

National Park Service
U.S. Department of the Interior



Fredericksburg and Spotsylvania National Military Park

Brock Road Water Main Improvements Project Environmental Assessment



County of Spotsylvania Department of Public Utilities



United States Department of the Interior

NATIONAL PARK SERVICE
Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405



March 4, 2005

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

Enclosed is the Environmental Assessment (EA) for the County of Spotsylvania – Department of Public Utilities' Brock Road Water Main Improvements Project. This document has been prepared by the National Park Service (NPS), in cooperation with the County of Spotsylvania – Department of Public Utilities (County). The County is proposing to construct a 16-inch water main to connect the existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and Route 627 / Brock Road (Route 613). By connecting these two existing dead-end water mains, a looped system would be formed to create a connected and more efficient County-wide water system. In addition, this looped water system would connect an existing 16-inch water main at the Ni Water Treatment Plant on Route 627 to the 8-inch water line on Route 613 eliminating the single feeds to the Lake Acres area on Route 627 and the Spotsylvania County Courthouse area. The proposed action will complete the Ni River Water Treatment Plant – Courthouse Loop, as described in the *"Spotsylvania County Revisions to Water/Sewer Master Plan for Courthouse Area,"* dated April of 1999.

In addition to creating a more efficient County-wide water system, this proposed water main will provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park (FSNMP), Spotsylvania Battlefield Exhibit Shelter. Completion of this project will greatly benefit the NPS by not only providing a solution to existing water quality issues at the Spotsylvania Battlefield Exhibit Shelter but will also provide a fire protection connection for the park.

Six alternatives were considered as part of this proposed system improvements project and are briefly described below:

1. The No Action Alternative would leave the system in the current configuration and continue the present management action, operations, and conditions of the existing utility infrastructure.
2. The Brock Road Alternative includes the construction of a 16-inch water main (buried within the ditch line of the Virginia Department of Transportation [VDOT] right-of-way [ROW] of Brock Road [Route 613]) connecting to existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and Route 627 / Brock Road (Route 613). The total project length consists of approximately 11,340 feet of new pipe, of which approximately 5,000 feet will be located on FSNMP property.
3. New water supply reservoir located near the Po River: Two locations were considered as part of this alternative, the Po Reservoir Upstream of Route 648 and the Po Reservoir Upstream of Route 208. This alternative, regardless of the location

chosen, includes the construction of an approximately 5 million gallon per day (mgd) or larger reservoir and associated dam structure.

4. New Well at the Spotsylvania County Courthouse: Includes the construction of a new groundwater well to serve as a public water source for Spotsylvania County.
5. The Brock Road Centerline Alternative includes the construction of a 16-inch water main (buried along the centerline of existing Brock Road [Route 631]) connecting to the existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and the intersection of Route 627 / Brock Road (Route 613). The total project length consists of approximately 11,340 feet of new pipe, of which approximately 1,400 feet will be located on FSNMP property.
6. The Brock Road Park By-pass Alternative includes the construction of a 16-inch water main buried within the ditch line of the VDOT ROW for Route 608 before turning north through easements to Hancock Road. From Hancock Road the alternative would then proceed onto Brock Road (Route 613) connecting to the existing water main located at the intersection of Route 627 and Brock Road (Route 613). The total project length consists of approximately 26,800 feet of which no portion is located on FSNMP property.

We are providing this EA for public review and comment. The public comment period closes 60 calendar days after the date at the top of this letter. If you wish to comment on the EA, you may mail comments to the name and address below. Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their name and/or home address from the record, which we will honor to the extent allowable by law. **If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment.** We will make all submissions from organizations, businesses, and individuals identifying themselves as representatives / officials of organizations / businesses available for public inspection in their entirety.

Please address your comments to:

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

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

Sincerely,

/S/ Russell P. Smith

Russell P. Smith
Superintendent

Enclosure

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

**Brock Road Water Main Improvements Project
Environmental Assessment**

**Fredericksburg & Spotsylvania National Military Park
Fredericksburg, Virginia
March 4, 2005**

Proposed Action:

The County of Spotsylvania – Department of Public Utilities (County) in cooperation with the National Park Service (NPS) is proposing to construct a 16-inch water main in Spotsylvania County, Virginia connecting the existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and Route 627 / Brock Road (Route 613) to create a connected and more efficient County-wide water system. In addition, this looped water system would connect an existing 16-inch water main at the Ni Water Treatment Plant on Route 627 to the 8-inch water line on Route 613, eliminating the single feeds to the Lake Acres area on Route 627 and the Spotsylvania County Courthouse area.

This proposed water main would provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park (FSNMP), Spotsylvania Battlefield Exhibit Shelter. Completion of this project will greatly benefit the NPS by not only providing a solution to the existing water quality issues at the Spotsylvania Battlefield Exhibit Shelter but will also provide a fire protection connection for the park.

For Further Information Contact:

Fredericksburg and Spotsylvania National Military Park
120 Chatham Lane
Fredericksburg, VA 22405-2508

Note to Reviewers and Respondents:

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

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

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Correspondence

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Introduction: Purpose & Need

1.1 Purpose and Need

The County of Spotsylvania – Department of Public Utilities (County) in cooperation with the National Park Service (NPS) is proposing to construct a 16-inch water main in Spotsylvania County, Virginia that connects the existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and Route 627 / Brock Road (Route 613) in order to create a connected and more efficient County-wide water system as outlined in the “*Spotsylvania County Revisions to Water/Sewer Master Plan for Courthouse Area*,” dated April of 1999.

This Environmental Assessment (EA) analyzes the impacts of an action alternative and no action on the natural, cultural, and human environment. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9); and *NPS Director’s Order 12* (DO-12): *Conservation Planning, Environmental Impact Analysis, and Decision-making*. Compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended (36 CFR 800) is being completed concurrently with this EA.

There are three main purposes for a looped water distribution system:

1. to improve hydraulic reliability,
2. to improve fire flow hydraulics, and
3. to improve water quality within a system.

Hydraulic reliability in the existing branched system is low. For example, if a water main break occurs between the water supply and the end user (i.e. residents), the system hydraulics is disrupted leaving all end users on the branch without water until proper repairs are completed. The longer the branch, the less reliable that system is because there are more potential main break locations that may result in a water outage. In a looped system, water can flow from either direction at any point in the loop and thus continue to supply water to the end users because the hydraulic pressure of the system causes the water to flow from the other direction of the loop. Currently, the existing water main at Brock Road and Route 627 is the end of a long branch, and the existing main at Brock Road and Judiciary Drive is the end of another long branch. In order to provide distribution system reliability concurrent with the level of development in the Lake Acres area and the Spotsylvania County Courthouse area, the ends of these two branches need to be connected. Connecting the two existing branched dead-end water mains located at the intersections of Brock Road (Route 613) / Route 627 and Brock Road (Route 613) / Judiciary Drive will create a connected and more efficient County-wide water system to improve hydraulic reliability.

Secondly, a looped system provides for improved fire flow hydraulics. In emergencies, such as a fire, the demand for water may rise beyond the capacity of the distribution piping. The County has determined that the Spotsylvania County Courthouse area and the Fredericksburg and Spotsylvania National Military Park (FSNMP) need improved fire flow hydraulics in order to provide for increased public safety and protection. In the existing branched system, the fire flow demand is drawn through the single branch feeding the area, which is limited to the capacity of the distribution piping to convey it to the location of the emergency event. In a looped system, the fire flow demand can be drawn

from two directions providing for better fire flow hydraulics and increased reliability of the distribution system during emergency events and provide for increased public safety within the Spotsylvania County Courthouse area. Currently, the FSNMP has limited fire protection capabilities (i.e. tanker trucks only) since there is currently not a direct connection to the County's water distribution system.

Thirdly, a looped system provides for improved water quality. In general, water quality in a distribution system degrades over time. In a branched system, the resident at the end of the branch is the only outlet for the water in that branch. When the demand is low, the residence time for the water may be longer than desired, resulting in "stale water." The larger the branches of a system, the more difficult it is to provide water quality at a consistent level. In a looped distribution system, the water circulates more freely, greatly reducing the likelihood of long residence times. The United States Environmental Protection Agency (EPA) has proposed draft regulations (Stage 2 Disinfectants and Disinfection Byproducts Rule) that will greatly increase the minimally accepted water quality throughout a distribution system. When these federal rules are finalized, the ends of the two branches previously described will need to be looped to help prevent violation of safe drinking water quality requirements and provide a means of reliable, quality water service to the Spotsylvania Battlefield Exhibit Shelter and surrounding communities.

In addition, this proposed water main would also provide a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter. Completion of this project will greatly benefit the NPS by not only providing a solution for the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter but will also provide a fire protection connection for the park and provide the most benefit to the NPS, visitors, and the local community while protecting the natural and cultural resources within the county.

1.2 Project Background

1.2.1 History and Significance of the Park

Four major Civil War battles occurred in Spotsylvania County, Virginia and it was the Battle of Spotsylvania Courthouse (May 8-21, 1864) that marked the beginning of the fall of the Confederacy. On May 7, 1864, the Union Fifth Corps and the Confederate First Corps independently led the marches of their respective armies toward Spotsylvania Courthouse. Because of its strategic importance at the intersection of Route 613 and Route 208 which controlled the shortest route to Richmond, Spotsylvania Courthouse was the scene of one of the bloodiest engagements of the war. This two-week battle was a series of combats along the Spotsylvania front, including 20 hours of the most intense hand-to-hand combat of the war during which the Union army ultimately seized the Confederate position. This battle may have initiated a turning point in the war and allowed for eventual Union victory (FSNMP 2003).

1.2.2 Project Study Area Description

Spotsylvania County, Virginia is approximately halfway between Washington, D.C., and Richmond, Virginia, and covers an area of 263,040 acres, or about 411 square miles. It is bordered by Stafford and Culpeper Counties on the north, along the Rappahannock and Rapidan Rivers; Caroline County on the east; Hanover and Louisa Counties on the south, along the North Anna River; and Orange County on the west. The project study area (Figure 1) is comprised primarily of the FSNMP on the northeastern portions of the project area surrounded by privately held low-density single-family housing and farmland bordering the FSNMP boundary. Preservation of archaeological resources beneath the existing Brock Road roadbed is a critical issue for the NPS due to the historic significance

of Brock Road within the County. Natural resources such as the Po River and associated wetland systems are located within the southwestern portion of the project area.

1.2.3 Relationship to Other Plans

1.2.3.1 Spotsylvania County Water/Sewer Master Plan

The *Spotsylvania County Water/Sewer Master Plan* completed in 1994 (*1994 Master Plan*) was intended to serve as a guide for planning, developing, and constructing water and sewer improvements and expansions. Since the development of the *1994 Master Plan*, significant changes in planning have occurred at the Spotsylvania Courthouse area of the County. In 1997, Spotsylvania County adopted the *Spotsylvania Courthouse Area Plan* which defined the characteristics, natural resources, cultural resources, community facilities, economic development, transportation, housing, and land use goals and requirements for the Spotsylvania Courthouse area.

In 1999, revisions were made to the *1994 Master Plan* in anticipation of future growth in the Spotsylvania Courthouse area. As part of those revisions, water distribution improvements were proposed to eliminate single-feed subdivisions within the Courthouse water distribution system, including the Ni Water Treatment Plant-Courthouse Loop. The Ni Water Treatment Plant - Courthouse Loop would connect an existing 16-inch water main at the Ni Water Treatment Plant on Route 627 to the 8-inch water line on Route 613, eliminating the single feeds to the Lake Acres area on Route 627 and the Courthouse area. By completing the Ni Water Treatment Plant-Courthouse Loop, the Courthouse area would receive increased system reliability and fire flow reliability.

1.2.3.2 General Management Plan

The current FSNMP *General Management Plan* (GMP) was approved on August 28, 1986 (NPS 1986), to direct management, use, and development of the park for the ensuing ten to fifteen years. It identifies the park's mission as, "...to protect the historic resources associated with the four Civil War battles fought here, to convey the significance of these events in the continuum of history, to provide a setting for contemplation, and to inspire in the community and nation a commitment to preserve these places for future generations." Improvements to both the Spotsylvania Battlefield Exhibit Shelter and fire protection for the park would be consistent with the park's mission to promote and convey the significance of the events that occurred at the FSNMP to the general public.

