National Park Service
U.S. Department of the Interior

Antietam National Battlefield
Sharpsburg, Maryland



Cultural Landscape Report
Burnside Bridge Area

September 2018

Resource Stewardship and Science
Division of Cultural Resources, National Capital Region

Cultural Landscape Report

Burnside Bridge Area

Antietam National Battlefield

Sharpsburg, Maryland



Historical Overview ❖ Significance Summary ❖ Analysis and Evaluation ❖ Treatment

Prepared by:

Daniel Taylor Weldon
Cultural Resource Specialist

U.S. Department of the Interior • National Park Service • National Capital Region • Resource Stewardship and Science • Washington, DC

2018

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Executive Summary

The Burnside Bridge area cultural landscape is a contributing component landscape of the larger Antietam National Battlefield. The study area is located to the south of Sharpsburg, Maryland along the banks of Antietam Creek and served as the scene of critical fighting during the Battle of Antietam on September 17, 1862. This cultural landscape retains significant character defining features including the Burnside Bridge (circa 1832), a collection of monuments and War Department Tablets (1887 to 1908), the Sycamore Witness Tree (circa 1858), and the National Park Service (NPS) Mission 66 development for the parking area and associated circulation system (1961-1963).

The Burnside Bridge area cultural landscape derives significance under National Register Criterion A in the areas of American agricultural practices, military history, and commemoration. The cultural landscape also derives significance under National Register Criterion C under the classification of landscape architecture due to the implementation of Mission 66, an ambitious visitor improvement initiative planned to coincide with the NPS half century that revolutionized the manner in which the American public interacted with the National Parks System through the development of new infrastructure. The overall period of significance for the Burnside Bridge area cultural landscape is 1738 to 1966. The period of significance coincides with the original English settlement of the region and concludes with the end of the NPS Mission 66 improvements. Under Criterion A, the period of significance begins in 1738 and concludes in 1933. This period encompass the start of agricultural developments, the events and reconstruction associated with the Battle of Antietam in 1862, and the commemoration efforts that followed. The period of significance under Criterion A concludes with the transfer of authority from the War Department to the National Park Service in 1933. Under Criterion C, the period of significance begins with the creation of the NPS Mission 66 program in 1955 and concludes with end of the execution of the plans in 1966.

The Burnside Bridge area cultural landscape retains a high level of integrity from the period of significance. However, the growth of woody vegetation has diminished the aspects of feeling and setting of this portion of the battlefield landscape. The topography of the cultural landscape has affected the accessibility of the site. Problems concerning interpretation are also observed in the cultural landscape. The intent of this cultural landscape report is to aid the park in

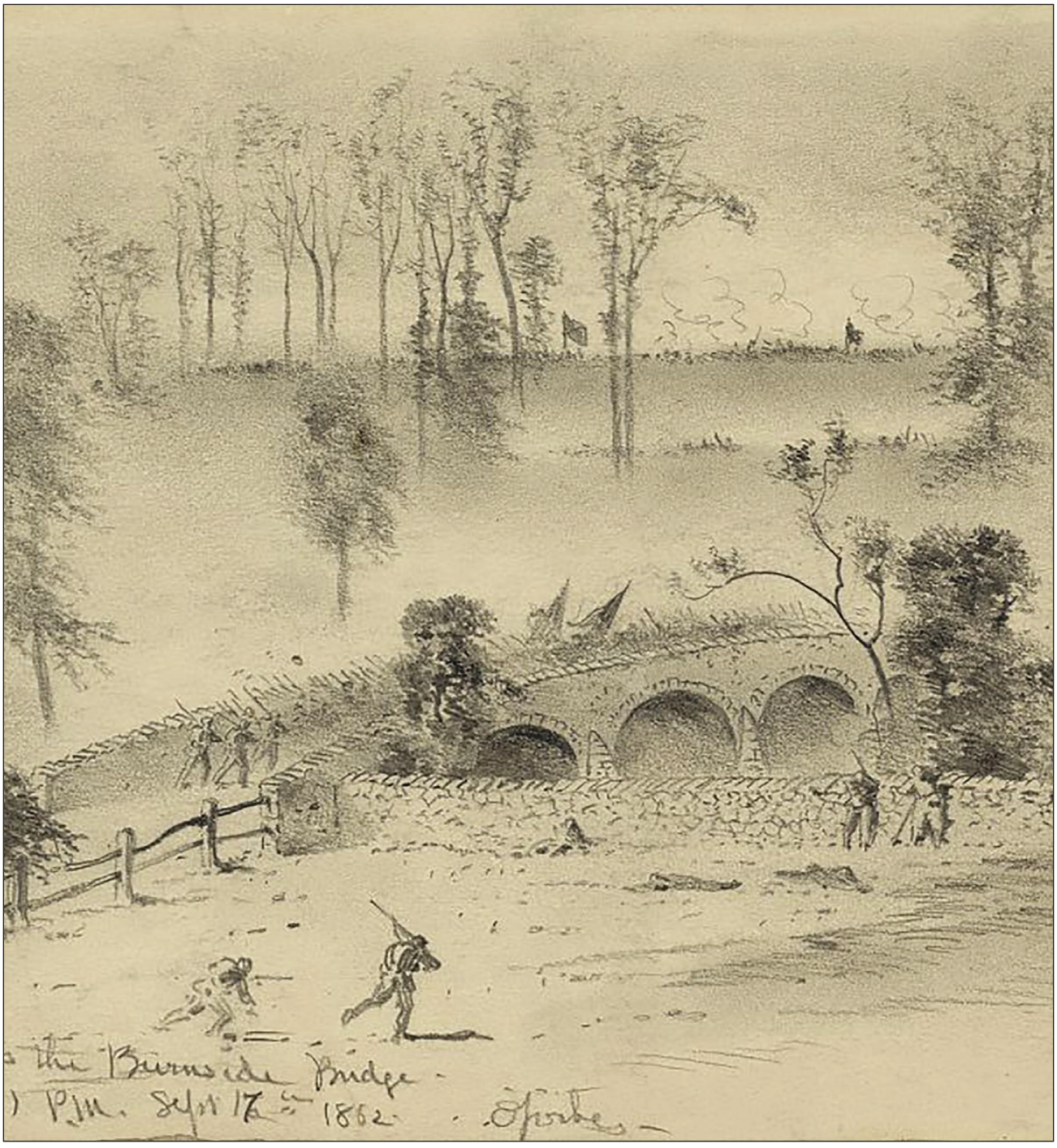
addressing these problems and other concerns in order to preserve the historic character of the cultural landscape.

The solutions presented in the Preferred Treatment include: the reconfiguration of the existing parking area to better accommodate visitor needs, rehabilitation of trails and walkways, selective removal of vegetation, the alteration of vegetation management in select character areas, and the modification to existing interpretation.

Acknowledgments

This report was a collaborative effort between the National Capital Region and Antietam National Battlefield. Daniel Weldon, National Capital Region Cultural Resource Specialist, prepared the report. Maureen Joseph, Regional Historical Landscape Architect, provided guidance and project oversight.

The National Capital Region graciously acknowledges those at Antietam National Battlefield who participated in meetings, provided guidance and documentation, aided in site visits, and reviewed drafts, especially Susan Trail, Superintendent; Jane Custer, Chief of Resource Management; Keith Snyder, Chief of Resource Education and Visitor Services; Stephanie Gray, Chief of Museum and Library Services; K.C. Kirkman, Exhibit Specialist; Joseph Calzarette, Natural Resources Manager, Benjamin Wagner, Chief of Facilities.



Introduction

Section cover: *The Charge Across the Burnside Bridge – Antietam* by Edwin Forbes (1862). (Library of Congress)

Introduction

The Burnside Bridge area cultural landscape straddles a valley carved by Antietam Creek and defined by a prominent ridge southeast of the town of Sharpsburg, Maryland in Washington County. The area of study for this treatment document is contained within the southern portion of the legislated boundaries of Antietam National Battlefield (ANTI). This vernacular landscape, evolving over centuries of human activities and natural succession, contains elements related to agricultural practices (1732 to 2018), Civil War commemorative efforts (1887 to 1932), and interpretive enhancements (1890 to 2018). For over two centuries, farmers have changed this landscape to conform to trends in American agriculture in general and specifically Maryland farming traditions. English colonial settlement and practices first arrived in the region during the 1730s, bringing the traditions of the Chesapeake Tidewater, including large scale tobacco plantations, into the then "wilderness" of the interior of Maryland. In the 1760s, emigrants of German descent moved south from Pennsylvania into the Great Valley, bringing their small farming practices that included the cultivation of diverse crops rather than monoculture planting. The farms flourished with processed grain and corn products arriving to markets in Philadelphia, Pennsylvania and Baltimore, Maryland.[1]

However, as the ravages of the Civil War (1861-1865) enveloped the country, these same farms would serve as the setting of fierce fighting during the single bloodiest day in the course of the conflict, the Battle of Antietam.[2] On September 17, 1862, the Confederate Army of Northern Virginia, under the command of General Robert E. Lee, and the Union Army of the Potomac, under the command of General George B. McClellan, engaged in the definitive battle in the Maryland Campaign. The land in and around Sharpsburg, Maryland served as the setting for the attack on the Confederate right flank. In the aftermath of the fighting, the dead lay scattered about the fields, structures were damaged or in rubble, and crops were decimated from the foraging of troops.

Property owners recovered from the damage, continued their farming practices, and reacted to innovations associated with the specialization of Maryland's agricultural economy. In 1887, the first commemorative effort associated with the larger battleground, beyond the boundary of Antietam National Cemetery, occurred at the Burnside Bridge with the erection of the 51st Pennsylvania Monument. Subsequently, in 1890, Congress established the Antietam National Battlefield Site with the War Department assuming control of limited parcels of

land and right of ways. Memorialization efforts continued with the placement of private monuments on the bridge and surrounding fields. The War Department strategically placed cast iron tablets to demarcate significant events associated with the battle. The landscape remained privately owned and in agricultural production during this time. In 1933, the National Park Service acquired authority over the unit, overtime changing the nature of the site from commemoration to resource preservation and interpretation.

The ensuing decades saw the acquisition of additional parcels and an expansion of National Park Service control and the initiation of the Mission 66 program during the late 1950s and early 1960s. The brainchild of National Park Service Director Conrad Wirth, the goal of Mission 66 program was to create a modern experience in the National Parks by improving infrastructure, accommodating an ever growing visitor population, generating new visitor facilities, such as the visitor center, expanding existing tour roads and parking lots to accommodate additional automobiles. The program is characterized by a Modernist architectural vocabulary and style. Wirth unveiled the plan in 1956 with an intended conclusion of 1966 to coincide with the half-century celebration of the establishment of the National Park Service. Regarding the Burnside Bridge area cultural landscape, the Mission 66 program introduced interpretive elements, including roads and scenic overlooks, and ultimately preserved the Burnside Bridge. In 2018, the cultural landscape project area retains many of the Mission 66 era features.

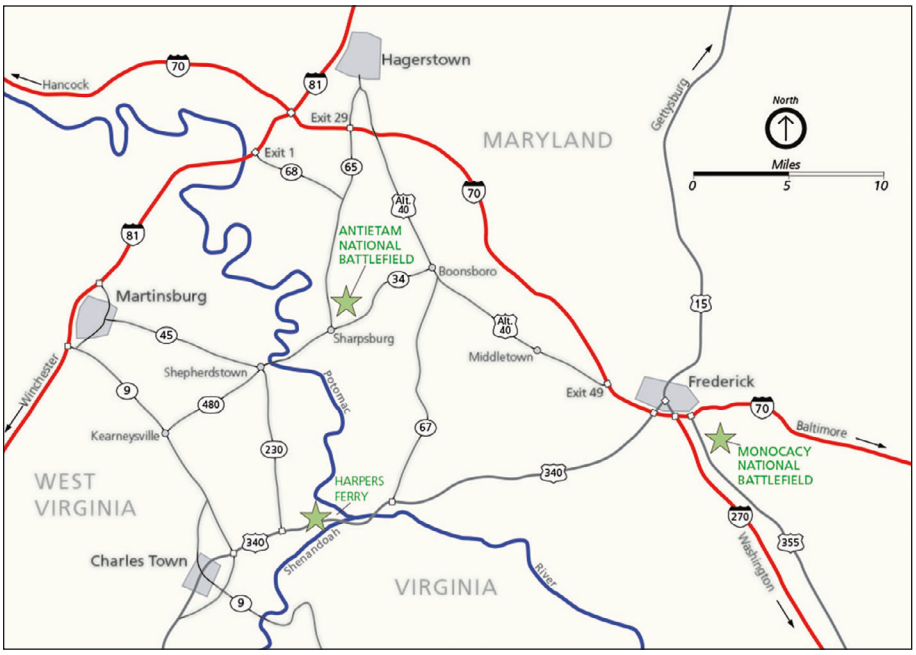


Figure 1. **Area map establishing the location of Antietam National Battlefield (https://www.nps.gov/anti/planyourvisit/upload/area_map.pdf)**

PROJECT SCOPE, ORGANIZATION, AND METHODS

The Burnside Bridge area cultural landscape provides visitors to Antietam National Battlefield a unique opportunity to understand multiple narratives or facets associated with the Battle of Antietam. The relatively unchanged agrarian landscape has the ability to convey a visitor to the time of Mission 66 era or to the earlier event of the Battle of Antietam. However, the physical composition of the site, the condition of vegetation, and the age of the existing interpretation at the cultural landscape, present challenges in regards to circulation and overall visitor experience. The goal of this Cultural Landscape Report (CLR) is to provide park management of Antietam National Battlefield guidance with the long- term management of the landscape.

However, prior to reviewing the content of the CLR, it is prudent to establish the study parameters of the project to understand what area of the battlefield will be impacted by the implementation of the treatment plan. The overall Burnside Bridge area cultural landscape is located within the southeastern border of Antietam National Battlefield. Troop movements associated with military actions during the morning and afternoon of September 17, 1862 around the Burnside Bridge defined the boundary for this cultural landscape rather than historic property lines. As such, the boundary of the cultural landscape encompasses portions of several historic farmsteads rather than entire properties. The treatment plans presented will not affect the cultural landscape as a whole, but rather will target a defined section of this larger cultural landscape. The CLR study boundary contains the area of land south of the Burnside Bridge Bypass road on the eastern bank of Antietam Creek, crosses the body of water, and curves up the slopes of the western bank towards the Otto farmstead. The exact shape and border is included in Figure 2 on page 10. The shape of the border is an approximate “J” centered on the Burnside Bridge. Drawing 2 on page 13 provides a detail map of the core project area.

The Cultural Landscape Report for the Burnside Bridge area cultural landscape incorporates the information presented in the Burnside Bridge Area Cultural Landscape Inventory (2016) and provides treatment recommendations for the site. This CLR summarizes information associated with site history, existing conditions, landscape characteristics, feature information, and the period of significance. National Park Service legislation and policy, as well as legislation and programs administered by the Maryland Department of Natural Resources, and an assessment of park needs and desires, established the parameters of the landscape treatment. Additional guidance for this document was ascertained by a careful review of the Foundation Document for Antietam National Battlefield (2013) and a series of studies completed by the National Capital Regional Office

(NCRO) Natural Resources Division. NCRO Cultural Resources staff conducted site visits (January 2016 to August 2017) and initiated design exercises to develop solutions for the site.

The content and composition of this report conforms to the standards established in the Guide to Cultural Landscape Reports: Contents, Process and Techniques, produced by the National Park Service in 1998. The treatment recommendations and actions contained in this document adhere to National Park Service Management Policies (2006), Director's Order 28: Cultural Resource Management (1999), and The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996), as well as the American Barriers Act (1968).

The document is composed of two chapters. The Introduction, or Chapter One, contains a brief history of the cultural landscape and includes graphic illustrations depicting the evolution of the land reviewing ownership and known landscape features. Included within the history discussion of the cultural landscape is a proposed National Register Status and Statement of Significance, as the cultural resource has not received evaluation separately from the larger context of Antietam National Battlefield. An analysis and evaluation follows and reviews the existing conditions of the landscape and contributing landscape features. Contained within the section is an evaluation of the integrity present on site and any deficiencies that were observed by NCRO staff. The chapter concludes with the identification of current FMSS features and potential impacts contained within the treatments in Chapter Two of the document.

Chapter Two of the document reviews the proposed treatment guidelines for the project area. In order to establish the constraints of a long-range treatment, the chapter begins with a review of how enabling legislation, National Park Service policies, guidelines, state legislation and policy, current planning practices, and ongoing projects will affect and influence the direction of the treatment philosophy. The chapter continues with the selection of a treatment philosophy and an identification of problems at the site. A broad overview describes the general treatment actions that can occur. Building off the general treatment recommendation, the document explores site-specific actions. Schematic plans and renderings depict how the landscape could be altered. However, as a caveat, professionally produced plans and drawings will be needed should the park wish to pursue any of the treatment recommendations. These actions require that the park complete proper compliance, including but not limited to Section 106 and

NEPA reviews, prior to the instigation of an action. The chapter concludes with a summary table of the actions proposed.

TERMINOLOGY

For the sake of this report, both historic names and modern non-historic names are used to denote character areas and landscape features, including a collection of structures and circulation paths. The historic names assigned to features are derived from primary sources including Mission 66 plans, interpretive prospectus, historic internal correspondence, documents, and adopted park naming conventions. A preference is given to the use of historic names when these names are known or are still relevant in terms of land use.

For features that a historic name could not be determined, the researchers of this cultural landscape report have found it necessary to assign names to previously unnamed features. These "modern" naming conventions appear in *italics* in the terminology section.

GENERAL PLACE NAMES/ CHARACTER AREAS

In the pages of the report, the use of the term **Burnside Bridge area** references the selected portion of the larger cultural landscape that is impacted by the proposals of this document. The more focused Burnside Bridge area is illustrated in Drawings 1 and 2 and encompasses a smaller area of the over arching cultural landscape. The parameters of the larger cultural landscape are defined as the land south of the Burnside Bridge Bypass bound by the southern border of Antietam National Battlefield. The Otto Farm lane forms the western edge of the cultural landscape.

This focused area of study is further divided into nine character areas and illustrated in Drawing 11 on page 113. The character areas include: ***Eastern Pasture, Eastern Woods,*** **Monument Plaza, the Burnside Bridge, the McKinley Walkway,** ***the Overlook Parking Area,*** **Burnside Bridge Road,** ***the Western Fields, and the Western Fields.*** Additional place names and features are used throughout the document. **Antietam Creek** references the significant body of water, a tributary creek of the Potomac River, which divides the cultural landscape into two distinct halves. The **Western Bank** refers to the area of land located to the west of Antietam Creek. This land corresponds to historic landholdings largely associated with the Otto family during the time of the Civil War. This portion of the cultural landscape contains the **Western Slope**, or the hillsides of the ridge overlooking the Burnside Bridge. The Western Slope corresponds with the Confederate position during the Battle of Antietam and

contains the **Rifle Pit Overlook**, a natural limestone outcropping used as a source for stone material at the site. The **McKinley Walkway**, a historic circulation path that formerly was a farm lane contained completely on the Western Slope. Positioned above the Rifle Pit Overlook is the ***Overlook Parking Area***, a concentration of the Mission 66 era improvements to the National Park Service. The term Overlook Parking Area references the teardrop shaped parking lot, the associated sidewalks, and the retaining wall network that extends from the crest of the ridge down towards the McKinley Walkway.

A reference in the document to the ***Western Fields*** corresponds to the area of hayfields that are located immediately to the west and south of the Overlook parking area. Historically, the fields were associated with several landowners including the Ottos, the Rohrbachs, the Newcomers, and several other owners of farmsteads. These fields are contained completely on the Western Bank or are to the west of Antietam Creek.

To the east of Antietam Creek lies the ***Eastern Bank***. The area includes a low hillslope and corresponds with the Union position during the Battle of Antietam. The majority of the monuments, a term defined later in this section, are contained to this portion of the cultural landscape.

PATHS

Several circulation pathways meander through the cultural landscape. These include the : Snavely Ford Trail, the Final Attack Trail, the Union Advance Trail, the Burnside Bridge Road, the Burnside Bridge Bypass, and the Burnside Bridge Trace. The **Snavely Ford Trail** begins at the southern tip of the Overlook Parking area and follows the course of Antietam Creek along the crest of the ridge on the Western Bank. At Snavely Ford, the trail turns north prior to connecting with the **Final Attack Trail** in the Western Fields. The majority of this circulation path is beyond the scope of the cultural landscape report. The Final Attack Trail is contained largely in the Western Fields beyond the area of study. A third trail, the **Union Advance Trail** forms a circular loop on the Eastern Bank following the topography created by the low central hill and the course of Antietam Creek.

Historically, the **Burnside Bridge Road** started in Sharpsburg, Maryland followed a southern course over the Burnside Bridge prior to making a sharp turn further south towards Rohrsville, Maryland on the Eastern Bank. Evidence exists for names of the Rohrbach Road or the Rohrsville Road. In the current iteration of the feature, the Burnside Bridge Road, following the historic road bed now continues up the Western Slope and connects to the Overlook parking area. Along the Eastern Bank, the historic course of the Burnside Bridge Road currently exists

as a road trace and is known as the **Burnside Bridge Trace**. The term **Burnside Bridge Bypass** references the Mission 66 road that was constructed to in order to divert traffic away from the Burnside Bridge.

STRUCTURES

The key feature, arguably the most important feature of the cultural landscape, is the centrally located stone Burnside Bridge. Evidence of other names, such as the Rohrsville Bridge, Rohrbachs Bridge, and Lower Bridge, were uncovered during the research of the cultural landscape inventory (CLI). However, the evidence for these names is scant in primary sources. For the sake of this document, the term **Burnside Bridge**, an agreed naming convention with the park, will be used.

The term, "monuments," is used as an umbrella designation for memorial structures that were erected during the commemorative era of the landscape. This demarcation is applied to the following features: the McKinley Monument, the 11th Connecticut Infantry, the 21st Massachusetts Infantry, the 35th Massachusetts Infantry, the 2nd Maryland Infantry, the 51st New York Infantry, and the 51st Pennsylvania Infantry. However, this term does not include the interpretation efforts of the War Department during the establishment of Antietam National Battlefield. These cast iron tablets are referenced as tablets throughout this document.

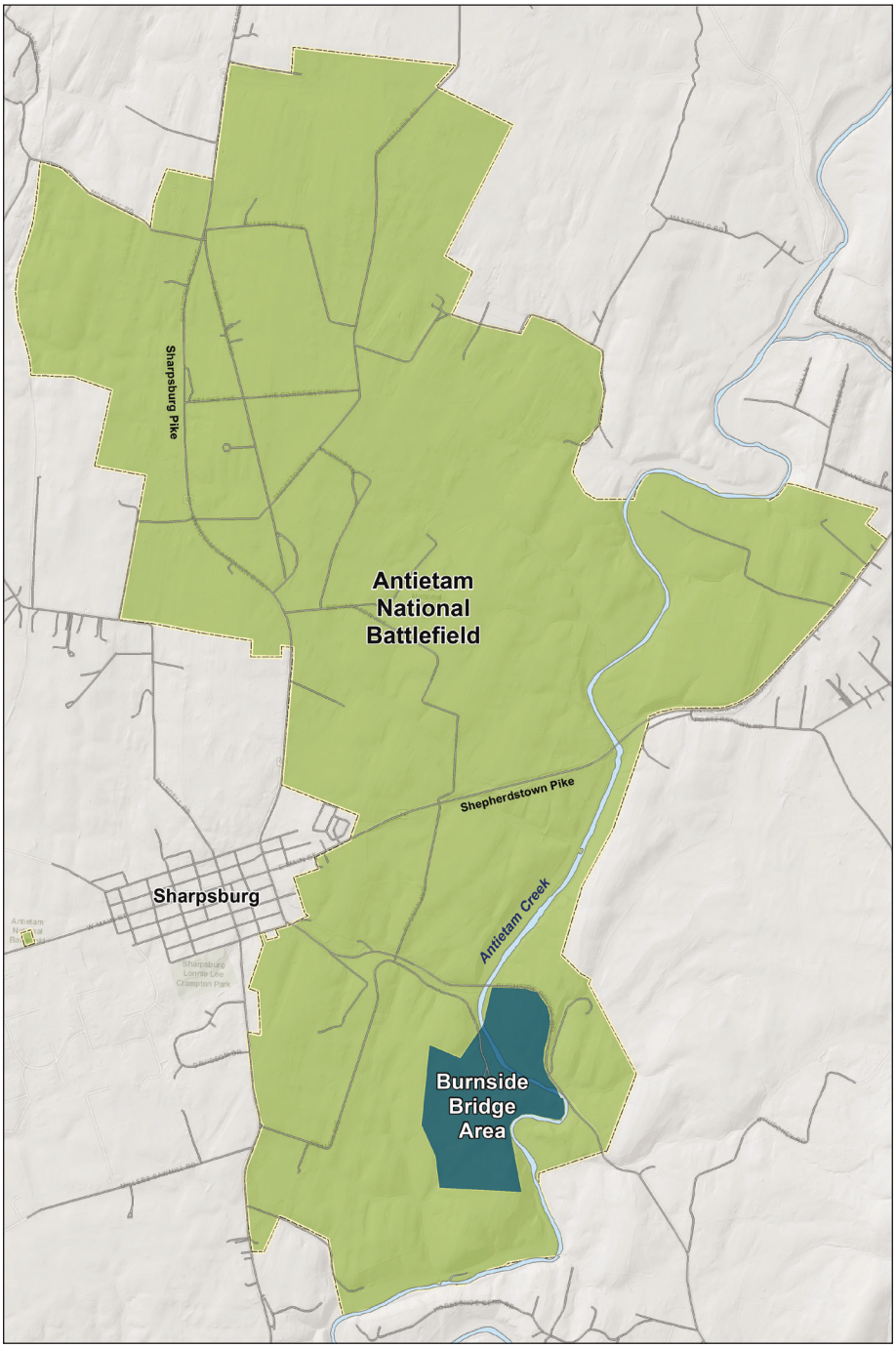


Figure 2. The project study area is located in the southern portion of the battlefield and rendered in red in the figure. For a more detailed view and identification of associated features, please reference the following maps.



Existing Conditions

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Woody Undergrowth
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Park Boundary
- Study Boundary

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 1943, 1952, 2000, 2008, Orthography 2011.
4. Proposed planting plan 1961
5. Site Visits March 2016, June 2016, and August 2016, and March 2017

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 1. **Existing conditions.**



Existing Conditions

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Woody Undergrowth
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Park Boundary
- Study Boundary

A. 21st Massachusetts
B. 35th Massachusetts
C. 2nd Maryland
D. 51st Pennsylvania
E. 51st New York
F. 11th Connecticut
G. McKinley Directional Sign
H. War Department Tablets

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 2000, 2008, Orthography 2011.
4. Site Visits March 2016, June 2016, and August 2016, and March 2017

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 2. **Existing condition details.**

HISTORY OF THE LANDSCAPE

The following historical overview is a summary of the events and patterns that shaped the physical character of the Burnside Bridge area cultural landscape. A more in depth history of the site can be located in the Burnside Bridge Area Cultural Landscape Inventory (CLI) (2016).

COLONIAL AND EARLY NATIONAL PERIOD, 1732 TO 1860

Prior to the Civil War, the Burnside Bridge area cultural landscape conformed to the agricultural traditions of the Antietam Drainage and the patterns of development associated with the Great Valley region of Maryland. Located within the boundary of the colony of Maryland, Charles Calvert, the Fifth Lord Baltimore, first encouraged settlement to the region in 1732. Calvert's motivations for opening up the interior of the colony were multifaceted. By encouraging settlement, Calvert created an alternative destination for emigrants other than Virginia and Pennsylvania. An increase in the population of the colony directly corresponded to an increase in the tax base that personally profited Calvert. The development of settlement in this particular area also presented a remedy to Maryland's Tidewater tobacco culture, as this opened additional lands for agricultural production, expanding the influence of the society and creating additional revenue for the colony.[3]

Calvert's initial plan for settlement led to the allocation of two hundred acre sites in the region. However, this practice changed as exampled by the granting of larger manorial land grants, including one that encompassed much of the cultural landscape to Joseph Chapline, by the name of Mount Pleasant and Hunting the Hare. As a condition of the grant, Chapline agreed to inhabit the land and prescribed to the practices of the tobacco culture. Calvert intended to create a slice of civilization emulating the Tidewater in the wilderness. Accounts suggests that the development followed the English Plantation system transporting architectural and societal concepts of slavery into the heart of the Maryland wilderness. The crops of tobacco initially planted failed and it became apparent that the conditions of the Great Valley were unsuitable for tobacco cultivation.[4]

Rather than dissuade migration, the failure of the tobacco crops encouraged a second wave of immigration to the Antietam Drainage. The English landholders divided the manorial land grants into smaller parcel and sold them to settlers of German origin moving south from Pennsylvania. The first generation of settlers shifted from the roles of agricultural overseers and landed gentry to that of land speculators, controlling land leases and entering into tenant agreements in the "lease and release" system. The German settlers actively moved away from the English plantation system, opting instead to build cluster arrangements similar in

manner to their homesteads of the north in Pennsylvania. Instead of attempting to promote tobacco, these settlers opted to cultivate a diverse collection of grains and livestock.[5] The German farmers opted to maintain small farms, cultivating only that portion of the land that their families and farmhands could maintain. Few farmers in the project study area participated in the practice of slavery, with the exception being the Otto family, which owned two slaves. The method of participating in a diverse agricultural economy continued until the Civil War.

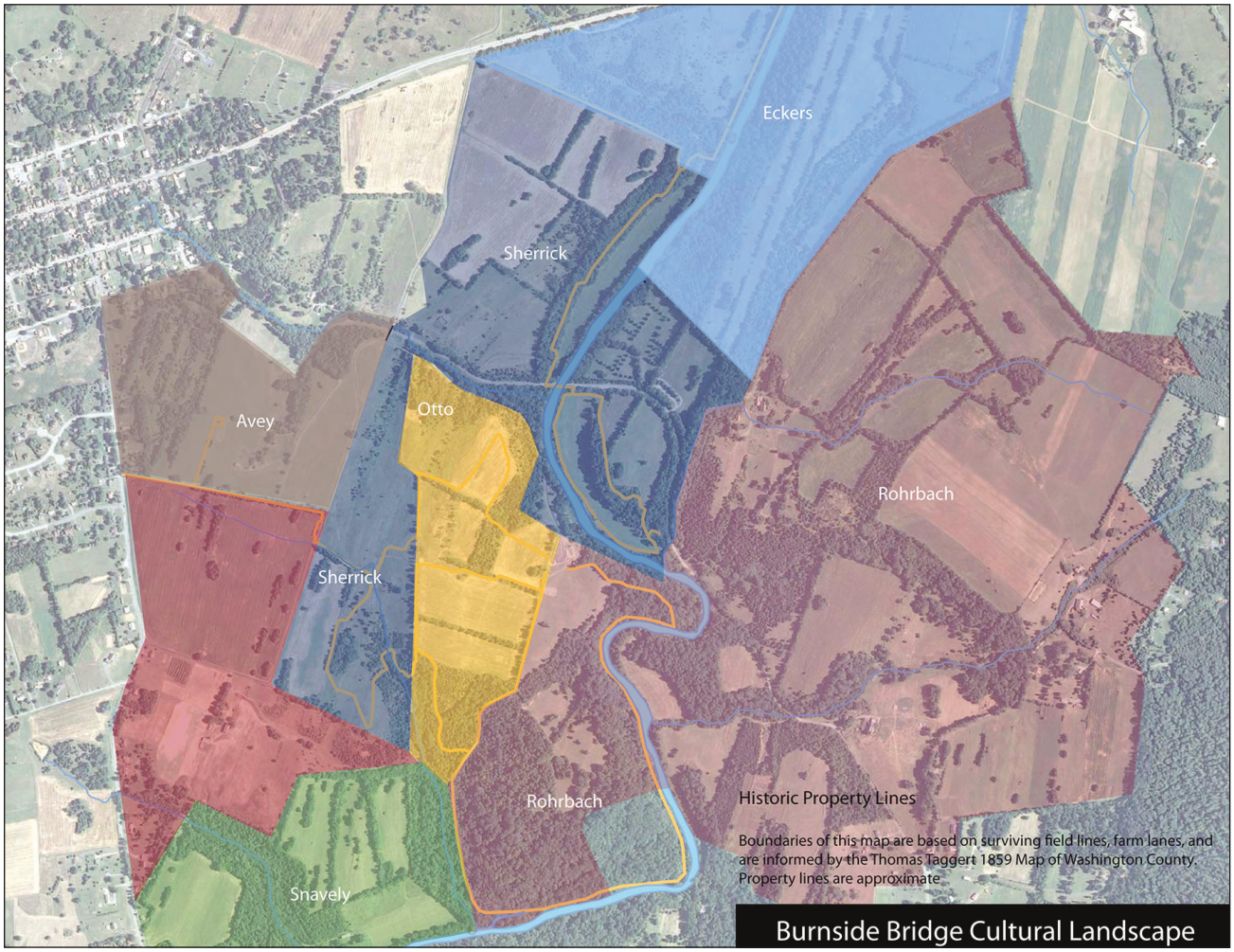


Figure 3. Map of historic farmsteads surrounding Burnside Bridge. The map is based on property lines illustrated in an 1859 map by Thomas Taggert and deeds from the period. The Rohrbach, Otto, and Sherrick properties are associated with the area of study during the time of the Battle of Antietam.

Otto, Sherrick, Rohrbach Families

During the Early National Period, three families, the houses of Otto, Sherrick, and Rohrbach, migrated from Pennsylvania and settled in the area of the Burnside Bridge cultural landscape. True to the larger pattern of the Antietam drainage, physical and written records confirm that these families participated in the German farming practices of the Great Valley context. The families constructed farm clusters on higher ground or on lands in close proximity to the main road outside the boundaries of the study area.[6] These clusters included a centrally located farmhouses and barns surrounded by ancillary structures. Beyond the

centrally located clusters, various fence patterns moved out into the landscape defining fields and pastures. Surviving Agricultural Census records from 1860, prior to the Civil War, reveals that these individuals were experiencing relative success and cultivating a variety of crops including corn, wheat, sweet potatoes and engaging in dairy practices, as evidenced through the butter recorded in the data.[7] The products were sold at markets in either Philadelphia or Baltimore.

Focusing specifically within the boundaries of the project area, the families constructed limited features during this period. Research conducted at this time has not uncovered evidence of any permanent structures in this portion of the landscape. The main Otto farming cluster was located to the north and west of the project area. However, photographic evidence from the time of the Civil War, which will be discussed at a later point in this chapter, suggests that the families used the area around the Burnside Bridge project area predominately as pasture. The largely impermanent structures of fences defined the cultural landscape. At some point during this period, a stone wall on the north side of the Burnside Bridge was erected. It is possible that the landowners used a portion of the land on the Eastern Bank of Antietam Creek as a field for crops; however, no documentary evidence has revealed this information. In accordance to the patterns of the region, it is assumed that the families used the forested slopes of the Western Bank as a woodlot or as an area of additional grazing for livestock.[8]

With the increase of population into the region, the necessity to construct transportation infrastructure followed suit with increased demands for means to move products to markets. Farmers in the region used a series of farm lanes and roads to transport products to markets in the points north towards Philadelphia and Hagerstown and south to Baltimore and Washington D.C. During the 1820s, a wooden bridge spanned Antietam Creek.[9] Between 1833 and 1836, the Washington County Commissioners approved the construction of a stone bridge. John Weaver is attributed with the design and construction of the three arched stone structure.[10] The topography of the landscape and position of the existing roadbed influenced the shape of the bridge. Surviving photographic evidence from the Civil War has led to the conclusion that the road as well as the roadbed of the bridge were dirt during this period.

Summary

During the Early National Period, the Burnside Bridge area cultural landscape developed and evolved in a pattern that kept to traditions of Great Valley farming practices. Within the boundary of the CLR study area, farmers and planters constructed few permanent landscape features. Washington County officials constructed the road leading from Rohrsville, Maryland to Sharpsburg, Maryland.

As a result of the course of the feature, the Burnside Bridge was constructed to provide access over Antietam Creek. The pattern of behavior expected for this area lends to the belief that fields and pastures likely were present in this portion of the battlefield. Similarly, it is assumed that fences marked these fields. Gardner's photographs, discussed in the following section, capture the character of the cultural landscape during the period just after the battle. The photos do contain evidence of historic fence lines, but it is uncertain as to when the fences were installed or who installed them. No evidence of other permanent structures have been discovered at this time. The overall condition of the vegetation is unknown at this time.

Figure 4. Burnside Bridge 1862 by Alexander Gardner from the Library of Congress



CIVIL WAR, 1861-1865

The events of the Civil War lend the primary significance of the cultural landscape. This site played a crucial role as the setting for events associated with the Battle of Antietam. To understand the significance of the site in the battle, we must first understand the context of the battle itself. Confederate General Robert E. Lee, commander of the Army of Northern Virginia, in an effort to move the theatre of war into Union territory and out of Virginia, invaded central Maryland. Lee's invasion is known as the Maryland Campaign. His reasoning for this strategy has been the subject of discussion by historians in the decades following the campaign. Common threads of discussion on the matter include his desire to resupply an understocked/underfed army, the rallying of additional troops for the Confederate cause from what he perceived as a sympathetic border state, the liberation of Maryland from Union authority, and the opportunity of gaining foreign support.[11]

Lee moved his troops from Richmond, Virginia north towards the Great Valley of Maryland, part of the breadbasket of the East. After moving through Frederick, Maryland, Lee divided his forces with portions of the Army of Northern Virginia moving towards Harper's Ferry, Hagerstown, and Sharpsburg. The Battle of South Mountain precipitated the conclusion of the Lee's campaign at the Battle of Antietam. For this battle, Lee selected a position on the high bluff of the Western Bank of Antietam Creek, including the town of Sharpsburg, Maryland with the Potomac River forming the rear of his defense. Lee's line formed a convex curve along Antietam Creek. Union General George McClellan, commander of the Army of the Potomac, positioned his forces on the Eastern Bank of Antietam Creek, electing a similar position on high ground to serve as his headquarters and to position his guns. The two armies clashed on September 17, 1862 in an incident known as the bloodiest single day battle of the Civil War. For the majority of the day the two armies engaged in combat and did not continue fighting the following day. The battle is considered a Union Victory.[12]

The outcome of the battle curbed Lee's quest to bring the fighting of the war into Union territory and failed at achieving the most significant of his goals. McClellan's victory provided Abraham Lincoln the political capital to issue the Emancipation Proclamation and changed the cause of the war from preservation of the union and the recognition of federal sovereignty to include the abolition of slavery.

Fighting at Burnside Bridge

Burnside Bridge formed the focus of the southern fighting during the battle. General Robert E. Lee charged General Robert Tombs with the task of, "preventing the enemy from crossing the river."[13] Col. Henry Benning commanded three of Toomb's Georgia regiments to positions along the ridge of the Western Bank of the cultural landscape. They stretched along the topography of the ridge. The natural topography of the landscape afforded a tactical advantage compared to the more numerous Union forces numbering approximately 12,000. Benning placed the 500 men under his command behind fence lines, stacks of stones, log piles, and existing quarry pits.[14] The height of the topography afforded unencumbered views of the bridge and pastures of the eastern bank.

On the Eastern Bank of Antietam Creek, Union General Ambrose Burnside prepared his Ninth Corps with the objective of taking the Confederate right flank. Burnside made the tactical decision that crossing the creek had to occur at the Burnside Bridge. However, the relatively shallow and open terrain of the east bank left Burnside's forces largely exposed to the barrage of fire from the smaller Confederate forces. The first assault on the bridge began at approximately 9:30 a.m. The result was unsuccessful and ended with a retreat. Burnside's forces attempted a second time to cross, ending in yet another retreat. At 1:00 p.m., a third and final assault occurred to take the bridge. This effort proved to be a success with the Confederate men vacating their positions on the hillside and moving further west into the Otto and Sherrick fields. A review of records indicate that Union forces moved up the hill in the hours that followed, pushing the Confederate forces towards Sharpsburg.[15]

In the aftermath of the battle, surviving records detail a ravaged landscape from the forging by the armies and the construction of encampments. The Union army sequestered the farmhouses and the property of the farmers as field hospitals. Accounts from the Sherrick family indicate that the foraging behavior of the Union forces after battle were more destructive than the actual fighting.[16] The period of occupation varied, with accounts suggesting that as late as November 1862 portions of the army remained in the area of Sharpsburg, Maryland.[17]

Alexander Gardner's Photographs

Post battle contemporary photographer Alexander Gardner captured a series of images of the landscape with the emerging stereograph technology. The work of Alexander Gardner is part of the early American photography movement and has a similar body of work to his contemporary Mathew Brady. The two have a reputation for their depictions of the Civil War landscape, photographing soldiers,

portraiture, and capturing the horrors of battle in images that made the public aware of the destruction of the fighting.

