloides*) – federal threatened, state endangered
- Red milkweed (*Asclepias rubra*) – state rare

Cerulean Warbler. The Cerulean warbler is a migratory passerine with a primary breeding range that covers most of eastern North America, extending from the lower and upper Mississippi River valley, upper Ohio River valley, and Appalachian Mountains northward to New York, portions of New England, and southwestern Quebec (Hamel 2000). Non-breeding (wintering) habitat includes portions of Central and South America.

The principal breeding habitat is almost exclusively deciduous forests, although rare instances have occurred where birds were observed utilizing needle-leaf trees for nesting. Records from a number of sources list a variety of deciduous tree species utilized for nesting, indicating that no one specific tree species is preferred. Kahl et al. (1985) suggest that the birds prefer forests with canopy coverage averaging 85%, while others suggest that gaps in the canopy are an important component. Forest size of occupied nesting sites tends to be larger than 25 acres.

Tricolored Heron. The tricolored heron is a wetland-dependent, wading bird that forages on small fish, aquatic invertebrates, small reptiles, and amphibians within salt and freshwater marshes and shorelines of ponds and lakes. Nesting habitat typically includes forested areas over standing water.

Alewife. The alewife is an anadromous fish that migrates into the warmer, freshwater regions of major coastal river systems during April through June.

Small Whorled Pogonia. The small whorled pogonia is a state and federally protected plant that occurs in the eastern United States from Georgia to Maine. This species tends to prefer second- to third-growth, mixed-deciduous or mixed-deciduous/coniferous forests on north-facing slopes within upland sites, often in association with neighboring drainageways and coves. Von Oettengen's (1992) observation is that "characteristics common to most *I. medeoloides* sites include sparse to moderate ground cover in the species' microhabitat, a relatively open understory canopy, and proximity to features that create long-persisting breaks in the forest canopy. Soils at most sites are highly acidic and nutrient poor, with moderately high soil moisture values."

The U.S. Fish and Wildlife Service (FWS) noted that they expect no impacts to federally-listed or proposed species or designated critical habitat (FWS 2003). None of the special status species were observed at project sites, and no suitable habitat for species known in the area exists at any of the locations affected by the project. The impact to special status species therefore would be negligible, and special status species was dismissed as an impact topic.

Air Quality

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.) requires land managers to protect air quality. Section 118 of the Clean Air Act requires parks to meet all federal, state, and local air pollution standards. *NPS Management Policies 2001* (NPS 2000) addresses the need to analyze potential impacts to air quality during park planning. Hauling material, operating equipment, and other construction activities could result in temporarily increased vehicle exhaust and emissions. However, hydrocarbons, nitrogen oxides, and sulfur dioxide emissions, as well as any airborne particulates created by fugitive dust plumes, would be rapidly dissipated by air flow because air stagnation is rare at the project site. Overall, there could be a short-term, negligible degradation of local air quality; however, such effects would be temporary, lasting only as long as construction. FRSP's air quality would be unaffected by the proposal. Therefore, air quality was dismissed as an impact topic.

Soundscapes and Noise

In accordance with *NPS Management Policies 2001* (NPS 2000) and NPS DO-47: *Sound Preservation and Noise Management* (NPS 2000), an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable vary

among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas. Based on the scope of the project and the surrounding commercial/residential development, there would be no basic change to soundscapes or noise. Therefore, soundscapes and noise was dismissed as an impact topic.

Lightscares

In accordance with *NPS Management Policies 2001* (NPS 2000), the NPS strives to preserve natural ambient landscapes, which are natural resources and values that exist in the absence of human caused light. The project would not add a detectable amount of light pollution.

Hazardous Materials

No hazardous materials, including asbestos containing material, lead-based paint, and petroleum storage tanks, would be impacted by work proposed in this project. The impact topic has therefore been eliminated.

1.6.2 Cultural Resources

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or 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 FRSP. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, Indian trust resources was dismissed as an impact topic.

Ethnographic Resources

Ethnographic resources are defined by the NPS 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” (DO-28). There are no known ethnographic resources within the project area, and the proposed actions would not preclude any traditionally-associated group from using the site.

Museum Objects

The NPS defines a museum object as “a material thing possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. Museum objects include prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens

that are part of a museum collection” (DO-28). This EA does not address preservation and protection standards and requirements for museum objects nor would the proposed action involve museum objects; therefore, museum objects was dismissed as an impact topic.

1.6.3 Environmental Justice

Executive Order 12898 (*General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*) requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the proposed action involves the stabilization of historic resources, it would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency’s *Draft Environmental Justice Guidance* (July 1996). Therefore, environmental justice was dismissed as an impact topic.

1.6.4 Socioeconomic Environment

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Implementing the proposed action could provide a negligible beneficial impact to the economies of nearby Fredericksburg, as well as Spotsylvania County (e.g. minimal increases in employment opportunities for the construction workforce and revenues for local businesses and government generated from construction activities and workers). Any increase, however, would be temporary and negligible, lasting only as long as construction. Therefore, socioeconomic environment was dismissed as an impact topic.

2 Alternatives

2.1 Introduction

This section describes various management alternatives for stabilizing historic ruins and resources at FRSP. Alternatives for this project were developed to preserve, restore, mark, and interpret key resources associated with the four battles around Fredericksburg, providing interpretive settings and opportunities that support a more vivid and expanded interpretation of the Civil War.

2.2 No Action Alternative

The No Action Alternative would continue the present management, operations, and conditions of the historic ruins and resources at FRSP. It does not imply or direct discontinuing the present action or removing existing uses, developments, or facilities. The No Action Alternative provides a basis for comparing the management direction and environmental consequences of the NPS Preferred Alternative. Should the No Action Alternative be selected, the NPS would respond to future needs and conditions associated with FRSP historic ruins and resources without appreciable actions or changes in the present course.

2.2.1 Sunken Road

In 2001, the city of Fredericksburg and the NPS agreed to close Sunken Road to vehicular traffic, allowing for pedestrian use of the roadway; however, no changes would be made in the appearance or structure of the road or its interpretive setting. The ends of the road would remain open to intersecting streets.

General pedestrian circulation and accessibility would not be improved. Visitors to Sunken Road would continue to park at the Fredericksburg Visitor Center and approach Sunken Road via a rubberized mulch path, entering the road at a midway point. This access would not be universally accessible nor would paths around the various resources along Sunken Road. No defined circulation pattern would be developed, and visitors would continue to wander around the resources with no direction and little interpretive information.

Existing interpretive signage and site markings would remain. The Stevens House would be marked with wood rails, while there would be no delineation of the Ebert House. Interpretive waysides would continue to be inadequate for telling the story of Sunken Road and the Battle of Fredericksburg. There would also be no unity, in terms of consistent marking and interpretation, among the sites at Sunken Road.

2.2.2 Fredericksburg National Cemetery

Current stabilization practices, which are marginally successful, consist of using park maintenance personnel to hydro-seed the terraces with a mixture of lime, fertilizer, grass seed, and mulch every 3 to 4 years. A small percentage of the seeds germinate and cover bare spots; however, without proper seedbed preparation, which normally consists of cultivating a few inches of soil, hydro-seeding is a temporary solution. Traditional seedbed preparation is impossible on the terraces because the severity of grade ensures disturbed soil would wash away before a turf cover could be established.

While hydro-seeding the terraces would maintain the status quo, it would do nothing to improve the appearance or long-term stability of the terraces. The grass, if it germinates at all, would have a shallow root system and would be quickly out competed by weeds. Poor turf cover on the terraces facilitates erosion and presents a poor visual appearance. The problem would continue to worsen, and the terraces could eventually erode away resulting in the desecration of gravesites on the terraces.

2.2.3 Civilian Sites

Historic Structure Markings. Historic structure markings would continue to vary by site. For example, both the Harrison House and McCoull House sites are marked with stones, while the Fairview House site and Bullock House site are marked with wooden posts. The Chancellorsville Inn site makes use of several types of markings to indicate additions to the structure over time. This variation in markings by site is confusing to visitors.

Site Access. Trails would remain unformalized and would continue to spread visitors across the resource. Most of these trails would remain as social paths. Over time, the use of these paths would lead to further erosion at the sites. Also, ruts and other variations along these paths would continue to present safety hazards to visitors.

2.3 NPS Preferred Alternative (Proposed Action)

The NPS Preferred Alternative presents the NPS proposed action and defines the rationale for the action in terms of resource protection and management, visitor and operational use, cost, and other applicable factors. The NPS Preferred Alternative in this project involves three components: (1) establish an interpretive setting at the Sunken Road; (2) restore Fredericksburg National Cemetery; and (3) access, stabilize, and interpret civilian sites throughout the park. At each of the sites, the goals of the project would be to:

- provide a setting that supports interpretive goals;
- provide a setting that provides context for, rather than degrades, extant historic and archeological resources;
- formalize circulation and visitor use areas to reduce degradation of surrounding landscape and maintenance requirements;
- provide ready and universal access for visitors to the core historic area;
- provide modern, relevant, on-site media; and
- provide the most benefit to the NPS, visitors, and the local community.

2.3.1 Sunken Road

The first and most visible component of the project involves the 1,474-foot long historic Sunken Road. The project would not actually restore the historic road but would seek to establish an appropriate interpretive setting along the length of the road by removing modern features, recreating the road's surface and historic dimensions, and, where appropriate, reconstructing missing portions of the stone walls (Figure 3). Work would include the removal of approximately 17,000 square feet of pavement (often several layers of it) in order to lower the surface of the road to nearer its historic level but would not disturb the historic roadbed. The pavement would be replaced with 6 inches of a sustainable hard surface treatment, such as structural soil or gravel with soil cement. Based on archeological evidence, long-missing stone retaining walls (approximately 400 linear feet) on the east side of the road would be reconstructed. In addition, overhead power lines would be relocated underground, and improvements to manage traffic around the site would be implemented. Finally, interpretive media that would illuminate the role of Sunken Road and its environs in the Battle of Fredericksburg would be developed.

In addition to the design of components specific to Sunken Road (stone wall reconstruction, surface treatment for the road itself), the reestablishment of an appropriate interpretive setting at Sunken Road encompasses design issues common to the entire project. Design standards selected for the Sunken Road could be used to establish a systematic design approach at sites park wide, including:

- a method for marking house sites;
- hard surface treatments for outdoor exhibit areas;
- surface treatments for interpretive trails and paths; and
- design standards for wayside exhibits.

In total, work along Sunken Road would cost approximately \$668,000.

Road Surface. Using information gained through archeological analysis, the historic dimensions of Sunken Road would be reestablished. The surface of Sunken Road would be restored to its natural appearance using structural soil surface located above the historic surface of Sunken Road. The pavement of the road would be removed to reveal its historic elevation and appearance. Use of a sustainable (20-year life) hard surface treatment for road would not intrude on the historic fabric but would visually mimic the historic appearance of Sunken Road.

Mercer Street would remain open to limited-access traffic and would continue to provide access to both Brompton and the Richardson House (see Figure 2); therefore, the segment of Sunken Road from Mercer Street north to the Richardson House driveway would be constructed of more stable, drivable material similar in appearance to other restored sections of the road. This small segment of Sunken Road would still be accessible by necessary local vehicular traffic, while only pedestrians and maintenance vehicles would be permitted on the rest of the road.

Mercer Street, a non-historic street that intersects with Sunken Road, would be reduced in width to 12 - 18 feet to reclaim a portion of the Innis House yard. The road would be asphalt with a double chip surface and would be colored to match the Sunken Road treatment. The sidewalk to the north side of Mercer Street would be removed to allow pedestrian use of the street as the main access path to Sunken Road.

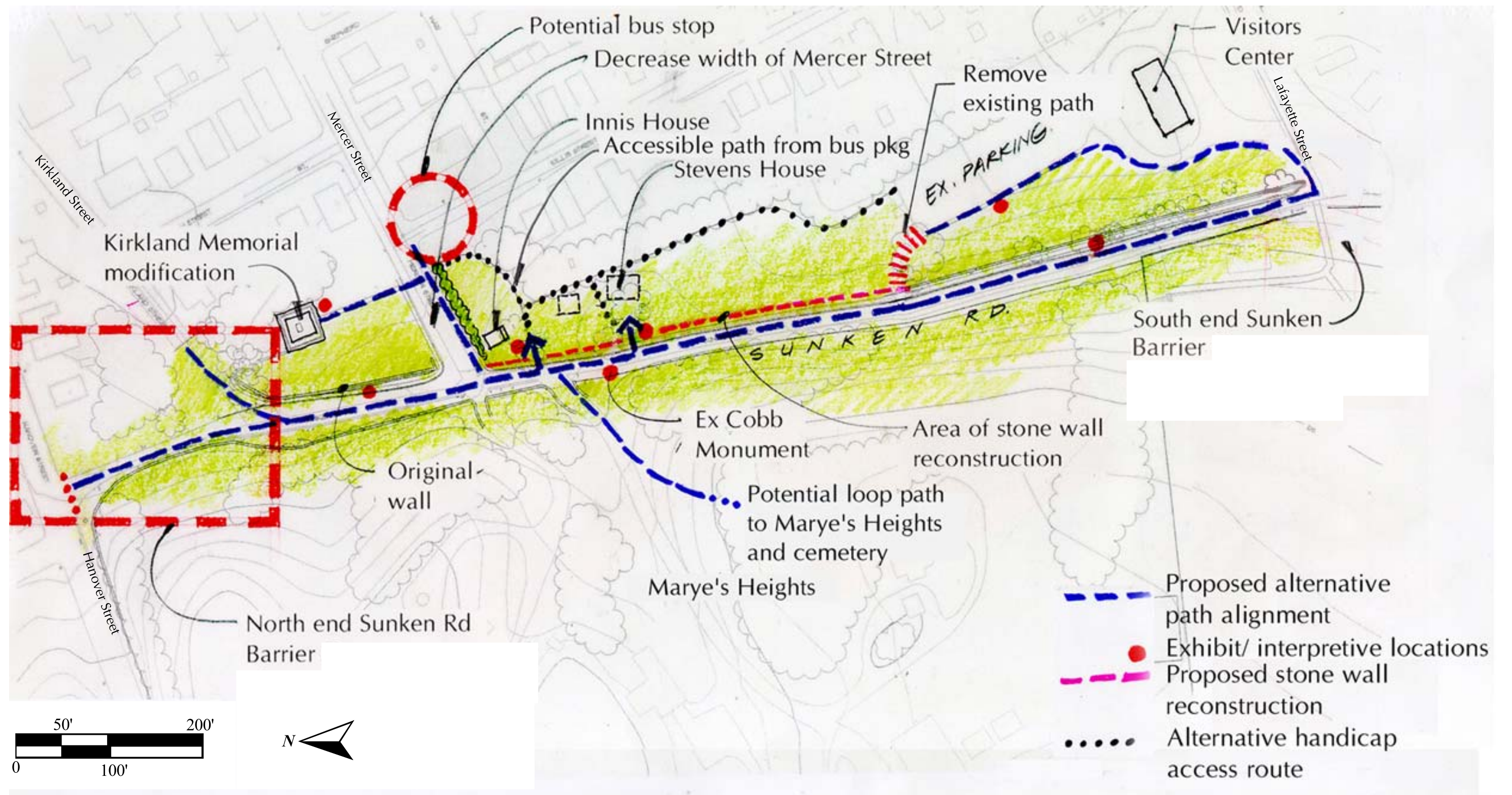
Stone Wall. Archeological analysis confirmed the location, nature, and extent of Sunken Road and missing segments of the adjacent stone walls, and analysis of historic photographs established design standards for reconstructing missing sections of the walls. Missing sections of the stone wall, approximately 400 linear feet, would be rebuilt between the existing reconstructed stone wall and Mercer Street, with a break in the area of the Stevens House. Approximately 2 to 4 inches of gravel would be placed atop traces of the original stone wall. The new wall would be constructed above this to a height of approximately 4 feet.

On the opposite side of the road, a sloped edge would be constructed along the existing west wall. Buffer plantings would be added to protect the wall and camouflage drainage under the perimeter of the roadway.

Circulation and Accessibility. In order to improve circulation and accessibility, hard-surface trails and exhibit areas would be added to various sites and high visitor use areas along Sunken Road. These would be constructed with materials (such as brick, aggregate, or rubberized mulch) appropriate to the specific site. These treatments would not only help to guide and control circulation but would also aid in reducing erosion and physical degradation of the landscape.

The existing rubberized mulch path between the Visitor Center parking area and Sunken Road would be removed. A new path would guide visitors from the parking area at the south end of Sunken Road, where they would begin their experience.

Sunken Road would curve and extend to the terminus of Kirkland Street in order to provide pedestrian access at this point. Additional plantings here would help to delineate the end of Sunken Road but would be kept low enough to keep the vistas to the road and Kirkland Memorial open. North of Kirkland Street, the width of Sunken Road would be reduced, and a pedestrian trail surface treatment would be used from this point to Hanover Street. At the terminus of Sunken Road at Hanover Street (Figure 4), a curbed vehicle pull off would be constructed to accommodate bus parking. One parallel parking space with accessibility for handicap use only would also be added. Low plantings along Hanover Street would keep views to Sunken Road open, and vegetation between Kirkland Street and the Kirkland Memorial would be removed to allow views of the memorial from Hanover Street. Large trees along the north east side of



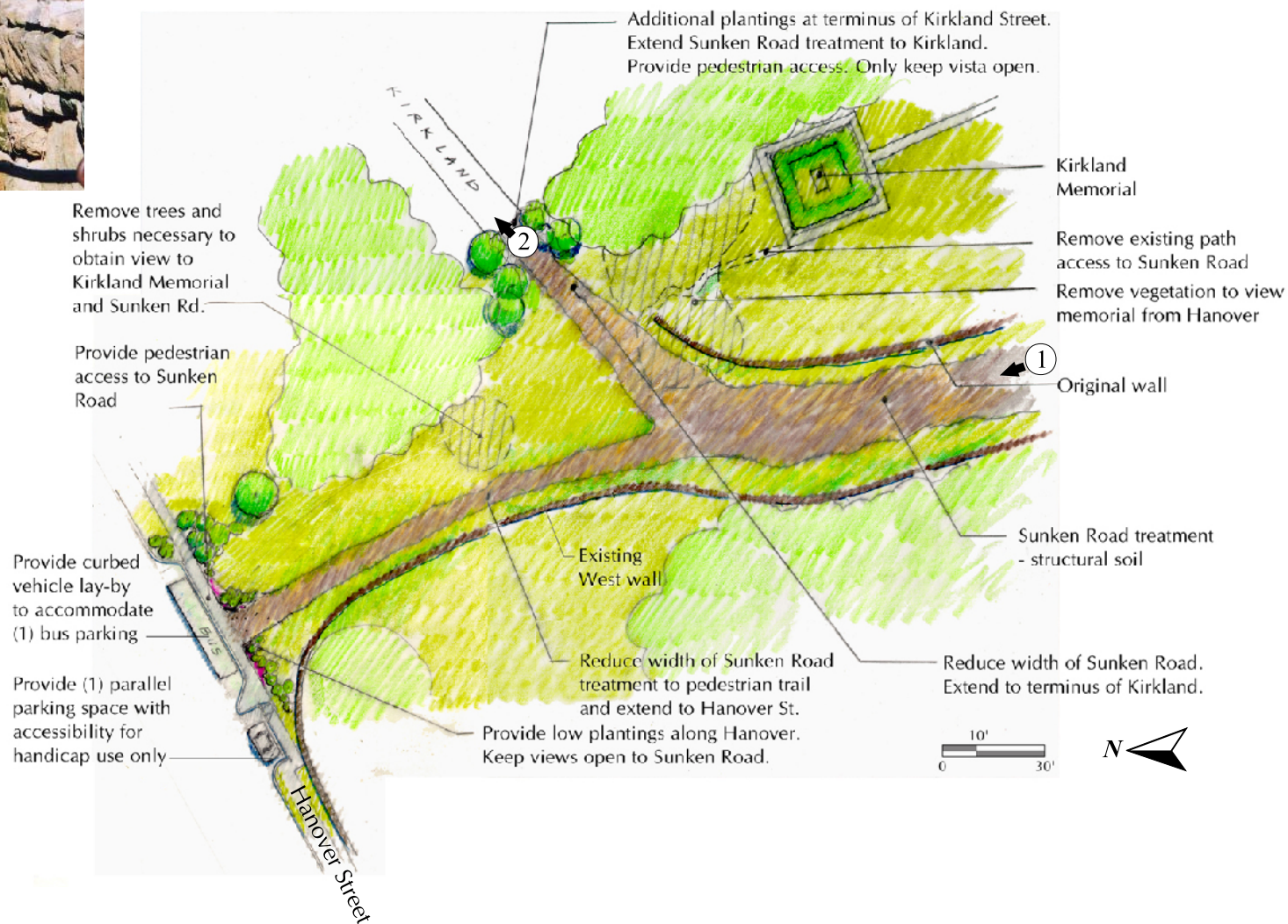
Source: Welford Engineering Associates

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Figure 3: Sunken Road - Proposed Improvements



Source: Welford Engineering Associates

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Figure 4: Sunken Road - NorthEnd Barrier

Sunken Road south of Mercer Street would be removed to provide for views of Sunken Road and other resources along the road. Vegetated islands would be constructed at the north and south termini to provide a visual transition to the Sunken Road experience, as well as an auditory and visual screen between the historic road and adjacent city streets.

Handicapped access would be provided via hard surface trail to the core historic area. Two handicap accessible parking spaces would be added opposite the Innis and Stevens Houses along Willis Street. Handicap parking in this area would provide pedestrian access and visibility to Sunken Road and historic sites along the road. A universally accessible pedestrian access path would lead from these spaces to Sunken Road. A trolley drop-off area (Figure 5) would be constructed at the corner of Mercer and Willis Streets and would provide pedestrian access to Mercer Street as well as views of the stone wall, Kirkland Memorial, and other sites along Sunken Road. Low shrubs with a few large evergreens and deciduous trees would be planted with sufficient spacing so as to ensure that views of the resources are maintained.

Interpretive Media and Wayside Exhibits. House sites along Sunken Road, including the Stevens House and the Ebert House, would be marked with a stone outline. This site marking would be sustainable and would be visible from a distance. Only sites that have no visible remains would be marked, and there would be no incorporation of historic with modern fabric. Site markings would be laid directly on the ground onto a geotextile fabric, and there would be no excavation involved. The stones would be mortared together to avoid safety issues. Interpretive waysides would also be installed to describe the history and context of each of these houses.

On-site exhibits would be added along the length of the road and at various sites along the road to provide interpretive information to visitors. These exhibits would be placed on a structural soil pad.

Utilities. The NPS is working with Dominion Virginia Power to relocate electric lines in the Sunken Road area to allow for eliminating overhead utility lines servicing the Sunken Road area and Brompton. The utility pole at the corner of Mercer Street and Sunken Road that currently feeds power and telephone to the Innis House (underground from the pole) would be removed. The pole on Willis Street would remain and would feed the Innis House underground from the pole to the existing underground connection. A pole on Hanover Street may or may not be removed depending on cost. If this pole were to remain, the proposed bus pull off at the terminus of Sunken Road would be eliminated. In addition, the two light poles on Sunken Road between Mercer Street and Hanover Street would be removed.

2.3.2 Fredericksburg National Cemetery

At Fredericksburg National Cemetery, some of the most visible features of the cemetery would be restored in a manner that could be sustained without significant additional work for a generation. The NPS Preferred Alternative involves two elements: (1) establishing turf on terrace slopes by replacing sod, and (2) stabilizing headstones and gravesites by righting headstones and restoring sunken gravesites.

Establish Turf on Terrace Slopes. The NPS Preferred Alternative would place sod on seven 60° terraces within the cemetery where erosion continues despite intensive annual efforts. This process would consist of applying Round-up herbicide on the terraces to kill all existing weeds and vegetation. A shallow

seedbed would be prepared by cultivating approximately 1 inch of soil. Tall fescue sod would be placed and secured on the prepared seedbed. The project would progress only at a rate that would allow prompt placement of sod on disturbed soil. The irrigation system, already in place, would allow the sod to be watered, which would ensure its survivability. With consistent irrigation, sod should eliminate virtually all erosion and restore an acceptable appearance to the faces of the terraces. The NPS Preferred Alternative would reverse current degradation and restore the visual quality of the terraces. The cost of placing sod on the terraces would be approximately \$51,370.

Stabilization and Preservation of Headstones and Gravesites. Approximately 600 headstones that have been knocked or pushed out of their vertical orientation would be restored to plumb (straightened to their original angle). The soil opposite the direction of lean would be removed, and the stone would then be moved to plumb and tamped into place. Variations in height of headstones, which may date to their initial installation, are retained as part of the historic appearance of the cemetery. Sunken gravesites would be restored to proper grade by adding topsoil followed by sod.

2.3.3 Civilian Sites

The final component of this project would develop access to, improve, and interpret civilian sites throughout the park in order to expand the park's interpretation of the Civil War to include the profoundly significant story of the civilians who inhabited the battlefields. The park includes at least 25 known civilian sites that comprised the battlefield landscapes of 1862-64. Currently, minimal and outdated interpretation is done at these sites and nothing is done to collectively tell their story. Work at each site would include some combination of the following:

- planning, designing, and installing on-site interpretation;
- establishing hard-surface visitor use areas – walkways and exhibit sites;
- implementing a consistent design for outlining and marking sites of buildings;
- restoring historic scenes (limited clearing of vistas); and
- using centralized interpretation through film.

In all, 19 sites would undergo minor improvements (Table 1), and at each site, work would range from about \$7,000 to \$70,000. Sites would include: Jackson Shrine, McCoull House, Harrison House, Chancellorsville Inn, Hazel Grove/Fairview, Old Salem Church, Chancellorsville, Union Breakthrough, Chatham, Bullock House, Lee-Jackson Bivouac, Catharine Furnace site, Wellford House, Spindle House, Widow Tapp Field, Maury Birthplace, and Landrum House (see Figure 1). The design for visitor use areas, walkways, marking of building sites, and wayside exhibits would be derived from design decisions made as part of the Sunken Road design process.

