



Rehabilitation of Various Roadways and Parking Areas Environmental Assessment



SUMMARY

The National Park Service (NPS), in cooperation with the Federal Highway Administration, proposes to improve various roadways and parking areas and correct drainage concerns at the Antietam National Battlefield. The Environmental Assessment (EA) examines in detail the No Action Alternative and the Action Alternative (the NPS Preferred Alternative). **The Preferred Alternative would have short-term minor adverse impacts to the cultural landscape, water quality, and visitor use and experience, long-term negligible adverse impacts to water quality, long-term moderate adverse impacts to the cultural landscape, and long-term moderate beneficial impacts to visitor use and experience and health and safety.**

Public Comment

This EA will be available for public review from October 15, 2007 through November 15, 2007. If you wish to comment on the EA, you may mail comments to the name and address below. Please note that the names and addresses of people who comment become part of public record. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. All submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

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An electronic version of this document can be found on the NPS's Planning Environment and Public Comment (PEPC) website at <http://parkplanning.nps.gov/anti>. This site provides access to current plans, environmental impact analyses, and related documents on public review. Users of the site are encouraged to submit comments on this document while it is available for public review. This document is located under the National Capital Region, Antietam National Battlefield. During this 30-day period, hardcopies of the EA will be available for review at the Antietam National Battlefield Library, Antietam National Battlefield Visitor Center, and the Sharpsburg Public Library Branch.

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1 INTRODUCTION

1.1 ABOUT THIS DOCUMENT

In 1969, the United States Congress passed the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) to establish a national policy,

“...which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; ...”

NEPA also established the Council on Environmental Quality (CEQ) as an agency of the Executive Office of the President. In enacting NEPA, Congress recognized that nearly all Federal activities affect the environment in some way. Section 102 of NEPA mandates that before Federal agencies make decisions, they must consider the effects of their actions on the quality of the human environment. NEPA assigns CEQ the task of ensuring that Federal agencies meet their obligations under the Act.

The CEQ developed regulations (40 CFR 1500-1508) that describe the means for Federal agencies to develop the Environmental Impact Statements (EIS's) mandated by NEPA in Section 102. The CEQ regulations developed the Environmental Assessment (EA) to be used when there is not enough information to decide whether a proposed action may have significant impacts. If an EA concludes that a Federal action will result in significant impacts, it becomes an EIS. Otherwise, it results in a Finding of No Significant Impact (FONSI).

Section 1508.09 of the CEQ regulations states that the purposes of an EA are to:

1. Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a FONSI.
2. Aid an Agency's compliance with the Act when no environmental impact statement is necessary.
3. Facilitate preparation of a statement when one is necessary.

Preparation of an EA is also used to aid in an agency's compliance with Section 102(2)E of NEPA, which requires an agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”

The Department of the Interior produced its NEPA regulations as Part 516 of its Departmental Manual (516 DM), last revised in March 2004. The National Park Service (NPS) produced several NEPA handbooks. In January 2001, the NPS released the Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision Making. The Federal Highway Administration's (FHWA) NEPA regulations are part of 23 CFR 771. The FHWA Tech Advisory T6640.8A was written in 1987 to provide guidance on environmental documents.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

Need

The proposed action is needed because the asphalt surfaces throughout the Antietam National Battlefield (Park) have deteriorated and continue to deteriorate. Signs of deterioration include cracking, edge failures, delamination, spot subbase failure, and slight rutting. During rainfall events, the water does not drain properly from the roadway. This standing water causes hazardous driving conditions, especially in freezing temperatures because a layer of ice forms on the roadway. Several roadways have insufficient width to allow tour buses to pass each other and to complete turn movements along the tour route without driving off of the pavement.

Purpose

The purpose of this project is to improve the visitor's experience and safety by upgrading and/or expanding the roads and parking areas, and correcting areas along the roadways that currently have poor drainage.

1.3 PURPOSE AND SIGNIFICANCE OF THE PARK

Description of the Park

The Park was established in 1890 to commemorate the single bloodiest day of the American Civil War. The Battle of Antietam, or Sharpsburg as it was referred to by the Confederate army, began at dawn on September 17, 1862. About 40,000 Southerners under the command of Gen. Robert E. Lee were pitted against 87,000 troops of the Federal Army of the Potomac commanded by Gen. George McClellan. At the day's end a total of 23,110 men and boys were dead, wounded, or missing.

The battle also became a turning point, an engagement that changed the entire course of the Civil War. Antietam not only halted Lee's bold invasion of the North but thwarted his efforts to force Lincoln to sue for peace. It also provided Lincoln with the victory he needed to announce the abolition of slavery in the South. And with the proclamation of Emancipation, Lincoln was able to broaden the base of the war and may have prevented England and France from lending support to a country that engaged in human bondage. The battle sealed the fate of the Confederacy.

The entire battlefield, including the private properties within the boundary, is listed on the National Register of Historic Places as a historic district. A number of structures remain from the historic period, including the Miller, Mumma, Piper, Otto and Sherrick farmhouses and the Pry house. The sites of the three main battle phases –Miller's Cornfield, Bloody Lane and the Burnside Bridge –are maintained and interpreted to visitors. Several structures and features that have been added to the Park since the war have become historic in their own right. These include Antietam National Cemetery, burial site for 4,776 Federal soldiers; the road system established by the Army in the 1890's; the 104 monuments placed by states and individuals to commemorate the men who fought at Antietam; and the observation tower overlooking Bloody Lane. The Park

today is considered one of the best preserved Civil War areas in the National Park System.

The Park attracts about 290,000 visitors per year, most of who come to tour the battlefield and learn about the battle events. Other recreational activities available include bicycling, birding, boating, group camping, fishing, hiking, horseback riding, and picnicking.

Project Location

The Park is located immediately to the north and east of the town of Sharpsburg, in the southeastern portion of Washington County, Maryland.



Figure 1. Project Location

1.4 RELATED PROJECTS AND PLANS

General Management Plan

The 1992 General Management Plan (GMP) for the Park serves as a manager’s guide for meeting the objectives established for the park and as a public statement of the NPS’s management intentions. The GMP establishes long-range strategies for resource management, visitor use, and development of an integrated park system. Management objectives identified within the plan direct the maintenance and upgrading of roadways and associated bridges in order to provide for a positive visitor experience and to ensure effective parkway operations. The proposed action to perform needed repairs and make improvements to various roadway and parking areas within the Park is entirely consistent with the Park’s management documents.

1.5 SCOPING

Scoping is an early and open process to determine the extent of environmental issues and alternatives to be addressed. Issues and concerns related to improving the roadways and parking areas were identified by the NPS, the State of Maryland, and various Federal agencies. An engineering study performed in May 2004 investigated general route conditions and provided recommendations. A scoping meeting in October 2004 was attended by the NPS and FHWA.

On December 13, 2004, the U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, responded to a request for information regarding the presence of species which are Federally listed or proposed for listing as endangered or threatened within the vicinity of the study area. "Except for the occasional transient individuals, no Federally proposed or listed endangered or threatened species are known to exist within the project impact area."

On April 1, 2005, the Maryland Department of Natural Resources Wildlife and Heritage Service provided information regarding State rare, threatened, and endangered plant and animal species known to exist near the study area, and included guidelines to help minimize the project's impacts to Forest Interior Dwelling Bird Species.

The FHWA, NPS and the Maryland Department of Environment attended a meeting and site visit in August 2005 to discuss stormwater management for water quality treatment and water quantity control.

In August 2005, the proposed action was reviewed by the NPS Cultural Resource Preservation Services staff. They determined that the proposed action may have an adverse effect to cultural resources and that an archeological investigation would be necessary to determine whether artifacts are present in the areas proposed for ground disturbing activities.

Issue Identification

Issues, as discussed in NEPA, describe the relationships between the action being proposed and the environmental (natural, cultural and socioeconomic) resources. Issues describe an association or a link between the action and the resource. Issues are not the same as impacts, which include the intensity or results of those relationships. Internal and external scoping (defining the range of potential issues) was conducted for this EA to identify what relationships exist between the proposed action and environmental resources.

- Water icing on the roadway creates slick driving conditions in the winter.
- Any excavation may disturb Civil War era archeological artifacts.
- Changes to Pry House Access Road and Piper Lane, both gravel roads, may disturb their historic character.

1.6 IMPACT TOPICS

Specific impact topics were developed to address potential natural, cultural, and social impacts that might result from the proposed rehabilitation. These include impact topics which correspond to the issues identified above and address Federal laws, regulations and orders, Park management documents, and NPS knowledge of limited or potential impacts to resources. Focusing EA information eliminates unnecessary analysis and discussion items within the affected environment and environmental effects sections. A brief rationale for the selection of each impact topic follows:

Impact Topics Requiring Further Analysis

Cultural Landscape

The National Historic Preservation Act of 1966, NEPA, the 1916 NPS Organic Act, NPS Management Policies, and DO-28 require Federal agencies to consider the effects of their proposed actions on cultural resources. According to the NPS *Management Policies* (2001) and *Cultural Resource Management Guidelines* (NPS 1997), all cultural landscapes are to be managed as cultural resources regardless of the type or level of significance. Management actions are to focus on preserving the physical attributes, biotic systems, and uses of a landscape as they contribute to historic significance.

The Park is considered one of the best-preserved Civil War areas in the National Park System. The farms and farmlands in and near the Park appear much as they did on the eve of the battle in 1862. The Park is in a rural area of south Washington County, Maryland, and agriculture is the predominant land use. Of the 3,255.89 acres within the Park boundary, 1,927.32 acres are owned in fee by the Federal government and managed by the NPS to maintain the historic setting and provide for visitor use. The entire battlefield, including the private properties within the boundary, is listed on the National Register of Historic Places as a historic district. The National Register of Historic Places recognizes the cultural landscape categories defined in NPS policy as descriptive terms; however, it officially lists the landscapes as either “districts” or “sites.” Contributing features to the cultural landscape of the Park include farm fields, woods, orchards, and fence lines that were known to exist just before the battle. Also contributing are the commemorative period features which include the observation tower, battle markers, and monuments. The removal of pavement at Confederate Avenue and the paving of Piper Lane and the Pry House Access Road may impact the cultural landscape; therefore this impact topic requires additional discussion in this EA.

Water Quality

The U.S. Environmental Protection Agency has developed national recommended ambient water quality criteria for approximately 120 priority pollutants for the protection of both aquatic life and human health (US EPA 2006). These criteria have been adopted as enforceable standards by most states. The NPS *Management Policies* (2006) state that the NPS will “take all necessary actions to maintain or restore the quality of surface waters and ground waters within the parks consistent with the Clean Water Act and all of the applicable Federal, state, and local laws and regulations”. In accordance with the Maryland Stormwater Management Guidelines for State & Federal Projects, the proposed action is exempted from water quantity control; however, water quality would

still need to be treated for all areas where new pavement or reconstruction is proposed. There would be difficulty treating stormwater through constructed Best Management Practices due to the sensitive nature of the area because any ground disturbing activities could potentially impact archeological resources. Therefore, this topic requires further discussion in this EA.