Gardner's photographic study of the landscape documents several vantages points throughout the site in order to capture a more complete image of the setting of the battle. From the Western Bank, Gardner photographs a view of the Burnside Bridge similar to that of the entrenched Confederate forces. The stereograph shows the effects of the battle on the feature. Gaps are visible in the coping. A portion of the southwest wall lays in rubble. A group of three individuals, possibly soldiers, lean against the wall of the feature. The background, which faces the Eastern Bank of Antietam Creek, shows open pasture land defined by a post and rail fence. A thin line of trees outlines the upper face of the hill.[18]

Gardner's depiction of the Western Bank is comparable to a present day overlook on the Union Advance Trail. From the vantage of the hilltop, the viewer can see the destruction of portions of the stone wall on the northern edge of the Burnside Bridge. This image reveals the presence of the famed Witness Tree on the north side of the bridge. Several tall trees cover the slopes of the far hill. However, the image does not show under growth, rather taller grasses cover the slopes.[19]

Gardner's collection of images also show the burials of Union soldiers along the stone wall. Coping from the Burnside Bridge potentially marked the graves of the interred remains. Additional images from the collection show the course of the road going south from Burnside Bridge.[20]



Figure 5. ***Antietam, Maryland. Burnside Bridge [photographed from a tree?]*** **by Alexander Gardner. From the Library of Congress. Gardner captures the view of the Burnside Bridge of the Confederates on the western bank of Antietam Creek.**



Figure 6. ***Soldier adjacent to the north wall by*** **Alexander Gardner. From the Library of Congress. The image shows the burials of Union dead adjacent to the north wall.**

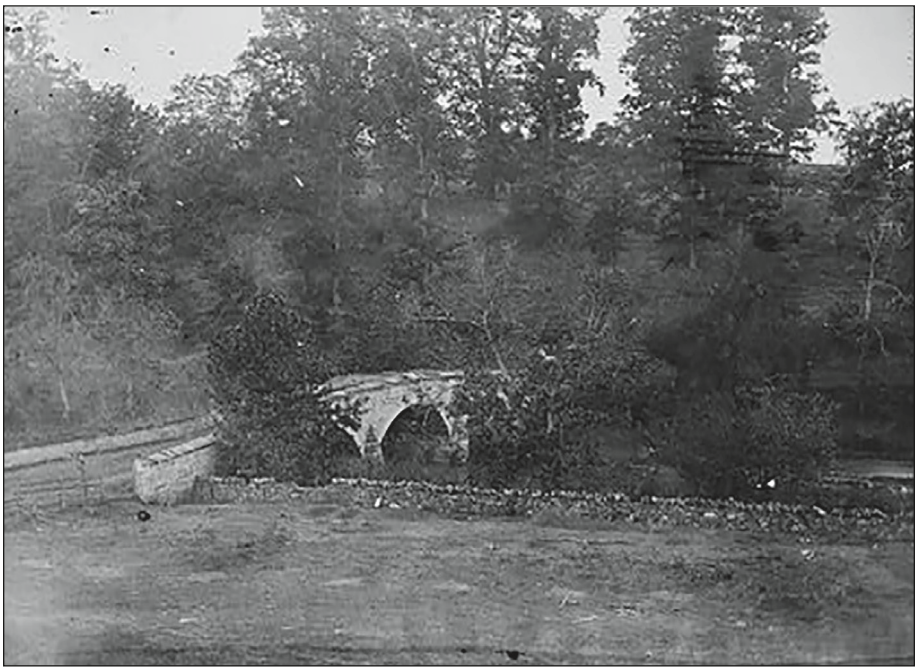


Figure 7. ***View from the east bank of Antietam Creek to the west*** **by Alexander Gardner. From the Library of Congress. The period image taken in the aftermath of the Battle of Antietam focuses on the Burnside Bridge and surrounding landscapes. The vantage of the image is comparable to the Union position on the eastern bank looking west.**

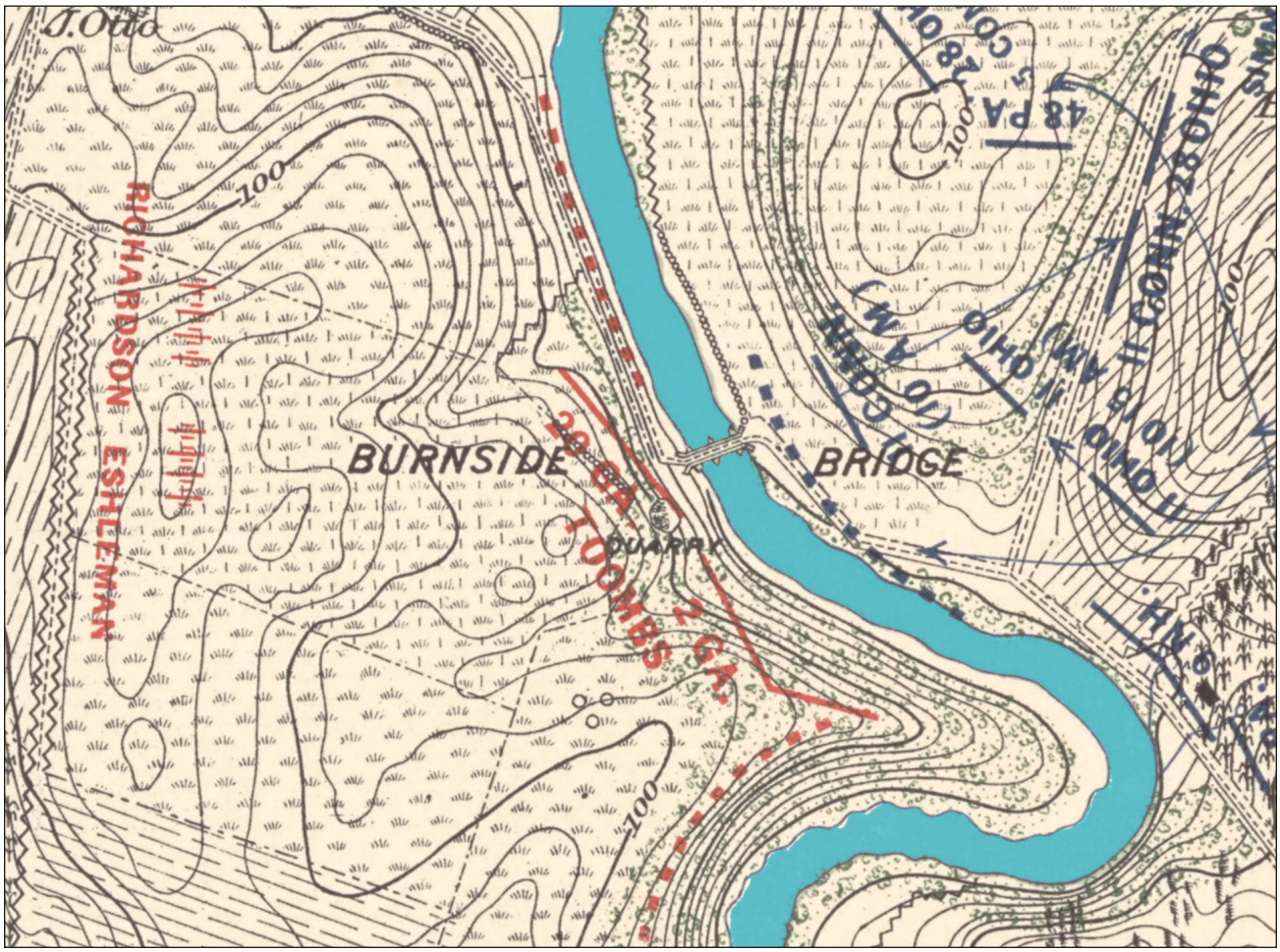


Figure 8. ***Antietam, Maryland. Burnside Bridge from the southeast*** **by Alexander Gardner. From the Library of Congress.**

Carman and Cope Map

Additional information regarding the landscape from the era of the battle arises from a study of the 1904 Carman and Cope Map collections of the Battle of Antietam. The work of Ezra Carman and Emmor B. Cope, while commissioned in the later commemorative period, warrants discussion in this section of the history narrative. This team of individuals, working on and off during a period of a decade, created a set of maps that show the lines of the battle. Incremental maps show the periodic movement throughout the course of the battle.[22] However, in addition to showing the lines of the battle, the maps reference the setting of the landscape. Cultivated fields and fence lines dot the map, as well as the historic areas of tree cover. Reviewing this map, the viewer can ascertain that agricultural lands found within the boundary of the area of study were composed of grasses. This included portions of the Eastern Bank as well as the slopes of the Western Ridge and portions of the crest of the hill. This space likely served as pasture land for grazing of livestock in the immediate vicinity of the bridge. In the surrounding fields of the Western Ridge, Carman and Cope rendered fields of harvested crops and those still in corn on the map.[23]

Figure 9. Carman and Cope map depicting the early phases of the battle. (Library of Congress).



Land Ownership

At the onset of the Civil War, three families owned property near the Burnside Bridge: the Otto family, the Sherrick/ Newcomer family with a tenant, and the Rohrbachs. The Otto's land occupied the top of the western slope and the fields immediately adjacent. The Sherrick/ Newcomer property straddled Antietam Creek and included a small portion of the western bank slope. At this time, questions remain as to where the tenant was living. The Rohrbach family owned the property in the southern portion of the cultural landscape boundary. Physical, photographic, and documentary evidence surviving from this period suggests that this portion of the landscape remained solely in agricultural production, with the Burnside Bridge and associated road the only major constructed features. A series of fences demarcated the boundaries of fields and ownership.

Summary

The photographic work of Alexander Gardner grants the viewer insight into the character of the Burnside Bridge area cultural landscape during the Battle of Antietam. The work of Carman and Cope provide additional knowledge on the subject matter. From this body of work, the condition of the fields during the battle is easily determined. The majority of the fields surrounding the Burnside Bridge were in grasses or pasture. However, a field of stubble defined the northern portion of the area and a field of corn demarcated the southern boundary of the study area. Fence lines including a collection of post and rail, worm fencing, and stone walls delineated the area of the fields. Photographs depict areas of wooded growth along the slopes of western bank of Antietam Creek. An area of wooded growth defined portions of the eastern bank. Other than the Burnside Bridge, the north wall was the only known permanent structure until 1864.



Civil War 1862

Historic Period Plan
Cultural Landscape Report

Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Forest, Fencerow Vegetation and Individual Trees
- Pasture
- Plowed Field
- Stubble
- Road
- Burnside Bridge
- CLR Boundary
- Historic Property Line
- Post and Rail Fence
- Worm Fence

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. *Atlas of the battlefield of Antietam*, Antietam Battlefield Board, Library of Congress, (1904).
4. Alexander Gardner Photograph Collection, Library of Congress, (1862).

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 3. **Civil War era landscape.**

REBUILDING AND RECOVERY, 1862 TO 1887

Following the Civil War, the farmers and citizens of the Sharpsburg, Maryland struggled to rebuild their lives. The return to agricultural enterprises proved to be lucrative to most, as the demand for grain products returned following the Civil War. Changes occurred in the manner of farming patterns practiced in this region, as grain production for markets appears to have waned while dairy farms expanded. Competition with western wheat and the decreased in the amount of processed grain form the basis of this hypothesis. However, the reluctance of the United States government to pay war reparations in the months, years, and in some cases decades following the war, caused most farmers to remain in great debt, forcing the selling of property to cover damages.[24]

Land Ownership 1862 to 1887

At the beginning of the Civil War, Anna Newcomer inherited the Sherrick property on the death of her father, Joseph Sherrick, Jr. in 1861. This included property on the east bank of Antietam Creek and land on the western bank of Antietam Creek. Surviving records indicate that Anna Newcomer lived in Hagerstown and leased the property to tenants.[25] The land holdings included the feature known as the quarry/ rifle pits. In 1864, a new farmstead was constructed on the western bank of the creek.[26] The farmstead consisted of a farmhouse to the north of the Burnside Bridge with an ancillary shed structure. The farmhouse was a two-story structure and sat at a low point in the natural topography of the site. At the crest of the hill, a large barn and a corncrib were constructed; this assumption is based on photographic evidence provided in the following pages. A smaller out building was constructed in the area adjacent (west) of the larger buildings. A set of surviving photographs (1884), Figures 10-12, from this era shows a largely open landscape consisting of a few scattered trees and fields for what appears to be pastures. Evidence of a farm lane bound by a wall, likely stone, is visible in the image, corresponding to the location of the present McKinley Walkway. A collection of post and rail and worm fences define the pasture spaces of the landscape. The improvements likely were the work of a tenant farmer based on archival research.[27]

In 1870, John, Mary, and Daniel Otto sold 66 acres to Jacob Stine.[28] This land formed the northern boundary of the Newcomer property. The same year, Stine's name appears in the agricultural census. The surviving record indicates that under the guidance of Stine the farm continued to practice the previous diversified cultivation pattern present on antebellum farms. The fields produced potatoes, hay, corn, winter wheat, and orchard products.[29]

Following the Civil War, the Rohrbach family's finances lay in ruin due to the destruction wrought on their landholdings. In 1863, Henry Mumma purchased a portion of the family's land on the western bank of Antietam Creek.[30] The Rohrbach family then consolidated the remaining land holdings of the family into fewer units in the areas north of the cultural landscape. In 1868, the Mumma's sold a portion of the western bank land holdings to John Benner. In 1875, the Snavely's followed suit and similarly sold to Benner.

Summary

Following the Civil War, Newcomer farm tenants actively built landscape features within the study boundary. This included the construction of the farm complex on the western slopes of Antietam Creek. The cluster originally consisted of a farmhouse and outbuildings; one adjacent to the house, and two barns located high on the hill. The surviving historic photographs from the era depict a mixture of worm and post and rail fences demarcating the fields during the period. The following map illustrates what is known from this era.

Figure 10. ***View from Conf. side of Antietam Creek near Burnside Bridge looks probably about North,*** **by T.D. and Walter Biscoe. (1884) From the DeGolyer Library, Southern Methodist University. The images has a vantage looking towards the historic Otto and Sherrick Farms.**





Figure 11. ***View from above Burnside Bridge obtained by W. after long tromp. Glimpse of parapet of Bridge in middle seen from up stream on Union side,*** **by T.D. and Walter Biscoe (1884). From the DeGoyler Library, Southern Methodist University. In the mid ground of the image the reader can make out the farm lane with a stone wall. Two large barns are located at the top of the hill.**

Figure 12. ***Burnside Stone Bridge from high land on Conf. side looking East or S.E.*** **by T.D. and Walter Biscoe (1884). From the DeGoyler Library, Southern Methodist University. The photograph is taken from a vantage north and west of the Burnside Bridge. In the image the reader can see the Newcomer House, orchard, and surrounding fields.**





1864 to 1887

Historic Period Plan
Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Forest, Fencerows Vegetation and Individual Trees
- Field
- Building
- Farm Lane
- Road
- Burnside Bridge
- CLR Boundary
- Historic Property Line
- Stone Wall
- Worm Fence
- Post and Rail Fence

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. *Atlas of the battlefield of Antietam*, Antietam Battlefield Board, Libary of Congress (1904).
4. Photographs by T.D. and Walter Biscoe, Biscoe Collection, DeGoyler Library, Southern Methodist University, (1884).

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 4. 1864 to 1887.

THE WAR DEPARTMENT AND MEMORIALIZATION EFFORTS, 1887 TO 1932

At the conclusion of the Civil War, a third narrative of activities or cultural traditions manifested on the landscape. In addition to agricultural practices, construction associated with memorialization occurred prior to and after the formal establishment of Antietam National Battlefield. On August 30, 1890, Congress established the Antietam National Battlefield Site.[31] The impetus for the creation of this site came in part from the efforts of local Congressman Louis E. McComas and the influence of the growing memorialization or commemoration movement that developed in the United States during this time.[32] Excursions of veterans groups visited the locations where they fought and remembered their fallen comrades in arms.[33] Following the enabling legislation, the War Department created a board to oversee marking of the lines of the battlefield and purchasing of selected right of ways and the small portions of land needed to place the tablets at important locations in the landscape.[34]

Monument placement

The dedication of the 51st Pennsylvania Monument was the first memorialization effort to occur at the Battlefield beyond the border walls of the National Cemetery. The associated veterans group erected the monument on the southeast corner of the Burnside Bridge to commemorate the bravery of their fallen comrades at the location of the group's greatest sacrifice.[35] The monument was dedicated in 1887. The installation of this monument at the corner of the bridge set a precedent. Subsequently in 1898, the 21st Massachusetts Volunteer Infantry dedicated a monument on the southwest corner of the Burnside Bridge and the 35th Massachusetts Volunteer Infantry erected a monument on the northwest corner of the bridge. In 1900, a final monument to the 2nd Maryland Infantry was placed at the northeast corner of the Burnside Bridge.

Beyond the placement of monuments on the four corners of the bridge, other groups erected additional commemorative structures in the landscape. Beginning in 1890, the US War Department placed cast-iron tablets along the historic Burnside Bridge Road in order to interpret the fighting in this area. The War Department selected a position parallel with the curve of the Burnside Bridge road on the eastern bank of Antietam. The placement was ideal as the 51st New York Volunteer Infantry elected to place their monument in the center of the tablets in 1908.[36] In 1895, the Eleventh Regiment Connecticut Veteran Volunteers elected to move their monument from "Connecticut Park," along the present day Branch Avenue, to its present location on the eastern bank.[37] Additional locations for the war tablets included the farm lane associated Newcomer/ Benner/ Spong Farm on the Western Bank and a location adjacent to the 11th Connecticut Monument.



Figure 13. Burnside Bridge in 1906. The image shows the placement of the monuments on the corner of the Burnside Bridge. The Newcomer Spong farmhouse is visible in the background. (Antietam National Battlefield Archives)

Figure 14. Burnside Bridge post 1923. The date of the photograph is unknown and shows the surrounding environs of the Burnside Bridge. (Antietam National Battlefield Archives)



A final monument of note was erected during this period. In 1903, a committee representing the state of Ohio dedicated the McKinley Monument on a piece of land owned by John Benner. The parcel of land was south of the Benner farm and located along a farm lane. The monument honored the heroism of the recently assassinated McKinley that he endured while serving at the Battle of Antietam. The monument consists of a base dominated by an ionic column and covered with metaphoric images and bas-reliefs of the president.[38] Later additions to the feature include the installation of a wrought iron fence around the monument in 1905.

With the erection of the monument, John Benner conveyed to the War Department a right of way leading from Burnside Bridge to the McKinley monument. The path followed the course of an earlier farm lane. However, the Benner property surrounded the right-of-way and the parcel associated with the



Figure 15. ***McKinley Monument in 1925*** **from the Library of Congress**

monument. The pathway followed the curve of the site's topography.[39] A historic photograph from 1905 depicts motorist traversing the path in early automobiles. The pathway was made from crushed stones and is likely a minor improvement over the previous farm path on the site. A series of memorandums indicate that additional improvements likely occurred to the feature in 1907.[40]

Fannie I. Spong inherited the Benner land holding. Period photographs indicate that the buildings constructed in the aftermath of the Civil War remained on the landscape. Between 1887 and 1907, the landowners constructed additional small outbuildings in the farmyard space. The small size of the buildings suggests that at the very least the structures were sheds, possibly a smoke house or a springhouse. An additional image shows a new barn structure constructed adjacent to the farmhouse (reference Figure 14 on page 36).

The relationship between the War Department and adjacent property owner, like the condition of the road, deteriorated. In 1917 a series of rainstorms removed portions of the roadbed impeding any possibility of movement along the path via automobile.[41] The following year Fannie Spong filled the ravine on the south side of McKinley Avenue, further eroding the road as this action obstructed the natural outlet of water.[42] Conversations about rebuilding the road and gutter structure continued for over a decade. In 1931, the War Department reconstructed the circulation route, transforming the pathway from an automobile lane to a pedestrian pathway.[43] The path moved to the other side of the existing gutter. An additional stone gutter and catch basin completed the final configuration of the feature.[44]

During this period the United States Geological Survey (USGS) constructed a measuring device south of the Burnside Bridge in Antietam Creek to record water levels. Additional research is needed to determine when the feature was placed in the creek.

Land Ownership 1887 to 1932

In 1880, Victor and Anna Newcomer sold seven acres of property to Jacob Stine.[45] The surviving deed indicates that this is likely the extreme western boundary of the cultural landscape study area. In later land acquisitions, Stine included this property in the sale to Dorsey in 1908, which included a total of 131 acres.[46]

During this period, the remainder of the Newcomer land holdings passed to the Newcomer/Nicodemus family and John Benner in a rather convoluted series of land trades. The land records indicate that in 1902 Benner granted a right of way from the Burnside Bridge to the McKinley monument to the United States

government. Fannie I. Spong owned the former Benner's land holding by 1907. The United States owned only the parcels directly associated with the memorials, monuments, and right-of-ways.

Summary

During this period, private groups erected monuments and the War Department placed iron tablets at strategic locations to commemorate the battle. Existing circulation included the known historic road towards Rohrsville, Maryland and the farm lane turned automobile lane turned pedestrian pathway that led to the McKinley Monument from the Burnside Bridge. Existing farm lanes continued to serve as a means to traverse the site. Existing aerial photographs shows a densification of the trees along the southern boundary of the site. The USGS constructed a measuring device in Antietam Creek. Additional farm structures were constructed adjacent to the McKinley monument. Post and rail fences located near the Burnside Bridge and near the farm are visible in historic photographs. The following graphics illustrate the period.



1887 to 1932

Historic Period Plan
Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Forest, Fencerows Vegetation and Individual Trees
- Field
- Building
- Farm Lane
- Road
- Burnside Bridge
- Monuments and Tablets
- Stone Wall
- Post and Rail Fence
- CLR Boundary
- Historic Property Line

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. *Map of the battlefield of Antietam,* Emmor Cope, Library of Congress (1898).
4. *McKinley Monument in 1925*, Library of Congress (1925).
5. *Map of the battlefield of Antietam*, Antietam Battlefield Memorial Commission, Library of Congress, (1908).
6. *Burnside Bridge Post 1923*, Antietam National Battlefield Archives

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 5. **1887 to 1932.**

NATIONAL PARK SERVICE AUTHORITY

1933 TO 1960

In 1933, as a part of President Franklin Delano Roosevelt's New Deal program, control of Antietam National Battlefield transferred from the War Department to the National Park Service.[47] The restructuring in oversight was part of a larger shift of placing selective public lands and cultural resources in the hands of a single agency. This change in authority occurred through the political maneuverings of Secretary of the Interior Harold Ickes and the Director of the National Park Service Horace Albright. Their efforts expanded the power of the National Park Service, provided land holdings in the eastern United States, and provided legitimacy to the fledgling agency.[48] At Antietam National Battlefield, the change in authority shifted the program of the park from pure commemoration to that of resource preservation and interpretation.

Burnside Bridge Area

This portion of the battlefield remained relatively unchanged during this period. After the shift in authority, the National Park Service discovered that relatively few lands were held in outright ownership, which limited the improvements that's could be made. Congress did not authorize the agency to expand beyond the existing War Department land holdings. A review of aerial photographs and selected images of the monuments reveals an open agrarian landscape delineated by trees and fence lines.[49] While the limited agricultural records from the period suggest farming occurred in this portion of the landscape, site specifics are vague. A close inspection of the fields in the photographs reveals a regularly tilled space, indicative of either row crops or the regular cutting of hay. Further defining the field patterns are a series of visible fence lines lined with vegetation, creating a dark ribbon against the lighter shade of the field.

A review of the forested vegetation reveals that the thickest concentration occurred in the area south of the Burnside Bridge along the slopes of the western bank. The growth varied in size and height and created a soft edge on the landscape indicative of an uncontrolled pattern of expansion. A narrow strip of trees line the stream on points north of the Burnside Bridge and the southern portion of the eastern bank. The growth of trees on the eastern bank occurs in a more defined edge and at the very least suggests attempts to maintain a field edge by the property owner.

An aerial from 1943 similarly reveals forested portions of the site along the slopes of the Antietam Creek on the western bank and the ravine south of the Benner Spong farm. Unencumbered views devoid of trees, with the exception of a few field trees characterized the western portion of the landscape. The 1952 aerial



Figure 16. View of the east bank looking south from Burnside Bridge (Antietam National Battlefield Archives, 1940).

revels a similar image, however, tree growth develops in the historic Rohrbach field. Analysis of the photograph reveals a collection of small trees adjacent to the each of the forested spaces. Additional trees and shrubs appear next to the fence lines. The trees of the ravine space encroach further up the hill. However, the general character of the site is maintained with open vantages that historically existed during the era of the battle.

Land Ownership

After the reallocation of authority, all War Department landholdings transferred to the National Park Service. The collection of property included the public right of ways and the small parcels of land in fields that contained the monuments, and the small portions of land associated with the memorials at the end walls of the Burnside Bridge, but not the bridge itself. In November of 1933, the Washington County Commissioners conveyed the Burnside Bridge to the National Park Service.[50] Formal acceptance of the title occurred in 1945.[51]

In 1939, the former Spong farm became available for purchase at public auction. As the National Park Service could not purchase land to expand the landholdings of the battlefield, the Washington County Historical Society purchased the tract of land. The property remained in the control of the Washington County Historical Society until 1940, when Congress authorized the Secretary of the Interior to accept donated property on behalf of the National Park Service.[52] However, issues



Figure 17. Aerial image from 1943. (Washington County, Maryland Archives)

with the chain of the title for the property prevented the National Park Service from accepting ownership of the property until 1943.[53]

After the acquisition of the Spong tracts, the National Park Service entered into a series of agreements with local farmers. The farmers agreed to cultivate the property in exchange for paying rent to the National Park Service. This maintained the farm aesthetic of this area of the battlefield, without stressing the resources of the National Park Service to maintain the landscape.[54] This

agreement is the forerunner to the current Special Use Permits (SUP) maintained by the park in this portion of the battlefield.

In 1946, an evaluation of the buildings associated with the Spong property determined that while historic and dating from 1864, they were not associated with the landscape of the Battle of Antietam, and therefore did not contribute to the overall story of the site. As a result, the National Park Service removed the various barns, house, sheds, and portions of the fence structure from the site.[55] Later internal dialogues in the park reveal that the foundations of some of the structures remained on the site until much later.

In 1947, the National Park Service began nearly a decade of repair work to the Burnside Bridge. B.L. Smith of Boonsboro, Maryland, under contract, began repairing the bridge's arches and repointing the mortar.[56] By 1953, discussion revealed that the bridge remained structurally unsound. The National Park Service and local government bodies tabled the option of removing the bridge from the highway system and enacted a weight limit restriction instead. However, as these measures did not remedy the problem completely, the National Park Service again initiated repair work in 1955 on the structure.[57]

Summary

Between 1932 and 1937, the smaller ancillary structures of the Spong farm were removed. Crop cultivation continued in the fields surrounding the Burnside Bridge. The tree canopy became denser on the western slope south of the Burnside Bridge. The state of the site is illustrated in Drawing 6 on page 49 and depicts the period 1932 to 1946, prior to major National Park Service changes.

In 1946, the remains of the Benner Spong farm complex were torn down by the National Park Service due to a determination that the features lacked a direct association with the Battle of Antietam, despite a construction date of 1864. Agricultural fields were converted into pastures. Trees continued to encroach on the historic fields and spread on the site. Drawing 7 on page 51 illustrates the composition of the cultural landscape after the demolition of the barn and prior to the initiation of the Mission 66 program.



Figure 18. ***McKinley Walkway in 1940*** **(Antietam National Battlefield Archives). The image shows the relocation of the pathway to the current location.**



1932 to 1946

Historic Period Plan
Cultural Landscape Report

Burnside Bridge Area

Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Forest, Fencerows Vegetation and Individual Trees
- Pasture
- Plowed Field
- Building
- Farm Lane
- Road
- Burnside Bridge
- A Monuments and Tablets
- CLR Boundary
- Historic Property Line
- Post and Wire Fence
- Post and Rail Fence

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 1943
4. *McKinley Walkway in 1940* Antietam National Battlefield Archives
5. View of the east bank looking south from Burnside Bridge Antietam National Battlefield Archives

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 6. 1932 to 1946.



1946 to 1961

Historic Period Plan
Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Forest, Fencerow Vegetation and Individual Trees
- Pasture
- Crop Field
- Farm Lane
- Road
- Burnside Bridge
- A Monuments and Tablets
- CLR Boundary
- Historic Property Line
- Post and Wire Fence
- Post and Rail Fence

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 1952
4.Charles W. Snell and Sharon Brown *Antietam National Battlefield and National Cemetery: An Administrative History*

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 7. 1946 to 1961.

MISSION 66, 1960 TO 1967

National Park Service Director Conrad Wirth unveiled an ambitious park planning initiative in 1955 named Mission 66. The targeted completion of the plan coincided with the 50th anniversary of the establishment of the National Park Service. The goal was to improve visitor infrastructure within the agency's units, as the previous infrastructure initiative occurred as a part of the New Deal programs in the 1930s. Funding for park improvements dissipated during the World War II years, yet visitation increased dramatically in the Post-War era. This led to great stress on existing resources and subpar conditions in the parks. Wirth envisioned new visitor facilities including the expansion of the National Park Service road network, the creation of visitor centers, and the introduction of interpretive elements in an effort to present a modern, relevant agency.[58]

In order to achieve Wirth's vision, park planning resources were consolidated and major funding acquired. Previously, individual park staff completed planning efforts. This shifted to centralized design led to a cohesive service wide aesthetic. The designs no longer had the rusticated "park-itecture" form of the late 1880s to 1930s, rather the contemporary Modern architectural idiom served as the form of architectural expression. The introduction of a collaborative design process that included commentary from architects, interpreters, and landscape architects replaced the previously employed method of creation of park design solely by landscape architects. These changes resulted in integrated design that addressed the needs of the modern visitor.[59]

At Antietam, as with other Civil War battlefields, the Mission 66 project had additional importance, as the effort coincided with the centennial of the Civil War. The Mission 66 Prospectus for the park laid out the intention for the park. As a part of the plans for Antietam, members of the Eastern Office Division of Design and Construction proposed the construction of a trail network, expansion of the tour road of the battlefield, the construction of the visitor center, and the creation of a network of interpretive tour stops.[60] The plan included the construction of waysides, shade structures, new parking areas, and the creation of cohesively designed interpretive panels.

Overlook Parking Area and Other Changes

It is during the Mission 66 era that the Burnside Bridge cultural landscape reached the height of its development. Planning efforts from the Eastern Office recognized the importance of the site in the overall story of the Battle of Antietam. The Interpretive Plan and a series of working drawings depict the effort taken to encourage visitation to the landscape.[61]

At the core of the new design was the creation of a series of overlooks and a new parking area. The designs placed the teardrop shaped parking area at the crest of the hill south of the Burnside Bridge, affording a view of the bridge and the pasture lands to the west. The plan for the feature included parking to accommodate the increased use of the automobile and tour bus. The plan for the parking lot conformed to the curve of the topography going down the hillside to a overlook prior to connecting to the existing McKinley Walkway. The stacked stone and concrete conformed to the design pallet established with the Mission 66 plans for the park.[62]

Figure 19. ***Planting Plan Visitor Center Burnside Bridge Area (1962).*** **From the Eastern Office Division of Design and Construction. The plan shows a planting proposal and layout of the Overlook Parking Area (NPS ETIC)**

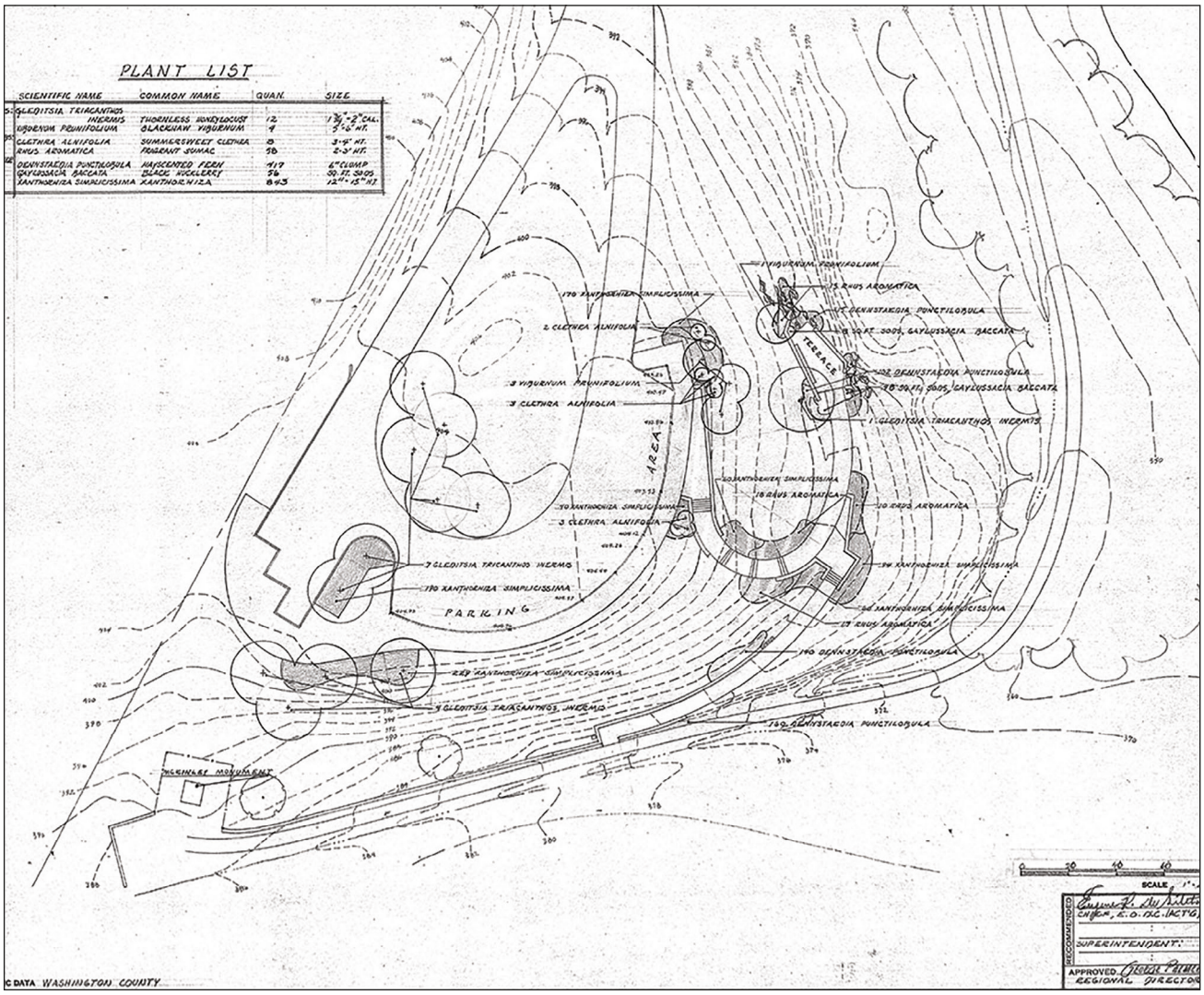




Figure 20. Mission 66 landscape under construction. View of the McKinley Walkway facing west towards the McKinley Monument. The plan reconstructed the historic pathway that was installed during the War Department Era. (Antietam National Battlefield Archives).

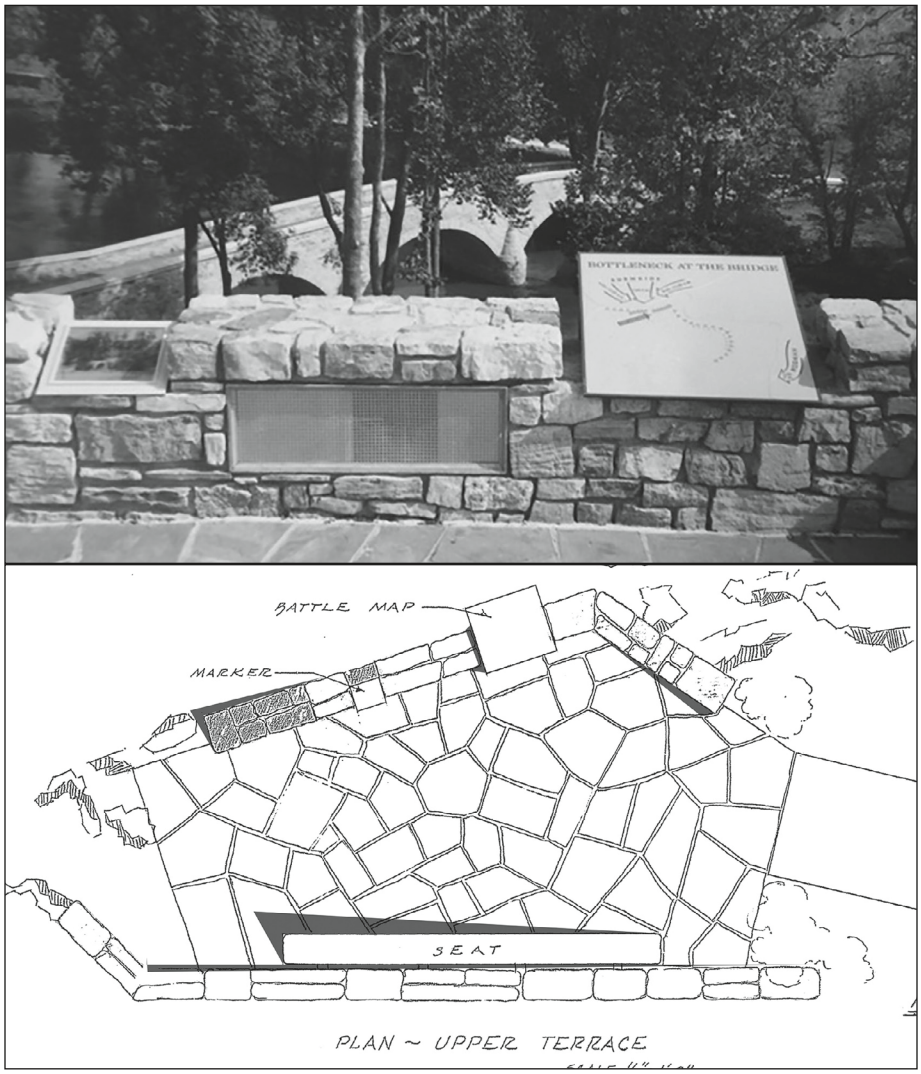


Figure 21. Rifle Pit Overlook in execution and in plan. The audio interpretive device is adjacent to the interpretive panel on the left. (Antietam National Battlefield Archives)

Along with the construction of the parking area, the plan included development of the circular Snavely Ford Trail along Antietam Creek. The construction of a narrow concrete walkway in the former Rohrbach field led to the , "As the Georgian's Saw it," Overlook. It remains unknown as to whether it was ever constructed as intended or if changes occurred due to issues with the site or funding.[63]

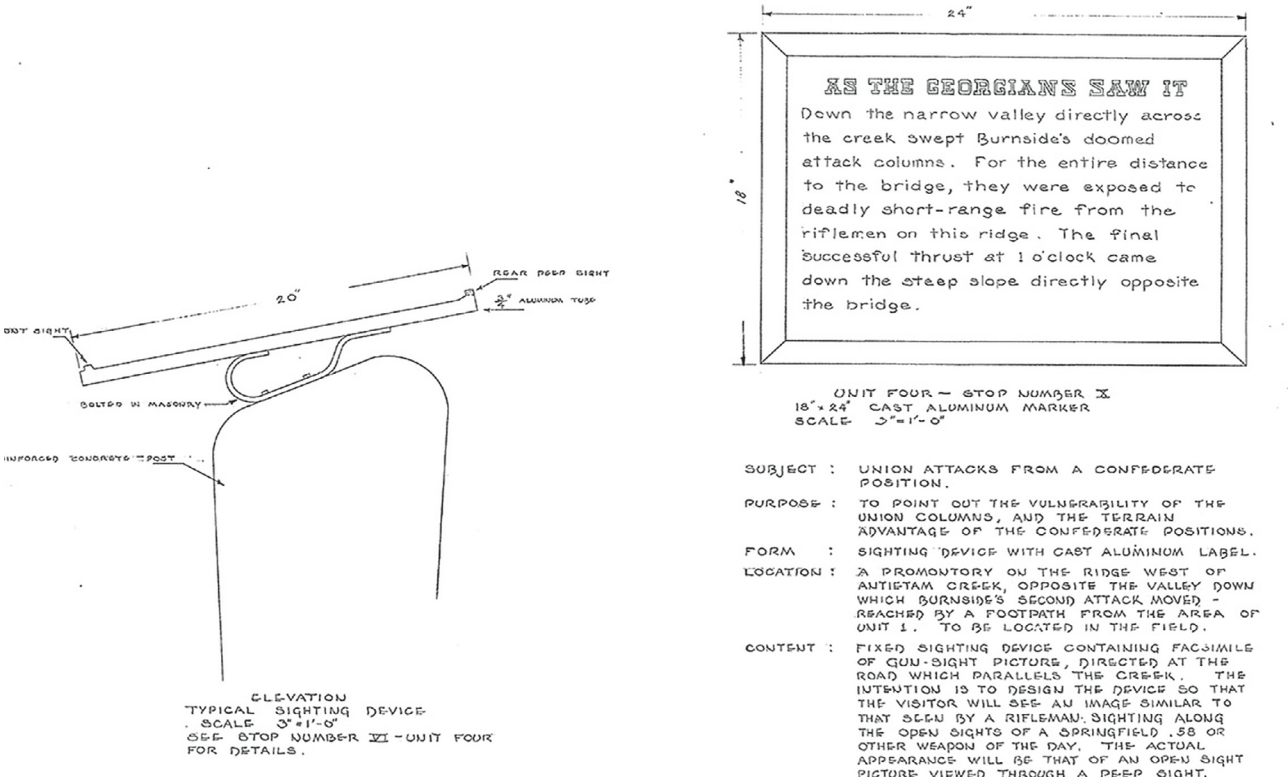


Figure 22. As the Georgians Saw It layout as presented in the Antietam National Battlefield Mission 66 Prospectus

In 1963, the National Park Service removed the monuments from the four corners of the Burnside Bridge and constructed a new monument plaza on the northeast bank of Antietam Creek near the bridge. The plaza consists of two benches and a concrete pad lined with the four monuments. The space was intended to serve as an area for reflection, where the monuments emphasized the connection to the groups that were associated with the fighting in this portion of the battlefield.[64]

By 1964, the National Park Service closed the Burnside Bridge to automobile traffic and began yet another restoration effort on the feature. The intention of the project was to return the bridge to its 1862 appearance.[65] The closing of the bridge to automobile traffic required the construction of an alternative traffic bypass around this area of the battlefield. This bypass moved through vehicular traffic away from the historic bridge. As a result of the bypass construction, portions of the historic roadway and the bridge were converted to pedestrian pathways.