1.2.3.3 Resource Management Plan

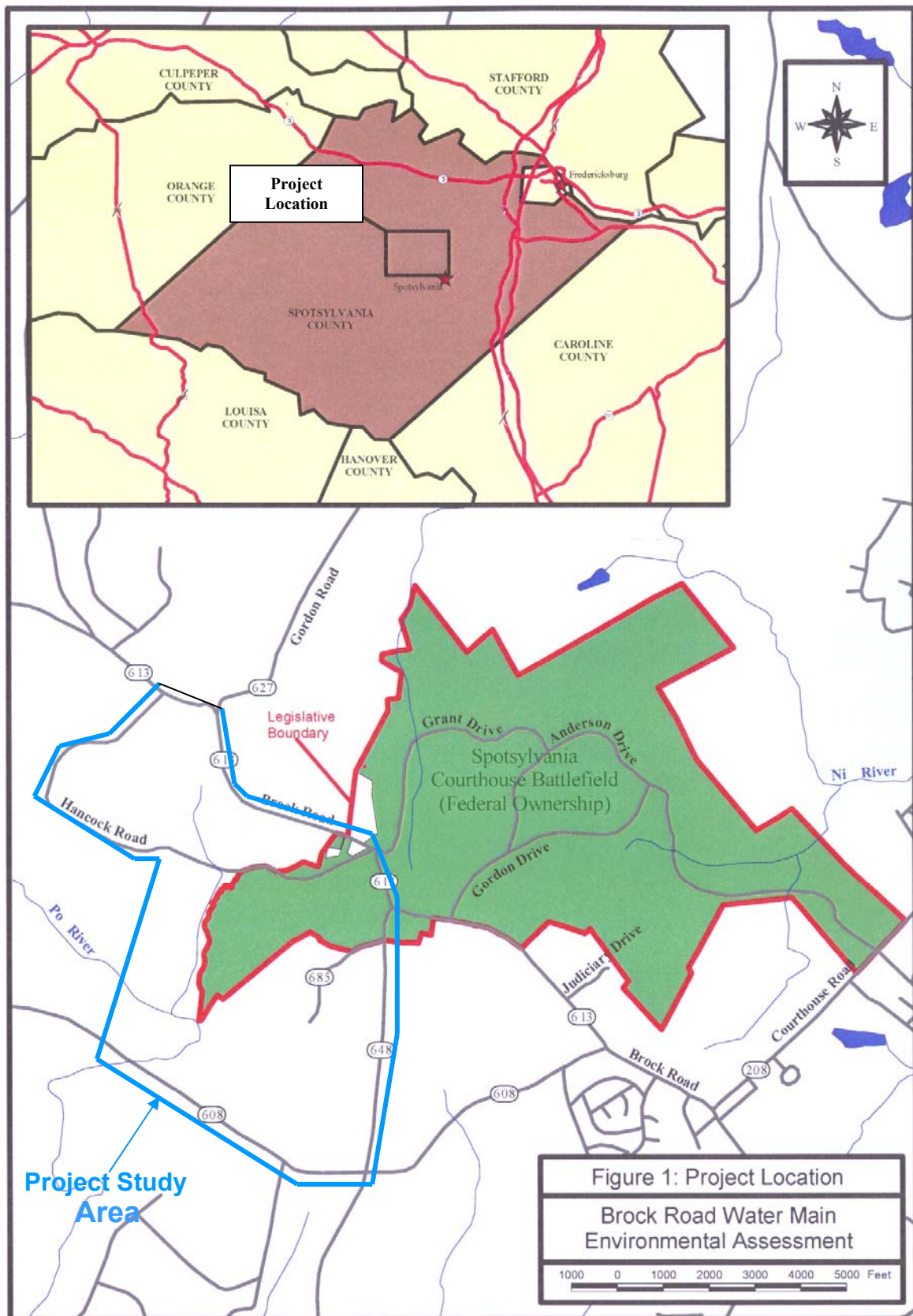
The *Resource Management Plan* (FSNMP 1999) outlines the park's needs in both cultural and natural resource research and management. Identified needs related to the proposed action include providing a solution for the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter and providing a fire protection connection for the park.

1.3 Planning Issues

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

1.3.1 Reliability

The proposed water main would create a connected and more efficient County-wide water system allowing water to flow from either direction at any point in the loop and thus supply a consistent source of water to the end users due to the hydraulic pressure improvements of the system.



1.3.2 Water Quality

This proposed water main will reduce the likelihood of long water residence times in accordance with the proposed EPA Stage 2 Disinfectants and Disinfection Byproducts Rule. In addition, a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter would be achieved.

1.3.3 Public Safety

Fire protection connections are an important safety concern for both the County and the NPS. The County has determined that the Spotsylvania County Courthouse area needs improved fire flow hydraulics in order to provide for increased public safety. In addition, there are currently no sources of fire protection connections to serve the FSNMP. The proposed loop system would provide a means of both increasing public safety for County residents and providing necessary fire protection for the park.

1.3.4 Preservation and Protection of Resources

Any proposed alignment must remain in the ditch line adjacent to the existing roadways to the greatest extent practicable to allow for the avoidance/minimization of cultural resources within the project area. Preservation of archaeological resources beneath the existing Brock Road roadbed is a critical issue for the NPS due to the historic significance of Brock Road within the county. The proposed action must be consistent with park's mission to promote and convey the significance of the events that occurred at the FSNMP to the general public.

1.4 Impact Topics

Specific impact topics were developed to focus the discussion and to allow comparison of the environmental consequences of each proposed alternative. The impact topics were identified based on federal laws, regulations, and Executive Orders; *NPS Management Policies 2001* (NPS 2000); NPS knowledge of resources; and site reconnaissance. The impact topics include: Public Safety, Socioeconomics, Natural and Physical Resources and Cultural Resources. A brief rationale for the selection of each impact topic is given below with more detailed discussions presented in "Chapter 3: Affected Environment."

1.4.1 Public Safety

There are currently no sources of fire protection connections to serve the FSNMP and the County has determined that the Spotsylvania County Courthouse area needs improved fire flow hydraulics. The proposed loop system would provide a means of both increasing public safety by providing adequate fire flow hydraulics for County residents and providing necessary fire protection for the park. Therefore, fire protection to improve public safety is considered as an impact topic.

1.4.2 Socioeconomic Environment

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Implementing the proposed action could provide a negligible beneficial impact to the economies of nearby Fredericksburg, as well as Spotsylvania County (e.g. minimal increases in employment opportunities for the construction workforce and revenues for local businesses and government generated from construction activities and workers). Any increase, however, would be temporary and negligible, lasting only as long as construction. However, since there is potential for induced development around the park as a result of enhancing the quality and

reliability of the water supply due to the installation of the water line through land which is currently privately owned farmland, the socioeconomic environment is considered as an impact topic.

1.4.3 Natural and Physical Resources

NEPA policy calls for an examination of the impacts on all components of the affected ecosystems. The NPS ensures that the environmental costs and benefits of the proposed action are fully evaluated before taking actions that may impact the natural, physical, and cultural resources of parks.

1.4.3.1 Surface Water Quality

The *NPS Management Policies 2001* require protection of water quality consistent with the Clean Water Act. Although, no streams will be impacted within park-owned land, the project study area contains surface waters associated with the Po River. Because the proposed action involves ground-disturbing activities, water quality is considered as an impact topic.

1.4.3.2 Wetlands

Executive Order 11990 (*Protection of Wetlands*) and NPS 77-1: *Wetland Protection* requires an examination of impacts to wetlands within the project study area. There are jurisdictional wetlands located within the project study area; therefore, wetlands are considered as an impact topic.

1.4.3.3 Floodplains

Executive Order 11988 (*Floodplain Management*) and NPS 77-2: *Floodplain Management* requires examination of impacts to floodplains within the project study area. The project study area is located within an area that is subject to normal flooding from 100-year flood events; therefore, floodplains are considered as an impact topic.

1.4.4 Cultural Resources

The NHPA, NEPA, NPS Organic Act (16 USC 1-4), *NPS Management Policies 2001* (NPS 2000), NPS DO-12, and NPS DO-28: *Cultural Resources Management Guideline* require the consideration of impacts on cultural resources either listed in, or eligible to be listed in, the National Register of Historic Places (NRHP). Cultural resources affected by the proposed action include archaeological resources and therefore cultural resources will be considered as an impact topic.

1.4.4.1 Archaeological Resources

Although the park lacks an archaeological overview and assessment, preliminary surveys have identified at least 85 archaeological sites within the park. The project area has not been surveyed for archaeological resources. Archaeological resources are therefore considered as an impact topic.

1.5 Impact Topics Considered but Dismissed from Detailed Analysis

The following impact topics and environmental considerations were identified but eliminated from further analysis because they do not apply to the proposed alternatives within the project area. This means that these resources do not exist within the project area or that the resources exist but none of the alternatives would have any impact on them

1.5.1 Natural and Physical Resources

1.5.1.1 Chesapeake Bay Considerations

Chesapeake Bay Preservation Areas (CBPAs) are those areas that may contribute to the pollution of the Chesapeake Bay watershed. Such areas are divided into three categories: Resource Protection Areas, Resource Management Areas, and Intensely Developed Areas. Construction within these areas is limited and regulated to ensure that non-point source pollution is remediated and the proposed action does not lead to an increase in pollution. The project study area is within a CBPA, more specifically within the Resource Protection Areas and the Resource Management Areas of the Po River. No violation of water quality standards are expected to result from the temporary increases in non-point source pollution produced during construction. The proposed action will not cause permanent increases in non-point source pollution; therefore, this is dismissed as an impact topic.

1.5.1.2 Soils and Topography

The project study area is located near the transition between the Coastal Plain and Piedmont physiographic regions. The geography of the area generally consists of gently rolling hills within the Piedmont Plateau comprised of a variety of soil types with varying characteristics. The proposed action involves only temporary ground-disturbing activities during construction. There will be no conversion of soil to impermeable surface and disturbed areas will be returned to preexisting ground contours, proper erosion and sediment controls will be implemented, and areas will be stabilized with an appropriate seed mix. Therefore, soil and topography issues are dismissed as an impact topic.

1.5.1.3 Vegetation

NPS policy is to protect the components and processes of naturally occurring vegetative communities, including the natural abundance, diversity, and ecological integrity of plants (NPS 2000). The majority of the project study area is comprised of privately owned farmlands, containing various “natural” grasses and harvestable crops. The remaining portion existing ROW and ditch lines consist of maintained grasses that are considered rural in characteristic and classified as a “natural” community type and other weedy species. The vegetation associated with a maintained ROW comprising a mix of Bermuda (*Cynodon dactylon*) and fescue (*Festuca* spp.) grasses with wild onion (*Allium canadense*), white clover (*Trifolium repens*), and other weedy species.

Temporary construction impacts to existing vegetative crops may occur within the farmland areas due to the installation of the water main. Tree clearing efforts and cover type conversion impacts are not anticipated; therefore, vegetation would not be impacted. The proposed action will not alter existing vegetative communities; therefore, vegetation is dismissed as an impact topic.

1.5.1.4 Wildlife and Wildlife Habitat

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

White-tailed deer (*Odocoileus virginianus*), flying squirrels (*Glaucomys sabrinus*), gray squirrels (*Sciurus carolinensis*), raccoons (*Procyon lotor*), opossums (*Didelphis marsupialis*), eastern cottontails (*Sylvilagus floridanus*), red foxes (*Vulpes vulpes*), meadow voles (*Microtus pennsylvanicus*), and a number of small mammals (shrews and rats) are terrestrial species that potentially occupy the mowed fields and pine/hardwood upland forests.

Several species of reptiles and salamanders are likely occupants of the hardwood swamps, marshes, and ditches in the park, in addition to a variety of water-dependent snakes and turtles. Red spotted

newts (*Notophthalmus viridescens*), northern cricket frog (*Acris crepitans*), northern leopard frog (*Rana pipiens*), green frog (*Rana clamitans*), snapping turtle (*Chelydra serpentina*), and eastern painted turtle (*Chrysemys picta*) are likely occupants of upland deciduous and pine forests, grassy meadows, and brush piles.

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

No anticipated impacts to the existing wildlife and wildlife habitat are likely to occur since all construction would be within farmland or along the existing ROW, in previously disturbed, upland areas. No loss of wildlife habitat would occur. Impacts to wildlife and wildlife habitat are closely tied to changes in vegetation cover. There will be no change in vegetative communities; therefore, wildlife and wildlife habitat will not change and is dismissed as an impact topic.

1.5.1.5 Geology

According to current NPS data on the region's geology, the proposed action would not impact geologic resources in the project area or elsewhere in the park. Therefore, geology was considered but dismissed as an impact topic.

1.5.1.6 Air Quality

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.), specifically Section 118 of the Clean Air Act, and *NPS Management Policies 2001* (NPS 2000) requires parks to meet all federal, state, and local air pollution standards as well as address the need to analyze potential impacts to air quality during park planning. Construction activities could result in temporarily increased vehicle exhaust and emissions. Overall, there could be a short-term, negligible degradation of local air quality; however, such impacts would be temporary, lasting only as long as construction. Therefore, air quality was considered but dismissed as an impact topic.

1.5.1.7 Threatened, Endangered and Special Status Species

The Virginia Department of Game and Inland Fisheries (VDGIF) (VDGIF 2003), through the project scoping process, identified the likelihood of the occurrence of threatened, endangered, or special status species to inhabit the project area (see correspondence letter in Appendix A). These species include:

- Dwarf wedgemussel (*Alasmodonta heterodon*) – federal threatened, state endangered
- Cerulean warbler (*Dendroica cerulea*) – federal species of concern
- Roanoke slabshell (*Elliptio roanokensis*) – federal and state species of concern
- Small whorled pogonia (*Isotria meleoloides*) – federal threatened, state endangered

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

1.5.1.8 Hazardous Materials

A review of database sources for identifying permitted, or otherwise regulated and non-regulated hazardous materials and waste sites concluded that no hazardous materials, including asbestos containing material, lead-based paint, and petroleum storage tanks, were identified within the project area. Therefore, Hazardous Materials were considered but dismissed as an impact topic.

1.5.1.9 Soundscapes and Noise

In accordance with *NPS Management Policies 2001* (NPS 2000) and NPS DO-47: *Sound Preservation and Noise Management* (NPS 2000), an important part of the NPS mission is the preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units together with the physical capacity for transmitting natural sounds. Based on the scope of the project and the surrounding residential development, there would be no basic change to soundscapes or noise. Therefore, soundscapes and noise were considered but dismissed as an impact topic.

1.5.1.10 Lightscares

In accordance with *NPS Management Policies 2001* (NPS 2000), the NPS strives to preserve natural ambient lightscares, which are natural resources and values that exist in the absence of human caused light. The proposed action would not contribute to the existing sources of light pollution; therefore, lightscares were considered but dismissed as an impact topic.