Visitor Use and Experience

NPS *Management Policies* (2006) state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks. Roadway work may cause temporary road closures and traffic detours. The presence of construction equipment may also impact the visitor's experience. Since the proposed action has the potential to impact visitor use and experience during construction, this topic requires further discussion in this EA.

Health and Safety

The NPS *Management Policies* (2006) state that the NPS will seek to provide a safe and healthful environment for visitors and employees. The deteriorating pavement and lack of drainage creates potential safety concerns for visitors and Park staff. Traffic management during construction activities has the potential to create visitor safety concerns; therefore this topic requires further discussion in this EA.

Impact Topics Dismissed from Further Analysis

Archaeological Resources

The National Historic Preservation Act of 1966, NEPA, the 1916 NPS Organic Act, NPS Management Policies, and DO-28 require Federal agencies to consider the effects of their proposed actions on cultural resources. The Archeological Resources Protection Act requires a responsibility to secure, for the present and future benefit of the American people, the protection of archeological resources and sites that are on public land. An archeological site(s) can be eligible to be listed in the National Register of Historic Places if the site(s) has yielded, or may be likely to yield, information important in prehistory or history.

A cultural resource survey and archeological investigation was completed in early 2007. In the parking lot expansion study area, a number of artifacts were recovered which suggest two clusters that likely represent the westward sweeping action of Federal troops against Confederate positions around the Dunker Church on the morning of September 17. Due to the number and nature of artifacts recovered and possible impacts to other resources, the proposed Visitor Center parking lot expansion was eliminated from the project. Along the various road sites, only one artifact was recovered. No further investigation was recommended in these areas. In accordance with Section 106 of the National Historic Preservation Act, it was determined that the proposed roadway, parking area, and drainage improvements throughout the Park would have no adverse effects to archeological resources. Therefore this impact topic has been dismissed from further evaluation in this EA.

Historic Structures/Buildings

The National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.) and the NPS *Cultural Resource Management Guidelines* (NPS 1997) and Policies (Director's Order 28) require the consideration of impacts on cultural resources listed on or eligible for listing on the National Register of Historic Places. The entire battlefield, including the private properties within the boundary, is listed on the National Register of Historic Places as a historic district. A number of structures remain from the historic period, including the Miller, Mumma, Piper, Otto, and Sherrick farmhouses and the Pry house. The sites of the three main battle phases – Miller's cornfield, Bloody Lane, and Burnside Ridge – are maintained and interpreted to visitors. Several structures and features that have been added to the battlefield since the war have become historic in their own right. These include Antietam National Cemetery, burial site for 4,776 Federal soldiers; the road system established by the Army in the 1890's; the 104 monuments placed by states and individuals to commemorate the men who fought at Antietam; and the observation tower overlooking Bloody Lane. There are few modern structures on the battlefield. There would be an adverse effect to two historic monument markers and the historic stone culvert along Richardson Avenue in the Park from the proposed action. After coordination and a site visit with the Maryland Historical Trust it was determined that a Memorandum of Agreement (MOA) would be drafted regarding the mitigation of the adverse effects. The MOA would be agreed upon and signed prior to any decision document for the proposed action; therefore this impact topic does not need to be discussed further in this EA.

Ethnographic Resources

Ethnographic resources are objects and places, including sites, structures, landscapes, and natural resources, with traditional cultural meaning and value to associated peoples. Research and consultation with associated people identifies and explains the places and things they find culturally meaningful. Ethnographic resources eligible for the National Register of Historic Places are called traditional cultural properties. There are no known ethnographic resources within the Park that would be affected by the proposed action based on current information at the Park; therefore this topic does not require further analysis in this EA.

Museum Collections

Museum collections (historic artifacts, natural specimens, and archival and manuscript material) may be threatened by fire, theft, vandalism, natural disasters, and careless acts. The preservation of museum collections is an ongoing process of preventative conservation, supplemented by conservation treatment when necessary. The primary goal is preservation of artifacts in as stable condition as possible to prevent damage and minimize deterioration. No museum collections would be impacted by the proposed action; therefore this impact topic does not require further discussion in this EA.

Wetlands

Executive Order 11990: Protection of Wetlands requires an examination of impacts to wetlands. For purposes of compliance with this executive order, the NPS uses "Classification of Wetlands and Deepwater Habitats of the United States" (FWS/OBS-79/31; Cowardin et al. 1979) as the standard for defining, classifying, and inventorying

wetlands. The U.S. Army Corps of Engineers (USACE) is responsible for the administration of Section 404 of the Clean Water Act and the issuance of permits for the discharge of dredged or fill material into jurisdictional wetlands. No wetlands would be impacted by the proposed actions. Therefore this impact topic does not require further analysis in this EA.

Environmental Justice

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low Income Populations forbids Federal agencies from disproportionately affecting minority and/or low-income communities. The study area and all related work would be within the boundaries of the Park. Any impacts of the project would affect all Park visitors equally and would not disproportionately affect low-income or minority individuals or populations. Therefore environmental justice does not require further discussion in this EA.

Floodplains

Development within floodplains and floodways is regulated by Federal and state laws to reduce the risk of property damage and loss of life due to flooding, as well as to preserve the natural benefits floodplain areas have on the environment. Executive Order 11988: Floodplain Management requires all Federal agencies to avoid construction within 100-year floodplains unless no other practical alternative exists. A portion of the project (Old Burnside Bridge Road) is location within the 100-year floodplain, however milling and overlay of the existing parking area would not impact floodplains. Therefore this impact topic does not require further analysis in this EA.

Wildlife and Wildlife Habitat

The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean that native animal life should be protected and perpetuated as part of the Park's natural ecosystem. White tailed deer are common in the Park, as well as other small mammals common to edge habitat such as opossums, rabbits, skunks, foxes, mice, squirrels and chipmunks. The areas to be graded as part of the Action Alternative are also comprised primarily of mowed grass. The mowed grass provides limited wildlife habitat due to a lack of plant diversity and repeated disturbance from mowing. The Action Alternative would have short-term negligible adverse impacts to wildlife and wildlife habitat, therefore this impact topic does not require further discussion in this EA.

Vegetation

NEPA requires an examination of impacts on the components of affected ecosystems. NPS policy requires the protection of the natural abundance and diversity of all the Park's naturally occurring communities. The Park has been restored to the vegetation types that were present during the Civil War, primarily farm fields, grasses, and some forested areas. The study area is located primarily in grassed areas that are frequently mowed. The Action Alternative would have long-term negligible adverse impacts to vegetation because the vegetation impacted would be mowed grass. The majority of the areas impacted would be re-vegetated after construction is completed; therefore this impact topic does not require further discussion in this EA.

Special Status Species.

Section 7 of the Endangered Species Act directs all Federal agencies to use their authority in furtherance of the purposes of the Act by carrying out programs for the conservation of threatened and endangered species. Federal agencies are required to consult with the U. S. Fish and Wildlife Service (FWS) to ensure that any actions authorized, funded, and/or carried out by the agency does not jeopardize the continued existence of any listed species or critical habitat. A letter dated October 29, 2004 was sent to the FWS requesting concurrence that, “the project is not likely to adversely affect any Federally-listed threatened or endangered species.” The FWS replied in a letter dated December 13, 2004 that, “Except for occasional transient individuals, no Federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 Consultation with the U.S. Fish and Wildlife Service is required.” The Maryland Department of Natural Resources provided information in a letter dated April 1, 2005 regarding rare, threatened, and endangered plant and animal species in the vicinity of the project, and practices to minimize impacts. Therefore, this impact topic does not require further discussion in this EA.

Socioeconomic Environment

Socioeconomic issues are defined as actions that have the potential to create a negative change to the demographics, housing, employment, and economy of an area. The project site is entirely on NPS property and the primary industries adjacent to the Park are retail, residential, agricultural and small businesses. The project is located in a primarily rural setting; however it is within the Hagerstown – Martinsburg metropolitan area. According to the 2000 Census, Washington County has a population of 131,923, with a population per square mile of approximately 288. The proposed action would have short-term minor beneficial impacts because during construction there would be an increase in employment and the utilization of local services. Therefore this impact topic does not require further discussion in this EA.

Soils/Geology

Underlying the forests and fields is a bed of limestone, making up what is known as “karst topography”. Karst features are formed when slightly acidic groundwater dissolves the rock, carving out spaces and cavities below the surface. This in turn creates not only springs and sinkholes, but also caves. Since these sensitive resources are directly linked to the area's groundwater, it is imperative that they be protected. Although the bedrock is comprised of limestone, the study area does not exhibit karst features.

Most soil found in the Park can be classified as the Hagerstown Series (soils are named after the area in which they are first discovered). Most of Antietam lies on a limestone foundation with some shale, sandstone, siltstone and dolomite. Antietam consists of broad, rolling valleys, which affects drainage, aeration, runoff, erosion and exposure to sun and wind. The geology here causes it to be highly susceptible to these elements, resulting in soil that is classified as highly or potentially highly erodible. This impact topic does not require further analysis in this EA because the Action Alternative would have long-term negligible adverse impact to soils and geology because any grading done to improve drainage would be in a localized area adjacent to the roadway.

Air Quality

Washington County is designated as a nonattainment area for fine particulate matter (PM_{2.5}), and a basic nonattainment area for 8 hour ozone by the Environmental Protection Agency. PM 2.5 is the abbreviation for fine Particulate Matter with a diameter smaller than 2.5 microns. PM 2.5 is produced by combustion, which includes vehicle exhaust. Adverse health effects from breathing air with a high PM 2.5 concentration include: premature death, increased respiratory symptoms and disease, chronic bronchitis, and decreased lung function particularly for individuals with asthma.

8-hour ozone basic nonattainment areas are areas whose 1-hour ozone design value is less than 0.121 parts per million, and therefore fall under the more general requirements (attainment deadlines 5-10 years after designation) of the Clean Air Act. EPA classifies ozone nonattainment areas based on the severity of their ozone problem. Sources of these pollutants include cars and trucks, power plants, refineries and other large industrial facilities, and some natural sources. Breathing ozone can irritate air passages, reduce lung function, aggravate asthma, and inflame and damage the cells lining the lungs.

The project is located within the boundaries of the Hagerstown/Eastern Panhandle Metropolitan Planning Organization. A determination on the air quality impacts of the project would be needed. It is likely the project would be found to be not regionally significant and to have a neutral effect on air quality. The Action Alternative would have short-term minor adverse impacts to air quality during construction because of the concentration of diesel burning construction equipment and fugitive dust emissions from earth moving activities. Piper Lane and the Pry House Access Road, currently loose gravel roads, may be paved with bonded aggregate, which would have long-term negligible beneficial impacts to air quality due to the reduction of dust. Minor adverse impacts would only occur during construction; therefore, this impact topic does not require further discussion in this EA.