Figure 23. Monument Plaza shortly after its construction in 1963 (Antietam National Battlefield Archives). View to the west shows a largely open landscape.

An additional change to the landscape was the introduction of interpretive elements. The National Park Service placed a series of aluminum panels, smaller in scale, but similar in form and material to the historic War Department tablets. The new interpretive panels required the use of substantial bases, including benches, concrete pillars, and stone walls for structural support.[66] Selected interpretive waysides included the use of audio devices to add an additional layer of interaction experienced by the visitor. A historic photograph from the period illustrates incorporation of the audio device into the Rifle Pit Overlook, illustrated in Figure 21 on page 55. It is unknown what the audio recording stated.

A review of historic photographs from this era reveals a more maintained cultural landscape. The slopes of the hillside leading to the new overlook, while covered in trees, lacks undergrowth other than grasses. Views into the historic Rohrbach pasture space shows a tree line contained to the edge of the slope and grasses in the field area.

Land Ownership

To construct the Burnside Bridge Bypass, the National Park Service purchased the Abbie Dorsey tract in 1964 on the eastern bank of Antietam Creek. A review of deed reveals that land holdings of Abbie Dorsey at that time roughly correspond to that of the historic Sherrick/ Newcomer land holdings from the time of the Civil War. With this land acquisition, the eastern bank of Antietam Creek belonged to the National Park Service. However, other branches of the Dorsey family owned the property to the west of the National Park Service land holdings.

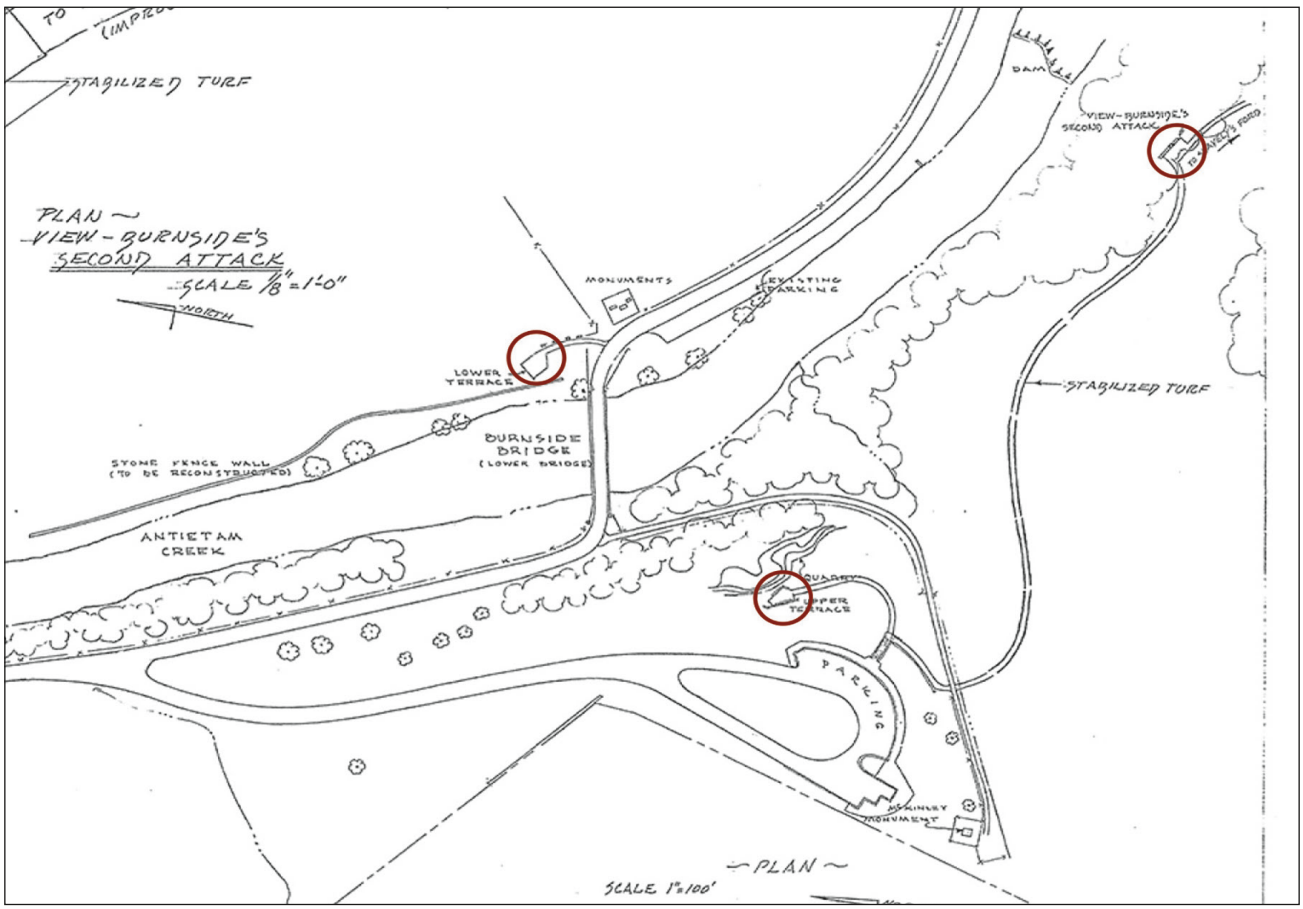
Coinciding with the purchase of the Abbie Dorsey tract, the National Park Service also purchased a small tract of land formerly held by James Dorsey. The location of the parcel was adjacent to the northern border of the former Spong tract. The

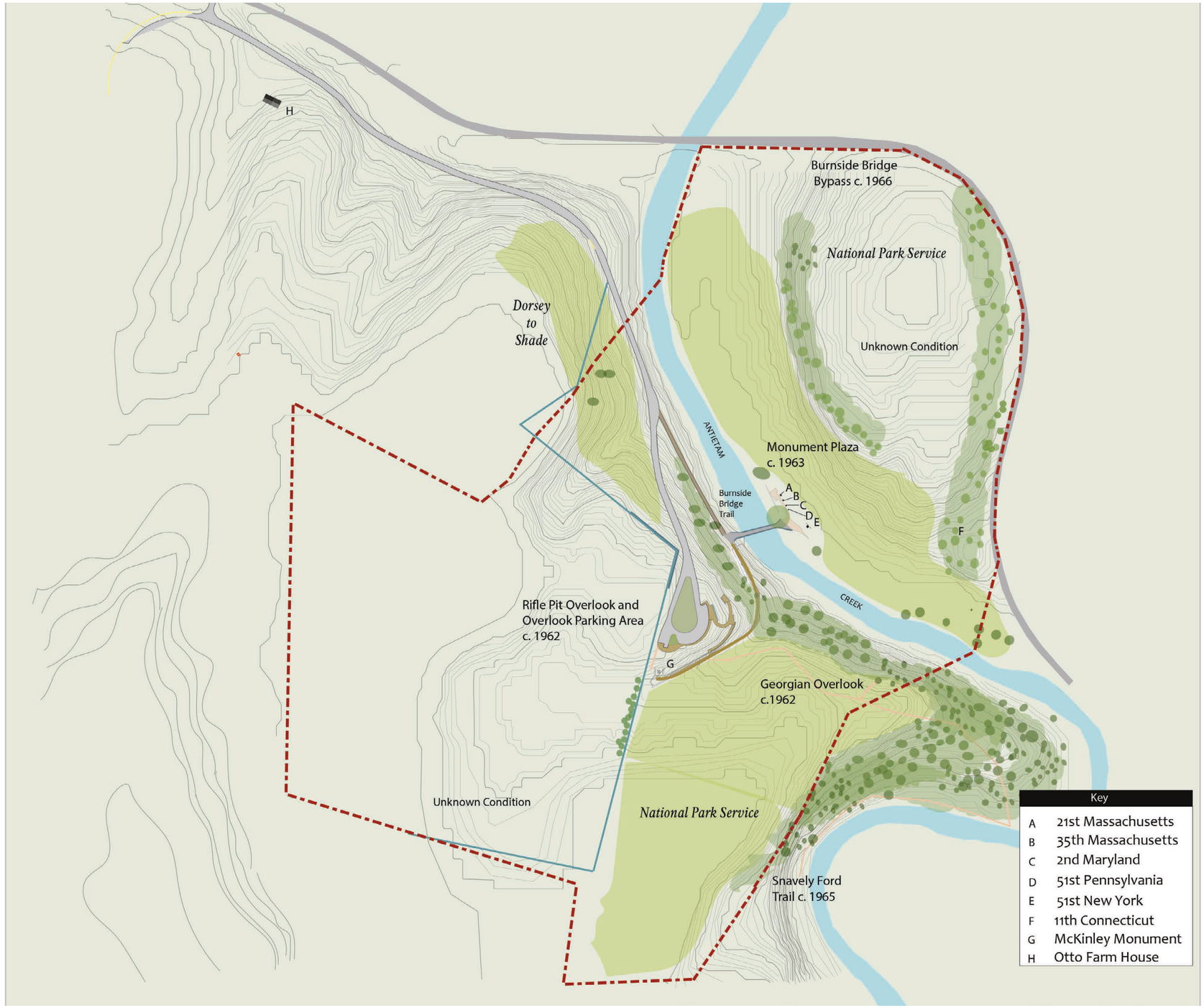
lands to the west of the National Park Service land holdings and the eastern bank of Antietam Creek belonged to various members of the Dorsey family.

Summary

Conforming to the vision of Wirth, the Mission 66 features of the Burnside Bridge area cultural landscape embodied the aspirations of the program. Land acquisitions helped preserve the setting around the historic bridge and allowed for the expansion of visitor infrastructure. The park installed a new series of interpretive overlooks and a new parking lot at the top of the western slope. The Snavely Ford trail moved through the landscape south from this new parking area. The monuments were removed from the Burnside Bridge to a new interpretive Monument plaza. In order to save the Burnside Bridge, the park, working with the Maryland Department of Transportation and Washington County, constructed a new highway, the Burnside Bridge Bypass road, moving through traffic away from the central feature. Throughout the site, tree growth was limited, creating open area vistas.

Figure 24. The Interpretive Prospectus Plan for the Burnside Bridge Area. New interpretation is circled in red.





1961 to 1967

Historic Period Plan
Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Forest, Fencerow Vegetation and Individual Trees
- Field
- Snavely Ford Trail
- Road
- Burnside Bridge
- ■A Monuments and Tablets
- CLR Boundary
- Historic Property Line

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. *Planting Plan Visitor Center Burnside Bridge* (1962).
4. Mission 66 Photographs from the Antietam National Battlefield Archives
5. *Antietam National Battlefield Site: A Developed Area Sign and Wayside Exhibit Plan*

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 8. 1961 to 1967.

POST MISSION 66, 1967 TO 2018

After the initial developments of the Mission 66 period, the National Park Service attention shifted to other areas of the battlefield. Evidence visible on the landscape, park planning documents, and administrative history suggests that changes to the Burnside Bridge area cultural landscape during this period were limited to routine maintenance. This included general cleaning of the site by youth conservation groups.[67] The NPS replaced deteriorated steps along the Snavely Ford path, reinforced existing culverts and replaced signs as a part of a building improvement plan that occurred between 1977 and 1979. In 1977, the Plymer Construction Company reconstructed the stone wall along the north side of the Burnside Bridge.[68] The National Park Service added interpretive panels to the Eastern Bank along the pathway of the Monument Plaza. Additional interpretive panels were added to the Union Advance Trail and to the Overlook parking area.

The trail network, which originally started with the Snavely Ford Trail, expanded with the acquisition of additional lands to the west of the project area. In 2006, Antietam National Battlefield opened the Union Advance Trail on the eastern bank of Antietam Creek. The trail follows the crest of the ridge and continues towards the Burnside Bridge before going north along Antietam Creek.[69] The pathway is defined with a natural dirt path and areas of mowed grass. Similarly, the National Park Service constructed the Final Advance Trail along the western bank and field area of this cultural landscape in 2007. The path radiates from the Overlook parking area and continues along a series of historic field lines.

The Burnside Bridge underwent an extensive rehabilitation from 1988 to 1989. During this time, the structure received an extensive cleaning and repointing and the stone piers were reinforced. The historic roadway was resurfaced with a bituminous material.[70] During the preparation of this report, 2016 – 2017, the National Park Service Historic Preservation Training Center (HPTC) completed a major rehabilitation of the bridge.

Land Acquisitions

After the Mission 66 era, the National Park Service secured the ownership of the land on both of the banks of Antietam Creek. In 1968, the remaining Dorsey family members sold portions of the historic Otto/ Stine farmstead, which formed the western boundary of National Park Service property, to the Shade family. In 1988, the National Park Service entered into a conservation agreement with the Shades.[71] Twila M. Shade granted 180.54 acres to the United States in scenic easements, in exchange for 9.98 acres. This agreement remained in place until 2003 when the National Park Service acquired fee simple ownership of their property.

Summary

Antietam National Battlefield constructed the Final Attack and the Union Advance Trails in the early 2000s. Additional interpretive panels were added to the landscape, specifically at the Union Advance Overlook. During FY 2016- 2017, at the time of the production of this document, the Burnside Bridge underwent a major rehabilitation that improved the structure of the bridge. A detailed account of this can be obtained in the Burnside Bridge Historic Structure Report by Rebecca Cybularz.



1967 to 2018

Historic Period Plan
Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Tree
- Cedar Tree
- Trail System
- Road
- Burnside Bridge
- Monuments and Tablets
- CLR Boundary
- Park Boundary

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 2000, 2008, Orthography 2011.
4. Site Visits March 2016, June 2016, and August 2016, and March 2017

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 9. 1967 to 2018.

UPDATED NATIONAL REGISTER STATUS AND STATEMENT OF SIGNIFICANCE

The Statement of Significance contained within the Burnside Bridge Area Cultural Landscape Inventory (2016) summarizes information in the previously completed National Register Nominations for the entirety of the Antietam National Battlefield. As no separate nomination has been written at this time for the Burnside Bridge area cultural landscape, the following is a potential Statement of Significance. The following Statement of Significance builds on the statement contained in the CLI.

EXISTING NR DOCUMENTATION

Initial listing of Antietam National Battlefield on the National Register of Historic Places occurred in 1966 during the creation of the register. The list automatically added units of the National Park Service identified for historic significance, including Antietam National Battlefield. The Keeper of the Register accepted a formal nomination for the Antietam National Battlefield in 1982. In 2009, the National Park Service submitted an updated nomination that further explored the significance of the battlefield landscape, beyond the events directly associated with the battle. The update context emphasized the agrarian history of the entire landscape and the commemorative efforts that occurred during the decades that followed the battle. It also provided information for additional properties, including the Otto and Sherrick properties, which were not documented in the original nomination. During this completion of this document, a National Register Nomination focused on Mission 66 resources was prepared and documented resources in the project area. The following discussion of the landscape in the context of the National Register is inferred from existing documentation of the battlefield in general and will highlight site-specific matters.

The current National Register Nomination, as identified in the updated 2009 narrative, recognizes three important layers in the overall story of the battlefield: 1. The pre-battle history and agricultural development of the rural community that made up the battlefield; 2. Battle related history including the effect of the Battle of Antietam on the outcome of the Civil war, the impact of the battle on the surrounding local population, and the issuance and the effect of President Lincoln's Emancipation Proclamation, and, 3. Post- battle memorialization, monumentation and efforts at battlefield preservation. Arguably, the Burnside Bridge Area cultural landscape narrative can be contained within these previously identified narratives. The Mission 66 National Register update identified the significance of the resources in the larger Mission 66 development of the park. The original National Register Nomination identifies significance for the battlefield in the areas of conservation, military, politics/ government under

Criterion A. The update to the National Register Nomination did not amend the areas of significance despite an extensive discussion regarding agriculture and commemoration. These other areas of significance strengthen the discussion of the feature under Criterion A. The original 1982 nomination identified a narrow window of September 16-18, 1862 as the period of significance. Despite the discussion of a specific date, the nomination discusses impacts on the landscape that occurred beyond this period during the late nineteenth to the middle of the twentieth century. The 2009 updates to the nomination do not address any changes to the original period of significance.

STATEMENT OF SIGNIFICANCE

Information presented in the Burnside Bridge Area Cultural Landscape Inventory (2016), the Antietam National Battlefield National Register Nomination (1982, updated 2009), the National Park Service Mission 66 Era Resources Study (2015), and the Antietam Mission 66 Resources National Register Additional Documentation (2018) forms the basis of the following Statement of Significance discussion presented on the landscape.

The Burnside Bridge area cultural landscape is significant under National Register Criterion A in the areas of military history, commemoration, and farming. Regarding military history, the cultural landscape is significant as the site served as part of the setting for the Battle of Antietam during the American Civil War. U.S. General Ambrose E. Burnside, for whom the structure's current name is derived, sustained heavy losses at the bridge while leading a corps of 12,000 men across Antietam Creek. When Burnside and his men attempted to cross the bridge on the morning of the battle, September 17, 1862, a group of 500 soldiers from the 2nd and 20th Georgia regiments led under the command of Col. Henry C. Benning repelled the crossing. The fighting focused on the taking of the Burnside Bridge and the traversing of the steep topography by Union forces in an effort to repel the Confederates in retreat towards the town of Sharpsburg.

In the ensuing decades after the battle, veterans groups, state organizations, and the War Department erected memorials and markers to honor the participants and demarcate the lines of the battle, garnering significance under Criterion A in the area of commemoration. These actions included the introduction of monuments and War Department tablets into the cultural landscape between 1887 and 1908. The monuments erected range in size and scale with the content reflecting the values of the associated groups and served as a means to immortalize the battle and its participants.

However, before the Battle of Antietam, the cultural landscape was a prosperous agricultural setting for farmers in the Great Valley of Maryland during a period largely lasting from 1739 to 1862. The alluvial soils of the Antietam Drainage provided a lush gently rolling terrain that allowed the development of agricultural communities. The landscape of the Antietam Drainage represents the convergence of two cultures, the German small scale farming settlement of Pennsylvania to the north and the English style plantations of Virginia and the Chesapeake to the south, resulting in the creation of blended field patterns, architecture, and farming practices. After the Civil War, the landscape once again turned towards farming as the economic driver, continuing to the present. This ushered in a second period of agricultural development that lasted from 1870 to the current day. The cultural landscape derives significance under Criterion A in the field of agriculture as the evidence of the evolution of the American agricultural practices continue on the landscape today.

The Burnside Bridge cultural landscape derives significance under Criterion C concerning landscape architecture. The landscape serves as an example of the Mission 66 Era planning efforts that the National Park Service initiated between 1955 and 1966 in order to better accommodate visitors. The planning coincided with the anniversary of the National Park Service's first half century and led to the development of road networks, interpretation, and visitor facilities within the park system. The execution of park plans ensured preservation of the Burnside Bridge through the limitation and eventual rerouting of traffic, the development of interpretive paths, the construction of new visitor tour stops and pathways, and the selective placement of monuments in the landscape.

The Burnside Bridge cultural landscape should be considered significant under Criterion D, due to the potential that the site could reveal further information regarding the Battle of Antietam. A review of archaeological reports from the park reveals that the area has largely not received attention from formal survey work.

The overall period of significance for the Burnside Bridge cultural landscape is 1738 to 1966. Under Criterion A the period of significance reflects the establishment of the first farms in the area of the cultural landscape and the first evidence of formal cultivation. Arguably, under Criterion A the period of significance could extend to the present day as the site is still used as a space to reflect and commemorate those that fell during the Civil War. Under Criterion C, the landscape design changes occurred on the landscape from a period of 1955 to 1966. The date of 1966 represents the height of development for the overall cultural landscape. For the purpose of this document, the date of 1966 concludes the period of significance.

CRITERION A

Military History:

Under Criterion A, the Burnside Bridge cultural landscape derives its principal significance in the area of military history for its general association with the Civil War and specifically the role of the site during the Battle of Antietam. On September 17, 1862, the Confederate Army of Northern Virginia and the Union Army of the Potomac met in the largest battle of the Maryland Campaign. Situated along the right flank of the Confederate line, the Burnside Bridge area served as the setting for major periods of fighting during the Battle of Antietam. US General McClellan ordered General Ambrose Burnside to the left flank of the Union line, meanwhile Confederate General Lee ordered General Robert Tombs along Antietam Creek to prevent an enemy crossing. Bisected by the Antietam Creek, the cultural landscape straddles a valley defined by a low hill on the eastern bank and high steep ridge on the western bank. This setting provided the Confederate forces with a tactical advantage on the western bank and the ability, despite being greatly outnumbered, to repeal multiple Union advances over Burnside Bridge. For nearly three hours, the small Confederate forces were able to defend from entrenched positions along the hillside. The third and final attempt to take the bridge proved to be successful with the Confederates dislodged from their vantages and pushed back towards the town of Sharpsburg, Maryland. Union interments occurred along stone walls and in fields. The Confederate dead lay in the fields. Both armies sequestered the use of houses, barns and other agricultural outbuildings for military hospitals. The scars of the battle damaged the Burnside Bridge.

Commemoration

The Burnside Bridge area cultural landscape also derives significance under Criterion A for commemoration that occurred after the Battle of Antietam. The efforts of veterans groups, state organizations, and the War Department changed the nature of the landscape from a rural setting to a commemorative space. The efforts of these groups reflect the larger national movement that occurred in the decades following the battle. The first monument erected in this portion of the battlefield was the 51st Pennsylvania, by the survivors of that regiment in 1887. Additional memorialization efforts included the 11th Connecticut Volunteer Regiment Monument in 1894, the 21st Massachusetts Volunteer Infantry Monument in 1898, the 35th Massachusetts Volunteer Infantry Monument in 1898, the 2nd Maryland Infantry Monument in 1900, the McKinley Monument in 1903, and the 51st New York Volunteer Infantry Monument in 1908. Coinciding with the formal memorialization efforts, the War Department erected a series of

cast iron tablets that noted areas of significance, events, and battle lines on the landscape.

Agriculture

The Burnside Bridge area cultural landscape is classified as significant under Criterion A, due to the site's development as an agricultural landscape. The existing National Register Nomination recognizes the role that agriculture played in the development of the landscape. Prior to the Civil War, small farms defined the landscape and were the primary economic force in the region. The German settlers that immigrated to the Great Valley constructed farms that were similar to their previous farmsteads in Pennsylvania. Condensed farming clusters, typically consisting of a bank barn with additional agricultural outbuildings surrounding the feature, dotted the landscape. They subscribed to a mixed agricultural cultivation method, relying on mixed grains and livestock as a means of both food and income. However, the landscape continued to be rural in character in the aftermath of the battle up to the present day. The nature of the farms changed, becoming more industrial and mechanized as technology evolved. Antietam National Battlefield utilizes the rural character of the landscape as a means to interpret the setting of the battle to the present day visitor.

CRITERION C

Landscape Architecture

While the Burnside Bridge area cultural landscape is an example of a vernacular landscape, defined by farmsteads and the largely informal placement of monuments, the site is considered significant under Criterion C due to the formal design efforts that coincided with the Mission 66 period. The improvements made during this period represents the vision of bringing the visitor into the landscape, as exemplified by the new parking lot, roadways, trails, and interpretive waysides that emerged from the program.

Coinciding with the National Park Service's first half century, National Park Service Director Wirth envisioned a way to modernize the park system into a modern agency. The onset of World War II had reduced funding for the National Park Service and as a result, facilities were not able to meet the needs of a higher visitor capacity in the Post- War years. Wirth's solution was the Mission 66 initiative, with the expressed goal of creating visitor facilities including tour roads, parking areas, interpretive stops, and visitors centers. The program merged the talents of interpreters, architects, and landscape architects to create collaborative plans. The Eastern Office Division of Design and Construction developed a scheme for the Burnside Bridge cultural landscape. This included the development of a bypass road to divert traffic away from the Burnside Bridge, the creation of

the Overlook parking area, and the planning of a site-wide interpretive plan to recount the story of the Battle of Antietam. These additions to the landscape changed how visitors experienced the site.

ANALYSIS AND EVALUATION

This portion of the Cultural Landscape Report will review the character of the Burnside Bridge area cultural landscape within the study boundary. The review will include a brief discussion of the CLR boundary, an analysis of the overall integrity of the site, and a review of the contributing features found within the CLR study boundary.

The Burnside Bridge Area Cultural Landscape Inventory (2016) and the Antietam National Battlefield National Register Nomination (1982; with a subsequent update in 2009) evaluated the historic character and integrity of the Burnside Bridge area cultural landscape. These documents, specifically the CLI, capture the entirety of the landscape. For the purpose of this document, the study area boundary of the Cultural Landscape Report is more limited than the boundary of the Cultural Landscape Inventory.

The study area of the CLR encompasses the pasture field that sits below the eastern hill up to the Burnside Bridge Bypass and the slopes of the western ridge. On the western bank, the area of study continues up the hillside to the Overlook parking lot and encompasses all pasture land that is visible from the edge of the sidewalk to the west and south. The review of lands on the western bank does not extend north of the current accessible parking spaces that lead to the old Burnside Bridge road. Contributing features beyond this study area were not evaluated.

UPDATED ANALYSIS AND EVALUATION

The Burnside Bridge Area Cultural Landscape Inventory (2016) and the Antietam National Battlefield National Register Nomination (1982; updated in 2009) evaluated the historic character and integrity of the site. The previous National Register Nominations focused primarily on the broader context of the battlefield. However, the CLI contains a more detailed analysis of the cultural landscape. For a more in depth discussion of the contributing features, please refer to the cultural landscape inventory. No significant archaeological surveys were conducted within the boundaries of the CLR study area, therefore, archaeological data was not used in the evaluation of integrity.

Evaluation of Integrity

In regards to cultural resources, the issue of integrity refers to the ability of a resource to evoke the period of significance. In order to establish integrity, the National Register acknowledges a set of criteria or concepts to aid in the evaluation. There are Seven Aspects of Integrity: location, setting, design, workmanship, materials, feeling, and association. A definition of each concept follows in the discussion below. A site does not have to retain all seven aspects in order to have integrity; however, most must be present. In 2016, most Cultural Resource Management (CRM) practitioners agree that location is the most critical aspect of integrity, unless the mobility or movement of a feature determines significance. The evaluation that follows is based on a review of features from the period of significance, identified as a period lasting from 1738 to 1966, and features relevant to the themes identified under Criteria A and C.

Location

In regards to integrity, location references the original spot that a cultural landscape was constructed or the place in which the events that lend significance to the cultural landscape occurred. The Burnside Bridge area cultural landscape remains in its original location of evolution from the defined periods of significance. Elements of the cultural landscape, *i.e.*, historic monuments formerly placed on the Burnside Bridge, have moved according to plans of the National Park Service and the needs of former landowners, but these changes have achieved significance in their own right due to their association with Mission 66 design changes.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of location.

Setting

In its current state, the Burnside Bridge area cultural landscape consists of agricultural fields augmented with forested spaces with Antietam Creek flowing through the middle of this landscape. This composition retains the land use that were present during the time of the Battle of Antietam. However, while this is a similar land use, it is not a similar appearance of the cultural landscape to its appearance during the battle or later Mission 66 era. Photographs and accounts from the time of the battle indicate that the forested portions of the landscape was significantly less than the present day. The limited forest cover was characterized by little to no understory with areas of pasture existing under the mature tree canopy. The open nature of the site provided vantages between each of the fields. Presently, the cultural landscape of the Burnside Bridge area has a diminished quality of setting due to the encroachment of vegetation in the landscape.

Understory growth and the natural succession of fields into red cedar have altered the setting of the landscape; however, the landscape character can still be surmised from existing features.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of setting, but is diminished due to the growth of woody vegetation.

Design

The Burnside Bridge area cultural landscape is a vernacular landscape, organically evolving through the manipulations of the landscape by centuries of farming, the ravages of the Battle of Antietam, and the individual memorialization efforts by veterans groups and the demarcation of the land by the War Department. Changes on the landscape occurred in a piecemeal manner without a larger overarching plan to guide growth of the landscape. While the monuments and the war tablets were "designed" elements with intended locations for placements, they lacked formally designed placements, with the exception of the McKinley Monument and possibly the 11th Connecticut. The Burnside Bridge is the other exception as John Weaver, amateur bridge builder, designed and constructed the structure for this location.

The transfer of authority to the National Park Service introduced formal designed features into the landscape. These elements were a part of the larger design plans for the park that emerged as a part of the Mission 66 initiative. The Mission 66 plan introduced expanded interpretive elements in the landscape in form of overlooks, a monuments plaza, trails, and the parking lot. Limited changes have occurred to these features since their construction and they remain highly legible on the landscape.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of design.

Materials

Discussion of materials, in regards to evaluation, references natural and physically constructed or manipulated materials that were present in the landscape during the period of significance. The monuments, war tablets, reconstructed fences, and the Mission 66 features, including the stone walls, retain, largely their original historic materials. Circulation patterns throughout the landscape have evolved from dirt paths to pathways paved in multiple layers of materials. The historic Burnside Bridge Road, while once dirt and later macadamized, is now used as a trail on the eastern and western bank of Antietam Creek. The Burnside Bridge

retains the historic stones from its original construction as well as materials introduced during later reconstruction and stabilization efforts.

In regards to vegetative material, the landscape is composed largely of native species that were likely similar to the plant composition during the time of the battle. The park has discussed the removal of most invasive species. Native cedars have encroached into the landscape as historic fields have shifted from cultivated crops and hayfields to native forest cover. Some of the historic plant varieties, corn and hay, grow in the historic fields, but new species such as soy beans are also growing in these areas.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of materials.

Workmanship

The continued evidence on the cultural landscape of constructed features by skilled craftsmen and designers expresses the facet of integrity known as workmanship. The monuments and war tablets are excellent examples of late nineteenth early twentieth century memorialization and commemoration. The Mission 66 features of the landscape remain in their original form, but are starting to deteriorate. The stone retaining walls leading from the Overlook parking area to the McKinley walkway display minor structural issues including fractures, freeze thaw stresses, and loss of mortar. While the Burnside Bridge retains its historic materials and composition, it has been the focus of several restoration/ rebuilding campaigns.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of workmanship, although there is degradation in the Mission 66 wall features.

Feeling

The facet of feeling, in the discussion of integrity, refers to a site's ability to impart to the visitor a sense of transport or immersion to a particular time in the location's past. Does the visitor feel as if they are experiencing a view similar to historic character? Can they imagine the historical events that occurred in this location? While the encroachment of vegetation has altered the landscape, a visitor certainly feels as if they are in the Mission 66 landscape and can arguably ascertain an immersion into a landscape concurrent with the Civil War.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of feeling.

Association

The direct connection or link of a cultural landscape to a historic event or individual embodies the concept of association. The Burnside Bridge Area cultural landscape is directly associated to the Battle of Antietam as the cultural landscape was the location of a critical defense position during the battle. The cultural landscape retains the topography and character from the time of the battle. In the aftermath of the battle, the landscape served as the setting for commemoration the post-Civil War era. Further development occurred during the Mission 66 era.

Evaluation: The Burnside Bridge area cultural landscape retains integrity of association.

EVALUATION OF LANDSCAPE CHARACTERISTICS SUMMARY

When evaluating the integrity of a cultural landscape, one must review the landscape characteristics in order to assign an overall evaluation. Landscape characteristics are the combination of the tangible and intangible assets that interact in such a manner as to form distinctive relationships and values and collectively help convey the significance of a cultural landscape. Any combination of features have the potential to be found in a particular landscape. These include, but are not limited to spatial organization, land use, circulation, vegetation, small-scale features, buildings and structures, views and vistas, among others. The following evaluation will briefly describe the state and the relationships of the landscape in its current configuration. A set of more in depth tables that will depict status of each individual feature are in the pages that follow. The tables contains the name of each feature along with the pertinent FMSS data. The table continues with an individual evaluation and character assessment of each presented asset, such as the McKinley Walkway, the monuments, the Burnside Bridge and other identified features at the site. Additional guidance is provided to inform the reader of items that will be discussed in the treatment plan.

The Burnside Bridge area cultural landscape, and the component landscape features, retains a high level of integrity from the period of significance (1738-1966). This high level of integrity is due to the retention of historic features, in either original placements or moved locations. The visual composition of the site has changed. Trees and vegetative undergrowth has spread on the site. Features such as the Mission 66 parking area and interpretive overlooks were added towards the end of the period of significance.

CULTURAL LANDSCAPES AND NATIONAL PARK SERVICE FACILITY MANAGEMENT

Cultural landscape reports, inventories, and various other preservation plans serve as critical tools for the preservation and management of cultural landscapes. To aid in the oversight of the implementation of a preservation plan, the National Park Service Facility Management Software System (FMSS) leads to more effective facility maintenance by providing facility management access to cultural landscape data including asset condition, historical significance, and preservation treatment information. Project information and tracking cost associated with improvements can also be collected. The information contained in the program facilitates a dialogue regarding both operational and funding priorities- allowing the park to more effectively prioritize requests. However, the effectiveness of this tool is limited to the timely and accurate updating of asset records. This report identifies existing FMSS data for the cultural landscape features and organizes the information in a table. This table identifies existing FMSS assigned features and those features that are missing from the record. It is the recommendation of this report that a more complete FMSS record for the area be completed as the preferred treatment alternative is implemented. The FMSS is presented in the following hierarchy: locations (geographic features, *e.g.,* Monument Plaza), land uses (Agriculture) , and assets (features, *e.g.*, monuments). It is recommended that an overarching FMSS asset for the cultural landscape be created in order to monitor future changes to the site.

The Burnside Bridge area's cultural landscape is monitored through a collection of FMSS numbers. The documentation of assets varies from park to park and reflects the identified needs of each park. This is to say that there is variation in the methods of recording in the system. Based on the information contained within FMSS, a portion of the maintained landscape is incorporated within the entered Burnside Bridge Area Historic Landscape (Mowable- 43609). However, this term fails to fully consider the entirety of the land uses or the range of assets at the site. Modifications to the definition or the expansion of FMSS numbers will be necessary. The FMSS numbers for the Burnside Bridge area cultural landscape are:

- The **Burnside Bridge Area Historic Landscape** (Mowable- 43609)
- **Burnside Bridge Road** (48566),
- **Snavely Ford Trail** (43615),
- **Union Advance Trail** (111961),
- **Final Attack Trail** (11957),
- **Burnside Bridge Pedestrian Path** (52161), and
- The **Burnside Bridge** (51737).

The majority of the landscape features contained within the cultural landscape are not incorporated into the FMSS system and need to be entered into the database.

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Spatial Organization							
Mission 66 parking area and Overlook	NA	NA	Location Records Needed	Asset record needed	Designed as a part of Mission 66 efforts to modernize the site. This includes the existing tear shaped parking lot, associated sidewalks and walkways, retaining walls, interpretation, and rifle pit overlook. The feature represents the collaboration of interpretation and landscape architecture designers in the National Park Service. The feature was designed in 1961 and 1962, with construction occurring between 1962 to 1964. No major renovations or manipulations have occurred to this feature. Minor repairs including the repaving of the surface have occurred. Good Condition. **Contributes to Criterion A and C**		Should be added as an asset; record needs to reflect the components which make up the spatial organization. Feature should be manipulated in order to better accommodate visitors and adhere to the policy of ABA as much as possible
Monuments Plaza	NA	NA	Location Records Needed	Asset record needed	Designed as a part of the Mission 66 efforts at the site from the relocation of the 51st PA Volunteer Infantry, 11th CT Volunteer Infantry, 21st MA Volunteer Infantry, 35th MA Volunteer Infantry monuments. The addition of two benches and concrete pad further defined the space. The composition has been maintained with minor changes to the individual features. Good Condition. **Contributes to Criterion A and C**		Should be added as an asset
Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Land Use							
Agriculture	NA	NA	Location Records Needed	43609 Burnside Bridge Area Historic Landscape (Mowable)	Prior to the Civil War and after the Battle of Antietam, farmers used the cultural landscape for agricultural production. SUPs from the park maintain the feeling of the agricultural landscape from the time of the battle. **Contributes to Criterion A and D**		SUP need to be changed to reflect natural concerns that are developing on the site including a rotating pasture cutting method.
Memorialization	NA	NA	Location Records Needed	Asset record needed	After the Civil War memorialization efforts by veterans groups and state organization were first observed on the landscape in 1887. The memorials honor the fallen dead of the battle of Antietam and were a part of the larger conciliation movement that occurred in the aftermath of the United States. The CLR includes seven individual memorials within the study area boundary. **Contributes to Criterion A and D**		
Interpretation	NA	NA	Location Records Needed	Asset record needed	The first efforts to interpret the landscape occurred under the guidance of the War Department in the 1890s. War tablets depicting military action and battle lines were erected on the landscape to inform the visitor of the events of the Battle of Antietam. The second major phase of interpretation coincides with the National Park Services Mission 66 program and led to the creation of an overlook spaces, trail network, and monument plaza. Changes to interpretation have occurred within the established parameters of the Mission 66 design. **Contributes to Criterion A and C**		An expansion of the existing interpretive efforts is needed to better inform and engage the visitor. The Long Range Interpretive plan should reflect the recommendations of the of the CLR in order to best maintain the assets
Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Review	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Constructed Water Feature							
McKinley Walkway Drainag	182737; McKinley Monument Walway Gutter 48251 GUT-00-H/ 048251	NA	Location Records Needed	Asset record needed	The earliest drainage feature associated with the walkway is present in photographs in 1903. Correspondence indicates that the earliest feature was intentionally filled in and allowed to wash out the existing road. Portions of the current drainage feature date from the 1930s. Fair condition. **Contributes to Criterion A**		CLI/LCS and FMSS asset needs to be created for the feature. An evaluation should reveal whether additional reconfigurations are needed in order to create a more efficent device
USGS Streamflow Gauge D	182739; NA	NA	Location Records Needed	Asset record needed	Undetermined		

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Circulation							
Burnside Bridge Road	176957; BURNRD/ 045085		Location Records Needed	48566 Burnside Bridge Road (paved)	Constructed in 1965 as a means to preserve the historic Burnside Bridge, the alignment of the Burnside Bridge Road has remained the same since the implementation of the of the feature. The feature represents the awareness of NPS officials of the growing importance of the automobile in visitor experience. While initially constructed by the National Park Service, the feature was transferred to Washington County after the completion of the project. Good Condition. **Contributes to Criterion C**		
Historic Burnside Bridge Road	176957; BU RDTRC/ 045075		Location Records Needed	Asset record needed	Constructed in the 1800s, the historic road served as a route of transportation for farmers to and from markets to points south and east of Sharpsburg. The feature was maintained by Washington County before transferring to the National Park Service. In 1964 vehicles were prohibited from crossing the Burnside Bridge and effectively stopped using portions of the historic road. The road is currently utilized as part of a circulation path to the bridge on the west bank of Antietam Creek and exists as a road trace on the east bank. Fair Condition. **Contributes to Criterion A and D**		The feature, in its present configuration, is hard to traverse and should be defined with a new materials that is more suitable to accommodate pedestrians
Snavely Ford Trail	176975; NA		Location Records Needed	43615 Snavely Ford Trail	The pathway was constructed in the Mission 66 era. The path interprets the crossing of the Rodman and his forces at the Snavely Ford. Fair Condition. **Contributes to Criterion C**		Maintenance including the resurfacing of the trail and the removal of trees will be necessary in order to ensure future visitor utilization
Union Advance Trail	176981; NA		Location Records Needed	111961 Union Advance Trail	Completed in 2006, the trail interprets the position of the Union army during the fighting in the vicinity of the Burnside Bridge.		Continued maintenance is needed in order to maintain the feature
Final Attack Trail	176979; NA		Location Records Needed	11957 Final Attack Trail	Completed in 2007, the trail utilizes the course of the historic Otto farm lane to guide visitors through the landscape. The path interprets the final assult of Union forces on the Confederate position in Sharpsburg.		Continued maintenance is needed in order to maintain the feature
Overlook Access road	176973; NA	NA	Location Records Needed	Asset record needed	Completed in 1963/ 1964, the road provides access to the Overlook parking area. The feature reflects the shift in National Park Service policy to embrace the automobile as a means to move visitors into the landscape to experience a site. The feature has maintained the same foot print during its existence. Good Condition. **Contributes under Criterion C**		

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Circulation							
Overlook parking area	176971; NA		Location Records Needed	Asset record needed	Completed in 1964, the parking area was designed by the National Park Service in 1961/1962. The feature includes a central island surrounded by parking in tear drop form. A defining walkway serves as a means to move through the landscape along the trail network, and to points of interest including the Burnside Bridge and the Rifle pit overlook. The feature represents the efforts of designers during the Mission 66 era to include a more inclusive design that provided access to key features in the park narrative. An increase in visitorship facilitated the need to accomodate a greater number of vehicles. The feature has remained in the configuration as designed without modifications. Good Condition. **Contributes to Criterion A and C**		
McKinley Walkway	176961; NA		Location Records Needed	52161 Burnside Bridge Pedestrian Path	The feature began as a farm lane, changed to a road by 1903, and was converted to the current footprint in 1931. Resurfacing of the feature has periodically occurred. The feature is from the era of commemoration efforts on the battlefield. Fair Condition. **Contributes to Criterion A**		As the feature does not conform to ABA, efforts must be made to better accommodate visitors to the site through the installation of handrails
Georgian Overlook	176977; NA		Location Records Needed	Asset record needed	The Georgian Overlook is located along the Snavely Ford Trail and is a Mission 66 era feature that coincides with a Civil War vantage. Fair Condition. **Contributes to Criterion A and C**		The encroachment of vegetation around the feature facilitates the need to take action to restore the intention of the feature on the site.
Monument Plaza	176963; NA		Location Records Needed	Asset record needed	Mission 66 efforts created the feature to accommodate the monuments that originally were located on the corners of the Burnside Bridge. The original interpretive panels were removed from the plaza. Good Condition. **Contributes to Criterion A and C**		
Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Vegetation							
Witness Tree	182747; NA	NA	Location Records Needed	Asset record needed	The Witness Tree is depicted in period photographs from the time of the Battle of Antietam and so named for "witnessing" the fighting. The feature has remained in its original location. Good Condition. **Contributes to Criterion A**		FMSS Asset needs to be created for the feature. Preservation concerns facilitate the need to investigate efforts to preserve the specimen through the propogation of seeds
Agricultural Fields	182749; NA	NA	Location Records Needed	Asset record needed	Agricultural practices have occurred in the landscape since the mid to late 1700s. A series of SUP agreements have maintained cultivated fields, giving visitors the appearance of the landscape during the time of the battle. Good Condition. **Contributes to Criterion A and D**		FMSS Asset needs to be created for the feature. Modifications to the SUP are needed in order to better accommodate the natural systems on the site.