1.5.2 Environmental Justice

Executive Order 12898 (*General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*) requires all federal agencies to incorporate environmental justice into agency missions by identifying and addressing the disproportionately high and/or adverse human health or environmental impacts of agency programs and policies on minorities and low-income populations and communities. Because the proposed action will be either in the existing VDOT ROW or on existing farmland, it would not have health or environmental impacts on minorities or low-income populations or communities as defined in the EPA's *Draft Environmental Justice Guidance* (July 1996). Therefore, environmental justice was considered but dismissed as an impact topic.

1.5.3 Visual Resources

The evaluation of scenic resources, both the visual character and the quality of a viewshed, were considered. A viewshed comprises the limits of the visual environment associated with the proposed action. The proposed action will not impact the scenic quality of the park or the surrounding area since no above ground structures will be permitted within the NPS property; therefore, scenic resources were considered but dismissed as an impact topic.

1.5.4 Cultural Resources

1.5.4.1 Indian Trust Resources

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

There are no Indian trust resources in FSNMP. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, Indian trust resources were considered but dismissed as an impact topic.

1.5.4.2 Historic Structures

All of the park's structures were recently surveyed during an update of its List of Classified Structures. This work evaluated 222 structures, nearly all of which are now listed on the National Register of Historic Places (NRHP) and most of which are in fair condition and have good documentation. None of these structures are within the project area. Therefore, Historic Structures were considered but dismissed as an impact topic.

1.5.4.3 Ethnographic Resources

Ethnographic resources are defined by the NPS as any "site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (DO-28). There are no known ethnographic resources within the project area, and the proposed action would not preclude any traditionally associated group from using the site; therefore, Ethnographic Resources were considered but dismissed as an impact topic.

1.5.4.4 Museum Objects

The NPS defines a museum object as "a material thing possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. Museum objects include prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens that are part of a museum collection" (DO-28). This EA does not address preservation and protection standards and requirements for museum objects nor would the proposed action involve museum objects; therefore, museum objects were considered but dismissed as an impact topic.

1.5.4.5 Cultural Landscapes

As described by the NPS *Cultural Resource Management Guidelines* (DO-28), a cultural landscape is "a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions." The park has neither a completed (Level II) cultural landscapes inventory nor a cultural landscape report for any areas within the park. However, the proposed action involves the burial of a waterline beneath the grade and ultimately will not be visible. Since above ground structures, such as hydrants, will not be required, cultural landscapes were considered but dismissed as an impact topic.

2

Alternatives

2.1 Introduction

Alternatives for this proposed action were developed to improve hydraulic reliability, improve fire flow hydraulics within the FSNMP and throughout the surrounding Spotsylvania County Courthouse area, and improve water quality within the system.

Evaluation of the existing water distribution system in Spotsylvania County (County of Spotsylvania, *Spotsylvania County Water/Sewer Master Plan*, Revisions 2002) and at FSNMP has revealed several system deficiencies such as:

- Hydraulic reliability in the existing branched system is low since water supply is limited to end users if a water main break occurs. Currently, the existing water main at Brock Road (Route 613) and Route 627 is the end of a large branch, and the existing main at Brock Road (Route 613) and Judiciary Drive is the end of another large branch.
- In emergencies, such as a fire, the demand for water may rise beyond the capacity of the distribution piping. In the existing branched system, the fire flow demand is drawn through the single branch feeding the area, which is limited to the capacity of the distribution piping to convey it to the location of the emergency event.
- In the existing branched system, when the water demand is low, the residence time of the water in the system may be longer than desired making it difficult to provide water quality at a consistent level.
- The County has determined that the Spotsylvania County Courthouse area needs improved fire flow hydraulics in order to provide for increased public safety. In addition, there are currently no sources of fire protection connections to serve the FSNMP.
- The Spotsylvania Battlefield Exhibit Shelter at FSNMP currently does not have an available water source due to degraded water quality issues at their existing well.

The following sections describe the six alternatives that were evaluated as to whether they met the three main purposes for the proposed action. The six alternatives (Figure 2) are:

1. No Action Alternative
2. Brock Road Alternative (NPS Preferred Alternative)
3. New water supply reservoir located near the Po River
4. New well at the Spotsylvania County Courthouse
5. Brock Road Centerline Alternative
6. Brock Road Park By-pass Alternative

2.2 No Action Alternative

It is important to note, that since 1981, no new utilities have been added to this project study area resulting in the several system deficiencies identified within the County-wide water system. The No Action Alternative would continue the present management action, operations, and conditions of the existing utility infrastructure. No new infrastructure would be constructed as part of this alternative; therefore, no new connections or upgrades would be provided. The No Action Alternative would leave the system in the current branched configuration without a connection between the existing water mains located at Route 208 and Route 627. The No Action Alternative provides no means for

improved hydraulic reliability, improved fire flow hydraulics, and water quality improvements within the current system. The No Action Alternative provides a basis for comparing the environmental consequences of the NPS Preferred Alternative. Should the No Action Alternative be selected, the existing branched water distribution system will continue to not meet the needs of the NPS to provide improved water quality at the Spotsylvania Battlefield Exhibit Shelter and a fire protection connection for the park. The NPS would be required to install a new well water system in order to provide adequate supplies to the Spotsylvania Battlefield Exhibit Shelter. Overall, the existing degraded conditions of the current system would continue.

In addition to the No Action Alternative, this EA analyzes one action alternative (Brock Road Alternative) for connecting the existing branched water mains.

2.3 Alternatives Carried Forward

2.3.1 Brock Road Alternative

The Brock Road Alternative (Figure 2) includes the construction of a 16-inch water main buried within the northern ditch line of the VDOT ROW of Brock Road (Figure 3) connecting to existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and Route 627 / Brock Road (Route 613). The total project length consists of approximately 11,340 feet of new pipe, of which approximately 5,000 feet will be located on FSNMP property. All construction would include related structures and facilities to be located beneath the grade within the VDOT ROW in the existing ditch line of the road a few feet off the pavement edge. The existing grade would not be impacted and all disturbed land will be returned to original conditions. Once construction is completed, the proposed action ultimately will not be visible. No above ground structures, such as hydrants, will be permitted within the boundaries of the park. The Brock Road Alternative not only provides a solution for the identified system deficiencies for the hydraulic reliability, fire flow hydraulics, and water quality issues currently within the water distribution system but also meets all of the goals identified for the purpose and need of the project.

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

Minimal mitigation efforts would be required for the Brock Road Alternative since all construction activities, related structures, and facilities are to be located beneath the grade within the VDOT ROW in the existing ditch line of the road. The existing ditch line is located just a few feet off the pavement edge, which minimizes potential disturbance to cultural and natural resources in the area.

All disturbed areas would be seeded with either native warm-season or native cool-season grasses, where appropriate. The County, in conjunction with the NPS, would develop an erosion and sedimentation plan in accordance with specific concerns of the individual site in compliance with Virginia regulations to be implemented by the contractor. No disturbance is permitted outside of the existing ditch line adjacent to Brock Road. Contractors must place a layer of sand on the existing roadbed during construction activities to contain spoils then return the spoils back to the ditch. In addition, no staging areas are permitted on NPS property; all appropriate measures must be adhered to

for coordination of the project with VDOT, and all appropriate maintenance of traffic issues must be considered as part of the project.

2.4 Alternatives Considered but Dismissed

The following alternatives were considered during the NPS Project Planning Process, but were dismissed based on their inability to meet the purpose and need of the project, and fulfill NPS guidelines, goals and/or objectives to improve operational water system efficiency:

- New water supply reservoir located near the Po River
- New well at the Spotsylvania County Courthouse
- Brock Road Centerline Alternative
- Brock Road By-pass Alternative

2.4.1 New Water Supply Reservoir located near the Po River

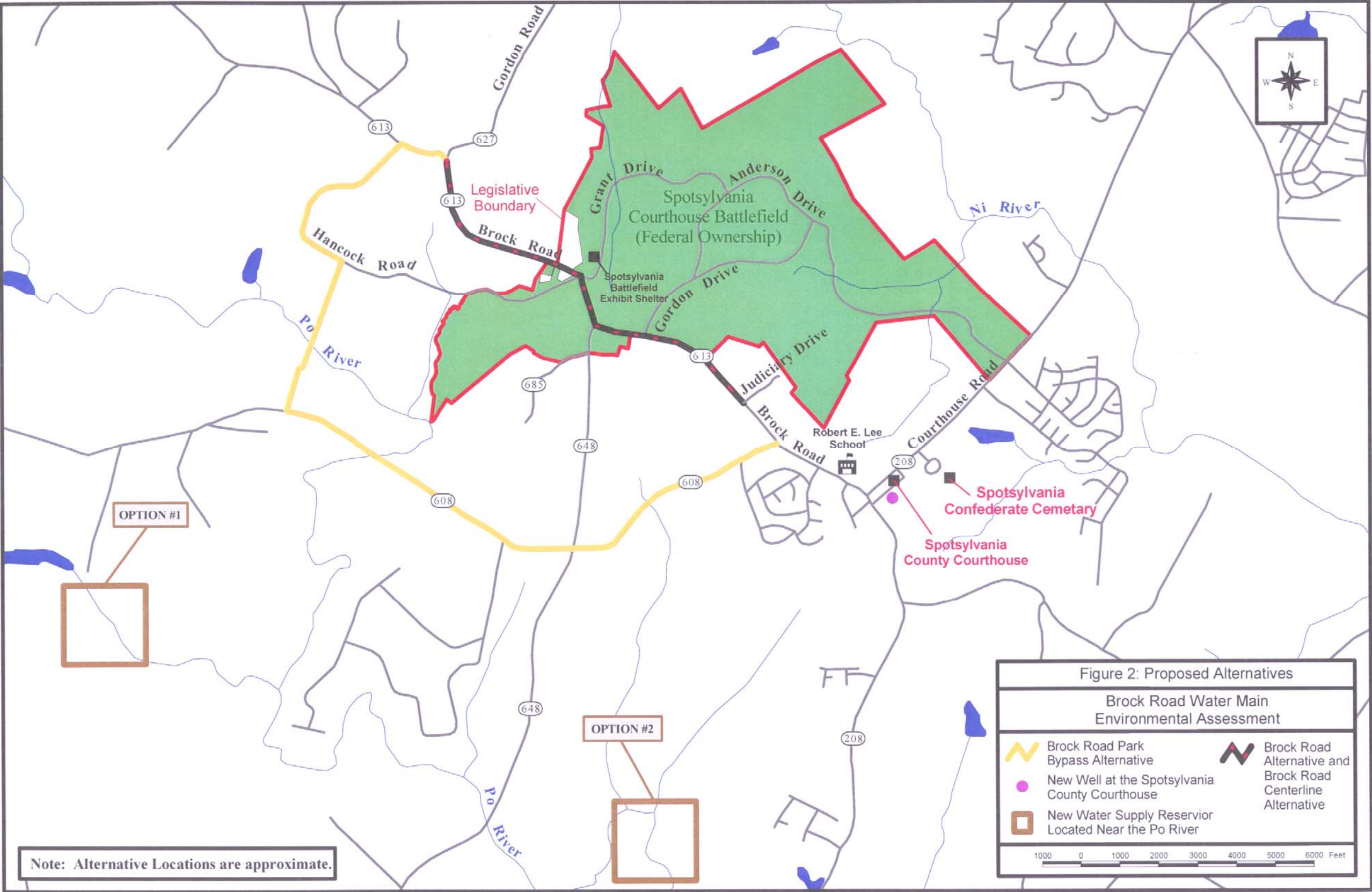
Two location alternatives were considered for the construction of a new water supply reservoir located near the Po River in Spotsylvania County:

1. Po Reservoir Upstream of Route 648 – The dam for this location alternative would be located on the Po River approximately one mile upstream of Andrews Bridge (Route 648) and would include a 5 million gallon per day (mgd) or larger reservoir.
2. Po Reservoir Upstream of Route 208 – This location alternative would include a dam and reservoir with a 7.7 mgd safe yield located approximately 2,400 feet upstream of Shells Bridge (Route 208).

Po Reservoir Upstream of Route 648 – The Po River watershed has not yet been impounded and the construction of a 5-mgd reservoir would result in permanent flooding of approximately 14.4 acres of the FSNMP and impact approximately 312 acres of wetlands.

Po Reservoir Upstream of Route 208 – The dam as part of this alternative would be approximately 25 feet wide, 1,100 feet long, and 55 feet high with one 300 foot spillway. Impacts include a reduction in the mean annual flow downstream of the proposed dam, flooding of 172 acres of wetlands, flooding of riverine habitat supporting the population of dwarf wedge mussel (a federally listed endangered species), flooding of a historic archaeological site, impact to nine residential dwellings, a new Route 648 bridge and causeway would be required, and encroachment of the 100-year floodplain onto 3.2 acres of FSNMP.

In addition to the environmental impacts associated with each of these alternatives, these two location alternatives were rejected based on their inability to meet the purpose and need of the project of providing solutions for the identified system deficiencies related to hydraulic reliability, fire flow hydraulics, and water quality issues currently within the water distribution system and their inability to provide a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter.