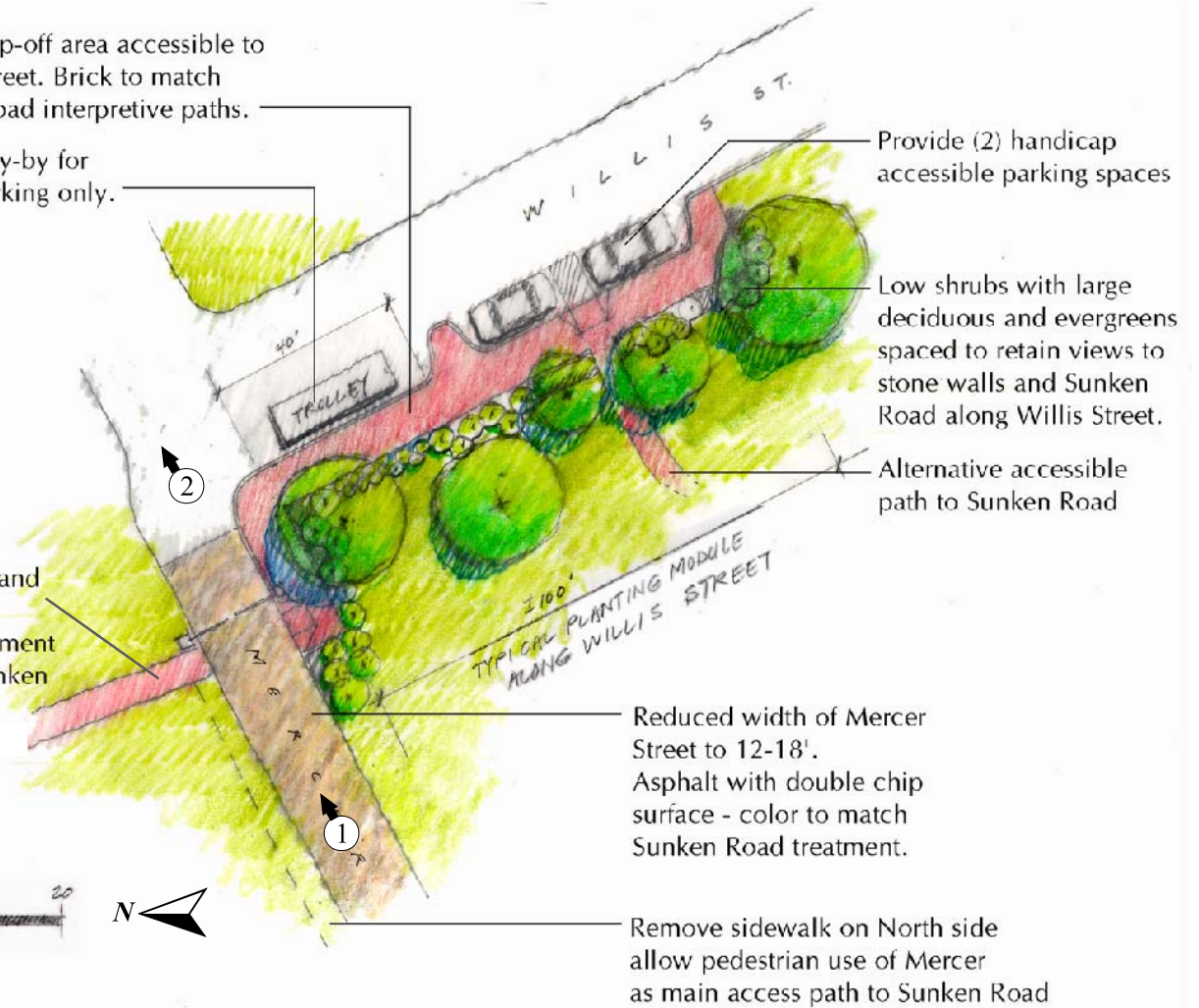
Historic structure markings would be standardized (Figure 6) at a number of sites throughout the park, including the Fairview House site and the Chandler House site at Jackson Shrine. The houses would be marked with a stone edge laid upon the ground. The interior of the structure would be covered with mowed grass, and a mowed grass area would immediately surround the structure. A meadow or unmowed grass area would be located adjacent to the mowed area. Trees would be planted in designated areas to symbolize their historic presence in the landscape.



Paved drop-off area accessible to Mercer Street. Brick to match Sunken Road interpretive paths.

Provide lay-by for trolley parking only.

Path to Kirkland Memorial - Surface treatment to match Sunken Road paths



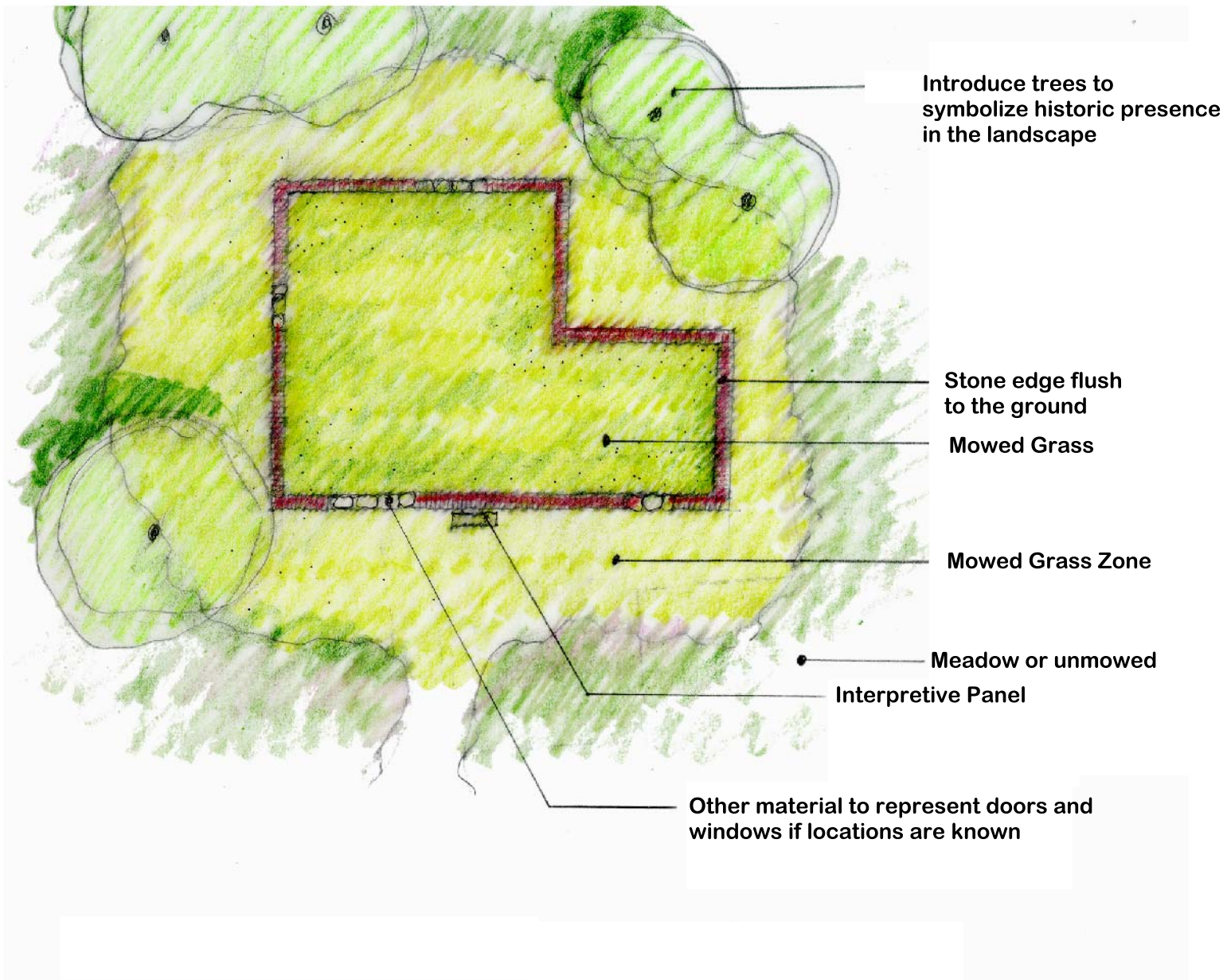
Source: Welford Engineering Associates

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Figure 5: Sunken Road - Trolley Drop-off/
Accessible Parking



Source: Welford Engineering Associates

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Figure 6: Historic Structure Marking (typical)

Table 1 Civilian Site Improvements	
Site	Proposed Action
Stonewall Jackson Shrine	New waysides along existing walkways
McCoull House	Two hard-surface pads with interpretive waysides; pave parking area
Harrison House	Hard-surface pad with two interpretive waysides
Anderson Drive	Hard-surface exhibit pad with two interpretive waysides
Chancellorsville Inn	Four hard-surface exhibit pads with interpretive waysides; pedestrian trail
Hazel Grove	Two hard-surface exhibit pads with interpretive waysides
Fairview	Five hard-surface exhibit pads with interpretive waysides; remove 3.17 acres wooded and scrub vegetation
Old Salem Church	Interpretive kiosk; pedestrian trail; three hard-surface trails with interpretive waysides
Chancellorsville	Three hard-surface exhibit pads with interpretive waysides
Union Breakthrough	Hard surface exhibit pad with two interpretive waysides
Chatham	Hard-surface exhibit pad with two interpretive waysides
Bullock House	Hard-surface exhibit pad with three interpretive waysides
Lee-Jackson Bivouac	Hard-surface exhibit pad with two interpretive waysides; 150-foot trail (surfaced with rubberized mulch) from parking area to exhibits
Catharine Furnace site	Hard-surface exhibit pad with three interpretive waysides
Wellford House	Hard-surface exhibit pad with two interpretive waysides
Spindle House	Hard-surface exhibit pad with interpretive wayside
Landrum House	Hard-surface exhibit pad with two interpretive waysides
Widow Tapp Field	Hard-surface exhibit pad with two interpretive waysides
Maury Birthplace	Hard-surface exhibit pad with two interpretive waysides
Fredericksburg National Cemetery upper entrance	Hard surface exhibit pad with interpretive exhibit

Hard-surface trails and exhibit areas, constructed with materials adapted to the local environment, would be added to a number of civilian sites. Three surface treatments would be developed and used throughout the park depending on the setting (Figure 7): brick in urban areas, aggregate in rural areas, and rubberized mulch in a natural color in wooded areas. These treatments would not only help to guide and control circulation but would also aid in reducing erosion and physical degradation of the landscape. In urban areas, surface treatments for exhibit areas and trails would consist of brick pavers in herring bone bond or running bond pattern with a brick soldier course. Exposed aggregate concrete enclosed with a brick soldier course would be used at open areas, farms, and rural sites. For wooded areas, trails and exhibit areas would consist of rubberized mulch bounded by a narrow brick edge.

In addition to site improvements throughout the park, an 18-minute film would be produced to provide contextual interpretation of the Civil War period in the area. Such a film would likely be viewed by more than 100,000 visitors each year and could be created at a lower cost than a stationary map program.

More substantial work is proposed for some of the civilian sites. These improvements are described in detail below.

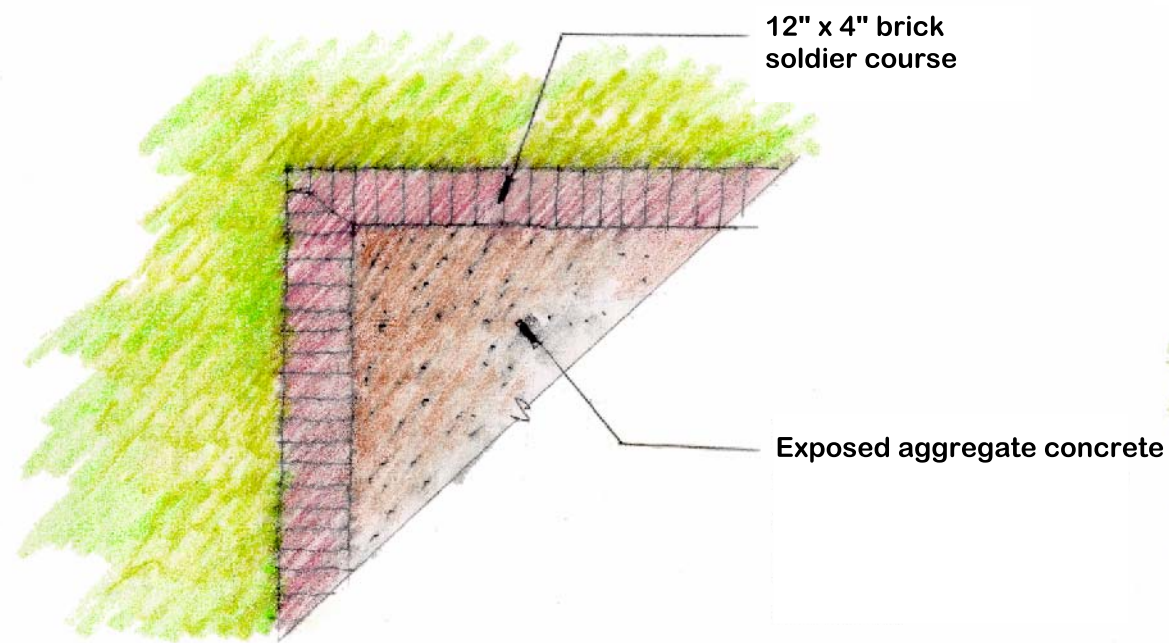
Stonewall Jackson Shrine. The Jackson Shrine's viewsheds would be enhanced through the project. The general layout of the site would remain as it currently exists; however, the exhibit area adjacent to the parking area would be modified to take advantage of views to the office building where Stonewall Jackson died. This would be accomplished through adding vegetation to screen the parking and to direct views from the exhibit area to the house. In addition, the edge of the parking area and adjacent path would be restored. The existing path to the house would be retained (Figure 8).

McCoull House Site/Harrison House Site. The McCoull House and Harrison House sites would be improved to enhance circulation around the sites as well as the viewsheds. A new parking pull off would be provided on the east side of Anderson Drive with two to three parking spaces. Parking in this location would provide maximum access to interpretive locations. In addition, parking would be improved at the McCoull House site by paving the existing parking area to allow access to the site to more visitors

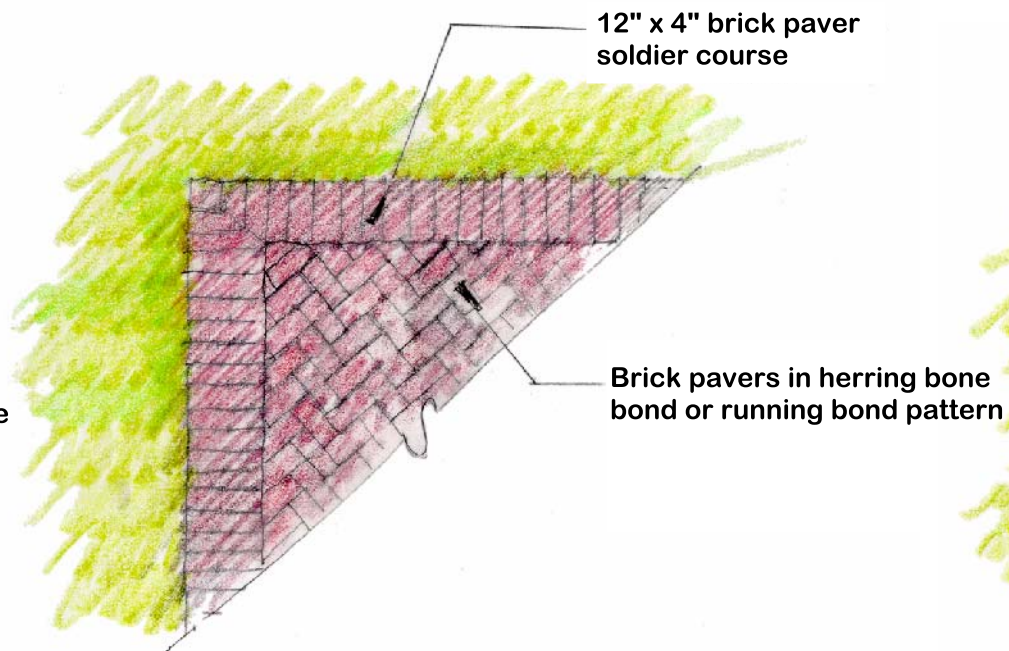
Chancellorsville Inn Site. The Chancellorsville Inn site would be improved to enhance interpretation and visitor circulation (Figure 9). The existing fence bordering the parking area would be removed and low bollards (thick posts) would be installed to allow for more open views of the adjacent battlefield. A 6-foot wide stabilized soil path would extend along the length of the parking area and connect to the loop trail and exhibit area. From the exhibit area, a 6-foot wide structural soil path would extend into the battlefield to the first trail marker, connecting to the mowed meadow path of the Chancellorsville History Loop Trail. A 6-foot wide structural soil path would wind through the site to the Chancellorsville Inn ruins. To keep pedestrians from creating social trails across the site, a 5-foot wide buffer would be mowed on each side of the path, but the area beyond that would be mowed only once or twice a year.

Exhibit areas consisting of structural soil with a stone border would be constructed at several locations on the site. The primary exhibit area would be located just off of the parking lot. Trees and shrubs would be planted in this area to screen the parking. Additional exhibit areas would be constructed along the loop trail. Historic marking of the house and ruins would remain unchanged: it is sufficiently consistent with the proposed design and leaving it in place would avoid the cost of removal.

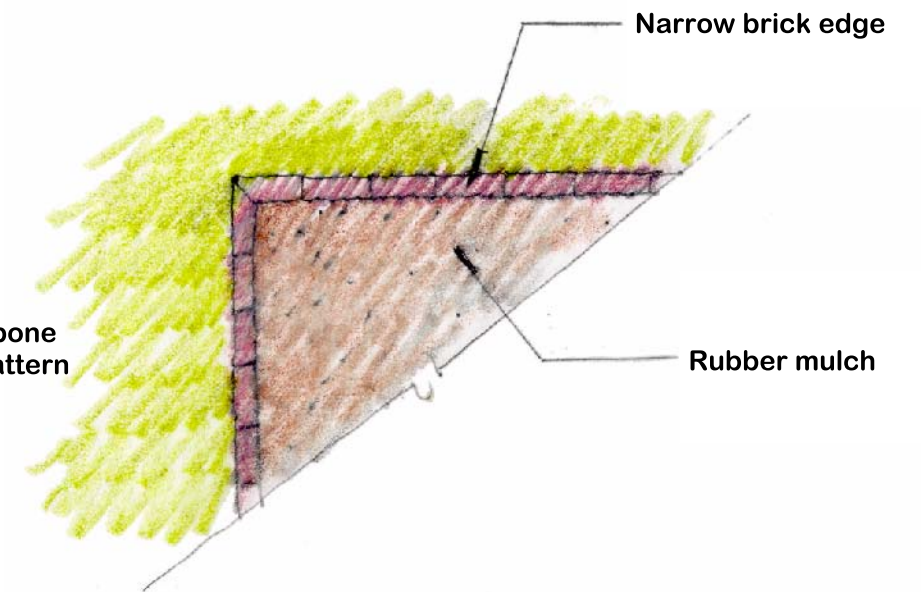
Hazel Grove/Fairview. The vista from Hazel Grove to the Chancellorsville Inn site would be restored by clearing and removing approximately 3.17 acres of trees and vegetation. Approximately 2.17 acres would be removed at Fairview south of Route 3, and approximately 1 acre would be cleared north of Route 3. All trees, brush, and vegetation would be removed from the designated areas. Cuts would be made as close to the ground surface as possible so as not to leave sharp points on stumps and stems. Stumps of removed trees would be ground to grade to permit future mowing, but stumps would be left in the ground



Open/ Farm/ Rural Sites



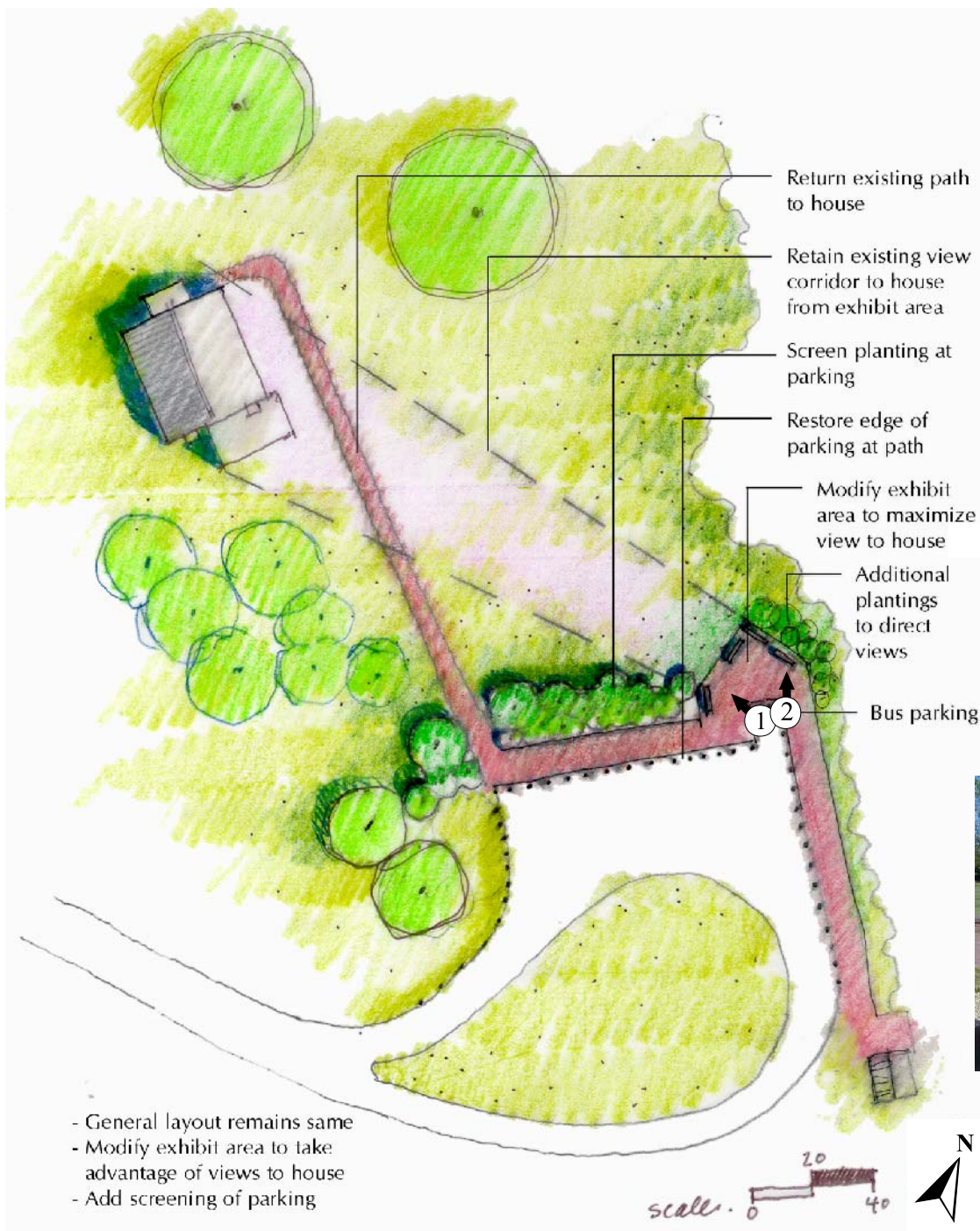
Urban Areas



Wooded Areas



Figure 7: Exhibit Area and Trail
Surface Treatment (typical)



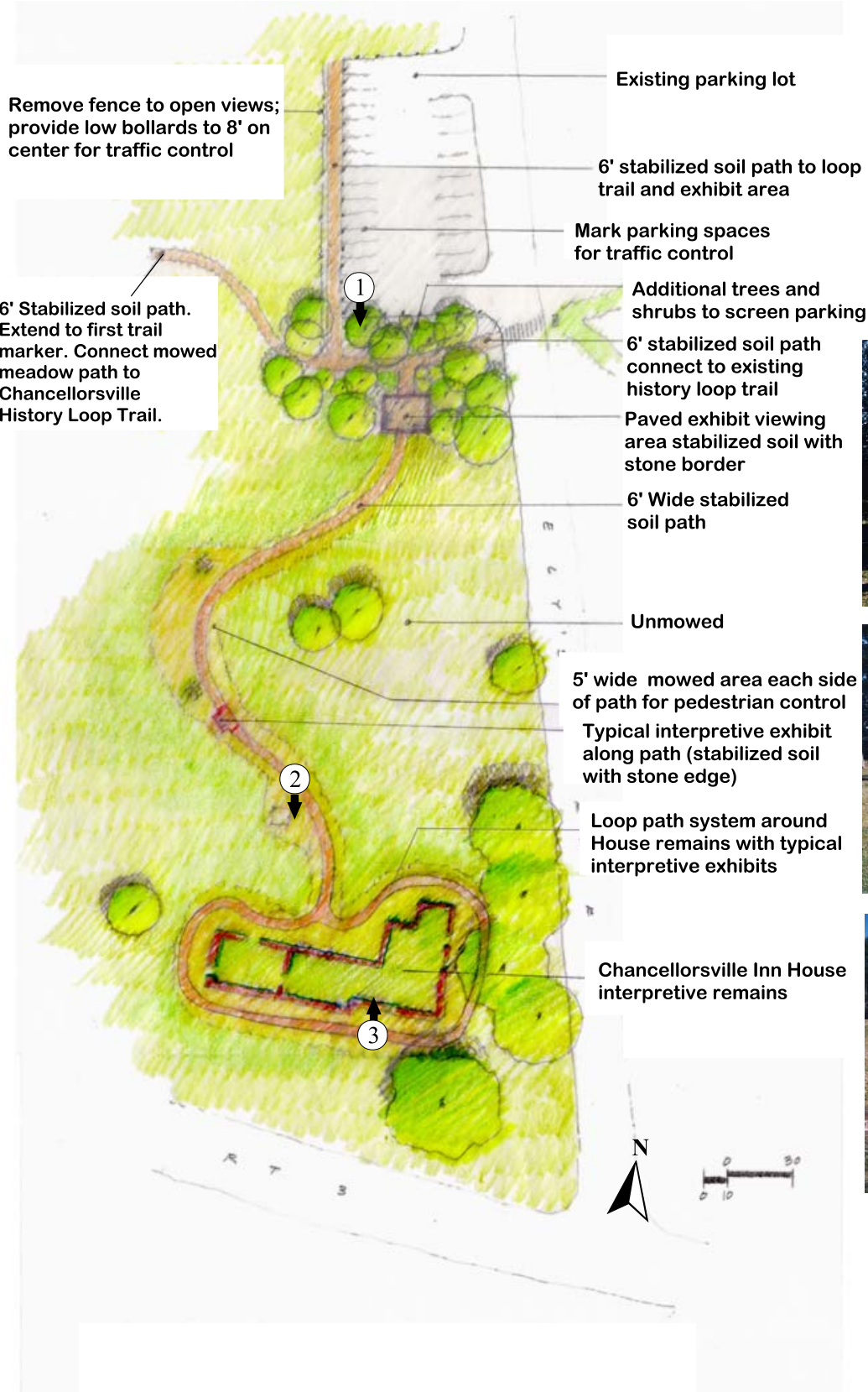
Source: Welford Engineering Associates

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Historic Ruins and Resources*



