

**National Park Service**  
**U.S. Department of the Interior**

**Antietam National Battlefield**  
Sharpsburg, MD



Assessment of Effects  
Cultural Resources Technical Memorandum  
Antietam National Battlefield Landscape Management Plan

**Prepared for:**

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

**Prepared by:**

Emily Everett, Preservation Planner  
Scott Seibel, Archeologist  
Heather Crowl, Archeologist  
Lauren Tuttle, Environmental Planner  
Sarah Bolivar, Landscape Architect  
Claire Sale, Project Manager



2000 K Street NW  
Suite 800  
Washington, District of Columbia 20006

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# 1. INTRODUCTION

The National Park Service (NPS) is developing a Landscape Management Plan (Plan) for Antietam National Battlefield ("the Battlefield") in Sharpsburg, Maryland. As a federal undertaking, the project is subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations [36 Code of Federal Regulations (CFR) Part 800] "Protection of Historic Properties" (Section 106). This technical memorandum has been prepared as part of the continuing consultation between the NPS, the Maryland Historical Trust (MHT) (Maryland's State Historic Preservation Office (SHPO)), and Federally Recognized Tribes ("tribes"). Section 106 consultation for the Plan was initiated with MHT and the following tribes in a letter dated November 15, 2021 and November 3, 2021, respectively (**Appendix A**):

- Absentee Shawnee Tribe of Indians of Oklahoma
- Accohannock Indian Tribe
- Catawba Indian Nation
- Cedarville Band of Piscataway Conoy (Piscataway Conoy Tribe)
- Chickahominy Indian Tribe
- Chickahominy Tribe Eastern Division
- Delaware Nation
- Monacan Indian Nation
- Nansemond Indian Nation
- Pamunkey Indian Tribe
- Piscataway Conoy Tribe
- Piscataway Indian Nation
- Rappahannock Tribe
- Shawnee Tribe
- Upper Mattaponi Indian Tribe

The NPS has developed this Technical Memorandum in support of the Plan to document the presence of historic properties, defined as those that are listed or eligible for listing in the National Register of Historic Places (NRHP), for the purposes of Section 106 review.

Identification of historic buildings, structures, sites, objects, districts, and cultural landscapes was undertaken within the Area of Potential Effect (APE) established for this project. The NPS consulted with SHPO and interested parties regarding the APE. Work was directed and conducted by staff that meet *The Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) in the disciplines of Historical Landscape Architecture, Archeology, and History.

As part of the National Environmental Policy Act (NEPA) process, the NPS developed one action alternative for the Plan. The focus of this memorandum is on the action alternative.

## 2. PROJECT SUMMARY

Antietam National Battlefield was established in 1890 to commemorate the bloodiest single-day battle in American history. The purpose of 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. The Battlefield is located in rural western Maryland, near Sharpsburg, Maryland. Of the 3,230 acres within the battlefield boundary, 1,991 are owned in fee by the federal government and managed by NPS. The project area represents the 1,991 acres owned by the federal government, which are roughly bordered by MD Route 65 (although some portions of the Battlefield lie to the west of the road) and Harpers Ferry Road to the west; farmland to the north; Antietam Creek to the east; and farmland to the south. The project area includes historic farmsteads, agricultural fields, forests, trails, a visitor center, two cemeteries, commemorative monuments, and historic structures as shown in **Figure 1**.

### Purpose

The purpose of the Landscape Management Plan is to develop comprehensive, sustainable land use strategies that will preserve significant landscape elements and integrate natural and cultural resource values. The Plan will define the framework for the treatment of the Battlefield and commemorative landscape and describe specific guidelines and tasks aimed to maintain and enhance its historic character.

### Need

This Plan is needed because:

- The 1992 General Management Plan (GMP) provides inadequate and outdated Scene Restoration and Resource Management guidance
- The Battlefield has more than doubled in size since the 1992 GMP
- Existing park guidance does not address appropriate preservation treatment for the entire battlefield cultural landscape as it is currently defined
- The landscape has been managed in a piecemeal manner
- Invasive species and pests present a growing challenge to Battlefield-wide stewardship
- Erosion occurs along creeks and trails, diminishing Battlefield resources
- The Battlefield experiences loss or diminishment of witness trees
- The Battlefield is evaluating a long-term lease program for farm operation and improved watershed stewardship
- The landscape lacks sufficient resiliency to address climate change impacts

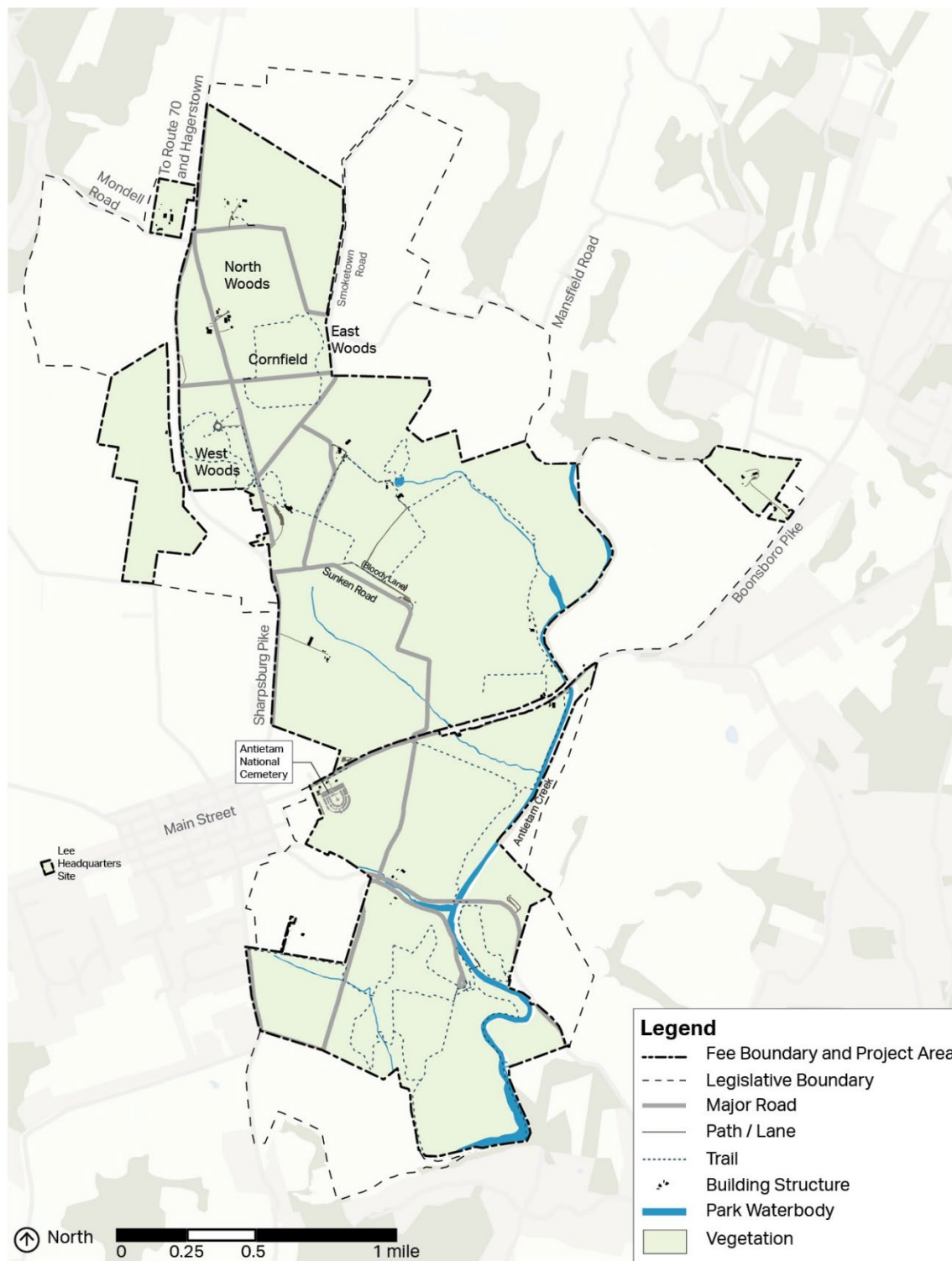


Figure 1: Antietam National Battlefield Project Area

### **3. HISTORICAL SUMMARY OF THE PROJECT AREA**

The following historical summary is from the Antietam National Battlefield's *Visitor Access and Circulation Plan Section 106 Assessment of Effects*, completed by the NPS in 2018, and the *Antietam National Battlefield Cultural Landscape Report*, prepared by Quinn Evans for NPS in 2021. All information presented herein is drawn directly or adapted from these documents.

Overall, the Antietam National Battlefield region's geologic history created a landscape that attracted Indigenous peoples and Euroamerican settlers to the Potomac River valley and contributed to its success as a farming landscape in the 18th and 19th centuries. The rolling hills, ridges, and stream valleys of the Antietam Creek watershed were strategic features that helped determine the course of the battle between the Union and Confederate armies on September 17, 1862.

#### **Indigenous Occupation Before 1632**

Archeological investigations have found only scattered evidence of Indigenous peoples on the land encompassing the present-day Antietam National Battlefield. However, the landscape may have been included within larger territorial claims of the groups of people living within the region.

#### **Colonial Maryland, 1632-1776**

There is little evidence of permanent habitation in the Antietam area during the early colonial period as Euroamerican settlements were concentrated on the Chesapeake Bay and the lower reaches of the Potomac River. In the first half of the 18<sup>th</sup> century, large tracts of land in the future Sharpsburg region were purchased by land speculators with no intention of farming or developing the land. Although land in the Antietam region was mostly held by large-scale and absentee landowners, there was agricultural settlement during this period. In the 1730s and 1740s, ethnic Germans began to settle in the Antietam Creek watershed, leasing smaller parcels and developing an agricultural economy based on grain cultivation.

#### **1776-1860**

From the late 18<sup>th</sup> century to the early 19<sup>th</sup> century, agriculture intensified in Washington County, dominated by wheat and small grains. The subdivision and sale of large land tracts accelerated. Farming families bearing names familiar on the present-day battlefield landscape emerged. As the land around Sharpsburg was divided into smaller farming plots, land clearance for farming greatly reduced forest lands. Landowners in the vicinity of Sharpsburg retained and managed small parcels, primarily under 100 acres, as woodlots. Woodlot management provided quality saw lumber and cord wood for annual use by the farm.

Farms that began with small cabins and outdoor firepits gradually evolved into larger farmsteads. By 1862, some farms were 100 years old, such as the Mumma and Roulette farms.



## **Civil War, 1861-1865**

During the American Civil War, the Union and Confederate Armies fought a bloody battle on September 17, 1862 on the land encompassing the present-day Antietam National Battlefield. The Union victory at Antietam provided President Abraham Lincoln the opportunity he had been waiting for to issue the preliminary Emancipation Proclamation five days after the battle. From that time onward, the American Civil War had a dual purpose — to preserve the Union and abolish slavery. The battle was fought on a rolling agricultural landscape composed of a mosaic of cropland, pastures, and woodlots, dotted with small farmsteads that were connected by narrow lanes. Antietam Creek formed a north-south spine through the battlefield and the topographic rise above the creek and outcroppings of native limestone influenced battlefield tactics and strategies. Today, these features are visible and provide the setting for commemorating and interpreting the battlefield.

## **Commemoration and Creation of the National Battlefield, 1864-1933**

Commemorative efforts at the Antietam Battlefield began shortly after the end of the Civil War. The Antietam National Cemetery was dedicated in September 1867 as an honorable final resting place for Union dead. From October 1866 to August 1867, approximately 4,200 Union dead from Antietam and the surrounding region were exhumed and removed to the cemetery. On August 30, 1890, the U.S. Congress established Antietam National Battlefield. Like other early Civil War Battlefield parks, Antietam National Battlefield was administered by the U.S. War Department. The War Department constructed a number of roads through the Battlefield to provide viewer access to important points on the landscape, which remained privately owned; erected almost 300 metal tablets documenting troop movements and artillery locations; and constructed a stone observation tower along Sunken Road (Bloody Lane). By 1898, the War Department's improvements were largely completed. In addition, during the late 19<sup>th</sup> century and early 20<sup>th</sup> century, states' and veterans' organizations erected monuments and memorials to honor the fallen. In 1933, the NPS took over management responsibilities for all national battlefields and military parks that had been under the jurisdiction of the War Department.

## **NPS Administration, 1934-Present**

NPS management placed increased emphasis on facilitating and catering for the visiting public, including the construction of parking lots, comfort stations, and the widening of existing roads. Workers from Depression-era public works programs completed a number of projects at the Battlefield in the mid 1930s. In 1940, the U.S. Congress passed legislation authorizing the Department of the Interior to acquire or accept by donation land for the Battlefield, permitting the NPS to acquire thousands of acres of land in fee or easements in subsequent decades and preserve the historic scene of the battle.