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Buildings and Structures							
Burnside Bridge	176987; Burnside Bridge 070/000028	NA	Location Records Needed	51737 Burnside Bridge (historic)	Originally constructed between 1833 and 1836, the Burnside Bridge was an important transportation feature and critical crossing point during the Battle of Antietam. The birdge consists of three arches spanning Antietam Creek and historically served as a crossing point for a regional transportation network. During the period after the Civil War, the bridge housed four monuments that commemorated the efforts in taking the bridge during the battle. The structural integrity of the feature facilitated the need for preservation efforts in the 1960s including the diverting of traffic away from the feature, conversion to a pedestrian only pathway, and the construction of the Burnside Bridge Bypass. The feature remains in its original configuration and retains original materials despite multiple restoration to the feature. Currently undergoing restoration. **Contributes to Criterion A**		
USGS Stream Gauge Station	177007; NA	NA	Location Records Needed	Asset record needed	Undetermined		
51st PA Volunteer Infantry	176989; 51st Pennsylvania Volunteer Infantry Monument 060/045043	NA	Location Records Needed	Asset record needed	Originally erected in the cultural landscape in 1887 at the corner of the Burnside Bridge. The feature was moved during the execution of the Mission 66 design on the landscape to the Monument Plaza. **Contributes to Criterion A and C**		
11th CT Volunteer Infantry	176991; 11th CT Volunteer Infantry Monument 060C/045041	NA	Location Records Needed	Asset record needed	Originally added to the landscape in 1894, the monument is associated with commemorative efforts. Good Condition. **Contributes to Criterion A**		The encroachment of vegetation around the location must be addressed in order to re-establish the relationship of the monument to the bridge.
21st MA Volunteer Infantry	176993; 21st MA Volunteer Infantry Monument 101/045047	NA	Location Records Needed	Asset record needed	Originally erected in the cultural landscape in 1898 at the corner of the Burnside Bridge. The feature was moved during the execution of the Mission 66 design on the landscape to the Monument Plaza. Good Condition. **Contributes to Criterion A and C**		
35th MA Volunteer Infantry	176995; 35th MA Volunteer Infantry Monument 058/045046	NA	Location Records Needed	Asset record needed	Originally erected in the cultural landscape in 1898 at the corner of the Burnside Bridge. The feature was moved during the execution of the Mission 66 design on the landscape to the Monument Plaza. Good Condition. **Contributes to Criterion A and C**		

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Record	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Buildings and Structures							
2nd MD Infantry Marker	176997; 2nd MD Infantry Monument 102/ 045045	NA	Location Records Needed	Asset record needed	Originally erected in the cultural landscape in 1900 at the corner of the Burnside Bridge. The feature was moved during the execution of the Mission 66 design on the landscape to the Monument Plaza. Good Condition. **Contributes to Criterion A and C**		
McKinley Monument	177003; McKinley, William Monument 056/ 045049	NA	Location Records Needed	Asset record needed	Installed in 1903 to honor William McKinley; Good Condition. **Contributes to Criterion A**		
51st NY Volunteer Infantry	177005; 51st NY Volunteer Infantry Monument 061/ 008140	NA	Location Records Needed	Asset record needed	Originally erected in the cultural landscape in 1908. The feature retains the same configuration and location as during the period of initial installation. Good Condition. **Contributes to Criterion A**		
Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Review	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Views and Vistas							
Georgian Overlook	182743; NA	NA	Location Records Needed	Asset record needed	The Georgian Overlook was installed during the Mission 66 period and provided the visitor with a vantage north to the Burnside Bridge and illustrated the effect of topography on the course of the battle. Fair Condition. **Contributes to Criterion A and C**		The encroachment of vegetation on the site facilitates the need to remove selected plant material in order to restore the historic vantage.
Rifle Pit Overlook	182741; NA	NA	Location Records Needed	Asset record needed	Installed during 1963-1964 as a part of the Mission 66 development of the site, the feature remains in its original configuration above the historic rifle pits. Good Condition.**Contributes to Criterion A, C, and D**		The encroachment of vegetation facilitates the need for selective removal in order to restore the vantage to the Burnside Bridge. As the feature is not ABA accessible, changes to the configuration of the feature will be necessary in order to improve the visitor experience.
Union Advance Overlook	182745; NA	NA	Location Records Needed	Asset record needed	The location was a historic vantage of a set of contemporary photographs taken during the time of the Battle of Antietam. Fair Condition. **Contributes to Criterion A**		Observations by NCRO staff have led to the conclusion that selective vegetation removal will be necessary in order restore the vantage similar to the historic photograph by Gardner

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Review	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Small Scale Features							
Monument Plaza Benches	NA	NA	Location Records Needed	Asset record needed	Installed during the creation of the Monument Plaza during the Mission 66 era, the features serve to define the space. They remain in the original location of installation. Good Condition. **Contributes to Criterion A and C**		CLI/LCS and FMSS asset needs to be created for the feature. The feature has the potential to be restored to revive the interpretive efforts of the site.
Burnside Bridge stone wall	177009; Burside Bridge Road Retaining Wall W-17-H/048248	NA	Location Records Needed	Asset record needed	The stone wall was present on the site during the time of the Battle of Antietam. Good Condition **Contributes to Criterion A**		
Burnside Bridge Road stone retaining wall	177011; Burnside Bridge WallW-23-H/048253	NA	Location Records Needed	Asset record needed	Reconstructed in 1977, the feature was originally at the site during the Battle of Antietam. Good Condition. **Contributes to Criterion A**		
Mission 66 stone walls on overlook	177013; NA	NA	Location Records Needed	Asset record needed	Installed on the landscape between 1963- 1964, the walls are a part of the Mission 66 landscape design for the Overlook area. The feature defines the walk way spaces on the landscape. Fair Condition. **Contributes to Criterion C**		CLI/LCS and FMSS asset needs to be created for the feature.
McKinley monument stone walls	177015; McKinley Monument Wall W-20-H/048250	NA	Location Records Needed	Asset record needed	The stone wall was installed as a part of the commemoration efforts at the site. Good Condition. **Contributes to Criterion A**		
McKinley monument iron fencing	177017; McKinley Monument Wall W-21-H/092420	NA	Location Records Needed	Asset record needed	The iron fence was installed as a part of the commemoration efforts at the site. Good Condition. **Contributes to Criterion A**		
Confederate Tablet No. 366	177019; Confederate Tablet No. 366- 48033 TAB -366/ 048033	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
Union Tablet No. 056	177023; Union Tablet No. 056-47895 TAB-56/ 047895	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Review	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Small Scale Features							
Union Tablet No. 057	177025; Union Tablet No. 057-47896 TAB-57/ 047896	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
Union Tablet No. 058	177027; Union Tablet No. 058-47897 TAB-58/ 047897	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
Union Tablet No. 068	177029; Union Tablet No. 068 47907 TAB-68/ 047907	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
Union Tablet No. 069	177031; Union Tablet No. 069 47940 TAB-69/047908	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
Union Tablet No. 099	177033; Union Tablet No. 099 47940 TAB-99/047940	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
Union Tablet No. 123	177035; Union Tablet No. 123 47966 TAB-123/ 047966	NA	Location Records Needed	Asset record needed	Erected between 1896 and 1898, the tablets were a part of the War Departments efforts to highlight the events of the Battle of Antietam through the demarcation of significant events and battle lines. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.

Feature Name	CLI/ LCS ID	FMSS ASSET TYPE	FMSS SITE/ LOCATION RECORD	FMSS Asset Review	Historic Character and Evaluation	Deficiency (Historic)	Additional Guidance
Small Scale Features							
McKinley monument directional marker	177035; McKinley Monument Direction Marker 45048 056A/045048	NA	Location Records Needed	Asset record needed	Installed in 1903, the marker directs visitors to the McKinley monument. It is associated with the commemorative period. Good Condition. **Contributes to Criterion A**		FMSS asset needs to be created for the feature.
"As the Georgians saw it" marker at the Georgian Overlook	177047; NA	NA	Location Records Needed	Asset record needed	Installed during the Mission 66 period, the sign is associated with an overlook that interpreted the landscape associated with the Burnside Bridge. Fair Condition. **Contributes to Criterion A and C**		CLI/LCS and FMSS asset needs to be created for the feature. The feature is in need of general maintenance

ENDNOTES

1. Paula S. Reed, Tillers of the Soil: A History of Agriculture in Mid-Maryland (Landover, Maryland: Catoctin Center for Regional Studies, 2011), 6-11.

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3. Paula S. Reed, Tillers of the Soil: A History of Agriculture in Mid-Maryland (Landover, Maryland: Catoctin Center for Regional Studies, 2011), 5-6.

4. Paula S. Reed, " National Register Nomination for Historic Places: Antietam National Battlefield Additional Documentation" (Prepared for the United States Department of the Interior, National Park Service, 23 September 2008, Certified by the Keeper of the Register, 13 February 2009), 10.

5. Paula S. Reed, " National Register Nomination for Historic Places: Antietam National Battlefield Additional Documentation" (Prepared for the United States Department of the Interior, National Park Service, 23 September 2008, Certified by the Keeper of the Register, 13 February 2009), 5-10.

6. Oehrlein & Associates Architects, Otto Farmhouse Historic Structures Report (Prepared for the United States Department of the Interior, National Park Service, 1993), 10-14.

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8. Perry Carpenter Wheelock, Farming Along the Chesapeake and Ohio Canal, 1828-1971 (Prepared for the United States Department of the Interior, National Park Service, 2007), 19.

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10. Helen Ashe Hays, The Antietam and Its Bridges: The Annals of an Historic Stream (New York: The Knickerbocker Press, 1910), 50.

11. Paula S. Reed, Tillers of the Soil: A History of Agriculture in Mid-Maryland (Landover, Maryland: Catoctin Center for Regional Studies, 2011), 47-49.

12. Gary Scott, " National Register Nomination for Historic Places: Antietam National Battlefield" (Prepared for the United States Department of the Interior, National Park Service, 20 August 1981, Certified by the Keeper of the Register, 10 February 1982), 44.

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15. Paula S. Reed, " National Register Nomination for Historic Places: Antietam National Battlefield Additional Documentation" (Prepared for the United States Department of the Interior, National Park Service, 23 September 2008, Certified by the Keeper of the Register, 13 February 2009), 23-24.

16. Keven M. Walker, Antietam Farmsteads: A Guide to the Battlefield Landscape (Sharpsburg, Maryland: WMIA, 2010), 96-97.

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18. Alexander Gardner, "Antietam, Maryland. Burnside Bridge. [Photograph from a tree?]"(Washington D.C.: Library of Congress, 1862), stereograph.

19. Alexander Gardner, "Burnside Bridge, across Antietam Creek, Maryland" (Washington D.C.: Library of Congress, 1862), stereograph.

20. Alexander Gardner, "Antietam, Maryland. Graves of Federal soldiers at Burnside Bridge" (Washington D.C.: Library of Congress, 1862), stereograph.

21. Alexander Gardner, "Antietam, Maryland. Burnside's bridge" (Washington D.C.: Library of Congress, 1862), wet collodion negative.

22. Timothy B. Smith, The Golden Age of Battlefield Preservation: The Decade of the 1890s and the Establishment of America's First Five Military Parks (Knoxville, TN: The University of Tennessee Press, 2008), 96; 107; 110.

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    The collection as a whole includes other images of Antietam Battlefield captured by the brothers Thomas Dwight and Walter S. Biscoe during their tour of the landscape. The images provide valuable insight to the character of the landscape in 1884.

28. "Land Conveyance of John, Mary, and Daniel Otto to Jacob Stine" (Deed, Washington County, Maryland Land Records Liber 126, Folio 741, 1870).

29. "U.S. Agricultural Census, Washington County" (Census Record, 1870).

30. “Land Conveyance of the Rohrbach Family to Henry Mumma” (Deed, Washington County, Maryland Land Records Liber 16, Folio 526, 1863).

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46. “Land Conveyance to Dorsey” (Deed, Washington County, Maryland Land Records Liber 127, Folio 394, 1908).

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61. Antietam National Battlefield Site: A Developed Area Sign and Wayside Exhibit Plan (Internal document of the National Park Service)

62. Charles W. Snell and Sharon A. Brown, Antietam National Battlefield and National Cemetery: An Administrative History (Washington D.C.: The Government Printing Office, 1986), 352-353.

63. Antietam National Battlefield Site: A Developed Area Sign and Wayside Exhibit Plan (Internal document of the National Park Service), 74. A review of the interpretive prospectus leads to more questions than answers as the present

form and location of the feature differs from the proposed form of the overlook. Additional research is needed.

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Treatment

Section cover: Overlook parking area retaining walls, looking northwest. (NCR CLP 2016)

TREATMENT

Despite the encroachment of woody vegetation into once open areas, the Burnside Bridge area cultural landscape retains a high level of integrity. The site is a vernacular landscape consisting of agricultural, commemorative, and interpretive character defining landscape features. The three qualities, that of a working landscape, an engaging educational experience, and one of quiet reflection seemingly could be in direct conflict, yet at this site, they effortlessly meld in such a manner as to evoke an image of the time of the battle. However harmoniously these land use values merge, the site is not without its deficiencies and matters that should be addressed. First, the unique situation of the topography of the site has rendered portions of the landscape inaccessible, presenting challenges to the most able of visitor and effectively creating barriers for all others. Second, the encroachment of woody understory vegetation presents visual barriers that are impairing or destroying critical relationships of specific features in the cultural landscape, including interpretive overlooks. Finally, interpretation should be expanded to create a successful "intellectual provocation" for the visitor. This chapter will establish a framework to address the identified problems to improve the visitor experience and resource management.

As defined by the National Park Service's A Guide to Cultural Landscape Reports, a landscape treatment plan, "articulates a preservation strategy for long-term management of cultural landscapes based on its significance, existing conditions, and use." This landscape treatment plan establishes a course of action for preserving the cultural resources and historic landscape characteristics, while accommodating current park needs. The treatment alternatives as presented in this section of the document serve as guidelines for park management. Drawings in this section are schematic and not considered final plans or drawings. The drawings serve as a guide for discussion and provide a vision or a goal as to how the landscape can look at a future date through the implementation of the treatment recommendation.

This chapter will first discuss the policies and practices that will affect actions planned for the site. The review identifies applicable National Park Service policy and practice, including applicable federal legislation, and pertinent state of Maryland legislation concerning reforestation and water conservation. Within this portion of the review, relevant issues and resources identified in the Foundation Document for Antietam National Battlefield (2013) are addressed to further guide

the conversation of proposals. The narrative then selects a treatment philosophy prior to a review of initial problems of the landscape and general solutions. Finally, the chapter concludes with the presentation of the recommended treatment plan.

TREATMENT FRAMEWORK

FEDERAL

Chesapeake Bay Watershed

Antietam Creek, a tributary of the Potomac River, is a part of the larger Chesapeake Bay watershed. The importance of the watershed network was first recognized in 1983. In 2014, representatives of federal agencies, state governments, signed the Chesapeake Bay Watershed Agreement and local partners located within the watershed. The Department of the Interior was included in the signatories of this agreement. The intent or vision of the agreement, "envision[s] an environmentally and economically sustainable Chesapeake Bay watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders." The agreement establishes goals of the signatories. Specifically related to the project are the following goals:

- Vital Habitats Goal: Restore, enhance and protect a network of land and water habitats to support fish and wildlife and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.
- Water Quality Goal: Reduce pollutants to achieve the water quality necessary to support the aquatic living resources of the Bay and its tributaries and protect human health.
- Toxic Contaminants Goal: Ensure that the Bay and its rivers are free of effects of toxic contaminants on living resources and human health.
- Healthy Watersheds Goal: Sustain state-identified healthy waters and watersheds, recognized for their high quality and/ or high ecological value.
- Climate Resiliency Goal: Increase the resiliency of the Chesapeake Bay watershed, including its living resources, habitats, public infrastructure and communities, to withstand adverse impacts from the changing environmental and climate conditions.
- Land Conservation Goal: Conserve landscapes treasured by citizens in order to maintain water quality and habitat; sustain working forests, farms and maritime communities; and conserve lands of cultural, indigenous and community value.

The goals of the program have led to the development of specific state programs in Maryland, which will be discussed further in the document. National Park Service

When determining the most appropriate course of action for the Burnside Bridge area cultural landscape, a hierarchy of legislation dictates potential courses of

action. National Park Service legislation and policy receive top priority followed by state legislation and related programs. The extensive list of National Park Service legislation and policy can be found in the Management Policy 2006 compendium.

National Park Service Regulations and Policy

Regarding the National Park Service, the two most important pieces of legislation guiding activities are the National Park Service Organic Act of 1916 and the National Park Service General Authorities Act of 1970. The Organic Act states that there is a dual purpose to the National Park Service, "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

To ensure there is no impairment of natural or cultural resources, this treatment plan is subject to the requirements of both the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Historic Preservation Act (NHPA). Proper review must be initiated prior to the start of the implementation of any proposal.

The synthesis of the mission in relation to cultural landscapes is defined by the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes*, which are housed within the regulatory hierarchy of the National Park Service. Management of the Burnside Bridge area cultural landscape is defined by *36 CFR Part 2: Resource Protection, Public Use and Recreation (Preservation of Natural, Cultural and Archeological Resources)*. Further guidance is provided through the interpretation of the National Park Service Management Policies (2006) and Director's Order #28

Director's Order #28 Cultural Resources Management provides a set of general management standards that guide the treatment of cultural landscapes. Of significance to the Burnside Bridge area cultural landscape are the following:

- Uses addressing programmatic needs or park facilities within a cultural landscape, such as visitor centers, parking, interpretive structures, housing, administrative facilities, maintenance yards, and storage areas, are carefully considered in the context of the significance of the landscape
- Contemporary facilities do not adversely impact the landscape's physical and visual character. New facilities are compatible with the historic character and material of the landscape
- Contemporary structures to facilitate access, such as ramps, railings, signs, and curb cuts, are designed and located to minimize adverse impacts on the character and features of a cultural landscape.

- All treatment and use decisions reflect consideration of effects on both the natural and built features of a cultural landscape and the dynamics inherent in natural processes and continued use.

  Director's Order 28 also provides additional guidance for cultural landscapes in regards to circulation systems.
- Plans for the treatment of structural features that are part of historically significant circulation systems are developed in consultation with a historical architect
- Historic circulation systems are rehabilitated to accommodate health and safety codes in ways that minimize impact on character- defining features

Accessibility

As a Federal agency, the National Park Service must make all practical efforts to comply with the Architectural Barriers Act of 1968, the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and follow the United States Access Board Guidelines for Outdoor Developed Areas Guidelines (2013). Wherever applicable the National Park Service is to provide inclusive utilization of the resource; separate facilities or experiences should be considered an alternative only when a lack of viable options exists.

Natural Resource Protection

Regarding the treatment of natural resources, the National Park Service is subjected to the following acts of legislation: National Park Service Organic Act, National Parks Omnibus Management Act of 1998, the Clean Air Act, the Clean Water Act, the Endangered Species Act of 1973, the National Environmental Policy Act, and the Wilderness Act. The guiding ethos of this body of legislation strives to, "understand, maintain, restore, and protect the inherent integrity of the natural resources, processes, systems, and values of the parks while providing meaningful and appropriate opportunities to enjoy them." However, this legislation is confined to the boundaries of the park, despite the possibilities from external sources, resulting in the need to engage in regional planning efforts to conserve and protect larger ecosystems beyond the control of the National Park Service. Part of the efforts to protect ecosystems require the active engage of the park to remove invasive and exotic species. However, as presented in the following treatment alternatives, the active removal of native species is limited.

Prior to considering an action presented in the alternative, the battlefield must consider whether such action will impair:

- Natural habitats, natural abundance, and natural distributions of native species and natural processes
- Rare, threatened, and endangered plant or animal species or their critical habitats

- Scientific study, interpretation, environmental education, appreciation of wildlife, or other public benefits
- Opportunities to restore depressed populations of native species
- Breeding or spawning grounds of native species

Concerning watersheds and streams, National Park Service Policy requires a holistic approach to resource planning. The wording of the National Park Service places a preference to imparting little or no impact on natural resources as the preferred option to any treatment. Limiting to activities in watershed and riparian buffers is the preferred method of behavior with alternatives considered prior to engagement.

Archeological Resources

National Park Service policy regarding archeological resources states that they should remain in situ unless a significant justification arises. Protective measures must be incorporated into the design of a project. A review of the administrative history and the official reports produced for the site reveals that the Burnside Bridge area cultural landscape has not received extensive archaeological attention. In developing the treatment alternatives for the site, the staff of NCRO tried to present solutions that would have minimal ground disturbance. However, to resolve certain issues some ground disturbance will be a reality.

As this is a Department of the Interior site, The American Antiquities Act of 1906 (AAA) requires that artifacts found on DOI lands will become part of the collections acquisitions of the park. The park will accession these items into the collections under the guidance of qualified individuals. The Archeological and Historic Preservation Act of 1974 (AHPA) requires the preservation of any artifacts or remains that are uncovered as a result of any federal construction project. Again, the uncertainty of what could be uncovered brings about the discussion of Native American remains. The park should prepare for the potential to trigger a NAGRPA situation, as the possibility of uncovering Native American remains exists. The Archaeological Resources Protection Act of 1979 (ARPA) mandates the protection of archaeological sites that are located during the course of a project. It will be necessary for an open dialogue to exists between construction crews, the park resources manager, the park superintendent and individuals at NCRO, including the Regional Archaeologist, during the course of the project.

Park Planning

In 2013, the National Park Service developed the Foundation Document for Antietam National Battlefield. The purpose of this document is to inform future planning efforts by defining the purpose of the battlefield, as well as its

fundamental and important resources and values that are vital to the mission of the Antietam National Battlefield. When initiating any planning projects within the park, these fundamental and important resources and values must be taken into consideration. Fundamental resources and values specific to the Burnside Bridge area cultural landscape are: The 1862 Battlefield, The Commemorative Landscape, and The Solemnity of the Site. The planning effort recognizes the integrity of the overall cultural landscape to the time of the battle, of which primary significance is derived, the commemorative activities that occurred in the decades following the battle, and the opportunity for meaningful reflection in the reverent spaces of the study boundary. The condition for these fundamental resources or values are all identified as 'Good' or a high value of integrity. Modifications to the study area must be mindful of the potential to impact these identified values. The exercise continues by identifying threats to these fundamental resources. Specifically, threats in the form of visitation, passive recreation, budgetary constraints, and environmental changes have the potential to impact the integrity of the cultural landscape. The development of partnerships and a redevelopment of interpretation provides an opportunity to mitigate the identified threats to the cultural landscape.

In addition, the document recognizes the value of the Witness Tree, Archaeological Sites, and the Antietam Creek Watershed as important resources to consider during the planning and development process. The document acknowledges that natural elements, such as the Witness Tree, have a lifespan. As a result, efforts should be made to prepare for the inevitable. Additional concerns with the resource includes soil compaction, due to visitation, which exacerbates the health of the specimen. Regarding archeological artifacts, the park as a whole has the potential to reveal resources related to both agricultural practices and the Civil War. A review of archeological reports indicates that limited survey work has occurred in the boundaries of the project area, specifically along the Western Bank of Antietam Creek. Therefore, archeological monitoring should occur whenever projects are initiated within the project area.

Discussed in greater detail, the Foundation Document recognizes the value of the Antietam Creek Watershed to the park. The waterway is identified on the State of Maryland's 2012 Clean Water Act 303 list, which indicates that the resources is an impaired waterway with recorded levels of phosphorus, chloride, and sulfate that exceed the ideal conditions for the waterway. The waterway supports a diverse aquatic population, recreational activities, often at odds with the Solemnity of the Site, with the potential to expand the total acreage of riparian buffers within the park boundaries. Current trends indicate that additional strains on the resource will include pressures for recreation, pollution, invasive aquatic flora and fauna,

and the frequency of climate related flooding events along the stream corridor leading to increased erosion and siltation. In order to address these concerns, the park has the opportunity to improve the condition of the stream by forming partnerships between government and nongovernment organizations, conducting public outreach, engaging in low impact stream bank stabilization measures, reducing the amount of impervious surfaces in the park adjacent to the watershed, and implementing measures approved in the Chesapeake Bay Watershed Agreement.

For each fundamental and important resource and value discussed in this section, the Foundation Document includes a chart describing the resource or value, their current state and the trends, and potential threats and opportunities. Please reference the Foundation Document for additional information.

ADDITIONAL CONSIDERATION

Native Grasslands and Song Bird Population

Beginning in 2014, the National Capital Region Inventory & Monitoring Network (NCRN I&M) initiated a program to analyze the impacts of land management on native grassland song bird populations. The study reviewed the impacts of grass cutting pattern initiatives at NCR battlefields, including Manassas National Battlefield Park and Monocacy National Battlefield, on the native songbird populations in regards to breeding, mortality, and habitat. Observations during this period noted that at Manassas National Battlefield Park, the cutting of the fields in July led to fewer breeding pairs, higher mortality rates, and fewer foraging opportunities. The study revealed that the cultivation of crops did not equate to comparable habitat, with only a few species, the Horned Larks and the Vesper Sparrows, reacting positively to current practices. The study proposed the modification of mowing to occur in August in order to reduce the negative impacts on the bird species.

Chesapeake Bay Watershed Initiatives

100-foot Stream Buffer

The State of Maryland has enacted legislation and programs that will impact proposals presented for the Burnside Bridge area cultural landscape. In 1988, the Maryland Legislation passed the Chesapeake Bay Critical Area Law (CBCA) as a part of the movement that spurred the Clean Water Act and a reaction to the movement that first recognized the essential impact of the Chesapeake Bay on the state. Modifications to the act were enacted in 1993 that expanded stream buffer requirements. The initial stream buffer requirements were 50 feet measured from the edge of the bank. The CBCA, while initially exempting federally owned lands, requires the retention of a 100-foot riparian buffer for all waters within then Chesapeake Bay Watershed and is worded to include all lands in the boundaries of the state. Subsequent discussion of the legislation in the 2008 Bay Smart Critical Area Program alludes to a more ambiguous application of the legislation, including possible federal compliance to these standards. This critical mass of 100 feet riparian buffer is identified as the space required to encourage natural habitat for fauna, a healthy environment for the growth of native flora species, provide microclimate development, and prevent the absorption of pH and other chemicals into the state's waterways. The state has developed a three part restoration method for the stream banks. This will be discussed within the preferred treatment alternative. Review of 2014 NCR water monitoring results finds the levels of pH in an acceptable range for Antietam Creek.

Stream ReLeaf Program

The Stream ReLeaf Program began in 1996 as a part of the Riparian Forest Buffer Initiative. The program encourages the retention of existing riparian buffers and the further expansion of buffers in the state of Maryland. It is part of the overarching agreement joining the efforts of Pennsylvania and Virginia to protect the Chesapeake Bay. As Antietam Creek, flows directly into the Potomac River, itself a major tributary for the Chesapeake Bay, the impacts to Antietam Creek from this project will need to be taken into account.

Working in tandem with the Stream ReLeaf Program, are the Erosion and Sediment Control Program and the Shore Erosion Control Program. The Erosion and Sediment Control program establishes the criteria for maintaining sites during construction. Shore erosion control is solely dealing with issues of shoreline degradation and encourages riparian buffers.

In 1991, the state of Maryland enacted the Forest Conservation Act to retain the present amount of tree cover in the state. The act establishes a minimum amount of forest that must be retained on a site in the case of grading or development. Provides for oversight from local commission regarding conservation, in this case Washington County Conservation Ordinance. For major grading projects, which includes the reconfiguration of existing trails, a minimum of twenty five percent of the existing tree canopy must be maintained on the site, with the participants encouraged to expand the percentage of canopy coverage.

TREATMENT PHILOSOPHY

In creating a treatment philosophy for the Burnside Bridge area cultural landscape, the enabling legislation of the park states, "Antietam National Battlefield is to preserve, protect, restore, and interpret for the benefit of the public the resources associated with the Battle of Antietam and its legacy," emphasizing battle related features. An analysis of the history of the cultural landscape reveals that the Burnside Bridge area reached the zenith or apex of development of its form during the mid-1960s with the introduction of substantial interpretive elements to the area associated with National Park Service Director Conrad Wirth's Mission 66 vision. The changes included the addition of landscape features such as strategically designed and placed overlooks, the movement of monuments, and the introduction of controlled automobile access into the site.

The landscape in its present configuration still reflects the changes that occurred in the 1960s. The site, in regards to constructed elements, remains as a time capsule from the Mission 66 era. No major building projects have occurred in the landscape since the Mission 66 period. Trails and paths constructed after the Mission 66 period are demarcated in natural materials. The site remains an interpretive tour stop and continues to give visitors the opportunity to pause and reflect on the story of the site. The continuation of agricultural helps evoke a sense of the landscape appearance at the time of the battle. However, the unchecked growth of woody vegetation at the site has diminished the historic character of the Mission 66 landscape as well as the character of the Civil War and Commemorative period landscapes.

The goals of the following landscape treatment philosophy will highlight the Mission 66 Era landscape, while restoring critical landscape relationships from the Civil War and Commemorative eras. This treatment philosophy will allow for the restoration of degraded elements, the preservation of existing features, and the intentional rehabilitation of selected features. The treatment alternatives proposed are mindful of the aforementioned park identified fundamental and important resources and values. The selection of a respectful, yet flexible treatment of the landscape will allow for modifications that will better serve the public and allow proactive measures to be instituted with selected features.

PRIMARY TREATMENT

The recommended guiding treatment for the Burnside Bridge area cultural landscape is rehabilitation. The Secretary of the Interior's Standards for the Treatment of Historic Properties defines rehabilitation as, "the act or process of making possible a compatible use of a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." Rehabilitation offers a greater flexibility in treatment options while accommodating aspects of preservation, restoration, and reconstruction. The following guidelines form the basis for of rehabilitation:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials, features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterizes a property will be preserved.
6. Deteriorated historical features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The treatment principal of rehabilitation will allow the park to maintain the historic character of the landscape, plan and retain existing historic features, repair damaged features with material in-kind, and make changes to the landscape that can better accommodate the needs of park staff and visitors to insure relevance and vitality of the resource. Rehabilitation provides the park with the flexibility to react and to accommodate the ever-changing needs of the resources and the public. Rehabilitation will allow for the installation of new features such as interpretive signs and ABA facilities that will provide a more inclusive design for visitors. Similarly, rehabilitation will provide the leniency to remove non-historic materials, such as vegetative matter, and to modify deficiencies in existing features. However, the duality of rehabilitation can allow the integration of restoration practices within a management plan including the reestablishment of historic or important field patterns. While rehabilitation will be used as the guiding treatment philosophy of the site, the practices of preservation, restoration, and rehabilitation will be applied according to the needs and goals for a feature on a case-by-case basis where deemed appropriate.

TREATMENT DATE

In constructing a treatment plan for a cultural landscape, it is important to establish a treatment date, which serves as a point in which to evaluate recommendations and proposed treatments. Landscape features introduced into the cultural landscape after this date are viewed as more expendable to modification if necessary. Features introduced prior to the selected date have a priority for preservation activity. The treatment date represents the pinnacle of development for the site or is the era of greatest significance for the cultural landscape. Based on a review of the history of the site, the treatment date selected for this cultural landscape is 1966.

- The selection of a treatment date of 1966 for the Burnside Bridge area cultural landscape corresponds with the final year of the period of significance of the site under National Register Criterion C. The conclusion of activities associated with the Mission 66 period design changes that altered the manner in which the landscape was experienced inform this date.
- The Mission 66 period is the most extant of the landscape periods represented at the site. The design for the Mission 66 plan remains intact, whereas only portions of earlier periods, such as the Early National farming era, remain evident on the landscape.
- Uncertainty exists of the exact arrangement of the land prior to the Civil War due to the limited written accounts and surviving graphic images describing the site. Photographic evidence from the era after the Civil War captured a limited view of the landscape, focusing primarily on the Burnside Bridge features immediately adjacent. While questions remain of the exact configuration of the landscape, a selection of 1966 encompasses the earlier elements.

- In general, the landscape as a whole retains a high level of integrity from this period as few significant modifications occurred after the conclusion of the program. The Mission 66 plan remains legible on the landscape.
- Changes made to the landscape after this date, if not deemed compatible with the character of the site and not historic by their own merits can be removed. However, the selection of this date accommodates the interpretation of once extant features on the landscape and incorporates features of earlier identified periods of significance including Early National Period farming, the Civil War, and the Commemorative Period under Criterion A and C.

MANAGEMENT ISSUES AND GENERAL RECOMMENDATIONS

The NCRO CLP has identified the following overarching areas of concern that have informed the treatment guidelines. By addressing the identified issues, park staff at Antietam National Battlefield will be engaging in proactive measures to improve the overall visitor experience, preserve the character of the battlefield, and ensure the proper care of cultural resources. Observations of the site, as well as informed discussion with Antietam National Battlefield staff, developed three predominant themes or categories of problems that are to be addressed in the treatment alternatives: vegetation, accessibility, and interpretation.

VEGETATION

Management Issue: During the Battle of Antietam, the environs surrounding the Burnside Bridge consisted of cultivated fields and pasture interspersed with minimal stands of trees along the hillsides adjacent to Antietam Creek. Alexander Gardner's historic photographs from the era depict a more open landscape. Gardner's images capture little to no understory and few to no saplings. The lack of consistently cultivated field areas, the encroachment of the forest canopy, and allowing fields to revert to succession forest has caused the area of cultivated lands to decrease.

General Recommendation: Invasive plants should continue to be removed and the existing cultivated field patterns should be maintained. Selected locations on the site should have woody or forest vegetation removed in order to restore the historic open character of the landscape.

ACCESSIBILITY

Management Issue: The topography of the Burnside Bridge area cultural landscape played a crucial role in the shaping the overall site narrative, specifically that of the Battle of Antietam. The unique topography of the site presented a difficult challenge during the Battle of Antietam, as the two armies attempted to defend and traverse the site. Confederate forces used the steep topography on the west bank of Antietam Creek to provide a defensive advantage to repel a much larger Union advance. The geography of the site has not changed since the Civil War era. The problem of traversing the site has persisted to the present day. Efforts to make the site accessible for visitors was first attempted during the era of War Department authority at the battlefield with the conversion of a farm lane to first an automobile route and then a pedestrian pathway to and from the McKinley Monument and Burnside Bridge. The National Park Service installed later circulation to the site. The most significant being the Mission 66 pathway system associated with the Overlook Parking area. However, these pathways were

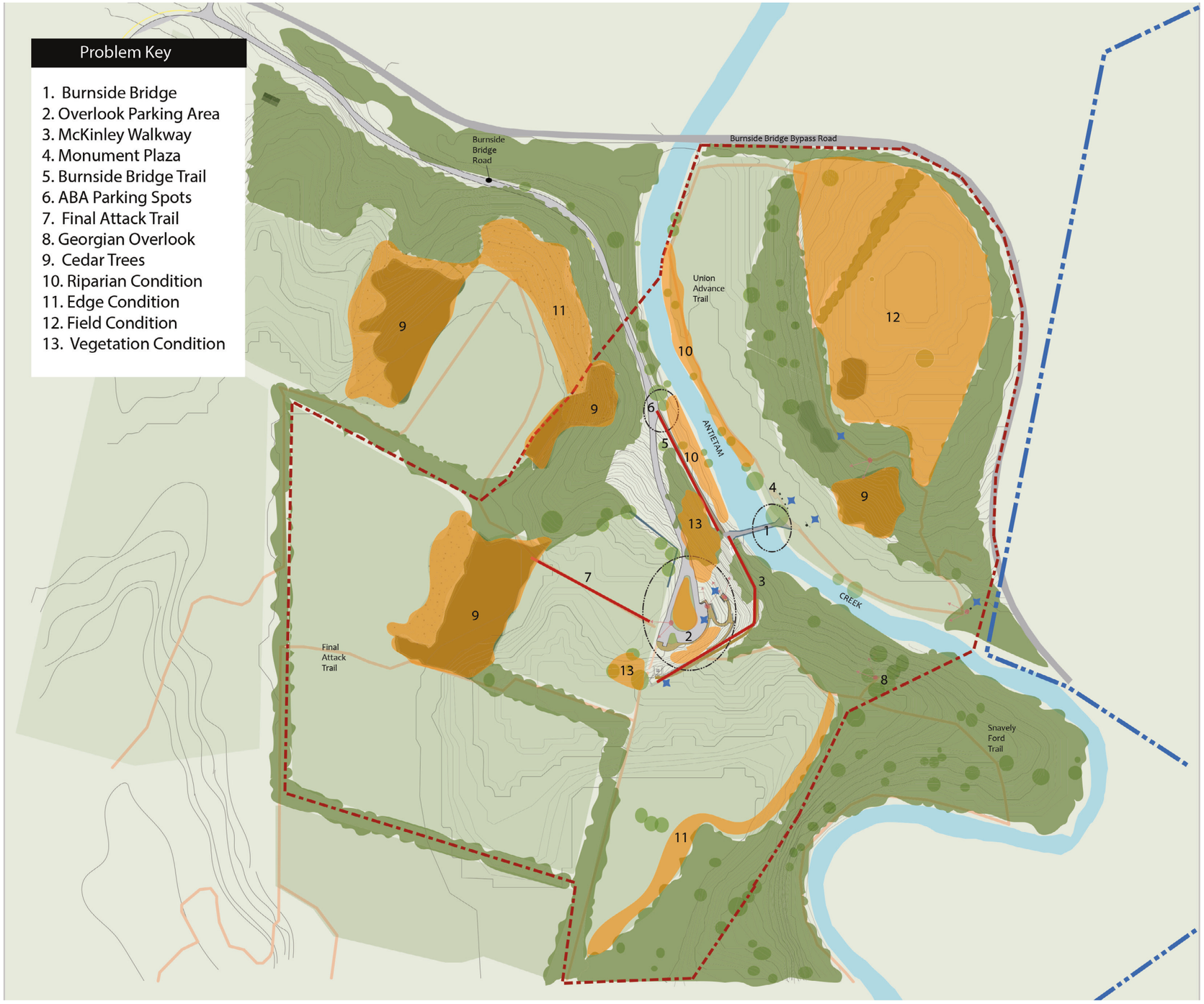
constructed prior to the adoption of the American Barriers Act and therefore do not provide compliant circulation at the site.

General Recommendation: Wherever possible, the park should provide universal access. Efforts should be made to make existing pathways as compliant as possible without damaging the integrity of the historic resource. The introduction of any new circulation paths will follow the ABA standards for trails and ramps.

INTERPRETATION

Management Issue: The 2013 Foundation Document emphasizes the need to, "build upon the identified interpretive themes," in order to create a comprehensive interpretive plan for the park. The existing stationary interpretation consists of War Department tablets, as well as interpretive panels from the Mission 66 era and a few modern insertions. Mobile or transitory interpretation occurs in the form of private guided tours or the self-guided automobile tour. Driving tour stops in the cultural landscape include location number 9 on the tour and portions of stop number 10. Prominent features from the Commemorative Period landscape era are not included in the interpretation. Additional issues with interpretation at the site include missing historic waysides and interpretive panels, the poor demarcation of trails, uncertainty of locations of related interpretive narratives, and the overall lack of an inclusive interpretative plan for visitors with disabilities.

General Recommendation: Existing interpretation should be evaluated in order to ensure that interpretive presentation of the site conforms to the current NPS design and content standards developed by Harpers Ferry Interpretive Center. The evaluation should review the content of the interpretive panels and ensure that the material conforms to the interpretive narratives identified in the park's Foundation Document.



Identified Problems

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Woody Undergrowth
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Park Boundary
- Study Boundary
- Accessibility
- View/ Vista
- Interpretation
- Walkway
- Vegetation

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 1943, 1952, 2000, 2008, Orthography 2011.
4. Proposed planting plan 1961
5. Site Visits March 2016, June 2016, and August 2016, and March 2017

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 10. Identified problems.

CHARACTER AREAS

Regarding cultural landscapes, the term character area is used to describe unique areas with a study boundary and are defined by physical qualities and cultural resources. Nine distinct character areas were identified within the project area and described below.

The **Eastern Pasture** is the lowland cold season grass hayfield on the eastern bank of Antietam Creek below the hillslope. The character area contains the portion of the Union Advance Trail that runs parallel and adjacent to Antietam Creek.

Eastern Woods references the hillslope above the eastern bank of Antietam Creek. It rises above the Eastern Pasture and is distinctively covered in trees. This character area contains the 11th Connecticut Monument, the northern most portion of the Union Advance Trail, and the Union Advance Overlook.

The **Monument Plaza** is located north of the Burnside Bridge on the eastern bank of Antietam Creek. The plaza was created as a part of the Mission 66 Era improvements and is defined by a concrete path, four monuments formerly located on the Burnside Bridge, and two concrete benches.