Figure 8: Stonewall Jackson Shrine



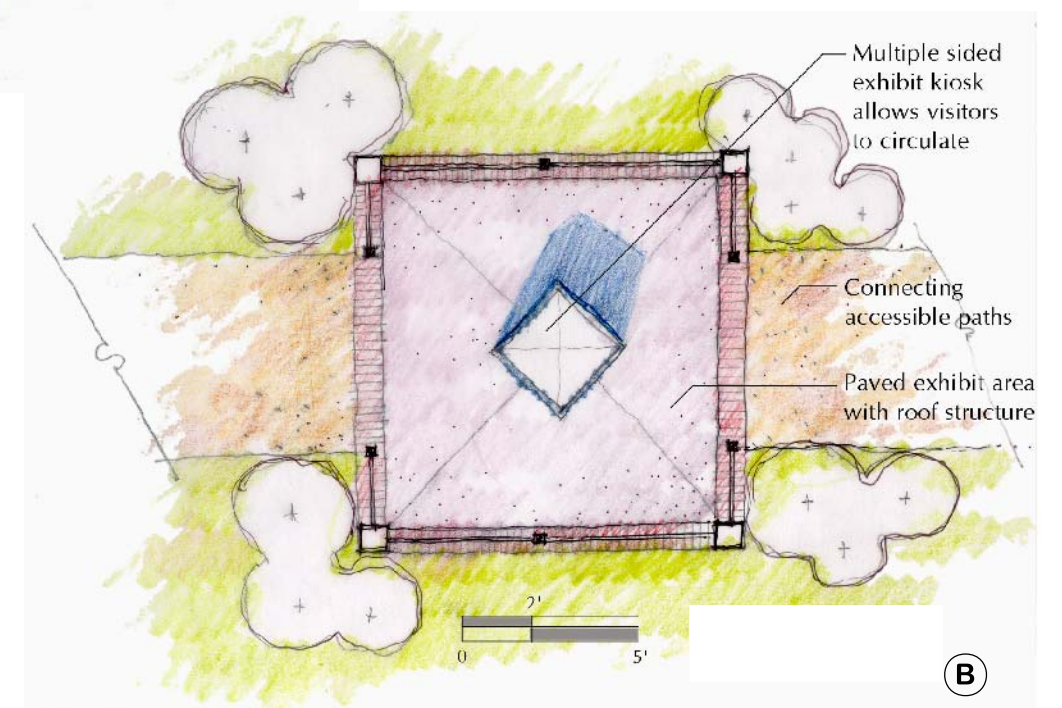
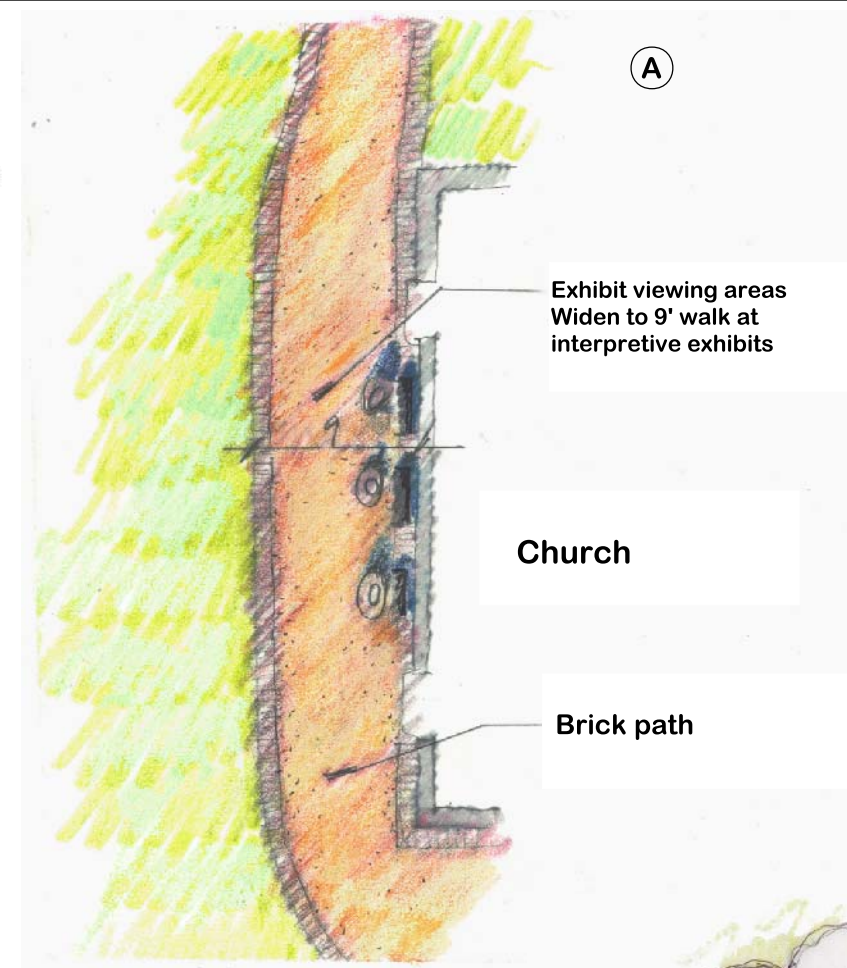
Source: Welford Engineering Associates

NATIONAL PARK SERVICE

*Fredericksburg & Spotsylvania NMP
Historic Ruins and Resources*



Figure 9: Chancellorsville Inn Site



Source: Welford Engineering Associates

NATIONAL PARK SERVICE

Fredericksburg & Spotsylvania NMP
Historic Ruins and Resources



Figure 10: Old Salem Church

to minimize disturbance to archeology. All stems and branches would be removed from the site for disposal.

Old Salem Church. Old Salem Church would have improved viewsheds and circulation. A new brick bus drop-off would be added adjacent to the existing bus parking area (400 square feet), extending approximately 15 feet into a vegetated area (Figure 10). Additional screen plantings adjacent to this would be added to help control pedestrian circulation and views of the site. An accessible walkway would connect the parking area and bus drop-off to a new exhibit shelter. The paved exhibit area would contain a multiple-sided kiosk. From the new shelter, a two-way loop path constructed of stabilized soil with a brick edge would generally follow the existing woodchip trail alignment to the Church. The path would follow the perimeter of the Church and widen to 9 feet at the south end of the Church for an exhibit viewing area with interpretive waysides. The path would then follow the existing trail alignment to an exhibit area in the southwest corner of the property. New plantings in the northwest corner of the parcel would help to enclose the site, terminate views, and screen urban development. In addition, new trees would be added just north of the Church to follow historic precedent, as determined by photographs.

2.3.4 Sustainability

The NPS has adopted the concept of sustainable design as a guiding principle of facility planning and development. The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, and to maintain and encourage biodiversity; to construct and retrofit facilities using energy-efficient materials and building techniques; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and practices through the sustainable design and ecologically sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. The NPS Preferred Alternative subscribes to and supports the practices of sustainable planning, design, and use of FRSP.

2.3.5 Mitigation

At the cemetery, replacement of sod would proceed only at a pace that would allow for minimizing exposure of soils.

Mitigation efforts would be developed to minimize the removal of 2.17 acres of Virginia pine forest alliance and 1 acre of scrub/shrub vegetation from the Fairview site. The northern and southern boundaries of the removal area would be marked with pink flagging (the east and west boundaries of the site are open field). Trees within these boundaries that were not to be cut would be marked with white flagging and black lettering "Do Not Cut." Access to the area would be permitted at specific locations determined by the NPS to minimize the impact to surrounding areas. Work would only be done when the ground was frozen, during dry weather, and when disturbing natural processes would not be a factor. This would minimize the disturbance to cultural and natural resources in the area.

Cuts into trees would be made as close to the ground as possible. This would be done to avoid sharp points on stumps and stems. Stumps of removed trees would be ground to grade to permit future mowing

and all stems and branches would be removed from the site for disposal. All disturbed areas would be seeded with either native warm-season or native cool-season grasses. The NPS would develop an erosion and sedimentation plan to be implemented by the contractor. Among other things, the plan would describe the process for mulching and seeding the landings and specified skid trails with seed, fertilizer, lime, and mulch.

Other sites would require less mitigation efforts; however, erosion and sediment control plans would be developed for each site where ground disturbing work is to be done. These would be developed according to the specific concerns of the individual site in compliance with Virginia regulations.

The NPS is consulting with the SHPO and the Advisory Council on Historic Preservation (ACHP) to develop a Programmatic Agreement stipulating actions the NPS will take prior to implementing the proposed actions. During this process, mitigation measures with regard to cultural resources would be developed.

2.4 Alternatives Considered but Dismissed

The following alternatives were considered during the NPS Value Analysis held in the summer of 2002, but were rejected based on their inability to meet the purpose and need of the project, fulfill NPS guidelines, and improve operational efficiency.

2.4.1 Sunken Road

Several alternatives were considered for restoring and interpreting the Sunken Road area.

Full/Literal Restoration. The original surface of the road would be archeologically exposed and restored to its original dirt surface. The stone wall would be reconstructed in areas where it is missing, incorporating the footers of the original stone wall. Other improvements throughout the Sunken Road area would be the same as those described in the NPS Preferred Alternative. This alternative would cost \$712,922, plus an additional \$110,000 for further archeological testing.

While enough archeological studies have been completed to locate and define the original road and its salient features, much more extensive work would be needed to precisely locate the original road surface, making the cost of literal restoration prohibitive. Further, full restoration of the road would not be sustainable due to the drainage issues associated with a dirt surface; therefore, the proposal would be inconsistent with the *Secretary of Interior's Standards for Rehabilitation* (36 CFR Part 67).

Suggestive Restoration. The historic dimensions of Sunken Road would be reclaimed; however, the road would be restored as a pedestrian corridor only rather than restoring the entire width of the roadway. Missing sections of the stone wall would not be reconstructed but would be marked. This alternative would cost \$510,922 but was rejected because of the potential for visual confusion related to the historic setting of the road.

Partial Restoration. A hard-surface reproduction of Sunken Road would be installed only in the area of the original stone wall, while pedestrian pathways would be established in other areas along the road. Missing segments of the stone wall would be reconstructed, and other improvements would be the same as described in the NPS Preferred Alternative. Partial restoration of Sunken Road, along with other improvements, would cost \$643,707. This alternative was rejected because of its potential to cause confusion to visitors and its inability to accurately portray the historic significance of Sunken Road.

2.4.2 Fredericksburg National Cemetery

Reset All Headstones. Approximately 7,000 headstones would be reset to consistent height and vertical orientation. This alternative was rejected because the scale of such a project would not be feasible.

2.4.3 Civilian Sites

The NPS initially envisioned a large-scale investment in a single civilian site at FRSP. The Catharine Furnace site, an 1830s industrial complex, would be improved and interpreted in order to illuminate the civilian experience during the war. The Catharine Furnace site receives approximately 30,000 visits each year, and approximately \$638,000 would be invested in improving the site.

This alternative was dismissed in favor of investing in 20 dispersed civilian sites. The Catharine Furnace site reflects a narrow experience of civilians associated with an industrial site; dispersed investment reflects the more common experiences of residents with varying perspectives, attitudes, and ordeals. In addition, more than 250,000 visitors each year would benefit from improvements to dispersed sites; therefore, the visitor experience would benefit more from the dispersed site improvements than a project only at the Catharine Furnace site.

2.5 Environmentally Preferred Alternative

The Environmentally Preferred Alternative is defined by the Council on Environmental Quality as “the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act [Section 101 (b)].” Section 101 (b) states that the Environmentally Preferred Alternative should:

- (1) “Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- (2) Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.
- (3) Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- (4) Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- (5) Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities.

- (6) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”

Generally, these criteria mean the Environmentally Preferred Alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources. In this case, the NPS Preferred Alternative is also the Environmentally Preferred Alternative. Although the No Action Alternative might meet some of these criteria, it in no way fulfills them to the level the proposed action would nor does it meet the purpose and need of the project.

Any NPS project would strive to fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations (Criterion 1). The No Action Alternative would accomplish this by maintaining the status quo at the park. The proposed action, however, would enhance the park’s ability to preserve this historical region for future generations.

Safety and accessibility are considerations at any NPS site. Current conditions at the park are becoming unsafe, as terraces erode, social paths develop over unstable terrain, and sites are not adequately screened from busy roads. Interpretive signs and sites are also deteriorating at a noticeable rate. Improving these aesthetics and cultural aspects of the park would allow the proposed action to fulfill Criterion 2 where the No Action Alternative would not.

In order for the park to attain the widest uses of the environment without undesirable consequences (Criterion 3), it must balance its care for the environment with its management of park resources and visitor use. The erosion of turf and landscapes around the park is becoming readily apparent. Not only is this a threat to safety, but also in time will become a threat to the environment. The proposed action would take steps to manage both the environment and park resources in a way that would benefit both in the long-term (Criterion 5).

Under the No Action Alternative, the park would continue to maintain the park according to current management standards, allowing the park to comply with Criterion 5. The proposed action, however, would work to improve the park’s ability to fulfill this objective. By improving important sites, like the vista between Hazel Grove/Fairview and the Chancellorsville Inn site, and updating interpretive signs; the park would improve its preservation of historical aspects of our national heritage and provide visitors with a better understanding of the site that will in turn foster a variety of choices around the park.

Finally, both alternatives offer a means to comply with Criterion 6. However, implementing the proposed action would improve the overall quality of the environment now and in the future.

Table 2 provides a summary of the environmental consequences related to each alternative.

Table 2: Summary of Environmental Consequences		
Resource	No Action	Proposed Action
Soils and Topography	Soil quality and composition would not be impacted. Topography and prime farmland soils would not be impacted.	Soil quality and composition would not be impacted nor would topography. Impacts to prime farmland soils would be negligible.
Vegetation	In some areas, turf would continue to be worn away by weathering and/or circulation patterns. This impact would be negligible.	In most areas, impacts to vegetation would be confined to new pathways being placed in the grass. At the Hazel Grove/Fairview site, approximately 2.17 acres of Virginia pine forest alliance and 1 acre of scrub/shrub vegetation would be removed. The impact to vegetation would be minor.
Wildlife and Wildlife Habitat	There would be no impact to wildlife or wildlife habitat.	The loss of the forest alliance and scrub/shrub habitat at the Fairview site would have a minor impact on wildlife in the long-term, as the habitat types are commonly found in the vicinity of the project area. The remaining projects would have a negligible impact to wildlife.
Archeological Resources	Negligible to minor impacts to archeological resources could result from continued ground disturbance and intrusion upon resources from use of nondesignated trails.	Minor to moderate, long-term, adverse impacts could result from installation of trails and interpretive exhibits.
Historic Structures	There would be negligible to minor, adverse impacts to historic structures as no rehabilitation or restoration would take place.	Minor, long-term, beneficial impacts would result from stabilizing structures and formalizing access to sites.
Cultural Landscapes	There would be a minor to moderate, adverse impact to cultural landscapes, as elements that define historic landscapes of the battlefields would continue to degrade.	Features that contribute to the cultural landscapes of the battlefields and Sunken Road would be preserved and interpreted. There would be a minor to moderate, long-term, beneficial impact.

Table 2: Summary of Environmental Consequences		
Resource	No Action	Proposed Action
Visual Resources	Adverse impacts to visual resources would range from negligible to moderate, as some sites (Sunken Road, McCoull House) would lack the appropriate views for visual interpretation.	Beneficial impacts to visual resources would range from negligible to moderate as sites including Sunken Road and McCoull House would have improved and more appropriate viewsheds created.
Visitor Use and Experience	There would be a minor to moderate, adverse impact to visitor use, as the sites would lack the circulation and/or interpretation to be fully appreciated.	There would be a minor to moderate, beneficial effect to visitor use, as sites would have improved circulation and be interpreted to fully maximize the visitor's time at the park.
Circulation and Site Access	There would be a negligible to moderate, adverse impact to circulation, as sites would lack the paths and guidance to direct visitors through a meaningful visit at the different sites.	There would be a negligible to moderate, beneficial effect to circulation, as visitors would be guided through the site to truly experience its historical context. Sites would also be universally accessible and would have improved safety.
Park Operations and Infrastructure	Operations at the cemetery would continue to be hindered by leaning headstones and eroding turf. Infrastructure would also be impacted on Sunken Road due to flooding during storm events. Overall impacts to park operations and infrastructure would range from negligible to minor.	Operations at the cemetery would be enhanced by improved access to the entire site for general maintenance activities. Flooding at Sunken Road would also be addressed by improved drainage structures. The overall benefits to park operations and infrastructure would range from negligible to minor.

3 Affected Environment

3.1 Introduction

The park currently includes approximately 8,000 acres in eight individual units spread out over a 110-square mile area. The area surrounding the park is privately owned and local zoning regulations currently allow for predominantly single-family residential use. The region is under the immediate jurisdiction of Spotsylvania County, Virginia; Stafford County, Virginia; and the city of Fredericksburg.

This chapter describes the existing environmental conditions in and around the project site. The chapter is organized by resource topic, and the existing conditions are described for each topic. Detailed information on resources in FRSP may be found in the *Resource Management Plan* (FRSP 1999), the GMP (NPS 1986), the *Long Range Interpretive Plan* (NPS 2001), and other studies done within the park. A summary of the resources associated with this project follows.

3.2 Physical and Natural Resources

Natural resources examined in detail include soils and topography, vegetation, and wildlife and wildlife habitat. Resources dismissed from further consideration were discussed in Chapter 1 of this document. The condition of each resource is described for Sunken Road, the Fredericksburg National Cemetery, and civilian sites. Many of the civilian sites are minimally interpreted with waysides. Park roads have been designed to lead visitors past these sites, many of which have pull-offs and are located immediately adjacent to the tour roads. Conditions at these sites are very similar and will be included in a general description of the area. The remaining civilian sites (Stonewall Jackson Shrine, McCoull House/Harrison House site, Chancellorsville Inn site, Hazel Grove/Fairview, and Old Salem Church) will be described individually (based on the proposed action, special consideration will be given to the vegetation and wildlife at the Hazel Grove/Fairview site).

3.2.1 Soils and Topography

The park lies along the transition (fall) line between the Coastal Plain and Piedmont physiographic regions, and the geography of the area generally consists of gently rolling hills within the Piedmont Plateau. The soils in the region typically consist of three different types: the Appling-Louisberg-Wedowee association, the Nason-Tatum-Catharpin association, and the Fluvanna-Appling-Poindexter association.

The Appling-Louisberg-Wedowee association consists of deep and moderately deep, well-drained soils, with a dominantly clayey or loamy subsoil. The Nason-Tatum-Catharpin association consists of deep, well-drained soils that have dominantly clayey subsoil, and the Fluvanna-Appling-Poindexter association consists of deep and moderately deep, well-drained soils that have a dominantly clayey or loamy subsoil. The soils of the project area are located in slopes of 0 to 15%.

Prime farmland is one of several designations made by the U.S. Department of Agriculture (USDA) to identify important farmland in the United States. The Farmland Protection Policy Act, the Virginia Agricultural and Forestal Act, and the Virginia Agricultural, Horticultural and Food Act provide for the protection of prime farmland and other agricultural resources. Prime farmland is important because it contributes to the nation's short- and long-range needs for food and fiber. Characteristics of prime farmland include an adequate moisture supply, a sufficient growing season, and other properties favorable to sustained, high yield crops. Urban or developed areas cannot be considered as prime farmland.

Prime farmland soils, as defined by the USDA, are soils that are best suited to producing food, feed, forage, fiber, and oilseed crops. They only need to be treated and managed using acceptable farming practices. Prime farmland soils have acceptable alkalinity or acidity levels, have no rocks, and are permeable to air and water. They may currently be in use for crops, pasture, or woodlands, but they are still considered prime farmland soils. Within the project site, Appling-Wedowee sandy loams, Brockroad silt loams, and Faceville-Varina soils are considered prime farmland soils (USDA 1985).

Sunken Road

Soils around Sunken Road have been thoroughly examined during extensive archeological investigations. Three major soils are present in the immediate vicinity of the Sunken Road: Kempsville Series, Dystrochrepts, and Udults. The Kempsville is an ultisol, which is a well developed, significantly differing textured soil extending up to 60 inches in depth. The Dystrochrepts is a type of inceptisol, a "young soil" that is less clayey than an ultisol. The Dystrochrepts occur on the slopes above Sunken Road in the drainageways between Marye's Heights and Willis Hill. Udults is a broadly defined group that, like the Kempsville Series, is composed of ultisols. All three soil types are similar in texture (sandy loam) and color (grayish brown to red). Human activities, such as land clearing, have increased the rate of erosion on the hillside leading to an increase in soil accumulation down slope from the road. There are a great variety of soils below the hill as actions to develop the area have brought in fill from other sites (Geier et al. 2001).

Fredericksburg National Cemetery

Based on their close proximity, the Fredericksburg National Cemetery has a similar soil composition to that at Sunken Road.

Civilian Sites

The area comprising the civilian sites is characterized by Appling-Wedowee sandy loams, which are deep, sloping, well drained soils. Permeability of the soils making up this complex is moderate, as is their

available water capacity. Surface runoff is medium to rapid. Erosion is a severe hazard, and the surface layer is friable. The root zone extends to a depth of 60 inches or more, and organic matter content and natural fertility are low. The soils are strongly or very strongly acidic. These soils are considered prime farmland soils (USDA 1985).

Stonewall Jackson Shrine. The topography of the site is generally flat. The dominant soil type in the area is State fine sandy loam. The soil type is deep and moderately well drained. The permeability and water capacity are both moderate. Surface runoff is slow making erosion hazard slight. The soil's high water table is generally the only risk to development (USDA 2001).

McCoull House Site/Harrison House Site. Both sites are characterized by Appling-Wedowee sandy loams, which are described above. Rolling hills make up the topography of the sites.

Chancellorsville Inn Site. The site is generally flat. Brockroad silt loam soils dominate this site and are considered prime farmland soils. These soils are deep, gently sloping, and well drained and are located on broad, convex ridgetops. Permeability is moderate, and the available water capacity is moderate. Surface runoff is medium, and erosion is a moderate hazard. The surface layer is friable and can be easily tilled. The subsoil has a moderate shrink-swell potential. The root zone extends to a depth of 60 or more inches. The organic matter content and natural fertility are low. The soil commonly is strongly acid or very strongly acid.

Hazel Grove/Fairview. Rolling hills characterize the topography in this area. The dominant soil type is Tatum loam. It is a deep, sloping, well drained soil. Permeability is moderate, and the available water capacity is moderate. Surface runoff is medium to rapid. Erosion is a severe hazard. The surface layer is friable. It can be easily tilled when it is moist but breaks into clods if tilled when it is too wet or too dry. The subsoil has a moderate shrink-swell potential. The root zone extends to a depth of 60 inches or more. The organic matter content and natural fertility are low. The soil is strongly acid or very strongly acid throughout.

Old Salem Church. The topography of this site is virtually flat. Soils at Old Salem Church are in the Faceville-Varina complex, which is generally deep, gently sloping, and well drained. Permeability of the soils in this complex is moderate to slow. The available water capacity is moderate. Surface runoff is medium, and erosion is a moderate hazard. The surface layer of these soils is friable and can be easily tilled. The subsoil has a low shrink-swell potential. The root zone extends to a depth of 60 inches or more. The organic matter content and natural fertility are low. The soils are commonly strongly acid or very strongly acid. This soil type is considered a prime farmland soil.

3.2.2 Vegetation

Vegetative communities within most of the civilian sites vary with regard to species composition and development stage. Where appropriate, natural vegetative communities have been classified using the *Standardized National Vegetation Classification System* (Nature Conservancy and ESRI 1994). For the most part, however, the project areas contain maintained lawns that are considered urban in their characteristic and were not classified as a "natural" community type.

Sunken Road

The vegetation surrounding the Sunken Road site is associated with maintained lawn comprising a mix of Bermuda (*Cynodon dactylon*) and fescue (*Festuca* spp.) grasses with wild onion (*Allium canadense*), white clover (*Trifolium repens*), and other weedy species. Several ornamental shade trees and shrubs line Sunken Road and associated structures; these include boxwood (*Buxus sempervirens*), white pine (*Pinus strobus*), rose (*Rosa* spp.), Chinese privet (*Ligustrum sinense*), deodar cedar (*Cedrus deodara*), southern magnolia (*Magnolia grandiflora*), forsythia (*Forsythia suspense*), and white ash (*Fraxinus americana*). The invasive vine English ivy (*Hedera helix*) can also be found in a number of locations.