Soundscape/Sound Environment

The NPS *Management Policies* (2006) state that the NPS will preserve, to the greatest extent possible, the natural soundscapes of parks. The soundscape (natural) of the park is defined as the aggregate of all natural, nonhuman-caused sounds that occur in parks, together with the physical capacity for transmitting natural sounds. This is the basis for determining the “affected environment” and impacts on the park soundscape. The majority of human-made noise is generated by commercial and recreational vehicular traffic on Route 65 and Route 34. Route 65 runs directly adjacent to the Park and Route 34 runs east west through the Park. The Action Alternative would have short-term minor impacts during construction from activities such as excavation, milling and paving. After construction is completed, no increase to noise levels is anticipated; therefore this impact topic does not require further discussion in this EA.

Park Operations

Routine maintenance activities for the Park include maintenance of the trails, mowing, and possibly prescribed fires. The Action Alternative would have short-term negligible adverse impacts while the roadways are being milled and paved. During construction,

Park operations would experience short-term negligible adverse impacts due to the possible lane and/or road closures. Park operations would experience long-term negligible beneficial impacts because although there would be additional impervious surface, the asphalt surface is easier to plow in the winter conditions, and the new pavement would require less maintenance. Because Park operations would be negligibly affected by road reconstruction and improvement activities, this topic does not require further discussion in this EA.

Energy Resources

Energy resources include power generation facilities, transmission and distribution systems, and energy resources such as coal, hydropower, natural gas, and oil. Energy resources also include energy-consuming practices related to a park unit's mission and construction activities. The proposed improvements would not affect energy resources because there are no power generation facilities, transmission or distribution systems, or coal, hydropower, natural gas, or oil deposits in the study area. The proposed improvements would not lead to an increase in energy consumption due to Park activities. This impact topic was dismissed because there would be no effect of the project on energy resources.

Prime and Unique Farmlands

Prime and unique farm lands are protected under the Farmland Protection Policy (7 U.S.C. 4201 et seq.) which states that Federal agency programs must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) as prime or unique. Prime farmland is defined in the Act as "land that has the best combination of physical and chemical characteristics for producing food, feed fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor and without intolerable soil erosion," while unique farmlands are lands "other than prime farmland that is used for the production of specific high-value food and fiber crops." None of the soils located in the study area are regulated under the Farmland Protection Policy Act; therefore this impact topic does not require further discussion in this EA.

Viewsheds

Part of the NPS mission, as outlined in the NPS *Management Policies* (2006), the agency works to understand, maintain, restore, and protect the inherent integrity of the natural resources, processes, systems, and values of the parks. Scenic views and visual resources are considered important characteristics that are individual to each park unit. The proposed Action Alternative would be limited to work on existing roadways and parking areas in the Park and would not dramatically alter their appearance. Therefore this impact topic does not require further discussion in this EA.

2 DESCRIPTION OF ALTERNATIVES

The following are descriptions of the proposed alternatives to rehabilitate roads and parking areas within the Park.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, no substantial improvements would be performed other than in accordance with planned routine maintenance operations. The existing safety concerns would not be addressed. None of the existing roadways or parking areas would be paved or reconstructed. Maintenance and some limited construction activities would occur in the foreseeable future to address preservation needs, the No Action Alternative would not address future impacts created by higher visitation rates and longer-term maintenance needs.

2.2 ACTION ALTERNATIVE

Under the Action Alternative, improvements would be performed to various roadways, parking areas, sidewalks, and paved trails throughout the Park. Details regarding the proposed improvements to the roadways and parking areas are detailed below. For all of the below listed roadways and parking areas that are currently asphalt paved, measures to improve the surface condition of the roadway would be done. This could include milling the existing pavement, spot reconstruction of the underlying road base, pavement with new asphalt, and one to two foot widening at the intersection of roadways and at curves in the road where rutting outside of the existing pavement is shown.

The Visitor Center Trail, Philadelphia Brigade Trail, Old Burnside Bridge Trail, Georgian Overlook Trail, and the Hawkin's Zouaves Trail would be milled and/or paved with a natural toned material to create a durable surface that would better blend with the surrounding landscape. Asphalt sidewalks adjacent to the parking areas would also be milled and/or paved with a natural toned material. The Maryland Battery A, Light Artillery marker and New Jersey, Hexamer's Battery marker would be moved back approximately 8 feet from their existing location immediately adjacent the roadway where they are in danger of being struck by passing vehicles.

Branch Avenue

The curves along Branch Avenue would be widened by approximately one foot to facilitate vehicle movement. Culverts would be replaced, and the paved waterway would be reconstructed. The area adjacent to the culvert would be re-graded to improve drainage. Existing culverts and ditches along the roadway would be cleaned and repaired.

Old Burnside Bridge Road

The curve would be widened to the inside by approximately two feet. The bus parking stalls would be reconstructed, and spot reconstruction would occur where necessary. The handicapped parking spaces would be reconfigured for easier and more efficient use. The existing steel backed timber guardrail would be reconstructed, and additional matching guardrail would be placed. Culverts would be reconditioned or replaced, and

riprap may be placed where necessary. A paved waterway would be placed and ditch grading would be necessary to improve drainage.

Rodman Avenue / Sherricks Run Bridge

The bridge would be rehabilitated through concrete repair. Spot reconstruction would be done where necessary and aggregate topsoil would be placed along a portion of the shoulder. Steel backed timber guardrail would be installed. To improve drainage, a culvert would be installed and the area adjacent to the roadway would be graded. The paved waterway would also be reconstructed.

Driveway to Maintenance Area

The asphalt would be removed, and the road base would be reconditioned. Once the base is reconditioned, the area would be paved with asphalt.

National Cemetery Parking

The existing partial gravel/partial asphalt pavement parking area would be paved to the limits of the gravel area, and the pavement would match the existing asphalt. A grassed island surrounded by curbing would be constructed in the center of the parking area. Grading would be done to ensure adequate drainage of stormwater.

Richardson Avenue

The portion of the road that is two directional would be widened two feet along the curves, and one to 1.5 feet on each side throughout a portion of the roadway. Guardrail would be replaced along the existing stone retaining wall adjacent to the stone bridge. The area would be graded where deemed necessary to improve drainage.

Piper Lane

A new culvert would be placed, and grading would be done where necessary. There would be no change made to the width of this historic lane.

Option A: The roadway and parking area would be paved using a more natural toned aggregate. This could be done through a mix of various sized aggregate, which would be mixed with a clear adhesive compound to form the bonded aggregate. Or, an asphalt pavement using natural toned aggregate would be used to pave the roadway and parking area. The top layer of asphalt binder would be removed to reveal a natural looking surface.

Option B: The existing uniform sized gravel would be scarified to break it into varying sizes, including gravel dust. This material would be compacted to form a roadway and parking area similar to that constructed by the War Department.

Mumma Lane

At the intersection of Smoketown Road and Mumma Lane two historic markers would be moved back from the edge of the roadway. The roadway would be widened by

approximately two and a half feet at the curve. The ditch would be graded and reconditioned to improve drainage.

Visitor Center Entrance Road

The roadway would be widened by approximately two feet at the curve and spot reconstruction would be done where necessary. Areas adjacent to the roadway would be graded, and the culvert would be reconditioned. A traffic counter would be installed in the pavement.

Visitor Center Parking Area

The drainage of the existing parking site would be improved by grading and pipe reconditioning. A new handicapped ramp would be constructed, and several concrete panels in the sidewalk would be fixed where they have deteriorated.

Hagerstown Pike

Several areas would be graded and culverts would be reconditioned to improve drainage. An existing pull-off would be removed, and the area would be re-vegetated.

Philadelphia Brigade Driveway and Parking

The roadway would be widened by approximately one foot on each side. The roadway curve to the monument parking would be widened by two feet. Areas adjacent to the roadway would be graded to improve drainage.

Starke Avenue

The existing 16-foot roadway would be reconstructed and widened to 18 feet in width. The ditch would be graded and culverts would be reconditioned to improve drainage.

Cornfield Avenue and Parking

A portion of the sidewalk at parking area A would be removed and grading would be done to improve drainage. An interpretive sign would be moved to accommodate the grading. The roadway would be widened by approximately one foot on each side.

Mansfield Avenue and Parking

The roadway would be widened by approximately one foot on each side, and the curve would be widened by approximately 1.5 feet. Two culverts would be placed and the clay pipe would be replaced with a culvert to improve drainage. Curb would be removed at the parking area. The area would be graded, and a paved waterway would be constructed.

Shull House Parking

This road is currently paved and meets a gravel parking area. The gravel parking area and two other small parking areas would be paved. A permanent stormwater management dry swale would be constructed.

Pry House Access Road

A new culvert would be placed, one culvert would be replaced with a larger culvert, and grading would be done where necessary. There would be no change made to the width of this historic lane.

Option A: The roadway and parking area would be paved using a more natural toned aggregate. This could be done through a mix of various sized aggregate, which would be mixed with a clear adhesive compound to form the bonded aggregate. Or, an asphalt pavement using natural toned aggregate would be used to pave the roadway and parking area. The top layer of asphalt binder would be removed to reveal a natural looking surface.

Option B: The existing uniform sized gravel would be scarified to break it into gravel of varying sizes, including gravel dust. This material would be compacted to form a roadway and parking area similar to that constructed by the War Department.

Table 1. Mitigation Measures

The following table summarizes the mitigation measures associated with the Preferred Alternative (Action Alternative).