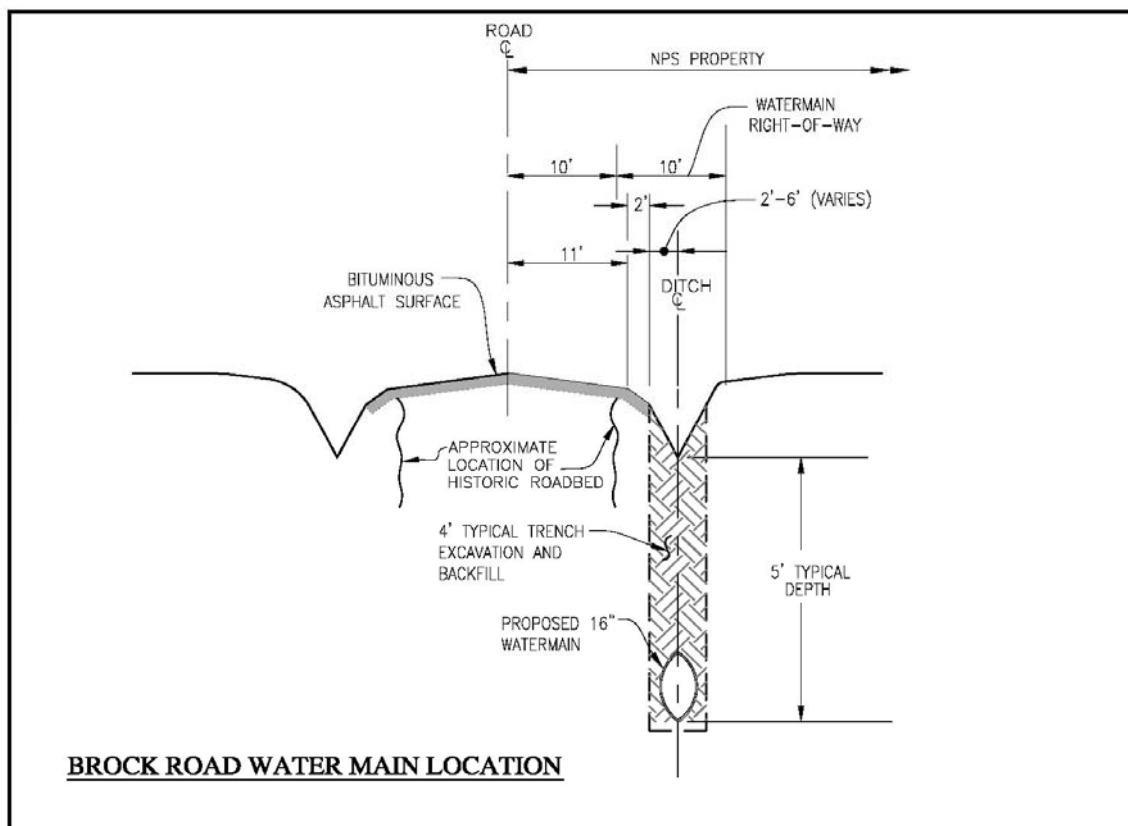


Figure 3. Proposed typical section for the Brock Road Alternative 16-inch water main.

2.4.2 New Well at the Spotsylvania County Courthouse

Water is supplied to approximately one-third of Spotsylvania County residents through small private wells. Most of these wells are located within the Piedmont Physiographic Province. Piedmont aquifers are generally low yielding, and highly variable in thickness and hydrologic characteristics. Because of this, the Spotsylvania County Board of Supervisors dedicated groundwater for residential use only, and denies withdrawals for commercial and industrial purposes indicating that groundwater is not a viable public water source for Spotsylvania County. Based on this decision, the installation of a new well at the Spotsylvania County Courthouse is not a viable alternative.

2.4.3 Brock Road Centerline Alternative

The Brock Road Centerline Alternative includes construction of a 16-inch water main buried along the centerline of the existing Brock Road connecting to the existing water mains located at the intersections of Brock Road (Route 613) / Judiciary Drive and Route 627 / Brock Road (Route 613). The total project length consists of approximately 11,340 feet of new pipe, of which approximately 1,400 feet will be located on FSNMP property.

This alternative will follow along the existing centerline of the existing Brock Road. Preservation of archaeological resources beneath the existing Brock Road roadbed is a critical issue for the NPS due to the historic significance of Brock Road within the County. Although this alternative would provide a solution for the identified system deficiencies currently within the water distribution

system, the alignment for this alternative would cause an adverse impact to the historic roadbed under Brock Road thereby not meeting all of the goals identified in the Purpose and Need. The archaeological resources beneath the existing Brock Road roadbed can be preserved by not allowing construction activities to occur beneath the existing roadbed. Therefore, this alternative was dismissed from further consideration.

2.4.4 Brock Road Park By-pass Alternative

The Brock Road Park By-pass Alternative includes the construction of a 16-inch water main buried within the ditch line of the ROW for Route 608 before turning north through easements to Hancock Road (Figure 2). From Hancock Road the alternative would then proceed onto Brock Road connecting to the existing the water main located at the intersection of Route 627 and Brock Road. The total project length consists of approximately 26,800 feet. Like the Brock Road Alternative, this alternative would form a looped system that improves the system's efficiency and provides a solution for the identified deficiencies currently within the system. However, this alternative does not provide the desired service connections to the FSNMP to provide a means of reliable, quality water service and fire protection connection to the Spotsylvania Battlefield Exhibit Shelter.

The Brock Road Park By-pass Alternative would have impacts to natural resources such as wetlands, streams, and farmlands. Temporary impacts to floodplains would likely occur since the proposed construction would involve two separate crossings of the Po River within the 100-year floodplain. In addition, permanent cover-type conversion impacts to palustrine-forested wetlands would occur to two wetland areas identified within the alignment of the proposed construction. The majority of the construction would be on existing, privately owned farmlands; however, this alternative would involve two crossings of the Po River. The crossing of multiple easements through privately held land bordering NPS property would also be required. No portion of this alternative is located within FSNMP property. Due to the increase in natural resources impacts, this alternative may also require additional mitigation dollars to construct. Therefore, this alternative was dismissed from further consideration.

2.4.5 Environmentally Preferred Alternative

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

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

Generally, these criteria mean the Environmentally Preferred Alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources. In this case, the NPS Preferred Alternative, or the Brock Road Alternative, is also considered the Environmentally Preferred Alternative. Although the No Action Alternative and all of the alternatives considered but dismissed might meet some of these criteria, they in no way provide the full level of system improvements that the Brock Road Alternative can while minimizing environmental impacts to the surrounding community.

Any NPS project strives to fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations (Criterion 1). The No Action Alternative would accomplish this by maintaining the status quo at the park. The Brock Road Alternative, however, would enhance the park's ability to improve and preserve this historical region for future generations by providing a reliable source of safe water to the Spotsylvania Battlefield Exhibit Shelter.

Water quality and public safety are considerations at any NPS site. Current utilities at the park are becoming unsafe and outdated. Water service quality at the Spotsylvania Battlefield Exhibit Shelter is unreliable and inefficient and there are currently no fire protection connections available. Improving these health and safety aspects of the park would allow the Brock Road Alternative to fulfill Criterion 2 where the No Action Alternative would not.

In order for the park to attain the widest uses of the environment without undesirable consequences (Criterion 3), it must balance its care for the environment with its care for the health and safety of the park and its visitors. The degradation of the water service quality at the Spotsylvania Battlefield Exhibit Shelter and the need for fire protection connections is becoming increasingly apparent. Not only is this a threat to the health and safety of the visitors, but it is also a threat to the environment since a reliable source of fire protection is currently not available for the park. The quality of the water from the existing well located at the Spotsylvania Battlefield Exhibit Shelter is continually degrading and it is anticipated that the exhibit shelter would need to be closed down should the well be required to be discontinued for use. The Brock Road Alternative would take steps to provide long-term fire safety management for the park environment and provide a long-term reliable and safe source of water for the exhibit shelter and its visitors (Criterion 5).

Under the No Action Alternative, the park would continue to maintain the park according to current management standards, allowing the park to comply with Criterion 5. The Brock Road Alternative, however, would work to improve the park's ability to fulfill this objective. By improving the water service quality and providing fire protection connections, the park would improve the health and safety of the park and the surrounding environment and provide visitors with a better atmosphere to enjoy the historical aspects of our national heritage.

Finally, neither of the alternatives will enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources to comply with Criterion 6.

Table 1 provides a summary of the environmental consequences related to each alternative.

Table 1. Summary of Environmental Consequences

Resource	No Action Alternative	Brock Road Alternative
Public Safety	There are currently no sources of fire protection connections to serve the FSNMP and the Spotsylvania County Courthouse area will continue to need improved fire flow hydraulics. The overall impact to the community under this alternative would be major and would contribute to adverse cumulative impacts to the existing safety of the communities within the County and the FSNMP since the current system does not provide adequate fire protection. Because there would be major adverse impacts, public safety impacts associated with this alternative would be an <i>adverse impact</i> .	The overall impact to the community under this alternative would be beneficial and would positively contribute to the existing safety of the communities within the County and the FSNMP since the new system would provide adequate fire protection.
Socioeconomics	The overall impact to the community under this alternative would be major and would contribute to adverse cumulative impacts to the existing communities within the County since the current system does not provide adequate hydraulic reliability or improved water quality. Because there would be major adverse impacts, socioeconomic impacts associated with this alternative would be an <i>adverse impact</i> .	The overall impact to the community under this alternative would be beneficial and would positively contribute to the communities within the County and the FSNMP since adequate hydraulic reliability and improved water quality would be obtained.
Surface Water Quality	There would be no impairment or cumulative impacts to any surface waters or impair existing surface water quality conditions.	One intermittent stream is located within the proposed action area; however, only temporary surface water quality impacts would be incurred. The overall impact to water quality of the surrounding watersheds would be negligible. Localized, short-term impacts to water quality could result due to the construction activities; however, the proposed action would contribute measurably to improve the regional increase in water system reliability and distribution. There would be no impairment of NPS resources or values related to water quality.
Wetlands	There would be no impairment or cumulative impacts of NPS resources or values related to wetlands.	There are no wetlands located within the proposed action area; therefore, no wetlands would be impacted. All construction would be situated along the existing ROW, in previously disturbed, upland areas.
Floodplains	There would be no impairment or cumulative impact to floodplains.	There would be no impact to floodplains since the proposed action area is not within the 100-year floodplain.

Table 1. Summary of Environmental Consequences

Resource	No Action Alternative	Brock Road Alternative
Archaeological Resources	There would be no impairment or cumulative impacts of NPS resources or values related to archaeological resources.	<p>The proposed action area was surveyed for archaeological resources. Compliance with Section 106 of the NHPA of 1966 as amended (36 CFR 800) has been completed concurrently as part of this document for this effort.</p> <p>It was recommended and concurred on by the Virginia Department of Historic Resources, that there was a low probability that the construction of the water main at this location would impact intact cultural strata or features, so long as construction activities were limited exclusively to the area within 10 feet of the northern edge of Brock Road.</p>

3

Affected Environment and Environmental Consequences

3.1 Introduction

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

This chapter describes the existing environmental conditions (affected environment) in the project study area and the environmental consequences associated with the alternatives. This chapter is organized by resource, and the existing conditions are described for each resource. Detailed information on resources in FSNMP may be found in the *Spotsylvania County Water/Sewer Master Plan* (1994 Master Plan), the GMP (NPS 1986), *Resource Management Plan* (FSNMP 1999), and other studies done within the park. In addition, the environmental consequences or impact for each resource is also discussed. NEPA requires consideration of context, duration, and intensity of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. NPS policy also requires that impairment of resources be evaluated in all environmental documents; therefore, this discussion is also included for each impact topic.

3.2 Methodology for Assessing Impacts

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

3.2.1 Type

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

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

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

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

3.2.2 Context

Context is the setting within which an impact is analyzed.

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

Local: The impact would affect the park.

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

3.2.3 Duration

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

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

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

3.2.4 Level of Intensity

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

3.2.5 Impairment

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

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

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

3.2.6 Cumulative Impacts

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

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

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

3.2.6.1 Spotsylvania County Planning Projects

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

- Ashley Farm – On March 25, 2003, rezoning for the Mullins Farm development was denied. The planned development would include 225 single-family units and 665,000 square feet of office and commercial space. The landowner might still develop the area under the current zoning regulations. It is located in close proximity to the Chancellorsville Inn site.
- Whitehall rezoning – The proposed rezoning would allow for 497 single-family units as well as some associated commercial development. It is located just north of Jackson Trail near its convergence with Brock Road and Herndon Road.
- Similar developments are planned in other areas of the county. One such adopted project is the Courthouse Area Plan. The Courthouse Area is divided into three planning districts, the Historic Village Planning Area, the Village Transition Planning Area, and the Rural Planning Area, within the Spotsylvania Courthouse region (*Spotsylvania Courthouse Area Plan, 1997*).

Historic Village Planning Area

The Historic Village Planning Area (*Spotsylvania Courthouse Area Plan, 1997*) consists of the core of the Courthouse Area. It is currently characterized by a mixture of uses, including residential, commercial, office and institutional. The development pattern is compact and focuses on the crossroads formed by the intersection of Routes 208 and 613. The existing Spotsylvania Courthouse Historic District, which is on the National Register of Historic Places, includes many of the historic buildings found in the Courthouse Area.

Village Transition Planning Area

The Village Transition Planning Area (*Spotsylvania Courthouse Area Plan, 1997*) presently contains several conventional, single-family subdivisions as well as large acreage of forest and fields. The district will accommodate most of the residential growth anticipated to occur in the Courthouse Area.

Rural Planning Area

The Rural Planning Area (*Spotsylvania Courthouse Area Plan, 1997*) is currently rural, with a mixture of forests, wetlands, working farms and fields. Detached houses in a variety of styles abut the main roads in places, giving the area a more settled appearance than its low density would suggest. Beyond the roads are many large, sparsely developed parcels. Some large-lot subdivisions do exist and typically have long, dead-end roads and back-up to undeveloped land. All development is served by private wells and septic systems. The main economic development activities are agriculture and timber production.