Fredericksburg National Cemetery

The primary form of vegetation at the cemetery site is a mix of Bermuda and fescue grasses with wild onion, dandelion (*Taraxacum officinale*), and other weedy species associated with a maintained lawn. The Sunken Road site sits adjacent to the cemetery, and the woody vegetation surrounding the cemetery is similar to that described for the Sunken Road site.

Civilian Sites

The majority of civilian sites are located immediately adjacent to the park road where the dominant vegetation is a sparse distribution of moss, Bermuda grass, and fescue grass. Where the civilian site is located in a wooded area, the interpretive area is surrounded by approximately 20 to 30 feet of clearing. Several large canopy deciduous trees including yellow poplar (*Liriodendron tulipifera*), southern red oak (*Quercus falcata*), and white oak (*Quercus alba*) are generally located along the wooded edge surrounding these sites.

Stonewall Jackson Shrine. The project area at the Stonewall Jackson Shrine is covered with a maintained lawn consisting of a mix of Bermuda and fescue grasses with wild onion, dandelion, and other weedy species.

McCoull House Site/Harrison House Site. At this site, there is a small plot of forested land surrounded by roads on three sides forming a triangle. This vegetative community is classified as mixed evergreen – cold deciduous forest consisting of trees of various age classes, most of which are saplings likely associated with regeneration from neighboring forests. The most common species present are Virginia pine (*Pinus virginiana*), eastern red cedar (*Juniperus virginiana*), white oak, southern red oak, and flowering dogwood (*Cornus florida*) with blackberry (*Rubus argutus*) and Japanese honeysuckle (*Lonicera japonica*) in the understory.

The McCoull House site contains a parking area and interpretive signage. The immediate area proposed for work contains a few stems of red maple and black locust (*Robinia pseudoacacia*). Beyond this immediate area is a maintained lawn with common grasses and weeds.

Chancellorsville Inn Site. The primary form of vegetation at the Chancellorsville Inn site is a mix of Bermuda and fescue grasses with wild onion, dandelion, and other weedy species associated with a

mowed field. In addition, a few stems of eastern red cedar occur immediately adjacent to the interpretive station next to the parking area.

Hazel Grove/Fairview. The Hazel Grove/Fairview study area consists of two sites located immediately south of Route 3 and just west of the Chancellor cemetery. Both sites of 0.97 acre and 1.2 acres are classified as Needle-leaved Evergreen Forests with Rounded Crowns, *Pinus virginiana* Forest Alliance according to the *Standardized National Vegetation Classification System* (Nature Conservancy and ESRI 1994). These two sites, according to NPS staff, were artificially planted with Virginia pine decades ago for purposes of producing a visual screen from encroaching residential houses on neighboring parcels. Dominant vegetation includes Virginia pine in the overstory with eastern red cedar, American holly (*Ilex opaca*), sweet gum (*Liquidambar styraciflua*), and flowering dogwood as the most common understory plants. Other less common understory species include southern red oak, sassafras (*Sassafras albidum*), and running pine (*Lycopodium flabelliforme*).

In addition, an area north of Route 3 of approximately 1 acre is included in this site. The vegetative community is classified as a mixed evergreen – cold deciduous shrubland using the *Standardized National Vegetation Classification System* (Nature Conservancy and ESRI 1994). The shrub vegetation appears to be the result of pioneering species reproduced from the adjacent forest established within an abandoned farm field or pasture. Dominant plants include saplings of sweet gum, eastern red cedar, red maple (*Acer rubrum*), post oak (*Quercus stellata*), Virginia pine, wild rose, and flowering dogwood. Additional species of vines and herbs include Japanese honeysuckle, wild grape (*Vitis rotundifolia*), blackberry, and broom sedge (*Andropogon virginicus*).

Old Salem Church. The vegetation within the project area is a sparse distribution of moss and a mix of Bermuda and fescue grasses. Forest saplings of eastern red cedar, black locust, and black cherry (*Prunus serotina*) dominate the area adjacent to the existing parking lot. Mature white oak and post oak trees occur adjacent to the walkway leading from the parking area to the church building. The remaining vegetation within the proposed work area is comprised of maintained lawn.

3.2.3 Wildlife and Wildlife Habitat

A comprehensive inventory of wildlife species occupying the park does not exist. Basic assumptions of wildlife populations can be made for particular habitats based on species needs and preferences. The park's *Resource Management Plan* (FRSP 1999) cites the presence of those mammals and birds common in urban environments.

White-tailed deer (*Odocoileus virginianus*), flying squirrels (*Glaucomys sabrinus*), gray squirrels (*Sciurus carolinensis*), opossums (*Didelphis marsupialis*), eastern cottontails (*Sylvilagus floridanus*), red foxes (*Vulpes vulpes*), meadow voles (*Microtus pennsylvanicus*), and a number of small mammals (shrews and rats) are terrestrial species that potentially occupy the mowed fields and pine/hardwood upland forests. Raccoons (*Procyon lotor*), white-tailed deer, gray squirrels, mice, and rats are species that have adapted to human-altered environments and may encroach upon yards, buildings, and storage areas in the study area.

Several species of reptiles and salamanders are likely occupants of the hardwood swamps, marshes, and ditches in the park, in addition to a variety of water-dependent snakes and turtles. Red spotted newts (*Notophthalmus viridescens*), northern cricket frog (*Acris crepitans*), northern leopard frog (*Rana pipiens*), green frog (*Rana clamitans*), snapping turtle (*Chelydra serpentina*), and eastern painted turtle (*Chrysemys picta*) are likely occupants of upland deciduous and pine forests, grassy meadows, and brush piles.

The park also contains important habitat for regional and migratory avifauna. The wetlands, open fields, and forested oak/pine complexes provide the diversity necessary to host a variety of passerines, buteos, accipiters, waterfowl, wading birds, and woodpeckers. As part of the Atlantic flyway, the park is useful for wintering and breeding migratory species such as waterfowl and neotropical birds that use the habitats at different times of the year. In addition, year-round residents such as crows, jays, wading birds, cardinals, and owls utilize habitats.

3.3 Cultural Resources

For the purposes of this analysis, cultural resources are divided into archeological resources, historic structures, and cultural landscapes. A summary of the cultural resources within the project area follows.

3.3.1 Archeological Resources

Overall, FRSP is a site of significant archaeological importance. With a few exceptions, the dwellings and structures that dotted the landscape during the mid 19th century have disappeared and archeological ruins and features today only mark their existence. The park is currently conducting archeological overview and assessments for each of the four battlefields. The preliminary reports from the overview and assessment of the Chancellorsville Battlefield include nearly 54 identified sites. Archeological overview and assessments of the remaining three battlefields will be conducted over the next three years. The purpose of this section is to describe those archeological resources that have been identified in the project area.

Since the 1930s, Phase I and II archeological investigations have been conducted at various sites within the park. Nearly all of these investigations focused on dwellings and structures important to the park story, but that are no longer standing. The sites that have been the subject of archeological excavations and which pertain to this project are as follows.

Sunken Road

The most extensive archeological investigations carried out within the park have focused on the Sunken Road corridor. Beginning in 1993, NPS personnel conducted investigations at the site of the Martha Stevens House. These investigations focused on finding the foundation remains of the dwelling, which burned in 1926. Geophysical prospecting and archeological excavations pinpointed the location of the structure but failed to delineate the exact boundaries of the structure (Cooper 2000). In May 2002, personnel from the Department of Anthropology at James Madison University, operating under a co-

operative agreement with the park, returned to the Stevens House. This study focused specifically on a possible stone wall enclosure that may have surrounded the Stevens House. A grid and trench system was set up on the site based on historical data. The only evidence of a wall was unearthed on the south side of the house. While other areas demonstrated remains of possible building materials (sandstone), signs of soil cutting and removal might hinder further evaluations of the wall remains (Geier and Sancomb 2002a). The park plans to continue investigations of the Stevens House in the summer of 2003 to further identify and delineate the boundaries of the structure's foundation.

In May 2001, a team of investigators from James Madison University conducted excavations along the length of Sunken Road. Although no trenches were set to the full width of the road, trenches lined the road to determine its composition, and direction. In 2002, a system of coring was done along the length of the road to examine the pavement depth. The depth of the historical road from the current paved road ranges from 0.5 feet south of the Stevens House to 1.5 feet north of Kirkland Street. The surface of the road is composed of local subsoils formed from the weathering of Potomac sandstone. These include: sandy loam, sandy clay, and additional quartz cobbles and pebbles that were added to the road for additional stability. Geier's report cites historical references and his own investigations to suggest that at the time of the Civil War the road curved eastward, following modern day Kirkland Street. When the road was at its historical elevation, the portion of road between Kirkland and Hanover was a bypass between Hanover and Telegraph Road (Geier et al. 2001).

The 2001 study also focused on the stone wall that lines portions of Sunken Road. Historical documents suggest that the west wall once lined the entire length of the road. Portions of this wall, however, were removed prior to the Civil War for undetermined reasons. Remains along the west side of the road suggest that on average the wall was 5 to 7 feet from the edge of the road. North of Brompton, the wall ranged back to 20 feet from the roadside. Investigations determined that Potomac sandstone was the primary material used in the construction process and stones were set in a 2-foot wide bench that was cut into the slope along the road. The excavations also revealed the location of the missing east wall, which was removed shortly after the Civil war and which the park is proposing to restore (Geier et al. 2001).

In 1965, NPS personnel, with assistance from Mary Washington College, conducted archeological excavations at the site of the Ebert House, located at the intersection of Sunken Road and Kirkland Street. These investigations uncovered the buried intact foundation of the structure. While the results of this excavation produced a plan of the foundation, it failed to tie the resources into any existing known point and thus failed to place the exact location of the dwelling on the surviving landscape (Wilson 1965). In November 2002, further investigations were conducted to verify the work completed in 1965. Using a simple grid and trench system, the study found that the remaining structure was buried under 4 to 6 inches of fill, which had most likely been deposited there during an unrelated construction project (Geier and Sancomb 2002b).

Civilian Sites

No archeological investigations have occurred at the following sites:

- Union Breakthrough Site on the Fredericksburg Battlefield
- Chancellorsville Visitor Center
- Lee-Jackson Bivouac Site on the Chancellorsville Battlefield
- Hazel Grove area on the Chancellorsville Battlefield
- Reconstructed Earthworks site on the Spotsylvania Battlefield
- Salem Church
- Chancellor Cemetery on the Chancellorsville Battlefield
- Wellford House Site on the Chancellorsville Battlefield
- Maury House Site on the Chancellorsville Battlefield
- Harrison House Site on the Spotsylvania Battlefield
- Jackson Shrine
- Fredericksburg National Cemetery

Site-specific investigations have been completed at several civilian sites including:

McCoull House Site/Harrison House Site. Exploratory excavations were completed at the site of the McCoull House in 1939 (Gurney 1939). These excavations were conducted by NPS staff in preparation for a proposed restoration of the structure, which was never accomplished. The results of this excavation revealed the cellar foundations, the partition wall, and the north fireplace and hearth. Future investigations may reveal evidence of associated outbuildings. Today, the McCoull House site is identified by fieldstone placed on top of the ground to roughly delineate the dimensions of the structure. Portions of the chimney are still visible at the site.

No archeological excavations have been conducted at the Harrison House site. Portions of the Harrison House foundation and chimney are still visible and mark the site.

Chancellorsville Inn Site. In 1935, the ruins of the Chancellorsville Inn were investigated by NPS personnel. While the investigators did not produce a report, in 1976 Stuart M. Burnette who was responsible for the investigations, produced a narrative report from memory and aided by forty-year-old field notes (Burnette 1976). The result of these early excavations was the theory that the structure was built in four phases, leading up to the 1863 Battle of Chancellorsville. In 1976-1977, archeologists from Temple University conducted archeological investigations at the site. The purpose of the excavations was to delineate the boundaries of the building and to stabilize the ruins (Crozier 1979). The foundations were excavated and stabilization consisted of repointing some existing brick foundation remains and filling missing segments of the wall with an aggregate mixture to mark the foundation.

Bullock House Site. In 2000, archeological investigations were carried out at the Bullock House site on the Chancellorsville Battlefield by researchers from the Department of Anthropology at James Madison University. Phase I investigations successfully located the structure as well as a possible support

structure. As a result of these investigations, the four corners of the house are now marked by wooden posts (Geier and Sancomb 2000).

Fairview House Site. In 2000, archeological investigations were carried out at the Fairview House site on the Chancellorsville Battlefield by researchers from the Department of Anthropology at James Madison University. Phase I investigations successfully located the structure. As a result of these investigations, the four corners of the house are now marked by wooden posts (Geier and Sancomb 2000).

Landrum House Site. In the summer of 1979, NPS archeologists conducted Phase I investigations at the Landrum House site on the Spotsylvania Battlefield. These limited excavations defined the overall dimensions of the structure and located a refuse pit northwest of the dwelling site (Blades 1979).

Catharine Furnace Site. Archeological investigations at the Catharine Furnace site were conducted during two periods nearly forty years apart. In 1935, exploratory work was conducted at Catharine Furnace by members of the Civilian Conservation Corps (CCC), under direction of a NPS foreman. These excavations were limited to the lower level of the site adjacent to the existing remains of the furnace stack, with some limited testing in the coal house located on the second level. The results of this investigation included the identification of structure sites and the development of a conjectural plan of the complex (Barnette and Northington 1936).

In 1977, researchers from the Department of Anthropology at Temple University returned to the site. Their excavations expanded upon the previous work and investigated the upper roadway, the charcoal house, the furnace itself, and a constructed terrace level with a retaining wall. The results of this work revealed more about the structures' importance and use and led to the stabilization of the furnace stack (Gruber 1978). The park anticipates conducting a more intensive archeological investigation of the site in the near future.

Chatham. In late winter and early spring of 1979, NPS archeologists conducted Phase I investigations of the Chatham Manor tract. The investigations consisted of remote aerial sensing, surface examination, and subsurface testing. Uncovered during the survey were evidence of approximately twenty archeological features pertaining to pre-Civil War, Civil War, and post-Civil War activity. The park hopes to conduct more involved investigations of these identified features in the future. (NPS-DSC 1979).

Spindle House Site. In 1997, NPS archeologists began Phase I testing of the Spindle House site on the Spotsylvania Battlefield. The investigations located the probable area of the site but failed to define its exact location. In 1998, a team of researchers returned to the site and on the last day of work discovered what may be the one of the corners of the structure. No report has been written on these investigations and the park plans to resume investigations on the near future (Report pending).

Widow Tapp Field. Archeology in the Widow Tapp field has been restricted to locating the primary wartime structure. In 1989, NPS archeologists identified the Widow Tapp Cabin through remote sensing and Phase I testing. The site of the cabin remains hidden in the woods bordering the field (Report Pending).

3.3.2 Historic Structures

In order for a structure or building to be listed in the National Register, it must possess historic integrity of those features necessary to convey its significance, i.e. location, design, setting, workmanship, materials, feeling, and association (see National Register Bulletin #15, *How to Apply the National Register Criteria for Evaluation*).

In 1996, the park's List of Classified Structures (LCS) was updated to include approximately 222 park structures. These structures must have historical, architectural, or engineering significance. Structures listed on the LCS must meet one of the following criteria: either the structure is listed individually or is eligible for the National Register or the structure is a contributing element of an historic site or district that is listed or is eligible for the National Register. In addition, the LCS includes other structures which have achieved significance within the last 50 years that are managed as cultural resources. Those structures listed on the park's LCS range from buildings, earthworks and defenses, roadways, monuments, and tablets and signs, and almost all of the structures on the park's LCS are now listed on the National Register. This section briefly describes the types of historic structures, both on the park's LCS and listed on the National Register, that are within the project area. For a list of historic structures within the project area, see Appendix B.

Sunken Road

Historic structures along Sunken Road include wartime features such as Sunken Road itself, Innis House, and the stone wall. Postwar structures, which have historic significance, can be categorized into two periods: commemoration and park development.

Between approximately 1888 and 1927, three markers were placed along Sunken Road to commemorate individuals or events associated with the Civil War activity of the site. All three remain as they were placed and are preserved and maintained by the NPS. Beginning with the establishment of the park in 1927, the War Department, and later the NPS, developed the area for visitation and interpretation. Those structures from the park development period that are listed on the National Register include the Fredericksburg Battlefield Visitor Center and its associated walkways and entrance drive, the CCC Maintenance Building, and House Site ID Tablets placed by the War Department.

Fredericksburg National Cemetery

Congress authorized the creation of the cemetery in July of 1865. The site was selected near Marye's Heights, where so many Union soldiers died trying to take the hill. The structures within the cemetery that are listed on the National Register can be categorized into three periods of construction: cemetery establishment and development, commemoration, and park development.

Beginning with the cemetery's establishment in 1865, development of the site continued through the 1870s and 1880s, and includes the National Cemetery Lodge, Gates and Wall, Grave Markers, Roads, Steps, Lodge Carriageway, Lodge Hitching Posts, Lodge Walks, Bivouac of the Dead Tablets, and

Cemetery Sign. Commemoration of the soldiers and battles took the form of monuments erected in the cemetery and includes four such memorials erected 1890s and 1900s.

Civilian Sites

The variety of structures scattered among the civilian sites cover a range of historic periods but can be classified into four categories: wartime structures, commemoration, park development, and postwar domestic occupation. The wartime structures include surviving buildings, such as Jackson Shrine, Salem Church, Chatham and its associated laundry and kitchen, Catharine Furnace Ruins, Fairview Artillery Position, Chancellorsville Cemetery Grave Markers, Landrum House Ruins and Road, Chatham Carriage Drive, and the McCoull House Road Trace.

Beginning about 1876, a number of monuments were erected on the battlefields to commemorate the armies and important individuals associated with the area. These include the Jackson Shrine Monument, both the General Thomas J. “Stonewall” Jackson Monument and Jackson Monument, Lee-Jackson Bivouac Monument, and the MOLLUS Marker.

Park development includes such historic structures as the Well House at the Jackson Shrine, McCoull House CCC Access Road, Commemorative Cedars Plaque on the Chancellorsville Battlefield, the Matthew Fontaine Maury Monument, Chatham Civil War Grave Markers, and House Site ID Tablets at the Landrum House, Jackson Shrine, and the McCoull and Harrison House Sites.

In two locations, postwar domestic occupation has yielded significant historic structures. These include the 29 early-mid 20th century structures on the grounds of Chatham and the Chancellorsville Cemetery Wall.

3.3.3 Cultural Landscapes

As described by the NPS *Cultural Resources Management Guideline* (DO-28), a cultural landscape is described as “...a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.”

While the park recognizes the presence of numerous areas with cultural landscapes that may meet National Register criteria, at present no reports documenting those resources exists. The park has neither a completed (Level II) cultural landscapes inventory nor a cultural landscape report for any areas within the park. This section provides a brief narrative of the transformation of, and the issues involved with alterations to, the park landscape. This section also describes historic contexts with which potential cultural landscapes may be associated.

The authorized boundary of the FRSP contains approximately 9,315 acres, including easements, of which 7,244 acres are currently owned and administered by the NPS. The park is comprised of primarily farmland and woods, with the exception of the Fredericksburg Battlefield and Salem Church, which are

today surrounded by growing urban development. The woods and fields that witnessed the battles and military events in the area are the primary resources of the park. In some areas, the ground cover is altered, but the terrain still provides a representative and interpretive setting.

In the mid-19th century, the Fredericksburg area was dominated by agricultural pursuits. The farms and fields worked by the local inhabitants ultimately became the battlegrounds for three years of the war. Many of the structures that served as landmarks during the battles survive, such as the Stonewall Jackson Shrine, Salem Church, Chatham, and the Innis House. Others such as the McCoull House, Harrison House, Stevens House, Wellford House, and Maury House have become ruins or archeological sites but offer the potential for defining the historic scene. When the war ended in 1865, the armies who had fought through the woods and fields left their mark on the landscape, and today more than 37 miles of earthworks, built by the soldiers, are reminders of the transformation of farms to battlegrounds.

In the years following the war, veterans groups and other interested parties further transformed the landscape. The establishment of the Fredericksburg National Cemetery turned a portion of the Confederate artillery position atop Marye's Heights into a burial place for more than 15,000 Union soldiers who died in the area battles. Commemoration soon followed, and in the 1870s the first monument or marker was placed on the battlefield. Today, more than 50 monuments are located throughout the park to commemorate the actions or individuals involved in the four area battlefields.

With the establishment of the park in 1927, the landscape of the battlefields underwent further change. The involvement of the CCC and the Works Progress Administration developed nearly 30 miles of roads to carry visitors across the battlefields and to gain access to points of interest. Additional development during this period included the construction of the Fredericksburg Visitor Center and the erection of numerous interpretive signs and tablets.

In the 140 years since the end of the war, and the 75 years since the establishment of the park, much development has occurred both within and adjacent to the park boundaries. As the park evolved and boundaries were expanded to incorporate more of the historic battlefields, the NPS sought to open these areas to the public. Additional parking areas were constructed; a visitor center at Chancellorsville was built; paths were developed to access important sites; and interpretive signs were erected. On the borders of the battlefield, urban development encroaches on the park resources. Residential neighborhoods extend to the park boundary on all of the four battlefields, and homes and commercial shopping centers now surround areas such as the Sunken Road corridor and Salem Church. Roads that bisect the park, such as State Route 3 at Chancellorsville and State Route 20 in the Wilderness, bring thousands of cars through the park each day, adding to the degradation of the landscape.

At present, the park does not have a cultural landscape inventory nor does it have any cultural landscape reports for any of the sites within the project area.

Sunken Road

In the years prior to the Civil War, the Sunken Road corridor sat on the edge of the town of Fredericksburg. Four residences were located along the road and the adjacent land served primarily agricultural pursuits. During the Civil War, Sunken Road was part of General Robert E. Lee's defensive line during the Battle of Fredericksburg. At one point, the stone wall adjacent to the road provided protection for nearly 2,000 men that lay in four lines along the road. The Union army was never able to overtake the wall during the Battle of Fredericksburg. Only during the Battle of Chancellorsville did the Union successfully overtake the site (Geier et al. 2001).

Following the end of hostilities, the town of Fredericksburg recovered from the destruction it had been subjected to and the community expanded. In the late 1880s, the area around Sunken Road underwent development as a residential neighborhood.

The stone wall that at one time bordered Sunken Road along nearly its entire length has undergone changes. Shortly after the Civil War a large section of the wall that bordered the road to the east was removed. A portion of this wall was rebuilt by the CCC in 1937.

By the time of the establishment of the park in 1927 postwar homes and structures crowded Sunken Road and the once open fields were covered by development. In 1935, the park built a visitor center, maintenance building, and parking lot along the northern end of the road. Vegetation along the Sunken Road includes plantings not associated with the wartime landscape, nor with the period of memorialization. For instance, trees have been planted on top of the site of the Ebert House. Photographic evidence reveals that these plantings occurred after the September 1965 dedication of the adjacent Richard Kirkland Monument. At the time of the monument's dedication, the lot that contains both the monument and the remains of the Ebert House was owned by Mary Washington College. The NPS took ownership of the property a few years later.

Over the years the park sought to acquire property along Sunken Road and remove all of the post-Civil War dwellings to restore the landscape to its historic appearance. Today, wood chip paths and markers lead visitors along the Sunken Road corridor and interpret the Civil War history of the site.

Fredericksburg National Cemetery

The land that the cemetery sits on was once part of the Fredericksburg Battlefield. General Robert E. Lee's forces successfully defended the hill throughout the battle on December 13, 1862. In July 1865, three months after the restoration of peace between the states, Congress authorized the establishment of a National Cemetery in Fredericksburg to honor the Federal soldiers who died on the battlefields or from disease in camp. The site chosen was on Marye's Heights, the Confederate position that had proven so impregnable to repeated Federal attacks

Civilian Sites

The various units of FRSP were part of some of the bloodiest battles in American history. Encampments, troop movements, and battles are all a critical part of the region's history. Many of these sites reflect the impact of these events.

Hazel Grove/Fairview. In the pre-dawn hours of May 3, 1863, Union leader Joseph Hooker unwisely ordered his forces positioned here to abandon Hazel Grove. Jackson's attacks the previous evening had played havoc with Hooker's deployment, and the Federal commander planned to adjust his lines. He instructed his men to fall back closer to the Union artillery concentrated at Fairview, the ridge across the open field. Cavalry officer J.E.B. Stuart had replaced the wounded Jackson in command of the Confederate forces and Lee commanded another portion of the Confederate army. The two generals planned to advance their armies toward Hazel Grove and reunite their outnumbered and divided army. Union occupation of Hazel Grove would have offered formidable resistance to the Confederate objective, but thanks to Hooker's tactical blunder, Stuart's forward movement encountered only a Union rearguard. With the capture of four cannons and 100 prisoners, the Confederates seized this important location. From this position they were able to fire on Union headquarters at the Chancellorsville Inn. This ability would lead to the destruction of the Inn. It also gave the Confederates the space to halt the Union army's advance.

3.4 Visual Resources

Within the Fredericksburg Battlefield unit and at Old Salem Church, historic resources line the field of view. The line of sight may be broken, however, by the residential and commercial developments that surround these units of FRSP. Beyond these areas, the park is surrounded by a much more rural setting where the landscape is dominated by rolling hills, open fields, and stands of trees.

Sunken Road

Sunken Road is currently paved and runs through the Fredericksburg Battlefield unit. There is a wooden split rail fence running parallel with the paved road on either side. The stone wall is set back a few feet from the fence at intermittent intervals. A path of varying composition runs between the fence and the wall. The wall is composed of medium sized stones, some of which have moss growing on them. Along the west side of the road, the hillside slopes down to meet the top of the wall. Brompton and the cemetery wall are visible from the road. Beyond the eastern side of the road, the hillside slopes down away from the wall to the Visitor Center and parking area. Traffic on local roads and the local community are both visible from the site.