In the late 1950s and 1960s, projects completed under the NPS's Mission 66 initiative transformed the infrastructure and interpretive program of Antietam National Battlefield. The

program included land acquisition, a new visitor center, reconstruction of the Dunker Church, extensive reconfiguration of the Burnside Bridge area, overhauling the tour route and waysides, and road and trail work.

Following Mission 66, the NPS concentrated its activities on restoring the battle's historic scene, which was increasingly threatened by encroaching development. This included more land acquisition, removal of non-historic structures, re-establishment of historic vegetation, and improved interpretation. A number of new trails were introduced in the 2000s. In 2021, projects included the rehabilitation and expansion of the visitor center and rehabilitation of the Mission 66 parking area and tour stop at Burnside Bridge (NPS 2018c, 2021).

### **3.1 Area of Potential Effect**

The APE for historic and archeological resources is identical with that defined in the project's Environmental Assessment (EA) for these resources (**Figure 2**). The APE for historic resources encompasses the project area and includes all areas where plan elements would be implemented and there is a potential for effect.

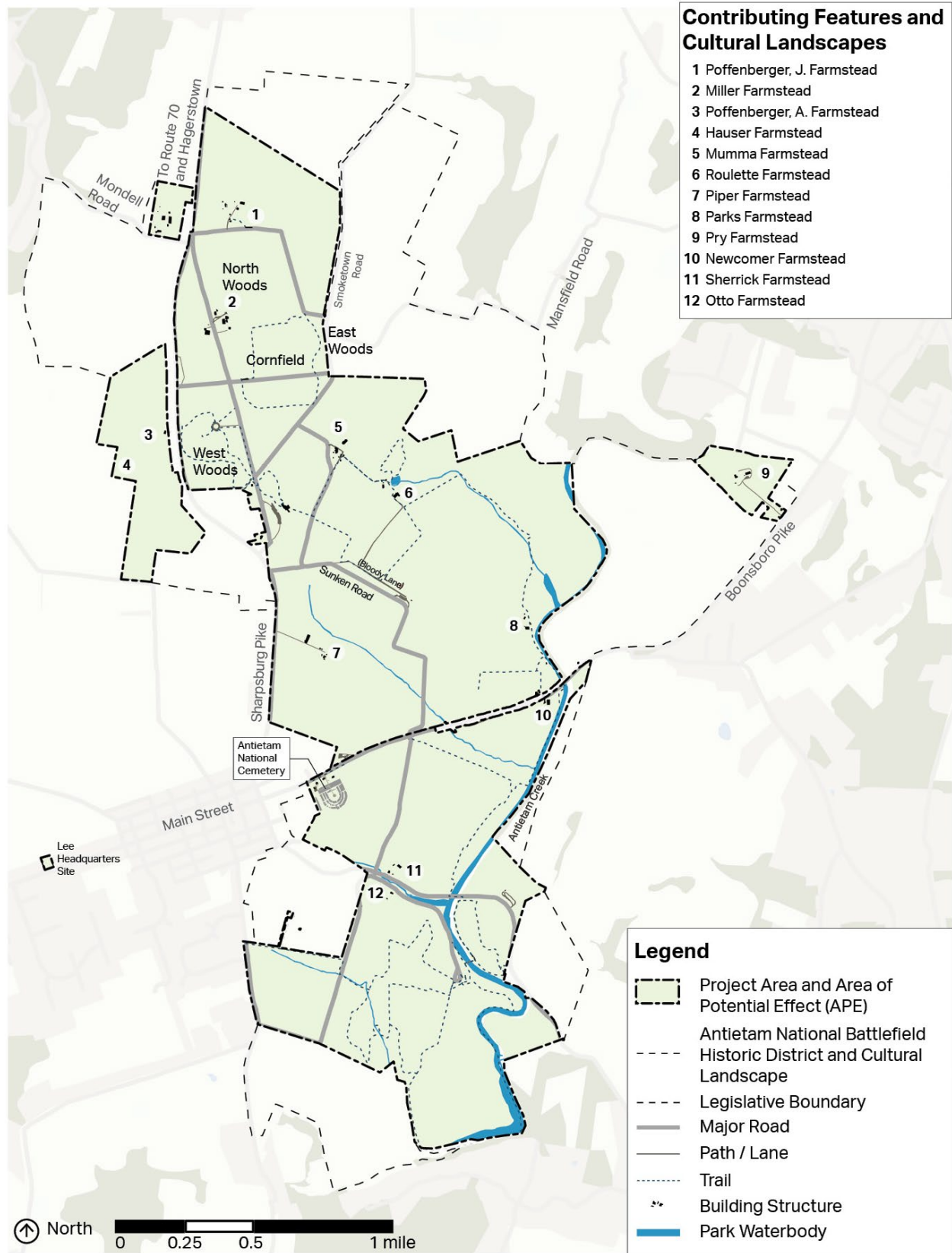


Figure 2: Area of Potential Effect

## 4. EXISTING CONDITIONS

Antietam National Battlefield is considered one of the best-preserved Civil War areas in the national park system. The farms and farmlands in and near the battlefield appear much as they did on the eve of the battle in 1862. The NPS manages lands within the Battlefield in accordance with the 1992 GMP and consistent with the 2013 Antietam National Battlefield Foundation Document. The Battlefield's physical landscape consists of flat to gently rolling plains with forested areas, agricultural areas (i.e., croplands, pastures, hayfields, and orchards), open grasslands and meadows, and mown lawns. Overall, the Battlefield and surrounding area has an agricultural character with farm buildings and crops surrounded by wooded areas configured as hedgerows in some locations. Antietam Creek meanders along portions of the eastern edge of the Battlefield. The Battlefield contains more than 60 buildings and structures. Features within the Battlefield include, but are not limited to, a visitor center, Antietam National Cemetery, an observation tower, trails, an 11-stop battlefield tour road, other roadways and lanes, fences, 106 monuments, 42 cannons, and over 384 historic plaques (**Figure 3**) (NPS 2013, 2018c, 2019).

The 2013 Antietam National Battlefield Foundation Document provides underlying information and management of the Battlefield. The Foundation Document identifies the fundamental resources and values of the Battlefield, including the following:

- **1862 Battlefield Landscape.** The cultural landscape and its many contributing features are primarily significant because of the Civil War battle fought here. The park preserves these features and others related to the 1862 vernacular agricultural landscape.
- **Antietam National Cemetery.** Antietam National Cemetery is the final resting place for Union dead from the Civil War and for veterans of other conflicts. This designed landscape is a deliberate creation of the American response to mourning and remembrance in the 19th century.
- **Commemorative Landscape.** Commemorative features have been added to the Antietam National Battlefield landscape by succeeding generations since 1867. The veterans who fought here wanted these parks "to be reconciliatory items, object lessons, patriotic icons, and most of all, memorials to the living and dead that fought in the war" (in the words of Timothy B. Smith in *The Golden Age of Battlefield Preservation*), thereby, making the commemorative features at Antietam central to the park's purpose.
- **Solemnity of the Site.** Antietam National Battlefield provides an opportunity to experience a solemn, peaceful, and reverent space, where one can reflect upon the sacrifices of the fallen and the implications of the battle.

Other resources and values include the following:

- **Archeological Resources.** Archeological resources are the physical evidence of past human activity, including the impacts of the Battle of Antietam on the environment.

- **Witness Trees.** Living trees that were standing at the time of the Battle of Antietam. The sycamore tree immediately adjacent to the Burnside Bridge is the most well-known of the witness trees at Antietam National Battlefield.
- **Antietam Creek Watershed.** The Antietam Creek, associated aquatic resources, and karst limestone geology serve as key features of the battlefield landscape and the natural setting.

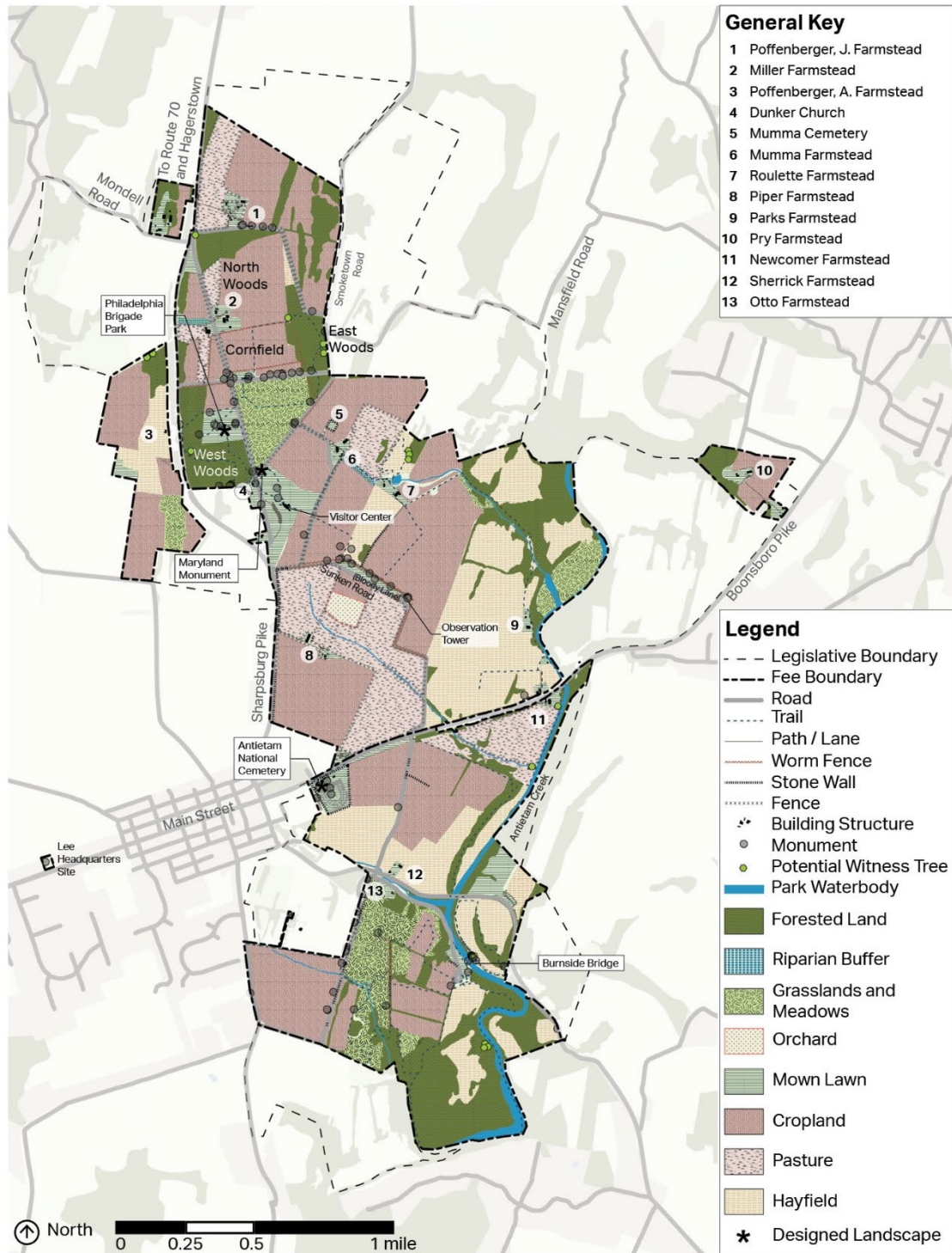


Figure 3: Existing Conditions

## 5. PROJECT DESCRIPTION

The Action Alternative proposes to improve the cultural landscape integrity and ecological function of Antietam National Battlefield's diverse landscape mosaic. The Action Alternative would rehabilitate forest cover in areas with historical woodlots or where contiguous cover can improve ecological function; improve riparian buffers adjacent to springs, creeks, and streams; convert some open areas to grasslands or meadows to provide higher species richness in the landscape; rehabilitate views through removing obstructive vegetation; and, add orchard planting when feasible to enhance the cultural landscape character and to support public education and interpretation. These elements are described below and shown in **Figure 4** and **Figure 5**.

### Forest Rehabilitation

The Action Alternative would reforest approximately 140 acres of woodland areas in locations where substantial gaps in forest cover exist or where historic woodlots, as documented in the 2021 Antietam National Battlefield CLR, have been diminished. The Action Alternative would also rehabilitate areas where transition from agricultural, grassland, or meadow areas to forest cover could improve ecological function. Planted tree species would be from the Northeastern Interior Dry-Mesic Oak Forest community and based on geographical location, such as the upland or floodplain community. Upland tree planting would include oaks, maples, hickories, and walnuts while floodplain areas would include a matrix of oaks, sycamore, silver maples, tulip poplars, and beeches.

### Water Quality Improvement

The Action Alternative would improve water quality through enhanced riparian buffers and erosion mitigation. Riparian buffers are a diverse mix of trees and shrubs that help filter sediment and nutrients, maintain desirable water temperature, and provide wildlife habitat. Riparian buffers would be maintained or enhanced adjacent to creeks, streams, and intermittent drainages as needed to help improve water quality measures. In areas that include historic vistas, the improvements would use shrubs or grasses instead of trees, if appropriate.