3.2.6.2 Route 208 Courthouse Road (*Spotsylvania Courthouse Bypass*)

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

3.2.6.3 Reconstruction and Improvement of Various Roadways at FSNMP

The Eastern Federal Lands Highway Division of the Federal Highway Administration (FHWA) is in the planning process for several road improvement projects within FSNMP (EFLHD 2002). These projects would be carried out in the Spotsylvania Courthouse unit. These projects would have the potential to impact soils, vegetation, and transportation. There are no anticipated roadway improvements to Brock Road in the vicinity of FSNMP.

3.2.6.4 Spotsylvania (*PRA-FSNMP Project Numbers 100(1) AND 300(1)*)

Hancock Road – The road has recently been supplemented with 6 inches of aggregate and graded to allow two 9-foot travel lanes.

McCoull House Road – The road has recently been supplemented with 6 inches of aggregate course and grades to accommodate two 8-foot travel lanes.

3.3 Public Safety

3.3.1.1 Impacts of No Action

There are currently no sources of fire protection connections to serve the FSNMP and the Spotsylvania County Courthouse area will continue to need improved fire flow hydraulics.

Cumulative Impacts

In the existing branched system, the fire flow demand is drawn through the single branch feeding the area, which is limited to the capacity of the distribution piping to convey it to the location of the emergency event. The No Action Alternative would have an adverse impact to public safety since (like this alternative) present and reasonably foreseeable future actions are not anticipated to provide additional public safety (i.e. fire protection) for the Spotsylvania County Courthouse area or FSNMP. The overall impact to the community under this alternative would be major and would contribute to adverse impacts to the existing safety of the communities within the County and the FSNMP since the current system does not provide adequate fire protection. Because there would be major adverse impacts, public safety impacts associated with this alternative would be an *adverse impact*.

3.3.1.2 Impacts of Proposed Brock Road Alternative

This alternative would provide for a looped system able to improve fire flow hydraulics thereby providing sources of fire protection connections to serve the FSNMP and the Spotsylvania County Courthouse area.

Cumulative Impacts

The new looped system would provide for improved fire flow hydraulics. This alternative would allow the fire flow demand to be drawn from two directions providing for better fire flow hydraulics and increased reliability of the distribution system during emergency events and provide for increased public safety within the Spotsylvania County Courthouse area. This alternative will also provide the FSNMP direct connection to the County's water distribution system allowing for enhanced fire protection capabilities at the park. The overall impact to the community under this alternative would be beneficial and would positively contribute to the existing safety of the communities within the County and the FSNMP since the new system would provide adequate fire protection.

3.4 Socioeconomic Environment

3.4.1.1 Impacts of No Action

No new utilities have been added to this project study area since 1981 resulting in the several system deficiencies identified within the County-wide water system. The No Action Alternative would leave the system in the current branched configuration without a connection between the existing water mains located at Route 208 and Route 627. This alternative currently provides low hydraulic reliability for communities during times of potential main breaks, low fire flow hydraulics resulting in inadequate fire flow protection, and long residence times leading to low water quality conditions within the current system to support the communities in the County connected to this system. In addition, this alternative does not provide a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter. Potential development is inhibited under this alternative since development would be constrained due to existing conditions.

Cumulative Impacts

Hydraulic reliability in the existing branched system is low. The longer the branch, the less reliable that system is because there are more potential main break locations that may result in a water outage. In general, water quality in a distribution system degrades over time. In a branched system, the resident at the end of the branch is the only outlet for the water in that branch. When the demand is low, the residence time for the water may be longer than desired, resulting in "stale water." The larger the branches of a system, the more difficult it is to provide water quality at a consistent level.

The EPA has proposed draft regulations (Stage 2 Disinfectants and Disinfection Byproducts Rule) that will greatly increase the minimally accepted water quality throughout a distribution system. When these federal rules are finalized, the ends of the two branches previously described will need to be looped to help prevent violation of safe drinking water quality requirements and provide communities on this system with safe drinking water.

This alternative would not provide a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter. The NPS would be required to install a new well water system in order to provide adequate water supplies to the Spotsylvania Battlefield Exhibit Shelter.

The overall impact to the community under the No Action Alternative would be major and would contribute to adverse cumulative impacts to the existing communities within the County and the FSNMP since reliable and safe drinking water will not be available. Because there would be major adverse impacts, socioeconomic impacts associated with this alternative would be an *adverse impact*.

Potential development is not likely to occur under this alternative since development would be constrained due to unreliable water quality.

3.4.1.2 Impacts of Proposed Brock Road Alternative

This alternative would create a new looped system improving on the existing branched configuration which provides no connection between the existing water mains located at Route 208 and Route 627. This alternative currently would provide for improved hydraulic reliability for communities during times of potential main breaks since water could be directed from multiple directions, improved fire flow hydraulics to provide for adequate fire flow protection, and improve residence times allowing for higher water quality conditions within the current system to support the communities in the County connected to this system. In addition, this alternative would provide a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter.

Cumulative Impacts

In the new looped system under this alternative, water can flow from either direction at any point in the loop and thus continue to supply water to the end users because the hydraulic pressure of the system causes the water to flow from the other direction of the loop. Currently, the existing water main at Brock Road and Route 627 is the end of a long branch, and the existing main at Brock Road and Judiciary Drive is the end of another long branch. In order to provide distribution system reliability concurrent with the level of development in the Lake Acres area and the Spotsylvania County Courthouse area, the ends of these two branches need to be connected. This alternative will provide that needed connection.

In addition, in a looped distribution system, the water circulates more freely, greatly reducing the likelihood of long residence times. Therefore, the new looped system would provide for improved water quality the existing communities within the County and the FSNMP. The EPA has proposed draft regulations (Stage 2 Disinfectants and Disinfection Byproducts Rule) that will greatly increase the minimally accepted water quality throughout a distribution system. When these federal rules are finalized, the ends of the two branches will be looped to help prevent violation of safe drinking water quality requirements.

This proposed water main would also provide a solution for the NPS to improve the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter. Completion of this project will greatly benefit the NPS by providing a solution for the existing degraded well water quality at the Spotsylvania Battlefield Exhibit Shelter. The overall impact to the community under this alternative would be beneficial and would positively contribute to the communities within the County and the FSNMP.

The County of Spotsylvania would like to maintain rural areas in parts of the county. However, the County is facing developmental pressures. Potential development is likely to encroach on FSNMP from the south and north along the existing Brock Road based on the current water line configuration and termini (Figure 4). The extent of the potential development on the immediate northern and southern boundaries of FSNMP would be constrained to the limited parcel sizes available within the Brock Road corridor thereby limiting growth and development of this area.

3.5 Natural and Physical Resources

Natural resources examined in detail include surface water quality, wetlands, floodplains, and archaeological resources. Resources dismissed from further consideration were discussed in Chapter 1 of this document. The condition of each resource is described for the Brock Road Alternative.

3.5.1 Surface Water Quality

The project study area lies within the watersheds of the Po River and Ni River, both tributaries to the Rappahannock River, the Chesapeake Bay, and the Atlantic Ocean. Several intermittent and perennial

streams, including the Po River and Ni River, are located in the vicinity of the project study area. The project study area is gently sloped with surface runoff buffered by herbaceous vegetated drainages.

No violation of water quality standards are expected to result from the negligible increases in pollutant loadings produced during construction of the alternatives presented. Pollutant loads would not be expected to increase since the County, in conjunction with the NPS, will implement and maintain strict erosion and sedimentation controls in accordance with the current Virginia Department of Conservation and Recreation, and the Division of Soil and Water Conservation's Virginia Erosion and Sediment Control Manual. The existing grade would not be impacted and all disturbed land would be returned to pre-construction conditions.

3.5.1.1 Methodology

All available information on water quality potentially impacted in FSNMP was compiled from secondary literature sources and limited field reconnaissance. Where possible, map locations of sensitive surface waters were compared with locations of the proposed construction and the surrounding area. Predictions about short- and long-term site impacts were based on previous projects with similar water quality conditions and recent studies. The thresholds of change for the intensity of an impact are defined as follows:

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

3.5.1.2 Impacts of No Action

Impacts to the current water quality of the intermittent or perennial streams, associated with the watersheds of the Po River and Ni River, identified for this alternative would be negligible and there would be no adverse short- or long-term impacts to the overall water quality within the associated watersheds.

Cumulative Impacts

Present and reasonably foreseeable future actions that would have an impact on water quality within the park include negligible to minor impacts from the Spotsylvania County development projects, the Spotsylvania Courthouse Bypass project, and the FHWA road improvements. These construction activities are anticipated to have only short-term localized impacts to water quality since all proper sediment and erosion controls measures would be strictly adhered to. The No Action Alternative would not contribute to cumulative impacts in the area.

Conclusion

The overall impact to water quality under the No Action Alternative would be negligible. The No Action Alternative would not contribute to cumulative impacts of water quality. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or

other relevant NPS planning documents, there would be no impairment of park resources or values related to water quality.

3.5.1.3 Impacts of Proposed Brock Road Alternative

According to USGS Topographic Quadrangle mapping (*Spotsylvania and Brokenburg*) and field reconnaissance, this alternative will cross an intermittent drainage tributary of the Po River. However, it is not anticipated that water quality would be impacted since all construction activities would be within the ROW and the existing ditch line.

This alternative includes traversing one intermittent stream. Construction will follow, at a minimum, Best Management Practice (BMP) standards as outlined by the Virginia Sediment and Erosion Control Handbook to keep water quality impacts site-specific and as negligible as possible. In addition, water quality would not be impacted since all construction activities would be within the ROW and the existing ditch line. The existing grade would not be impacted and all disturbed land will be returned to original conditions.

Cumulative Impacts

Present and future water system improvements, would have a beneficial cumulative impact on the park and the surrounding area. Overall the cumulative impacts to water quality of the surrounding watersheds of the Po River and Ni River from these projects would be negligible to minor since all construction activities would be within the ROW and the existing ditch line. However, the overall increase in water system reliability and distribution associated with this alternative would provide long-term and beneficial improvements to the overall system water quality in the region.

Conclusion

The overall impact to water quality of the surrounding watersheds from this alternative would be negligible to minor. Localized, short-term impacts to water quality could result due to the construction activities associated with crossing the intermittent stream. In addition, this alternative would contribute measurably to improve the regional increase in water system reliability and distribution. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values related to water quality.

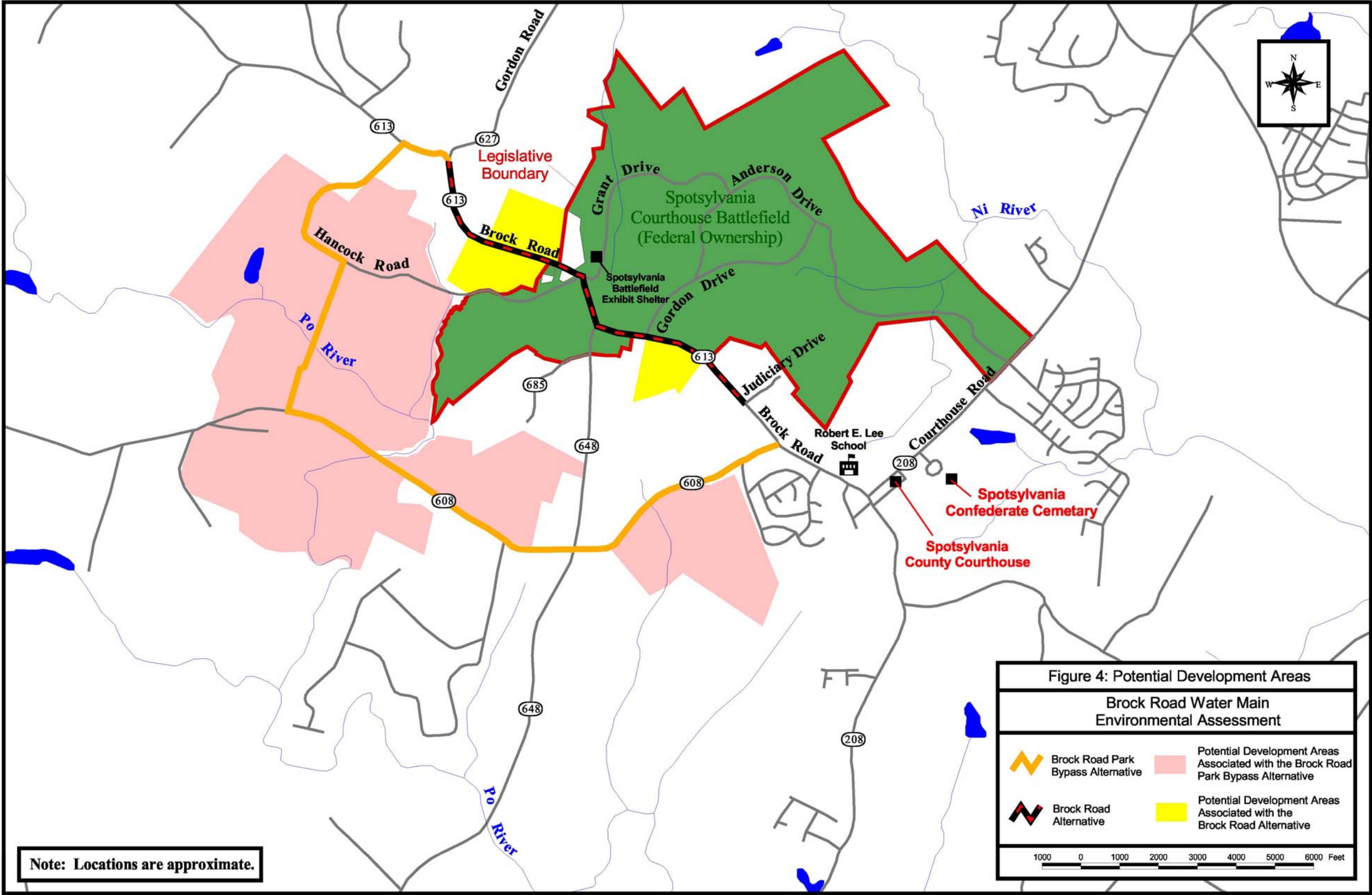
3.5.2 Wetlands

Wetland determinations within the project study area were made utilizing National Wetlands Inventory (NWI) mapping from the FWS and in accordance with Executive Order 11990 (*Protection of Wetlands*) and NPS 77-1: *Wetland Protection*, and field reconnaissance.