Fredericksburg National Cemetery

The 12-acre cemetery sits on a hill above Sunken Road surrounded by a red brick wall. The hillside is terraced to provide space for the gravesites and headstones that line the grounds. Many of the headstones are tilting or falling over. A brick wall encircles the cemetery and is enclosed with a large iron gate.

Portions of the brick wall have moss and/or mold growing on them. Several other portions have deteriorating masonry. Sites visible from just beyond the wall include the Visitor Center, Sunken Road, and the local roads.

Civilian Sites

Many of the civilian sites sit amidst trees, shrubs, and the remains of Civil War earthworks. Park roads lined with trees weave their way to different sites. Each of the civilian sites is generally characterized by a small interpretive area which marks the site of significance and includes waysides to tell the story of the site. In some cases, a pull off is provided along the park road, and in others a parking area is located nearby for visitors to use. In instances where a pull off only is provided, the site is generally located only a few feet from the edge of the road and the waysides are immediately adjacent to the road, visible from within the visitor's car. Where a parking area is provided, one or more informal paths lead from the parking area to interpretive exhibits and to the resource.

Stonewall Jackson Shrine. The Shrine is located just off of Route 606. This road is not visible from the site, however the access road is. The access road bisects a field that sits between the site and railroad tracks. The building in which Stonewall Jackson died is still standing, and a marker sits where the main house once stood. There are several interpretive signs and a recorded message display between the parking area and the site.

McCoull House Site/Harrison House Site. The site is accessible from Burnside or Gordon Drive, small roads lined with trees and grasses that bypass Route 613. A large meadow sits just beyond the site and runs along the road before reaching the site. Both sites contain the remains of the structures that once stood but are now marked with interpretive signs.

Chancellorsville Inn Site. Route 3, a busy four lane roadway, borders the site on the south; Route 610 sits just east of the site; and the northern and western boundaries are lined with shrubs and trees. During an archeological study of the area (Crozier 1979), the original stones that were used as the front steps to the Inn were discovered. These stones have been unearthed and placed within the outline of the structure. This outline is marked with a short brick wall (two bricks high) and rope. Four interpretive signs sit just beyond the parking area: two describe the Battle of Chancellorsville, one describes the significance of the site, and the fourth is a painting that depicts the battle. These signs are not in line with the site but rather the road that sits beyond the site. When facing the outlined site from the parking area, the Inn's original well is marked with a wooden outline to the left and a headstone from the early 20th century sits to the right.

Hazel Grove/Fairview. The sites are located slightly west of Chancellorsville Inn, on the opposite side of Route 3. The site consists of a long open field bordered on both sides by wooded vegetation. The Hazel Grove site is marked with several interpretive signs that describe the significance of the site. Beyond the signs the open field contains the remains of several Civil War era earthworks and replica cannons. The Fairview site, to the east, is covered with woody vegetation. The brick walls surrounding the Chancellor cemetery are visible from some portions of the Fairview site.

Old Salem Church. The site is at the intersection of Route 3 and Route 639. There is a small parking area that is accessible from Route 639 and from which the church is visible through a sparse assemblage of trees and shrubs. A path leads from the parking area to the site; however, there is clear evidence of social paths developing a more direct route to the site. The path runs from the parking area past the church to one of the interpretive signs with various trees and shrubs to the north and west. These shrubs are not tall enough or thick enough to completely screen the roads and surrounding residential/commercial community from the site.

3.5 Visitor Use and Experience

The first stop for many visitors to FRSP is the Fredericksburg Battlefield Visitor Center. The Visitor Center provides an audiovisual program to introduce the battles as well as maps and related literature to guide them on the driving tour around the park. Although there are various types of information available at the Visitor Center and at different sites, there is no interpretive media to present a visual overview to place the sites in a larger context. Furthermore, many of the interpretive exhibits intrude upon the historical context of the sites (NPS 2001).

Sunken Road

Sunken Road would be closed to vehicular traffic; however, the road is still paved and provides little interpretive value to visitors. The remaining portions of the wall that line the road have some interpretive signs that tell the story of the battle there. The road mainly serves as a throughway for visitors to reach the cemetery and other parts of the Fredericksburg unit. Passage along the road is difficult after storm events, as the road's drainage system has proven inadequate. This inadequacy has impacted the visitor's ability to move about the site and visualize it as a whole.

Fredericksburg National Cemetery

The cemetery is currently open to visitors and hosts Memorial Day observances. A driveway and paved sidewalk provide access through the large gate at the front of the cemetery. Portions of the brick wall that surround the cemetery are decaying. Within the cemetery, the terraces line the hillside to provide a more level site for the headstones. The grass and soil on the terraces has eroded to the point that headstones are tilting or falling over. This has made the visitor experience at the cemetery less enjoyable and even hazardous.

Civilian Sites

Many of the civilian sites are minimally interpreted with waysides. Park roads have been designed to lead visitors past these sites, many of which have pull offs and are located immediately adjacent to the tour roads. Most of the sites consist of two to three signs, which tell the story of the site, generally without relating that story to the context of the battle or overall history of the area. Many of these signs are dated and are visibly decaying. Furthermore, they do not present the park in a fluid method that would allow

visitors to understand the true story of the region and the relationship between different sites. At those sites where pedestrian circulation is possible, social paths have developed due to a lack of efficient trails. Repeated foot traffic over these paths has led to erosion of grasses, soils, and landscape; making the sites hazardous to visitors and visually unappealing.

Stonewall Jackson Shrine. The historic setting, furnished exhibits, and personal services are the strengths of the interpretive program at the Jackson Shrine. The spontaneity of the furnished rooms could be enhanced, and there is a need to visually represent the various people who were connected with the site. The house is staffed with interpreters year round but on a schedule of days and hours that varies to fit visitor patterns. Wayside exhibits and an audio station near the parking lot interpret the historic scene and Jackson's arrival.

McCoull House Site/Harrison House Site. The McCoull and Harrison House sites are set off the park tour road. Both offer some interpretive signs and the ruins of the two structures. There is a mowed grass path leading from the McCoull House across the meadow to the Harrison House. This path is not well marked, so visitors would only travel out to the site on their own curiosity or previous knowledge of the park.

Chancellorsville Inn Site. The Chancellorsville Inn site sits next to a busy highway where noise is an intrusion on the visitor experience. The path from the parking lot to the ruins is not clearly marked. The different styles of delineating the foundation at various time periods are confusing and do not enhance the interpretive value of the site. There is also currently no visual connection between this site and the Hazel Grove/Fairview site, making interpretation and understanding of the battle setting difficult for visitors.

Hazel Grove/Fairview. There is little interpretation of the Hazel Grove/Fairview site and no connection with the Chancellorsville Inn site. There are several signs in the parking area, but the rest of the site is an open field. Visitors may wander the site with no particular destination other than the earthworks and artillery replicas positioned near the center of the field.

Old Salem Church. There is a narrow woodchip path around the property with interpretive signs. Because the path does not come close to the structure, visitors may leave the path to examine the church's exterior more closely. This has led to the creation of social paths that have worn away the turf in some locations. The church is normally closed to visitors, but it is open on designated dates.

3.6 Circulation and Site Access

There are few paths of defined circulation at the park. Many of the sites lack any type of circulation path, as there are only interpretive signs along the side of the road. Those sites that do have some area possess a simple path leading to the site. However, exploration of the site or viewing interpretive signs often requires visitors to leave the path.

Sunken Road

Visitors may reach the Sunken Road site from the Visitor Center parking lot via a rubberized mulch trail. A narrow dirt path runs alongside Sunken Road, separated from the road by a split rail fence, from Lafayette Street to Mercer Street, and visitors are free to leave this path to walk around the various sites along Sunken Road, including the Stevens and Innis House sites and view site markers, though there is no formal circulation around these sites. The area around the Stevens House site and well has been mulched and visitors wander freely across this area. Around the Innis House, paths have become worn where visitors walk up to the house to peer in its windows. Access is provided to the Kirkland Memorial via a stone walkway from Mercer Street, which leads up to and around the memorial. There is access to the residential community along Willis Street via Kirkland Street and a sidewalk on the north side of Mercer Street. These trails are not universally accessible.

Though Sunken Road would be closed to vehicular traffic, vehicular access to Brompton would not be disrupted. In addition, limited vehicular access would be provided to the road and its resources by trolley.

Fredericksburg National Cemetery

The path to the cemetery is interrelated with the paths at the Visitor Center and Sunken Road. Visitors enter the cemetery enter through the gate near Lafayette Street and follow a path that runs through the center of the cemetery. Visitors may leave the path and walk out on the terraces to view individual headstones.

Civilian Sites

Most of the civilian sites contain waysides immediately adjacent to the park road. In some cases, there is a pull off for visitors to park and walk up to the signs. At larger sites (with exception of Stonewall Jackson Shrine) no formal trails have been designated, and visitors are free to find their own path to the resource. This has resulted in numerous social trails, small dirt paths that have been worn away by repeated foot traffic, developing across the sites. These sites, therefore, are not universally accessible.

Stonewall Jackson Shrine. From the parking lot visitors may follow a brick path to the interpretive area or to the office building, where Stonewall Jackson died. Otherwise, visitors are free to wander the grounds.

McCoull House Site/Harrison House Site. Both of these sites are accessed via Anderson Road, a park road. There is a small, unpaved parking area at the McCoull House site where visitors may park to view waysides and the remains of the house. A mowed trail connects this site to the Harrison House site.

Chancellorsville Inn Site. Visitors can access the site from a parking area adjacent to Route 603. From there, visitors can view waysides and the remains of the Inn. To explore the site, visitors follow social paths that have developed around the site over time. These paths are not maintained and in some areas have worn away to the extent that they may present hazards to visitors.

Hazel Grove/Fairview. Visitors may park in the parking area at Hazel Grove/Fairview to view the site from a distance and read interpretive signs. The site, which consists of an open field stretching from Hazel Grove to Fairview, contains no formal trail system; however, earthworks and artillery replicas are scattered throughout the field and encourage visitors to explore the site.

Old Salem Church. From the parking lot visitors follow a woodchip path to the church building or to a series of waysides in the corner of the property. The path does not take a direct route to the site, and consequently a number of social paths have developed. Once at the site, visitors must leave the path to examine the church and interpretive signs.

3.7 Park Operations and Infrastructure

Sunken Road

Park Operations. Park operations use 0.25 full time equivalencies (FTE) to maintain the Sunken Road grounds. This includes the maintenance activities needed to maintain the grounds, trees, shrubs, walks, and trails from Lafayette Boulevard to Hanover Street. The grounds are mowed approximately once every 7 to 10 days, depending on soil moisture. Mowing utilizes approximately 75% of the FTE. Other maintenance work includes snow removal, fence maintenance, and leaf removal. Time and resources spent on maintaining the parking lot at Fredericksburg Visitor Center are minimal; however, park staff occasionally blows leaves and debris, removes snow, and fills cracks or potholes in the parking area.

The main operational problem in the Sunken Road area is soil compaction. To help prevent this, a hedge of Chinese holly protects the Kirkland Memorial. The Innis House and original stone wall are protected by rope barriers.

The Innis House requires normal maintenance associated with a house and complicated by the fact that the building is over 150 years old. Painting is required every 5 to 7 years with a new roof installed every 10 to 15 years. Maintenance problems at this site are also soil compaction and drainage. Water in this area tends to drain toward the house. Also the trail on each side of the house carries an excessive amount of water during heavy downpours and rainy spells. Additional work at the Kirkland Memorial consists of cleaning and waxing once every five years.

Infrastructure. Drainage at Sunken Road has created a problem within the park. Currently, the road is drained by drop inlets that sit at the lowest point within the road near Mercer Street. Although these inlets drain into storm sewers, during heavy storm events the inlets do not drain the entire road thoroughly and flooding occurs.

Fredericksburg National Cemetery

Maintaining the slopes and headstones at the Fredericksburg National Cemetery requires 0.46 FTE. Grass at the site is mowed once every 7 to 10 days between April and October days, depending on soil moisture. The terrace slopes are mowed with a self-propelled lawn mower pulled with a rope and guided by a long

stick, requiring two people per mower per terrace. The flats of the terraces are mowed with a riding lawn mower, and weed trimmers are used to trim around headstones. During dry periods, the terraces are cut with weed trimmers.

Two challenges in maintaining the terraces are the labor requirements and the environmental conditions. Mowing the terraces is a laborious and physically demanding task. Years of searching have failed to find a mechanized way to mow the terraces. The slope and aspect of the terraces create difficult growing conditions for grass. This has recently been partially mitigated by installation of an irrigation system.

Civilian Sites

Maintenance requirements for many of the civilian sites are so minimal that they would be considered immeasurable. Occasional sign repair and infrequent mowing occur at these sites only a few times per year.

Stonewall Jackson Shrine. The Stonewall Jackson Shrine requires 0.05 FTE to maintain. This includes the maintenance activities needed to maintain the grounds, trees, walks, and trails. The mowing schedule at this site is approximately every 14 to 20 days, which utilizes 50% of the FTE. Other maintenance work includes snow removal, fence maintenance, trail maintenance, and leaf removal. Time and resources spent maintaining the site's parking lot are minimal, but park staff occasionally blows leaves and debris, removes snow, and fills cracks.

Chancellorsville Inn Site. Maintenance of the Chancellorsville Inn site requires grounds work as well as work on vistas. This effort requires 0.05 FTE. The grounds are mowed once every 14 to 20 days, which utilizes 75% of the FTE. Other maintenance work includes fence, sign, and cannon maintenance. Time and resources spent maintaining the parking area are minimal.

The primary problems at Chancellorsville Inn site are soil compaction and safety issues. Some type of barricade is needed between the site and Route 3 to keep visitors, particularly children, from wandering into the highway.

Hazel Grove/Fairview. Hazel Grove/Fairview requires 0.05 FTE to maintain. This includes the maintenance activities needed to maintain the grounds, vista, and trails. The grounds are mowed approximately once every 14 to 20 days, which utilizes 85% of the FTE. Other maintenance work includes vista, sign, and cannon maintenance. Time and resources spent maintaining the parking areas at Hazel Grove and Fairview are minimal, but park staff does occasionally blow leaves and debris, remove snow, and fill potholes. New parking areas are scheduled to be constructed at both sites in July 2003.

Old Salem Church. The Old Salem Church grounds require 0.05 FTE to maintain. This includes the maintenance activities needed to maintain the grounds, trees, walks, and trails. The mowing schedule at this site is approximately every 14 to 20 days, which utilizes 50% of the FTE. Other maintenance work includes snow removal, fence maintenance, trail maintenance, and leaf removal. Time and resources spent maintaining the parking lot at Old Salem Church are minimal, but park staff occasionally blows leaves and debris, removes snow, and fills cracks.

4 Environmental Consequences

4.1 Introduction

This section describes the environmental consequences associated with the alternatives. It is organized by impact topic, which distills the issues and concerns into distinct subjects for discussion analysis. NEPA requires consideration of context, intensity, and duration of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. NPS policy also requires that impairment of resources be evaluated in all environmental documents; therefore, this discussion is also included for each impact topic.

4.2 Methodology for Assessing Impacts

As required by NEPA, potential impacts are described in terms of type (beneficial or adverse), context (site-specific, local, or regional), duration (short-term or long-term), and level of intensity (negligible, minor, moderate, or major). Overall, these impact analyses and conclusions were based on the review of existing literature and FRSP studies, information provided by experts within the park and other agencies, professional judgments and park staff insights, consultations with the Virginia State Historic Preservation Officer (SHPO), and public input.

Type

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.

Direct: An effect that is caused by an action and occurs at the same time and place.

Indirect: An effect that is caused by an action but is later in time or farther removed in distance, but still reasonably foreseeable.

Context

Context is the setting within which an impact is analyzed.

Site-specific: The impact would affect the project site.

Local: The impact would affect the park.

Regional: The impact would affect localities, cities, or towns surrounding the park.

Duration

For all resources and values, the duration of impacts in this document is defined as follows:

Short-term: Impacts that occur only during construction or last less than one year.

Long-term: Impacts that last longer than one year.

Level of Intensity

Because level of intensity definitions (negligible, minor, moderate, or major) vary by impact topic, they are provided separately for each impact topic.

Impairment

In addition to determining the environmental consequences of the preferred and other alternatives, *NPS Management Policies 2001* (NPS 2000) and *Directors Order 12: Conservation Planning, Environmental Impact Analysis and Decision-Making*, require analysis of potential effects to determine whether or not actions would impair park resources.

A fundamental purpose of the NPS, as provided for in its Organic Act (1916) and reaffirmed by the General Authorities Act (1970), as amended in 1978, and recognizing a national park system, begins with a mandate to conserve park resources and values. However, the laws do give the NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of the park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources and values. An impact would be more likely to constitute an impairment to the extent it affects a resource or value whose conservation is:

- (1) Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the 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.

Impairment may result not only from NPS activities in managing the park, but also visitor activities or activities undertaken by concessionaires, contractors, and others operating in the park. An impairment determination is provided for each impact topic, where appropriate, within the conclusion section of each alternative.

Cumulative Impacts

Impacts can be direct, indirect, or cumulative. As previously noted, direct impacts are caused by an action and occur at the same time and place as the action, while indirect impacts are caused by the action and occur later or farther away but are still reasonably foreseeable. The CEQ regulations, which implement NEPA, require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as impacts which result when the impact of the proposed action is added to the impacts of other present and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7).

To determine the potential cumulative impacts, existing and future projects at FRSP and in the surrounding area were identified. These included lands administered by the NPS; the Commonwealth of Virginia; Spotsylvania County, Virginia; Stafford County, Virginia; and the Fredericksburg-Stafford County Park Authority. Projects were determined by meetings and phone calls with county and town governments and state land managers. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or that would be implemented in the reasonably foreseeable future.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of a particular natural resource, cultural resource, visitor use, or the socioeconomic environment. Because some of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project. Cumulative impacts are considered for all alternatives and are presented at the end of each impact topic discussion. The following projects were identified:

City of Fredericksburg Water Line

In conjunction with the FRSP project to stabilize historic resources and ruins, the city of Fredericksburg would replace a water line at the north end of Sunken Road. Under the proposed action, the paved surface on Sunken Road would be removed and the road would be lowered to its historical elevation. The city would take advantage of this construction process by replacing or capping in place a line that runs along Hanover Street. This project would have the potential to impact soils, vegetation, and archeology.

Stafford County Multi-Use Trail

Stafford County is currently designing a multi-use trail to connect the historic sites of Belmont and Ferry Farm along the Rappahannock River. The county is working on two sections of this trail: the northern section from Belmont to the Falmouth Bridge and the southern section from Chatham Bridge to Ferry

Farm. The Fredericksburg-Stafford County Park Authority is working on the center section between the two bridges. The proposed trail is directly across the river from historic Fredericksburg, and possible connections to the city along existing bridges are under investigation. The project would have the potential to impact on soils, vegetation, visitor experience, and circulation.

Spotsylvania County Planning Projects

Spotsylvania County is a rapidly developing community. The county's planning department has a number of different projects that are in different phases of development. These projects would have the potential to impact soils, vegetation, wildlife, archeology, and visual resources. They include:

- Ashley Farm – On March 25, 2003, rezoning for the Mullins Farm development was denied. The planned development would include 225 single housing units and 665,000 square feet of office and commercial space. The landowner might still develop the area under the current zoning regulations. The area in question is located in close proximity to the Chancellorsville Inn site.
- Whitehall rezoning – The proposed rezoning would allow for 497 single family units as well as some associated commercial development. The area in question is located just north of Jackson Trail near its convergence with Brock Road and Herndon Road.
- Similar developments are occurring in other areas of the county. The Village of Spotsylvania Courthouse is one such development. It is located near the Courthouse Road bypass project described below.

Route 208 Courthouse Road (Spotsylvania Courthouse Bypass)

The Virginia Department of Transportation (VDOT) is planning a project to improve a corridor for Courthouse Road through Spotsylvania County. The project would also relieve traffic congestion at the Spotsylvania Courthouse. It would begin just west of the Ta River, near Post Oak, and continue one mile west of the Ni River, at the intersection of Route 208 and Wild Turkey Road. The project would have the potential to impact on soils, vegetation, visitor use, and transportation.

Reconstruction and Improvement of Various Roadways at FRSP

The Eastern Federal Lands Highway Division of the Federal Highway Administration (FHWA) is in the planning process for several road improvement projects within FRSP (EFLHD 2002). These projects would be carried out in the Chancellorsville Battlefield unit, the Spotsylvania Court House unit, and the Stonewall Jackson Shrine unit. These projects would have the potential to impact soils, vegetation, visitor experience, and transportation.

Chancellorsville (PRA-FRSP Project Numbers 13(1), 15(1), 16(1), AND 17(1))

- Furnace Road – The road would be overlaid with asphalt pavement within the existing roadway width. The grass shoulders would be stabilized and the stone masonry on the bridge would be cleaned and repointed. The Maury Birthplace parking area would be paved to allow parking spaces for one bus and three automobiles. The remaining gravel area would be removed and replanted as green space.
- Sickles Drive – The road would be paved, and areas of severe deterioration would be reconstructed. The bridge over Scott's Run would be repointed.

- Stuart Drive – The Hazel Grove parking area would be redesigned to include five additional automobile parking spaces, and the road would be repaved with asphalt.
- Bullock Road – Beginning at Route 3, approximately 1,500 feet of Bullock Road would be repaved with asphalt as a two-lane road. The remainder of the road to its intersection with Route 610 would be redesigned as a one-lane, one-way road. Approximately 1,840 square feet of existing pavement would be removed and returned to green space.
- Berry-Paxton Drive – The Fairview parking area, located at the end of a cul-de sac on Berry-Paxton Drive, would be redesigned to allow six additional automobile and two bus parking spaces. The road itself would be repaved and drainage structures would be cleaned.
- Jackson Trail East – The road's intersection with Brock Road would be repaved. Jackson Trail East would be widened to an average width of 13 feet and scarified to a depth of 2 inches. This space would be supplemented with 6 inches of aggregate. Also, the Catharine Furnace site parking area would be redesigned to include four additional parking spaces.
- Jackson Trail West – The intersection with Brock Road would be repaved and the remaining road would be supplemented with 6 to 8 inches of aggregate course. Necessary drainage and driveway improvements would also be preformed.

Spotsylvania (PRA-FRSP Project Numbers 100(1) AND 300(1))

- Hancock Road – The road would be supplemented with 6 inches of aggregate and graded to allow two 9-foot travel lanes.
- McCoull House Road – The road would be supplemented with 6 inches of aggregate course and graded to accommodate two 8-foot travel lanes.

Stonewall Jackson Shrine (PRA-FRSP Project Number 21(1))

- The shrine road would be rebuilt with a 6-inch aggregate base and 2 inches of asphalt pavement to provide two 9-foot travel lanes with 2-foot shoulders. The circle area would be a one-way, 11-foot travel lane with a similar pavement depth. The parking area at the shrine would be paved to allow nine automobile and one bus parking spaces.

National Cemetery Boundary Wall Rehabilitation

FRSP is proposing to repoint the entire length of brick wall surrounding Fredericksburg National Cemetery. This project would have the potential to impact visual resources, visitor experience, and park operations.

4.3 Physical and Natural Resources

4.3.1 Soils and Topography

4.3.1.1 Methodology

All available information on soils and topography potentially impacted in various areas of the park was compiled. Where possible, map locations of sensitive soils were compared with locations of proposed developments and modifications of existing facilities. Predictions about short- and long-term site impacts

were based on previous projects with similar soils and recent studies. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** Soils and/or topography would not be affected or the effects to soils and/or topography would be below or at the lower levels of detection. Any effects to soils would be slight.
- Minor:** The effects to soils and/or topography would be detectable, and effects to soil area and/or topography would be small. Mitigation may be needed to offset adverse effects and would be relatively simple to implement and likely be successful.
- Moderate:** The effects on soils and/or topography would be readily apparent and result in a change to the soil character and/or topography over a relatively wide area. Mitigation measures would be necessary to offset adverse effects and likely be successful.
- Major:** The effects on soils and/or topography would be readily apparent and would substantially change the character of the soils and/or topography over a large area in and out of the park. Mitigation measures to offset adverse effects would be needed, extensive, and their success could not be guaranteed.

4.3.1.2 Effects of No Action

Sunken Road

Informal paths around resources such as the Innis House and Stevens House would continue to experience soil loss from erosion, and foot traffic would cause some compaction of soils. The overall loss of soil would be negligible. There would be no change to topography.

Fredericksburg National Cemetery

The soils on the cemetery terraces are located on moderately steep slopes (approximately 60°) that ensure rapid surface runoff and severe erosion potential. The cemetery is a high visitor use area, and heavy foot traffic combined with continued loss of turf would contribute to continued soil erosion on the terraces and compaction of gravesites. This effect would be localized, adverse, and minor over the long-term. There would be no change in topography.

Civilian Sites

Foot traffic would cause continued compaction and soil and ground cover loss on social trails at the civilian sites. This effect would be greater in areas of heavier visitor use, but overall soil losses on these trails would be negligible. There would be no change in topography at any of these sites, and there would be no loss of prime farmland soils.

Cumulative Impacts

Present and reasonably foreseeable future actions that would have an effect on soils and/or topography within the park include negligible to minor impacts from the Fredericksburg water line, the Stafford County multi-use trail, the Spotsylvania County development projects, the VDOT project, and the FHWA road improvements. These impacts would include soil disturbance and exposure, which can lead to erosion and runoff. There would also be a negligible to minor loss of prime farmland soils to development. The effects of the No Action Alternative would not contribute to cumulative impacts in the area.

Conclusion

The overall impact to soils and topography under the No Action Alternative would be negligible to minor but would be localized. The No Action Alternative would not contribute to cumulative impacts to soils and topography. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to soils and topography.

4.3.1.3 Effects of Proposed Action

Sunken Road

The proposed action would include the excavation and removal of soil to restore the historic elevation of Sunken Road, including more than 17,000 square feet of asphalt and underlying soil. Because this is primarily fill material and the soil surface of the road would be stabilized with structural soil, the impact to soils and topography at Sunken Road would be negligible.