### Native Grassland and Meadow Establishment

The Action Alternative would establish approximately 287 acres of additional native grasslands and meadows through conversion of some hayfields and crop fields. These additional grasslands and meadows would increase the overall value to birds, small mammals, and insects by creating larger, contiguous grassland areas. These fields would be maintained through a prescribed burn program and monitoring, and ongoing control of invasive vegetation. Grasslands and meadows would help maintain historic viewsheds for the public's understanding of the battle.

## **Agriculture**

The Action Alternative would continue to maintain approximately 824 acres of agricultural areas, which is the predominant land use in the Battlefield, through special use permits or historic leasing. Agricultural fields where key battle-related actions occurred would remain in agricultural use. These areas would continue to implement Nutrient Management plans and farmstead-specific Soil and Water Conservation plans, which outline best management practices such as crop rotation, integrated pest management, conservation tillage, and cover crops. Farmsteads with hayfields would continue to follow soil and water conservation plan best management practices for mowing frequency guidelines and soil and water management. Farmsteads with pastures would continue to follow soil and water conservation plan best management practices for guidelines on stock numbers per acres, mowing frequency of invasive vegetation, conservation of soil and water, riparian management, and rotational grazing.

## **Orchards**

The Action Alternative would reestablish approximately two acres of the historic Mumma Farm orchard and maintain the Piper Farmstead's existing eight-acre orchard. The restoration of the historic Mumma farmstead-related landscape features, such as the orchard, would enhance the public's understanding of historic farming. Alternatives such as planting dwarf or nonfruiting varieties of trees would be considered for reducing the maintenance needs of the orchard. The Battlefield staff and the orchard cooperator would continue to manage the orchards through best management practices, such as deer population control, organic operation with low pesticide use, native bee population management, and cyclical mowing.

## **Mown Lawn**

The Action Alternative would maintain mown lawns in select areas, such as tour road buffers, edges between road and agricultural fields, areas around the visitor center, Dunker Church, Mumma Cemetery, the Philadelphia Brigade Park, Sunken Road (Bloody Lane) and the Observation Tower, the Lee Headquarters Site, and adjacent to the Burnside Bridge Overlook, as well as areas around the farmsteads, between farm buildings and structures and along internal fence lines.

## **Mumma Farmstead**

The NPS has identified the Mumma Farmstead as a place for a focused effort on public education programming. The Action Alternative would maintain the historic landscape by providing universally accessible routes to the farmhouse and the Mumma barn with a ground material of low visual impact; restoring missing farmstead vegetation such as kitchen gardens; re-establishing the orchard that was located northeast of the large barn; and rehabilitating the stone wall between the Mumma Farm and Roulette Farm.



## Designed Landscapes

In addition to its agricultural and natural areas, the Battlefield also contains multiple location-specific design landscapes. The Action Alternative would include the following enhancements:

- Rehabilitate Philadelphia Brigade Park by re-introducing original tree plantings and maintaining historic formal spatial patterns based on recommendations in a future Philadelphia Brigade Park CLR.
- Rehabilitate the Maryland Monument landscape by replacing tree gaps with sugar maples and maintaining the historical tree spacing pattern to define the monument setting.
- Rehabilitate the Antietam National Cemetery landscape through implementation of the 2014 Antietam National Cemetery CLR. Overall, the cemetery landscape would be rehabilitated through new plantings, vegetation removal, the maintenance and establishment of new lawn areas, headstone preservation, and accessibility improvements to the cemetery lodge and within the cemetery grounds. Additional details about the proposed rehabilitation actions are included in Appendix C.

## Viewsheds

The Action Alternative would re-establish important visual connections through clearing of obstructive successional vegetation. Principal vantage points include the Visitor Center, Miller Meadow, Observation Tower, and Burnside Bridge. Views from the visitor center towards Sunken Road (Bloody Lane) would be rehabilitated through woody vegetation clearance. Views from the visitor center to the north would be rehabilitated by placing overhead utility lines underground or relocating these lines to along MD Route 65.

## Replica Historic Fencing

The Battlefield currently has approximately 40,400 linear feet of replica historic fencing, defined as fencing the NPS reconstructs based on historic documentation such as maps and photographs; reconstructed fencing re-creates the appearance of the non-surviving historic property in materials, design, color and texture, per *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Under the Action Alternative, the park staff would focus maintenance efforts on approximately 15,100 linear feet of high priority replica historic fencing that supports interpretive operations (**Figure 5**). High priority replica historic fencing, consisting of wooden worm and rail fencing, is located at the Cornfield, along Dunker Church Road (historic Hagerstown Pike) and Sunken Road (Bloody Lane), and at the Burnside Bridge. Park staff may also maintain the remaining approximately 25,200 linear feet of lower priority replica historic fencing, which primarily serves to delineate spatial relationships of the land.

Park staff would continue to review fencing needs based on interpretive and historic importance, maintenance requirements and existing conditions. Maintaining replica historic fencing would help visitors better understand the events of the battle and maintain the design integrity of the historic landscape. By dividing replica historic fencing into high and low priority, the park would strive to maintain all high priority replica historic fencing and, depending upon funding availability and operational requirements, may maintain lower priority replica historic fencing.

### **Maintenance of Other Landscape Elements**

The Action Alternative would continue to maintain other landscape elements through the following methods:

- Maintain roadbeds and edges with grass mixes requiring minimal mowing and monitor roadway for erosion and disturbance by burrowing animals.
- Maintain monuments through routine monitoring that ensures they are routinely cleaned and repaired, level, and that the foundation based of each monument is protected from erosion and burrowing animals.
- Maintain farm lanes depending on their material, such as gravel surfaced, paved asphalt with exposed aggregate, or fully asphalt paved.
- Maintain trails and routes, consisting of bare ground, mown grass, wood chips, or paved surfaces for erosion or depressions, material damage, or inconsistent material distribution.
- Monitor historic stone walls for potential needs of repairing, resetting, or replacing in-kind. The Battlefield would continue to preserve stone walls by ensuring a clear and stabilized foundation, walls are free of debris and overgrown vegetation, and ensuring walls remain consistently aligned in their historic pattern and arrangement.
- Protect Potential Witness Trees according to the Burnside Sycamore assessment and operation procedure while the NPS develops a tree protection plan. Protection measures would include minimizing soil compaction around the base of trees, erosion, and incompatible adjacent activities around the tree drip lines, as well as consistent monitoring for tree disease or damage.
- Maintain historic structures by maintaining/preserving all aspects of integrity for historic buildings and structures, maintaining structural foundation, improving interpretation, and maintaining unobstructed visual access.
- Maintain historic field edges and fencerows through clearance of non-native vegetation, maintenance of desirable trees, and development a special seed mix/plant list to maintain the historic spatial pattern of the landscape.