The **Burnside Bridge** character area contains the historic Burnside Bridge and associated structural elements. The character area is the only physical link between the two banks on either side of Antietam Creek. The bridge is located in the center of the area of study.

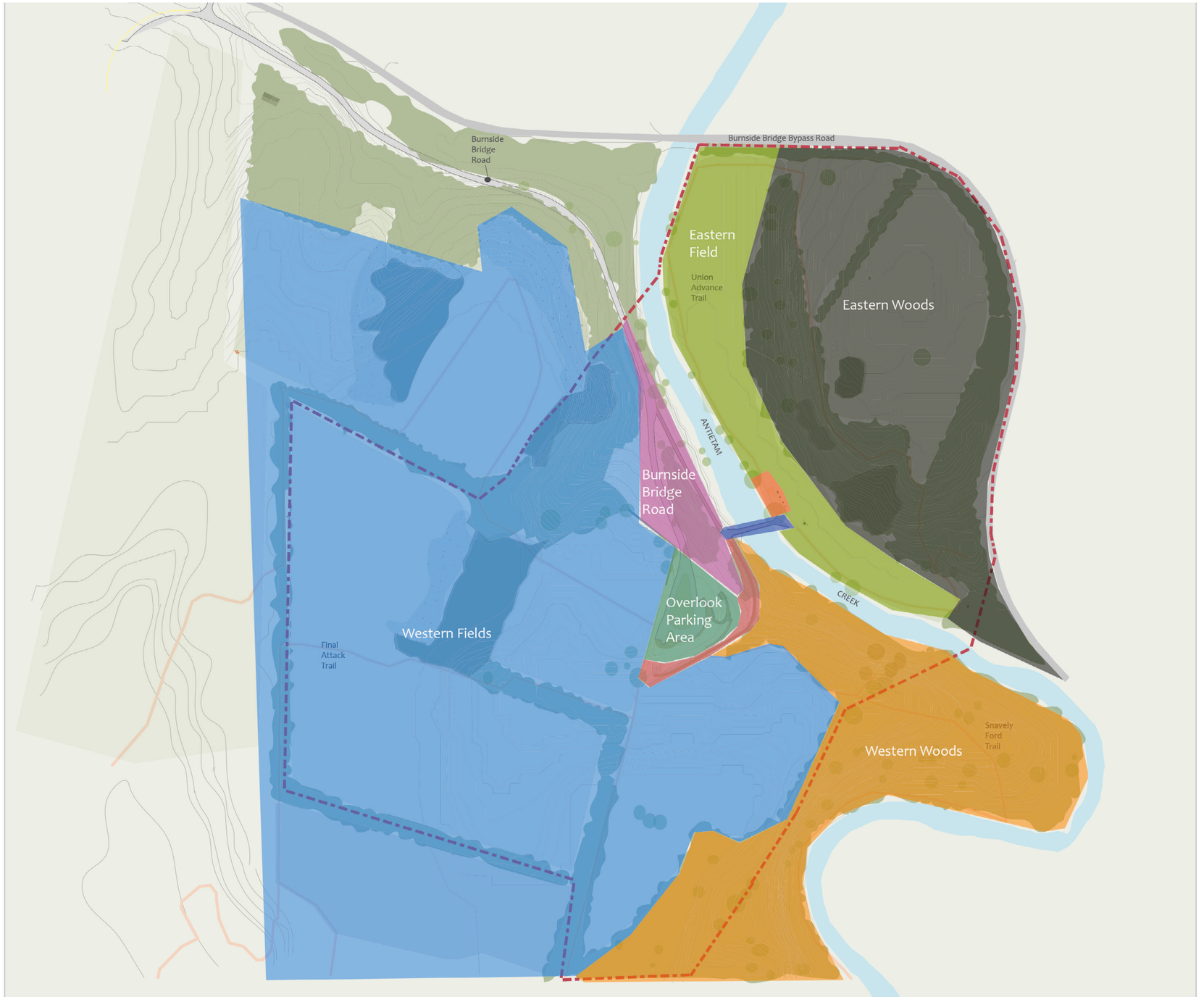
The **McKinley Walkway** character area is defined by the course of the circulation feature starting at the McKinley Monument and terminating at the Burnside Bridge. The walkway conforms to the topography of the site. This character area consists of the walkway, associated drainage features, McKinley Monument, and retaining walls.

Constructed as a part of the Mission 66 project, the **Overlook Parking Area** consists of the parking lot, central median, the sidewalk and pathway system, and the Rifle Pit Overlook interpretive stop. The character area is located atop the ridge of the western bank.

The **Burnside Bridge Road** character area consists of the historic Burnside Bridge Road, as well as the new spur of the Burnside Bridge Road constructed as a part of the Mission 66 projects. This character area includes the hillslope between the two circulation paths. The character area is located to the west of the Burnside Bridge.

The **Western Fields** consists of the collection of pastures and agricultural fields located to the south and west of the Overlook Parking Area. The fields consist of a mixture of warm season and cold season grasses and fields devoted to agricultural crops. The character of this area is open and unobstructed.

The **Western Woods** is defined as the wooded slopes of the western ridge on the portion of land immediately adjacent to Antietam Creek. The wooded state of the character area is different to the open character of the Western Fields.



Character Areas

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Trail
- Road
- Burnside Bridge
- Park Boundary
- Study Boundary
- Eastern Woods
- Eastern Field
- Monument Plaza
- Burnside Bridge
- Overlook Parking Area
- McKinley Walkway
- Brunside Bridge Road
- Western Fields
- Western Woods

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 1943, 1952, 2000, 2008, Orthography 2011.
4. Proposed planting plan 1961
5. Site Visits March 2016, June 2016, and August 2016, and March 2017

Drawn By
Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1"= 200'

Drawing 11. Character areas.

PREFERRED LANDSCAPE TREATMENT

This portion of the document will present the preferred landscape treatment for the Burnside Bridge area cultural landscape study zone. The preferred landscape treatment was developed on July 29, 2016 after a joint CLR workshop between Antietam National Battlefield and NCR staff. At the workshop a set of four treatment alternatives were presented and discussed. The best elements of the four treatment alternatives were combined to form the preferred landscape treatment. The original proposals and designs are included in this document as Appendix A. Elements of these four proposals were included in this document as Appendices B and C. The preferred landscape treatment addresses the overarching problem topics, moving beyond the general actions, and explores site-specific solutions. The recommendations follow the Secretary of the Interiors Standards for Rehabilitation for Cultural Landscapes.

A follow up Accessibility Workshop was conducted on March 29, 2017 with Monta Baskerville, the NCR Accessibility Coordinator, to determine suitable alternatives and solutions to matters regarding visitor access, ABA, and visitor experience. Additional guidance is provided in Appendices D and E.

PREFERRED LANDSCAPE TREATMENT- REHABILITATION OF THE CULTURAL LANDSCAPE

General Concept: The preferred landscape treatment recommends maintaining the existing character of the Burnside Bridge area cultural landscape. However, the landscape treatment actively acknowledges that modifications or rehabilitation of existing natural and cultural resources will be necessary to improve visitor experience and resource maintenance. The proposal builds upon existing maintenance practices in place. The goal of the preferred landscape treatment is to return the landscape to a composition similar to the 1960s.

The Overlook Parking area will be rehabilitated. As the topography of the Burnside Bridge area cultural landscape presents a challenge to accessibility, modifications should be made in order to better accommodate visitors. A new interpretive overlook will provide an alternative to the inaccessible Rifle Pit Overlook. Additional changes will include the introduction of a new interpretation panels, a complete redesign of the interpretive kiosk at the southern portion of the parking lot, and the introduction of shade trees.

The preferred landscape treatment incorporates a series of existing projects related to the rehabilitation of the McKinley Walkway and the Overlook Parking area into the design scheme. The modifications to the circulation path and adjacent drainage ditch will make the feature more accessible and more

sustainable. The associated project statements advocate the rehabilitations of failing structural materials.

The preferred landscape treatment recommends a targeted removal of areas of selective woody vegetation. The proposal encourages the reestablishment of historic views, the maintenance of existing field patterns, and the removal of specific invasive species. In addition to the practice of removal, the preferred landscape treatment encourages the expansion of certain vegetation communities. Cold season grasses should be converted to warm season grasses to encourage grassland habitat expansion. Guidance for stream restoration will be provided, which will include the appropriate plants for the designated stream buffers.

It is encouraged that Antietam National Battlefield reevaluates the interpretation in keeping with the best practices standards established by the Harpers Ferry Interpretive Center in order to address issues concerning the physical condition and content of the interpretive media. The reevaluation will provide guidance for the Antietam National Battlefield Visitor Center and Circulation Plan Environmental Assessment that is currently slated for completion in 2018. A benefit of the reevaluation will be the start of a dialogue within the park to expand the types of interpretation and to create a more inclusive interpretive experience for visitors.

Topography affects the accessible circulation at the site. Where possible, a set of existing circulation paths will be rehabilitated to meet the ABA standards. These changes will include the reconfiguration of the existing handicapped parking spaces at the base of the western slopes, the rehabilitation of the Burnside Bridge road to be a more accessible path, and discussions regarding the Georgian Overlook path.



Drawing 12. Preferred treatment.

OVERALL LANDSCAPE

The following preferred landscape treatment tasks are either associated with the entire project area or encompass multiple character areas. The tasks are organized based on the issues previously identified in this section of the document. The overall treatment philosophy is rehabilitation.

VEGETATION

The overall philosophy for the vegetation to rehabilitation the existing condition to better reflect the condition during the battle and the Mission 66 period, as well as park needs.

Task 1: Continue efforts to remove invasive plants

The Natural Resource staff of Antietam National Battlefield identified one plant species of concern within the boundaries of the study area, autumn olive (*Elaeagnus umbellata*). Efforts to eradicate autumn olive is an on-going priority. These efforts should continue and be expanded to address the spread of tree of heaven (*Ailanthus alitissima*), which was observed by NCR staff during site visits.

Task 2: Modify the existing Controlled Burn Environmental Assessment

As Antietam National Battlefield expands the acreage of the park that is in warm season grasses or seeks ways to impede the encroachment of woody understory vegetation, it will be necessary to expand the use of controlled burns as a resource management tool. The battlefield must initiate the proper review process to expand the existing Controlled Burn Environmental Assessment to include areas of this cultural landscape where the practice is identified as a recommended treatment option. Please reference the provided map, Drawing 13, that illustrates these affected areas.

Task 3: Maintain existing field shapes and patterns

As trees have encroached on the fields, staff should make an effort to maintain the existing field shapes. A comparison of historic aerials from the 1940s and the present day illustrates changes to the cultural landscape's character. For guidance on methods for maintaining the field pattern, please reference Appendix G.

Task 4: Engage in field rehabilitation

Once open fields are being negatively impacted by the successional growth of Eastern red cedars (*Juniperus virginiana*). The spread of this species, while a native to the region, has affected the views and vistas associated with the Burnside Bridge Area cultural landscape. Historically, during the time of the Battle of Antietam, the fields west of the present day Overlook Parking area were open and were a part of the path used by the Union forces in the drive towards Sharpsburg. Antietam

National Battlefield should remove the trees in the areas west of the Overlook Parking area and are included in the proposed expansion of the Controlled Burn EA. These stands are associated with the Otto Farm. After removing the two stands of trees, the land should be incorporated into the prescribed burn plan of the park in order to prevent a recolonization of the species. The fields should then be placed into active agricultural practice and be incorporated into the battlefield's existing SUP agreements.

Task 5: Convert existing cold season grass hayfields to warm season grass hayfields.

Antietam National Battlefield has engaged in the practice of warm season conversion in hayfields in the southern portion of the battlefield, specifically fields historically associated with the Otto and Sherrick farms. These efforts should continue. Expanded efforts should target selected portions of the field network of the Western Bank of Antietam Creek. All other fields will continue to be planted in cold season grasses. However, cutting practices should be modified to occur in mid- August, benefiting song-bird species that inhabit the battlefield. This conversion will require minor modifications to the existing SUP agreements, as well as an expansion of the battlefield's targeted rotational controlled burns. A list of appropriate warm season grasses are discussed in Appendix H.

Task 6: Selectively prune branches

The Rifle Pit Overlook and The Union Advance Trail Overlook were developed to provide visitors with strategic views to the Burnside Bridge. The growth of trees have obscured these once open vantages. To address this situation, Antietam National Battlefield staff should selectively remove tree branches that obscure the views. Reference Appendix G for a more detailed description of the prescribed process. To improve the overall condition of the trails in the project area, branches creating hazards or barriers to visitors should be removed.



Controlled Burns

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Woody Undergrowth
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Trees
- Park Boundary
- Study Boundary
- Controlled Burn Areas

Sources
1. National Capital Region, *Burnside Bridge Area Cultural Landscape Inventory (2016).*
2. Antietam National Battlefield and NCR GIS Data.
3. Aerial Images 1943, 1952, 2000, 2008, Orthography 2011.
4. Proposed planting plan 1961
5. Site Visits March 2016, June 2016, and August 2016, and March 2017

Drawn By

Daniel Weldon using AutoCad , Arc GIS, Adobe Illustrator CC.

Scale 1”= 200’

Drawing 13. Controlled burn areas.

INTERPRETATION

The overall philosophy for the interpretative program is to create a relevant accessible program for visitors. This will be achieved through the updating and rehabilitation of the existing interpretive program.

Task 7: Evaluate the existing- modern interpretive panels to ensure that they conform to the Harpers Ferry Interpretive Center (HFIC) standards regarding physical composition and content presentation.

As the staff of Antietam National Battlefield prepares for the development of a new Long-Range Interpretative Plan, the existing non- historic interpretive panels should be evaluated for size, orientation, and presentation materials. The HFIC guidelines will serve as the standard to assess the waysides. This will determine which panels are a priority for replacement. This evaluation should review the physical size of the panels and content presentation. This evaluation does not apply to historic interpretive waysides, including the War Department tablets and the Mission 66-era interpretation.

Task 8: Evaluate the existing interpretation at the site and compare to the identified interpretive themes that are located in the Foundation Document.

To ensure a cohesive interpretation of the cultural landscape, staff should evaluate the narratives presented in the existing interpretive panels. The interpretive themes identified in the Foundation Document will serve as a gauge to evaluate the interpretation. The existing interpretation at the site should be evaluated to ensure that the content presented in the interpretive waysides and panels conforms to at least one of the identified narratives.

Task 9: Expand the existing interpretation to better convey the identified interpretive narratives from the Foundation Document to the public.

NCR staff identified potential locations or opportunities that will allow Antietam National Battlefield to expand the interpretive program. The locations are based on the six identified themes from the Foundation Document. This evaluation can inform an expansion in interpretation by traditional means or new interpretive methods. Park staff should use the provided maps and charts as a tool for the long-range interpretation plan discussion. Reference Appendix E for further discussion of interpretation.

Task 10: Create a more inclusive interpretive program

As battlefield staff redevelop the interpretive program, a more inclusive interpretation of the site must emerge as a part of the plan. The following guidelines were developed to inform this process:

- Interpretation must be oriented where it is physically accessible and approachable conforming to the established standards of the HFIC.
- Inclusive interpretation must be located along accessible routes.
- Interpretation that caters specifically to guest with accommodation needs must be analogous to standard park guest interpretation.
- Interpretive panels and features must include braille text in order to serve visitors with vision impairment.
- Large format text must be used to aid visitors with vision impairment.
- Interpretive media beyond the tradition wayside should be used in order to better serve the public and address accessibility needs.

Task 11: Expand the types of interpretation

To be more inclusive, Antietam National Battlefield should expand the existing interpretation by using new media methods. The use of a 3-D topographic model, an interpretive mobile app, and interactive waysides are a few of the proposed options that the interpretive staff should explore. Reference Appendix E for illustrations and design specifics for these options.

Task 12: Evaluate the interpretation to inform the Antietam National Battlefield Visitor Center and Circulation Plan Environmental Assessment.

The development of the Long- Range Interpretive Plan for Antietam National Battlefield has implications beyond the topic of interpretation, directly impacting visitor use of infrastructure. The identification of locations associated with new interpretation will facilitate the need to expand the existing circulation path network in order to provide access. After identifying interpretation stops, the locations need to be marked and included in the development of the ANTI Visitor Center Circulation Plan EA. These locations should be considered when developing future treatments in the cultural landscape. Any expansion to either the interpretation or the visitor circulation should be compatible with the landscape, considerate towards cultural resources, and cognizant towards any accessibility challenges, which may emerge.

ACCESSIBILITY

Topography and existing design create accessibility challenges at the site. The overall treatment recommendation for accessibility is rehabilitation to make a more inclusive experience.

Task 13: Conduct an Accessibility Self- Evaluation and Transition Plan Overview with the Denver Service Center.

Following guidance from the National Park Service Washington Support Office (WASO), it is recommended that Antietam National Battlefield, working with the National Park Service Denver Service Center, complete a study of the park's overall accessibility. Following the precedent of Lava Beds National Monument of California, the park should complete an Accessibility Self Evaluation and Transition Plan Overview study. The evaluation will review the accessibility challenges and opportunities for improvement of the park's structures and circulation paths. The effort will be coordinated with the National Capital Regions Accessibility Coordinator. The outcome of the project will impact the Burnside Bridge Area cultural landscape.

Task 14: Highlight accessible routes

To improve the visitor experience, the park should mark or call attention to all portions of the existing trail network that are determined to be accessible. To achieve this task, the park must place appropriate signs to demarcate the accessible routes. These pathways must be marked on the updated trail information that will be located in the new interpretive kiosk and should also be added to park maps, the park website, and visitor information literature. The park should follow the example of Yosemite National Park. Examples are included in Appendix F.

An example of how the Burnside Bridge cultural landscape would be marked with indicated accessible routes. The map does take into consideration the modification of the Final Attack Trail. The truly ABA accessible portions of the circulation network are marked in a set of orange dashed lines. Those circulation paths that do not meet the desired slope or other ABA standards are indicated in dashed green lines. Examples of trail identification examples used by units of the National Park Service to provide accessibility information to the visitors is included in Appendix F of this document.



Drawing 14. Accessible routes.

CHARACTER AREA TREATMENT

OVERLOOK PARKING AREA

The overall treatment philosophy for the cultural landscape is rehabilitation. The following section will review treatment recommendations that are applicable to the overall cultural landscape prior to discussing tasks that are specific to a particular character area. Treatment recommendations for the overall cultural landscape are organized by previously identified problem themes: vegetation, interpretation, and accessibility.

Task 15: Rehabilitate the existing parking space configuration to accommodate an ABA compliant parking space.

The existing Overlook Parking area does not have ABA compliant parking spaces. The lot consists of fifteen standard parking spaces and two bus/ RV parking spaces in a curved form arranged around a central teardrop shaped median island. A curving walkway defines the edge of the parking lot. Based on current standards, one ABA compliant parking space should be created by combining two adjacent parking spaces. The parking spaces will be combined into a single ninety-six inch parking space with a required parking aisle on the side. A small ramp will need to be constructed in the parking aisle to connect the walkway to the parking lot surface. Alternatively, the park could convert two parking spaces into ABA designated spaces with a shared central aisle and curb cut to the sidewalk. This is dependent on the dimensions of the existing spaces. Reference Appendix D for further guidance regarding ABA standards for parking spaces and diagrams showing potential layouts.

Task 16: Rehabilitate the entrance to the overflow parking space in the pasture.

The access to the overflow parking is confusing to visitors. To “de-clutter” the entrance to the overflow parking lot, all non-historic small-scale features should be removed. This includes the gates and low two rail fences, as the features are not part of the original Mission 66 design. The signs demarcating bus and RV parking should be removed. The two designated parking spots should instead be painted onto the paved surface of the parking lot. Additional improvements to this area will include painting stripes on the entrance to the farm lane to keep the access clear. Appropriate signs to warn drivers of potential pedestrian crossings should be added to the farm lane entrance. Further design research is needed to develop a long-term solution to the vehicular circulation along the farm lane.

Task 17: Bus Parking

The existing bus parking spots are partially accessible. Minor alterations to the existing condition will improve the situation. For parking spot A (reference map in the following page), a curb cut should be added in order to provide access to

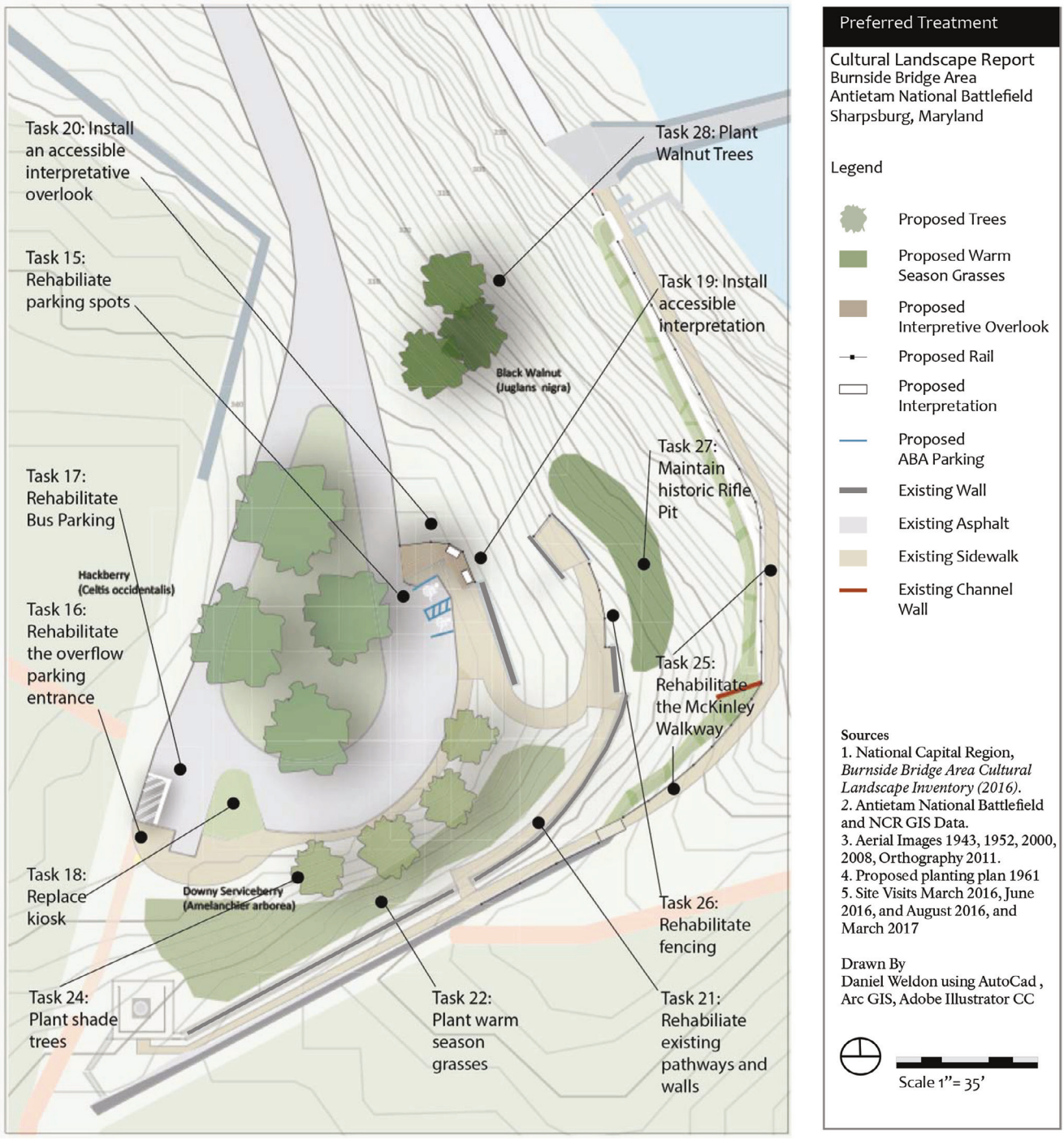


Figure 25. Proposed changes to the Overlook Parking area.

the sidewalk. The curb cut should occur on the western edge of the parking space. The curb cut will have a minimal impact on the sidewalk of the Overlook Parking area. For parking spot B, a sign should be added and striped painting added to the farm lane. The adjacent farm lane will serve as the access point of the sidewalk. No curb cut is needed.

Task 18: Replace the existing interpretive kiosk

The Overlook Parking area contains an interpretive kiosk structure on the southern curve of the parking lot. The existing structure consists of a substantial gable roof and heavy red cedar timbers that is uncharacteristic of Antietam National Battlefield. A new kiosk structure should be installed. The overall design of the new kiosk should conform to the standards of the National Park Service's Harpers Ferry Interpretive Center (HFIC) regarding wayfinding kiosk and be in a style and material pallet that is architecturally appropriate for the battlefield. Content should follow HFIC standards. Regarding the placement of the feature, the current site is considered appropriate for the construction of a new interpretive kiosk.

Guidelines:

- The design of the kiosk must match the overall aesthetic of the park
- The design should conform to the size and content standards established by the HFIC.
- Information should be limited to a simple texts and maps to orient visitors. Please see the examples provided in Appendix E.
- Information regarding accessible experiences should be included in the presentation material.
- Based on HFIC guidance, a list of "Do Not Items" and park restrictions should not be included as a part of the presentation materials.
- Maps should be oriented in the direction of the described resources to better inform a visitor how to get from Point A to Point B.
- Trail information should be grouped with other well thought out park information to serve as a surrogate to a visitor center.
- Do not provide after-hours lighting for the feature.

Task 19: Install accessible interpretation at the Overlook Parking area

The interpretation at the Overlook Parking area, specifically the Rifle Pit Overlook, is not accessible. Inclusive interpretation should be placed near the proposed accessible parking spot, along the stone wall at the upper level of the Overlook Parking area. The following guidelines are provided for the new wayside panels.

- The interpretive waysides installed should be similar in content, but updated based on the latest scholarship.

- The panels will be installed along the accessible portion of the route
- The panels will conform to the size and content requirements of the HFIC.
- The interpretation will contain a narrative associated with one of the six identified themes in the Foundation Document.
- The waysides will be angled in such a manner as to not obstruct the views to the Burnside Bridge.
- The placement of the features should not impede the existing circulation
- If installed along the top of the wall, the panels must be attached in such a way as to be minimally intrusive into the cultural resources

Task 20: Install a new ABA accessible interpretive overlook.

The topography of the western slope creates an inaccessible site. The Rifle Pit Overlook interpretive plaza is inaccessible from the Overlook Parking area except by a series of steep stairs. The feature was constructed as part of the 1960s development. A series of design studies were prepared (see Appendix B) to assess an alternative route to this plaza from the parking area. The alternative accessible routes would severely damage the hillside associated with the historic battle lines. As a viable alternative, the existing upper overlook parking area walkway pad should be expanded to provide a vantage of the Burnside Bridge and interpret the Rifle Pit. The new accessible interpretive pad shouldn't extend further than the line established by the existing wall. The pad will have either a rail or wall (sympathetic, but different to the current wall) to create a buffer for visitors. The layout of the interpretation should leave a clear viewing space to the Burnside Bridge with interpretation, either waysides or a non traditional methods, on either side of the viewing space. A bronze or resin tactile sculpture could be included as a part of the interpretation. Panels will conform to the HFIC specifications for inclusive interpretation and should be a part of the identified interpretive themes associated with the battlefield. Please see provided drawings regarding the configuration of the feature.

Task 21: Rehabilitate the existing pathways and retaining walls

PMIS Statement #204525 (Construction date 2019) formulated a plan to rehabilitate the existing pathways and retaining wall structures of the Overlook Parking area. The scope of the project includes the retaining walls and sidewalks leading from the parking lot to the Rifle Pit Overlook and the McKinley walkway. The project statement identified the need to repoint mortar, replace damaged stones, and address uneven settling in the concrete walkways and walls. Observations made during site visits have noted all of the aforementioned issues. The rehabilitation proposal should continue to preserve the original Mission 66 design. The rehabilitation must follow the Secretary of the Interior Standards for Rehabilitation. A broom finish should be applied to all walkway panels that are

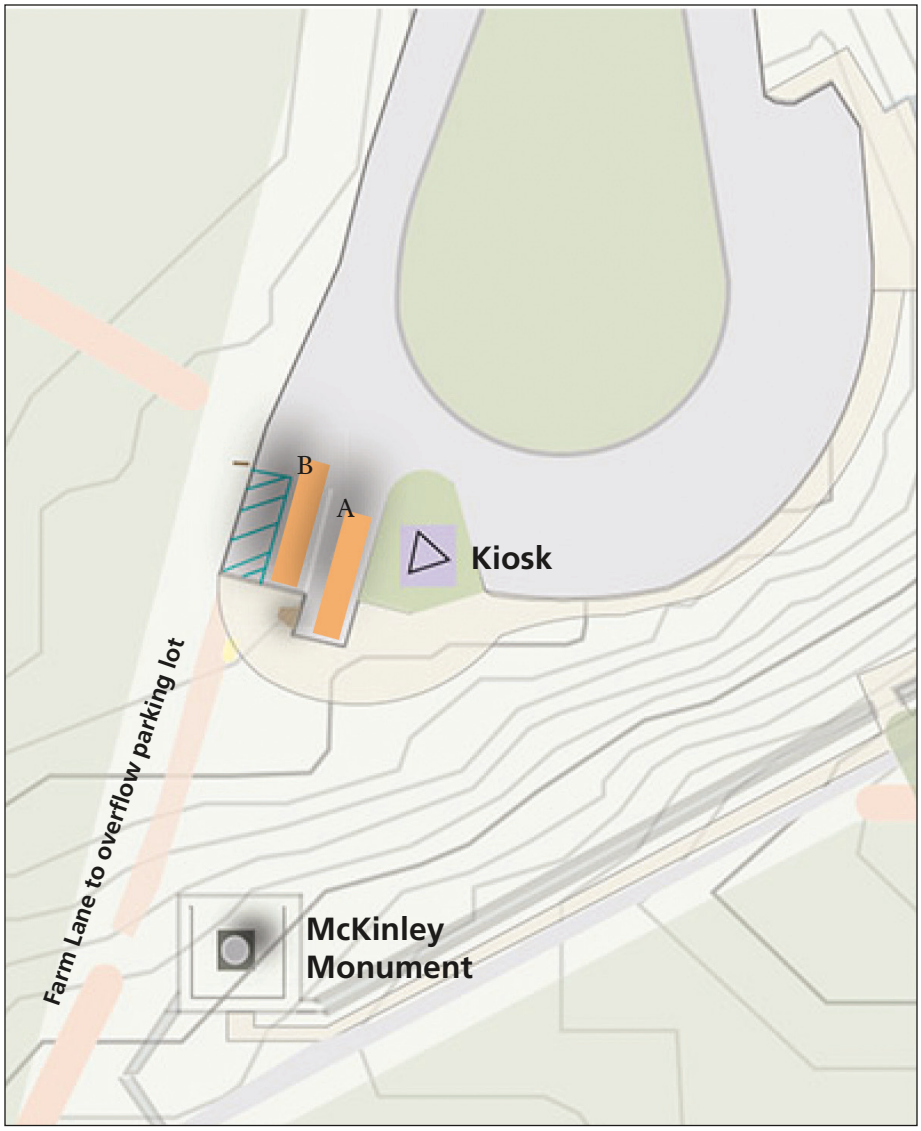


Figure 26. Bus Parking Spot A and B and the new kiosk. Note that the farm lane is striped in order to read more as a road and less as a third parking spot.

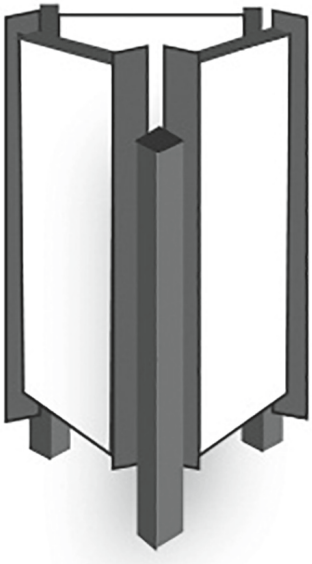


Figure 27. Proposed layout for the new kiosk The proposal as presented recommends the use of a triangular shaped structure. The design is rendered by the author and follows the Harpers Ferry Center guidelines



Figure 28. Current configuration of the Overlook Parking area looking east (NCR CLP 2016). The kiosk is in the foreground. In the background the reader can see the low retaining wall of the overlook. From this vantage a visitor can glimpse the Burnside Bridge and Rifle Pit below.



Figure 29. Current configuration looking south towards the hayfield. To the east of the kiosk are two bus parking spots and the farm lane (NCR CLP 2016).



Figure 30. Sidewalk at the northern portion of the Overlook Parking area (NCR CLP 2016).



Figure 31. View from the Overlook Parking area east towards the Rifle Pit Overlook (NCR CLP 2016).



Figure 32. View north and west towards the upper level of the Overlook Parking area from the lower terraces and walkway (NCR CLP 2016).



Figure 33. Mission 66 Era sidewalk leading from the Overlook Parking area to the McKinley Walkway (NCR CLP 2016).

replaced during the rehabilitation. The replacement mortar must be structurally weaker than the historic stone building material.

Task 22: Plant the southern hillslope of the Overlook Parking area in warm season grasses

As the previously prescribed wildflower mixture has proven unsuccessful, the southern hillslope of the Overlook Parking area should be planted in a warm season grass mixture. The park should manage the slope using prescribed burns in order to establish the plant community and maintain the health of the plants. The area must be included in an expansion of the Controlled Burn EA. Please reference Appendix H for a list of appropriate warm season grass varieties.

Task 23: Remove trees that are growing south of the Overlook Parking area

To restore the historic views of the cultural landscape, the trees south of the Overlook Parking area should be removed. The growth is non-historic and occurred prior to National Park Service ownership of the parcel.

Task 24: Plant shade trees

In order to provide shade to visitors, a new variety of tree species should be planted in the Overlook Parking area median. Currently, four small, slow growing pin oaks (*Quercus phellos*) are planted in the island. It is recommended that hackberry (*Celtis occidentalis*) replace the pin oaks. Hackberry was selected due to the fast growing and resilient nature of the variety. The mature specimens are noted for a rounded canopies with spreads of forty to sixty feet, making this selection ideal for shade. The profile of the tree is similar to that of the honey locust, a historically present variety. Following the design intent of the Mission 66 plan, trees should be planted along the southern curve of the Overlook Parking area. Downy serviceberry (*Amelanchier arborea*) are suggested. The typical downy serviceberry specimen achieves a height of twenty-five feet with a narrow canopy spread of twenty feet. This specimen has the benefit of providing shade, yet being visually light. The downy serviceberry trees should be planted east of the interpretive kiosk in order to allow an unobstructed view towards the McKinley monument. Please refer to the provided Overlook Parking area drawing for proposed locations (reference Figure 25 on page 130).

MCKINLEY WALKWAY

Task 25: Rehabilitation of the McKinley Walkway

The McKinley Walkway, a War Department era circulation feature, serves as the main access route from the Burnside Bridge to the McKinley Monument. The pathway is very steep and requires repairs to the War Department era upper stone drainage channel, lower walkway retaining wall, adjacent hillside slope, and Mission 66-era paving. In 2016, a walkway rehabilitation project, PMIS Project # 215835, Provide Safe Visitor Access to the Historic Burnside Bridge, was funded in order to correct the identified projects.

- Restore upper historic drainage channel- Vegetation grows in the drainage channel and the mortar joints are deteriorated.
- Prepare the drainage channel for repointing by manually removing vegetation or spraying with Roundup or similar herbicide.
- Select proper lime mortar for repointing joints.
- Rehabilitate walkway surface- The 1960s walkway is cracked and deteriorated on the edges and very slippery when wet.
- Replace paving with a new exposed aggregate or broom brush concrete surface.
- Rehabilitate lower walkway stone retaining wall- The retaining wall is failing in several places. Problems include portions of the wall that are leaning or bowing, the crumbling of mortar, and the dislodgement of stones.
- Rebuild the wall to correct structural issues.
- Incorporate a handrail into the rehabilitation of the wall. Place the feature on the hillside or upslope side of the pathway. It is recommended that the rail be structurally stable, but visually light. A post and cable wire rail system could be used. Examples are provided in the document. The overall



Figure 34. Existing retaining walls and walkway system at the Overlook Parking area (NCR CLP 2016).

form should follow ABA Standards for specifications.

- Rehabilitate the adjacent hillslope- The adjacent hillslope is eroding.
- Install a geotextile on the slope or plant the slope in native grasses.
- Rehabilitate the drainage course adjacent to the lower walkway- Erosion is a concern.
- Convert the drainage ditch into a bio-swale to reduce the impacts of runoff.

Task 26: Rehabilitate the Rifle Pit Overlook fencing.

In the current configuration of the Rifle Pit Overlook, a post and rail fence defines the pathway and serves as a physical barrier between visitors and the slope on either side of the Mission 66 wall. The period plans of the overlook do not include any railing along the pathway leading to the overlook. The existing non- historic post and rail fence around the Rifle Pit Overlook should be removed. The handrail suggested for the McKinley Walkway would be an appropriate solution as it is structurally sound, yet visibly light in the landscape. The construction of the new rail must follow the Secretary of the Interiors Standards for Rehabilitation. Please see Figure 40 on page 143 for an example of the rail design.

Task 27: Maintain the historic Rifle Pit.

The profile of the Rifle Pit is hard to read and the location at the site is difficult to access with standard lawn equipment. To stabilize the historic Rifle Pit, a mixture of warm season and sedge grasses should be planted. The planting of the grasses will stabilize the form of the cultural resource, while allowing the profile of the topography to be legible. This recommendation is informed by the best management practices for earthworks produced by the National Park Service.

It is recommended that the blend of grasses include the following varieties: hair grass (*Agrostis hymalis*), plains oval sedge (*Carex brevior*), pale sedge (*Carex granularis*), field oval sedge (*Carex molesta*), fox sedge (*Carex vulpinoidea*). The mixture is based on a meadow planting at Dumbarton Oaks Park. To maintain the grass species, the Rifle Pit should be managed the same as the rest of the slope. Reference Appendix G for further guidance regarding earthworks management.

Task 28: Plant walnut trees

To provide additional shade to visitors and reinforce the historic battle era setting, walnut trees (*Juglans nigra*) should be planted on the slope of the western bank. The planting should occur in the area depicted in the Overlook Parking area plan provided. The trees should be spaced an appropriate distance apart. The planting should not occur within the established sight line of the Overlook Parking area to the Burnside Bridge. Efforts must be made by battlefield staff to ensure that the trees do not encroach into the sight lines. Pruning may be necessary as the trees develop.

Task 29: Remove the flowering dogwood tree at the Rifle Pit Overlook

The flowering dogwood is obscuring views from the Overlook Parking area towards Antietam Creek. The tree is non historic and was not included in the original Mission 66 planting plan. It is recommended that the tree be removed in order to improve the visitor experience on the site.

Task 30: Remove vegetation from the slopes of Antietam Creek.

Woody- understory growth obscures the views from the hill of the western bank of Antietam Creek to the Burnside Bridge. Attempts should be made to restore the hillslope to a more open character. This removal should be targeted, specifically removing vegetation along the lower course of the McKinley Walkway and the curve of the pathway. Reference Appendix G for more guidance regarding removal options.



Figure 35. Representative example of the structural failing present in the wall system at the Overlook Parking area and the McKinley Walkway (NCR CLP 2016).



Figure 36. The McKinley Walkway looking west. The adjacent gutter to the left of the sidewalk in this image dates to the War Department Era. The vegetation that is currently growing in the feature should be removed (NCR CLP 2016).



Figure 37. (above) McKinley Walkway looking east (NCR CLP 2016).



Figure 38. The lower portion of the McKinley Walkway. The proposed rail would be placed on the right side of the walkway creating a buffer between pedestrians and the ditch (NCR CLP 2015).



Figure 39. The existing condition of the Rifle Pit Overlook (NCR CLP 2016).

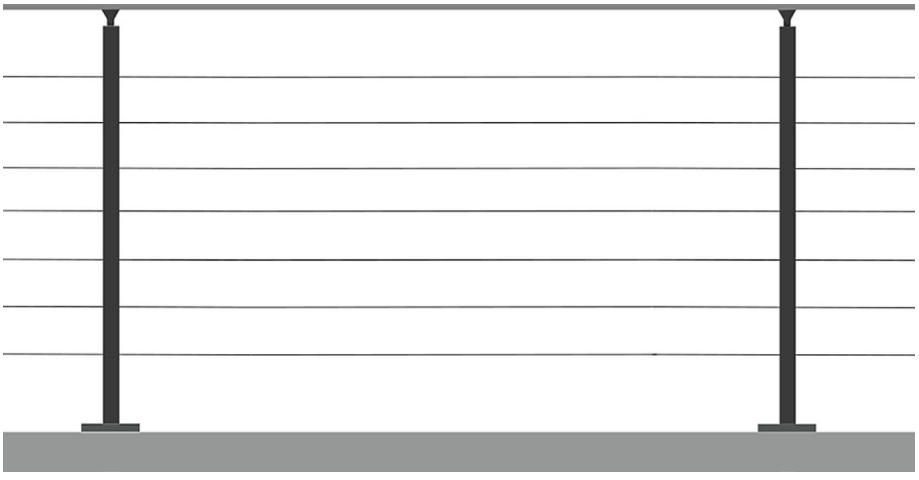


Figure 40. The proposed rail for this portion of the cultural landscape is a cable rail system that will be visibly light, yet physically stable.



Figure 41. View towards the Burnside Bridge from the McKinley Walkway (NCR CLP 2016).



Figure 42. View from the Rifle Pit to the Burnside Bridge (NCR CLP 2016).