3.5.2.1 Methodology

All available information on wetlands potentially impacted in FSNMP was compiled from secondary literature sources and limited field reconnaissance. Where possible, map locations of wetlands were identified and avoided. Predictions about short- and long-term site impacts were based on recent studies and previous projects. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** No wetlands would be affected or small portions of individual wetlands could be affected as a result of the alternative. The impacts would be on a small scale, and no alterations to community structure and/or hydrology would be affected.
- Minor:** The alternative would affect some wetlands and would also cause minimal alterations to community structure and/or hydrology. Mitigation to offset adverse impacts could be required and would be effective.



Moderate: The alternative would affect some wetlands and would cause measurable alterations to community structure and/or hydrology. Mitigation to offset adverse impacts could be extensive but would likely be successful.

Major: The alternative would have a considerable impact on wetlands and would cause significant alterations to community structure and/or hydrology. Mitigation measures to offset the adverse impacts would be required and extensive, and success of the mitigation measures would not be guaranteed.

3.5.2.2 Impacts of No Action

The No Action Alternative would not impact existing wetlands identified within the area.

Cumulative Impacts

Similar to the ongoing changes in vegetative community composition, impacts to wetlands are occurring throughout the region primarily from urbanization, industrialization, and road construction. The present and reasonably foreseeable future actions identified as part of this study could collectively have a minor to moderate adverse impact on the existing wetland communities in the area. The contribution of impacts to the existing wetland communities in the region as a result of this alternative would not contribute to the total cumulative impacts.

Conclusion

The overall impact to existing wetland communities under the No Action Alternative would be negligible and would not contribute to cumulative impacts on wetlands within the County due to construction activities associated with present and reasonably foreseeable future actions. Because there would be no major adverse impacts, there would be no impairment of park resources or values related to wetlands.

3.5.2.3 Impacts of Proposed Brock Road Alternative

Construction of the Brock Road Alternative would be located on uplands (as defined and regulated by the U.S. Army Corps of Engineers, 1987 Wetland Delineation Manual, Technical Publication Y-87-1). There are several small isolated pockets of palustrine-forested wetlands with a vegetative composition consisting primarily of mixed hardwood species located adjacent to the Brock Road Alternative; however, no wetlands are located within the proposed action area of the alternative. All proposed construction activities would occur within the existing ROW consisting of previously disturbed uplands.

Cumulative Impacts

The present and reasonably foreseeable future actions identified, as part of this study could collectively have a minor to moderate adverse impacts on the existing wetland communities in the area. The contribution of impacts to the existing wetland communities in the region as a result of this alternative would not contribute to the total cumulative impacts.

Conclusion

The overall impact to wetland communities within the surrounding watersheds from this alternative would be negligible. Because there would be no major adverse impacts to a resource or value, there would be no impairment of park resources or values related to wetlands.

3.5.3 Floodplains

Executive Order 11988 (*Floodplain Management*) and NPS 77-2: *Floodplain Management* requires examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. Evaluation of Flood Insurance Rate Maps (FIRM) revealed that the Brock Road Alternative was not located in any part of the 100-year floodplain.

3.5.3.1 Methodology

All available information on floodplains potentially impacted in FSNMP was compiled from secondary literature sources and limited field reconnaissance. Where possible, map locations of surface waters were compared with locations of the proposed construction and the surrounding area. Predictions about short- and long-term site impacts were based on previous projects with similar conditions and recent studies. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** Floodplains would not be affected or the impacts to floodplains would be below or at the lower levels of detection. Any impacts to floodplains would be slight.
- Minor:** The impacts to floodplains would be detectable. Mitigation may be needed to offset adverse impacts and would be relatively simple to implement and likely be successful.
- Moderate:** The impacts to floodplains would be readily apparent and result in changes to the floodplain over a relatively wide area. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.
- Major:** The impacts to floodplains would be readily apparent and would substantially change the character of the floodplain over a large area in and out of the park. Mitigation measures to offset adverse impacts would be needed, extensive, and success of the mitigation measures could not be guaranteed.

3.5.3.2 Impacts of No Action

Impacts to floodplains associated with the watersheds of the Po River and Ni River, identified within the project area would be negligible and there would be no adverse short- or long-term impacts to the overall function of the floodplains within the associated watersheds.

Cumulative Impacts

Present and reasonably foreseeable future actions, that would have an impact on floodplains within the park include minor to moderate impacts from the Spotsylvania County development projects, the Spotsylvania Courthouse Bypass project, and the FHWA road improvements. These construction activities could potentially have long-term impacts to the overall function of the floodplains within the associated watersheds; however, projects are required to meet all appropriate regulatory requirements so as to mitigate for any potential floodplain impacts. The No Action Alternative would not contribute to cumulative impacts in the area.

Conclusion

The overall impact to floodplains under the No Action Alternative would be negligible. The No Action Alternative would not contribute to cumulative impacts to the overall function of the floodplains within the associated watersheds. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values related to floodplains.

3.5.3.3 Impacts of Proposed Brock Road Alternative

A review of the Federal Emergency Management Agency's FIRM maps confirmed that this alternative is not located within the 100-year floodplain. Construction activities for this alternative would not be located within areas that are subject to normal flooding from a 100-year flood. Therefore, construction activities would not have any direct or indirect impacts on the floodplain functions or values.

Cumulative Impacts

Present and reasonably foreseeable future actions, including the Spotsylvania County development projects, the Spotsylvania Courthouse Bypass project, and the FHWA road improvements, could potentially present a low-level risk to increase average flood heights within the associated watersheds. However, this alternative would not contribute to cumulative floodplain impacts in the area.

Conclusion

The overall impact to floodplains within the surrounding watersheds from this alternative would be negligible and there would be no impairment of park resources or values related to floodplains.

3.6 Cultural Resources

The background research was conducted by obtaining information on previously recorded archaeological sites and on information to develop a historic context and then updating the previously recorded information from VDHR, the County, and the NPS. The presence of properties currently listed on the National Register of Historic Places, and any properties, which have been determined eligible for the National Register or the Virginia Landmarks Register within the project study area, were also evaluated. In addition, the character of a cultural landscape, defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions, was also evaluated.

The CEQ regulations, which implement the National Environmental Policy Act of 1969 (42 USC 4321 *et seq.*), require assessment of impacts to cultural as well as natural resources. In this EA, impacts to cultural resources are described in terms of type, context, duration, and intensity, as described above. These impact analyses do not include discussion of the proposed action's compliance with Section 106 of the National Historic Preservation Act (NHPA). CEQ regulations and the NPS's *Conservation Planning, Environmental Impact Analysis, and Decision-making* (DO-12) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. Compliance with Section 106 of the NHPA of 1966 as amended (36 CFR 800) is being completed concurrently as part of this document for this proposed action.

3.6.1 Archaeological Resources

On April 15, 2004, Phase I archaeological testing in support this Environmental Assessment (JRIA, 2004) was completed. Approximately 5,370 feet of the Brock Road Alternative is located within the congressionally authorized boundaries of the Spotsylvania Court House Battlefield component of the Fredericksburg and Spotsylvania National Military Park; however, the westernmost portion of the water main corridor within park boundaries passes through a privately owned inholding that is technically not NPS property. As such, the testing associated with this project focused on the approximately 5,000 linear feet along Brock Road that is currently held by the NPS. With a width of approximately 10 feet, the tested portion of the corridor encompassed roughly 1.15 acres. A plan summarizing this proposed testing strategy was submitted to and approved by the NPS and VDHR.

In addition to the shovel testing efforts, a pedestrian survey of the two segments of water main corridor beyond NPS property (JRIA, 2004) were conducted to ensure that no potentially significant historic landscape features, such as remnant Civil War earthworks, were impacted by construction-related activities. This survey indicated that the physical conditions within these areas were comparable to those observed within the NPS boundaries and no visible indications of potential historic resources were noted. As a result, it was recommended that there was a low probability that the construction of the water main at this location would impact intact cultural strata or features, so long as construction activities were limited exclusively to the area within 10 feet of the northern edge of Brock Road.

Both fieldwork and reporting components of this project were conducted at a level that met or exceeded the Secretary of the Interior's standards (Department of the Interior 1983, 48 FR 44720-44723), as well as Virginia Department of Historic Resources (VDHR) guidelines for Phase I archaeological surveys (VDHR 1992a, 1992b).

Compliance with Section 106 of the NHPA of 1966 as amended (36 CFR 800) is being completed concurrently as part of this document for this proposed action.

3.6.1.1 Methodology

An archaeological site(s) can be eligible to be listed in the National Register of Historic Places (National Register) if the site(s) has yielded, or may be likely to yield, information important in prehistory or history. An archaeological site(s) can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national (see NPS 1990). For purposes of analyzing impacts to archaeological resources, thresholds of change for the intensity of an impact are based upon the potential of the site(s) to yield information important in prehistory or history, as well as the probable historic context of the affected site(s):

Negligible: Impact is at the lowest levels of detection - Barely measurable with no perceptible consequences, either adverse or beneficial. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Adverse Impact – Disturbance of a site(s) results in little, if any, loss of significance or integrity. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Beneficial Impact – Maintenance and preservation of a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate: Adverse Impact – Disturbance of a site(s) results in loss of significance or integrity. A memorandum of agreement is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b).

Beneficial Impact – Stabilization of a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

Major: Adverse Impact – Disturbance of a site(s) results in loss of significance or integrity. The National Park Service and applicable state or tribal historic preservation officer are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Beneficial Impact – Active intervention to preserve a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

3.6.1.2 Impacts of No Action

Under the No Action Alternative, there would be no change in management action. There would be no project-related ground disturbance that would result in impacts to archaeological resources.

Cumulative Impacts

Past, present and reasonably foreseeable future actions have contributed adverse impacts to archaeological resources at FSNMP. Many of these projects include actions occurring before establishment of the park and/or as a result of inadvertent impacts prior to the legal requirements for archaeological survey, site protection, and mitigation. Present and on-going projects in the area, including various Spotsylvania County planning projects, the Spotsylvania Courthouse Bypass project, and the FHWA road improvements, have the potential to

adversely impact archaeological resources. Ground disturbance related to the No Action Alternative would not occur; therefore, would not contribute to adverse cumulative impacts.

Conclusion

The overall impact to archaeological resources under the No Action Alternative would be negligible, and would not contribute to adverse cumulative impacts to archaeological resources. Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values related to archaeological resources.

3.6.1.3 Impacts of Proposed Brock Road Alternative

The background research concluded that no known archaeological resources were identified within the limits of this alternative with the exception of the existing Brock Road historic roadbed. This alternative would not cause an adverse effect to the historic roadbed under Brock Road since all construction activities would occur within the existing ditch line of the VDOT ROW and avoid the resources contained within the historic roadbed.

The archaeological testing conducted along the Brock Road Alternative within NPS property associated with the Spotsylvania Court House Battlefield (JRIA, 2004) demonstrated that soil stratigraphy along the ditchline north of Brock Road was heavily disturbed and that there was no potential for intact cultural strata or features. Shovel tests situated 10 feet north of the road also demonstrated a significant degree of disturbance from road construction, ditch maintenance, etc., and the few historic artifacts retrieved were from disturbed contexts. Assuming that soil conditions were reasonably similar along the north side of Brock Road beyond NPS boundaries, it was recommended and concurred on by the Virginia department of Historic Resources, that there was a low probability that the construction of the water main at this location would impact intact cultural strata or features, so long as construction activities were limited exclusively to the area within 10 feet of the northern edge of Brock Road.

Cumulative Impacts

Past, present and reasonably foreseeable future actions have contributed adverse impacts to archaeological resources at FSNMP; however, ground disturbance related to this alternative would be minimal; therefore, would not contribute to perceptible consequences, either adverse or beneficial.

Conclusion

The archaeological testing and pedestrian survey conducted along the Brock Road Alternative within NPS property (JRIA, 2004) demonstrated that soil stratigraphy along the ditchline north of Brock Road was heavily disturbed and that there was no potential for intact cultural strata or features and it was recommended and concurred on by the Virginia Department of Historic Resources, that there was a low probability that the construction of the water main at this location would impact intact cultural strata or features, so long as construction activities were limited exclusively to the area within 10 feet of the northern edge of Brock Road.

The overall impact to archaeological resources under this alternative would be negligible, and would not contribute to adverse cumulative impacts to archaeological resources. This alternative would not cause an adverse effect to the historic roadbed under Brock Road since all construction activities would occur within the existing ditch line of the VDOT ROW and avoid the resources contained within the historic roadbed.

4

Consultation & Coordination

4.1 Introduction

NEPA requires federal agencies preparing environmental documents to consult with stakeholders, including the general public and regulatory agencies early in the planning process. This process, known as scoping, helps to determine important issues; allocate assignments among the interdisciplinary team members and/or other participating agencies; identify related projects and associated documents; identify other permits, surveys, consultations, etc. required by other agencies; and create a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. This chapter documents the scoping process for this project, and includes the official list of recipients for the document.

4.2 Brief History of Planning and Public Involvement

On April 4, 2002 the EA kickoff meeting was held at FSNMP with representatives from FSNMP, the County, and Michael Baker Jr., Inc. Topics discussed at this meeting included: purpose and need for the project; proposed actions and alternatives; existing sources of information; documentation issues; and planning issues. Representatives from Michael Baker Jr., Inc also toured the project area to identify potential impacts associated with proposed actions.