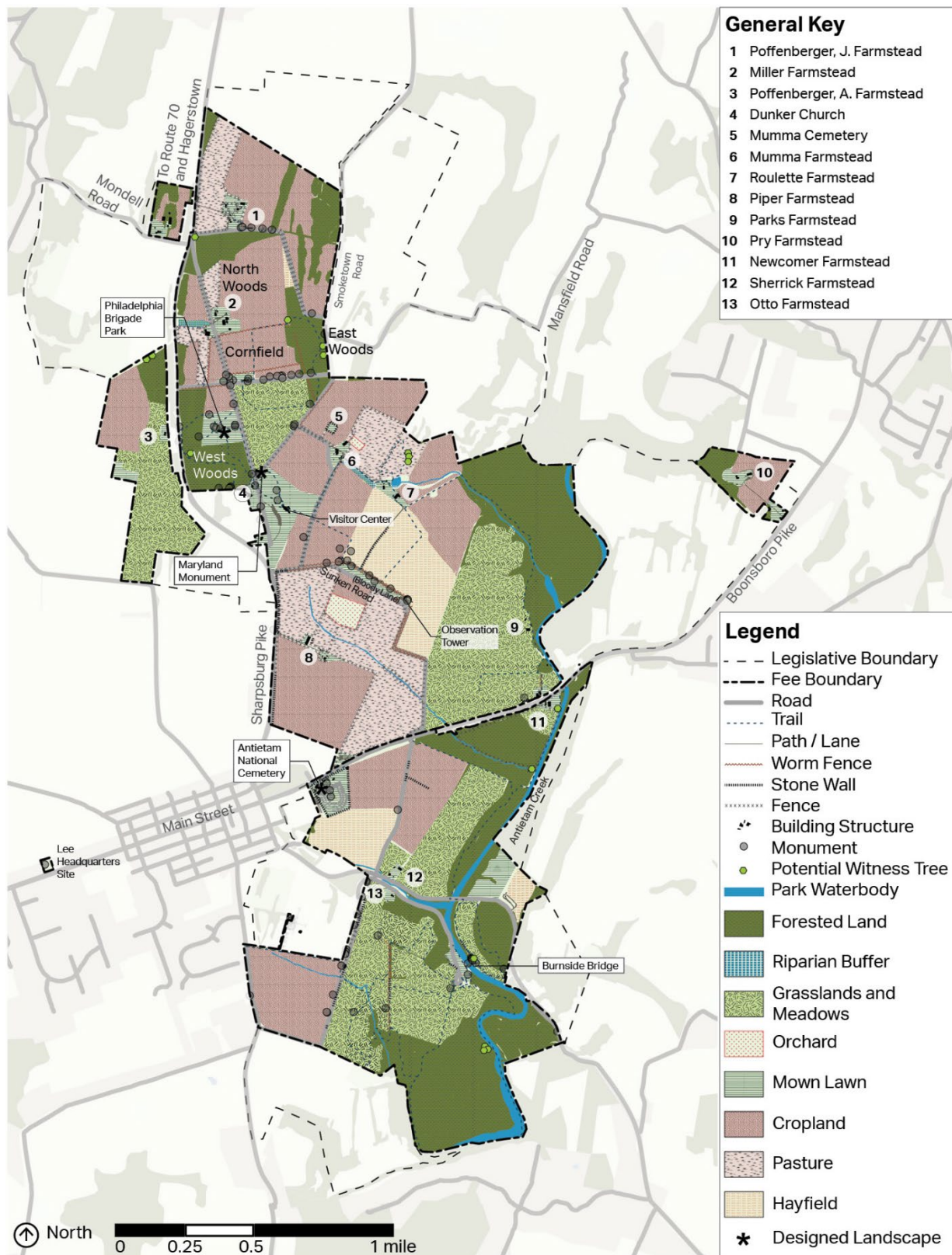


Figure 4: Action Alternative

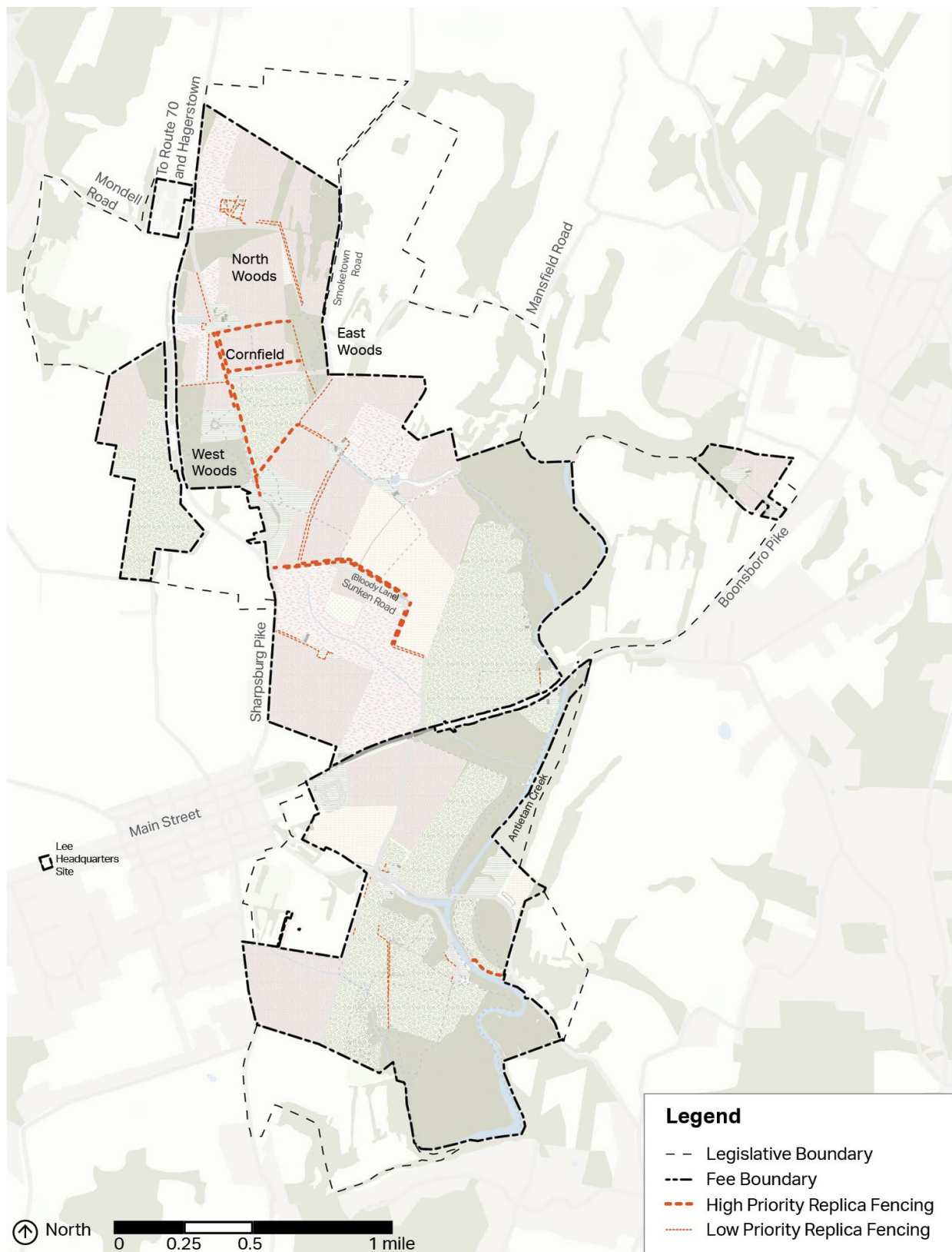


Figure 5: Action Alternative – Priority Fencing

## 6. HISTORIC AND ARCHEOLOGICAL RESOURCES

The Battlefield includes numerous documented historic and archeological resources. Historic resources at the park include the Antietam National Battlefield Historic District, which is listed in the NRHP. Historic resources at the Battlefield also include the Antietam National Battlefield, Antietam National Cemetery, the Burnside Bridge Area, the D. R. Miller Farmstead, the Mumma Farmstead, the Newcomer Farmstead, the Parks Farmstead, the Joseph Poffenberger Farmstead, the Roulette Farmstead, and the Visitor Center Area, all of which are documented in Cultural Landscape Inventories (CLIs) and/or Cultural Landscape Reports (CLRs). Additional historic resources at the Battlefield include the Hauser Farmstead, Newcomer Farmstead, Otto Farmstead, Piper Farmstead, Pry Farmstead, A. Poffenberger Farmstead, and Sherrick Farmstead, which are all cultural landscapes but have not been documented in CLIs or CLRs. The entire Battlefield is also recorded as an archeological site.

### 6.1 Historic Resources

The APE contains overlapping historic resources, including districts and cultural landscapes. Many resources contribute to multiple properties. A historic district, as defined by 36 CFR Part 60 "National Register of Historic Places," is a "geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history." The NPS defines a cultural landscape as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values." Cultural landscapes are listed in the NRHP when their significant cultural values have been documented and evaluated within appropriate thematic contexts, and physical investigation determines that they retain integrity. Cultural landscapes and their associated features are listed in the NRHP as part of or all of a historic district or site and associated resources counted within.

Documented historic resources in the APE include the following:

- ***Antietam National Battlefield Historic District (HD):*** The district encompasses the legislative boundary of the Battlefield. Although the Battlefield was administratively listed in the NRHP at the program's inception in 1966, no documentation was prepared and completed until 1982 with additional documentation in 2009 and 2018. The periods of significance include September 16-18, 1862, and the periods of commemoration and the NPS Mission 66-era. The district is significant in the areas of architecture, community planning and development, conservation, military, and politics/government. The district is significant at the national and local levels for the following reasons (NPS 1982, 2009, 2018b, 2021):
  - Antietam National Battlefield was the scene of one of the major battles of the American Civil War and of American history.



- The Battlefield and National Cemetery represents an early attempt by Americans to memorialize and commemorate those who fought for their country in the Civil War.
  - The historic scene of September 1862 remains incredibly intact.
  - The battlefield farms are an important slice of regional history rooted in the rich soil cultivated and developed into prosperous farms by German husbandmen. The landscape itself had a profound effect on the agricultural development of the area and specifically on the course and outcome of the Battle of Antietam.
  - Mission 66-era resources at the battlefield reflect the fundamental principles of the NPS's Mission 66 programs to modernize, enlarge, and revitalize the national park system by its 50<sup>th</sup> anniversary in 1966.
- ***Antietam National Battlefield Cultural Landscape (CL):*** The overall period of significance for Antietam National Battlefield is 1760 to 1967, with the following associated periods and themes (NPS 2021):
    - Agriculture (1760-1936): The battlefield farms are an important slice of regional history rooted in the rich soil cultivated and developed into prosperous farms by German husbandmen. The landscape had a profound effect on the agricultural development of the area.
    - The Civil War (1861-1865): The battlefield is the scene of one of the major battles of the American Civil War and of American history. The geographic and agricultural landscape that developed over the century prior to the battle influenced the landscape of the battle.
    - Commemoration (1864-1933): The Battlefield and National Cemetery represents an early attempt by Americans to memorialize and commemorate those who fought for their country in the Civil War.
    - Mission 66 (1960-1967): The Mission 66-era resources at Antietam National Battlefield reflect the fundamental principles of the NPS's Mission 66 program to modernize, enlarge, and revitalize the national park system by its 50<sup>th</sup> anniversary in 1966.

In addition to the Antietam National Battlefield HD and CL, individual areas and properties within the boundaries of Antietam National Battlefield have been documented in a series of CLIs and CLRs:

- ***Antietam National Cemetery CL:*** This cultural landscape is document in a CLI and CLR. The period of significance for the cemetery is 1865 to the present. The period reflects the ongoing role and exceptional importance of national cemeteries as public places of commemoration and honor (NPS 2005a, 2014).
- ***Burnside Bridge Area CL:*** This cultural landscape is document in a CLI an CLR. The overall period of significance for the Burnside Bridge area is 1738-1966. This period encompasses

the start of agricultural developments, the events and reconstruction associated with the Battle of Antietam, and the commemoration efforts that followed (NPS 2016, 2018d).

- ***Newcomer Farmstead CL:*** This cultural landscape is document in a CLI. The periods of significance for the farmstead is 1762-1861, 1861-1965, and 1888-1910. The periods encompass, respectively, the farmstead's preserved agricultural landscape, role in the Battle of Antietam, and association with early Civil War battlefield preservation efforts (NPS 2018a).
- ***Mumma Farmstead CL:*** This cultural landscape is document in a CLI. The overall period of significance for the farmstead is 1761-1933. This period encompasses the farmstead's preservation of an historic agrarian landscape, involvement with the Battle of Antietam, and association with early Civil War battlefield preservation efforts (NPS 2004a).
- ***D. R. Miller Farmstead CL:*** This cultural landscape is document in a CLI. The periods of significance for the farmstead is 1799-1861, 1861-1865, and 1890-1964. These periods of significance encompass, respectively, the farmstead's agricultural history as a late eighteenth/early nineteenth century agricultural landscape, involvement with the Battle of Antietam, and association with early Civil War battlefield preservation efforts (NPS 2005b).
- ***Parks Farmstead CL:*** This cultural landscape is document in a CLI. The periods of significance for the farmstead is 1796-1861 and 1861-1865. These periods of significance encompass the farmstead's association with the agricultural history of western Maryland during the Early National period and role in the Battle of Antietam (NPS 2011).
- ***Joseph Poffenberger Farmstead CL:*** This cultural landscape is document in a CLI. The periods of significance for the farmstead is 1861-1865 and 1890-1910. These periods of significance encompass the farmstead's role in the Battle of Antietam and involvement in early Civil War battlefield preservation efforts (NPS 2008).
- ***Roulette Farmstead CL:*** This cultural landscape is document in a CLI. The periods of significance for the farmstead is 1761-1861, 1861-1865, and 1890-1933. These periods of significance encompass the farmstead's agricultural history as a late eighteenth/early nineteenth century agricultural landscape, involvement with the Battle of Antietam, and association with early Civil War battlefield preservation efforts (NPS 2004b).
- ***Visitor Center Area CL:*** This cultural landscape is document in a CLI. The periods of significance for the Visitor Center area are 1861-1865, 1897-1933, and 1955-1965. These periods encompass, respectively, the area's involvement with the Battle of Antietam; early battlefield preservation, commemoration, and administration under the War Department; and the NPS Mission 66 program and the changes that occurred within the landscape (NPS 2018e).

Specific resources identified as contributing resources are summarized below. The 1982 Antietam National Battlefield NRHP nomination does not distinguish between contributing and non-contributing resources. Additionally, the 2021 Antietam National Battlefield CLR explicitly

summarizes and builds upon the CLIs for the Antietam National Cemetery, the Burnside Bridge Area, the D. R. Miller Farmstead, the Mumma Farmstead, the Newcomer Farmstead, the Parks Farmstead, the Joseph Poffenberger Farmstead, the Roulette Farmstead, and the Visitor Center Area. For these reasons, only contributing resources identified in the 2009 and 2018 Antietam National Battlefield NRHP nomination documentation and the 2021 Antietam National Battlefield CLR are summarized below.

Note that these specific resources are grouped by resource type (e.g., buildings and structures, circulation) for organizational purposes only. **Table 1** and **Table 2** summarize the resource types that contribute to the Battlefield's documented historic properties.

- ***Land Use.*** Contributing land uses include agriculture, grasslands, woods, commemoration, interpretation/education, and visitor recreation. The existing land uses within the Battlefield are consistent with historic use of the landscape. Agriculture is the predominant land use and has been documented within the project area since the 1700s. The continued use of the landscape for agriculture maintains the openness and agrarian character of the landscape. Today, more areas are forested than occurred in 1862 and through much of the 20<sup>th</sup> century. The North, East, and West Woods are wooded areas that were once woodlots associated with local farms. Commemorative uses include features that commemorate the events and major figures of the battle. Interpretation/education is provided throughout the Battlefield for visitors.
- ***Spatial Organization.*** Contributing features include open fields framed by fence lines, walls, fences, and roads, contrasted by areas of woods; spatially distinct areas: farmsteads, monuments, and building clusters; and formal, linear arrangement of monuments.
- ***Topography.*** Contributing features includes limestone outcroppings and exposed bedrock cliffs and prominent hills, including the high ridge east of Sharpsburg/west of Antietam Creek, running north-south through the battlefield; Nicodemus Heights on the west side of the Battlefield; a hill to the east of Antietam Creek occupied by the Pry Farm; the hill above Burnside Bridge; and a broad ridge at the Final Attack trail.
- ***Views and Vistas.*** Views are defined by topography and vegetation. Contributing views are shown in **Figure 6** and described in **Table 4**. Note that the existing conditions descriptions in **Table 4** are drawn directly from the *Antietam National Battlefield Cultural Landscape Report*, prepared by Quinn Evans for NPS in 2021. Examples of contributing views that are currently obscured by power lines or overgrown vegetation are shown in **Figure 7**. Overall, views have not changed substantially since the periods of significance, but successional vegetation growth now encloses some views and obscures views to landmarks. Some views are also impacted by utility lines, residential development, a water tower, and a cell tower. The continuity of the agricultural land use, the general layout of the farmsteads, and the reconstruction of historic features all reflect the views present in the 19<sup>th</sup> century. Significant views are retained in the landscape.