Figure 43. Vegetation on the slopes adjacent to the McKinley Walkway (NCR CLP 2016).



Figure 44. (below) View towards the Burnside Bridge from the East Bank (NCR CLP 2016).

WESTERN PASTURE

Task 31: Reconfigure the Final Attack Trail

The current trailhead will be removed and be returned into an agricultural field. This is in keeping with the present and historic character of the cultural landscape. A new segment of the trail will be inserted along an existing tree line. A map of the new configuration is provided below. This trail must be identified as non-accessible. Information should be included on maps, printed materials, and the park website. New markers must identify the trail as non-accessible.

WESTERN WOODS

Task 32: Remove the 'As the Georgian's Saw It' Overlook

The issues of upkeep, visitation, and accessibility informs the recommendation to remove the ' As the Georgians Saw It' Overlook. Research during the completion of the CLI and CLR for the Burnside Bridge Area cultural landscape, has located only one drawing from the Mission 66 era of the Georgian Overlook. According to the drawing, the intended design for the feature included a low stone wall, matching the design of the Rifle Pit Overlook wall. Interpretive panels were to be mounted into the wall. The Georgian Overlook was intended to be integrated into the Snavely Ford Trail path as a planned stop. However, a visual evaluation of the site reveals that the original design was never implemented. The park should consider placing the interpretation at an alternative location to interpret the actions of the Georgia troops.

Figure 45. The "As the Georgians Saw It" Overlook (NCR CLP 2015). While a part of the Mission 66 proposal, the current configuration of the overlook does not reflect the historic proposal.



BURNSIDE BRIDGE TRAIL

Task 33: Develop the Burnside Bridge Trail

Based on the Antietam Accessibility Workshop, it was determined that the most critical or quintessential experience in the cultural landscape is the Burnside Bridge. It is recommended that an accessible trail be created to accommodate visitors. The trail will be developed from the lower parking lot, follow the historic road to Burnside Bridge, cross the bridge, and end at the Mission 66 memorial plaza on the eastern bank. In order to make the trail successful, the truly accessible portions of the trail must be highlighted with signage and maps (***i.e.***, the parking lot, road trace, and the center of the bridge, and the eastern bank- whereas the eastern slope of the bridge is accessible in one direction only).

Task 34: Reconfigure the two existing accessible parking spots.

The two existing "accessible" pull-off parking spaces at the Burnside Bridge Road are not compliant. To provide greater ease of access and to conform to ABA standards for pull in / pull out parking spaces, the two spaces should be reoriented to form two pull through spaces that are parallel to the park road. The spaces should be standard sized parking spaces with a designated pull space separating the two spots. A walkway/pathway for travel, should be places on the passenger side of the vehicle. For additional ABA guidance on the reconfiguration of the parking spaces , please refer to Appendix D.

Task 35: Rehabilitate the Burnside Bridge Road (PMIS #215837)

Replace the existing Burnside Bridge road material on the western bank of Antietam Creek with a stable, but pervious material to make the roadway ABA compliant.

The park uses the Burnside Bridge road, a historic route, as a pedestrian walkway to the Burnside Bridge. The proposed rehabilitation project for the pedestrian pathway should use a more suitable surface. The pathway should be rehabilitated with a stable, yet pervious material. The color of the material should be either a light brown or tan to allude to the appearance of the historic dirt road. The path will link to the western bank of the Burnside Bridge, which has an ABA compliant slope of 1:60. The design of the trail entrance and parking spaces should be more sympathetic and aesthetically pleasing. Interpretation will be included at the beginning of the trail. Subject matter will likely be the bridge. It should include a small accessible marker noting the accessible route to the bridge.



Figure 46. The historic Burnside Bridge Road. This view is looking south towards the bridge from the ABA parking spaces (NCR CLP 2016).

Figure 47. The historic Burnside Bridge Road looking north. The historic circulation route serves as the main access to the bridge. The slope of the feature will allow this path, with some rehabilitation, to be converted into an accessible route (NCR CLP 2016).



MONUMENT PLAZA

Task 36: Install accessible bench

The design of the Monument Plaza benches, while from the Mission 66 period, is not accessible. The park should install a third accessible bench. The design must be sympathetic to the Mission 66 design. However, it must include an armrest and a back to meet current ABA standards.

Optional Task 36B: Stone wall adjacent to the Witness Tree

The stone wall adjacent to the Burnside Bridge was reconstructed in 1977, but the section nearest the tree was not rebuilt. It is recommended that the missing portion of the stone wall be reconstructed. However, prior to the initiation of the project, an arborist must evaluate the condition of the Witness Tree and determine whether the action will have a negative impact on the root system.

Task 37: Trailhead development

The Union Advance Trail north of the Monument Plaza is not marked. An appropriate trail head, conforming to the HFC sign standards and the outcome of the Antietam Long Range Interpretive plan should be installed.

Figure 48. Witness Tree and missing wall. Currently a post a rail fence connects the stone wall to the Burnside Bridge. If deemed a viable option, the stone wall should be reconstructed (NCR CLP 2016).





Figure 49. Monument Plaza (NCR CLP 2015).

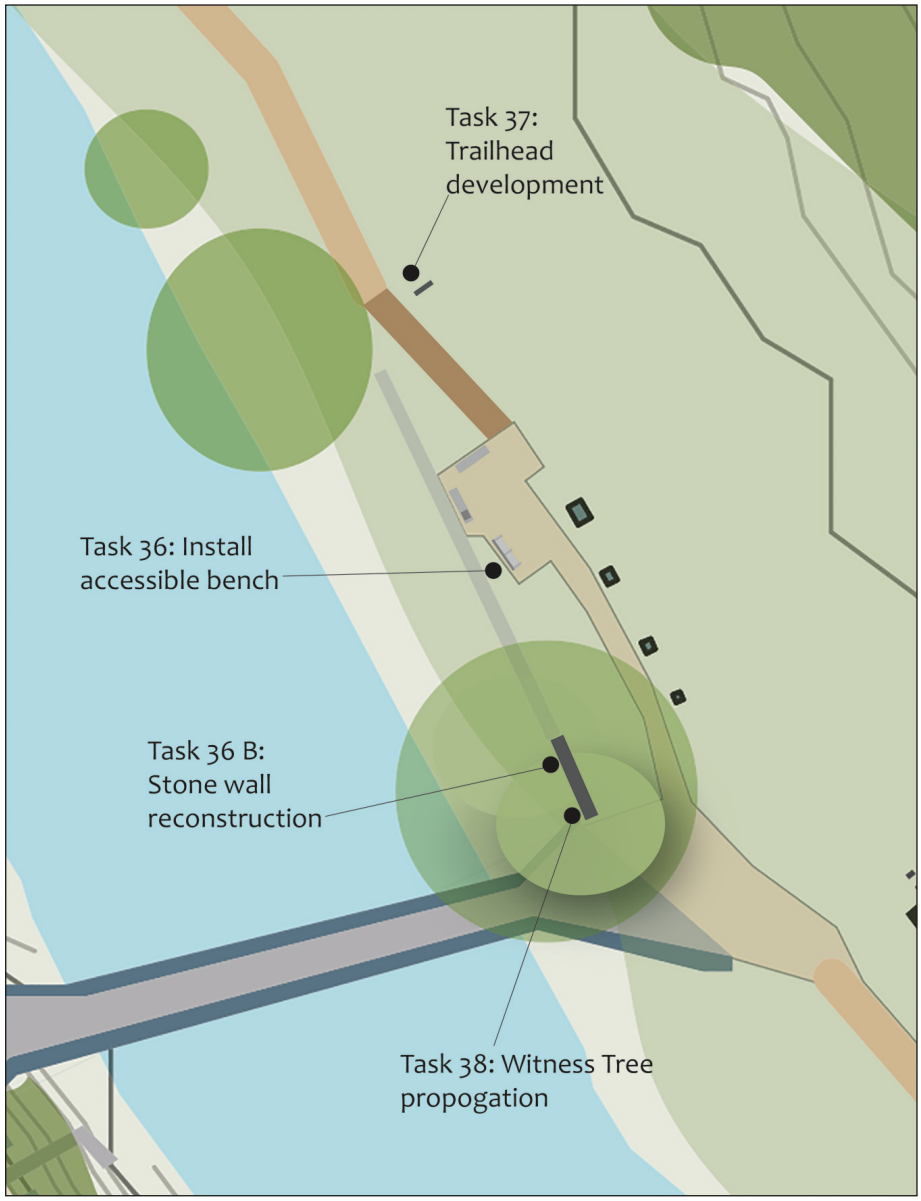


Figure 50. Illustration of the proposed changes to the Monument Plaza. A new trail head would be placed to the north and west of the Monument Plaza to mark the Union Advance Trail. An ABA compliant bench would be placed on the eastern portion of the plaza. The diagram shows the reconstruction of the stone wall.

Task 38: Cultivate seedlings from the American Sycamore Witness Tree.

The 2013 Antietam National Battlefield Foundation Document identifies the value of the American Sycamore Witness Tree (*Platanus occidentalis*) to the overall story of the battlefield. To ensure that a representation of the Witness Tree remains in the cultural landscape, proactive measures must be initiated. Viable pollinated seeds should be collected from the tree and cultivated at locations elsewhere in the park. Planning efforts between NCR and park staff should coordinate the best locations in the boundaries of Antietam National Battlefield to cultivate the specimens. The selection of multiple locations will ensure that the distance between the specimens will prevent the spread of possible diseases.



Figure 51. The Witness Tree facing south (NCR CLP 2015).

EASTERN PASTURE

Task 39: Follow best management practices for stream bank restoration

The Maryland Department of Natural Resources has identified Antietam Creek as a critical body of water for best management practices, as it is a part of the Chesapeake Bay watershed. Antietam National Battlefield should actively participate in streambank restoration along the banks of Antietam Creek by expanding and improving the existing riparian buffers. The Maryland Department of Natural Resource has produced literature on the subject matter. The design requirements, as well as plant species associated with each buffer, are illustrated in Appendix H.

Task 40: Rehabilitate the historic Burnside Bridge Road on the Eastern Bank of Antietam Creek.

The historic Burnside Bridge Road is no longer used as vehicular transportation route and is now covered in grasses. The park should consider rehabilitating the former road in a stable but pervious material to provide a more defined visitor circulation path and to retain the feature in the landscape. An appropriate trailhead marker should be placed north of the Memorial Plaza to mark the trails. The style and content should be sympathetic and follow the proposals and suggestions of the *Long Range Interpretive Plan and Signage* workshop.

Figure 52. The Burnside Bridge Road south of the Monument Plaza (NCR CLP 2016).



EASTERN WOODS

Task 41: Remove Eastern red cedars from the slope of the eastern bank

Another large stand of Eastern red cedars are growing on the southern portion of the hillslope of the east bank of Antietam Creek. This area was historically open. To restore the landscape to its 1860s appearance and open views from the existing Union Advance Trail, this stand of trees should be removed.

Task 42: Remove woody- understory growth at the 11th Connecticut Monument

Photographic evidence dating from the time of the Battle of Antietam reveals that the slopes of the eastern bank of Antietam Creek were once more open. Selective cutting and the removal of woody plants should occur in the area highlighted on the provided map which will open views to the 11th Connecticut Monument, making the feature more prominent to visitors.

Task 43: Plant the north fields of the eastern bank in trees.

The northern most fields of the eastern bank should be planted in trees to reduce the amount of land managed by SUP agreements. This portion of the cultural landscape was historically open fields, associated with the Sherrick and Rhorbach families during the time of the Battle of Antietam. However, by converting this portion of the cultural landscape into a wooded lot, the park will create a needed buffer along the border of the battlefield and reduce the cost associated with maintaining these open fields. Working with the Natural Resources Division of NCR, the staff of Antietam National Battlefield should develop an appropriate collection of native tree species to plant in these fields.



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Section cover: Otto Farm looking southwest. (NCR CLP 2015)

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Appendices

Section cover: Burnside Bridge from the east bank. (NCR CLP 2015)

Appendix A

Proposed Treatment Alternatives

TREATMENT GUIDELINES AND RECOMMENDED TASKS

ALTERNATIVES

This portion of the document will present design alternatives for the Burnside Bridge area cultural landscape study area. The proposed alternatives address the overarching problem topics, moves beyond the general actions, and explore site specific solutions. All of the proposals are designed to follow the Secretary of the Interiors Standards for Rehabilitation. The CLR provides four treatment alternatives, A, B, C, and D, of varying intensity, development, time, cost, and amount of intrusion in the landscape.

CONCEPT A — PRESERVATION OF EXISTING CHARACTER

General Concept: The treatment alternative recommends maintaining the Burnside Bridge area cultural landscape in a manner that preserves the existing character of the site. This treatment alternative will result in negligible visible modifications to the cultural landscape and will continue a management path similar to the current practices. The agrarian nature of the cultural landscape provides the visitor a glimpse of the site as it appeared during the Battle of Antietam; therefore, the existing open spaces should be maintained. Habitat conservation and expansion is addressed through the modification of existing field vegetation to warm season grass habitat. Efforts to curtail invasive plants will continue in a manner currently practiced at the site. Currently, the matter of accessibility is paramount at the site as none of the circulation paths conform to ABA standards. This treatment alternative targets the circulation adjacent to the significant Burnside Bridge. A new material could be introduced at the historic Burnside Bridge road trace; however, the physical form of the roadway should not be expanded. This treatment alternative proposal will accommodate a series of existing PMIS Statements related to the rehabilitation of the McKinley Walkway in an effort to make a more sustainable feature.

ELEMENTS OF THE PLAN:

Historic Burnside Bridge Road

- Replace the existing historic Burnside Bridge road on the west bank with a stable but pervious material to make the roadway ABA compliant.
- Reconfigure the existing handicapped parking spots, at the base of the western slope, to be a pull in pull out configuration to provide greater ease of access.

Vegetation

- Cultivate seedlings from the American Sycamore Witness Tree for future replanting.
- Convert cold season grass fields to warm season grass fields.
- Remove invasive plants from the site such as autumn olive and ailanthus.
- Maintain the existing field patterns.

McKinley Walkway (PMIS Statement 215835)

- Upper Portion
    - Repoint the historic drainage channel and remove plant material.
- Middle Course
    - Place a geotextile tarp on the western hillslope in order prevent further erosion.

- Middle Course (continued)
  - Manipulate the existing ditch, west of the McKinley walkway, into a bio swale with undulating hills in the channel.
  - Support the existing western hillslope through the shoring of the slope with vegetation and natural balustrades.

- Lower Portion
  - Continue the bio swale form down the course of the channel.
  - Rebuild the retaining wall of the McKinley Overlook path in order to address structural issues in the wall.
  - Place ABA compliant rails on the upslope side of the pathway.
  - Rehabilitated the walkway in a stable, yet porous surface material.

- PMIS Statement 204525
  - Repair deteriorated retaining walls exposed to the freeze thaw cycle.
  - Rehabilitate failing concrete with a porous yet stable material.



Treatment Alternative A

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Trees
- Boundary
- Areas of Change
- Field Changes

Scale 1”= 200’

CONCEPT B — MINOR REHABILITATION

General Concept: The treatment alternative provides more extensive recommendations for the cultural landscape and rehabilitates historic and non-historic features to improve the visitor experience. The modifications will be noticeable. The existing Mission 66 design of the Overlook Parking area and existing circulation do not provide compliant accommodations for visitors. In order to become more compliant, an ABA parking space should be introduced to the site. The park could consider an adjustment to the existing interpretation by installing interpretation at the top overlook wall, effectively bringing the interpretation to the viewer in a more accessible manner. Additional changes to interpretive elements must be made in order ensure that the existing interpretation at the site conforms to the presentation standards of the Harpers Ferry Center. This will lead to a greater consistency in interpretation at the site. The encroachment of woody vegetation throughout the site has impacted the open character of the cultural landscape. The growth of plants, such as trees and shrubs, at the overlooks could be removed in order to restore historic views as well as reestablish significant historic vantages to the Burnside Bridge.

ELEMENTS OF THE PLAN:

Accessibility:

Overlook Parking area

- Convert two of the existing parking spaces into a single ABA parking space.
- Vegetation
- Remove vegetation at the Rifle Pit Overlook to restore the view to the Burnside Bridge.
- Remove selected vegetation from the northern portion of the Georgian Overlook to restore the view to the Burnside Bridge.
- Remove vegetation from the Union Advance Trail Overlook to reestablish a view to the Burnside Bridge.
- Interpretation
- Remove the roof from the existing trail kiosk. Paint the structure a more appropriate color, keeping in character with existing wayfinding the in the park.
- Install additional interpretive panels at the Overlook Parking area to provide a more inclusive experience for visitors.

Site-wide

- Evaluate the existing interpretive panels and modify to conform to the interpretive panel reevaluation standards established by the Harpers Ferry Center.



Treatment Alternative B

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Trees
- Boundary
- Areas of Change

Scale 1"= 200'

CONCEPT C — REHABILITATION

General Concept: This treatment alternative recommends significant changes to the cultural landscape and proposes rehabilitation of historic and non-historic features. Accessibility is more actively explored in this alternative. Treatments include the development of a new path from the Overlook Parking area to the Rifle Pit Overlook, the introduction of a new parking lot off the Burnside Bridge Bypass Road, and modify the existing Union Advance Trail. The introduction of these elements into the landscape will make the cultural landscape's circulation more accessible and compliant. The removal of vegetation at strategic locations is more intensive than the previous proposal and requires more intensive maintenance. These practices will reestablish a pattern of vegetation more in keeping with the cultural landscape at the time of the battle. However, in order to provide a greater visitor experience, shade trees are suggested for the Overlook Parking area. To create a more engaging interpretation of the cultural landscape, the park should consider the expansion of interpretation to better reflect the interpretive threads identified in the Foundation Document.

ELEMENTS OF THE PLAN:

Accessibility

Overlook Parking area

- Construct a ramp from the Overlook Parking area to the Rifle Pit Overlook in order to establish an ABA path between the two features.

East Bank Hayfield

- Construct a new parking lot in the northern portion of the East Bank hayfield in order to provide an ABA access route to the eastern bank of Antietam Creek.
- Reconfigure the existing Union Advance Trail to provide an ABA accessible route to the Burnside Bridge.

Vegetation

Overlook Parking area

- Plant shade trees along the edge of the central median and sidewalk in order to provide shade to visitors.

West Bank Fields

- Remove the field of eastern red cedars to reestablish an open field.

Eastern Hayfield

- Engage in selective removal of trees and understory near the 11th Connecticut Monument.

Rifle Pit Overlook

- Engage in more intensive measures to remove woody vegetation from the Rifle Pit Overlook.

Georgian Overlook

- Remove woody vegetation to allow a 180-degree view from the overlook.

Interpretation

Overlook Parking area

- Replace the interpretive kiosk to conform to the standards established by the Harpers Ferry Center.

Site-wide

- Evaluate the existing interpretation at the site and compare to the interpretive themes that are located in the Foundation Document.
- Expand the existing interpretation to better convey the identified interpretive narratives from the Foundation Document to the public.



Treatment Alternative C

Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland

Legend

- Antietam Creek
- Deciduous Trees
- Cedar Trees
- Field
- Trail
- Road
- Burnside Bridge
- Monuments
- Trees
- Boundary
- Areas of Change

Scale 1"= 200'

CONCEPT D — RESTORATION + REHABILITATION

Treatment Alternative D alters the cultural landscape through the restoration of the land to an appearance more in keeping with the site during the Mission 66 period and the rehabilitation of other landscape features. In order to provide greater accessibility at the site, a second parking lot location is explored on the eastern bank of Antietam Creek. The portion of the Snavely Ford Trail to the Georgian Overlook will be examined in an effort to create a more ABA compliant pathway. To recapture the setting of the cultural landscape at the time of the Battle, portions of the landscape should be restored to an appearance more in keeping with the Mission 66 era, yet this must be done in such a way as to balance the natural resources needs of the cultural landscape. Interpretation is addressed through the active expansion of the types of interpretation at the site, including more inclusive designs and an interpretive app.

ELEMENTS OF THE PLAN:

Accessibility

Eastern Hayfield

- Construct an ABA parking lot to provide access to the eastern bank of Antietam Creek.
- Repave the historic Burnside Bridge road trace to provide ABA compliant access to the Burnside Bridge, using a stable, porous material.

Overlook Parking area

- Install a sunshade to provide a respite at the vantage point towards the bridge.
- Modifications to the Georgian Overlook Trail to conform to the ABA standards in a porous yet stable material.

Vegetation

West Bank Fields

- Remove trees that are growing adjacent to the Overlook Parking area and the McKinley Monument to reestablish a vista towards Sharpsburg, Maryland.
- Restore the 1960s field configuration by removing selected trees.

Interpretation

Site-wide

- Create inclusive interpretation.
- Design interactive interpretation.
- Expand the types of interpretation at the site.


Burnside Bridge Road
Burnside Bridge Bypass Road
Union Advance Trail
ANTIETAM CREEK
Vegetation Removal
Interpretation
Interpretation
Parking Lot
Vegetation Removal
Final Attack Trail
Georgian Walkway
Snavely Ford Trail
Vegetation Removal
Treatment Alternative D
Cultural Landscape Report
Burnside Bridge Area
Antietam National Battlefield
Sharpsburg, Maryland
Legend
Antietam Creek
Deciduous Trees
Cedar Trees
Field
Trail
Road
Burnside Bridge
Monuments
Trees
Boundary
Areas of Change
Scale 1"= 200'

Appendix B

Accessible Ramp Design Study

OVERLOOK PARKING AREA RAMP PROPOSAL

The following proposal was originally explored in Treatment Alternative C.

In the present configuration of the Overlook Parking area and associated circulation pattern, an individual with requiring a mobility accommodation cannot access the Rifle Pit Overlook. The curved path down the slope contains a set of shallow steps and not a ramp to provide egress or access to the Rifle Pit Overlook. An individual may attempt with reasonable peril to go down the feature, however, their path up the circulation corridor is impossible. The feature is effectively cut off from the circulation pattern above and below as the lower path contains shallow steps as well.

In order to create a more inclusive design scheme for the site, this recommendation proposes that a ramp be constructed connecting the Overlook Parking area walkway to the Rifle Pit Overlook. Based on the information provided in topographic maps, the height distance between the Overlook Parking area and the Rifle Pit Overlook is between ten and twelve feet, requiring an ABA ramp of approximately two hundred feet to traverse the slope. This distance would require the construction of a ramp with a slope of approximately 1:12. Through a series of design studies, National Capital Regional staff were able to determine that it is possible to create a ramp meeting the standards of ABA.

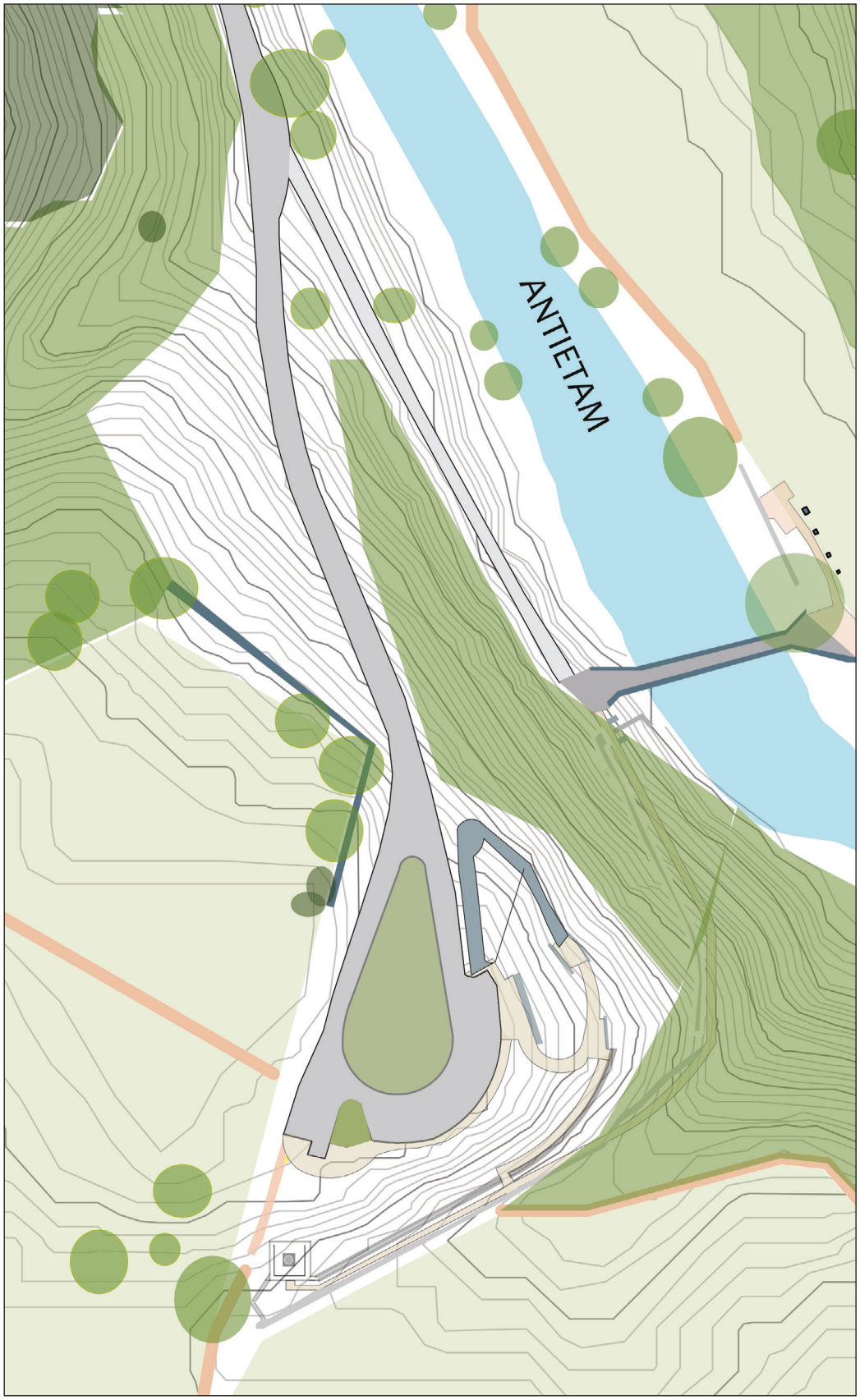
Starting at the northern edge of the parking lot, the new ramp will abut the existing sidewalk, but be composed of a different material. The shape of the ramp will curve north following the form of the slope. Halfway through the course of the ramp, a significant landing should be placed following the ABA standards, but to also provide a turning radius in the course of the feature. This landing should be elevated about the natural topography of the site. At the landing, the course of the ramp will continue south towards the Rifle Pit Overlook. Following the course of the topography the new ramp will connect at the northern portion of the overlook, which is defined by a non-historic rail fence. The path of the ramp must be a consistent 36 inches wide over the course of the feature, with passing space provided in addition to the landing. If the ramp is 60 inches, no passing spaces will be needed. In order to comply with ABA standards, a rail structure must be included in the design of the feature in order to provide stability to those traversing the feature.

The addition of the ramp, while arguably necessary, will be visible from the eastern bank of Antietam Creek and from the Burnside Bridge. However, this location is the least intrusive of the ramp schemes that could be constructed on the site. In keeping with the Secretary of the Interior Standards of Rehabilitation,

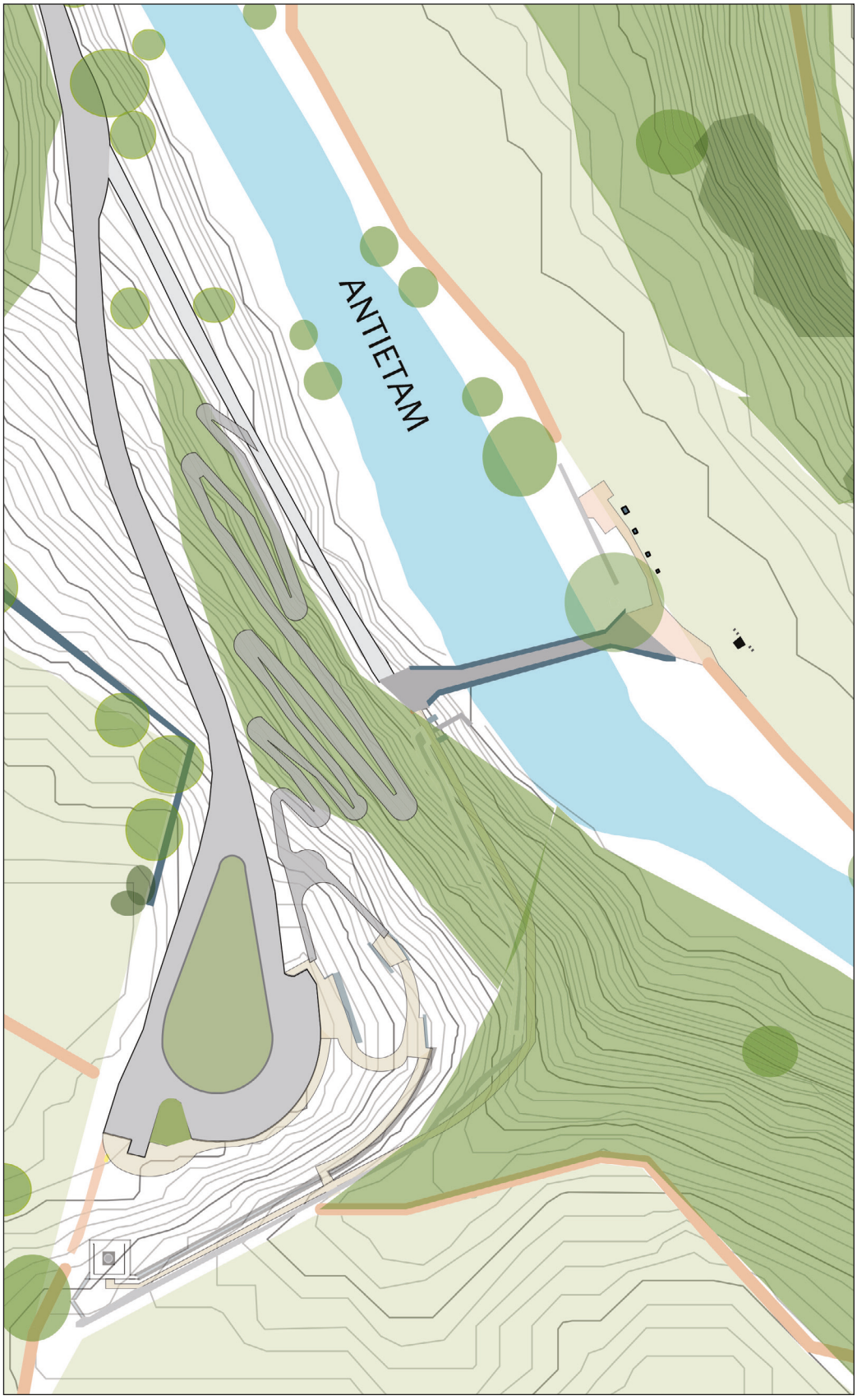
the matter of visibility is a concern for new additions to a historic landscape. As such, the physical appearance of any vertical member of the design must be as visually light as possible, yet retain structural integrity. To limit the visible impact on the landscape, the railing feature should consist of simple vertical members supporting an upper horizontal member. The design should conform to the design standards established by the Denver Service Center. Conforming to the standards of ABA the rail should be placed on both sides of the ramp path. As this is a new element being inserted on the landscape, it is the recommendation that a material other than stone be used, in order to ensure that the new ramp is distinctive yet complementary to the historic fabric of the Mission 66 design. At this time, it is not intended for the rail to extend into the area of the Rifle Pit Overlook, as the feature itself will not be manipulated beyond the removal of the non-historic fence.

An additional concern with the placement of the ramp is a small drain located in the proximity of the proposed placement of the feature. As it is undetermined the origin of the source of water that is flowing from the drain, it is recommended that the feature be removed or reworked to discharge at a different location. The course of the feature could be incorporated into the design of the pathway with the discharge occurring at the landing at the center of the ramp course.

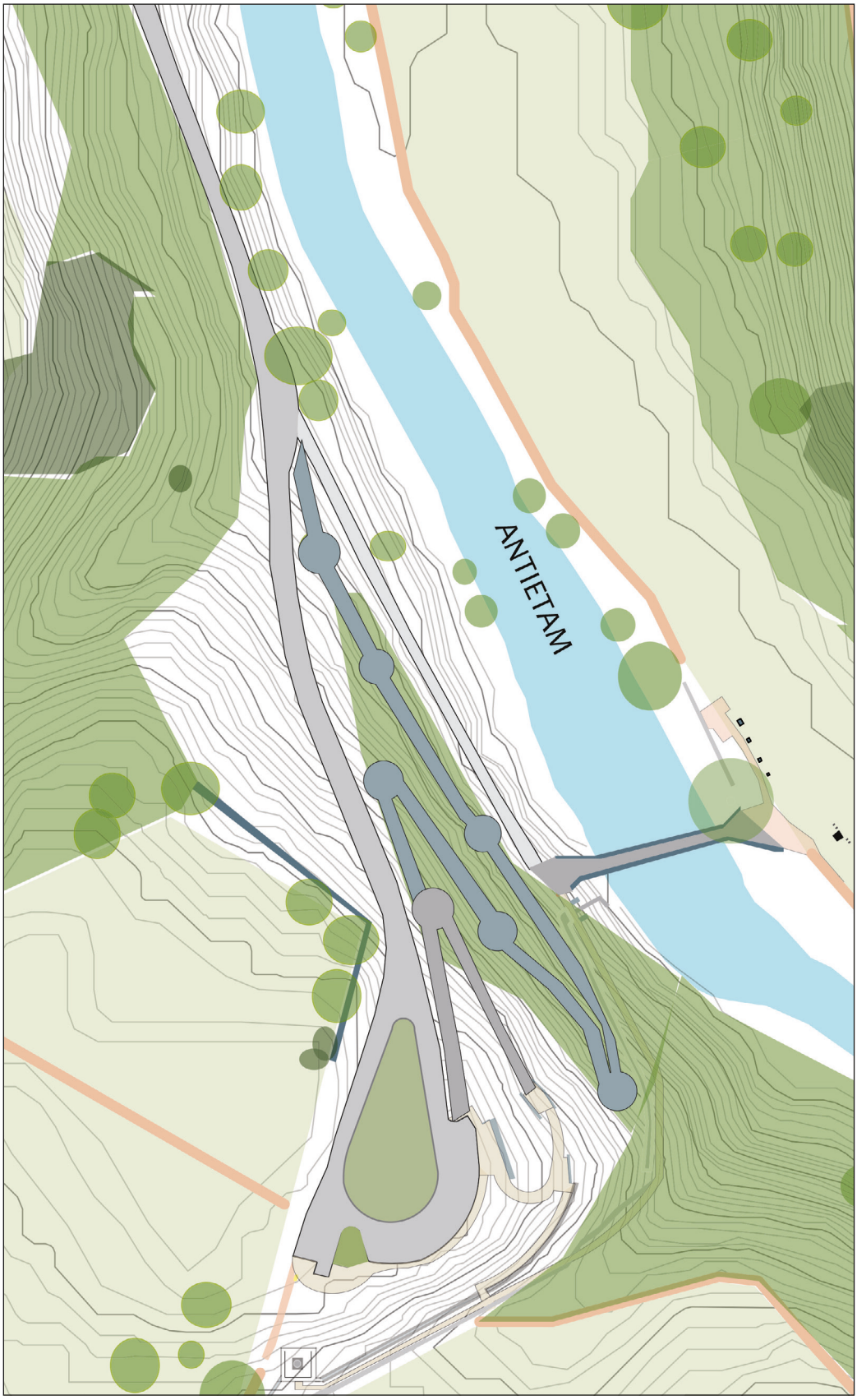




Schematic design of the accessible ramp with a slope of 1: 10. The proposal connects the Overlook Parking area to the Rifle Pit Overlook. This is the least obtrusive



Schematic design of the accessible ramp with a slope of 1: 20. The proposal connects the Overlook Parking area to the Burnside Bridge trace. This is the most compact route and the ideal slope.



Schematic design of the accessible ramp with a slope of 1: 20. The proposal connects the Overlook Parking area to the ABA parking spots. This is the most spread out configuration.

Appendix C

Accessible Parking Study

ACCESSIBLE PARKING

The following proposals were related to the plans associated with Treatment Alternatives C and D. The proposals explored the possibility of installing a second ABA accessible parking lot in the cultural landscape as a means to access the eastern bank of Antietam Creek. The concept was tabled by the park during the Cultural Landscape Report workshop due to the potential to encourage inappropriate land use (recreational activity associated with Antietam Creek). This appendix serves as a record of this design conversation.

TREATMENT ALTERNATIVE C

An evaluation of the cultural landscape has determined that due to the topography, the site can not reasonably accommodate the needs of park visitors. As design studies have determined that the insertion of an extensive ramp into the landscape is not a viable option, alternatives to the ramp were explored. As the western slope cannot be manipulated to provide ABA access, the potential of using the eastern bank was explored. The inclusion of additional parking in the cultural landscape will allow more of the site to be experienced including the eastern bank of Antietam Creek and the Burnside Bridge. Treatment Alternative C explores the less intrusive of the two options. Treatment Alternative D is more intensive due to placement and visual impact. Only one of the alternative proposals should be selected by the park, as it is not the recommendation of this document to implement both plans.

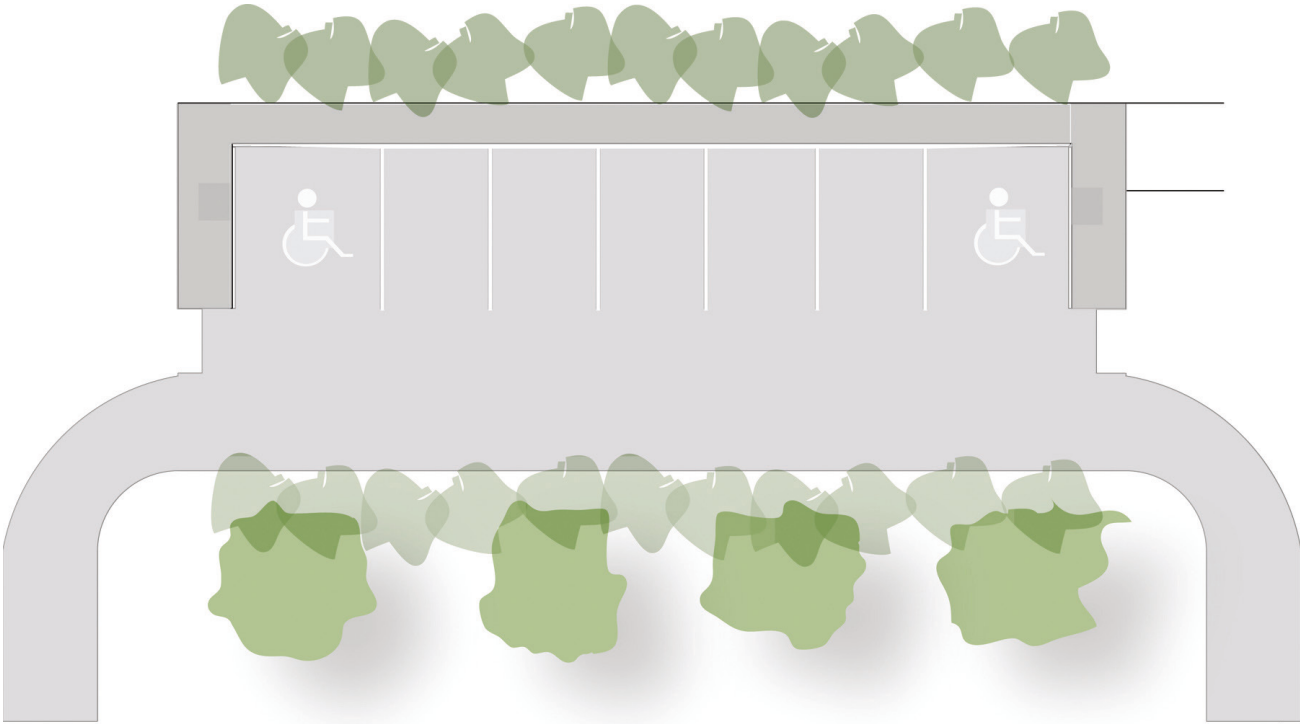
For Treatment Alternative C, the location for this new parking lot is the northern most hayfield contained within the boundary of this CLR on the eastern bank. Presently this field has an access point that connects to the Burnside Bridge Bypass opposite the Rohrbach Campground. The design of the parking lot will conform to the standards of both the ABA and the Denver Design Services Center. It is recommended that the parking lot be a pull in pull out design. By having the parking space a one-way entrance/ exit design, it will rectify a design issue of the sharp curve and the problems of limited site lines. In order to address the new traffic pattern that will develop from the introduction of turning and pulling out traffic, the park will have to enter into conversations with the Maryland DOT and the applicable Washington County officials to review the impacts of the creation of this design.