Prior to this meeting, the County also carried out extensive discussions with the NPS with regard to the project.

In August 2003, a second EA meeting was held at FSNMP with representatives from FSNMP, the County, and Michael Baker Jr., Inc. The project had been delayed since the April 4, 2002 meeting due to funding issues. Topics discussed at this meeting included: purpose and need for the project; proposed actions and alternatives; existing sources of information; documentation issues; and planning issues.

On October 31, 2003, a planning meeting was held with the Virginia Department of Historic Resources to initiate coordination and the Section 106 Concurrence process on the Spotsylvania County – Brock Road Water Line Environmental Assessment project.

4.3 Interagency Coordination

Agencies contacted requesting their comments and available information for the proposed project during the planning process included:

- US Army Corps of Engineers (COE),
- US Fish and Wildlife Service (FWS),
- USDA Natural Resource Conservation (NRCS),
- Virginia State Historic Preservation Office (SHPO),
- Virginia Marine Resources Commission (VMRC),
- Virginia Department of Environmental Quality (DEQ),
- Virginia Department of Conservation and Recreation (DCR),
- Virginia Department of Game and Inland Fisheries (VDGIF),

- Virginia Department of Agriculture and Consumer Services (DACS), and
- Virginia Department of Transportation (VDOT).

These agencies confirmed that there would be no adverse impacts to resources identified within the project study area. The FSNMP required consultation with the Advisory Council and SHPO is complete in compliance with Section 106 of the NHPA. The archaeological testing and pedestrian survey conducted along the Brock Road Alternative within NPS property (JRIA, 2004) demonstrated that soil stratigraphy along the ditchline north of Brock Road was heavily disturbed and that there was no potential for intact cultural strata or features and it was recommended and concurred on by the Virginia Department of Historic Resources, that there was a low probability that the construction of the water main at this location would impact intact cultural strata or features, so long as construction activities were limited exclusively to the area within 10 feet of the northern edge of Brock Road.

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

4.4 Federal Consistency Determination

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

4.4.1 Fisheries Management

There is one farm pond directly adjacent to this alternative. Because of this relative location and isolated position in the landscape as well as the minimal construction disturbance, there would be no direct or indirect impacts to fisheries management.

4.4.2 Subaqueous Land Management

There is one farm pond in or directly adjacent to this alternative. However, there would be no direct or indirect impacts to subaqueous lands.

4.4.3 Wetlands Management

There are no wetlands in the vicinity of this alternative; therefore, there would be no impacts to wetlands.

4.4.4 Dunes Management

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

4.4.5 Non-point Source Pollution Control

An approved erosion and sediment control plan will be implemented prior to any ground disturbing activities. No additional impervious area will be created by this alternative.

4.4.6 Point Source Pollution Control

This alternative would not introduce any point sources that would require regulation.

4.4.7 Shoreline Sanitation

No additional stormwater management structures are required as part of this alternative; therefore, the amount of runoff entering this system would not change.

4.4.8 Air Pollution Control

The implementation of this alternative would have negligible, short-term impacts on air quality. Hauling material, operating equipment and other construction activities could result in temporarily increased vehicle exhaust and emissions. However, hydrocarbons, nitrates and sulfur dioxide emissions, as well as any airborne particulates created by fugitive dust plumes, would be rapidly dissipated by diffusion because air stagnation is rare at the project area. Overall, air quality would be unimpacted by this alternative.

4.4.9 Coastal Lands Management

This alternative is located within CBPAs; however, the project would not involve non-point source pollution nor would it lead to an increase in pollution.

4.4.10 Findings from Federal Consistency Determination

Based upon the above information, data, and analysis, the NPS finds that the alternative evaluated for this preferred alternative is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program.

4.5 List of Recipients

This EA will be available for formal public review for 60 days and has been distributed to a variety of interested individuals, agencies, and organizations, including those listed in this Chapter “Consultation & Coordination.” This EA is available on the Internet at <http://www.nps.gov/FSNMP> and at local libraries.

References

Acronyms

ACHP – Advisory Council on Historic Preservation
BMP – Best Management Practice
CEQ – Council on Environmental Quality
CBPA – Chesapeake Bay Preservation Area
CFR – Code of Federal Regulations
DO – Director’s Order
EA – Environmental Assessment
EPA – Environmental Protection Agency
FHWA – Federal Highway Administration
FSNMP – Fredericksburg & Spotsylvania National Military Park
FWS – U.S. Fish and Wildlife Service
GMP – General Management Plan
NEPA – National Environmental Policy Act
NHPA – National Historic Preservation Act
NPS – National Park Service
NRHP – National Register of Historic Places
NWI – National Wetlands Inventory
RMA – Resource Management Area
RPA – Resource Protection Area
ROW – Right-of-Way
SHPO – State Historic Preservation Officer
VDGIF – Virginia Department of Game and Inland Fisheries
VDHR – Virginia Department of Historic Resources
VDNH – Virginia Department of Conservation and Recreation, Division of Natural Heritage
VDOT – Virginia Department of Transportation
USDA – U.S. Department of Agriculture

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List of Preparers, Contributors, and Reviewers

This document was prepared by Michael Baker Jr., Inc. with input from staff at FSNMP and the County of Spotsylvania.

Michael Baker Jr., Inc.

Claudette L. Jenkins, Ph.D.	Technical Environmental Manager	12 years of experience	Guidance of the NEPA process, document preparation and review/ Project Management
Gary Geck, AICP	Infrastructure Manager	17 years of experience	Engineering Design/Document Review/Project Management
Stephanie Collier	Administrative Assistant	3 years of experience	Document Support
Irving R. Copeland Jr.	Environmental Associate	2 years of experience	Resource Data Analysis/Document Preparation
Suntemple Helgren	Environmental Specialist	8 years of experience	Resource Data Analysis/Document Preparation
Russell Prange	Environmental Associate	2 years of experience	Resource Data Analysis/Document Preparation
Jennifer Riddle	Graphic Designer	4 years of experience	Graphic Support
JK Robinson	GIS Specialist	10 years of experience	Graphics and GIS/Mapping

Contributors and Reviewers

Fredericksburg & Spotsylvania National Military Park

Russell P. Smith	Superintendent
John Hennessy	Chief Historian
Mike Johnson	Chief Ranger
Gregg Kneipp	Natural Resources Manager
Eric Mink	Historian/Cultural Resources Manager

County of Spotsylvania

Brent Elam, P.E.	Utilities Engineer; Department of Public Utilities
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Appendix A

Correspondence



COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

September 24, 2003

Claudette Jenkins, Ph.D.
Technical Environmental Manager
Michael Baker, Jr., Inc.
770 Lynnhaven Parkway, Suite 240
Virginia Beach, VA 23452



RE: ESSLOG #19080, Spotsylvania County – Dept. of Public Utilities, Brock Road Water Main Environmental Assessment

Dear Ms. Jenkins:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project.

I have reviewed the information that you retrieved from the Virginia Fish and Wildlife Information Service and have reviewed the site myself and have the following comments:

The federal endangered state endangered dwarf wedgemussel (*Alasmidonta heterodon*) has been documented in the project area. The applicant should coordinate with this Department (Brian Moyer, 804-367-6913) and with the US Fish and Wildlife Service (Kim Marbain, 804-693-6694) regarding potential impacts to this species.

This project is within or adjacent to a reach of Po River that has been designated as a Threatened or Endangered Species' Water due to the presence of dwarf wedgemussel (*Alasmidonta heterodon*). The applicant should coordinate with this Department and the US Fish and Wildlife Service to evaluate potential impacts to this resource.

A survey along a route passing in the vicinity of the project area has documented the presence of the federal species of concern cerulean warbler (*Dendroica cerulea*) during the breeding season. This species may occur at the project site if appropriate habitat exists, but no coordination is necessary at this time. The classification of "federal species of concern" is not a legal designation and does not require further coordination.

The federal species of concern state special concern Roanoke slabshell (*Elliptio roanokensis*) has been documented in the project area. The classifications of "federal species of concern" and "state special concern" are not legal designations and do not require further coordination.

Recipient Name
ESSLog #
9/24/2003
Page 2

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

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

This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-2211. Please note that this response does not address any other environmental concerns; these issues are analyzed by our Environmental Services Section, in conjunction with interagency review of applications for state and federal permits. If you have any questions in this regard, please contact Brian Moyer at (804) 367-6913.

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

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

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

Sincerely,

Amy E. Martin
Online Service Coordinator

cc: R.T. Fernald, VDGIF
Kim Marbain, USFWS



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

DAVID E. OGLE
DISTRICT ADMINISTRATOR

86 DEACON ROAD
FREDERICKSBURG, VA 22405
(540) 899-4300
FAX: (540) 374-3333

CHARLES A. KILPATRICK, P. E.
RESIDENT ENGINEER

October 22, 2003

Michael Baker Jr., Inc.
770 Lynnhaven Parkway, Suite 240
Virginia Beach, VA 23452
Attn: Claudette Jenkins

RE: Proposed 16" Water Main
Rt. 608 Robert E. Lee Drive
Rt. 613 Brock Road
Rt. 627 Gordon Road
Spotsylvania County

Dear Ms. Jenkins:

I am in receipt of your correspondence dated August 26, 2003 regarding the potential installation of a 16" water main in Spotsylvania County. Although the request was sent to Mr. Charles A. Kilpatrick, Resident Engineer, I will offer the following information or observations in his behalf. I apologize for not responding by your requested deadline of October 1, 2003, but I have been on extended sick leave.

I believe a plan could be prepared for either or all of the three roads in question that the Department could review and approve via a VDOT Land Use Permit. Both Rt. 613 and Rt. 608 are narrow two-lane roads with relatively high traffic counts. This will limit lane closures to between 9:00 a.m. and 3:30 p.m. There also may be a need for night operations. The typical sections most probably have a 20-foot pavement section with shoulders two feet to four feet in width located with a 30' or 40' right-of-way.

Although there is nothing in Spotsylvania County's Six-Year Road Plan regarding the reconstructing of these roads, I believe that some years in the not so distant future, Rt. 613, Brock Road will have to be reconstructed. What that project may be is hard to say at this point. However, VDOT will have to relocate some or all of the county's entire waterline with the costs for such relocation being included in the county's secondary road

construction cost. Even if this is not considered a factor at this time, the water main could be located under the ditch line a minimum of 36" depth. However, the design must be flexible enough to move the valves behind the ditch line to avoid damage during VDOT's normal maintenance and ditch cleaning operations. This same concern should also be applied to the other roads, Rt. 608 and Rt. 627. Most probably, the outside two of three feet of pavement at the edge of the road will be severely damaged and this pavement must be replaced. Also, any road crossings that would be necessary must be bored if the line crosses another VDOT maintained road. One other issue that would have to be considered is the location where the proposed Rt. 208 Bypass crosses Rt. 608, Robert E. Lee Drive. There must not be a conflict in the two projects (i.e. road construction and water main construction) at that location.

It is my understanding that a meeting for this proposal will be held in our Residency Office at 10:00 a.m. on 11-06-03. Both Mr. Kilpatrick and I plan to be at that meeting. Certainly we will discuss all potential aspects of the proposed construction; however, we will also review the Department's Land Use Permit process prior to authorizing the proposed construction.

If further information is needed concerning the above, please call my office at (540) 899-4202.

Sincerely,



C. S. Hamrick
Land Development Manager

CSH/ewh

CC: C. A. Kilpatrick via E-Mail
Ken Martin via E-Mail
Brent Elam – Spotsylvania County
Michael Johnson – National Park Service



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6669 Short Lane
Gloucester, VA 23061



September 16, 2003

Dr. Claudette Jenkins
Michael Baker, Jr., Inc.
770 Lynnhaven Parkway, Suite 240
Virginia Beach, Virginia 23452

Re: Project #3042

Greetings:

The U.S. Fish and Wildlife Service (Service) has received your request to review the attached project for potential impacts to federally listed or proposed endangered and threatened species and designated critical habitat in Virginia pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Attached is a list of species with Federal status and species of concern that have been documented or may occur in the county where your project is located. This list was prepared by this office and is based on information obtained from previous surveys for rare and endangered species.

In order to ensure coordination with the State agencies, we consistently recommend that individuals contact the Virginia Department of Conservation and Recreation, Division of Natural Heritage **and** the Virginia Department of Game and Inland Fisheries, since each agency maintains a different database and has differing expertise and/or regulatory responsibility. You can contact these agencies at the following addresses:

Virginia Department of Game and Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230
(804) 367-1000

Virginia Department of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 2nd Floor
Richmond, VA 23219
(804) 786-7951

If either of these agencies determines that your project may impact a federally listed, proposed, or candidate species OR federally designated critical habitat, please contact this office and provide a copy of the response letter from each agency and the above referenced project number; otherwise, further contact with this office is not necessary.

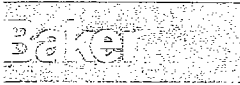
If you have any questions or need further assistance, please contact Ms. Jolie Harrison at (804) 693-6694, extension 208.

Sincerely,

A handwritten signature in black ink, reading "Karen L. Mayne". The signature is written in a cursive style with a large, stylized 'K' and 'M'.

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures



Michael Baker Jr., Inc.