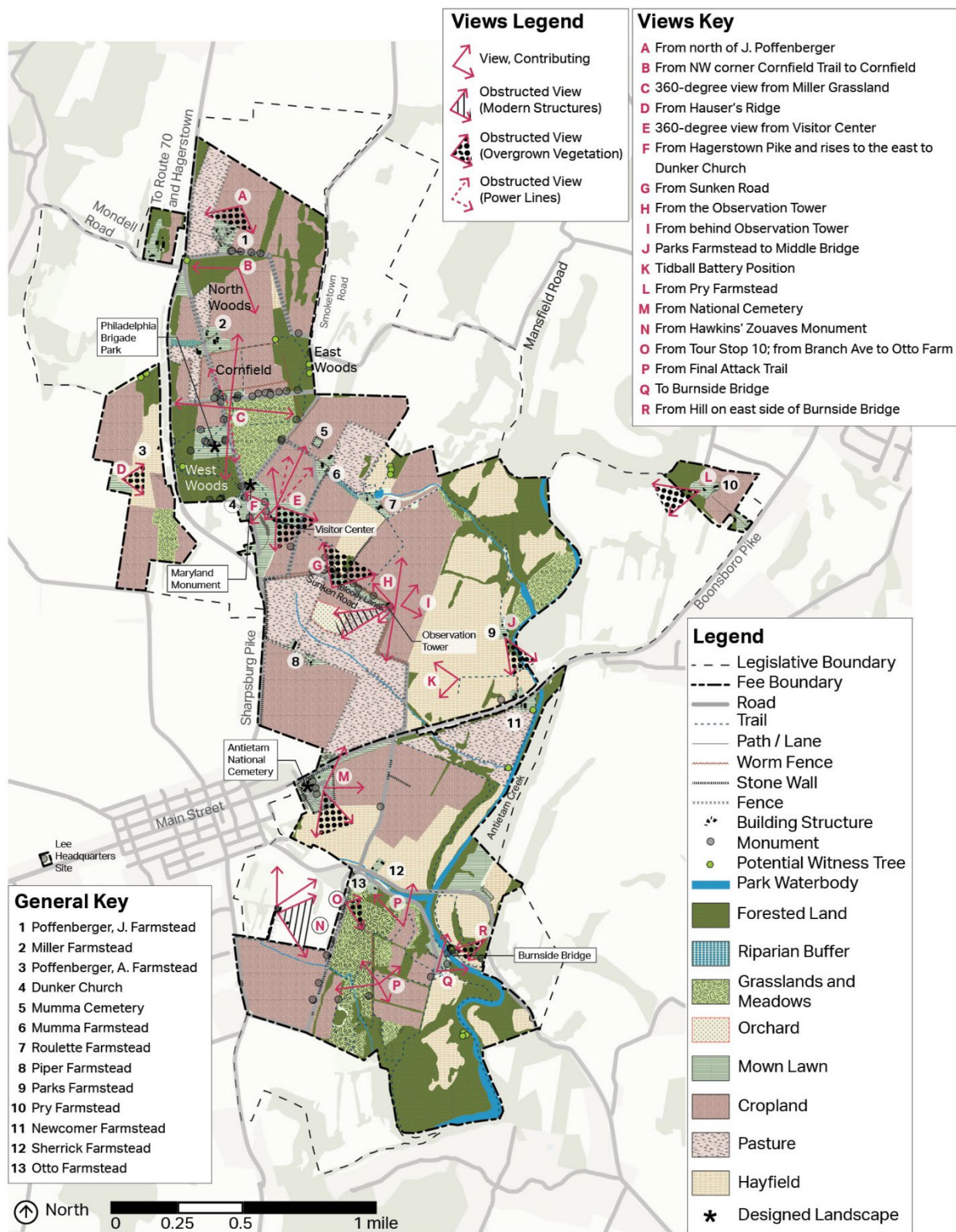


Figure 6: Contributing Views Overlaid on Existing Conditions



View C. View from Miller Grassland looking north showing power lines



View G. View from Sunken Road looking north at the intersection with Roulette Lane showing overgrown vegetation



View R. View from hill on east side of Burnside Bridge showing overgrown vegetation

## Figure 7: Examples of Contributing Views

- ***Natural Systems and Features.*** Contributing features include soils and geology and waterbodies. Soils and geology were important to the initial settlement of the region, military action during the Battle of Antietam, later development, commemoration, and interpretation of the battlefield. The rich, well-drained soils are prime farmland. Exposed bedrock throughout the landscape reveals the underlying geology and influenced the placement of croplands and grasslands. These patterns are visible today. Waterbodies within the Battlefield include ponds, springs, creeks, intermittent streams, and associated floodplains.
- ***Vegetation.*** Contributing vegetation includes forests, grasslands, agricultural fields (croplands, hayfields, pastures), orchards, threatened plants, witness trees, mown lawn, and ornamental vegetation. Vegetation patterns are a mosaic of agricultural fields and forests, with much of the landscape maintained for agricultural use. Ornamental vegetation is not widely present, but occurs within farmsteads and at key points around Commemorative and Mission 66 features. Nearly 65 percent of the vegetation patterns from 1862 are in the same condition today. Today, the landscape remains largely agricultural. Croplands, hayfields, and pastures create open spaces that are reflective of the historic character of the landscape. However, there are fewer orchards than there were historically.
- ***Buildings and Structures.*** The battlefield contains over 60 buildings and structures, which have a wide range of architectural styles. Contributing buildings and structures include the following:
  - Civil War era (1861-1865) buildings and structures: Dunker Church and the Burnside Bridge
  - Agricultural (1760-1936) buildings and structures at the following farmsteads:
 

○ Joseph Poffenberger Farmstead	○ Piper Farmstead
○ D.R. Miller Farmstead	○ The Newcomer Farmstead
○ A. Poffenberger Farmstead/Locher Cabin	○ The Parks Farmstead
○ Mumma Farmstead	○ The Pry Farmstead
○ Roulette Farmstead	○ The Sherrick Farmstead
	○ The Otto Farmstead
  - Commemorative (1864-1933) buildings and structures: Observation Tower
  - Mission 66 buildings and structures: Visitor Center and Rodman Avenue Bridge
- ***Cluster Arrangement.*** The battlefield contains several distinct cluster arrangements, which can be described separately to provide additional detail for these areas:
  - **Visitor Center cluster.** This cluster includes the building, parking area, walks, views, plantings, and the Dunker Church. The visitor center occupies the highest point of



Antietam National Battlefield. Paved paths lead from the parking area to the building entrance and a trail to the north, which connects to Dunker Church. The visitor center landscape includes mown lawn, deciduous trees, and mature holly shrubs adjacent to the buildings.

- **Dunker Church cluster.** The Dunker Church is set on a slight hill to the west of Hagerstown Turnpike and is accessed by brick steps and walkway from the road and connects to a trail. The Dunker Church is set within an area of mown lawn and the historic West Woods is opposite the church on Smoketown Road.
- **Sunken Road and Observation Tower cluster.** This cluster includes Sunken Road, the Observation Tower, Richardson Avenue, and tour stop #7. The landscape between these features is composed of mown lawn that surfaces the Sunken Road, worm fencing along the roadway, and a few deciduous shade trees. The cluster is surrounded by agricultural fields that are maintained on sloping topography that encloses the Sunken Road.
- **Philadelphia Brigade Park.** The park is a spatially distinct area, with formal arrangement of trees that create an enclosed space. The park is composed of a mown lawn, orderly rows of trees, and a central access drive that creates a loop around the Philadelphia Brigade monument.
- **Hawkins' Zouaves Site.** The Hawkins Zouaves Monument and its immediate landscape setting is composed of a high ridge overlooking the battlefield to the east. The monument is accessed from Harper's Ferry Road and a small pullout along the roadway. A path connects from the road to the monument. The area consists of mown lawn surrounded by a wood rail fence.
- **Lee Headquarters Site.** Surrounded by a three-rail fence on three sides, the site's southern boundary is marked by a low stone wall at the southwest corner and sloping lawn to Shepardstown Pike. The park space is mown lawn with a mature canopy of trees. Trees frame the view to the memorial at the center of the site.
- **Farmsteads.** Farmsteads are clusters of buildings, composed of a main farmhouse and several domestic and agricultural outbuildings. Agricultural outbuildings are usually set at a distance from the domestic structures. Each farmstead's collection of buildings and structures are connected by informal dirt or grassed narrow farm lanes. Remnants of stone walkways occur at many of the farmhouses, leading to front and back porches, and connecting to yard spaces and farm lanes. Farmsteads are typically sited along hillsides and take advantage of the natural topography. The entire farmstead is typically enclosed by wood fencing that surrounds the cluster of buildings and structures. Dry-laid stone walls are used to enclose smaller yards, and as retaining walls. The 11 farmsteads with contributing cluster arrangements include the following:
  - Joseph Poffenberger Farmstead
  - D.R. Miller Farmstead

- Alfred Poffenberger Farmstead
  - Mumma Farmstead
  - Roulette Farmstead
  - Piper Farmstead
  - Newcomer Farmstead
  - Parks Farmstead
  - Pry Farmstead
  - Sherrick Farmstead
  - Otto Farmstead
- ***Circulation.*** Numerous circulation routes contribute to the overall character of the landscape. Historic roads and road traces are used today for vehicular and pedestrian access. Contributing circulation features include the following:
    - Route 34 (Boonsboro Pike)
    - Route 65 (bypass)
    - Hagerstown Pike/Sharpsburg Pike
    - Smoketown Road
    - Burnside Bridge Road
    - Old Burnside Bridge Road
    - Harper’s Ferry Road
    - Cornfield Avenue
    - Mansfield Avenue
    - Richardson Avenue
    - Rodman Avenue
    - Branch Avenue
    - Starke Avenue
    - Sunken Road (Bloody Lane)
    - Otto Farm Lane
    - Farm Lanes to individual farmsteads
    - Internal vehicular and pedestrian routes within each Farmstead
    - Tour Route
    - Tour Stops (all except 3 and 10)
    - Antietam Remembered Trail/Dunker Church Trail
    - Snavelly Ford Trail
    - Road trace between the barn and house at the Locher/A. Poffenberger Farm
  - ***Archeological Sites.*** Archeological sites contribute to the cultural landscape. In general, archeological sites are in good condition, but continue to be exposed due to erosion. It is likely that further contributing archeological resources exist related to Indigenous occupation, agricultural development, the Civil War, the Commemorative Period, and Mission 66.
  - ***Small Scale Features.*** Contributing small scale features include the following:
    - Monuments, pre-1967
    - Philadelphia Brigade
    - Decorative Iron Fence
    - Remnant Concrete Posts
    - Stone walls at tour stops
    - Dry-laid stone walls
    - Mortared stone walls, Rodman & Branch Avenue

- Mumma Cemetery stone wall
  - War Department Tablets
  - Directional Markers
  - Headstones
  - Cannon
- ***Constructed Water Features.*** Contributing constructed water features include the McKinley lane drainage system at the Burnside Bridge area; the concrete water trough, spring, and stone culverts under War Department roads at the D.R. Miller Farmstead; the spring house at the Mumma Farmstead; and the vaulted spring alcove at the Roulette Farmstead.

Table 1: Contributing Resources (1 of 2)

Resource Categories	Resources contribute to:					
	Antietam National Battlefield HD	Antietam National Battlefield CL	Antietam National Cemetery CL	Burnside Bridge Area CL	Newcomer Farmstead CL	Mumma Farmstead CL
Land Use	NA	X	X	X	X	X
Spatial Organization	NA	X	X	X	X	X
Topography	NA	X	NA	X	X	X
Views and Vistas	X	X	X	X	X	X
Natural Systems and Features	NA	X	NA	X	X	X
Vegetation	X	X	X	X	X	X
Buildings and Structures	X	X	X	X	X	X
Cluster Arrangement	NA	X	X	NA	NA	X
Circulation	X	X	X	X	X	X
Archeological Sites	X	X	NA	X	NA	X
Small Scale Features	X	X	X	X	X	X
Constructed Water Features	NA	NA	NA	X	NA	X

Table 2: Contributing Resources (2 of 2)

Resource Categories	Resources contribute to:				
	D. R. Miller Farmstead CL	Parks Farmstead CL	Joseph Poffenberger Farmstead CL	Roulette Farmstead CL	Visitor Center Area CL
Land Use	X	X	X	X	X
Spatial Organization	X	X	X	X	X
Topography	X	X	X	X	X
Views and Vistas	X	X	X	X	X
Natural Systems and Features	X	X	X	X	X
Vegetation	X	X	X	X	X
Buildings and Structures	X	X	X	X	X
Cluster Arrangement	NA	NA	NA	NA	NA
Circulation	X	X	X	X	X
Archeological Sites	NA	NA	NA	X	NA
Small Scale Features	X	X	X	X	X
Constructed Water Features	X	NA	NA	X	NA



## 6.2 Archeological Resources

The Battlefield contains 34 documented archeological sites (using the NPS Resource ID code) related to Indigenous occupation, agricultural practices, the Civil War, and other historic activity. These 34 NPS sites are included within 26 archaeological sites as recorded with the Maryland Historical Trust using the Smithsonian site trinomial designation. Of these 34 NPS archeological sites, 33 are located within the fee boundary and one is located within the legislative boundary. All 34 sites within the legislative boundary are summarized in **Table 3**.