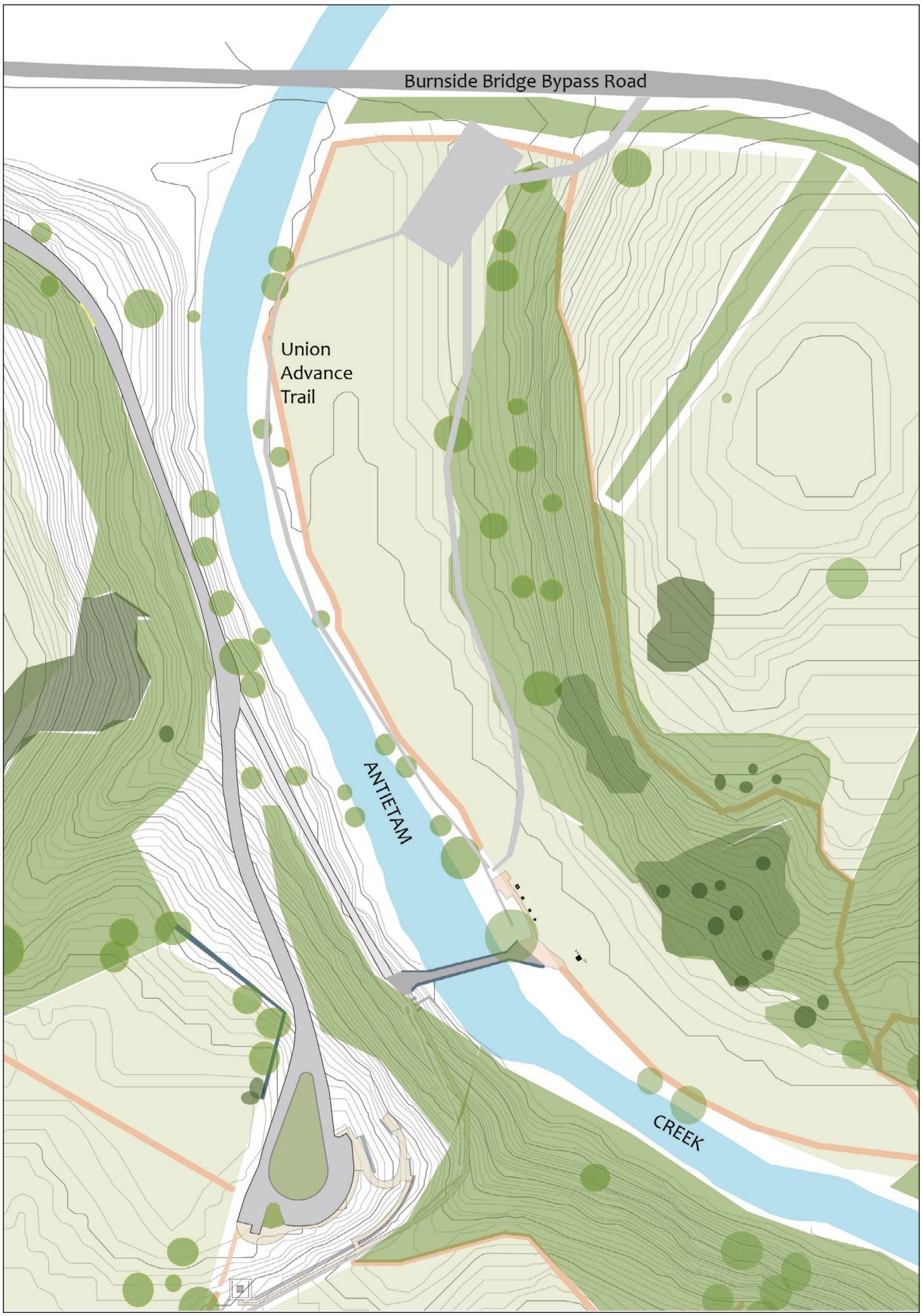
Regarding the parking lot design, at least one ABA spaces should be incorporated into the design, with no more than six new total spaces in the lot. Conforming to the standards of ABA, the accessible space will either have a width of 96 inches with an adjacent parking aisle or be a total of 136 inches wide with no parking aisle. The location of the parking lot could be placed on the crest of the hill

behind the existing tree line. The curve of the hillside will provide a visual barrier for the parking lot, limiting the impact of the feature on the cultural landscape. The location of the parking lot on the hill will necessitate the need to construct a small ramp from the top of the hill to the lower topography of the bottomland pasture. The ramp will be less intrusive in the landscape than the ramp that would be necessary on the western bank. The ramp will continue along the edge of the pasture and Antietam Creek, following the existing course of the Union Advance trail towards the Burnside Bridge.

The parking lot should be made of a stable yet pervious material. Rather than opt for a green pavement consisting of geotextiles and grasses, the surface of this feature should be of a more substantial product.

The introduction of the parking lot into the landscape will provide the park with an opportunity to improve the trail network on the eastern bank. In order to make the path accessible from the parking lot to the bridge, the surface of the circulation path should be improved from an earthen path to that of a more solid material. Similar to other proposed paths in the landscape, the width of the path should be 36” with areas of passing expanding to a width of 60” in order to conform to the ABA standards for pathways. A rail system must be added to the new trail.




Burnside Bridge Bypass Road
Union
Advance
Trail
ANTIETAM
CREEK



Like the previous alternative, the parking lot should be a pull in/ pull out design that will conform to the standards of the Denver Design Services center. Again at least one space should be designated for ABA and will have a total of no more than six additional spaces. The parking spaces will either have a width of 96 inches with an adjacent parking aisle or be a width of 132 inches with no adjacent parking aisle. The placement of the feature will follow the historic road. The exact placement of the parking lot is debatable but should exists somewhere in the cultural landscape south of the 11th Connecticut monument to shield the lot from the direct view of the cultural landscape. Similar to the other proposal, a multi-agency team will be assembled to create the lot.

Similar to the other parking lot proposal in the northern hayfield, the material of the parking lot must be pervious in nature, yet stable. Working with NCR staff, the park will have to determine what material to use in the construction of the project. The location of the parking lot in the low point of the eastern bank will require additional design work to accommodate water retention and inundation, and the collection of rain run-off. Bio-swales and water slowing measures must be incorporated into the design of the feature. In addition to the retention of the water, the park must take precautions to prevent the seeping or contamination of Antietam Creek from the oils and fluids from the vehicles that will park in the

lot. The introduction of plants that are known for filtration values, such as cattails (*Typha typhaceae*) could absorb chemicals prior to contact with the Antietam Creek drainage.

The low placement of the parking lot in the landscape lends a structural advantage to the park, as it will not require the construction of a ramp to transport visitors to the Burnside Bridge. Similar to the other proposal, improvements are required to make the existing historic road trace an accessible walkway for visitors. However, the close proximity of this proposed parking lot to the bridge means that a limited amount of new trail surface would be introduced to the site.

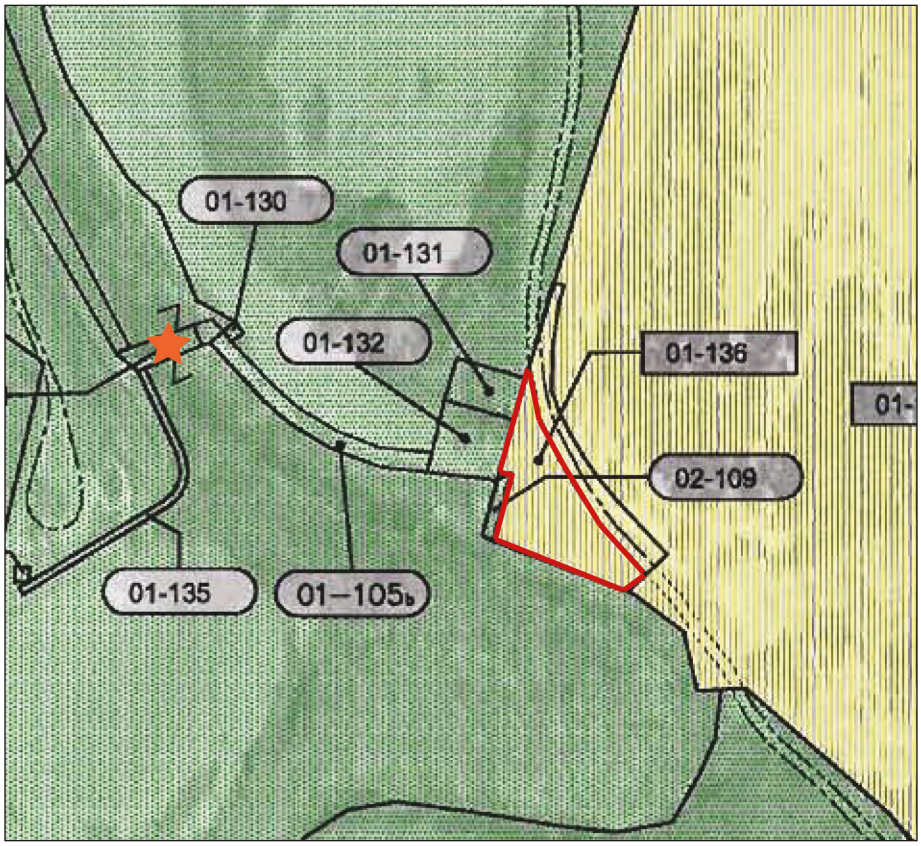
The advantage of the site is also the disadvantage of this proposal. The relatively even topography with edge of the creek means that the area is susceptible to inundation from Antietam Creek. The material proposal for the walk way and the parking pad itself must be pervious in order to react to the possibility of flooding. Discussion between NCR staff and the Natural Resource staff of Antietam National Battlefield revealed that the area is not a wetland, nor is it an area of habitat concern. However, general observations during site visits reveal the area to be wet in general.

TREATMENT ALTERNATIVE D

Eastern Bank Parking

While the previous alternative focused on the construction of a parking lot in the northern hayfield of the eastern bank, this proposal will focus on the creation of a parking lot in the southern portion of the eastern bank. Historically, evidence exists for parking vehicles on the eastern bank of Antietam Creek adjacent to the Burnside Bridge. A 1940s image shows a vehicle parked adjacent to the Burnside Bridge. Period plans from the 1950s and 1960s indicate the presence of the parking lot during the documentation of existing conditions prior to the construction of the Burnside Bridge Bypass. However, this ended in the Mission 66 Era with the construction of the bypass and the rerouting of vehicular traffic away from the bridge.

The proposed construction location is flat and close to the Burnside Bridge. The course of the bypass is less precarious than the other location with the grade of the potential entrance even with the existing road. However, in order to enact this particular proposal, Antietam National Battlefield must purchase additional property. The access to this portion of the cultural landscape is parcel 01-136, which is held in a right of way easement and not in fee simple ownership by the park. The parcel is within the legislated boundary of the park and therefore could be added without the need to change without a petition for a boundary expansion.




CREEK
Snavely
Ford
Trail

Like the previous alternative, the parking lot should be a pull in/ pull out design that will conform to the standards of the Denver Design Services center. Again at least one space should be designated for ABA and will have a total of no more than six additional spaces. The parking spaces will either have a width of 96 inches with an adjacent parking aisle or be a width of 132 inches with no adjacent parking aisle. The placement of the feature will follow the historic road. The exact placement of the parking lot is debatable but should exists somewhere in the cultural landscape south of the 11th Connecticut monument to shield the lot from the direct view of the cultural landscape. Similar to the other proposal, a multi-agency team will be assembled to create the lot.

Appendix D

ABA Standards

General
• The National Park Service, as a federal agency, must comply," to the extent practicable," must provide an accessible route for any new designed or altered portions of existing trail or pathways. • Routine or periodic trail maintenance activities are not considered an alteration. An alteration is an intentional changed to the original design, purpose, intent or function. However, maintenance consists of periodic repair of existing trails in keeping with the original design of the circulation path. • The application of the ABA standards extends to all areas that are newly designed, newly constructed buildings, facilities, and altered portions of existing buildings and facilities. • The accessible entrance may be different to the one used by the general public (though it cannot be locked and ADAAG requires directional signage to the accessible entrance). • A ramp steeper than is ordinarily permitted may be used in space limitations (a gradient of 16:6 percent (1:6) • Only one accessible restroom is required and it may be unisex. • Accessible routes are only required at the elevation of the entrance. • Interpretive materials should be located where they can be seen by seated persons. • Parking areas should be related directly to the building which they serve. "Handicapped" parking stalls should be no more than (100') from Building entries (Landscape architect's Portable Handbook, 2001).
Accessible Route Specifications
• At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger loading zones. • An alteration to an existing route that decreases or has the effect of decreasing the accessibility of a building or facility below the requirements for a new construction at the time of alteration is prohibited. • An alteration of an existing element, space, or area of a building or facility shall not impose a requirement for accessibility greater than required for new construction. • Existing elements in compliance to an earlier standard pursuant to the Architectural Barriers Act or Section 504 of the Rehabilitation Act of 1973 shall not be required to comply to these requirements. • Width= 36 inches . • Passing Zone = 60 inches x 60 inches occurring at a regular interval every 200 horizontal feet in the course of the route. • Wheelchair turn radius= 180 degrees with a minimum foot print of 48 inches wide, with a 42 inch wide return. A 48 inch space shall separate the return • Slope= Preferred 1:20; Maximum allowed is 1:10. • Where a slope is 1:20 a resting interval must be placed every 50 feet. • Cross slope of the path not to exceed 1:48. • Handrails necessary for a route with a slope greater than 1:20. • Ground surfaces and floors shall be stable, firm, and slip resistant materials. • Beveled edges will be used for all changes in level of material. • A gradient change greater than 5 percent will require the incorporation of a ramp. • Obstacles no greater than ½ inch will be allowed over the course of an accessible route. • Openings in the surface of the material will not exceed ½ inch

Accessible Parking

- Space= 96 inches wide; Van= 132 inches width minimum.
- Van parking width can be 96 inches if an access aisle 96 inches is placed adjacent to the feature.
- Access aisle = the full length of the parking space.
- Access aisle shall adjoin an accessible route. Two parking spaces can share a single accessible route.
- Accessible aisles shall be 60 inches minimum.
- Accessible aisles shall be marked.
- Accessible aisles shall not overlap vehicular way.
- Accessible aisles shall be on the same level as the parking spot that is being served.
- Vehicular pull up space will be a minimum of 96 inches wide by 20 feet long.
- Adjacent accessible aisle will be 60 inches and run the full length of the parking space.
- Vertical clearance of 114 inches is required at each accessible parking spot.
- Shall be made of a firm and stable material.

Parking Space Requirements	
Total number of parking spaces provided in parking facility	Minimum number of required accessible parking spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

Handrails

- Handrails are required on ramp runs greater than 6 inches
- Not required on running slopes less than 1:20
- A slope greater than 1:20 will require the installation of a handrail.
- Handrails shall be continuous within the full length of each stair flight or ramp run.
- Handrails on switchback or doglegs stairs and ramps shall be continuous between flights or runs (505.3)
- Top gripping surface of the handrail will be 34 inches minimum and 38 inches maximum vertical above the surface of the circulation feature.
- Clearance between handrails gripping surface and adjacent surface shall be 1 ½ inches.
- Gripping surface will be continuous in length and unobstructed.
- Handrails shall not rotate within their fittings.

- At the top of a flight of stairs or a ramp, the handrail will extend twelve inches beyond the start of a landing.

Curb Ramps

- Curb ramps shall not be steeper than 1:20.
- Flares will not be steeper than 1:10.
- Landing length will be a minimum of 36 inches.
- Shall not flare out into traffic lanes, parking spaces, or parking access aisles.

Ramps

- Ramp runs shall have a running slope not steeper than 1:12 (preferred) not to exceed 1:10 (maximum allowed).
- Cross slope shall not be steeper than 1:48.
- Changes in level other than the running slope or the ground slope are not permitted.
- Clear width= the width between handrails shall be 36 inches minimum.
- The rise of any ramp shall be 30 inches maximum.
- Landings shall be placed at the top and bottom of the feature.
- The minimum width of the landing shall be the minimum width of the adjacent ramp.
- Clear landing= 60 inches
- Ramp runs with a rise greater than 6 inches shall have handrails
- Ramps that change direction shall have a clear landing of 60 inches minimum by 60 inches minimum
- Edge protection is required if handrails are required.
- Surface must be stable and non slip
- Must be well draining to prevent the accumulation of rainwater

Stairways

- No open risers
- A uniform riser height and tread depths will be maintained over the course of the run of the stairway
- Risers shall be 4 inches high minimum and 7 inches high maximum.
- Treads will be 11 inches deep minimum
- Treads are permitted to have a slope no greater than 1: 48.
- Stairs shall have handrails.
- Stair treads and landings will be designed to prevent the accumulation of water.

Viewing Areas

- Clear ground space, a minimum of 36 inches by 48 inches must be provided at each viewing location.
- One viewing space will overlap an accessible trail or clear ground space.
- The viewing space will be a 32 inch maximum by 51 inch minimum high spot
- Guards or safety barriers will be permitted
- A turning space shall be provided in the viewing area
- The surface of the clear ground space and turning spaces shall be firm and stable.
- The slope shall not be steeper than 1:48

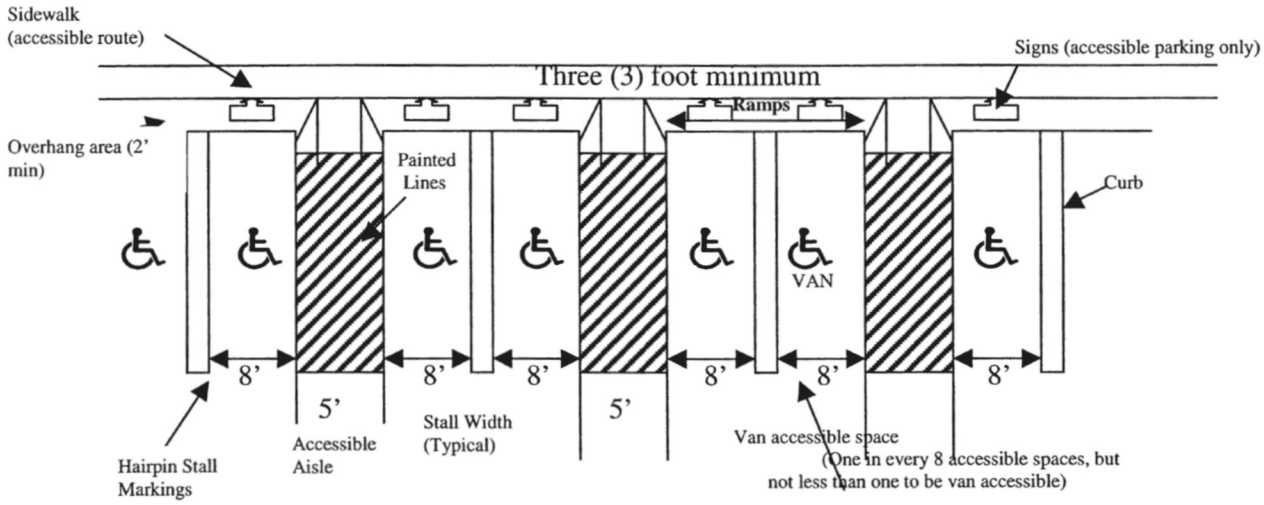
Conditions for Exception

The natural condition and state of cultural resources of the site may create a situation where it is impossible to meet the standards established by the American Barriers Act. In this situation, modifications and the creation of accessible routes must meet the standards to the “extent

practicable." If a feature cannot meet the standards an exception must be applied for. Consideration for an exception will be granted based on the possibility of meeting the criteria:

- Addressing concerns of terrain to meet the established standards impairs the natural landscape to a point of detriment.
- Construction practices can not meet the standards of the guidelines
- The installation of the accessible route will directly conflict with natural and cultural resource laws including: National Historic Preservation Act, National Environmental Policy Act, Endangered Species Act, Other Federal, State, or local law, the purpose of which is to preserve archeological, cultural, historical, or other significant features; the environment; or threatened or endangered species

Figure 1—Accessible Parking Space Standards



Appendix E

Interpretation Alternatives

3-D TOPOGRAPHIC RELIEF MODEL

In an effort to create more inclusive interpretation, the park should consider an alternative medium or method to provide information. Individuals with vision impairments rely heavily on other senses, including an often-heightened sense of touch. As the topography of the cultural landscape played a significant role in the story of the site, a unique means of interpretation is the construction of a topographic relief model. The model would capture the topography and key features, such as the Burnside Bridge, the monuments, and the Witness Tree. The model would be a solid form encouraging exploration and understanding of the site through touch. Examples of this approach can be found at the Smithsonian Institute in Washington DC and Colonial Williamsburg. The author has provided images of an example model. This model has the benefit of providing visual interest for unimpaired visitors and an additional means of engaging with the audience. The following guidelines will inform the content and form of the installation:

1. The model should be made out of cast metal, resin, or cast concrete
2. The model should be placed no more than three feet off the ground allowing optimal interaction
3. The model should include the key landscape features of the Burnside Bridge, the monuments, the Witness Tree, and the Mission 66-era design.
4. Braille and standard text labels should be incorporated into the feature.
5. The width of the feature should be no more than twice the arm span of a child, encouraging circulation around the feature.
6. The material used to create the model should be durable to withstand excessive touching
7. The material should be appealing to the touch.
8. Soft edges rather than sharp or pointed edges should be used.
9. The location of the feature should be at a prominent location that encourages exploration to the destination. The inclusion of the feature in the monument plaza would help to reinvigorate interest in the feature.





Photographs by author the images are of the Colonial Williamsburg topographic relief model that is used as an interpretive device at the site.

MOBILE APP

As the staff of Antietam National Battlefield evaluates and re-envision the existing Long- Range Interpretive Plan, recent advances in digital technology provide the park with an opportunity to explore new methods of engaging the public. It is recommended that the park investigate the implementation of a digital tour housed on visitor's smart phone devices. The medium has the potential to address issues associated with interpreting the site with a limited interpretive staff, can be modified to accommodate the needs of individuals with mobility issues and visual and hearing impairments, and is a non-intrusive means of interpreting the cultural landscape. The HFC lists digital apps as an approved method of interpretation that can be employed by a park. From a cost and logistical perspective, should Antietam National Battlefield pursue the option of creating an app, the app should be developed for the entire park, not solely for the Burnside Bridge cultural landscape.

LOGISTICS

The HFC recommends the development of a collaborative partnership between the park, the HFC, and a third party partner to create an app. At this time, the apps created for the National Park Service focus on wayfinding and are not specifically used for interpretation. However, Antietam National Battlefield is poised to change this trend. Should the battlefield pursue the development of an interpretive app, consultation with HFC is necessary in order to formulate the implementation process. Discussion will include selecting a platform host system and developer that can address the needs and desires of the park. HFC can help guide the creation of content and the development of agreements that regarding the updating of content. It should be noted that an app is intended to be used in tandem with traditional interpretation, not as a complete alternative to established methods. Modifications to existing interpretation, including the addition of QR codes, may be necessary.

CONTENT

Using an existing National Park Service app, the National Mall and Memorial Parks app, as a case study, NCR staff have designed "screen shots" of what should generally be included in a comparable Antietam National Battlefield app. These remarks should be viewed as a springboard rather than a final solution of what an interpretive app for Antietam could be. The National Mall and Memorial Parks app includes five topic tabs: Park Overview/ Events/ News, Maps, Walking Tours, Digital Interactions, and Additional Links/ Partnerships.

PARK OVERVIEW/ EVENTS/ NEWS

This tab orients visitors with a general overview of the park. Subcategories in the tab allows the visitor to see if the park has any planned or scheduled events including ranger-guided tours, demonstrations, or lectures. The tab contains information regarding event locations. Any park warnings or visitor notifications, such as severe weather warnings, can be placed on the app in order to convey information to the public in a timely manner. This tab also allows visitors to view any recent accomplishments or achievements by park staff.

MAPS

A key component of the National Mall and Memorial Parks app is the park map that links with the users smart phone GPS. This allows the visitor to know exactly what portion of the park they are located. The map highlights or calls out nearby sites, informing a visitor about the significance of a resource or serves as a guide to a visitor to other

nearby points of interest. Pin icons that are embedded into the maps represent the landmarks. This information changes as a person walks through the park.

WALKING TOURS

Further utilizing the GPS technology, the app groups related pins on a defined pathway to create an interpretive experience. Sites with a similar significance are linked together on a predefined "ideal" route. Regarding Antietam National Battlefield, this function of the app could be used to link stops associated with the six identified interpretive narratives or provide information regarding the more obscure interpretive panels in the landscape to encourage site exploration. The app could contain information about the existing trail network in order to orient visitors. Beyond the identified interpretive themes, the park could develop different walking tours associated with the different geographic features in the park, or different aspects of the battle.

DIGITAL INTERACTIONS

A facet that makes a digital app alluring for interpretation is the ability to explore the cultural landscape with additional information scattered throughout a location. Using the camera on the smartphone and the GPS technology, the app will scan the cultural landscape and determine the presence of any embedded app information. This information displays as hot buttons on the image. By pressing the button, the viewer interacts with the interface and information is delivered over the screen of the device. Examples of interactive interpretation include short video clips explaining the significance of a particular site, the appearance of a historic photograph with a narrative blurb, or an animation illustrating troop movements from the battle. The technology presents the opportunity to animate the Battle of Antietam or to depict lost landscape features such as the historic Newcomer/ Spong Farmstead. The interactive elements will be geo-referenced, requiring the user to be physically present in the park's boundaries to activate the interpretation. To provide inclusive interpretation, the app will include closed captioning and audio narration in order to engage visitors with vision and hearing impairment.

ADDITIONAL LINKS/ PARTNERSHIPS

A final tab included in the case study app provides visitors with information regarding partnership programs and links to other regional information. For Antietam National Battlefield, specifically, this tab could include information on friends groups, such as the Civil War Trust, and the nearby National Park Service units of the Chesapeake and Ohio Canal National Historical Park, Harpers Ferry National Historical Park, and Monocacy National Battlefield.







GENERAL GUIDELINES FOR THE APP.

When developing an interpretive app, the final product should be informed by the following guidelines:

- The app should be easily approachable by the public and be intuitive to operate, requiring minimum instruction.
- The app should be easily updatable in order to provide relevant information regarding current park activities and area alerts.
- The app should be geo-spatial reference to ensure optimal interaction within the boundaries of the park.
- The app should include legible geo-referenced park maps that orient visitors in the battlefield.
- In order to accommodate visitors with special needs, the app should include closed captioning and audio tours.
- The app should include interpretive content including guided tours.
- The app should be an interpretive tool rather than the sole method of interpreting the cultural landscape.
- The app should be housed on a relevant host platform.
- The app should be included in the long- range interpretive planning updates.
- The app should be fiscally prudent.
- The app should include trail information

INTERACTIVE PANELS

When evaluating the existing interpretive panels or planning for the expansion of the interpretive waysides, it is recommended that the park considers using interactive panels as a means of providing provoking interpretation. The approach provides a tactile means of engaging the public. This method will not be appropriate for every interpretive panel, and should only be used where it will enrich the overall interpretive experience. Examples of interactive interpretive elements include the recreation of a component of a Civil War era gun, the installation of a feature that directs the view of the visitor, or a facsimile of an artifact related to a particular interpretive theme. This approach is more relevant for the engagement of a younger audience or for visitors with visual impairment.

NCR provides the following guidelines prior to the installation of such feature:

- Will the inclusion add to the interpretive theme present on a panel?
- Will the feature add to the understanding of the visitor?
- Is the inclusion necessary for understanding or provocation of the visitor to the narrative of the site?
- Can this element be contained effectively to the prescribed media guidelines?
- Can the media be configured in such a way that the material will need minimal replacements?

Appendix F

Accessibility Signs and Guides

ACCESSIBILITY SIGNS AND GUIDES

In 2017, the Harpers Ferry Interpretive Center provided examples of appropriate trailhead signage for outdoor developed areas. The document provided examples of recently implemented trailhead signs that addressed the Architectural Barriers Act Accessibility Standards (ABAAS) and the requirements of the United States Access Board to, "address access to trails, picnic and camping areas, viewing areas, beach access routes and other components of outdoor developed areas on federal sites when newly built or altered."

ABAAS REFERENCES

F216.13 Trailhead Signs- Where new trail information signs are provided at trailheads on newly constructed or altered trails designed for use by hikers or pedestrians, the signs shall comply with 1017.10

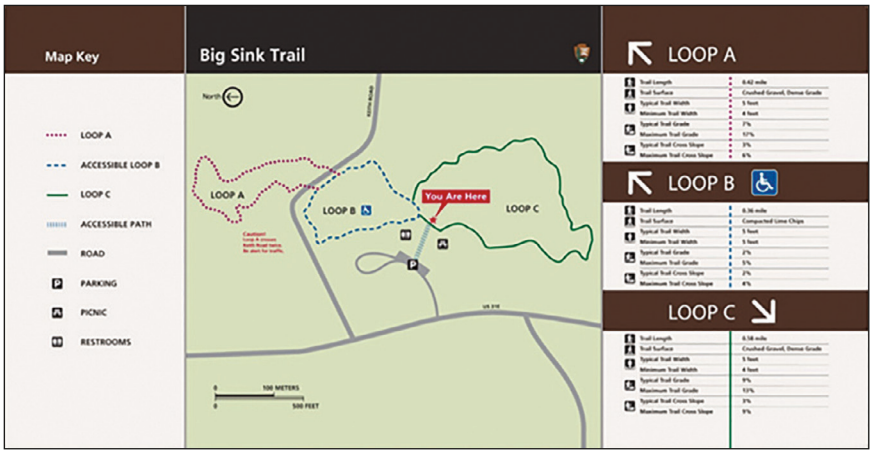
Advisory F216.13 Trailhead Signs- New trail information signs are required to comply with 1017.10 regardless of whether the newly constructed or altered trails comply with 1017. If trail information signs designate the name of the trail, only the name of the trail is required to comply with 703.5. See F216.2 Tactile characters are not required on exterior signs. Trail information signs are not required to display the International Symbol of Accessibility.

1017.10 Trailhead Signs. Trail information signs at trailheads shall include: 1. Length of the trail or trail segment; 2. Surface type; 3. Typical minimum tread width; 4. Typical maximum running slope; 5. Typical maximum cross slope.

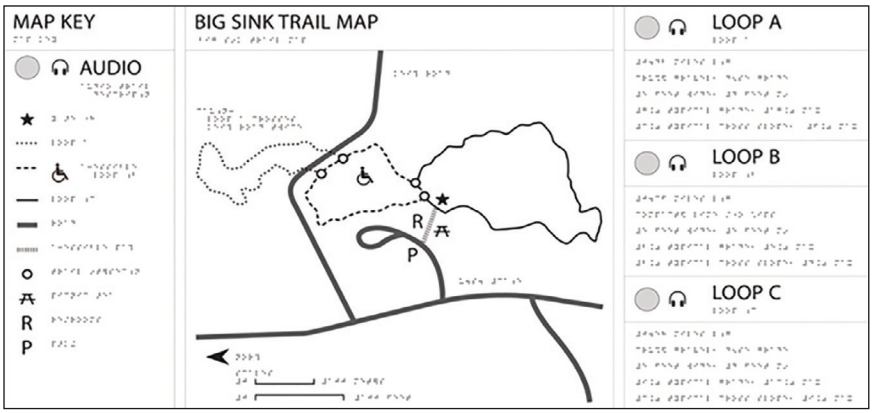
While the requirements for information is specific, the guidelines do not specify how the information must be displayed graphically. The following examples show different sign renderings and composition currently employed by parks.



According to the Harpers Ferry Interpretive Center, this mixed presentation display is deemed one of the most successful presentations as it includes a tactile and audio element for visitors. The wayside is located at Abraham Lincoln Birthplace (ABLI)

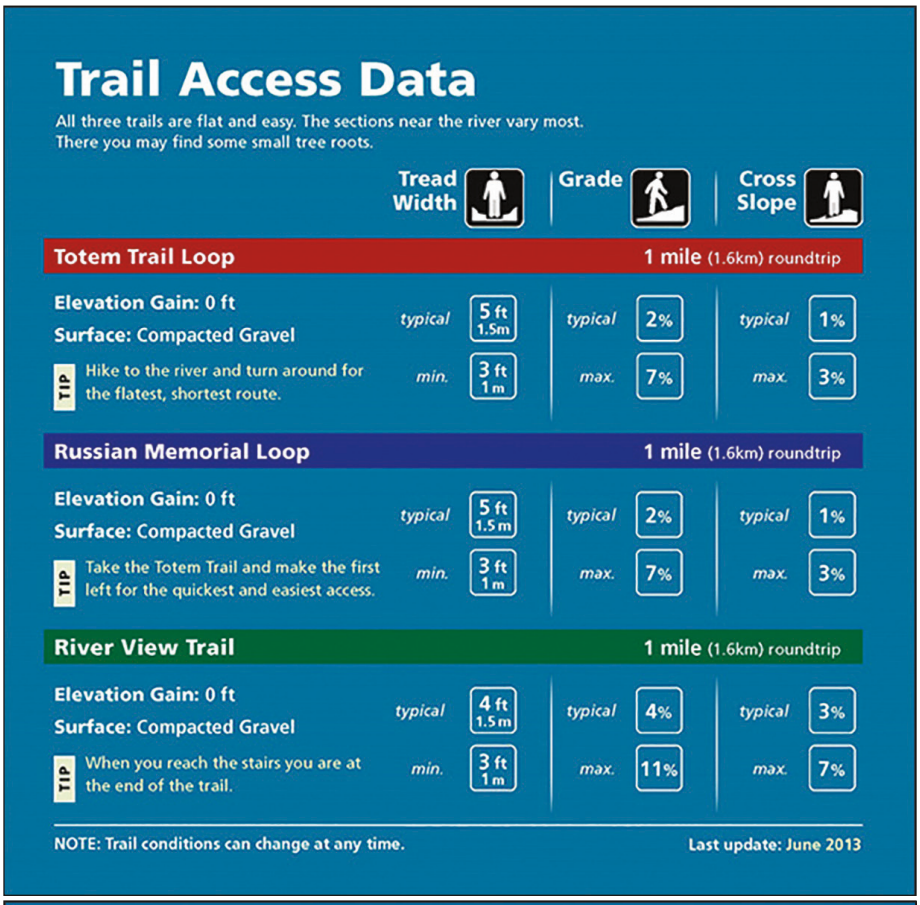


The graphic depicts the accessible route (Loop B). The route is highlighted in a different color and includes a handicap logo

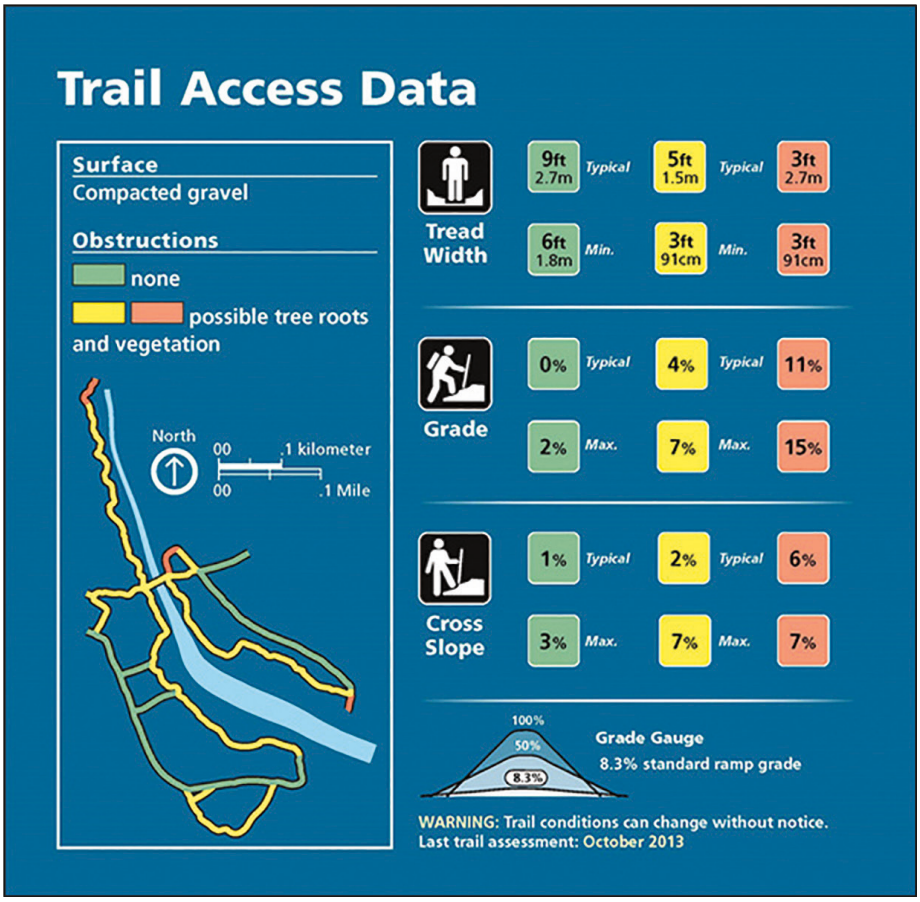


The tactile component includes braille and indicates the presence of auditory components for visitors. The different trails and rendered differently and convey the same information as the visual guide provided.

The presentation of the Sitka National Historic Park trail information more closely follows the ABAAS guidelines. The graphic details the material, elevation gain, tread width, grade, cross slope, and overall length of the trail.



The second example from Sitka National Historic Park is color coded. The provided map highlights possible obstructions or barriers that the visitor could anticipate while on this particular trail. For the same color coded areas, the tread width, grade, and cross slopes are provided. A graphic in the lower portion of the sign illustrates the grade percentage compared to the standard ramp grade.







At Grand Canyon National Park, the park opted to provide an elevation profile on the graphic in order to help visitors better visualize the changes in the grade of the trail. Key points on the trail are highlighted in the elevation profile and the site map.



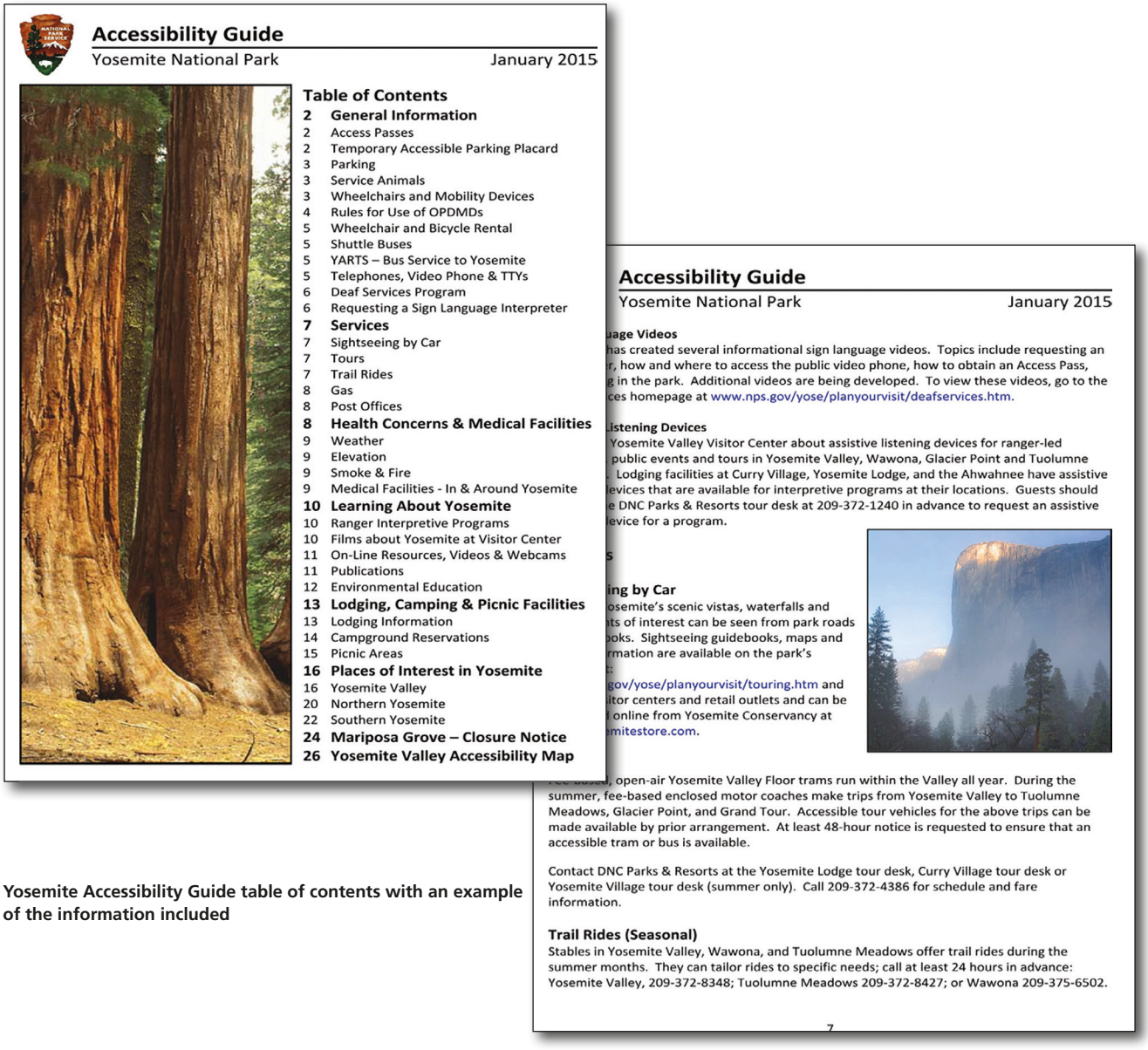
At Sleeping Bear, truly accessible portions of the trail are rendered in blue, while portions of the trail where the grade exceeds what is allowed are rendered in red, with the grade percentage provided.



During the Antietam Accessibility Workshop, Monta Baskerville, the NCR Accessibility Coordinator, suggested that ANTI, following the example of Yosemite National Park, create an accessibility guide. A briefer version of the document could be made for the park.

In 2015, Yosemite National Park created a guide for visitors accessibility. The guide provides a general overview of park conditions including weather, elevation, safety facilities and pertinent contact information. The guide then addresses specific topics including matters regarding accessibility, hearing impairment services, audio guides for seeing impaired, transportation, and the anticipated experience of visitors with aphasia. Finally, the guide provides a brief description of places of interests and describe the accommodations and services provided to visitors. The guide is housed on the park website under park information and is available at entrance stations and visitor centers.

Included are a few images of the pages contained in the guide as an example for the park.