Social paths around resources in this area would be formalized into a trail system. Soil disturbance and movement during trail construction would be negligible, and soils would be stabilized by installing sustainable, hard surface treatments on pedestrian paths. A combination of structural soil, brick, and stone would be used for these pathways and would protect soils from erosion and compaction as a result of unrestricted foot traffic. A beneficial, negligible impact would be particularly noticeable around the Innis House where ruts have formed around the exterior of the house as visitors attempt to peer in its windows.

Fredericksburg National Cemetery

New sod would be placed on the slopes of the cemetery's terraces to protect them from further erosion. Installation of new sod would involve killing existing weeds and vegetation with an herbicide and preparing a shallow seedbed by cultivating approximately 1 inch of soil. The project would progress only at a rate that would allow prompt placement of sod on disturbed soil to minimize the potential for soil loss and runoff, and soil would not be left exposed if inclement weather were forecast. Once the sod is established, which could be expected to occur within one growing season, virtually all erosion on the

terraces would be eliminated. This would have a long-term, minor, beneficial impact on soils in the immediate area.

Additionally, small amounts of soil would be moved to stabilize the headstones and restore gravesites. In cases where headstones have been knocked or pushed out of plumb, the soil opposite the direction of lean would be removed. Further, sunken gravesites would be restored to grade by adding topsoil followed by sod. The overall amount of soil movement would be very small and would be considered negligible. There would be no impact to topography.

Civilian Sites

At each of the civilian sites included in this project, a combination of hard surface trails, wayside exhibits, and pads would be installed, and with this there would be an insignificant loss of soil at each site. Installation of new waysides would result in the permanent displacement of an imperceptible amount of soil, and construction of trails and pads would have the potential for soil loss from erosion during construction. However, the implementation of erosion and sediment control plans appropriate to the sites would minimize soil loss. Trails would be designed to follow the sites' natural contours so as not to change topography, and once construction is complete and surrounding areas are revegetated, soil movement would not occur. These types of negligible impacts would occur at Stonewall Jackson Shrine, Chancellorsville Inn Site, the Catharine Furnace Site, Lee-Jackson Bivouac, Chancellorsville, Wellford House, Spindle House, Landrum House, Union Breakthrough, Bullock House, and Chatham.

Additional site specific impacts were identified at the following civilian sites:

McCoull House Site/Harrison House Site. The addition of a parking pull off for two to three cars north of Anderson Road in the area of the McCoull and Harrison Houses and improvements to the McCoull House parking area would impact a small area of soils. The new parking pull off would be constructed in an area that is currently vegetated, and some grading and soil removal would be required. A negligible amount of soil could be lost during construction, but implementation of an erosion and sediment control plan would minimize this. Asphalt would be placed over disturbed soils and would prevent further soil loss in the area; however, soil compaction could occur over the long-term beneath the pavement.

At the McCoull House, an existing dirt parking area would be paved with asphalt. Soil disturbance would occur during construction, and soil loss would be minimized by an appropriate erosion and sediment control plan. Paving this area, however, would ultimately stabilize exposed soils at the site and decrease the potential for soil erosion and runoff. There would be no change in topography, and prime farmland soils would not be impacted.

Hazel Grove/Fairview. Approximately 3.17 acres of vegetation would be cleared at this site to restore historic vegetation patterns. To minimize soil compaction, particularly around sensitive archeological earthworks, work requiring the use of heavy equipment would be done only when the ground is frozen and during dry weather and an adjacent, paved roadway would be used for construction staging. To minimize erosion and soil loss once vegetation is removed, all disturbed areas would be seeded with a

seed mix of grasses, and the NPS would develop an erosion and sedimentation plan for the site. Among other things, the plan would describe the process for mulching and seeding equipment landings and skid trails. The overall impact to soils at this site would be short-term (lasting only during the construction period and until grass becomes established), adverse, and minor. The long-term impact to soils would be negligible.

Old Salem Church. A bus parking area immediately adjacent to the existing parking lot would impact approximately 400 square feet of soils in an area that is currently vegetated. Construction would temporarily disturb soils at the site and could lead to increased soil erosion and runoff if proper erosion and sediment controls are not implemented. To minimize compaction of soils, the existing parking area would be used as a construction staging area for heavy machinery. Once construction is complete and the hard surface (in this case brick) is in place, the potential for soil movement would be over. The impact of this action on soils at the site would be negligible.

Cumulative Impacts

Non-federal actions that have occurred on adjacent lands, in combination with future actions at FRSP, have resulted in and would continue to result in soil loss and conversion of prime farmlands throughout the region. The adverse effects of non-park actions, including installation of a new water line by the city of Fredericksburg along Sunken Road, construction of the Stafford County multi-use trail, the various Spotsylvania County development projects, VDOT projects, and the FHWA road improvements, would dwarf any adverse effects from park actions. Overall the effects of cumulative effects to soils of these projects would be minor to moderate, but the contribution of impacts from this project to soils in the region would constitute an imperceptible portion of the total impacts in the area.

Conclusion

The overall impact to soils and topography from the proposed action would be negligible, though localized, short-term, minor impacts to soils could result. In addition, the proposed action would not contribute measurably to regional cumulative effects to soils and topography. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to soils and topography.

4.3.2 Vegetation

4.3.2.1 Methodology

All available information on vegetation and vegetative communities potentially impacted in FRSP was compiled. Where possible, map locations of sensitive vegetation species, populations, and communities were identified and avoided. Predictions about short- and long-term site impacts were based on recent

studies and previous projects with similar vegetation. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** No native vegetation would be affected or some individual native plants could be affected as a result of the alternative, but there would be no effect on native species populations. The effects would be on a small scale, and no species of special concern would be affected.
- Minor:** The alternative would affect some individual native plants and would also affect a relatively minor portion of that species' population. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, could be required and would be effective.
- Moderate:** The alternative would affect some individual native plants and would also affect a sizeable segment of the species' population over a relatively large area. Mitigation to offset adverse effects could be extensive but would likely be successful. Some species of special concern could also be affected.
- Major:** The alternative would have a considerable effect on native plant populations, including species of special concern, and affect a relatively large area in and out of the park. Mitigation measures to offset the adverse effects would be required and extensive, and success of the mitigation measures would not be guaranteed.

4.3.2.2 Effects of No Action

Sunken Road

Under the No Action Alternative, conditions would remain the same, at least over the short-term, and there would be no change from the current vegetation management practices. Social trails would continue to form across the site to access resources, wearing away grass and other groundcovers. The impact would be adverse but negligible.

Fredericksburg National Cemetery

Current stabilization practices at the cemetery would continue, consisting of hydro-seeding the terraces once every three to four years with a mixture of lime, fertilizer, grass seed, and mulch to cover bare spots. The grass, if it germinates at all, would have a shallow root system and would be quickly out competed by weeds. This groundcover would not be stable, and erosion and turf loss would continue on the terraces. The overall impact to vegetation would be adverse but negligible.

Civilian Sites

There would be no change in the current vegetation maintenance programs. Natural processes would continue to drive vegetative changes in wooded areas, and open areas would be managed as mowed areas or open tall grass fields. Under the No Action Alternative, social trails would continue to form at civilian

sites due to a lack of a formalized trail system, leading to worn areas with little or no groundcover. The impact to vegetation at the civilian sites would be negligible.

Cumulative Impacts

Present and reasonably foreseeable future actions in the area of FRSP that would have an effect on vegetation include negligible impacts from the Stafford County multi-use trail, various Spotsylvania County planning projects, VDOT projects, and the FHWA road improvements. The No Action Alternative would not contribute to these effects.

Conclusion

The overall impact to vegetation under the No Action Alternative would be negligible, and the No Action Alternative would not contribute to cumulative impacts on vegetation. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to vegetation.

4.3.2.3 Effects of Proposed Action

Sunken Road

In the Sunken Road area, a number of individual trees would be impacted by the proposed actions. Near the intersection of Mercer and Willis Streets, nine eastern white pine trees and an area of scrubby vegetation would be removed to make room for the bus pull off. The scrubby area includes English ivy, wild rose, Chinese privet, and a white ash tree. On the opposite side of Mercer Street, three deodar cedar trees and three southern magnolia trees would be removed to open up views to the Kirkland Memorial from the bus pull off. Vegetation would also be removed in the area of the Ebert House to allow for views of the Kirkland Memorial from Hanover Street. Trees in this area that would be cleared include a southern magnolia, a red maple, and two deodar cedars. A few individual stems would also be removed during reconstruction of the stone wall. In addition, a few large trees along Sunken Road fronting the Fredericksburg Visitor Center would be removed to enhance interpretation of Sunken Road.

Formalizing trails throughout the site would allow for revegetating areas where vegetation has been worn down by visitor use. In addition, screening vegetation in the form of low plantings would be added along Hanover Street to help delineate the terminus of Sunken Road. Landscape vegetation would also be planted around the bus pull off at the corner of Mercer and Willis Streets and at the Lafayette Street intersection of Sunken Road.

The overall impact of the proposed action on vegetation in the Sunken Road area would be localized and negligible.

Fredericksburg National Cemetery

Installing new sod on the cemetery's terraces would replace existing deteriorating sod with stable, lush grass cover. This would help to stabilize the terraces from further erosion, as well as provide vegetative ground cover where in many cases none currently exists.

Civilian Sites

Creation of interpretive paths, wayside exhibit areas, and minor parking improvements would result in the loss of native herbaceous and woody vegetation at several of the civilian sites. In most cases, mown grass or weedy groundcover would be replaced by hard surface materials only in the footprint of new paths or exhibits. This would occur at Chancellorsville, Union Breakthrough, Chatham, Bullock House, Lee-Jackson Bivouac, Catharine Furnace, Wellford House, Spindle House, and Landrum House (see Table 1). These impacts would not affect plant communities or populations and would be negligible over the long-term. In addition, at some sites, including Stonewall Jackson Shrine and the Chancellorsville Inn site, screening vegetation in the form of small native trees and shrubs would be added to help direct circulation and views of the site. In a few instances (see below), more substantial impacts to shrub and woody vegetation would occur from constructing small parking areas or recreating historic vegetation patterns.

McCoull House Site/Harrison House Site. In order to construct a parking pull off near the Harrison House site, a small area of young, wooded vegetation would be cleared. Trees that would be removed include individual stems of American holly, white oak, red oak, and dogwood, and a number of young Virginia pine. The impact to vegetation would be negligible overall.

Hazel Grove/Fairview. The scrubland vegetative community type present north of Route 3 is a temporary growth stage for what would ultimately become a mature forest of oak, pine, and red cedar. This particular community type is found at various locations throughout the park and is common in the region, primarily in areas that have been previously disturbed by logging or in pasture areas that have not been grazed or mowed in recent years. The removal of the woody vegetation (approximately 1 acre) above ground level would have a negligible effect on this community type regionally. The habitat type is not considered unique, and the species of plants that comprise the community are some of the most frequently occurring plants on the park.

Removal of vegetation at the Fairview site south of Route 3 would result in the loss of approximately 2.17 acres of Virginia pine forest alliance. Virginia pine is a very common tree species in the region, and many stems occur in forests adjacent to the 2.17 acre impact zone. The ultimate conversion of the acreage to an herbaceous community would be in keeping with the neighboring mowed fields maintained for interpretational purposes.

All trees, brush, and vegetation would be removed from the site, and cuts would be made as close to the ground surface as possible so as not to leave stumps. The site would be seeded with a mix of either native warm-season or native cool-season grasses, and regular mowing of the open fields would result in the enhancement of these grass species and would discourage colonization by woody species and the spread of exotic species. The overall impact of this habitat conversion would be long-term, adverse, and minor.

Old Salem Church. A small area of scrub vegetation (approximately 400 square feet) would be cleared for constructing a bus parking area adjacent to the existing parking lot. The area that would be cleared contains black cherry saplings, two cedar trees, a black locust, and herbaceous species including Japanese honeysuckle. The proposed action would have a negligible impact on vegetation overall.

Cumulative Impacts

Vegetative changes and losses are occurring throughout the region primarily from urbanization, industrialization, and road construction and will likely continue. Projects in the vicinity of FRSP that would contribute to this include construction of the Stafford County multi-use trail, various Stafford County planning projects, VDOT projects, and FHWA road improvements within the park. Collectively, these projects would have a minor to moderate adverse effect on vegetation in the area. Though the clearing at Hazel Grove/Fairview would require a minor amount of vegetation removal, the impact would be localized; therefore, the contribution of impacts from this project to vegetation in the region would be a negligible portion of the total cumulative impacts.

Conclusion

The overall impact to vegetation from the proposed action would be minor. In general, however, the proposed action would affect only individual trees and small areas of mowed grass. The proposed action would not contribute measurably to cumulative impacts to vegetation. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to vegetation.

4.3.3 Wildlife and Wildlife Habitat

4.3.3.1 Methodology

The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean that native animal life should be protected and perpetuated as part of the park's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; otherwise they are protected from harvest, harassment, or harm by human activities. According to *NPS Management Policies 2001* (NPS 2000), the restoration of native species is a high priority (sec. 4.1). Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and the ecological integrity of plants and animals. Information on FRSP wildlife was taken from park documents and records. The FRSP natural resource management staff, the U.S. Fish and Wildlife Service, and the Virginia Department of Game and Inland Fisheries also provided wildlife information. The thresholds of impact are as follows:

- Negligible:** There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be of short duration and well within natural fluctuations.
- Minor:** Impacts would be detectable, but they would not be expected to be outside the natural range of variability and would not be expected to have any long-term effects on native species, their habitats, or the natural processes sustaining them. Mitigation measures, if needed to offset adverse effects, would be simple and successful.
- Moderate:** Breeding animals of concern are present; animals are present during particularly vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they could be outside the natural range of variability for short periods of time. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.
- Major:** Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or permanent. Loss of habitat might affect the viability of at least some native species. Extensive mitigation measures would be needed to offset any adverse effects, and their success would not be guaranteed.

4.3.3.2 Effects of No Action

Sunken Road

No improvements would be made to circulation or trails, and footpaths would continue to develop as visitors cross the site randomly. Insects and small mammals that inhabit the grass would be displaced as these trails form and vegetation is worn away. The impact would be negligible.

Fredericksburg National Cemetery

Insects and small animals that inhabit the grass could be adversely impacted as small amounts of turf are worn and eroded on the terraces, particularly the slopes. The impact, however, would be negligible.

Civilian Sites

Wildlife species would continue to be minimally disturbed by human activities related to visitor use and park maintenance; however, wildlife using the area are generally accustomed to human activity. Further, there would be no significant changes in vegetation that would affect wildlife habitat or wildlife.

Undirected circulation around each of the sites would lead to the continued formation of social trails and trampling of grass and groundcover, which may serve as habitat for a variety of insects and small

mammals. However, this impact would be localized, and the No Action Alternative would have a negligible impact on wildlife and wildlife habitat.

Cumulative Impacts

Wildlife habitat loss is primarily a result of commercial and residential development. Current and proposed development activities in the region are anticipated to result in the continued reduction of wildlife habitat and subsequent displacement of species in the future. Ongoing and proposed projects in the FRSP area that would impact wildlife and wildlife habitat include the construction of the Stafford County multi-use trail, various Spotsylvania County planning projects, and VDOT projects. Together these projects would have a minor to moderate adverse impact on wildlife and wildlife habitat. The No Action Alternative would not contribute to cumulative impacts.

Conclusion

The No Action Alternative would have a negligible impact on wildlife and wildlife habitat and would not contribute to cumulative impacts on these resources. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to wildlife and wildlife habitat.

4.3.3.3 Effects of Proposed Action

Sunken Road

The Sunken Road area is located in an urban setting and is maintained as parkland. It has limited habitat value for birds and mammals; however, scattered trees provide nesting for birds and mowed lawn provides habitat for insects and small mammals. Wildlife in this area would be accustomed to human activity and would not be affected by construction or visitor use. Formalizing trails throughout the site would eliminate the formation of social trails and the trampling of grass and groundcover by visitors and would improve habitat for animals that enjoy the lawn setting. Some trees and scrub vegetation would be removed to clear viewsheds, resulting in a decrease in habitat for birds and squirrels. However, the overall impact to wildlife and wildlife habitat in this area would be negligible.

Fredericksburg National Cemetery

Applying an herbicide (Roundup) to kill existing grass and weeds on the cemetery terraces would not impact insects or other wildlife. Studies indicate that adverse effects to soil microorganisms, including earthworms, would be unlikely as a result of applying Roundup at normal rates. In fact, several studies have shown that the application of such an herbicide can increase populations of beneficial insects, including common butterfly species and honeybees. Neither birds nor mammals have been found to be affected by toxicity from Roundup application (Giesy et al. 2001).

Microorganisms, insects, and small mammals that inhabit the grass of the terraces would be temporarily disturbed while the existing grass is killed and new sod is put in place. The area of displacement would be limited to the slopes of the terraces, and once the sod is in place the area would once again be suitable habitat. The displacement, therefore, would not affect the long-term habitat or reproduction of any species. The impact to wildlife and wildlife habitat would be negligible.

Civilian Sites

The proposed actions for each of the following civilian sites would mostly affect maintained lawns and/or small, man-altered environments such as interpretive stations. These impacts would be very small and would not result in large increases in visitor use that would affect wildlife at the sites. As such, the proposed actions at most of the sites would have a negligible impact on wildlife populations. These sites include Stonewall Jackson Shrine, McCoull House Site, Harrison House Site, Chancellorsville Inn Site, Lee-Jackson Bivouac, Union Breakthrough, the Catharine Furnace site, Wellford House, Spindle House, Landrum House, Bullock House, and Old Salem Church. Impacts associated with vegetation removal at Hazel Grove/Fairview would be more substantial and are described below.

Hazel Grove/Fairview. The dense shrub habitat (approximately 1 acre) north of Route 3 would be removed. The area is likely used by a variety of wildlife species including small mammals such as rabbits and mice that prefer this habitat type for protective cover against predators. Likewise, songbirds such as wrens, cardinals, robins, and sparrows likely seek this habitat type for food and nesting. This habitat type has been documented as frequently occurring in the immediate area, and the removal of approximately 1 acre for conversion to a field would have only a minor impact on the local populations and their habitats. Adverse impacts would be long-term.

South of Route 3, approximately 2.17 acres of Virginia pine forest would be removed. Wildlife species that could be affected include several terrestrial and arboreal species that prefer forest habitats such as gray squirrels, woodpeckers, box turtles, and warblers. The impact to wildlife and wildlife habitat would be minor and long-term.

Cumulative Impacts

Commercial and residential development projects in the area of FRSP would result in a reduction of wildlife habitat in the region and the subsequent displacement of species. Projects that could contribute to this effect include construction of the Stafford County multi-use trail, various Spotsylvania County planning projects, and VDOT projects. These projects would have minor to moderate adverse impacts on wildlife and wildlife habitat. The proposed actions at FRSP would include work within habitats utilized by wildlife scattered across the park; however, the habitat types are commonly found in the region and the small size of the proposed impacts would contribute only a minor loss of habitat available for wildlife populations.

Conclusion

The proposed action would have minor impacts on wildlife and wildlife habitat and would not contribute to cumulative impacts to these resources. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to wildlife and wildlife habitat.

4.4 Cultural Resources

The CEQ regulations, which implement the NEPA require assessment of impacts to cultural as well as natural resources. In this EA, impacts to cultural resources are described in terms of type, context, duration, and intensity, as described above. These impact analyses do not include discussion of the proposed project's compliance with Section 106 of the National Historic Preservation Act (NHPA). CEQ regulations and the NPS's *Conservation Planning, Environmental Impact Analysis, and Decision-making* (DO-12) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate, of the effectiveness of mitigation under NEPA only.

The NPS is consulting with the SHPO and the ACHP to develop a Programmatic Agreement stipulating actions the NPS will take prior to implementing the proposed actions. The NPS will continue to consult with the SHPO throughout the planning process.

4.4.1 Archeological Resources

4.4.1.1 Methodology

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such research questions. An archeological site(s) can be eligible to be listed in the National Register of Historic Places if the site(s) has yielded, or may be likely to yield, information important in prehistory or history. An archeological site(s) can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national (see NPS 1990). For purposes of analyzing impacts to archeological resources, thresholds of change for the intensity of an impact are based upon the potential of the site(s) to yield information important in prehistory or history, as well as the probable historic context of the affected site(s):

Negligible: Impact is at the lowest levels of detection – barely measurable with no perceptible consequences, either adverse or beneficial, to archeological resources.

- Minor: Adverse Impact – Disturbance of a site(s) results in little, if any, loss of significance or integrity and the National Register eligibility of the site(s) is unaffected.
 Beneficial Impact – Maintenance and preservation of a site(s).
- Moderate: Adverse Impact – Disturbance of a site(s) does not diminish the significance or integrity of the site(s) to the extent that its National Register eligibility is jeopardized.
 Beneficial Impact – Stabilization of a site(s).
- Major: Adverse Impact – Disturbance of a site(s) diminishes the significance and integrity of the site(s) to the extent that it is no longer eligible to be listed in the National Register.
 Beneficial Impact – Active intervention to preserve a site(s).

4.4.1.2 Effects of No Action

Under the No Action Alternative, there would be no change in management action. There would be no project-related ground disturbance which would result in no impacts to archeological resources. However, access to some civilian sites, such as the Chancellorsville Inn, would continue to occur via non-designated social trails. Continued foot traffic on non-designated trails could contribute to continued soil erosion, ground disturbance and potential intrusion upon archeological resources, thereby resulting in negligible to minor adverse impacts to archeological resources.

Cumulative Impacts

Past, present and reasonably foreseeable future actions have contributed adverse impacts to archeological resources at FRSP. These projects include actions occurring before establishment of the park and/or as a result of inadvertent impacts prior to the legal requirements for archeological survey, site protection, and mitigation. Present and on-going projects in the area, including the City of Fredericksburg's water line project and various Spotsylvania County planning projects, have the potential to adversely impact archeological resources. Ground disturbance related to the No Action Alternative would not occur; however, continued use of non-designated social trails and increasing erosion would contribute a negligible increment to adverse cumulative impacts.

Conclusion

The overall impact to archeological resources under the No Action Alternative would be negligible to minor adverse, and the No Action Alternative would contribute a negligible increment to adverse cumulative impacts to archeological resources. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to archeological resources.

4.4.1.3 Effects of Proposed Action

In 1993, 2000, 2001, and 2002, a series of archeological investigations were conducted in the Sunken Road project area at Fredericksburg Battlefield. Under the NPS Preferred Alternative, visitor access to civilian sites would be improved and interpretative media would be installed. To avoid impacts to archeological resources, site markings would be laid directly on the ground surface, and there would be no excavation involved.

Civilian site locations at Chancellorsville and Spotsylvania Battlefields were not included in archeological surveys conducted in the 1990s and between 2000 and 2002. Improvements in visitor access and installation of interpretive media would occur in battlefield areas at Chancellorsville and Spotsylvania Battlefields.

The NPS would design access trails and interpretive exhibit areas to avoid archeological resources; however, because the potential for long-term adverse impacts to archeological resources exists at Fredericksburg, Chancellorsville, and Spotsylvania Battlefields, archeological investigation and evaluation of the areas of potential effect should be completed. Given the current knowledge of these sites, it is anticipated that these improvements would have minor to moderate adverse impacts. The NPS is consulting with the SHPO and the ACHP to develop a Programmatic Agreement stipulating actions the NPS will take prior to implementing the proposed actions. The NPS will ensure that the design of the proposed actions is consistent with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*, as well as compatible with the protection of archeological resources at Chancellorsville and Spotsylvania Battlefields.

Cumulative Impacts

A variety of present and reasonably foreseeable actions have and would continue to contribute adverse impacts to archeological resources in the park, such as minor adverse impacts from the City of Fredericksburg's water line project and a negligible to minor impact from Spotsylvania County planning projects. In conjunction with these present and reasonably foreseeable actions, implementing the NPS Preferred Alternative would have a minor contribution to adverse cumulative impacts

Conclusion

Implementation of the preferred alternative is anticipated to have minor to moderate long-term adverse impacts to archeological resources. It is not anticipated that implementing the preferred alternative would have major adverse impacts to resources or values whose conservation are (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to archeological resources.

4.4.2 Historic Structures

4.4.2.1 Methodology

In order for a structure or building to be listed in the National Register of Historic Places, it must be associated with an important historic context, i.e. possess significance – the meaning or value ascribed to the structure or building, *and* have integrity of those features necessary to convey its significance, i.e. location, design, setting, workmanship, materials, feeling, and association (see NPS 1990). For purposes of analyzing potential impacts to historic structures/buildings, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) is at the lowest levels of detection – barely perceptible and not measurable.

Minor: Adverse Impact – Impact would not affect the character defining features of a National Register of Historic Places eligible or listed structure or building.
Beneficial Impact – Stabilization/preservation of character defining features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Moderate: Adverse Impact – Impact would alter a character defining feature(s) of the structure or building but would not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized.
Beneficial Impact – Rehabilitation of a structure or building in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Major: Adverse Impact – Impact would alter a character defining feature(s) of the structure or building, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed in the National Register.
Beneficial Impact – Restoration of a structure or building in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

4.4.2.2 Effects of No Action

FRSP is considered historically significant with many of the park features being listed on or eligible for listing on the National Register. Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park was listed in the National Register in 1966 and the nomination updated in 1973.

Under the No Action Alternative, access to and interpretation of civilian sites associated with Fredericksburg Battlefield, including Sunken Road and Innis House, would not be improved and visitors would continue to access these sites in a random manner. The stone wall at Sunken Road would not be rehabilitated and restored.

Access to and interpretation of civilian sites associated with Chancellorsville Battlefield, including Catharine Furnace, and Salem Church would not be improved, and visitors would continue to access these sites in a random manner. Access to and interpretation of civilian sites associated with Spotsylvania Battlefield, including the Landrum House Ruins, would not be improved, and visitors would also continue

to access these sites in a random manner. Features of historic structures would continue to be preserved and stabilized, but no rehabilitation or restoration would take place. Negligible to minor long-term adverse impacts to the historic structures within the areas of potential effect at these civilian sites would be anticipated.