**Table 3: Archeological Resources within Antietam National Battlefield**

Resource ID	Site Name	Site Trinomial	Site Type(s)	NRHP Status	Within Fee Boundary?
ANTI00001.000	West Woods	18WA0456.1	Battlefield	Unevaluated (1, 2)	Yes
ANTI00002.000	North Woods	18WA0456.2	Undetermined	Unevaluated (1, 2)	Yes
ANTI00003.000	East Woods	18WA0456.3	Undetermined	Unevaluated (1, 2)	Yes
ANTI00004.000	Piper Orchard	18WA0456.4	Agricultural Feature(s); Undetermined	Unevaluated (1, 2)	Yes
ANTI00005.000	Mumma Orchard	18WA0456.5	Undetermined	Unevaluated (1, 2)	Yes
ANTI00006.000	Mumma Farm	18WA0456.6	Undetermined	Unevaluated (1, 2)	Yes
ANTI00007.000	Locher-A. Poffenberger Farmstead	18WA0461	Farmstead; Battlefield	Recommended Eligible; National Significance (2); Contributing Resource, Antietam National Battlefield (3)	Yes
ANTI00008.000	D.R. Miller Tenant House	18WA0466	Artifact Scatter; Farmstead	Unevaluated (1, 2)	Yes
ANTI00009.000	Mumma Orchard Prehistoric Site	18WA0482	Isolated Find	Unevaluated (1, 2)	Yes
ANTI00010.000	North Woods Prehistoric #1	18WA0483	Isolated Find	Unevaluated (1, 2)	Yes

Resource ID	Site Name	Site Trinomial	Site Type(s)	NRHP Status	Within Fee Boundary?
ANTI00011.000	North Woods Prehistoric #2	18WA0484	Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00012.000	Piper Orchard Prehistoric Site	18WA0485	Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00013.000	Mumma Farmstead	18WA0450	Farmstead; Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00014.000	Benner Tenancy	18WA0606	Historic Structure	Unevaluated (1, 2)	Yes
ANTI00015.000	Antietam National Battlefield	18WA0456	Battlefield	Listed/ Documented, National Significance, 1982 (2)	Yes
ANTI00015.001	Dunker Church	18WA456.7	Building; Battle Site	Listed/ Documented, National Significance, 1982 (2)	Yes
ANTI00016.000	D.R. Miller Farmstead	18WA0505	Farmstead	Determined Eligible, National Significance, 2005 (2); Contributing Resource, Antietam National Battlefield (3)	Yes
ANTI00017.000	Mt. Pleasant Prehistoric Site	18WA0438	Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00018.000	Joseph Sherrick Farm	18WA0456.7	Habitation	Listed/ Documented, National Significance (2)	Yes

Resource ID	Site Name	Site Trinomial	Site Type(s)	NRHP Status	Within Fee Boundary?
ANTI00019.000	John Otto Farm	18WA0456.8	Habitation	Listed/ Documented, National Significance (2); Contributing Resource, Antietam National Battlefield (3)	Yes
ANTI00020.000	Orendorff/ Newcomer Farmstead and Mill	18WA0320	Farmstead; Battlefield; Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00021.000	Roulette Farmstead	18WA0509	Farmstead; Battlefield	Unevaluated (1); Recommended Eligible, Local Significance (2); Contributing Resource, Antietam National Battlefield (3)	Yes
ANTI00029.000	Joseph Poffenberger Farmstead	18WA0594	Farmstead; Battlefield	Unevaluated (1); Recommended Eligible; Local Significance (2)	Yes
ANTI00030.000	John Otto Farmstead	18WA0601	Farmstead	Unevaluated (1, 2)	Yes
ANTI00031.000	Poffenberger Tenant House	18WA0595	Farmstead; Battlefield	Unevaluated (1, 2)	Yes
ANTI00032.000	Clip Tenant House	18WA0596	Farmstead; Battlefield	Unevaluated (1) Recommended Eligible, Local Significance (2)	Yes
ANTI00033.000	Jonathan Keplinger Tenant House	18WA0597	Farmstead; Battlefield	Unevaluated (1); Recommended Eligible, Local Significance (2)	Yes

Resource ID	Site Name	Site Trinomial	Site Type(s)	NRHP Status	Within Fee Boundary?
ANTI00034.000	Parks Floodplain Prehistoric Site	18WA0598	Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00035.000	Pry House Farmstead	18WA0599	Farmstead; Battlefield	Unevaluated (1, 2)	No
ANTI00036.000	Miller Farm Outbuilding	18WA0600	Farmstead; Battlefield	Unevaluated (1, 2)	Yes
ANTI00037.00	Parks Floodplain II Prehistoric Site	18WA0603	Lithic Scatter	Unevaluated (1, 2)	Yes
ANTI00038.000	Parks Farmstead	18WA0602	Farmstead	Unevaluated (1, 2)	Yes
ANTI00039.000	Joseph Sherrick Farmstead	18WA0604	Farmstead	Unevaluated (1, 2)	Yes
ANTI00040.000	Piper House Farmstead	18WA321	Farmstead	Unevaluated (1); Not Evaluated (2); Contributing Resource, Antietam National Battlefield (3)	Yes

1 Source: MEDUSA, Maryland's Cultural Resource Information System.

<https://mht.maryland.gov/secure/medusa/>

2 Source: NPS Cultural Resources Information System. <https://apps.cr.nps.gov/CRIS/>

3 Source: *Antietam National Battlefield*. 1982, 2009. National Register of Historic Places Inventory Nomination Form. National Park Service, National Capital Region.

Notably, the entire battlefield is recorded as an archeological site (18WA0456), consisting of artifacts, building remnants, and possibly additional graves of soldiers associated with the Battle of Antietam. Other archeological sites include agricultural features, farmsteads, a historic structure, a building, habitations, a battle site, battlefields, artifact scatters, and lithic scatters.

The NRHP status of these archeological sites is not entirely clear when comparing the archeological site records at Maryland Historical Trust (MHT), archeological records for ANTI in NPS Cultural Resources Information System (CRIS), and the 1982 and 2009 NRHP nomination

forms for Antietam National Battlefield. The 1982 and 2009 NRHP nomination forms do not list any archeological sites, either by Smithsonian trinomial number or NPS Resource ID number. The NRHP nomination forms only provide names of “sites,” and not all of the “sites” names as contributing resources could be correlated to a formally designated archaeological site (i.e., the Shull Tract, the John Flook Farm/Nicodemus Farm). Additionally, the NRHP nomination forms do not have “Archeology-Prehistoric” or “Archeology-Historic” checked as Areas of Significance.

As can be ascertained from the NRHP nomination forms, five of the 34 archeological sites appear to contribute to the NRHP eligibility of Antietam National Battlefield: John Otto Farm (18WA0456.8), Locher-A. Poffenberger Farmstead (18WA0461), D.R. Miller Farmstead (18WA0505), Roulette Farmstead (18WA0509), and Piper House Farmstead (18WA0321). NPS CRIS notes that Dunker Church (18WA0456.7) is listed in the NRHP, but it is unclear if this technically includes the archeological component of Dunker Church as a contributing element or only the above-ground component. The same applies to the Joseph Sherrick Farm (18WA0456.7) and the John Otto Farm (18WA0456.8). NPS CRIS notes that five archeological sites have been recommended eligible for the NRHP, either for Local or National significance: Locher-A. Poffenberger Farmstead (18WA0461), Roulette Farmstead (18WA0509), Joseph Poffenberger Farmstead (18WA0594), Clip Tenant House (18WA0596), and Joseph Keplinger Tenant House (18WA0597). NPS CRIS also notes that the D.R. Miller Farmstead (18WA0505) was determined eligible for the NRHP in 2005. It should be noted that none of the NRHP listings, determinations of eligibility, or recommendations for NRHP eligibility as noted in NPS CRIS are noted in the archeological site records available through MEDUSA, MHT’s online cultural resource information system.

The NRHP nomination form for Antietam National Battlefield notes archeological investigations at Piper Farm (18WA321), Mumma Farm (18WA0456.6 and 18WA0450), Locher-Poffenberger Farm (18WA0461), and D.R. Miller Farm (18WA0505), but provides little information on why the archeological components of three of these sites contributes to the NRHP eligibility of the Battlefield. The archeological investigations at the Piper Farm in 1979 and 1984/1985 documented twentieth and mid-nineteenth century artifacts. The archeological investigations at the Mumma Farm found evidence of artillery lines, a cistern, and the possibility of unmarked graves at the Mumma Cemetery. The archeological investigations at the Locher-Poffenberger Farm noted that available data could provide a better understanding of the social and economic aspects of rural Maryland in the nineteenth century. The archeological investigations at the D.R. Miller Farm revealed military artifacts as well as domestic concentrations from the late nineteenth and early twentieth centuries.

Additionally, the 2021 Antietam National Battlefield Cultural Landscape Report (Quinn Evans) notes that “[a]rcheological sites contribute to the cultural landscape (Quinn Evans 3-122). The report, however, does not note how the archeological sites contribute to the landscape, nor does the report provide any recommendations for updating the NRHP status of the archeological sites to show as contributing elements to the cultural landscape.

Regardless of these data and reporting discrepancies, none of the 34 archeological sites within the Battlefield have been determined not eligible for the NRHP. All 34 of the sites are considered historic properties.

Approximately 48 percent of the Battlefield has been subject to some level of archeological survey. The intensity of survey within that 48 percent, however, is not comprehensive. Some of the archeological surveys have not included the full suite of archeological survey types necessary to identify archeological components within the Battlefield (i.e., pedestrian inspection, interval shovel testing, metal detecting). Given the variety of land uses present over the past >10,000 years, and the area's role in the Battle of Antietam, additional archeological resources are likely to exist in the APE relevant to Indigenous occupation, agricultural development, the Civil War, the Commemorative Period (1864-1933), and Mission 66 (1960-1967) (NPS 2021).

## 7. EFFECTS ASSESSMENT

This document records the assessment of effects on the historic and archeological resources identified in the preceding sections. The section below addresses anticipated effects of the Action Alternative on the project area's and the APE's historic and archeological resources. Adverse effects in the section below are defined according to the NHPA Section 106 implementing regulations (36 CFR Part 800), which state that "an adverse effect is found, when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Adverse effects could include, but are not limited to, physical destruction or damage, alterations that are not consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, removal from historic location, change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance, and introduction of visual elements that diminish the integrity of the property's significant historic features.

For analysis purposes, archeological sites that contribute to the Antietam National Battlefield historic district and cultural landscape are addressed holistically in **Section 7.2**.

### 7.1 Historic Resources

Overall, the Action Alternative would have no adverse effects on historic resources. Changes to contributing resources as a result of the Action Alternative and why these changes would not result in adverse effects are described below.

#### Land Use

The undertaking would have no adverse effects on contributing land use resources. The undertaking would reforest approximately 140 acres of woodland areas in areas where substantial gaps in forest cover exist or where historic woodlots have been diminished. These reforested areas would be primarily located along the west side of Antietam Creek. The undertaking would also establish approximately 287 acres of additional grasslands and meadows by converting some hayfields and cropland. In total, the undertaking would change the existing land use of approximately 427 acres of the 1,991-acre project area. The addition of forests, grasslands, and meadows would not be noticeable at a large scale, and agriculture would remain the predominant land use. The replacement of some hayfields and cropland with grasslands and/or meadows would retain the same open character of the landscape as agricultural fields. The addition of forests, grasslands, and meadows would also be consistent with historic uses of the landscape. No changes would occur to the project area's commemoration, interpretation/education, and visitor recreation land uses.

## Spatial Organization

The undertaking would have no adverse effects on contributing spatial organization. The undertaking would establish approximately 287 acres of additional grasslands and meadows by converting some hayfields and cropland. However, the change in vegetation would retain the open character of the preceding agricultural fields. These newly established grassland and meadow areas would continue to be framed by fence lines, walls, fences, and roads. The undertaking would also reforest approximately 140 acres of woodlands areas in areas where substantial gaps in forest cover exist or where historic woodlots have been diminished. These reforested areas would be primarily located along the west side of Antietam Creek. The contrast between open fields and wooded areas would increase due to the shift in the configuration of open and closed areas along Antietam Creek. No changes would occur to the spatial arrangement of farmsteads, monuments, and building clusters.

## Views And Vistas

The undertaking would have no adverse effects on contributing views and vistas. Overall, the undertaking would re-establish important visual connections through clearing of obstructive successional vegetation, the placement of overhead utility lines underground or relocating them, and maintaining historic fence lines that frame the historic landscape. No changes would occur to the Battlefield's topography or general layout of farmsteads.

The removal of obstructive successional vegetation and overhead utility lines and changes in vegetation patterns within important viewsheds would improve the ability of the landscape to represent historic conditions. The effects assessment of the undertaking on specific views is summarized in **Table 4**. Note that the existing condition descriptions in **Table 4** are drawn directly from the *Antietam National Battlefield Cultural Landscape Report*, prepared by Quinn Evans for NPS in 2021. **Figure 8** shows contributing views overlaid on the Action Alternative.



Table 4: Contributing Views' Existing Conditions and Effects Assessment

Contributing Views	Existing Conditions	Effects Assessment
View A. View from north of J. Poffenberger	At the north end of the Battlefield is a view from the cannon emplacement north of Joseph Poffenberger's farm looking south towards the North Woods and west to Nicodemus Heights. Views from the prominent ridge north of the Joseph Poffenberger farmhouse yard appear much as they did when the Union artillery occupied the site during the battle, except for a line of trees just north of the farmhouse and barn that block views to the south, limiting the full range of sight the artillery had.	The undertaking would have no adverse effect on this view. The undertaking would remove lower branches, or limb up, the line of trees just north of the farmhouse and barn. This would improve views to the south, but the line of trees would continue to obstruct the views to the south.
View B. View from NW corner Cornfield Trail to Cornfield	From the south edge of the North Woods, the view is south to the Cornfield and west to Nicodemus Heights.	The undertaking would have no adverse effect on this view. No changes would occur to this view.