Accessibility Guide
Yosemite National Park January 2015

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2 General Information
2 Access Passes
2 Temporary Accessible Parking Placard
3 Parking
3 Service Animals
3 Wheelchairs and Mobility Devices
4 Rules for Use of OPDMDs
5 Wheelchair and Bicycle Rental
5 Shuttle Buses
5 YARTS – Bus Service to Yosemite
5 Telephones, Video Phone & TTYs
6 Deaf Services Program
6 Requesting a Sign Language Interpreter
7 Services
7 Sightseeing by Car
7 Tours
7 Trail Rides
8 Gas
8 Post Offices
8 Health Concerns & Medical Facilities
9 Weather
9 Elevation
9 Smoke & Fire
9 Medical Facilities - In & Around Yosemite
10 Learning About Yosemite
10 Ranger Interpretive Programs
10 Films about Yosemite at Visitor Center
11 On-Line Resources, Videos & Webcams
11 Publications
12 Environmental Education
13 Lodging, Camping & Picnic Facilities
13 Lodging Information
14 Campground Reservations
15 Picnic Areas
16 Places of Interest in Yosemite
16 Yosemite Valley
20 Northern Yosemite
22 Southern Yosemite
24 Mariposa Grove – Closure Notice
26 Yosemite Valley Accessibility Map

Accessibility Guide
Yosemite National Park January 2015

uage Videos
has created several informational sign language videos. Topics include requesting an
r, how and where to access the public video phone, how to obtain an Access Pass,
g in the park. Additional videos are being developed. To view these videos, go to the
ces homepage at www.nps.gov/yose/planyourvisit/deafservices.htm.

istening Devices
Yosemite Valley Visitor Center about assistive listening devices for ranger-led
public events and tours in Yosemite Valley, Wawona, Glacier Point and Tuolumne
Lodging facilities at Curry Village, Yosemite Lodge, and the Ahwahnee have assistive
evices that are available for interpretive programs at their locations. Guests should
e DNC Parks & Resorts tour desk at 209-372-1240 in advance to request an assistive
evice for a program.

ing by Car
osemite's scenic vistas, waterfalls and
ts of interest can be seen from park roads
ooks. Sightseeing guidebooks, maps and
rmation are available on the park's
:
gov/yose/planyourvisit/touring.htm and
itor centers and retail outlets and can be
online from Yosemite Conservancy at
mitestore.com.

, open-air Yosemite Valley Floor trams run within the Valley all year. During the summer, fee-based enclosed motor coaches make trips from Yosemite Valley to Tuolumne Meadows, Glacier Point, and Grand Tour. Accessible tour vehicles for the above trips can be made available by prior arrangement. At least 48-hour notice is requested to ensure that an accessible tram or bus is available.

Contact DNC Parks & Resorts at the Yosemite Lodge tour desk, Curry Village tour desk or Yosemite Village tour desk (summer only). Call 209-372-4386 for schedule and fare information.

Trail Rides (Seasonal)
Stables in Yosemite Valley, Wawona, and Tuolumne Meadows offer trail rides during the summer months. They can tailor rides to specific needs; call at least 24 hours in advance: Yosemite Valley, 209-372-8348; Tuolumne Meadows 209-372-8427; or Wawona 209-375-6502.

7

Yosemite Accessibility Guide table of contents with an example of the information included

Accessibility Guide

Yosemite National Park January 2015

Medical Facilities Outside Yosemite with a Range of Services Include:

John C. Fremont Hospital
5189 Hospital Road
Mariposa, CA 95338
209-966-3631

Northern Inyo Hospital
150 Pioneer Lane
Bishop, CA 93514
760-873-5811

Tuolumne General Hospital
101 Hospital Road
Sonora, CA 95370
209-533-7100

Adventist Community Clinic
(Urgent Care only)
48677 Victoria Lane
Oakhurst, CA 93644
559-683-2711

Horizons Unlimited Health Care
Mariposa Clinic
5320 Highway 49 North
Mariposa, CA 95338
209-966-2344

Sonora Regional Medical Center
1000 Greenley Road
Sonora, CA 95370
209-536-5000

Mercy Medical Center
333 Mercy Avenue
Merced, CA 95340
209-564-5000

Valley Children's Hospital
9300 Valley Children's Place
Madera, CA 93638
559-353-5150

Mammoth Hospital
185 Sierra Park Road
Mammoth Lakes, CA 93546
760-934-3311

Learning About Yosemite

There are four Visitor Centers in Yosemite located in Wawona, Tuolumne Meadows, Big Oak Flat and Yosemite Valley. Rangers in the park's Visitor Centers, wilderness centers, nature centers and museums are knowledgeable about Yosemite and are there to assist visitors with information about the park. While at the Visitor Center, explore exhibits and learn about Yosemite's spectacular landscapes, wildlife, history, natural resources, and how Yosemite has evolved through the centuries. Audio tours are available for Yosemite Valley Visitor Center Exhibit Hall (free) and Mariposa Grove of Giant Sequoias (fee based).

Ranger Interpretive Programs

See the *Yosemite Guide* for a complete list of seasonal ranger activities, which range from campfire programs and all-day hikes to talks about Yosemite topics. Ask at any visitor center for details, or visit online at www.nps.gov/yose/planyourvisit/guide.htm.

Free Films About Yosemite at the Valley Visitor Center

Shown on the hour and half hour, *Spirit of Yosemite* and *Yosemite: A Gathering of Spirit* are free short films about Yosemite. *Yosemite: A Gathering of Spirit* is shown on every hour on the hour and *Spirit of Yosemite* is shown on the half hour in the Yosemite Valley Theater behind the Valley Visitor Center. Both films are captioned and an audio transcription of *Spirit of Yosemite* is available at the information counter in the Valley Visitor Center.

Spirit of Yosemite –The film offers a superb introduction to the magnificent scenery, natural history, and cultural heritage of Yosemite National Park along with information on the historical influences that helped create it.

Accessibility Guide

Yosemite National Park January 2015

A few accessible parking spaces are available just west of the visitor center. To reach these parking spaces, enter the Valley on Southside Drive, and go west (left) on Sentinel Drive. Turn left on Northside Drive, and follow the blue-and-white accessibility signs. Turn right on Village Drive. Stay on Village Drive until reaching the "Do Not Enter" sign marking the shuttle-bus route, and then turn left. Accessible parking spaces are on the right side of the road.

Visitors can also park at the day-visitor parking area and take the free shuttle bus, which has wheelchair lifts and tie-downs, to the visitor center (summer only).

Yosemite Museum – Shuttle Stops #5 and #9

The Yosemite Museum has an art gallery with changing exhibits and the Indian Cultural Exhibit. The Indian Cultural Exhibit offers displays and demonstrations relating to the culture and lives of the Ahwahneechee people who inhabited Yosemite Valley. In front of the Museum is a cross-section of a Giant Sequoia tree that visitors can touch and a recreation of an umacha, a Miwok and Paiute cedar bark house. Interpretive rangers are available to provide additional information.



Indian Village of Ahwahnee – Shuttle Stops #5 and #9

Behind the museum and the visitor center is the reconstructed Indian Village of Ahwahnee, which offers outdoor displays about the culture and lives of the Ahwahneechee inhabitants of Yosemite Valley.

A short, partially paved loop trail winding through the village has displays that incorporate audio buttons. The village's central area is level but unpaved.

The Ansel Adams Gallery – Shuttle Stops #5 and #9

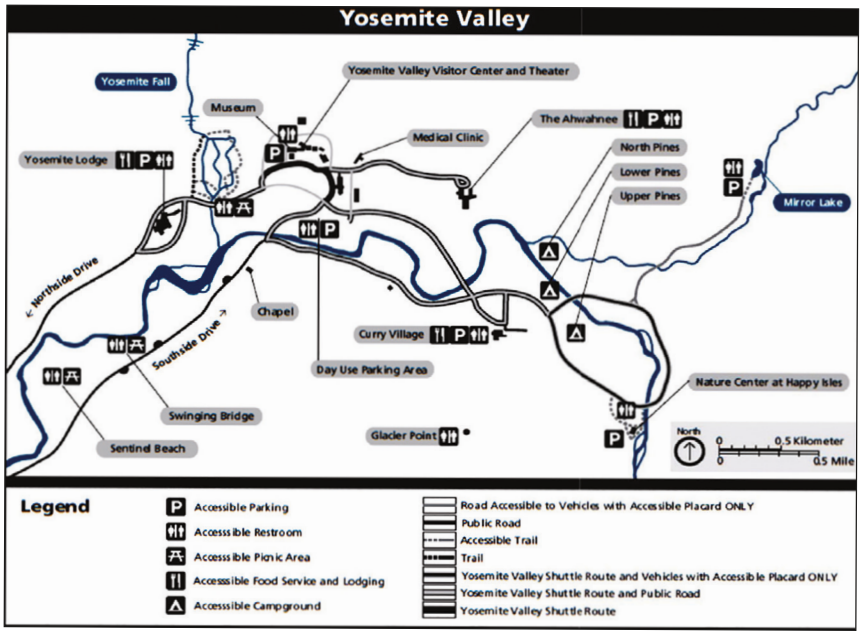
Showcasing the work of Ansel Adams, contemporary photographers, and other fine artists, the gallery is open daily. For more information, contact the gallery at 209-372-4413, or visit online at www.anseladams.com.

The gallery's main floor is accessible by ramp at the front. The upper level is accessible by an outside path (with a short slope of 8 percent) or by steps inside.

Yosemite Art Center – Shuttle Stop #2

Located south of the Yosemite Village Store, the Yosemite Art and Education Center, operated by the Yosemite Conservancy, offers art classes during the summer and fall. For information and a schedule of classes, call 209-372-1442 or 209-379-2646. The class schedule is also available in the *Yosemite Guide*. Many of the art classes are offered in accessible areas.

Examples of the information provided to visitors and the content included in the descriptions of the locations



Yosemite National Park opted to include an accessible trail map in the guide. The map highlights the important stops and interest points for visitors. This map however does not convey the trail information that ABAAS recommends

Appendix G

Vegetation Management

VEGETATION MANAGEMENT GUIDANCE

INVASIVE SPECIES AND WOODY VEGETATION MANAGEMENT:

The Antietam National Battlefield Natural Resources Division, as well as the Cultural Resources Division and the Natural Resources Division of the National Capital Regional Office, have recognized the importance of the control of invasive vegetation species and woody understory growth. Section Four of the National Park Service's Management Policies 2006 identifies the importance of managing exotic or invasive species, as they are disruptive to natural systems displacing and out competing native species. Removal and eradication of the exotic species can occur if the exotic species:

- Interferes with natural processes and the perpetuation of natural features, native species or natural habitats
- Disrupts the genetic integrity of native species
- Disrupts the accurate presentation of a cultural landscape
- Damages cultural resources
- Significantly hampers the management of park or adjacent lands
- Poses a public health hazard as advised by the US Public Health Service(which includes the Centers for Disease Control and the NPS public health program
- Creates a hazard to public safety

But how will the park handle the invasive species? The 2016 NCR Invasive Species EA serves as the principal guide to the treatment presented in this appendix.

The 2016 NCR Invasive Species EA identifies Antietam National Battlefield as a part of the Ridge and Valley vegetation ecosystem. Antietam National Battlefield is composed of plant communities belonging to the Northeastern Interior Dry-Mesic Oak Forest. Upland areas of the park, including the slopes, ridges, and plateau forest of the Burnside Bridge area cultural landscape are composed of northern red oak, chestnut oaks, scarlet oaks, black oak, white oak, and Virginia pine. Shrubs located in this forest type include blueberries, mountain laurel, and other varieties of shrubs adapted to acidic soils.

During the course of discussion with Antietam National Battlefield staff, Autumn Olive was identified as a plant of great concern, in the boundaries of the cultural landscape, as well as other aquatic invasive varieties. It is prudent that the park make efforts to identify additional invasive species and develop an appropriate course of action to remedy problems in the ecosystem. Observations by NCR staff revealed additional vegetation concerns including ailanthus, barberry, and the excessive growth of a woody understory.

Autumn Olive

Autumn Olive is best addressed with through hand removal of the specimens prior to the fruiting of the plant. For larger specimens, the removal should occur in the spring with active monitoring of the stump. An organic herbicide should be added to the stump in order to kill the plant and prevent any regrowth. It is the recommendation that current measures of invasive plant removals continue in the current manner. Further recommendation for the removal of Autumn Olive includes the identification of locations where Autumn Olive is growing with GPS data to monitor the spread of the invasive and gauge the effectiveness of a management program.

OTHER METHODS

Herbicides and Biological Agents

For other invasive varieties located in the cultural landscape, additional methods of eradication exist. The 2016 Invasive Plant EA discusses the use of select herbicides. Table One, inserted at the end of this appendix, presents particular herbicides and appropriate applications of the chemicals. However, prior to applying an herbicide to the site, approval must be granted from the Regional IPM Coordinator prior to the application of the product in the landscape. Antietam National Battlefield must be coordinated with staff at the regional office.

Table Two identifies biological agents that can be applied to select invasive plant species. Natural Resource staff must identify and document the location of the mentioned invasive plant species before proposing this course of action in the park. Again prior to selecting the application of a biological agent, the park will need to coordinate the effort with NCR staff.

Manual, Mechanized, and Physical Treatment Removal

Beyond herbicides and biological agents, additional treatment options are discussed in the EA. Region wide, natural resource staff are provided with the options of manually removing individual plants with the use of trowels, spades, and hand held clippers etc. Manual treatment or removal has the potential to stimulate the growth of certain varieties and caution must be exercised and initiated on a case by case basis dependent on the species being removed.

Mechanical removal, such as the introduction of specialized cutters, mowers, and powered saws can occur with the proper notification to NCR staff. This method can only be used if a large area of the landscape is infected with an invasive variety or plant species of a significant caliper. Caution is advised, as these methods will require additional NEPA compliance due to the scale of the project site, location of removal, and the potential impact on surrounding resources.

Physical treatment for invasive species includes the application of solar smothering on targeted sites. The application consists of the placement of special geotextiles, plastic sheeting, or mulch to effective block or restrict the amount of sunlight received or captured by a plant. The method, however, is time intensive and can require application for several months and can be nondescript or selective in the plants and controlling other woody plants killed.

Cultural Treatment

Regarding a cultural treatment option for invasive species, the EA recommends the introduction of livestock to graze as a means to control invasive species. This method is a preference of NCR staff as the practice re-establishes historic land use patterns associated with agriculture, has the potential to have a relatively positive impact on the landscape, and has the ability to provide interpretive opportunities regarding current practices and the historic state of the landscape. The effectiveness of this option can be optimized by targeting certain plant species during times of vulnerability (*i.e.*, early growth in the spring) and modifying grazing habits to effect certain vegetation (*i.e.*, fences).

Of the three livestock options identified within the EA, for Antietam, and specifically the condition of the Burnside Bridge area cultural landscape, the ideal livestock specimen is the goat. (Insert EA Chart 49). The selection of this species has several positives. The livestock is small and compact in comparison to sheep and cattle. Goats are less

susceptible to toxins contained within plants, therefore incurring a less mindful watch over the eating habits. The animal has the potential to digest and consume the problem vegetative species and can adapt to the steep topography found on portions of the site. Goats are not discrete with the diet and will consume all types of plant growth while producing a sterile by-product, thus not spreading trouble plants. The same by-product fertilizes the land and adds nutrients to the soil, encouraging growth. The animal has the potential to be directed to forage on particular portions of the landscape through tethering and the placement of temporary fences to concentrate grazing. However, caution must be given, as the goat is susceptible to predators including coyotes and dogs. As the topic of livestock is discussed as a viable option within the EA, it should be included within the park wide invasive species EA through the process of inclusion by reference. The park should consider entering into a grazing agreement with either local farmers or herders to range the livestock on the site. The specifications of a grazing agreement or a region wide grazing cooperative can be arranged with the help of the regional office staff. It is not recommended that the park purchase and maintain a herd.

General Maintenance

Monitoring of the application treatment area is necessary regardless of the method selected. Natural resource staff must observe the impact of the treatment on the targeted plant variety, the effectiveness on elimination, and the impact on the surrounding vegetation. While this removes the invasive plant, it has the potential to positively impact the plant community by allowing the growth of desired vegetation.

For the Burnside Bridge area cultural landscape, this document recommends the application of manual removal, physical removal (*i.e.,* solar smothering), cultural treatment methods, with limited mechanical removal, and the potential for the use of herbicides contingent on NCRO policy. However, the application of the treatments must be approved by collaborative efforts between Antietam National Battlefield staff and NCRO Resource Managers.

ADDITIONAL GUIDANCE

Maintaining Field Shapes

Process:

To monitor the effectiveness of an edge treatment, the fields must first be mapped using GPS equipment to establish the existing form of the field. The GPS points should be plotted in GIS to create a map of the field edges, establishing the current condition and base measurements. The ideal time for this to occur is in the late winter/ early spring prior to new growth. A second set of points should be taken in the fall, using the same methodology, to document the growth of vegetation. Efforts should be made to rectify the differences in the two lines. This can be achieved through approved vegetation removal methods. At the end of the treatment, the measurement of the field should match the base map points. This practice must be repeated yearly in order to impede any further encroachment of vegetation.

Selective Pruning

Process:

A collection of resource management and facility staff should visit each of the overlooks to collectively determine which branches should be removed. Photographs should be taken prior to cutting in order to document the existing condition. A second documentation effort should occur after the removal to similarly document work completed. Staff should anticipate that this effort would be a yearly event in order to ensure the best results.

Example Trade Name	Active Ingredient	Primary Targets			Aquatic Approved?	Methods				
		Herbs	Woodies	Monocots		Preemergent	Cut Stump	Foliar	Hack/Squirt	Basal Bark
Vastlan	Triclopyr salt (Cholrine)	x	x		Yes		x	x	x	
Garlon 3a, Element 3A	Triclopyr salt (Triethanolamine)	x	x		Yes		x	x	x	
Garlon 34 Ultra, Pathfinder II	Triclopyr ester	x	x		No		x	x		x
Rodeo, Aqaneat	Glyphosate salt	x	x	x	Yes		x	x	x	
Roundup Pro Concentrate	Glyphosate salt	x	x	x	No		x	x	x	
Poast, Segement	Sethoxydim			x	No			x		
Milestone	Aminopralid salt	x			2016	x		x	x	x
Escort XP	Metsulfuron methyl	x	x	x	No	x		x		
Transline, Stinger	Clopyralid salt	x	x		No		x	x		
Tordon 22K	Pictoram salt	x	x	x	No			x		
Tordon 101M	Pictoram salt and 2,4-D	x	x	x	No		x	x	x	x
Plateau	Imazapic salt	x	x	x	No		x	x	x	
Habitat, Polaris	Imazapic salt	x	x	x	Yes	x	x	x	x	x
Method 240SL, Method 50 SG	Aminocycloprachlor	x	x	x	No	x	x	x	x	x
Pendulum 3.3 EC, Prowl H20	Pendimethalin	x		x	No	x				

Target Species	Biological Control Agent	References
Canada thistle	Stem mining weevil, seed head weevil, stem and shoot gallfly, flowerhead weevil, defoliating beetle, painted lady butterfly caterpillars (all with limited effectiveness); rust fungus	Cripps et al. 2011 Berner et al. 2013
Leafy spurge	Flea beetles, leafy spurge gall midge, stem boring beetle, root-boring moth	Bourchier et al. 2006
Purple loosestrife	Leaf beetle	Blossey et al. 1994
Garlic mustard	Research- pending approval	Gerber et al. 2009
Spotted knapweed	Root weevils. Flower weevils, seedhead feeders	Story 2002 Knochel and Seastedt 2010 Winston et al. 2012
Japanese stiltgrass	Two species of *Bipolaris;* research on-going	Kleczewski et al. 2012
Common reed (Phragmites)	Research ongoing	Tewksbury et al. 2002
Nodding and plumeless thistles	Several insects established, but may harm native thistles; rust fungus	Kok 2001 Cripps et al. 2011 Havens et al. 2012
Knotweeds	Psyllid- pending APHIS approval	Grevstad et al. 2013
Multiflora rose	Eriophyid mite, rose-seed chalcid	Smith et al. 2010 Jesse et al. 2010
Tree- of- heaven	Research ongoing	Herrick et al. 2012 Schall and Davis 2009a, b
Mile-a- minute	Host-specific stem-boring weevil	Hough - Goldstein et al . 2012
Swallowworts	Host-specific moth- pending APHIS approval	Hazlehurst et al. 2012
Eurasian watermilfoil	Research ongoing	Cock et al. 2008 Menninger 2011
Parrotfeather	Research ongoing	Cilliers 1999
Giant salvinia	Salvinia weevils; research ongoing	Tipping et al. 2008
Hydrilla	Host- specific semiaquatic weevil; research ongoing	Center et al. 2013
European water chestnut	A promising leaf beetle, but no petitions have been submitted to APHIS	Ding et al. 2006, 2007
Water hyacinth	Two weevils and a moth (limited effectiveness)	Center et al. 1999 Center and Dray 2010

	Animal		
Variable	Goats	Sheep	Cattle
Diet	Prefer to browse woody plants, then forbs	Prefer forbs, then grasses	Prefer grasses
	Most tolerant of secondary plant compounds	Tolerant of secondary plant compounds	Least tolerant of secondary plant compounds
Behavior	Narrow, strong mouths evolved for stripping individual leaves and chewing branches	Narrow muzzle allows for selective grazing	Foraging is less selective than sheep and goats
	Can reach taller branches by standing on hind legs or climbing	Does not graze uniformly	Graze more uniformly than sheep or goats
	Able to navigate steep hills/ inclines, other rugged terrain	Prefer open field grazing	Larger animals may have greater physical impact than sheep or goats
	Does not graze uniformly		
Care	Require herding, or can be tethered to concentrate grazing activity	Require herding	Require periodic movements, but do not require herding
	Temporary, portable fencing is sufficient for containment	Temporary, portable fencing is sufficient for containment	Require stable fencing; kept contained by portable solar powered electric fencing
	Susceptible to predation	Susceptible to predation	Less susceptible to predation than sheep or goats

Slope Vegetation Removal

Process:

In order to achieve the desired results in this sensitive space, following the direction of the 2016 National Capital Region Invasive Species Removal EA, goat grazing and hand removal are the prescribed methods of treatment. Goats can navigate the steep terrain. Temporary fencing and tethering will allow the goats to consume certain areas of the woody growth. After the goats have grazed in the defined zones, the park should evaluate the removal efforts and determine the effectiveness of the practice. Contingent on the decision of the park, the grazing should occur yearly in order to maintain these established viewsheds.

EARTHWORK MANAGEMENT GUIDELINES

- Establish the base line condition through GPS/ GIS mapping and photo documentation.
- Expand prescribed burning to include this portion of the hillslope of the western bank. Include this portion of the cultural landscape in an expansion of the Controlled Burn EA. The alternative is to graze goats along this portion of the slope.
- Cover the feature in a hay mulch following the use of a prescribed burn.
- Only allow the soil of the pit to be exposed for the least amount of time possible. Clearing should occur near the time for germination to take hold on the site.
- Patience, as it may require up to four years for the native warm season grasses to establish in the Rifle Pit due to the location of the resource on the slope.
- Do not directly mow the Rifle Pit, as this can lead to damage to the resource as well as presents a safety risk to staff due to the precarious position of the pit in the hillslope.

Appendix H

Riparian Buffers

RIPARIAN BUFFERS

During the July 29, 2016 Cultural Landscape Report workshop, the staff of Antietam National Battlefield voiced a desire for guidance regarding stream restoration and riparian buffers along Antietam Creek. This appendix is a synthesis of best practices advocated by the Maryland Department of Natural Resources (DNR). The information was originally presented in Maryland Cooperative Extension Fact Sheet 725 Riparian Buffer Management: Riparian Forest Buffer Design, Establishment, and Maintenance, Maryland Cooperative Extension Fact Sheet 726: Trees for Riparian Forest Buffers, Maryland Cooperative Extension Fact Sheet 727: Riparian Buffer Management Understory Plants for Riparian Forest Buffers, and Maryland Cooperative Extension Fact Sheet 728 Grasses for Riparian Buffers and Wildlife Habitat Improvement. The information illustrates an existing plant list provided by the Maryland DNR and presents the species options best suited for the park.

GENERAL INFORMATION

The Maryland DNR has provided guidance for riparian forest buffer design. The Maryland DNR recognizes the benefit of constructing riparian buffers as they have a positive impact on the health of the state's waterways. Riparian buffers serve as a means to aid in the retention of sediment and impede erosion, remove chemicals from entering into the water supply, naturally recharge the water table, and provide wildlife habitat. In general, no buffer should be smaller than 35 feet in width, with the majority of buffers approximately 100 feet. A buffer as wide as 300 feet can serve be installed with the express purpose of wildlife habitat restoration. The buffer can be divided into three distinct zones. Each part is called a zone and has a particular vegetation composition. Zone 1 is located adjacent to the body of water, Zone 2 is a transition zone for permitting certain activities, and Zone 3 is the buffer adjacent to other development or agricultural land uses.

THREE ZONE

Zone 1- Undisturbed Forest

Zone 1 is located adjacent to the streambank. The minimum required area for this zone is thirty- five feet. The Maryland DNR states this is the smallest size that an effective undisturbed area can be and have an impact on the stream system. (The manner in which the guidance is written suggest that a riparian buffer could consist of this single zone). Guidance from the Maryland DNR recommends that this zone should consist of a mixture of plants found in Tables One, Two, and Three. The tables represent specimens specifically recommended for the mountain region of Maryland. Within this list, further effort was taken to select specimens that were more in keeping with the character of the park. However, ultimately the park is responsible for selecting specimens from this list that represent the quality of the character of the battlefield. A mixture of taller hardwoods and dispersed shrubs and understory growth should be encouraged to grow in this space. The hardwoods selected should be placed adjacent to the streambank to provide stability and rejuvenation to the bank. The trees selected should form a draping canopy, which will encourage the growth of a shade loving woody plants and cool the water in the stream. This mixture of plant growth will lead to greater soil stability as well as a filtration of nutrients into the water system. No activity should occur in this zone. This means no grazing, no logging, and no recreational activity.

Zone 2- Managed Forest

Zone 2 is the transition space between Zones 1 and 3. The Maryland DNR does not provide guidance on the size of this space. The vegetation of Zone 2 is the same as Zone 1; however, it is distinct area in the buffer, as activity is allowed in this space. This means that trees can be grown and harvested for commercial purposes. Limited grazing can occur in this space dependent on the plant material planted. However, this is contingent on the topography of the site, as this activity will not be allowed if the zone is in a steeply sloped location.

Zone 3- Grasses

The DNR recommends that grasses and forbs be planted in Zone 3. The grasses serve as a natural impeding agent to the flow of water at the site. Similarly, the grasses serve as a means to spread the water through the site, ensuring that the water is absorbed over a greater area. The grasses also serve as a sponge to absorb containments from entering into the body of water. Measurement requirements were not given for this are in the buffer, but Zone 3 should encompass the remainder of the riparian buffer. For a list of appropriate grasses, review Table Four.

ALTERNATIVE DESIGN APPROACH

As an alternative to the three-part riparian buffer system, the Maryland DNR encourages the planting of a buffer consisting solely of warm season grasses. This method seems to be acceptable were the restoration of habitat takes precedent to storm-water management of soil stabilization. The alternative highlights the benefit of species of quail, pheasant, rabbits, and other songbird species. The buffer should consist of a mixture of the warm season grass varieties identified in this appendix. To encourage habitat restoration in a lowland zone, a mixture consisting of Big bluestem (*Andropogon gerardi*), Indiangrass (*Sorghastrum nutans*), and Switchgrass (*Panicum virgatum*) is recommended. To add to the stabilization of the streambank, willow stakes should be placed within the bank. This approach should be selected only if the buffer is placed next to a relatively shallow bank. As no shade tree varieties are planted in this approach, the Maryland DNR iterates that this will not have dramatic impact to the temperature of the adjacent stream, therefore limiting the benefit to aquatic ecosystems.

PROPOSAL

NCR staff recommends that Antietam National Battlefield engage in constructing a riparian buffer. In regards to what type of buffer to place in the landscape, NCR offers the following suggestions. Please reference included map that illustrates the buffer plan.

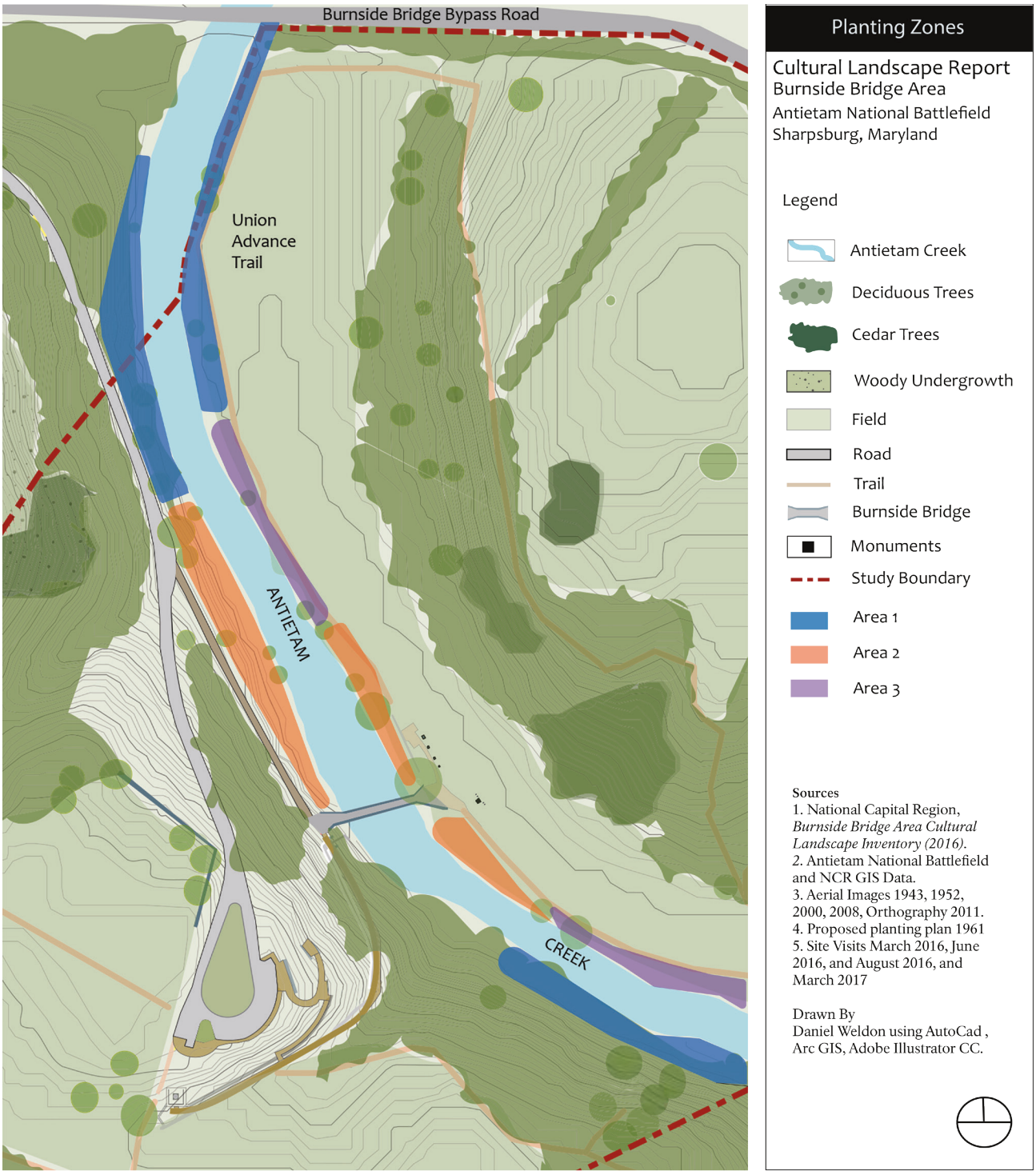
Area 1- Due to the existing tree growth and woody understory, it is recommended that the park install a three-zone buffer in this location. In order to conform to the buffer standards of the State of Maryland, additional shrubs and trees must be planted in order to meet the distance requirement. The plants selected should consist of species included in the guide provided.

Area 2- It is recommended that in the identified, three-part Area Two, that the park install a warm grasses buffer. This will ensure that significant views towards the Burnside Bridge will be maintained, as the plant material will be that of a slow growing grass and not that of trees and dense undergrowth. Plants that achieve a smaller growth height from the list provided should be considered for the buffer. A warm season buffer is appropriate as these locations in the cultural landscape conform to relatively low grade needed to support a warm grasses buffer.

Area 3- For these areas, it is the discretion of the park to select either a warm season grass buffer or a three-zone buffer. These areas in the landscape do have existing trees, but have a relatively even flat grade which would support a warm grasses buffer. Whichever type of buffer is selected by the park must conform to the prescribed behavior and plant composition dictated by the Maryland Department of Natural Resources.

MAINTENANCE

Regardless of the composition selected for the riparian buffer, during the first two seasons of establishment natural resource and maintenance still will have to remove weeds from the buffer space in order to allow the new plants to grow. Weeds should not be allowed to achieve a height over 6 inches. Saplings should be planted at a spacing of every eight to twenty feet dependent on the needs of the specimen variety. The overall buffer space should be prepped the autumn prior to planting, with the actual planting occurring in the spring. The Maryland DNR advocates a process of two herbicide applications the spring and autumn prior to planting, with a tilling in the autumn and the application of fertilizer (limited in nitrogen) in the fall. However, this strategy may be modified if a warm grass riparian buffer is planted. Similarly existing plant material should be removed. Planting may occur in the autumn. Controlled burns will be used after the first year for the space planted in warm season grasses to aid in the establishment of the plant community. The burn should not occur in the space planted in hardwoods.



Proposed riparian buffer planing zones.

ZONE 1 TREES

TREE	HEIGHT	SPREAD	DROUGHT TOLERANCE	GROWTH RATE
American Beech (*Fagus grandifolia*)	50’ to 70’	40’	Low	Slow to medium (12” to 24”)
Bald Cypress (*Taxodium distichum*)	50’ to 70’	25’	Medium	Medium (12” to 24”)
Blackgum (*Nyssa sylvatica*)	30’ to 50’	20’ to 30’		Slow to medium (12” to 24”)
Black Willow (*Salix nigra*)	100’		Low	Rapid
Green Ash (*Fraxinus pennsylvanica*)	80’		Medium	Rapid
Hackberry (*Celtis occidentalis*)	60’		High	Rapid
Persimmon (*Diospyros virginiana*)	55’		Medium	Slow
Red Maple (*Acer rubrum*)	68’		Medium	Rapid
Red Oak (*Quercus rubra*)	60’ to 75’	45’	Medium	Rapid (24”)
River Birch (*Betula nigra*)	70’		Low	Rapid
Silver Maple (*Acer saccharinum*)	50’ to 80’	35’ to 50’	Medium	Rapid 24”+
Sweetgum (*Liquidambar styraciflua*)	60’ to 70’	40’ to 50’	Medium	Medium (13” to 24”)
Swamp White Oak (*Quercus bicolor*)	100’		Low	Rapid
Sycamore (*Platanus racemosa*)	40’ to 100’	40’ to 70’	Medium	Rapid 24’+
Tulip Poplar (*Liriodendron tulipifera*)	120’		Low	Rapid
White Ash (*Fraxinus americana*)	90’		Low	Moderate
White Oak (*Quercus alba*)	100’		Medium	Slow
Willow Oak (*Quercus phellos*)	100’		None	Rapid

ZONE 2 TREES

SPECIES	HEIGHT	GROWTH RATE	DROUGHT TOLERANCE	INFORMATION SOURCES
American Hornbeam (*Carpinus caroliniana*)	30 ‘ to 40’	Slow	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Boxelder (*Acer negundo*)	Less than 50’	Rapid	High	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Flowering Dogwood (*Cornus florida*)	30’ to 40’	Slow	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Hawthorn (*Crataegus pennsylvanica*)	Less than 30’	Medium		Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Hophornbeam (*Ostrya virginiana*)	Less than 30’	Slow	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Redbud (*Cercis canadensis*)	Less than 50’	Slow	High	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Sassafras (*Sassafras albidum*)	Less than 50’	Rapid	High	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Downy Serviceberry/ Shad-bush (*Amelanchier arborea*)	30’ to 40’	Slow	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Arrowwood (*Viburnum dentatum*)	8’	Medium	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Blackhaw (*Viburnum prunifolium*)	12’ to 15’	Medium	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=g240
Buttonbush (*Cephalanthus occidentalis*)	15’	Medium	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Elderberry (*Sambucus nigra*)	7’	Fast	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Grey Dogwood (*Cornus racemosa*)	10’	Medium	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Maple-leaf Viburnum (*Viburnum acerifolium*)	6’	Slow to Medium	High	Fact Sheet 727 Understory Plants for Riparian Buffers/ USDA
Possumhaw (*Viburnum nudum*)	5’ to 12’	Medium	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a659
Pussy willow (*Salix discolor*)	6’ to 15’	Fast	Medium	Fact Sheet 727 Understory Plants for Riparian Buffers/ Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=c808
Red Osier Dogwood (*Cornus sericea*)	12’	Fast	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/

Species	Height	Growth Rate	Drought Tolerance	Information Sources
Sweet Pepperbush (*Clethra alnifolia*)	3' to 8'	Medium	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=c230
Virginia Sweet spire (*Itea virginica*)	3' to 5'	Slow to Medium	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=k720
Witch-Hazel (*Hamamelis virginiana)*	15' to 20'	Medium	Low	Fact Sheet 727 Understory Plants for Riparian Buffers/ Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a749

ZONE 3 GRASSES

Zone 3: Warm Season Grasses **	
Big bluestem (Andropogon gerardi) Description: Robust warm season, native bunchgrass. Prefers moist, well-drained soils, but is more drought tolerant than other warm season grasses. Good acid tolerance. Height: Grows 6 to 7 feet all. Cultivars: Niagara, Kaw, Rountree Growth Period: Summer ++ Growth Rate: Moderate++ Drought Tolerance: High ++ Fire Tolerance: High ++ ++ Source Material: http://plants.usda.gov/java/charProfile?symbol=ANGE	 Image source : https://upload.wikimedia.org/wikipedia/commons/4/4f/Andropogon_gerardii_(3904160434).jpg
Little bluestem (Schizachryium scoparium) Description: Warm season, native bunchgrass. Fair to excellent acid tolerance. Usually sown in mixtures with other native grasses. Seeds are light and fluffy Height: Grows 3 to 4 feet tall. Cultivars : Aldous, Camper, Blaze Growth Period: Summer and Fall ++ Growth Rate: Moderate++ Drought Tolerance: High ++ Fire Tolerance: Medium ++ +Source Material : http://plants.usda.gov/java/charProfile?symbol=SCSC	 Image source: https://upload.wikimedia.org/wikipedia/commons/f/f6/SchizachyriumScoparium.jpg

Indiangrass (sorghastrum nutans) Description: Native, perennial, warm season. Difficult to establish in pure stands, best used in mixtures. Seed light and fluffy. Height: 6 feet tall ++ Cultivars: Oto, Holt Growth Period: Summer and Fall++ Growth Rate: Moderate++ Drought Tolerance: Medium ++ Fire Tolerance: High++ ++ Source Material: http://plants.usda.gov/java/charProfile?symbol=SONU2	 Image source: http://plants.usda.gov/gallery/standard/sonu2_004_svp.jpg
Switchgrass (Panicum Virgatum) Description: Native, perennial, warm season, tall grass. Drought resistant, but grows under a wide range of conditions. Salt and acid tolerant. Used as a sand stabilizer and for erosion control. Earlies maturing war season grass. Height: Grows 3 to 8 feet tall. Cultivars: Blackwell, Cave- in –Rock, Shelter Growth Period: Summer ++ Growth Rate: Rapid ++ Drought Tolerance: Medium++ Fire Tolerance: High++ ++ Source Material: http://plants.usda.gov/java/charProfile?symbol=PAVI2	 Image source: http://www.northcreeknurseries.com/_ccLib/image/plants/DETA-378.jpg

Eastern Gamagrass (Tripsacum dactyloides) Description: Large, native, warm season, colony-forming bunchgrass. Useful in lowland, irrigated, or subirrigated sites. Not alkaline tolerant. Do not include in seeding mixture with other warm season grasses. Currently being tested for silage in place of corn. Height: 5 feet ++ Growth Period: Spring and Summer ++ Growth Rate: Rapid ++ Drought Tolerance: Low ++ Fire Tolerance: High ++ ++ Source Material : http://plants.usda.gov/java/charProfile?symbol=TRDA3	 Image Source: http://www.ag3inc.com/Plants/Plant_Images/TripsacumDactyloides.jpg
Weeping lovegrass (Eragrostis curvula) Description: Introduced, warm season, perennial bunchgrass. Tolerant of acid, dry, and infertile soils. Moderately salt tolerant. Establishes rapidly, providing good initial cover, gradually gives way to other perennial species. Height: 3 feet ++ Growth Period: Summer++ Growth Rate: Rapid ++ Drought Tolerance: High ++ Fire Tolerance: Medium++ ++ Source Material: http://plants.usda.gov/java/charProfile?symbol=ERCU2	 Image source: http://www.tropicalforages.info/key/Forages/Media/Html/images/Eragrostis_curvula/Eragrostis_curvula_03.jpg

** Information originally presented in University of Maryland/ Maryland Cooperative *Extension Fact Sheet 728*. Composition and content of the table has been modified for the needs of this document.

++ Information gathered from USDA National Resources Conservation Plant Characteristic Profiles.

National Park Service
U.S. Department of the Interior



Antietam National Battlefield
P.O. Box 158
Sharpsburg, MD 21782

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