Resource Area	Mitigation Measure
Vegetation	Noxious weed seeds would be restricted from use in seed mixes, and exotic invasive species would be managed when feasible.
Water Quality	An erosion and sediment control plan/stormwater pollution prevention plan would be prepared to meet Maryland and NPS standards and guidelines. All Best Management Practices to limit erosion and sedimentation would be incorporated to the extent possible.
Cultural Resources	<p>If any archeological resources are discovered during the construction of the project, all work would stop, and the appropriate agency personnel would be notified.</p> <p>In the unlikely event that human remains or cultural items subject to the Native American Graves Protection and Repatriation Act (NAGPRA) are discovered, all work would stop, and the appropriate provisions of NAGPRA would be followed.</p> <p>Removal of pavement at two locations that are remnants of the old Confederate Avenue [(1) Dunker Church west to MD 65; (2) Adjacent to Starke Avenue] to decrease the total impervious surface in the Park to reduce or eliminate the impervious area required for treatment under the state water quality standards. The pavement would be removed to the historic surface and be further stabilized and restored to the desired condition by the NPS after this project concludes.</p>

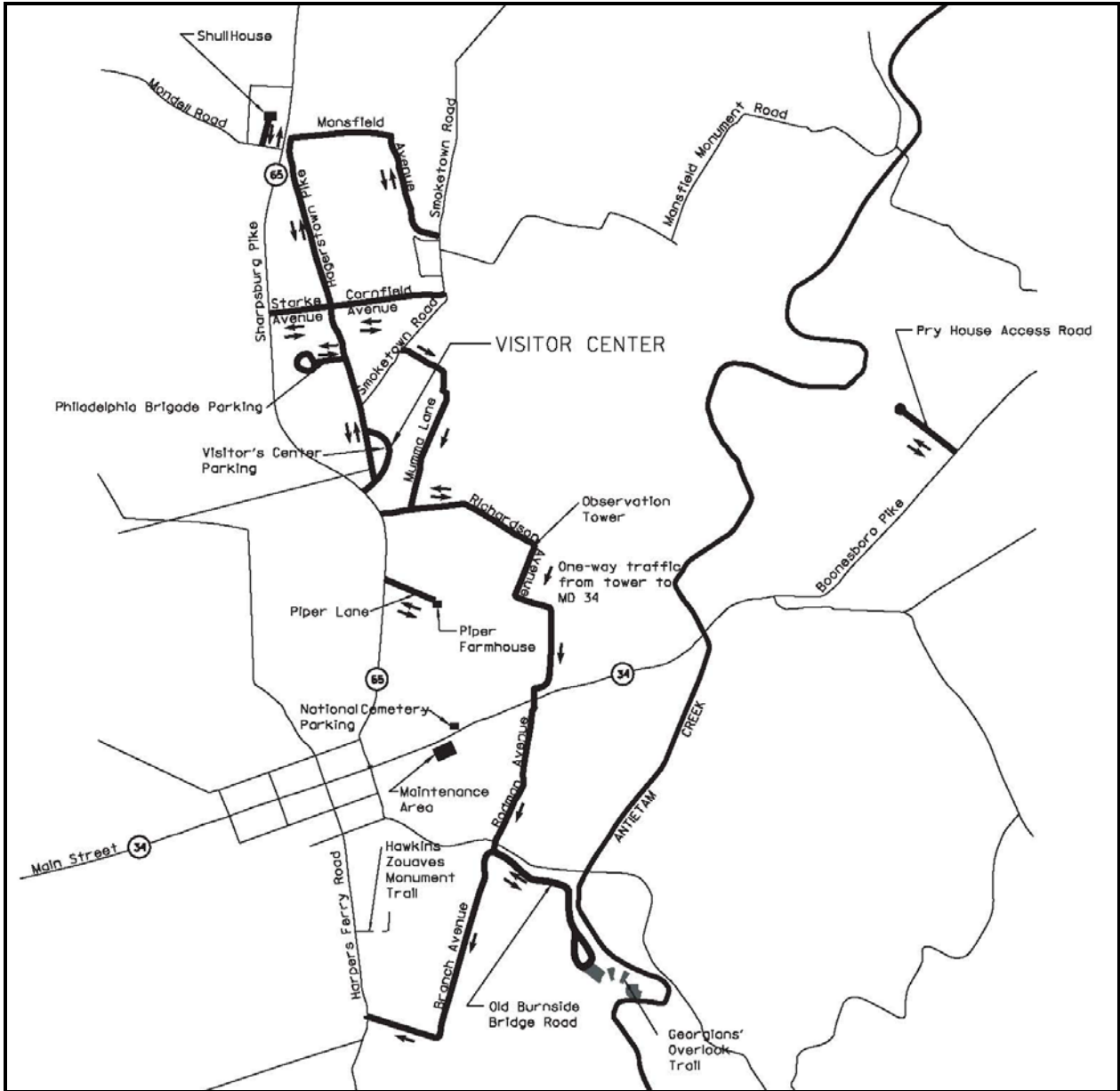


Figure 2. The proposed areas for improvement can be found bolded.

2.3 ALTERNATIVES CONSIDERED BUT DISMISSED

A number of design and construction options were identified during scoping to improve various roadways and parking areas within the Park. These options were deemed unreasonable and were not carried forward for analysis in this EA. Justification for eliminating these options from further analysis was based on factors outlined in DO-12:

- the alternative's lack of technical feasibility;
- inability to meet the project's purpose and need;
- duplication with other less environmentally damaging or less expensive alternatives;
- conflict with an up-to-date park plan, statement of purpose and significance, or other policy;

- severe environmental impact; or, as a secondary, supporting reason, economic infeasibility.

Most of the project is limited to existing facilities in the Park; therefore there were not additional alternatives that would meet those objectives. The Action Alternative previously included the expansion of the Visitor Center parking lot. The expanded parking area would have held approximately 35 cars and four buses, making the parking lot total 87 passenger vehicle stalls, 5 handicapped parking stalls, and 8 bus stalls. A storm water treatment feature would have been necessary to treat the stormwater runoff from the additional impervious surface. It would have been located adjacent to the expanded parking area.



Figure 3. The area proposed for the Visitor Center parking expansion is shown in reference to the existing parking area and Hagerstown Pike.

The archeological investigation of the area where the expanded parking lot was proposed found various artifacts located throughout the area that depicts troop movements. Because of the importance of the artifacts found and concerns regarding the treatment of stormwater in this area, this component of the Action Alternative was dismissed from further analysis.

2.4 PREFERRED ALTERNATIVE

The No Action Alternative does not address the roadway deficiencies and therefore does not meet the purpose and need for the action. The Action Alternative has been selected as the preferred alternative since it addresses the roadway deficiencies (minor patching, rutting and/or cracking) and meets American Disability Act (ADA) Guidelines. The Action Alternative protects existing facilities and returns the roadways and parking areas to a more serviceable state, reducing short-term maintenance costs.

2.5 ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is simply put, “this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources” (Q6a)(516 DM 6 4.10(A)(5).

The Action Alternative is the environmentally preferred alternative. The smooth driving surface from the rehabilitation and repaving would provide a more enjoyable ride for motorists on the tour route through the Park. The new roadways and bonded aggregate trail and walkway surface would provide a more aesthetically pleasing view for visitors. The Action Alternative also protects access to interpretation of the battle and its associated markers and monuments. The water quality of the stormwater runoff would improve because of the treatment of areas proposed for rehabilitation. The deteriorated surfaces and standing water issues would no longer exist, decreasing the potential for safety concerns of Park staff and visitors. Under the No Action Alternative, the pavement would continue to deteriorate no longer preserving the historic War Department roads throughout the Park. The continued maintenance on the roadways would inconvenience visitors and would hamper their interpretation of the battle.

Table 2. Summary of Impacts/Alternatives

The following table summarizes and compares the likely results of implementing the No Action Alternative and the Preferred Alternative as they relate to the environment.

Factor	No Action Alternative	Action Alternative
Cultural Landscape	Long-term minor adverse impact as pavement continues to deteriorate.	Short-term minor adverse impacts during construction. Long-term moderate adverse impacts.
Water Quality	No impact.	Short-term minor adverse impacts during construction from increased sediment. Long-term negligible adverse impacts as the water quality would be treated to the extent possible.
Visitor Use and Experience	Long-term minor adverse impact as pavement continues to roughen and a lack of Visitor Center parking continues.	Long-term moderate beneficial impact because of the pavement and facility improvements. Short-term minor adverse impact during construction.
Health and Safety	Long-term minor adverse impact as the roadways continue to deteriorate and standing water continues to create potential safety hazards.	Long-term moderate beneficial impact because of new pavement and the correction of the drainage problem areas.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

It is a requirement of NEPA that proposed actions by a Federal agency that significantly effect the environment are identified. In implementing NEPA, CEQ regulations state that "significantly" as used in NEPA requires considerations of context and intensity (1508.27). CEQ further states that context,

...means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

For each impact topic identified in Section 2.1, a process for impact assessment was developed based on the directives of Section 4.5(g) of the DO-12 Handbook. National park system units are directed to assess the extent of impacts on park resources as defined by the context, duration, and intensity of the effect. While measurement by quantitative means is useful, it is even more crucial for the public and decision-makers to understand the implications of those impacts in the short and long term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists. With interpretation, one can ascertain whether a certain impact intensity to a park resource is "minor" compared to "major" and what criteria were used to base that conclusion.

Each alternative is compared to a baseline to determine the context, duration, and intensity of resource impacts. For purposes of impact analysis, the baseline is the continuation of current management (the No Action Alternative) projected over the next 10 years. In the absence of quantitative data, best professional judgment was used to determine impacts. In general, the thresholds used come from existing literature, Federal and state standards, and consultation with subject matter experts and appropriate agencies.

Methodology

The methodology of the impact analysis follows the guidance provided in NPS DO-12 and CEQ's NEPA implementation guidelines at 40 CFR Parts 1500 through 1508. The environmental consequences associated with the proposed alternatives are considered in terms of direct, indirect, and cumulative impacts. A direct impact is one that is caused by an action and occurs at the same time and place. An indirect impact is one that is caused by an action that is later in time or further removed in distance, but still reasonably foreseeable.

Each impact is further described in terms of type (beneficial or adverse); context (site-specific, local, or regional); intensity (negligible, minor, moderate, or major); duration (short- or long-term); and impairment (would or would not impair park resources and values).

Cumulative Impacts

The CEQ regulations (40 CFR 1508.7) require the assessment of “cumulative impacts” which are defined as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

In January 1997, the CEQ published a handbook entitled Considering Cumulative Effects Under the National Environmental Policy Act (see <http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm>). The introduction to the handbook opens with, “Evidence is increasing that the most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time.”

Cumulative impacts are considered for all alternatives, including the No-Action Alternative. They were determined by looking at each resource (impact topic), determining which past, present, and future actions would impact the resource for the determined spatial and temporal boundaries, and then combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects in the Park and, if applicable, the surrounding region. Projects were determined by phone calls with county and town governments and state land managers, including the Washington County Planning and Community Development Division, the Hagerstown-Washington County Economic Development Commission, the Federal Highway Administration Maryland Division Office, and the town of Sharpsburg. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or that would be implemented in the reasonably foreseeable future. These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on a particular resource.

Past Actions

The Civil War Battle at Antietam: General Robert E. Lee's first invasion of the North culminated with the Battle of Antietam, in Maryland (or Sharpsburg, as the South called it). The battle took place on Wednesday, September 17, 1862, just 18 days after the Confederate victory at Second Manassas, 40 miles to the southeast in Virginia. Not only was this the first major Civil War engagement on Northern soil, it was also the bloodiest single day battle in American history.

Establishment by Congress: Originally established as a national battlefield site on August 30, 1890, the Park was administered by the War Department until August 10, 1933, when the responsibility for the battlefield and the adjacent Antietam National Cemetery was transferred to the NPS.

Listing on the National Register: On October 15, 1966, the Park was listed on the National Register of Historic Places. The present boundaries of the Park include the area east of Antietam Creek up to the Boonsboro-Sharpsburg Road

and the Philip Pry farm where Major General George B. McClellan, commander of the Union Army of the Potomac, had his headquarters. The area of the battlefield also includes the Antietam National Cemetery at the eastern edge of Sharpsburg on the Boonsboro Road where 4,776 Federal soldiers are buried.