Contributing Views	Existing Conditions	Effects Assessment
View C. 360-degree view from Miller Grassland	An elevated rise south of Tour Stop 4 provides views to the Cornfield, across the Miller grassland, and to the west. This view is negatively impacted by electric lines along Dunker Church Road (historic Hagerstown Pike).	<p>The undertaking could relocate the electric lines underground along Dunker Church Road (historic Hagerstown Pike) or relocate them to along MD Route 65. Buried electric lines along Dunker Church Road (historic Hagerstown Pike) would require above-ground utility boxes and/or transformers. These modern intrusions may be less noticeable than the current overhead electric lines within the view, but would continue to adversely effect the view.</p> <p>Relocated overhead electric lines along MD Route 65 may or may not be visible from the Miller grassland. Visibility may be dependent on the time of year and leaf cover in forested areas along MD Route 65. The view west from the Miller grassland would be rehabilitated if the electric lines are buried along MD Route 65.</p>

Contributing Views	Existing Conditions	Effects Assessment
View D. View from Hauser's Ridge	From the Hauser farmstead is a view in a generally eastern direction towards the West Woods. Views from Hauser Ridge to the West Woods would have been more open during the battle than they are today.	<p>The undertaking would have no adverse effect on this view. The undertaking would convert existing hayfields and cropland within this view to grasslands and/or meadows. However, this change in vegetation would retain the open character within the view.</p> <p>The undertaking could relocate the existing electric lines along Dunker Church Road (historic Hagerstown Pike) to along MD Route 65. Relocated overhead electric lines along MD Route 65 may or may not be visible from within this view. Buried electric lines along MD Route 65 would require above-ground utility boxes and/or transformers. Visibility of these modern intrusions from within this view may be dependent on the time of year, leaf cover in forested areas along MD Route 65, and the grassland mowing schedule.</p>

Contributing Views	Existing Conditions	Effects Assessment
View E. 360-degree view from Visitor Center	<p>The visitor center provides panoramic views of the Battlefield. The hill behind the visitor center gives a nearly 360-degree view overlooking much of the battlefield landscape: Sunken Road, Mumma Farm, the Cornfield, and Antietam Creek. Beyond the boundaries of the Battlefield, views are towards South Mountain on the east, the river valley of Harpers Ferry on the south, and the town of Sharpsburg to the southwest. The view to Sunken Road is slightly obscured by vegetation, and the view west is also slightly obscured by vegetation. The view to the northeast is impacted by the electrical lines along Smoketown Road and Mumma Farm Lane. The long range views from the visitor center to South Mountain and across farm fields have changed little, although threatened by expansion of suburban development into the area.</p>	<p>The undertaking would have no adverse effect on this view. The undertaking would convert existing croplands within the view towards Sunken Road and to the east to hayfields. However, this change in vegetation would retain the open character within the view. The undertaking would also rehabilitate the views toward Sunken Road through woody vegetation clearance and rehabilitating views to the north by placing overhead utility lines along Smoketown Road and Mumma Farm Lane underground.</p>
View F. View from Hagerstown Pike and rises to the east to Dunker Church	<p>The view to the Dunker Church from Dunker Church Road (historic Hagerstown Pike) and the rise to the east is an historic view.</p>	<p>The undertaking would have no adverse effect on this view. No changes would occur to this view.</p>

Contributing Views	Existing Conditions	Effects Assessment
View G. View from Sunken Road	Views to and from Sunken Road are an important feature of the landscape. The roadway is maintained in low grasses which preserve the view along road corridor. From the roadway, views are enclosed by the steep banks. The view is partially obstructed by vegetation at the intersection of Sunken Road and Roulette Lane.	The undertaking would have no adverse effect on this view. The undertaking would convert existing croplands within this view to hayfields. However, this change in vegetation would retain the open character within the view. Obstructive successional vegetation near the intersection of Sunken Road and Roulette Lane would be cleared.
View H. View to/from the Observation Tower	Throughout much of the battlefield, the view to the Observation Tower is prominent. From the Observation Tower there is a 360-degree view of the entire landscape. This view is negatively impacted by adjacent development including housing, cell and water towers.	<p>The undertaking would have no adverse effect on this view. The undertaking would convert existing cropland to the north and east of the Observation Tower to hayfield. Existing hayfields farther east would be converted to grasslands and/or meadows. However, this change in vegetation would retain the open character within the view.</p> <p>Existing pasture, hayfields, grasslands, and meadows even farther east and along Antietam Creek would be converted to forested land. However, this change in vegetation would be minimally noticed due to its location in the background of the view from the Observation Tower and against other existing forested areas in the view's background.</p>

Contributing Views	Existing Conditions	Effects Assessment
View I. View from behind Observation Tower	The view from behind the Observation tower, at ground level, provides a 360-degree view of the landscape.	The undertaking would have no adverse effect on this view. The undertaking would convert existing cropland to the east of the Observation Tower to pasture. Existing hayfield farther east of the Observation Tower would also be converted to grasslands and/or meadows. However, this change in vegetation would retain the open character within the view.
View J. View from Parks Farmstead to Middle Bridge	The view to the Middle Bridge from Parks Farmstead was open during the Battle of Antietam. Today this view is enclosed by vegetation.	The undertaking would have no adverse effect on this view. The undertaking would convert existing hayfield in the view's foreground to grasslands and/or meadows. However, this change in vegetation would retain the same open character as hayfield.
View K. View from Tidball Battery Position	This view is across the Newcomer farm from an elevated hill, looking west.	The undertaking would have no adverse effect on this view. The undertaking would convert existing hayfield within this view to grasslands and/or meadows. However, this change in vegetation would retain the open character within the view.
View L. View from Pry Farmstead	At the Pry Farmstead, there is a view from the farmhouse looking west towards the battlefield. Vegetation is overgrown in portions of this historic view. From the Pry Farmstead, the battlefield is still visible but is encroached upon by forest.	The undertaking would thin vegetation on the slope to the west of the Pry Farmstead to open up, and thus rehabilitate the view.

Contributing Views	Existing Conditions	Effects Assessment
View M. View from National Cemetery	The view from the National Cemetery to the south is towards the battlefield and valley of Antietam Creek and South Mountain beyond. This view is partially obscured by a row of trees outside the southern cemetery wall.	The undertaking would thin trees outside the southern cemetery wall to improve the view.
View N. View from Hawkins' Zouaves Monument	From the Hawkins' Zouaves Monument, there is a view towards the National Cemetery and west towards the valley of Antietam Creek. This latter view is impacted by adjacent residential development.	The undertaking would have no adverse effect on this view. No changes would occur to this view.
View O. View from Tour Stop 10; from Branch Ave to Otto Farm	At the southern end of the battlefield along Branch Avenue, views to the east overlook the Otto Farm including native meadow plantings and the Final Attack Trail, and mountains beyond Antietam Creek. Views to the Otto Farmstead are obscured by vegetation.	The undertaking would thin trees between Tour Stop 10 and the Otto Farm to improve views to the Otto Farm.
View P. View from Final Attack Trail	Views from the Final Attack Trail are from an elevated position above Antietam Creek, and open due to the native grassland vegetation. The Antietam Creek drainage is visible and the mountains beyond.	The undertaking would have no adverse effect on this view. The undertaking would convert existing cropland in the foreground of this view to grasslands and/or meadows. However, this change in vegetation would retain the same open character as cropland.

Contributing Views	Existing Conditions	Effects Assessment
View Q. View to Burnside Bridge	At Burnside Bridge, there is a view of the bridge from the Mission 66 overlook and along the Burnside Bridge Road.	The undertaking would have no adverse effect on this view. The undertaking would convert existing hayfields on the opposite side of the Burnside Bridge and Antietam Creek to grasslands and/or meadows. However, this change in vegetation would retain the same open character as hayfields.
View R. View from hill on east side of Burnside Bridge	Views on the east side of the bridge were historically open during the battle but vegetation partially obscures the view today.	The undertaking would have no adverse effect on this view. The undertaking would convert existing hayfields within this view to grasslands and/or meadows. However, this change in vegetation would retain the same open character as hayfields. Obstructive successional vegetation would be cleared.



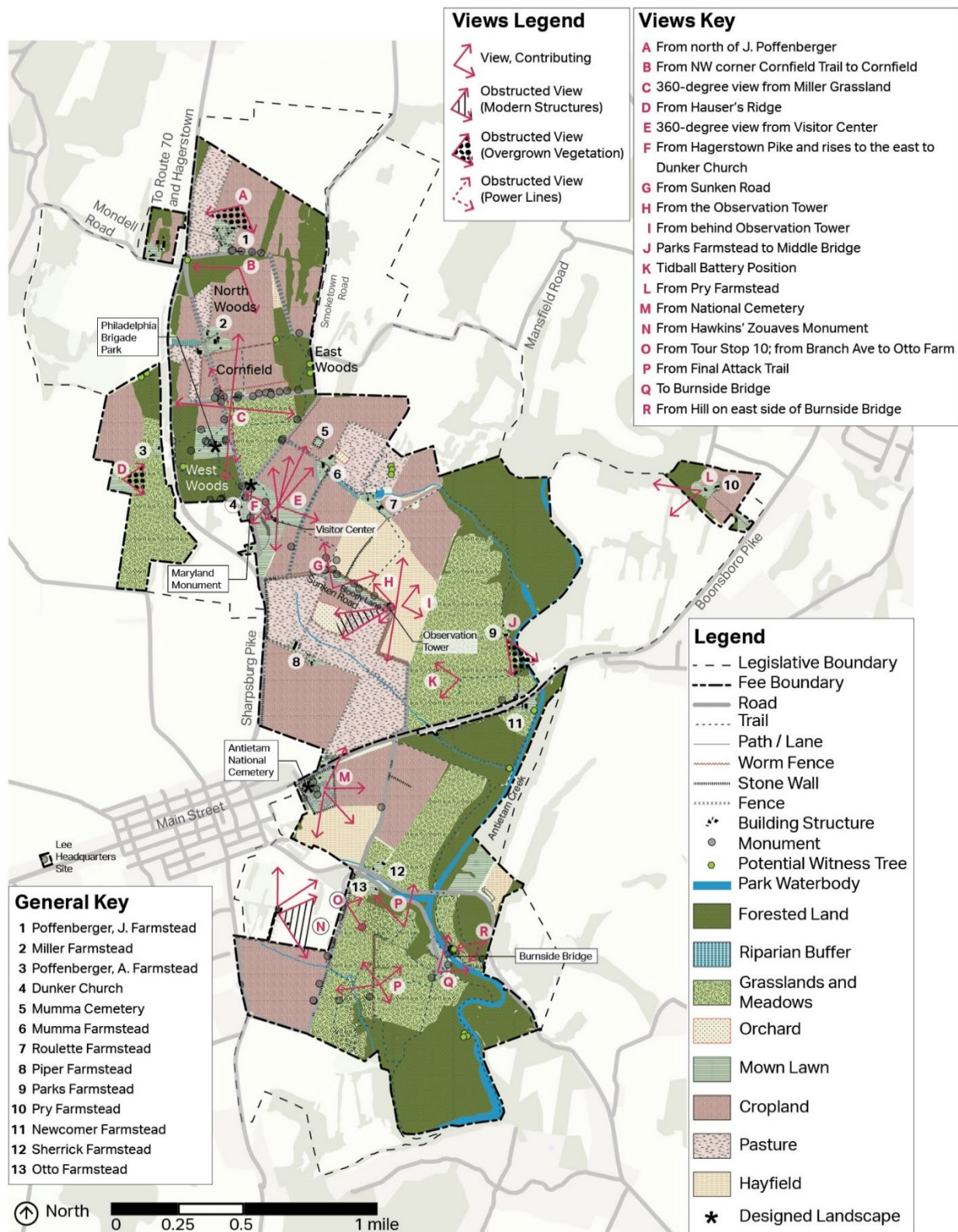


Figure 8: Contributing Views Overlaid on the Action Alternative

## Vegetation

The undertaking would have no adverse effects on contributing vegetation. The undertaking would reforest approximately 140 acres of woodland areas in areas where substantial gaps in forest cover exist or where historic woodlots have been diminished. These reforested areas would be primarily located along the west side of Antietam Creek. The undertaking would also establish approximately 287 acres of additional grasslands and meadows by converting some hayfields and cropland. The replacement of some hayfields and cropland with grasslands and/or meadows would retain the preceding open character as agricultural fields.

In total, the undertaking would change the existing land use of approximately 427 acres of the 1,991-acre project area. The addition of forests, grasslands, and meadows would not be noticeable at a large scale, and agriculture would remain the predominant land use. The undertaking would maintain agricultural areas by continuing with special use permits or the historic leasing program. Agricultural fields where key battle related actions occurred would remain in agricultural use.

The undertaking would also:

- Re-establish the historic Mumma Farm orchard.
- Maintain the existing Piper Farmstead orchard.
- Protect Potential Witness Trees.
- Maintain mown lawn in select areas.
- Rehabilitate Philadelphia Brigade Park by re-introducing original tree plantings based on recommendations in a future Philadelphia Brigade Park CLR.
- Rehabilitate the Maryland Monument landscape by replacing tree gaps with sugar maples.
- Rehabilitate the National Cemetery landscape as prescribed in the 2014 Antietam National Cemetery CLR.

Overall, vegetation in the project area would continue to consist of forests, grasslands, meadows, agricultural fields (croplands, hayfields, pastures), orchards, mown lawn, and ornamental vegetation.