Cumulative Impacts

A variety of present and reasonably foreseeable future actions has and would continue to contribute adverse impacts to historic structures within the park. These projects include long term, minor, beneficial impacts from the FRSP cemetery wall project. In conjunction with present and reasonably foreseeable actions, the impacts of the No Action Alternative would contribute a negligible increment to cumulative impacts.

Conclusion

Implementation of the No Action Alternative would have negligible to minor long-term adverse impacts to historic structures and would contribute a negligible increment to cumulative impacts. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to historic structures.

4.4.2.3 Effects of Proposed Action

FRSP is considered historically significant with many of the park's features being listed in or eligible for listing in the National Register. Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park was listed in the National Register in 1966 and the updated in 1973.

Under the NPS Preferred Alternative, the NPS would improve access to and install interpretative media at civilian sites associated with Fredericksburg Battlefield. The design of access trails and interpretive media would be carried out in a manner that preserves the character of the historic houses and house sites and minimizes the potential visual effects on civilian site features and would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The establishment of an interpretive setting at Sunken Road, including restoration of missing features of the stone wall, would be designed and constructed with a context-sensitive design in keeping with the historic setting of Fredericksburg Battlefield. Negligible long-term impacts to historic structures at Fredericksburg Battlefield are anticipated.

In the National Cemetery, some headstones would be restored to their upright configuration, resulting in a long-term, minor, beneficial impact to historic structures.

Access to and interpretation of civilian sites associated with Chancellorsville Battlefield, including the Catharine Furnace site and Salem Church, would be improved. Access to and interpretation of civilian

sites associated with Spotsylvania Battlefield, including the Landrum House, would be improved. The design of access trails and interpretive media at Chancellorsville and Spotsylvania Battlefields would be carried out in a manner that preserves the character of the historic house sites, minimizes the potential visual effects on civilian site features at Chancellorsville and Spotsylvania Battlefields, and is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Negligible long-term impacts to the historic structures within the areas of potential effect at these civilian sites would be anticipated.

Cumulative Impacts

Present and/or reasonably foreseeable future actions have and would continue to impact historic structures in the park. These projects include minor, beneficial impacts from the National Cemetery wall project. The impacts of the NPS Preferred Alternative would contribute incremental negligible to minor beneficial impacts to historic structures.

Conclusion

The overall adverse impacts to historic structures under the proposed action would be negligible. There would also be minor long-term beneficial impacts to historic structures with the stabilization and preservation of headstones in the National Cemetery. The proposed action would contribute a negligible to minor beneficial increment to cumulative impacts on historic structures. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to historic structures.

4.4.3 Cultural Landscapes

4.4.3.1 Methodology

Cultural landscapes are the result of the long interaction between people and the land, the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by historical land-use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past, a visual chronicle of its history. The dynamic nature of modern human life, however, contributes to the continual reshaping of cultural landscapes; making them a good source of information about specific times and places, but at the same time rendering their long-term preservation a challenge.

In order for a cultural landscape to be listed in the National Register, it must possess significance (the meaning or value ascribed to the landscape) *and* have integrity of those features necessary to convey its significance. The character defining features of a cultural landscape include spatial organization and land patterns; topography; vegetation; circulation patterns; water features; and structures/buildings, site

furnishings and objects (see NPS 1996). For purposes of analyzing potential impacts to cultural landscapes, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) is at the lowest levels of detection – barely perceptible and not measurable.

Minor: Adverse Impact – Impact would not affect the character defining patterns or features of a National Register of Historic Places eligible or listed cultural landscape.
Beneficial Impact – Preservation of character defining features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Moderate: Adverse Impact – Impact would alter a character defining pattern(s) or feature(s) of the cultural landscape but would not diminish the integrity of the landscape to the extent that its National Register eligibility is jeopardized.
Beneficial Impact – Rehabilitation of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Major: Adverse Impact – Impact would alter a character defining pattern(s) or feature(s) of the cultural landscape, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed in the National Register.
Beneficial Impact – Restoration of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

4.4.3.2 Effects of No Action

At Fredericksburg Battlefield modern developments, such as vehicular access roads, overhead utility lines, barriers, and fencing intrude on the historic landscape. Under the No Action Alternative, spatial organization and relationships among landscape features would not be rehabilitated. Mercer Street would continue to foreshorten the Innis House yard; features of Sunken Road itself, including reclaiming the historic road prism and repairing and recreating missing portions of the stone wall, would not occur. Also, Sunken Road would continue to be connected, at its north terminus to Mercer Street and at its south terminus to Lafayette Boulevard. Because materials that define the spatial organization would not be repaired, minor to moderate long-term adverse impacts to cultural landscapes are anticipated at Fredericksburg Battlefield.

In the Fredericksburg National Cemetery, the terrace slopes would continue to degrade thus reducing its ability to convey its historical context. It is anticipated that this alternative would have a long-term, minor, adverse impact on cultural landscapes.

Improvements to access, circulation, and interpretation at civilian sites at Chancellorsville and Spotsylvania Battlefields would not take place. At these locations, the design of access trails and interpretive exhibits would not occur, and social trails would continue to be used. Vista clearing at

Fairview and the Chancellorsville Inn site would not occur. Long-term minor to moderate adverse impacts to cultural landscapes are anticipated at Chancellorsville and Spotsylvania Battlefields.

Cumulative Impacts

Present and reasonably foreseeable future actions have and would continue to cultural landscapes in the park. Actions that would have an impact on cultural landscapes within the park include various Spotsylvania County planning projects. The No Action Alternative would contribute a minor adverse increment to cumulative impacts.

Conclusion

The No Action Alternative would result in minor to moderate long-term adverse impacts to cultural landscapes. The No Action Alternative would contribute a minor adverse cumulative increment to cumulative impacts. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to cultural landscapes.

4.4.3.3 Effects of Proposed Action

Implementing the NPS Preferred Alternative would protect and maintain features that define spatial organization of landscape features at Fredericksburg Battlefield. One lane of Mercer Street would be reclaimed and a portion of the lawn area north of the Innis House would be restored. The historic prism of the Sunken Road would be reclaimed. Connectivity with modern vehicular roads at both the north and south terminus of the Sunken Road would be removed, and these areas screened from modern traffic intrusion with landscaping that would respect the scale and context of the historic scene. Trees and vegetation proposed for removal in the Sunken Road area are not historical in nature, were planted in the 1960s and 1970s, and were never part of the original design of the site. Overhead utility lines and non-historic barriers, and fencing would be removed, restoring spatial organization and relationships among landscape features at Fredericksburg Battlefield. Based on historical, pictorial, and physical documentation, missing features of the stone wall would be restored.

Improvements to access, circulation, and interpretation at civilian sites at Chancellorsville, and Spotsylvania Battlefields would be implemented. At these locations, the design of access trails and interpretive exhibits would be sensitive to the spatial relationship of landscape features. Numerous social trails would be removed. At the Chancellorsville Battlefield a wooded area between Hazel Grove and Fairview would be cleared to restore the historic vista from Fairview to the Chancellorsville Inn site. Visitor access and interpretative improvements at Chancellorsville and Spotsylvania Battlefields would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

The NPS is consulting with the SHPO and the ACHP to develop a Programmatic Agreement stipulating actions the NPS will take prior to implementing the action alternatives to reduce impacts to cultural landscapes. Because restoration of spatial relationships as well as preservation and rehabilitation of landscape features would occur, it is anticipated that this alternative would result in minor to moderate beneficial impacts to cultural landscapes at Fredericksburg, Chancellorsville, and Spotsylvania Battlefields.

Cumulative Impacts

Present and reasonably foreseeable future actions have and would continue to impact cultural landscapes within the park. Projects that would have an impact on cultural landscapes within the park include various Spotsylvania County planning projects. The NPS Preferred Alternative would contribute a minor to moderate beneficial increment to cumulative impacts.

Conclusion

The NPS Preferred Alternative is anticipated to result in minor to moderate long-term beneficial impacts to cultural landscapes. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to cultural landscapes.

4.5 Visual Resources

4.5.1 Methodology

- Negligible:** The visual quality of the landscape would not be affected or the effects would be at or below the level of detection, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience.
- Minor:** Effects to the visual quality of the landscape would be detectable, although the effects would be localized and would be small and of little consequence to the visitor experience. Mitigation measures, if needed to offset adverse effects, would be simple and successful.
- Moderate:** Effects to the visual quality of the landscape would be readily detectable and localized, with consequences at the regional level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.
- Major:** Effects to the visual quality of the landscape would be obvious and would have substantial consequences to the visitor experience in the region. Extensive mitigation measures would be needed to offset any adverse effects, and their success would not be guaranteed.

4.5.2 Effects of No Action

Sunken Road

The No Action Alternative would retain the existing infrastructure and interpretive elements with no physical changes to the project site. Sunken Road would remain paved, which would prevent the park from regaining its historical visual experience that is crucial to the park's mission. The surrounding community would still be visible from the road, further hindering the park's ability to present the site in its historical context. The effect of no action would have a minor impact on visual resources at Sunken Road.

Fredericksburg National Cemetery

Headstones would continue to tilt and the terraces would continue to erode, detracting from the visual quality of the cemetery. The cemetery is a nationally recognized place of remembrance and these actions could detract from this recognition. The No Action Alternative would have a moderate impact on visual resources.

Civilian Sites

No physical changes would be made at any of the civilian sites that would affect the visual experience. In particular, there would be no changes made to visual resources at the Hazel Grove/Fairview site. The Chancellorsville Inn site, which has a historical connection with the site, would not be visible. This alternative would have a negligible impact on visual resources.

Cumulative Impacts

As development around the park increases, the visual quality and visitor experience would generally decrease. Present and reasonably foreseeable future actions that would have an effect on visual resources within the park include a potential moderate, adverse impact from various Spotsylvania County planning projects and minor, beneficial effects from the FRSP cemetery wall project. The effects of the No Action Alternative would not contribute to cumulative impacts on visual resources.

Conclusion

The overall impact to visual resources under the No Action Alternative would be negligible, and the No Action Alternative would not contribute to cumulative impacts to visual resources. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to visual resources.

4.5.3 Effects of Proposed Action

Sunken Road

Under the proposed action the road would be lowered to its historical elevation to allow for better interpretation of the road and the surrounding area. By screening the road from surrounding vehicular traffic and removing overhead power lines, the park would further enhance the visual experience in the area. The effects of the proposed action would have a moderate beneficial effect on visual resources.

Fredericksburg National Cemetery

Under the proposed action, headstones would be stabilized in new soil. Sod would also be placed on seven of the terraces to decrease and/or prevent the rate of erosion. This action would have a moderate beneficial effect on the visual quality of the site.

Civilian Sites

Improvements at a number of the civilian sites would result in long-term, minor, beneficial effects to visual resources. These improvements include installing new waysides, free of deterioration and weathering; adding screening vegetation adjacent to parking areas and nearby development; and formalizing trails using surface treatments appropriate to the setting. These improvements would visually enhance the various sites and improve the aesthetic appearance of the park as a whole.

Stonewall Jackson Shrine. Under this alternative, vegetation would be used to screen the parking lot from the site. This would also create more direct views of the site as visitors first arrive. This alternative would have a minor, beneficial effect to visual resources.

Chancellorsville Inn Site. Removing the existing fence bordering the parking area and replacing it with low bollards would allow for a more open view of the battlefield. This alternative would have a minor, beneficial effect to visual resources.

Hazel Grove/Fairview. Approximately 3.17 acres of trees would be removed to restore the vista from Hazel Grove to the Chancellorsville Inn site. This action would have a moderate, beneficial effect on viewsheds from one site to another. However, this would open up more direct views of Route 3 from the Hazel Grove/Fairview area.

Old Salem Church. Vegetation would screen the area from the surrounding residential and commercial districts. This action would have a minor, beneficial effect on visual resources.

Cumulative Impacts

Present and reasonably foreseeable future actions that would have an effect on visual resources within the park include a negligible impact from the Spotsylvania County planning projects, and minor beneficial effects from the FRSP cemetery wall project. The effects of the NPS Preferred Alternative would contribute beneficially to this effect by increasing screening of surrounding development.

Conclusion

The overall effect to visual resources under the proposed action would be minor to moderate, and the proposed action would contribute beneficial effects to visual resources. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (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 related to visual resources.

4.6 Visitor Use and Experience

4.6.1 Methodology

NPS Management Policies 2001 (NPS 2000) state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks.

Part of the purpose of FRSP is to offer opportunities for recreation, education, inspiration, and enjoyment. Consequently, one of the park's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

Observation of visitation patterns combined with the assessment of what is available to visitors under current management was used to estimate the effects of the actions in the various alternatives in this document. The impact on the ability of the visitor to experience a full range of park resources was analyzed by examining resources and objectives presented in the FRSP significance statement. The potential for change in visitor use and experience proposed by the alternatives was evaluated by identifying projected increases or decreases in understanding of the sites and other visitor uses and determining whether or how these projected changes would affect the desired visitor experience, to what degree, and for how long.

- Negligible:** Visitors would not be affected, or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.
- Minor:** Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
- Moderate:** Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.

Major: Changes in visitor use and/or experience would be readily apparent and would be severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

4.6.2 Effects of No Action

Sunken Road

Sunken Road would remain in its current state, and nothing would be done to improve the interpretive experience along the area. The road surface would remain paved and at its current elevation. No new signs would be added to further explain the significance of the road in history, and no undated signs would be added to interpret the house sites along the road. In addition, the existing network of social trails would remain and continue to expand as no formal trails would be constructed. The visitor experience would therefore not be improved, nor would site access as much of the area would remain inaccessible to visitors with disabilities. This alternative would have a long-term, minor, adverse impact on visitor use and experience.

Fredericksburg National Cemetery

The Fredericksburg National Cemetery is a high profile area in the park. Not only is it heavily visited, it draws frequent media attention, is the site of an annual Memorial Day celebration and luminary event, and is a favorite of veteran's groups. The goodwill that the cemetery generates would be lost if the park continues to do nothing to stop the erosion of the cemetery's terraces or to improve their appearance. The alternative would have a long-term, minor, adverse impact on visitor experience.

Civilian Sites

The civilian sites would remain disjointed and unconnected thematically. It would be difficult for the visitor to interpret the significance of the individual sites and their relationship to each other and to the larger context of the war based on the existing interpretive exhibits. Many of the sites are accessed via pull offs from the park roads, and this would remain unchanged. There would not be formalized areas for viewing exhibits or waysides, and no formal circulation trails would exist at many of the sites (with the exception of the Stonewall Jackson Shrine). Visitors would be free to wander the sites, finding their own route from parking areas to resources along social trails which can be rough and dangerous. Random and varied historic site markings at a number of sites would further confuse visitors as to what they are seeing. At the Hazel Grove/Fairview site, non-historic vegetation patterns would continue to make interpretation of the site difficult. The impact of the No Action Alternative on visitor use and experience would be long-term, adverse, and minor.

Cumulative Impacts

Present or reasonably foreseeable future actions that would have an impact on visitor use and experience within the park and region include minor beneficial effects from greater recreation options with the

Stafford County multi-use trail, as well as minor to moderate beneficial effects from the VDOT and FHWA projects which would improve transportation options within the park and region. While these projects would have a minor to moderate beneficial cumulative effect on visitor experience in the area, the No Action Alternative would contribute noticeable, minor, adverse impacts to these cumulative effects.

Conclusion

The overall effect to visitor use and experience under the No Action Alternative would be long-term, minor, and adverse and would contribute noticeable adverse effects to otherwise beneficial cumulative effects on visitor use and experience in the area.

4.6.3 Effects of Proposed Action

Sunken Road

Lowering Sunken Road to its historic elevation, removing the asphalt surface, and covering the road with structural soil would allow the visitor to experience the road in its historic setting. This would be further enhanced by reconstructing the stone wall that historically existed along the road. Improvements to interpretive waysides at the site would add to the visitor understanding, as well as tie the Sunken Road and its associated resources into the context of the Civil War and history of the Fredericksburg area. Consistent site markings would be installed to delineate former house sites along the road, and improved interpretation of these sites would explain their importance. Curbs and vegetation would be installed at each end of Sunken Road to separate visitor areas from the adjacent busy roads and local community. This would help to delineate Sunken Road as a significant historic site to visitors and allow the area to be viewed in the context of the park and not the modern day environment.

Formalizing trail systems and using a universally accessible and sustainable surface treatment for pathways would improve visitor experience, and additional parking for disabled visitors and for trolleys and buses would open the site to more visitors. These trails, along with additional parking, would provide access to key resources in the Sunken Road area including the Innis House, Stevens House, and Kirkland Memorial.

This alternative would have a long-term, moderate, beneficial effect on visitor experience.

Fredericksburg National Cemetery

The proposed action would improve the overall appearance of the cemetery, as well as safety of visitors walking over gravesites. Visitors would once again be able to view the cemetery in the intended condition, and it would give the proper feeling of respect to the many veterans interred there. Repairing sunken gravesites would reduce the risk of injuries, as would replacing patchy sod on the terraces. Overall, the repairs would collectively help the cemetery to regain and maintain a certain level of prominence for the many national events held there. The alternative would have a long-term, minor, beneficial effect on visitor experience.

Civilian Sites

Better orientation in the form of a new video and interpretive exhibits at each site would allow visitors to glean more from their visit. In particular, an improved overview of the civilian story during the period 1862-64 would help visitors to better understand the Civil War period in the area. Thematic connections between each of the civilian sites and new interpretive waysides would strengthen the visitor experience. Waysides would be designed to describe not only the individual site but also to illustrate the role of the site and civilians in the war. Standardizing historic site markings throughout the park would also help to reduce visitor confusion caused by using a variety of random materials to delineate sites. The overall impact of this alternative to visitor experience would be long-term, moderate, and beneficial.

At larger sites, circulation patterns would be formalized to lead visitors in an organized path around the site. Using accessible surface treatments appropriate to the historic setting would make the sites more accessible to visitors with disabilities, as well as improve the aesthetics of the sites. Trails at the Chancellorsville Inn site and Old Salem Church would be greatly improved.

Specific improvements at the following sites would have additional beneficial impacts on visitor experience:

McCoull House Site/Harrison House Site. In addition to improvements described above, including new interpretive waysides and site markings, new and improved parking areas would contribute to an enhanced visitor experience. Paving an existing dirt road and parking area adjacent to the McCoull House site would allow more visitors to drive directly to the McCoull House site. Constructing a parking pull off along Anderson Road opposite the Harrison House site would provide parking for visitors to that site where currently none exists. These improvements would have a minor, beneficial effect on visitor experience over the long-term.

Hazel Grove/Fairview. Removing approximately 3.17 acres of woody and scrub vegetation would return the Hazel Grove/Fairview site to its wartime appearance. This would allow visitors to see and understand the setting of the Battle of Chancellorsville by opening the vista from Hazel Grove to the Chancellorsville Inn site and restoring the historic vegetation pattern. The alternative would have a long-term, moderate, beneficial effect on visitor experience.

Cumulative Impacts

Other projects ongoing and planned in the area of the park that would have an effect on visitor use and experience include construction of the Stafford County multi-use trail, which would enhance recreational activities in the area, and VDOT and FHWA projects, which would improve transportation and parking around the park. Additionally, the park's project to repoint the wall at Fredericksburg National Cemetery would contribute to beneficial impacts to visitor experience at that site by improving aesthetics. These projects would cumulatively have a long-term, moderate, beneficial impact on visitor use and experience. This project to stabilize historic ruins and resources would add noticeably to these beneficial impacts.

Conclusion

The overall effect to visitor use and experience under the proposed action would be long-term, moderate, and beneficial, and the proposed action would have a noticeable contribution to beneficial cumulative impacts to visitor use and experience in the area.

4.7 Circulation and Site Access

4.7.1 Methodology

The purpose of park trails is to enhance visitor experience while providing safe and efficient circulation around park resources. The thresholds of change for the intensity of an impact are as follows:

- Negligible: Circulation and site access would not be affected, or the effects would be at the lowest levels of detection and would not have an appreciable effect on traffic flow. There would be no changes in the site accessibility.
- Minor: The effect would be detectable, but would be of a magnitude that would not have an appreciable effect on traffic flow. There would be no noticeable changes in the circulation patterns or site accessibility. If mitigation was needed to offset adverse effects, it would be simple and likely successful.
- Moderate: The effects would be readily apparent, and would result in a substantial change in circulation patterns, congestion, and/or site accessibility, in a manner noticeable to the public. Mitigation would be necessary to offset adverse effects and would likely be successful.
- Major: The effects would be readily apparent and would result in a substantial change in circulation in a manner noticeable to the public and be markedly different from the present circulation patterns and site accessibility. Mitigation measures to offset adverse effects would be needed, would be extensive, and their success would not be guaranteed.

4.7.2 Effects of No Action

Sunken Road

Under this alternative, circulation and access at Sunken Road would not be changed. Visitors could follow a trail from the Visitor Center parking lot to Sunken Road. From there, another narrow trail would trace the edge of the road towards the Stevens House site, but visitors would leave the path to examine the Stevens House and Innis House sites. The site would remain inaccessible to visitors with disabilities. This alternative would have a long-term, minor, adverse impact on circulation and access.

Fredericksburg National Cemetery

Under this alternative, circulation within the cemetery would remain unchanged. Tilting headstones would hinder and/or deter circulation across the terraces and represent a safety hazard to visitors. This alternative would have a long-term, minor, adverse impact to circulation.

Civilian Sites

At the civilian sites, waysides would generally remain immediately adjacent to the park road with a pull off in some cases for visitors to park and walk up to the signs. At larger sites (with exception of Stonewall Jackson Shrine) no formal trails would be designated, and visitors would be free to find their own path to the resource. Social trails would continue to form from repeated foot traffic and would develop across the sites. These sites would not be universally accessible. This alternative would have a long-term, minor, adverse impact to circulation.

Cumulative Impacts

Present or reasonably foreseeable future actions that would have an effect on circulation and site access within the park include a minor, beneficial effect from the Stafford County multi-use trail and moderate, beneficial effects from the FHWA proposed parking and roadway improvements. The effects of the No Action Alternative would have a noticeable adverse contribution to cumulative impacts on circulation and site access.

Conclusion

The overall effect to circulation under the No Action Alternative would be minor and adverse, and the No Action Alternative would contribute cumulative effects to circulation.

4.7.3 Effects of Proposed Action

Sunken Road

In general, access and circulation at the Sunken Road area would be improved for visitors, particularly those with disabilities. Formalizing trails would direct traffic around the site and lead to less visitor confusion. Access to the site would be from the Fredericksburg Visitor Center parking area or from two new bus pull off/disabled visitor parking areas. Eliminating the rubberized mulch between the Fredericksburg Visitor Center and Sunken Road would redirect visitors to begin their tour at the road's south end instead of in the middle. From here, visitors would follow the existing route along Sunken Road. A pedestrian walkway would continue on to Hanover Street, but it would not be the primary route. Curving the roadway to meet with Kirkland Street would direct pedestrian traffic in a new pattern.

Providing paths from accessible car and bus parking areas along Mercer and Hanover Streets would allow disabled visitors to visit the site. Accessible paths connecting to Sunken Road, the Stevens House, and the Innis House from the bus stop on Mercer Street would provide access that does not currently exist for disabled visitors.

This alternative would have a long-term, moderate, beneficial effect on circulation and site access.

Fredericksburg National Cemetery

Site access to the cemetery would not be altered; however, uprighting headstones, repairing sunken gravesites, and replacing sod would improve circulation throughout the cemetery. Visitors would be able to walk freely through the cemetery without fear of tripping over these hazards. This impact would be long-term, minor, and beneficial.

Civilian Sites

Formalizing trails would improve circulation and site access within the civilian sites. This would also contribute to making the sites more universally accessible and to decreasing safety hazards for visitors.

McCoull House Site/Harrison House Site. New parking areas on Anderson Road and at the McCoull House would allow for improved access to these two sites. In addition, the parking pull off on Anderson Road would promote smoother vehicular circulation as cars would be able to pull completely off of the road into a formal parking area instead of parking on the side of the roadway if they wish to stop and explore these sites. Paving the driveway and parking area at the McCoull House would encourage visitors to drive up to that site and view the exhibits there.

Chancellorsville Inn Site. Under this alternative, a 6-foot wide structural soil path would be constructed from the parking lot to the exhibit area and the battlefield. This would allow visitors to view the site in an organized, educational, and safe manner. This alternative would have a long-term, moderate, beneficial effect to circulation.

Old Salem Church. A new bus parking area would improve access to the site, particularly for those arriving by bus.

Cumulative Impacts

Present or reasonably foreseeable future actions that would have an effect on circulation and site access within the park include a minor, beneficial effect from the Stafford County multi-use trail and moderate, beneficial effects from the FHWA proposed parking and roadway improvements. The effects of the Preferred Alternative would have a noticeable beneficial contribution to cumulative impacts on circulation and site access.

Conclusion

The overall effect to circulation and site access under the proposed action would be beneficial and minor to moderate and would contribute to beneficial cumulative impacts on circulation and site access.

4.8 Park Operations and Infrastructure

4.8.1 Methodology

Park operations, for the purpose of this analysis, refers to the quality and effectiveness of the infrastructure, and the ability to maintain the infrastructure, used in the operation of the park in order to adequately 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.

Park staff knowledgeable of these issues were contacted, and members of the planning team evaluated the impacts of each alternative. Impact analyses are based on the current description of park operations presented in the Affected Environment chapter of this document.

- Negligible: Park operations would not be affected, or the effects would be at low levels of detection and would not have an appreciable effect on park operations.
- Minor: The effect would be detectable but would be of a magnitude that would not have an appreciable effect on park operations. If mitigation was needed to offset adverse effects, it would be simple and likely successful.
- Moderate: The effects would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
- Major: The effects would be readily apparent, would result in a substantial change in park operation in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, would be extensive, and their success could not be guaranteed.