Construction of Roadways: The road system was established by the Army in the 1890's. Gravel military roads (including Starke, Cornfield, Rodman, Branch, Mansfield, Richardson and Confederate Avenues) were laid out to delineate areas where the armies engaged. In many cases the military roads overlay the original farm roads (Smoketown Road, Piper Lane, Bloody Lane, Mumma Lane, Burnside Bridge Lane, and Harpers Ferry Road).

Antietam Overlay District: The Zoning Ordinance for Washington County Maryland contains Section 20A.0 Antietam Overlay District. The purpose of the Antietam Overlay District is to provide mechanisms for the protection of significant historic structures and land areas by requiring development and land subdivision to occur in a manner that 1) preserves the existing quality of the viewshed of the battlefield, and 2) ensures that development of certain lands adjacent to the major roads which provide public access to the battlefield (i.e., Maryland Routes 34 and 65) is compatible with the agricultural and historic character of the area. The "AO" District is an overlay zone meant to enhance, not substitute for the existing underlying zoning designation, which regulates land use.

Present Actions

Stormwater Runoff: Precipitation onto the surrounding areas used for agriculture, including livestock and cropland becomes runoff entering nearby streams and creeks. The runoff includes nutrients and sediment from fertilizers and animal waste. Precipitation in the neighboring town of Sharpsburg and the other impervious surfaces surrounding the Park in the Conococheague-Opequon watershed increase sediment, nutrients, and the water temperature of streams and creeks.

Groundwater Contamination: Existing sewage treatment and septic systems in Sharpsburg and other surrounding municipalities contaminate the groundwater and other waters.

Future Actions

Washington County, MD Antietam Battlefield and Approaches Conservation Project: The Washington County Department of Planning and Community Development, in partnership with the Maryland Department of Natural Resources, proposes to acquire conservation and historic preservation easements on the historic Saint James School properties on College and Lappans Roads (MD Route 68) in Fairplay and Williamsport, Maryland and on the Alexander Farm property on Sharpsburg Pike (MD Route 65), also in Fairplay, Maryland. The Alexander Farm property is located on Sharpsburg Pike (MD 65), which is listed as part of Washington County's Antietam Overlay District, one method the County uses to protect the battlefield and surrounding areas.

Impairment

NPS Director's Order 12 requires an impairment finding for actions that impact NPS resources. The 'fundamental purpose' of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park and monument resources and values. However, the laws do give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given NPS management discretion to allow certain impacts within parks, that discretion is limited by statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified as a goal in the park's Master Plan or General Management Plan or other relevant NPS planning documents.

A determination on impairment is made in the conclusion section.

3.1 CULTURAL LANDSCAPE

Affected Environment

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

The Park is considered one of the best-preserved Civil War areas in the National Park System. The farms and farmlands in and near the national battlefield appear much as they did on the eve of the battle in 1862. The Park has two periods of historical significance: the period of the battle, and the long period of commemoration that followed it. Features noted on the pre-battle map included grass, woods, stubble, corn, plowed fields, outcrops of rock, hay stacks, rail fences, post and rail fences, stone

fences, paling fences, structures, and roads. Antietam National Cemetery and its surrounding wall, tombstones, lodge, carriage house, and rostrum were the first commemorative structures built. More than 200 cast iron markers were placed to designate the sites of battle events. Gravel military roads (including Starke, Cornfield, Rodman, Branch, Mansfield, Richardson, and Confederate Avenues) were laid out to delineate areas where the armies engaged. In many cases the military roads overlay the original farm roads (Smoketown Road, Piper Lane, Bloody Lane, Mumma Lane, Burnside Bridge Lane, and Harpers Ferry Road). This early battlefield road system is significant as part of the period of commemoration and is listed on the National Register of Historic Places. In the 1890's veteran organizations from the various states erected monuments commemorating the regiments that engaged in the battle as well as larger state monuments honoring all the military units from a particular state.

Methodology

The character defining features of the cultural landscape were researched through the 1992 General Management Plan, and other cultural resources surveys completed for farmsteads in the Park. The character-defining features of a cultural landscape include spatial organization and land patterns; topography; vegetation; circulation patterns; water features; and structures/buildings, site furnishings and objects. Predictions about short-term and long-term impacts to the cultural landscape were based on previous experience of projects of similar scope and characteristics. Analyses of the potential intensity of impacts to the cultural landscape were derived through best professional judgment and from coordination with the NPS National Capital Cultural Resource Preservation Services and the Maryland Historical Trust. The construction of the Action Alternative would most likely be two years or less, therefore the short-term duration is two years.

In accordance with the Advisory Council on Historic Preservation's regulations implementing section 106 (36 CFR Part 800, "Protection of Historic Properties"), impacts to cultural resources were identified and evaluated by: determining the area of potential effects; identifying cultural resources present in the area of potential effects that were either listed on or eligible to be listed on the National Register of Historic Places; applying the criteria of adverse effect to affected cultural resources either listed on or eligible to be listed on the National Register; and considering ways to avoid, minimize, or mitigate effects.

CEQ regulations and DO #12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g. reducing the intensity of an impact from major to moderate or minor). Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation only under the National Environmental Policy Act. It does not suggest that the level of effect as defined by section 106 is similarly reduced. Although adverse effects under section 106 may be mitigated, the effect remains adverse. There was coordination between the FHWA, NPS and the Maryland Historical Trust to discuss the proposed action, the impacts to the cultural resources, and mitigation of the adverse effects.

Definition of Intensity Levels:

Negligible	Minor	Moderate	Major
The impact would be at the lowest levels of detection or barely measurable, with no perceptible consequences, either adverse or beneficial, to the cultural landscape. For purposes of Section 106, the determination of effect would be no adverse effect.	The impact would not affect the character-defining features of a cultural landscape listed on or eligible for the National Register of Historic Places. For purposes of Section 106, the determination of effect would be no adverse effect.	The impact would alter a character defining feature or features of the cultural landscape but would not diminish the integrity of the landscape to the extent that its National Register eligibility would not be jeopardized. For purposes of Section 106, the determination would be adverse effect.	The impact would alter a character-defining feature or features of the cultural landscape, diminishing the integrity of the resource to the extent that it would no longer be eligible to be listed on the National Register. For purposes of Section 106, the determination of effect would be adverse effect.

Definition of Duration:

Short-term: Effects lasting less than 2 years
Long-term: Effects lasting longer than 2 years

Cumulative Impact Scenario

The spatial boundary for the cumulative impacts assessment has been defined as the limits of the Historic District as listed in the National Register of Historic Places. The temporal boundary for the cumulative impacts assessment has been defined as the day of the Battle, September 17, 1862 through 10 years after the decision document for this proposed action. Past, present, and future actions that contribute to cumulative impacts include: the Civil War Battle at Antietam, establishment by Congress, listing on the National Register, and the Washington County, MD Antietam Battlefield and Approaches Conservation Project. These actions have a long-term moderate beneficial cumulative impact to cultural landscapes. The preservation of the battlefield site, as well as properties along the ingress and egress route of the armies allows for the area to remain similar in appearance to the day of the battle.

Environmental Effects

No Action Alternative

The No Action Alternative would have a long-term minor adverse impact to the cultural landscape because the roadways would continue to deteriorate, causing additional cracking, delamination, and rutting in the asphalt pavement.

Cumulative Impacts. The other past, present, and future actions would have a long-term moderate beneficial impact to the cultural landscape. The No Action Alternative combined with the other actions would have a long-term moderate beneficial cumulative impact to the cultural landscape, because the No Action Alternative would only slightly contribute to the overall impact.

Conclusions. The No Action Alternative would have a long-term minor adverse impact to the cultural landscape; however the cumulative impact would be long-term, minor, and

beneficial. The cultural landscape would not be impaired as a result of the No Action Alternative.

Action Alternative (Preferred Alternative)

The Action Alternative would have a short-term minor adverse impact to the cultural landscape during construction because of the construction equipment, grading, reconstruction, and repaving activities. The Action Alternative would also have a long-term moderate adverse impact to the cultural landscape; however mitigation measures would minimize the impact. The minor increase in asphalt pavement to widen several roadways would be barely perceivable.

In accordance with Section 106 of the National Historic Preservation Act, it was determined that the proposed action may have adverse effects on contributing elements to the Antietam National Battlefield. The removal of asphalt pavement and a layer of the road base at Confederate Avenue to reveal the War Department roadway would have no adverse effects to the cultural landscape. This character defining feature of the cultural landscape would not be adversely altered. The proposed action of the 1992 General Management Plan identifies the removal of this roadway to restore the Park to 1862 conditions. However, it was determined that the possible paving of Piper Lane and the Pry House Access Road with bonded aggregate would have an adverse effect on the cultural landscape, since the composition of the roadway would change to an impervious surface. An earth toned aggregate would be used to pave the roadway as mitigation to be less visually intrusive than the existing gravel surface, and would look similar to the historic appearance of the War Department roads. An MOA to determine the appropriate mitigation measures to minimize the adverse effects of the proposed action would be drafted and signed by the NPS, FHWA, and the Maryland Historical Trust prior to the completion of a decision document for the proposed action.

Cumulative Impacts. The other past, present, and future actions would have a long-term moderate beneficial impact to the cultural landscape. The Action Alternative combined with the other actions would have a long-term moderate beneficial cumulative impact to the cultural landscape, because the Action Alternative would only slightly contribute to the overall impact. The cultural landscape would appear similar to the day of the battle (as proposed in the General Management Plan) for continued interpretation and education.

Conclusions. The Action Alternative would have a short-term minor adverse impact and a long-term moderate adverse impact to the cultural landscape; however the cumulative impact would be long-term, minor, and beneficial. The cultural landscape would not be impaired as a result of the Action Alternative.

3.2 WATER QUALITY

Affected Environment

Trees, grasses, and agricultural crops intercept and absorb rainfall. Clearing and grading activities associated with construction allows soils to erode, causing increased sediment. After construction is completed roads and parking lots (impervious surfaces) no longer allow rainfall to soak into the ground. Most rainfall is converted directly to runoff. The increase in stormwater can be too much for the existing drainage system to

handle. Stormwater management practices help control nonpoint source pollution through the use of nonstructural and/or structural techniques to intercept surface runoff from developed areas, filter and treat this runoff, and then discharge it at a controlled rate. The overriding condition that governs the quantity of stormwater runoff is the amount of impervious surfaces. Stormwater contains a variety of constituents, such as nitrogen, phosphorus, metals, oil, and grease that can contribute to nonpoint source pollution.