## Buildings And Structures

The undertaking would have no adverse effects on contributing buildings and structures. The undertaking would maintain historic structures by preserving material and workmanship integrity, maintaining structural foundation, improving interpretation, and maintaining unobstructed visual access. Although these proposed activities could result in noticeable changes to contributing buildings and structures, these maintenance activities would help preserve and maintain these

buildings and structures. These activities would be undertaken in a manner that is consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

### **Cluster Arrangement**

The undertaking would have no adverse effect on the contributing cluster arrangements. The undertaking would overall retain the battlefield's distinct cluster arrangements. The undertaking would maintain high priority replica historic fencing, farm lanes, and historic structures, and monitor and preserve historic stone walls, all of which are part of these distinct cluster arrangements. The undertaking may also maintain low priority replica historic fencing. Although these proposed activities could result in noticeable changes on these elements of the contributing cluster arrangements, these activities would help preserve and maintain these elements. These activities would be undertaken in a manner that is consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

No other changes would occur to the Visitor Center cluster, the Dunker Church cluster, Hawkins' Zouaves Site, Lee Headquarters Site, or the 11 farmstead cluster arrangements. No other changes would occur to the remaining contributing cluster arrangements, except as described below:

- **Sunken Road and Observation Tower cluster.** The undertaking would convert some existing croplands to the north of Sunken Road (Bloody Lane) to hayfields.
- **Philadelphia Brigade Park.** The undertaking would re-introduce original tree plantings based on recommendations in a future Philadelphia Brigade Park CLR. However, the formal arrangement of trees would continue to frame the roadway and park, creating an enclosed space.

### **Circulation**

The undertaking would have no adverse effects on contributing circulation features. The undertaking would retain the physical location of contributing roads, farm lanes, internal vehicular and pedestrian routes within each Farmstead, tour route, tour stops, and trails. The undertaking would also not alter circulation patterns.

At the Mumma Farmstead, new universally accessible routes would be provided to the farmhouse and the Mumma barn. Universal accessibility improvements would also be implemented within the Antietam National Cemetery. The routes would be planned in a way that avoid or minimize changes to overall circulation patterns at the Mumma Farmstead and Antietam National Cemetery.

The undertaking would also:

- Monitor roadways for erosion and disturbance by burrowing animals.
- Maintain farm lanes depending on their material, such as gravel surfaced, paved asphalt with exposed aggregate, or fully asphalt paved.

- Maintain trails and routes, consisting of bare ground, mown grass, wood chips, or paved surfaces for erosion or depressions, material damage, or inconsistent material distribution.

Although these proposed maintenance activities could result in noticeable changes on contributing circulation features, these activities would help maintain or improve these features' function as circulation features. These maintenance activities would be undertaken in a manner that is consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

### **Small-Scale Features**

The undertaking would have no adverse effects on contributing small-scale features. The undertaking proposes the following changes to contributing small-scale features:

- Maintain monuments through routine monitoring that ensures they are routinely cleaned and repaired, level, and that the foundation based of each monument is protected from erosion and burrowing animals.
- Monitor historic stone walls for potential needs of repairing, resetting, or replacing in-kind. The park would continue to preserve stone walls by ensuring a clear and stabilized foundation, walls are free of debris and overgrown vegetation, and ensuring walls remain consistently aligned in their historic pattern and arrangement.

Although these proposed rehabilitation and maintenance activities could result in noticeable changes on contributing small-scale features, these activities would help preserve or maintain these features. These rehabilitation and maintenance activities would be undertaken in a manner that is consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

The 2021 Antietam National Battlefield CLR identifies worm fences, six-rail fences, picket fences, and post and wire fences as non-contributing, but compatible small-scale features. The undertaking would maintain high priority replica historic fencing, which are those that are important to understanding the battle, and may maintain lower priority replica historic fencing, depending upon funding availability and operational requirements. Low priority replica historic fencing that is not maintained could fall into disrepair, potentially resulting in its removal. The removal of low priority replica historic fencing would have no adverse effects on small-scale features because this fencing is non-contributing.

### **Topography, Natural Systems And Features, and Constructed Water Features**

The undertaking would have no adverse effects on contributing topography, natural systems and features, or constructed water features. No changes to these contributing resources would occur as a result of the undertaking.

Excluding the Action Alternative's changes to contributing archeological sites, the Action Alternative Plan overall would result in no adverse effects on the Antietam National Battlefield historic district and cultural landscapes. The proposed changes in vegetation and maintenance or rehabilitation of other landscape elements are consistent with the battlefield's historic setting, character, and period of interpretation. The landscape's agricultural character would be preserved. The proposed changes to vegetation would preserve the vegetative mosaic similar in appearance to the historic condition. The proposed changes to contributing views would preserve historic significant views and vistas across the battlefield landscape. Some views would be rehabilitated to emphasize visual relationships that are critical to understanding battle movements associated with the Battle of Antietam, and those that are important to the Commemorative period and the Mission 66 era. Impacts on contributing views and viewsheds would be either negligible or beneficial to the historic landscape. Contributing circulation routes would be preserved by maintaining roads and trails that follow historic routes.

As funding becomes available to implement elements of the Plan, additional Section 106 consultation with the SHPO and tribes will be needed. Each element of the Plan will be subject to a separate Section 106 consultation as outlined in the 2008 Programmatic Agreement; and all work will be designed to meet *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. NPS will complete additional Section 106 compliance, including consultation with SHPO and tribes, submitted as a separate project (or separate projects) from this Action Alternative as the precise locations of each element of the Plan are developed and designed. Section 106 compliance will be completed prior to any implementation work. Individual Memorandums of Agreements will be developed for these elements if there is a finding of adverse effect.

## **7.2 Archeological Resources**

The Action Alternative proposes multiple changes to the existing landscape that could result in ground disturbance with the potential to adversely affect the integrity of archeological resources, though there are many proposed changes that have little to no potential for ground disturbance or effects to archeological resources. Further analysis is necessary to determine the level of archeological survey effort needed to identify archeological historic properties within those portions of the Battlefield where proposed landscape changes could result in adverse effects on archeological resources.

### **Forest Rehabilitation**

This landscape change consists of the planting of trees over approximately 140 acres of the Battlefield and would consist of digging holes in which saplings would be planted. Digging holes for tree planting, as well as the growth of the trees and the expansion of their roots, has the potential to adversely impact the integrity of archeological historic properties. As such, forest rehabilitation has the potential to result in adverse effects.

### **Water Quality Improvement**

This landscape change consists of the enhancement of riparian buffers. If enhancement includes the planting of trees, realignment of streams, or other ground disturbing activities, it could result in adverse impacts on the integrity of archeological historic properties.

Enhancement activities, such as the planting of riparian vegetation, though, could also aid in the protection of archeological site integrity by reducing or preventing erosion. As such, water quality improvement could result in either no adverse effect or adverse effects.

### **Native Grassland and Meadow Establishment**

This landscape change consists of converting approximately 303 acres of hayfields and cropland to native grasses. While the original planting of annual grass seeds could require some ground disturbance, it is anticipated that any such ground disturbance would occur within areas previously disturbed by agricultural plowing. This would result in no adverse effects.

### **Orchards**

This landscape change includes planting approximately two acres of orchards at the historic Mumma Farmstead and maintaining the existing eight-acre Piper Farmstead orchard. Digging holes for tree planting, as well as the growth of the trees and the expansion of their roots, has the potential to adversely impact the integrity of archeological historic properties. As such, planting orchards at Mumma Farmstead has the potential to result in adverse effects. As there would be no ground disturbing activities at Piper Farmstead, this would result in no adverse effects.

### **Mown Lawn**

This landscape change includes maintaining existing mown lawns. Mowing is unlikely to result in ground disturbance. It is not anticipated that mowing would impact the integrity of archeological historic properties. As such, the activity would result in no adverse effects.

### **Mumma Farmstead**

Landscape changes at Mumma Farmstead could include restoring missing farmstead vegetation, such as the kitchen gardens, reestablishing the orchard, and rehabilitating the stone wall between Mumma Farm and Roulette Farm. Ground disturbance related to the kitchen gardens or planting trees in the orchard has the potential to adversely impact the integrity of archeological historic properties. As such, these activities associated with the Mumma Farmstead have the potential to result in adverse effects. Rehabilitation of the stone wall is unlikely to result in ground disturbance. It is not anticipated that the rehabilitation of the stone wall would impact the integrity of archeological historic properties. As such, these activities would result in no adverse effects.

## **Designed Landscapes**

This landscape change consists of activities at the Philadelphia Brigade Park, Maryland Monument, and the Antietam National Cemetery. Specifically, activities at the Philadelphia Brigade Park include re-introducing original tree plantings and maintaining historic formal spatial patterns based on recommendations in a future Philadelphia Brigade Park CLR. Activities at the Maryland Monument include replacing tree gaps with sugar maples and maintaining the historical tree spacing pattern to define the monument setting. Activities at the National Cemetery include rehabilitating the landscape through implementing the 2014 Antietam National Cemetery CLR, vegetation planting and removal, and grading to accommodate universal accessibility improvements. Ground disturbing activities such as tree and vegetation planting, grading, and certain types of vegetative clearance have the potential to adversely impact the integrity of archeological historic properties. As such, these activities associated with designed landscapes has the potential to result in adverse effects. Other activities such as mowing, clearance of vegetation to ground level, and general maintenance activities would not adversely impact the integrity of archeological historic properties. As such, these activities would result in no adverse effects.

## **Viewsheds**

This landscape change includes the clearing of obstructive successional vegetation and the placement of overhead utility lines underground or relocating them. Hand or mechanical clearing of vegetation to ground level would not result in adverse impacts on the integrity of archaeological sites and would result in no adverse effects. Grubbing of roots or other ground disturbing activities associated with vegetative clearing and digging associated with burying or relocating utility lines has the potential to adversely impact the integrity of archeological historic properties. As such, vegetative clearing and utility line burying or relocation associated with viewsheds has the potential to result in adverse effects.

## **Fencing**

This landscape change includes maintenance of existing fencing. Ground disturbance associated with fencing maintenance could involve the resetting of fence posts or placement of new fence posts, which has the potential to adversely impact the integrity of archeological historic properties. As such, fencing maintenance has the potential to result in adverse effects.

## **Maintenance of Other Landscape Elements**

These landscape maintenance elements include a variety of activity classes:

- Mowing
- Monitoring of burrowing animal activity
- Routine maintenance of monuments
- Routine maintenance of farm lanes (i.e., gravel, paved)

- Routine maintenance of trails and routes
- Monitoring of historic stone walls for repair, resetting, or in-kind replacement
- Protection of potential witness trees
- Routine maintenance of historic structures
- Routine maintenance of historic field edges and fencerows

It is anticipated that most or all such activities would either not include ground disturbance or would be performed in areas of prior ground disturbance. It is not anticipated that the maintenance of other landscape elements would impact the integrity of archeological historic properties. As such, these activities would result in no adverse effect.



## 8. AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

In order to avoid or minimize adverse effects on historic properties, several steps would be undertaken by NPS during implementation of the Action Alternative.

- NPS would minimize ground-disturbing activities to the extent practicable.
- NPS shall complete additional Section 106 compliance, including consultation with SHPO and tribes, submitted as a separate project (or separate projects) as the precise locations of each element of the Plan are developed and designed. Section 106 compliance will be completed prior to any implementation work. Individual Memorandums of Agreements will be developed for these elements if there is a finding of adverse effect.
- The undertaking's maintenance and rehabilitation activities would be undertaken in a manner that is consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- NPS would conduct Phase IB archeological survey in those areas of the Battlefield that have not been subjected to the full suite of intensive archeological survey methods to identify archeological historic properties that could be impacted by landscape management and maintenance activities that have the potential for ground disturbance, could result in a loss of archeological integrity, and could result in adverse effects on archeological historic properties.
- NPS would implement avoidance measures around known historic and archeological resources during landscape management and maintenance to the extent practicable.
- NPS would evaluate the NRHP eligibility of any unassessed archeological site that cannot be avoided by landscape management and maintenance activities that have the potential for ground disturbance, could result in a loss of archeological integrity, and could result in adverse effects on archeological historic properties.
- NPS would apply minimization measures to any archeological historic property that cannot be avoided by landscape management and maintenance activities that have the potential for ground disturbance, could result in a loss of archeological integrity, and could result in adverse effects on archeological historic properties.
- If avoidance and minimization measures are insufficient to avoid adverse effects on archeological historic properties by landscape management and maintenance activities, NPS will develop and implement mitigation measures through individual Memorandums of Agreements (MOAs).

- NPS would establish Unanticipated Discoveries protocols for each landscape management or maintenance activity as part of the Section 106 documentation process prior to implementation of work. NPS would follow the established Unanticipated Discoveries protocols in the event unanticipated archeological resources are encountered anywhere in the park as a result of ground disturbances.
- NPS protocols will be followed for the unanticipated discovery of cemeteries or human remains.
- NPS would contact Federally Recognized Tribes with affiliation in Maryland if any Native American burials, cemeteries, or funerary objects are encountered.

## 9. SOURCES

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## APPENDIX A