4.8.2 Effects of No Action

Sunken Road

Under the No Action Alternative, current operational practices would remain in place. Park operations at the site are not hindered by any obstructions or inconveniences. Drainage problems at Sunken Road would not be permanently fixed, though emergency repairs would be made as necessary to the existing stormwater infrastructure. Overhead power lines along Sunken Road feeding the Innis House and Brompton would remain in place. This alternative would have a negligible impact on park operations and infrastructure.

Fredericksburg National Cemetery

Under current conditions, the tilting headstones and sunken gravesites hinder park operations, as these obstructions require special consideration when maintaining the lawn. As the headstones continue to tilt and gravesites continue to sink, maintaining the lawn would become increasingly difficult. This alternative would have a long-term, minor, adverse impact on park operations.

Civilian Sites

Operations in terms of maintenance at each of the civilian sites would remain unchanged and minimal. Most of the sites would use minimal operational services, including only grass cutting; leaf removal; trail, fence, and wayside maintenance; and snow removal. Grass cutting would continue on a regular basis, and the other activities would be completed as needed. There would be no changes in staffing. The impact to operations would be negligible.

Cumulative Impacts

Ongoing and proposed park projects that would affect park operations and infrastructure include the FRSP cemetery wall project and the FHWA road and parking projects within the park. Both of these projects would decrease the need for maintenance at the cemetery wall and on park roads/parking areas, thereby having a minor, beneficial effect on park operations over the long-term. Also replacing a waterline along Sunken Road would improve water service to park buildings in that area. The effects of the No Action Alternative would not contribute to cumulative effects to park operations and infrastructure.

Conclusion

The overall effect to park operations and infrastructure under the No Action Alternative would be negligible, and the No Action Alternative would not contribute to cumulative effects on park operations and infrastructure.

4.8.3 Effects of Proposed Action

Sunken Road

Under this alternative, the number of pathways requiring attention in the area would increase, but due to the improved quality of these pathways the amount of time required to care for them would not be noticeably impacted. Changes would be made to the drop inlets on Sunken Road, improving drainage during storm events. Electric service to Brompton and the Innis House would be undergrounded; however, there would be no impact to the existing electrical service. This alternative would have a long-term, minor, beneficial impact on park operations and infrastructure.

Fredericksburg National Cemetery

Headstones would be righted and new sod would be applied to the terraces, allowing park operations to operate more fluidly at the site. In particular, mowing the grass would become less challenging. This alternative would have a long-term, minor, beneficial impact on park operations.

Civilian Sites

Formal trails, waysides, and parking areas added to various sites could require a very minor amount of additional maintenance, but this would not impact park operations as a whole. At most of these sites, informal trails, waysides, and parking areas already exist that require some regular maintenance. This project would make improvements to these facilities, and in fact formalizing trails could reduce the need for trail maintenance, as sustainable surface treatments have been chosen for construction. The impact to park operations and infrastructure would be negligible.

The proposed action would convert the Hazel Grove/Fairview site from forested to grass, increasing maintenance requirements for the site. This impact is described in more detail below.

Hazel Grove/Fairview. Woody and scrub vegetation (3.17 acres) would be removed from the site and grass would be planted. The area would be maintained as an open field, similar to the existing Hazel Grove meadow area and other battlefield settings within the park. This would add additional mowing responsibilities to the park maintenance staff. Although the impact would require additional time for mowing, there would be no additional staff required, and the overall impact to park operations would be negligible.

Cumulative Impacts

The proposed FRSP project to repair the Fredericksburg National Cemetery wall and a city project to replace the waterline along Sunken Road, as well as the ongoing and proposed FHWA projects within the park, would also impact park operations. These projects would decrease the maintenance requirements for the cemetery wall, as well as park roads and parking areas, and therefore would have a long-term, minor, beneficial impact on park operations and infrastructure. The FRSP project to stabilize historic ruins and resources would have a negligible to minor beneficial impact but would contribute little to the cumulative impact on park operations.

Conclusion

The overall effect to park operations and infrastructure under the proposed action would be negligible to minor and beneficial. The proposed action would contribute very little to overall cumulative impacts on park operations and infrastructure.

5 Consultation & Coordination

5.1 Introduction

NEPA requires federal agencies preparing environmental documents to consult with stakeholders, including the general public and regulatory agencies, early in the planning process. This process, known as scoping, helps to determine important issues and eliminate those that are not; allocate assignments among the interdisciplinary team members and/or other participating agencies; identify related projects and associated documents; identify other permits, surveys, consultations, etc. required by other agencies; and create a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. This chapter documents the scoping process for this project, and includes the official list of recipients for the document.

5.2 Brief History of Planning and Public Involvement

On August 28, 1986, the park's GMP was approved. Among other things, the GMP called for the reduction of vegetation that takes away from the historical context of the land, improving the interpretation of the Sunken Road, and improving signs and site descriptions to better inform first time visitors of the interconnected nature of the different units. A scoping team consisting of planners from the NPS and the private sector developed a design based on a number of goals.

On January 9, 2003, the EA kickoff meeting was held at FRSP with representatives from FRSP, Denver Service Center (DSC), and Vanasse Hangen Brustlin, Inc. Topics discussed at this meeting included: proposed actions and alternatives at Sunken Road, Fredericksburg National Cemetery, and civilian sites; existing sources of information; and planning issues. The planning team also toured sites to identify potential impacts associated with proposed actions.

Prior to these meetings, the park also carried out extensive discussions and meetings with local government and citizens. Contact with the local government was focused primarily on the closing of Sunken Road to vehicular traffic. This contact included letters, conversations, and city council meetings. The city council created a special committee to investigate the park's plan to close and renovate Sunken

Road. In April 2001, the group voted 4-1 in favor of the park's proposal to close the road, and on May 8, 2001, the city council unanimously voted to close Sunken Road.

In March 2001, representatives from FRSP attended the Fairview Homeowners Association and Maury Neighborhood Association meeting to discuss the park's plans for the Sunken Road area and homeowner concerns over traffic and parking issues in the area. The park received support for its plan to close Sunken Road from the Spotsylvania Preservation Foundation, Inc (SPFI). SPFI wrote a letter to the Fredericksburg City Manager to record its support for this action (SPFI 2001). The Board of Directors of the Historic Fredericksburg Foundation, Inc. also supported the park's plans in a unanimous decision and recorded this with a letter to the editor in the Free Lance-Star newspaper in Fredericksburg.

The park also held public meetings to obtain opinions on the proposed plans. On October 21, 1998, a public meeting was held at the Fredericksburg Battlefield Visitor Center. This meeting was held to gain initial input on restoration plans for the future. Approximately 30 residents attended the meeting. Another public meeting held on March 13, 2001, focused on plans to close and renovate Sunken Road. Approximately 20 residents voiced their opinion, with the majority in favor of the park's plan.

5.3 Interagency Coordination

Agencies contacted during the planning process include the VDNH, FWS, VDGIF, the Advisory Council for Historic Preservation, and the State Historic Preservation Officer (SHPO) as represented by the Virginia Department of Historic Resources. VDNH, FWS, and VDGIF commented on the project with regards to potential impacts to federal and state threatened and endangered species. These agencies confirmed that there would be no adverse impacts to these resources. Consultation with the Advisory Council and SHPO is ongoing in compliance with section 106 of the NHPA.

Please see Appendix A for copies of written correspondence with agencies.

5.4 Federal Consistency Determination

Under the Coastal Zone Management Act Section 307(c) and 15 CFR Part 930, sub-part C, federal government actions within the coastal zone must be consistent with state and local regulations. The NPS has determined that the proposed project would not have any direct effects on the coastal zone or coastal zone resources and uses. The potential for indirect effects would be minimal and is summarized below for each of the enforceable regulatory programs of Virginia's Coastal Resources Management Program.

Fisheries Management. There are no water bodies in or directly adjacent to the project location. Because of this relative location as well as the scale of the proposed project, there would be no direct or indirect effects to fisheries management.

Subaqueous Land Management. There are no water bodies in or directly adjacent to the project location. Therefore, there would be no effects to subaqueous lands.

Wetlands Management. There are no wetlands in the vicinity of the project area; therefore, there would be no impacts to wetlands.

Dunes Management. The project is located in an upland area and does not contain coastal dunes; therefore, there would be no impact to coastal dunes.

Non-point Source Pollution Control. An approved erosion and sediment control plan will be in place before any ground disturbing activities are begun. The additional impervious area created by the project would be minimal and would be in the form of narrow walkways.

Point Source Pollution Control. The project would not introduce any point sources that would require regulation.

Shoreline Sanitation. Drop inlets along Sunken Road are linked to the City of Fredericksburg's stormwater management system, and there would be no change in this. The amount of runoff entering this system would not change as a result of the proposed action.

Air Pollution Control. The proposed action would have negligible, short-term impacts on air quality. Hauling material, operating equipment, and other construction activities could result in temporarily increased vehicle exhaust and emissions. However, hydrocarbons, nitrates and sulfur dioxide emissions, as well as any airborne particulates created by fugitive dust plumes, would be rapidly dissipated by air drainage because air stagnation is rare at the project site. Overall air quality would be unaffected by the proposal.

Coastal Lands Management. The project area is not located within a Chesapeake Bay Protection Area.

Based upon the above information, data, and analysis, the NPS finds that the proposed rehabilitation of historic ruins and resources at FRSP is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program.

5.5 List of Recipients

This EA will be on formal public review for 45 days and has been distributed to a variety of interested individuals, agencies, and organizations, including those listed under "Consultation & Coordination." This EA is available on the Internet at <http://www.nps.gov/frsp> and at local libraries.

Federal Agencies and Officials

Advisory Council for Historic Preservation
U.S. Army Corps of Engineers, Fredericksburg Field Office
U.S. Fish and Wildlife Service

State Agencies

Chesapeake Bay Local Assistance Department*
Virginia Department of Agriculture and Consumer Services*
Virginia Department of Aviation*
Virginia Department of Conservation and Recreation*
Virginia Department of Environmental Quality
Virginia Department of Environmental Quality, Piedmont Regional Office*
Virginia Department of Forestry*
Virginia Department of Game and Inland Fisheries*
Virginia Department of Health*
Virginia Department of Historic Resources
Virginia Department of Mines, Minerals, and Energy*
Virginia Department of Transportation*
Virginia Division of Air Program, Department of Environmental Quality*
Virginia Division of Natural Heritage, Department of Conservation and Recreation*
Virginia Division of Waste Program, Department of Environmental Quality*
Virginia Division of Water Program, Department of Environmental Quality*
Virginia Institute of Marine Science*
Virginia Marine Resources Commission*
Virginia Port Authority*

Local Agencies and Officials

Caroline County Administrator
Fredericksburg City Manager
Spotsylvania County Administrator
Spotsylvania County Planning Department

Organizations

Central Virginia Battlefield Trust
Civil War Preservation Trust
Fairview Homeowners Association
Fredericksburg Area Tourism Department
Friends of Fredericksburg Area Battlefields
Friends of Wilderness Battlefield
MWC for Historic Preservation
National Parks & Conservation Association
Spotsylvania Preservation Foundation, Inc.

* distributed by the Virginia Department of Environmental Quality

References

Acronyms

ACHP – Advisory Council on Historic Preservation
CCC – Civilian Conservation Corps
CEQ – Council on Environmental Quality
CFR – Code of Federal Regulations
DO – Director’s Order
DSC – Denver Service Center
EA – Environmental Assessment
FHWA – Federal Highway Administration
FRSP – Fredericksburg & Spotsylvania National Military Park
FTE – Full-time equivalency
FWS – U.S. Fish and Wildlife Service
GMP – General Management Plan
LRIP – Long Range Interpretive Plan
NEPA – National Environmental Policy Act
NHPA – National Historic Preservation Act
NPS – National Park Service
NRHP – National Register of Historic Places
RF&P – Richmond, Fredericksburg, & Potomac Railroad Company
SHPO – State Historic Preservation Officer
SPFI – Spotsylvania Preservation Foundation, Inc.
VDGIF – Virginia Department of Game and Inland Fisheries
VDNH – Virginia Department of Conservation and Recreation, Division of Natural Heritage
VDOT – Virginia Department of Transportation
VHB – Vanasse Hangen Brustlin, Inc.
USDA – U.S. Department of Agriculture

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- Virginia Department of Game and Inland Fisheries. February 10, 2003. Letter to Christina Shumate, VHB, Inc. Description: Threatened and endangered species in the vicinity of the project.
- Virginia Division of Natural Heritage, Department of Conservation and Recreation. February 14, 2003. Letter to Christina Shumate, VHB, Inc. Description: Natural heritage resources in the project area.
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This document was prepared by Vanasse Hangen Brustlin, Inc. with input from staff at FRSP and DSC.

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Chris DeWitt, AICP	Environmental Planner	12 years experience	Document review
Christina Shumate, MEM	Environmental Planner	2 years experience	Document preparation
Scott Smizik, MEEP	Environmental Planner	1 year experience	Document preparation
Tricia Wingard, BS	Environmental Scientist	4 years experience	Guidance of the NEPA process, document review, and project management

Contributors and Reviewers

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Appendix A

Correspondence



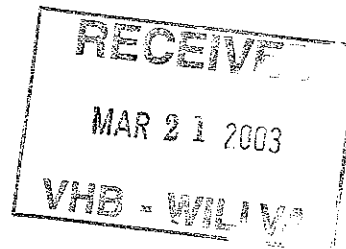
United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6669 Short Lane
Gloucester, VA 23061



March 20, 2003



Ms. Christina Shumate
Vanasse Hangen Brustlin, Inc.
477 McLaws Circle, Suite 1
Williamsburg, Virginia 23185

Re: Stabilization of Historic Ruins and
Resources, Fredericksburg and
Spotsylvania National Military Park,
#2835, Spotsylvania County and
Fredericksburg, Virginia

Dear Ms. Shumate:

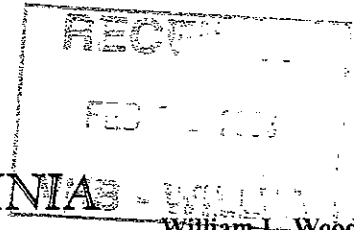
We have reviewed your January 29, 2003 request for information on Federally listed and proposed endangered and threatened species and designated critical habitat for the above referenced project. The following comments are provided under provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

The National Park Service proposes to stabilize the historic ruins and resources at Fredericksburg and Spotsylvania National Military Park in Spotsylvania County and Fredericksburg, Virginia. Based on the project description and location, it appears that no impacts to Federally listed or proposed species or designated critical habitat will occur. Should project plans change, or if additional information on the distribution of listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

If you have any questions or need further assistance, please contact Kerry Linehan of this office at (804) 693-6694, extension 127.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office



COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

February 10, 2003

Christina Shumate
Environmental Planner
Vanasse Hangen Brustlin, Inc.
477 McLaws Circle, Suite 1
Williamsburg, Virginia 23185

RE: ESSLOG #18538, Fredericksburg and Spotsylvania National Military Park

Dear Ms. Shumate:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project. I concur with the information you obtained from the Fish and Wildlife Information Service operated by the Department of Game and Inland Fisheries.

Chancellorsville Battlefield: The *federal species of concern* cerulean warbler (*Dendroica cerulea*) has been documented in the project area. "Federal species of concern" is not a legal designation and does not require coordination at this time.

Spotsylvania site: The *federal species of concern* cerulean warbler has been documented in the project area. "Federal species of concern" is not a legal designation and does not require coordination at this time.

Salem Church: The *state special concern* tricolored heron (*Egretta tricolor*) has been documented in the project area. "Federal species of concern" is not a legal designation and does not require coordination at this time.

Fredericksburg Visitors Center: This project is located within 0.5 mile of a stream reach containing a documented occurrence of anadromous fish (alewife, *Alosa pseudoharengus*). The applicant should coordinate with this Department regarding potential impacts to this species.

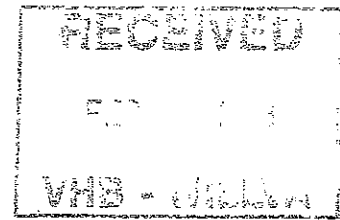
Information about fish and wildlife species was generated from our agency's computerized Fish and Wildlife Information System, which describes animals that are known or may occur in a particular geographic area. Field surveys may be necessary to determine the presence or absence of some of these species on or near the proposed area. Also, additional sensitive animal species may be present, but their presence has not been documented in our information system.

Christina Shumate

ESSLog #18538

2/10/2003

Page 2



Endangered plants and insects are under the jurisdiction of the Virginia Department of Agriculture and Consumer Services, Bureau of Plant Protection. Questions concerning sensitive plant and insect species occurring at the project site should be directed to Keith Tignor at (804) 786-3515.

There is no charge for our response.

This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-8001. Please note that this response does not address any other environmental concerns; these issues are analyzed by our Environmental Services Section, in conjunction with interagency review of applications for state and federal permits. If you have any questions in this regard, please contact Brian Moyer at (804) 367-6913.

Please note that the data used to develop this response are continually updated. Therefore, if significant changes are made to your project or if the project has not begun within 6 months of receiving this letter, then the applicant should request a new review of our data.

The Fish and Wildlife Information Service, the system of databases used to provide the information in this letter, can now be accessed via the Internet! The Service currently provides access to current and comprehensive information about all of Virginia's fish and wildlife resources, including those listed as threatened, endangered, or special concern; colonial birds; waterfowl; trout streams; and all wildlife. Users can choose a geographic location and generate a report of species known or likely to occur around that point. From our main web page, at www.dgif.state.va.us, choose the hyperlink to "Wildlife", then "Wildlife Information & Mapping Services" and then "Wildlife Information Online Service". For more information, please contact Amy Martin, Online Service Coordinator, at (804) 367-2211.

Thank you for your interest in the wildlife resources of Virginia.

Sincerely,

W. Adam Phelps
Wildlife Biologist

cc: R.T. Fernald, VDGIF



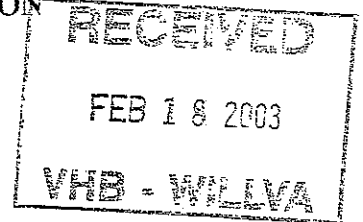
W. Tayloe Murphy, Jr.
Secretary of Natural
Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

217 Governor Street
Richmond, Virginia 23219-2010
Telephone (804) 786-7951 FAX (804) 371-2674 TDD (804) 786-2121

February 14, 2003



Christina Shumate
Vanasse Hangen Brustlin, Inc.
477 McLaws Circle, Suite 1
Williamsburg, VA 23185

Re: Stabilize Historic Ruins and Resources, Fredericksburg & Spotsylvania National Military Park

Dear Ms. Shumate:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biological and Conservation Data System (BCD) 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.

Fredericksburg National Cemetery, Sunken Road (Fredericksburg)

According to the information currently in our files, natural heritage resources have not been documented in the project area. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Salem Church

BCD documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

Fairview, Chancellorsville

According to the information currently in our files, this site may support habitat appropriate for the small whorled pogonia (*Isotria medeoloides*, G2G3/S2/LT/LE) and red milkweed (*Asclepias rubra*, G4G5/S1/NF/NS).

Small whorled pogonia grows in a variety of woodland habitats in Virginia, but tends to favor mid-aged woodland habitats on gently north or northeast facing slopes often within small draws. Direct destruction as well as habitat loss and alteration are principle reasons for the species' decline (Ware, 1991). Please note that small whorled pogonia is currently classified as threatened by the United States Fish and Wildlife Service (USFWS) and as endangered by the Virginia Department of Agriculture and Consumer Services (VDACS).

Red milkweed, a state rare perennial herb, inhabits wet pine savannas, sandhill seeps, seepage swamps (Weakley, in prep.). It has also been documented in such disturbed areas as powerline rights-of-way (TNC, 1996). This species produces dull red to lavender flowers from June through July (Radford et al., 1968). Like many wetland species, this species has suffered a loss of habitat due to conversion and/or draining of wetlands. In addition, this plant has declined as a result of active fire suppression, which has eliminated significant herbaceous-dominated wetlands (DCR, 1989). Red milkweed is currently known from twenty-one locations in Virginia's coastal plain and piedmont regions.

Due to the potential for this site to support populations of natural heritage resources, DCR recommends an inventory of suitable habitat in the study area. If natural heritage resources are found, we can more accurately evaluate if there will be any impacts to natural heritage resources and if needed offer specific recommendations for minimizing impacts.

DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at (804) 371-6206 to discuss arrangements for field work. A list of other individuals who are qualified to conduct inventories may be obtained from the USFWS.

Spotsylvania

According to the information currently in our files, this site may support habitat appropriate for the small whorled pogonia (*Isotria medeoloides*, G2G3/S2/LT/LE).

Small whorled pogonia grows in a variety of woodland habitats in Virginia, but tends to favor mid-aged woodland habitats on gently north or northeast facing slopes often within small draws. Direct destruction as well as habitat loss and alteration are principle reasons for the species' decline (Ware, 1991). Please note that small whorled pogonia is currently classified as threatened by the United States Fish and Wildlife Service (USFWS) and as endangered by the Virginia Department of Agriculture and Consumer Services (VDACS).

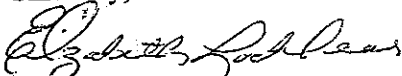
If extensive work is being conducted in forested areas, DCR recommends an inventory of suitable habitat in the study area. If natural heritage resources are found, we can more accurately evaluate if there will be any impacts to natural heritage resources and if needed offer specific recommendations for minimizing impacts.

DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at (804) 371-6206 to discuss arrangements for field work. A list of other individuals who are qualified to conduct inventories may be obtained from the USFWS.

A fee of \$275.00 has been assessed for the service of providing this information. Please find enclosed an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, Department of Conservation and Recreation, 203 Governor Street, Suite 402, Richmond, VA 23219, ATTN: Cashier. Payment is due within thirty days of the invoice date.

Should you have any questions or concerns, feel free to contact me at 804-692-0984. Thank you for the opportunity to comment on this project.

Sincerely,



Elizabeth Locklear
Locality Liaison

CC: Jolie Harrison, USFWS
Keith Tignor, VDACS

Appendix B

List of Classified Structures

The following is a list of structures at each of the identified sites that fall within the project area. This list was generated from the park's List of Classified Structures. Each of these sites has been determined eligible for listing on the National Register.

Sunken Road

IDLCS #07871 Ennis [Innis] House

07869 Cobb Monument

82069 Fredericksburg Visitors Center

82070 Fredericksburg Visitors Center Walkway

82123 Fredericksburg Visitors Center Entrance Loop

82071 Fredericksburg CCC Maintenance Building

82074 Martha Stevens Stone

82079 Sunken Road Wall

82080 Sunken Road Reconstructed Wall

82081 Battle of Fredericksburg UDC Marker

00429 Sunken Road

82134 House Site ID Tablets

Fredericksburg National Cemetery

IDLCS #07889 National Cemetery Lodge

07888 National Cemetery Gates and Wall

82029 National Cemetery Grave Markers

81993 National Cemetery Roads

81995 National Cemetery Steps

81996 National Cemetery Lodge Carriageway

81997 National Cemetery Lodge Hitching Posts

82012 National Cemetery Lodge Walks

82020 Bivouac of the Dead Tablets

82000 National Cemetery Sign

07865 Charge of General Humphreys' Division Monument

07866 V Corps, Army of the Potomac Monument

07867 83rd New York Volunteers Monument

07868 127th Pennsylvania Monument

Civilian Sites

Stonewall Jackson Shrine

IDLCS #00426 Jackson Shrine

07908 Jackson Shrine Monument

82134 House Site ID Tablets

07915 Well House

McCoull House Site/Harrison House Site

IDLCS #82134 House Site ID Tablets
07926 McCoull House Road Trace
83059 McCoull House CCC Access Road

Old Salem Church

IDLCS #00428 Old Salem Church

Chatham

IDLCS #00422 Chatham
07872 Chatham Kitchen Building
07873 Chatham Farm Office
07874 Chatham Laundry
07875 Chatham Summer House
07876 Chatham Lily Pond
07877 Chatham Carriage House and Stable
07878 Chatham Corn Crib
07879 Chatham Milk House
07880 Chatham South Greenhouse
07881 Chatham North Greenhouse
07883 Chatham Rotunda
07885 Chatham Civil War Grave Markers
82031 Chatham Music Stair
82033 Chatham Pergola
80077 Chatham Caretaker's Cottage
82035 Chatham Lane
82039 Chatham Carriage Drive
82037 Chatham Front Retaining Wall
82038 Chatham Front Entrance Path
82036 Chatham Rear Wall and Gates
82040 Chatham Carriage Drive Culverts
82041 Chatham Carriage Drive Spur
82042 Chatham Carriage Drive Retaining Wall
82043 Chatham Manor Entrance Gates
82044 Chatham Side Garden Terrace Walkway
82045 Chatham Garden Paths
82046 Chatham Farm Lane
82047 Chatham Garden Rose Trellises
82050 Chatham Gas Pump
82051 Chatham Furnace House
82052 Chatham Septic Tank
82053 Chatham Manor Fire Hydrant
80076 Chatham Dairy Barn

Chancellorsville Visitor Center

IDLCS #07903 General Thomas J. “Stonewall” Jackson Monument
07904 Jackson Monument

Lee-Jackson Bivouac Site

IDLCS #07899 Lee-Jackson Bivouac Monument
82141 Commemorative Cedars Plaque

Catharine Furnace

IDLCS #07910 Catharine Furnace Ruins

Fairview

IDLCS #07892 Fairview Artillery Position
82103 Chancellorsville Cemetery Wall
82104 Chancellorsville Cemetery Grave Markers

Maury House Site

IDLCS #07909 Matthew Fontaine Maury Monument

Landrum House Site

IDLCS #82134 House Site ID Tablets
82005 MOLLUS Marker
07933 Landrum House Ruins
07925 Landrum House Road

No structures were identified for the following sites: Marye’s Heights, Union Breakthrough, Bullock House Site, Hazel Grove, Reconstructed Earthworks, Wellford House Site, Harrison House Site, Spindle House Site, or Chancellorsville Inn Site.



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

July 2003

United States Department of the Interior-National Park Service