About three miles of Antietam Creek are within the boundaries of the Park. The surface waters of Antietam Creek are generally characterized as being of good quality, although the area is showing some impacts from human activities. Primarily agricultural, wooded, or rural residential land users surround the creek and its tributaries within the Park; however, upstream municipalities and the neighboring town of Sharpsburg may also impact the quality of the Park's water resources. These are problems that affect many natural areas in the face of intensive agricultural practices and increasing development.

Methodology

Maryland Stormwater Management Regulations (COMAR 26.17.02) were consulted to determine the water quantity and water quality treatment requirements from an increase in impervious surface. Maryland Stormwater Management Guidelines for State & Federal Projects, which supplement the Stormwater Management Regulations (COMAR 26.17.02) and the "2000 Maryland Stormwater Design Manual, Volumes I & II" were also consulted. In accordance with these guidelines, the proposed action is exempt from water quantity control. Predictions about short-term and long-term impacts to water quality were based on previous experience of projects of similar scope and characteristics. Analyses of the potential intensity of impacts to water quality were derived from the available information and best professional judgment. The construction of the Action Alternative would most likely be two years or less, therefore the short-term duration is two years.

Definition of Intensity Levels:

Negligible	Minor	Moderate	Major
Impacts are chemical, physical, or biological effects that would not be detectable, would be well below water quality standards or criteria, and would be within historical or desired water quality conditions.	Impacts (chemical, physical, or biological effects) would be detectable but would be well below water quality standards or criteria and within historical or desired water quality conditions.	Impacts (chemical, physical, or biological effects) would be detectable but would be at or below water quality standards or criteria; however, historical baseline or desired water quality conditions would be altered on a short-term basis	Impacts (chemical, physical, or biological effects) would be detectable and would be frequently altered from the historical baseline or desired water quality conditions; and/or chemical, physical, or biological water quality standards or criteria would be slightly and singularly exceeded on a short-term basis.

Definition of Duration:

Short-term: Effects lasting less than 2 years
 Long-term: Effects lasting longer than 2 years

Cumulative Impact Scenario

The spatial boundary for the cumulative impacts assessment has been defined as the area draining to Antietam Creek within the Conococheague-Opequon watershed [USGS cataloging unit: 02070004]. The temporal boundary for the cumulative impacts assessment has been defined as the day of the Battle, September 17, 1862 through 10 years after the decision document for this proposed action. Past, present, and future actions that contribute to cumulative impacts include: agricultural runoff or nutrients and erosion into Park surface waters possibly causing eutrophication or sedimentation, groundwater contamination from old septic systems in Sharpsburg, sewage discharge from upstream municipalities, stormwater runoff from the streets of Sharpsburg. These actions combined have a long-term moderate adverse impact to water quality.

Environmental Effects

No Action Alternative

There would be no impacts associated with the implementation of the No Action Alternative.

Cumulative Impacts. There are no impacts associated with the No Action Alternative; therefore there can be no cumulative impacts.

Conclusions. There would be no impact to water quality from the No Action Alternative. Water quality would not be impaired as a result of the No Action Alternative.

Action Alternative (Preferred Alternative)

The Action Alternative would have short-term minor adverse impacts to water quality. The removal of vegetation during construction would expose bare soil, increasing erosion and sediment. The Action Alternative would have long-term negligible adverse impacts to water quality once construction is completed. The increased stormwater associated with increased impervious surface would be treated to the extent possible according to the Maryland Department of Environment's stormwater guidelines.

Cumulative Impacts. The other past, present, and future actions would have a long-term moderate adverse impact to water quality. The Action Alternative combined with the other actions would have a long-term moderate adverse impact to water quality because of continued development of the surrounding area. The Action Alternative's contribution would be barely perceivable.

Conclusions. The Action Alternative would have a short-term minor adverse impact and a long-term negligible adverse impact to water quality. The Action Alternative combined with the other actions would have long-term moderate adverse cumulative impact. Water quality would not be impaired as a result of the Action Alternative.

3.3 VISITOR USE AND EXPERIENCE

Affected Environment

The Park is adjacent to the community of Sharpsburg and is surrounded by privately owned residential, commercial, and farm lands. The Park attracts an estimate of 290,000 visitors each year. The Park, located in the Great Valley region of the Appalachian Ridge and Valley province, encompasses over 3,250 acres of farmland, pastures, woodlots and limestone forests. In 1992, the GMP was approved, outlining goals for restoring the battlefield to its 1862 appearance. The plan includes projects such as replanting of historic woodlots and orchards, re-establishing original fence lines, lanes and trails, as well as maintaining the integrity of the historic farmsteads.

The Visitor Center has a theater, exhibits, observation room, and museum store. The Pry House Field Hospital Museum also provides visitors a chance to learn more about the battle. This new museum is located in the historic Pry House which served as Union Commander General George B. McClellan's headquarters during the battle. Exhibits include a re-creation of an operating theater, interpretive panels and objects relating to the care of wounded and the effects on the civilian population in the area, and information on the Pry House.

The self-guided driving tour road is 8½ miles long with 11 stops. Most visitors drive the route, but walking and biking are encouraged. Audiotape or CD programs, which enhance the self-guided tour, may be purchased from the bookstore. Tour stops include the Dunker Church, North Woods, East Woods, the Cornfields, West Woods, Mumma Farm, Roulette Farm, Sunken Road (Bloody Lane), Lower Bridge (Burnside Bridge), the Final Attack, and the Antietam National Cemetery.

Methodology

Available information regarding traffic counts was compiled by talking to Park staff. Predictions about short-term and long-term impacts to visitor use and experience were based on previous experience of projects of similar scope and characteristics. Analyses of the potential intensity of impacts to visitor use and experience were derived from the available information on the Park and best professional judgment. The construction of the Action Alternative would most likely be two years or less, therefore the short-term duration is two years.

Definition of Intensity Levels:

Negligible	Minor	Moderate	Major
Changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.	Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.	Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.	Changes in visitor use and/or experience would be readily apparent and severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

Definition of Duration:

Short-term: Effects lasting less than 2 years

Long-term: Effects lasting longer than 2 years

Cumulative Impact Scenario

The spatial boundary for the cumulative impacts assessment has been defined as the area encompassing the Park. The temporal boundary for the cumulative impacts assessment has been defined as the day of the Battle, September 17, 1862 through 10 years after the decision document for this proposed action. Past, present, and future actions that contribute to cumulative impacts include the Civil War Battle at Antietam, establishment by Congress, listing on the National Register, construction of roadways, and the Washington County, MD Antietam Battlefield and Approaches Conservation Project. These actions combined would have a long-term moderate beneficial impact on visitor use and experience. The establishment of the Park site protects an important piece of United States History for future generations to interpret. The construction of roadways throughout the Park allows for visitors to travel among the sites and to experience various monuments and views.

Environmental Effects

No Action Alternative

The No Action Alternative would have long-term minor adverse impacts as the roadways continue to deteriorate. The roads would become rougher with more cracking and potholes, which would make driving the tour route less enjoyable. Maintenance activities, such as pothole patching, would increase. The temporary lane closures or detours to repeatedly complete these activities would inconvenience visitors.

Cumulative Impacts. The other past, present, and future actions would have a long-term moderate beneficial impact to visitor use and experience. The No Action Alternative combined with the other actions would have a long-term moderate beneficial impact because although the roadways would be less enjoyable to motorists, the Park would continue to be preserved for future use.

Conclusions. The No Action Alternative would have long-term minor adverse impacts, and there would be a long-term moderate beneficial cumulative impact to visitor use and experience.

Action Alternative (Preferred Alternative)

The Action Alternative would have long-term moderate beneficial impacts to visitor use and experience. The new pavement and correction of drainage issues would improve the driving experience, especially throughout the auto tour. Visitors would likely express an appreciation for the long-term improvements; however they may also express a negative opinion during construction. The disruption to the roadways and presence of construction equipment would have a short-term minor adverse impact, ending at the completion of construction.

Cumulate Impact. The other past, present, and future actions would have a long-term moderate beneficial impact to visitor use and experience. The Action Alternative combined with the other actions would have a long-term moderate beneficial impact to visitor use and experience because the Park would be preserved and routes through the Park would be more enjoyable to visitors.

Conclusions. The Action Alternative would have a long-term moderate beneficial impact to visitor use and experience, and there would be long-term moderate beneficial cumulative impacts to visitor use and experience.

3.4 HEALTH AND SAFETY

Affected Environment

The existing roadways throughout the Park were originally constructed in 1890s. No road projects have been done in the past 13 years. The deteriorating pavement and inadequate drainage creates potential safety hazards for visitors and Park staff. From 1996 through 2004, there were 52 recorded accidents within the Park. The accidents were spread throughout the roadways. The roadways with the highest numbers of accidents were the Visitor Center Parking Area (5), Route 65 (4), Burnside Bridge Road (3), Burnside Bridge Parking Area (3), Route 34 (3), and Dr. Miller Farm (3).

Methodology

Available information regarding accidents was compiled by talking to Park staff. Predictions about short-term and long-term impacts to health and safety were based on previous experience of projects of similar scope and characteristics. Analyses of the potential intensity of impacts to health and safety were derived from the available information on the Park and best professional judgment. The construction of an action alternative would most likely be two years or less, therefore the short-term duration is two years.

Definitions of Intensity:

Negligible	Minor	Moderate	Major
The impact to health and safety would not be measurable or perceptible.	The impact would be measurable or perceptible, and it would be limited to a relatively small number of visitors at localized areas. Impacts to health and safety could be realized through a minor increase or decrease in the potential for conflicts in current accident areas.	The impact to safety would be sufficient to cause a permanent change in accident rates at existing low accident locations or to create the potential for additional conflicts in areas that currently do not exhibit noticeable conflict trends.	The impact to safety would be substantial either through the elimination of potential hazards or the creation of new areas with a high potential for serious accidents or hazards.

Definition of Duration:

Short-term: Effects lasting less than 2 years
 Long-term: Effects lasting longer than 2 years

Cumulative Impact Scenario

The spatial boundary for the cumulative impacts assessment has been defined as the roadways throughout Park. The temporal boundary for the cumulative impacts assessment has been defined as August 30, 1890, the establishment as a national battlefield site, through 10 years after the decision document for this proposed action. Past, present, and future actions that contribute to cumulative impacts include the construction of roadways, and the Washington County, MD Antietam Battlefield and Approaches Conservation Project. These combined actions would have a long-term negligible adverse impact to health and safety due to the presence of multiple intercepting roadways that could potentially present safety hazards in inclement weather.

Environmental Effects

No Action Alternative

The No Action Alternative would have a long-term minor adverse impact to health and safety. The pavement would continue to deteriorate and drainage problems would worsen over time. This would increase the potential safety hazard to visitors and Park staff driving through the Park.

Cumulative Impacts. The other past, present, and future actions would have a long-term negligible adverse impact to health and safety. The No Action Alternative combined with the other actions would have a long-term minor adverse impact to health and safety because the deterioration of the roadways and standing water could increase the accident risk to motorists.

Conclusions. The No Action Alternative would have a long-term minor adverse impact to health and safety. The cumulative impact to health and safety would be long-term, minor, and adverse.

Action Alternative (Preferred Alternative)

The Action Alternative would have a long-term moderate beneficial impact to visitor conflicts and safety. The drainage inadequacies would be corrected and the new pavement would provide a smooth and solid driving surface. The existing guardrail that does not meet safety standards would be removed and replaced with new crash tested guardrail. Also in areas that have been identified as needing guardrail, extensions to existing guardrail or new guardrail would be installed.

Cumulative Impacts. The other past, present, and future actions would have a long-term negligible adverse impact to health and safety. The Action Alternative combined with the other actions would have a long-term minor beneficial impact to health and safety because motorists would not encounter deteriorated pavement, insufficient driving widths, or standing water.

Conclusions. The Action Alternative would have a long-term moderate beneficial impact to visitor conflicts and safety. The Action Alternative combined with other actions would have a long-term minor beneficial impact to health and safety.

4 PUBLIC INVOLVEMENT AND COORDINATION

As required by NPS policies and planning documents, it is the Park's objective to work with State, Federal, and local governments and private organizations to ensure that the Park and its programs are coordinated with theirs, and are supportive of their objectives, as far as proper management of the Park permits, and that their programs are similarly supportive of Park programs.

Consultation and coordination have occurred with numerous agencies for the development of the alternatives and preparation of the EA. The following organizations and agencies were contacted for information, which assisted in identifying important issues, developing alternatives, and analyzing impacts:

Federal Highway Administration – Eastern Federal Lands Highway Division
Hagerstown-Washington County, MD Economic Development Commission
Maryland Department of Environment
Maryland Department of Natural Resources
Maryland Historical Trust
United States Department of Interior – Fish and Wildlife Service
United States Department of Interior – National Park Service
Washington County Planning and Community Development Division

4.1 PUBLIC NOTICE/PUBLIC COMMENT PERIOD

In order to give the public and all interested parties a chance to review the EA, it will be noticed for public comment for a minimum of 30 days through local newspapers and on the world-wide-web. During this 30-day period, hardcopies of the EA will be available for review at the Antietam National Battlefield Library, Antietam National Battlefield Visitor Center, and the Sharpsburg Public Library Branch; and on the world-wide-web as indicated below. Copies of the EA will also be sent to applicable Federal, State, and local agencies for their review and comment.

An electronic version of this document can be found on the NPS's Planning Environment and Public Comment (PEPC) website at <http://parkplanning.nps.gov>. This site provides access to current plans, environmental impact analyses, and related documents on public review. Users of the site are encouraged to submit comments on this document while it is available for public review. This document is located under the National Capital Region, Antietam National Battlefield. An electronic version may also be found at the Federal Highway Administration, Eastern Federal Lands Highway Division's website at <http://efl.fhwa.dot.gov/planning/nepa.htm>.

4.2 PERMITS AND AGENCY COORDINATION

Erosion/sediment control plan approval is required, before construction, to prevent siltation due to releases of sediment (soil) from active construction sites. For example, before a housing development begins, the land needs to be cleared and graded. Erosion/sediment control plan implementation is needed to control the exposed soil from washing away into the storm drains, streams, rivers, and the bay. Plan approval is required for any construction activity that disturbs 5,000 square feet or more of soil, or results in the excavation of 100 cubic yards or more of soil.

The purpose of the Federal National Pollutant Discharge Elimination system (NPDES) stormwater program is to control pollution generated from runoff associated with industrial activity, including construction, and municipal separate storm sewer systems.

This general permit is required for all construction activity in Maryland with a planned total disturbance of 1 acre or more. Conditions of the permit include compliance with approved erosion/sediment control and stormwater management plans, self-monitoring and record keeping.

4.3 LIST OF PREPARERS/REVIEWERS

Federal Highway Administration

Kevin S. Rose, Environmental Compliance Specialist
Lisa Landers, Environmental Protection Specialist
Thomas Shifflett, Project Manager
Stephen Ratke, Highway Engineer
Jonathan Woody, Highway Engineer

Antietam National Battlefield

John Howard, Superintendent
Ed Wenschhof, Chief Ranger,
Jane Custer, Cultural Resource Specialist

5 REFERENCES

Federal Highway Administration Eastern Federal Lands Highway Division, Engineering Study for Roads and Bridge, Antietam National Battlefield, Maryland; May 2004

Gibb Archaeological Consulting, Archaeological Survey, Antietam National Battlefield, Management Summary, February 2007

Hagerstown-Washington County Economic Development Commission, 2007 Economic Data Summary, 2007

Maryland Department of Environment, Maryland Stormwater Management Guidelines for State and Federal Projects, July 2001

National Park Service, Antietam National Battlefield, General Management Plan/Final Environmental Impact Statement, 1992

Natural Resource Conservation Service, United States Department of Agriculture, Soil Survey of Washington County, Maryland, May 2002

Sterling, Bruce B., and Slaughter, Bernard W., Surveying the Civil War: Methodological Approaches at Antietam National Battlefield, Archaeological Perspectives on the American Civil War, University Press of Florida, 2000.

U.S. Department of Housing and Urban Development, Federal Insurance Administration – National Flood Insurance Program, Flood Insurance Rate Map Washington County, Maryland

U.S. Environmental Protection Agency, National Recommended Water Quality Criteria, Office of Water, Office of Science and Technology, 2006.

Washington County Department of Planning and Community Development, Comprehensive Plan for the County 2002

APPENDIX A: DOCUMENTATION OF AGENCY CONSULTATION



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

December 13, 2004

Ms. Brigitte Azran
U.S. Dept. of Transportation
Federal Highway Administration
21400 Ridgetop Circle
Sterling, VA 20166-6511

RE: Project PRA-ANT1300(1), 900(1), Antietam Nat. Battlefield, Washington County, MD

Dear Ms. Azran:

This responds to your letter, received November 1, 2004, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above reference project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Maricela Constantino at (410) 573-4542.

Sincerely,

G. A. Moser

G. Andrew Moser
Acting Program Supervisor, Threatened and Endangered Species



Robert L. Ehrlich, Jr., Governor

Michael S. Steele, Lt. Governor

C. Ronald Franks, Secretary

April 1, 2005

Ms. Brigitte Azran
Environmental Compliance Specialist
USDOT - Federal Highway Administration
Eastern Federal Lands Highway Division
21400 Ridgetop Circle
Sterling, VA 20166-6511

RE: Environmental Review for PRA-ANTI 300(1), 900(1), Antietam National Battlefield, Rehabilitation of Roads and Trails, Washington County, Maryland.

Dear Ms. Azran:

The Wildlife and Heritage Service (WHS) has several records for rare, threatened and endangered plant and animal species known from the project site. Following are approximate locations of these species' records, and general habitat descriptions for each. We would encourage coordination with WHS in order to avoid adverse impacts to these important native species.

There are breeding records for the state-listed endangered Loggerhead shrike (*Lanius ludovicianus*) known from the project site. Although this particular species has not been observed in Maryland since the late 1980's, it may still occur in areas of appropriate habitat in the park. The Loggerhead Shrike utilizes open grassland and meadow areas, often with suitable perching structures such as fencerows or single shrubs and trees.

There is a record for state-listed threatened Goldenseal (*Hydrastis canadensis*) known to occur in the park, approximately 0.75 miles south of Burnside Road crossing at Antietam Creek, within mesic forest over limestone substrate. There is also a record for state rare Butternut (*Juglans cinerea*) known to occur in the park as well, approximately 0.73 miles south of Burnside Road crossing at Antietam Creek, in the wooded area there.

There is a record for the state rare Planarian (*Sphalloplana* sp. 1) known to occur in Farmstead Cave, off of Dunker Church Road. And a record for state-listed endangered Shenandoah Cave Amphipod (*Stygobromus gracillipes*) known to occur within a modified karst spring approximately 250 meters south of the Hawkins Zoaves monument. There is also a record for a population of the Cherrydrop Snail (*Hendersonia occulta*), a species with In Need of Conservation status, known to occur in the park, in locations 0.6 to 0.8 miles south of Burnside Bridge Road crossing Antietam Creek, on limestone outcrops within hardwood forest.

In addition, the Wildlife and Heritage Service has records for the following species of interest known to occur within the vicinity of the project site. These species could potentially occur on the project site itself, if the appropriate habitat is present. They are:

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>
<i>Erythronium albidum</i>	White Trout Lily	Threatened
<i>Oryzopsis racemosa</i>	Black-fruited Mountainrice	Threatened
<i>Hydrophyllum macrophyllum</i>	Large-leaved Waterleaf	Threatened

Habitat for White Trout Lily is described as: Alluvial woods, coves, and moist woodlands (Radford et al 1968); woods and thickets (Fernald 1950); rich floodplain forests (MDNHP). Habitat for Black-fruited Mountainrice is described as: Rich, often calcareous and rocky, woods (Fernald 1950); dry to moist woods and wooded dunes (Gleason & Cronquist 1991); wooded slopes and cliffs, frequently on and near limestone outcrops (MDNHP). Habitat for Large-leaved Waterleaf is described as: Rich woods and moist roadbanks (Radford et al 1968); floodplain terrace forests, mixed deciduous limestone forests (MDNHP).

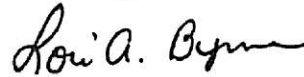
Our analysis of the information provided also suggests that the forested area on or adjacent to the project site contains Forest Interior Dwelling Bird habitat. Populations of many Forest Interior Dwelling Bird Species (FIDS) are declining in Maryland and throughout the eastern United States. The conservation of FIDS habitat is strongly encouraged by the Department of Natural Resources. The following guidelines will help minimize the project's impacts on FIDS and other native forest plants and wildlife:

1. Avoid placement of new roads or related construction in the forest interior. If forest loss or disturbance is absolutely unavoidable, restrict development to the perimeter of the forest (i.e., within 300 feet of the existing forest edge), and avoid road placement in areas of high quality FIDS habitat (e.g., old-growth forest). Maximize the amount of remaining contiguous forested habitat.
2. Do not remove or disturb forest habitat during May-August, the breeding season for most FIDS. This seasonal restriction may be expanded to February-August if certain early nesting FIDS (e.g., Barred Owl) are present.
3. Maintain forest habitat as close as possible to the road, and maintain canopy closure where possible.
4. Maintain grass height at least 10" during the breeding season (May-August).

Page 3
April 1, 2005

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,



Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER #2004.2412.wa
Cc: E.L. Thompson, DNR
D. Feller, DNR
R. Dintaman, DNR



Maryland Department of Planning
Maryland Historical Trust

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary

Matthew J. Power
Deputy Secretary

May 15, 2007

Mr. Kevin S. Rose
Environmental Compliance Specialist
Eastern Federal Lands Highway Division
Federal Highway Administration
21400 Ridgetop Circle
Sterling, VA 20166-6511

Re: Project PRA-ANTI 300(1), 900(1)
Proposed Roadway Improvements – Antietam National Battlefield
Washington County, Maryland
Section 106 Review – FHWA and NPS

RECEIVED
2007 MAY 18 PM 2:27
FEDERAL HIGHWAY ADMINISTRATION
STERLING, VA

Dear Mr. Rose:

Thank you for your recent letters, dated 30 March 2007 and 16 April 2007, requesting comments of the Maryland Historical Trust (Trust) concerning the above-referenced project. We are reviewing the project to assess its effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended. We offer the following preliminary comments and request additional information in order to make an informed review of the various proposed activities that comprise this undertaking.

We appreciate FHWA's efforts to initiate consultation early in the planning process for the undertaking. Based on the brief information provided in your letters and accompanying attachments, we understand that the project entails multiple roadway, parking area, and drainage improvements throughout Antietam National Battlefield, as well as some relocation of markers and monuments, bridge repairs, and culvert work. As you know, the Antietam National Battlefield (WA-II-0477/18WA456) is listed in the National Register of Historic Places. This extensive historic complex encompasses numerous contributing resources (including historic buildings, structures, sites, objects, and landscape features) associated with its significant events, as well as additional resources that are individually eligible for or listed in the National Register on their own merit. Given the extraordinary significance of Antietam National Battlefield, along with the high public visibility of this park, it is essential that planning for this undertaking affords full consideration to developing alternatives that avoid adverse effects and are sensitive to the historic characteristics and resources of this property.

Although your recent letters requested the Trust's concurrence with FHWA's assessment of effects for certain actions, the submittals did not contain sufficient information or supporting documentation for our office to make informed decisions or provide concurrence at this time. We ask that you please provide the following information in order to continue the Section 106 consultation for this undertaking and fulfill the requirements of 36 CFR Part 800:

- A complete description of the entire undertaking, including all the various proposed improvements;
- Detailed maps and plans to accompany the project description and illustrate the locations of all proposed actions;
- A detailed description of the specific historic properties/contributing resources located within the area of potential effects for this undertaking that may be affected in some way by the improvements;
- A copy of the full draft report(s) on any archeological investigations that have been conducted for this project;
- A description of any prior archeological investigations that included portions of the current project areas with a summary of results relevant to the present undertaking;

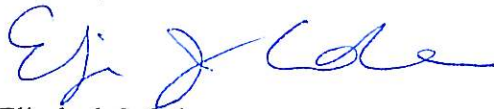


- Photographs of existing conditions;
- Please clarify who is the lead federal agency for purposes of Section 106 – FHWA or NPS;
- Copies of the views of the National Park Service;
- A summary of what efforts have been taken to notify the public and any relevant consulting parties about this undertaking and copies of any comments received thus far;
- A thorough assessment of the undertaking's effects on historic properties, with supporting documentation;
- A full discussion of what efforts FHWA has taken to avoid and reduce adverse effects on historic properties, with justification for its preferred alternative;
- Any additional information that would help facilitate an informed review of this undertaking.

Once we have received this additional information, we will continue our review of the project. A site visit with all relevant parties may help facilitate resolution of any issues or concerns that may arise from the Section 106 review.

We look forward to working with all involved parties to successfully complete the Section 106 consultation for this undertaking. If you have questions or need further assistance, please contact me at 410-514-7631 / bcole@mdp.state.md.us. Thank you for providing us this opportunity to comment.

Sincerely,



Elizabeth J. Cole
Administrator, Project Review and Compliance

EJC/200701095

cc: Lisa Landers (FHWA)
John Howard (Superintendent, Antietam National Battlefield)
Ed Wenschhof (Chief Ranger, Antietam National Battlefield)
Jane Custer (Cultural Resource Program Manager, Antietam National Battlefield)
Dave Hammers (FLHP Coordinator, National Capital Region, NPS)



Maryland Department of Planning
Maryland Historical Trust

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary

Matthew J. Power
Deputy Secretary

July 19, 2007

Mr. Kevin S. Rose
Environmental Compliance Specialist
Eastern Federal Lands Highway Division
Federal Highway Administration
21400 Ridgetop Circle
Sterling, VA 20166-6511

RECEIVED
2007 JUL 24 AM 8:42
EASTERN FEDERAL LANDS
HIGHWAY DIVISION
STERLING, VA

Re: Project PRA-ANTI 300(1), 900(1)
Proposed Roadway Improvements – Antietam National Battlefield
Washington County, Maryland
Section 106 Review – FHWA and NPS

Dear Mr. Rose:

Thank you for your recent letter, dated June 7, 2007 and received by the Maryland Historical Trust (Trust) on June 11, 2007 concerning the above-referenced project. Your correspondence provided additional information regarding the undertaking, as requested in the Trust's prior letter dated May 15, 2007. We are reviewing the project to assess its effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

Your detailed submittal addresses many of the questions raised by the Trust in our May 15th comments. It is clear that FHWA and NPS have made a concerted effort to avoid and reduce adverse effects to contributing resources of the National Register listed Antietam National Battlefield (WA-II-0477/18WA456) through sensitive design and project planning. As noted in your submittal, certain elements of the project may have adverse effects on historic properties; these elements include relocation of two markers/monuments, modification of the stone culvert crossing of Richardson Run along Richardson Ave., and changes to the roadway surfaces for the Pry House access road and Piper Lane. Before concurring with the assessments of effect provided in your recent letter, the Trust requests the opportunity for a site visit with FHWA and NPS to tour all aspects of the proposed undertaking, discuss treatment options, and resolve any concerns. We encourage FHWA and NPS to continue to explore further project modifications that would eliminate the potential for adverse effects on historic properties.

Part of the recent project submittal included the full draft report on the archeological investigations conducted for this undertaking. Trust staff reviewed the following document: *Phase II Archeological Survey of Portions of Antietam National Battlefield, Sharpsburg, Washington County, Maryland* (Gibb and Michailof 2007). The report presents detailed descriptions of the goals, methods, and results, of archeological identification survey conducted within the proposed project areas. The draft meets the reporting requirements of the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). The survey identified archeological resources likely associated with the Battle of Antietam within the area proposed for expansion of the Visitor Center parking lot. Based on the presence of these archeological remains, NPS appropriately decided to eliminate the parking lot expansion from further consideration at this time. Should NPS propose any future impacts to this area, further archeological investigations would be warranted. The survey did not identify any other archeological resources within the remainder of the current project area. Thus, agree that additional investigations are not necessary for the project as presently proposed.

We have a few minor comments on the draft itself, and ask the consultant to address these issues in the preparation of the final document.

- We are unclear why the report is titled a Phase II, as the level of effort represents a Phase I identification survey, rather than a Phase II site evaluation.
- The Abstract should present a succinct summary of the project and be no more than one page in length.
- The report should specify the repository that will curate the artifacts and associated records generated by the investigation. If curated by NPS, the report should note that it followed pertinent NPS standards for artifact processing and curation.
- Figure titles should include the project name and site number where relevant.
- On Figure 5-31, please label the shovel test pits.
- Antietam National Battlefield is recorded in the Maryland Inventory of Historic Properties as archeological site 18WA456. The consultant should prepare an official site update form for 18WA456 to reflect the results of the current study. The original site update form should be submitted to the Trust for entry in the Inventory Properties and a copy of the update form included as an appendix to the report.
- The final report should be printed double sided.
- Please provide the Trust with two copies of the final report for our library and the MAC Lab.

We look forward to the upcoming meeting and site tour with all involved parties, scheduled for 10:00 AM on July 30, 2007, and to working with all involved parties to successfully complete the Section 106 consultation for this undertaking. If you have questions or need further assistance, please contact me at 410-514-7631 / bcole@mdp.state.md.us. Thank you for providing us this opportunity to comment.

Sincerely,



Elizabeth J. Cole
Administrator, Project Review and Compliance

EJC/200701927

cc: Lisa Landers (FHWA)
John Howard (Superintendent, Antietam National Battlefield)
Ed Wenschhof (Chief Ranger, Antietam National Battlefield)
Jane Custer (Cultural Resource Program Manager, Antietam National Battlefield)
Dave Hammers (FLHP Coordinator, National Capital Region, NPS)
Stephen Potter (NPS National Capital Region)
James Gibb



Maryland Department of Planning
Maryland Historical Trust

RECEIVED

2007 AUG -3 PM 3:35

EASTERN DISTRICT OF MARYLAND
HIGHWAY DIVISION
STERLING, MD

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary

Matthew J. Power
Deputy Secretary

July 31, 2007

Mr. Kevin S. Rose
Environmental Compliance Specialist
Eastern Federal Lands Highway Division
Federal Highway Administration
21400 Ridgetop Circle
Sterling, VA 20166-6511

Re: Project PRA-ANTE 300(1), 900(1)
Proposed Roadway Improvements – Antietam National Battlefield

Dear Mr. Rose:

Thank you for providing the opportunity for staff from the Federal Highway Administration (FHWA), the National Park Service (NPS), and the Maryland Historical Trust (Trust) to meet on July 30, 2007 and conduct a site tour of the various project areas for the above-referenced undertaking. The site meeting greatly helped our understanding of the existing conditions, planned improvements, and the proposed treatment of historic properties. The discussions facilitated ongoing consultation between our agencies pursuant to Section 106 of the National Historic Preservation Act of 1966.

We acknowledge and appreciate the substantial efforts that NPS and FHWA have taken to avoid and reduce the adverse effects of planned improvements on historic properties and ensure the appropriate consideration of the property's significant cultural resources. Based on the documentation presented in your prior submittals and the results of the site meeting, the Trust concurs with NPS and FHWA that elements of the undertaking may have unavoidable adverse effects on contributing resources of the Antietam National Battlefield (WA-II-0477/18WA456). We await further consultation to resolve the adverse effects through the negotiation and implementation of an appropriate Memorandum of Agreement (MOA) for the undertaking as a whole. Trust staff provided NPS with an electronic copy of a sample MOA for their use in developing an initial draft document. As planning proceeds, we ask that you please provide the Trust with copies of any comments or concerns relevant to cultural resources that you receive from the public or other interested parties.

We look forward to working with all involved parties to successfully complete the Section 106 consultation for this undertaking. If you have questions or need further assistance, please contact Beth Cole at 410-514-7631 / bcole@mdp.state.md.us. Thank you for providing us this opportunity to comment.

Sincerely,

J. Rodney Little
Director/State Historic Preservation Officer

cc: Lisa Landers (FHWA)
John Howard (Superintendent, Antietam National Battlefield)
Ed Wenschhof (Chief Ranger, Antietam National Battlefield)
Jane Custer (Cultural Resource Program Manager, Antietam National Battlefield)
Dave Hammers (FLHP Coordinator, National Capital Region, NPS)