A Unit of Michael Baker Corporation

770 Lynnhaven Parkway, Suite 240
Virginia Beach, Virginia 23452
Main Phone (757) 463-8770
Fax (757) 463-0503

August 26, 2003

Ms. Karen Mayne, Supervisor
USFWS - Mid County Center
6669 Short Lane
P.O. Box 99
Gloucester, Virginia 23061

**RE: Spotsylvania County – Department of Public Utilities
Brock Road Water Main Environmental Assessment**

Dear Ms. Mayne,

The Spotsylvania County – Department of Public Utilities is preparing an Environmental Assessment (EA) in cooperation with the National Park Service (NPS) for the construction of a 16-inch water main addition in Spotsylvania County, Virginia (refer to the attached project location map). The referenced project will evaluate two Build Alternatives that will connect existing water mains located at the intersection of Judiciary Drive and Brock Road (Route 613) and Gordon Road (Route 627) and Brock Road in order to create a connected and more efficient County-wide water system as well as provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse Exhibit Shelter.

Build Alternative 1 includes the construction of a 16-inch water main buried along Brock Road connecting to the existing water mains located at the intersection of Brock Road and Judiciary Drive and the intersection of Route 627 and Brock Road. The total project consists of approximately 11,340 feet of 16-inch ductile iron pipe, of which approximately 3,200 feet will be located on NPS property. It is anticipated that the water main and related structures required to meet regulations and to provide for the proper function of the system will be located within the existing ditch line of the road a few feet off the pavement edge. Construction should not affect the existing grading and all disturbed land will be returned to original conditions. Once construction is completed, the only visible features will be the fire hydrants (hydrants will not be located within NPS property).

Build Alternative 2 includes the construction of a 16-inch water main buried adjacent to Route 608 (Robert E. Lee Drive) before turning north through easements, up to Hancock Road. The alternative would then follow Hancock Road onto Brock Road to the tie-in point on Route 627. The total project consists of approximately 26,800 feet of 16-inch ductile iron pipe. Like Build Alternative 1, the construction will include related structures and facilities to be located within the existing ditch line of the road a few feet off the pavement edge, where appropriate. This alternative would avoid the National Park Service property, although two river crossings would be necessary and multiple easements through privately held land bordering NPS property would be required. Existing grading and all disturbed land will be returned to original conditions and fire hydrants will be the only visible features.

In addition to the Build Alternatives listed above, this EA will evaluate a No Build alternative.

As part of the EA scoping process for this project, I am requesting your comments and available information for the proposed project to compile sufficient data on the existing conditions within the project area. In order to adhere to the project's anticipated schedule, I am requesting your response no later than October 1, 2003 so that we can keep this project moving forward. If comments are not received from your agency within this timeframe, it is assumed that your agency has no concerns with the project moving forward. Please do not hesitate to call me directly at (757) 631-5418 or email me at cjenkins@mbakercorp.com if you have any questions regarding this request.

Sincerely,

Michael Baker Jr., Inc.

Claudette Jenkins, Ph.D.
Technical Environmental Manager

CC: Brent Elam, P.E.; Spotsylvania County – Department of Public Utilities
Michael Johnson; Chief Ranger; US Department of the Interior – National Park Service
Project File

Enclosure: Project Location Map

KEY

LE - federally listed endangered.

LT - federally listed threatened.

PE - federally proposed endangered.

PT - federally proposed threatened.

EX - believed to be extirpated in Virginia.

LE(S/A) - federally listed endangered due to similarity of appearance to a federally listed species.

LT(S/A) - federally listed threatened due to similarity of appearance to a federally listed species.

C - candidate species; the U.S. Fish and Wildlife Service has enough information to list the species as threatened or endangered, but this action is precluded by other listing activities.

SOC - species of concern; those species that have been identified as potentially imperiled or vulnerable throughout their range or a portion of their range. These species are not protected under the Endangered Species Act.

G - global rank; the species rarity throughout its total range.

G1 - extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 - very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.

G3 - either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G_T_ - signifies the rank of a subspecies or variety. For example, a G3T1 would apply to a subspecies of a species that is very rare and local throughout its range or found locally in a restricted range (G3) but the subspecies warrants a rank of T1, critically imperiled.

G_Q - The taxon has a questionable taxonomic assignment.

SPOTSYLVANIA COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>
<u>INVERTEBRATES</u>		
Alasmidonta heterodon	Dwarf wedge mussel	LE
<u>VASCULAR PLANTS</u>		
Helonias bullata ¹	Swamp pink	LT
Isotria medeoloides	Small whorled pogonia	LT

Species of Concern

<u>INVERTEBRATES</u>		
Elliptio lanceolata	Yellow lance	G3
Lasmigona subviridis	Green floater	G3
Sigara depressa	Virginia Piedmont water boatmen	G1G3
Speyeria idalia	Regal fritillary	G3
<u>NON-VASCULAR PLANTS</u>		
Sphagnum carolinianum	Carolina peatmoss	G3

¹This species has been documented in an adjacent county & may occur in this county east of I-95.

Dwarf Wedge Mussel

Alasmidonta heterodon



B. Windsor

Description - The dwarf wedge mussel has a spotty distribution in Atlantic coast drainage rivers and their tributaries from Canada to North Carolina. It is a small mussel whose shell rarely exceeds 1.5 inches in length. The shell outline is ovate or trapezoidal. The female shell is shorter, trapezoidal, and inflated in the back whereas the male shell is elongate, compressed, and ovate. The outer shell layer is brown to yellowish-brown, with greenish rays in young or pale-colored specimens. This mussel is unique in that it has two lateral teeth on its right valve and only one tooth on its left valve (opposite of all other North American mussel species).

Life History - The dwarf wedge mussel lives in shallow to deep rivers and creeks of various sizes where the current is slow to moderate. This mussel lives on muddy sand, sandy, and gravel stream bottoms that are nearly silt free. Like other freshwater mussels, this species is a filter feeder. It feeds on plankton collected from water

that is passed over its gills. Reproduction occurs sexually. Females carry eggs in their gills. During spawning, the male releases sperm into the water column and the sperm is taken into the female through the gills. The resulting larvae (known as glochidia) are released from the female into the water column and must attach to a fish host to survive. While attached to the fish host, development of the glochidia continues. Once metamorphosis is complete, the juvenile mussel drops off the fish host and continues to develop on the stream bottom. Fish hosts for this species include the mottled sculpin (*Cottus bairdi*), slimy sculpin (*Cottus cognatus*), tessellated darter (*Etheostoma olmstedii*), and johnny darter (*Etheostoma nigrum*).

Conservation - The dwarf wedge mussel was federally listed as an endangered species on March 14, 1990. The decline of this species is due to human degradation of habitat and water quality which have resulted in the continuing decline and subsequent loss of this species from previously occupied habitat. Threats to the species include agricultural, domestic, organic, and industrial pollution; impoundments that destroy habitat and cause silt deposits, low oxygen levels, and fluctuations in water levels and temperatures of the flooded area; and erosion and siltation from land clearing and construction of bridges or roads.

What You Can Do To Help - If you reside on property that borders a stream or other waterway, avoid using chemicals or fertilizers. To help control erosion and reduce runoff, maintain a buffer of natural

vegetation along streambanks. Install fencing to prevent livestock from entering streams to reduce trampling of mussels, siltation, and input of waste products. Protecting water quality is the most effective way to conserve mussels.

To find out more about the dwarf wedge mussel contact:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

References

Michaelson, D.L. and R.J. Neves. 1995. Life history and habitat of the endangered dwarf wedgemussel *Alasmidonta heterodon* (Bivalvia:Unionidae). Journal of the North American Benthological Society 14(2):324-340.

U.S. Fish and Wildlife Service. 1993. Dwarf wedge mussel (*Alasmidonta heterodon*) recovery plan. Hadley, Massachusetts.



U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
<http://www.fws.gov>
August 1999

Small Whorled Pogonia

Isotria medeoloides



© D.D. Tyler

Description - The small whorled pogonia is a herbaceous perennial orchid. It has a widely scattered distribution in the eastern United States along the Atlantic coast from Maine to Georgia with outlying occurrences in the midwest and Canada. This species has pale green, elliptical leaves, usually five or six, that grow in a single whorl at the top of a hairless, grayish-green stem. The one or two flowers per plant are yellowish-green, unscented, and form in the center of the whorl.

Life History - In Virginia, the small whorled pogonia is found in ordinary looking third-growth upland forests with an open understory and a closed canopy where the topography is typically moderately sloping or almost level. The plants are usually associated with decaying vegetative matter such as fallen trunks and limbs, leaf litter, bark, and tree roots. The pogonia is found in soils that are acidic sandy loams with low nutrient

content. The flowers appear in late April to mid-May. The small whorled pogonia reproduces primarily through self-pollination and occasionally vegetatively. It is often confused with the Indian cucumber-root (*Medeola virginiana*) and the large whorled pogonia (*Isotria verticillata*). The Indian cucumber-root has deep green leaves with a stem that is thin, hairy, and wiry. The large whorled pogonia has a reddish-purple stem and dark green leaves; its flower is reddish-purple.

Conservation - The small whorled pogonia was federally listed as an endangered species on September 10, 1982. It was reclassified as threatened on November 7, 1994. This was possible because at the time of reclassification 61% of the viable populations had been protected. The small whorled pogonia and its habitat continue to be threatened, directly and indirectly, by residential and commercial development. The upland habitat where it is found is seldom protected by federal or state laws unless it occurs on federally-owned property. Without voluntary landowner protection many pogonia populations have been and will be destroyed. Other threats to this species are collection by plant enthusiasts and browsing by white-tailed deer and invertebrates.

What You Can Do To Help - If you find a plant that appears to be the small whorled pogonia, take note of the location and photograph the plant, if possible. Please do not remove the plant!

Contact one of the following agencies for assistance:

Virginia Department of Agriculture
and Consumer Services
Office of Plant Protection
P.O. Box 1163
Richmond, Virginia 23209
(804) 786-3515

Virginia Department of
Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 3rd Floor
Richmond, Virginia 23219
(804) 786-7951

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694

References

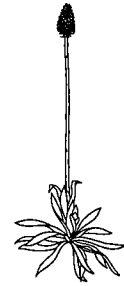
- U.S. Fish and Wildlife Service. 1992. Small whorled pogonia (*Isotria medeoloides*) recovery plan, first revision. Newton Corner, Massachusetts.
- Ware, D.M.E. 1991. Small whorled pogonia. Pages 95-97 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.



U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
<http://www.fws.gov>
August 1999

Swamp Pink

Helonias bullata



Description - The swamp pink is a perennial evergreen herb found in scattered populations from New Jersey south to Georgia. Historically, this plant was found from Staten Island, New York to the southern Appalachians. In Virginia, this lily has been documented in four counties. Its bright green, lance-shaped leaves form a basal rosette. A hollow flower stalk rises one to two feet from the center of the rosette and produces a pink or lavender flower head that consists of 30 to 50 small fragrant flowers. Few of the plants in a population produce flowers.

Life History - Swamp pink occurs in a variety of wetland habitats that include bogs, spring seeps, stream edges, wet meadows, and headwater wetlands. Sites are saturated year-round, but are rarely flooded and soils are generally neutral to acidic. Wetland habitat is easily altered through both direct and secondary disturbance. It is difficult for

seedlings to get established and they are particularly vulnerable to human foot traffic. Flowering occurs from March to May. The basal leaves turn reddish-brown in the winter and lie flat on the ground or are slightly raised. These winter leaves are often hidden by fallen leaf litter. Reproduction is primarily asexual and seed dispersal is limited.

Conservation - The swamp pink was federally listed as a threatened species on September 9, 1988 due to population decline and threats to its wetland habitats. Historically, wetland drainage and/or filling associated with urban and agricultural development have been the primary threat to this species. However, with the enactment of the federal Clean Water Act and state wetland legislation, direct habitat loss has been slowed. Secondary effects from activities such as timber clearing, land development, siltation from runoff associated with adjacent development, and agriculture have become the major threat. These activities affect the hydrologic regime and increase the release of sediments and pollution. Plant collection and soil compaction from trampling are also threats to this species.

What You Can Do To Help - If you find a plant that appears to be the swamp pink, take note of the location and photograph the plant, if possible. Please do not remove the plant!

Contact one of the following agencies for assistance:

Virginia Department of Agriculture
and Consumer Services
Office of Plant Protection
P.O. Box 1163
Richmond, Virginia 23209
(804) 786-3515

Virginia Department of
Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 3rd Floor
Richmond, Virginia 23219
(804) 786-7951

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694

References

Stevens, E.C. 1991. Swamp pink. Pages 88-89 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

U.S. Fish and Wildlife Service. 1991. Swamp pink (*Helonias bullata*) recovery plan. Newton Corner, Massachusetts.



U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
<http://www.fws.gov>
August 1999

From: "Richardson, Jeanne" <jcrichardson@deq.state.va.us>
To: <cjenkins@mbakercorp.com>
Date: 9/11/2003 2:46:04 PM
Subject: Spotsy Dept Public Utilities Brock Road Water Main EA

Ms. Jenkins,

It appears that either Alternative 1 or Alternative 2 may require a general or individual permit from the Corps of Engineers and/or DEQ VWP program. Please refer to www.deq.state.va.us for a current copy of the Joint Permit Application and the state regulations governing impacts to state waters. If you have any questions please contact me. Thank you, Jeanne

Jeanne C. Richardson

Environmental Specialist II

Virginia Department of Environmental Quality-NVRO

jcrichardson@deq.state.va.us

(703) 583-3940-Woodbridge

(540) 899-4510-Fredericksburg

(703) 583-3841-FAX

MEETING MINUTES

October 31, 2003

PROJECT: Spotsylvania County – Brock Road Water Line

ATTENDEES: Claudette L. Jenkins; Ph.D.; Michael Baker Jr., Inc.
Eric Mink; Historian – National Park Service
Ethel Eaton – Virginia Department of Historic Resources

MEETING LOCATION: Virginia Department of Historic Resources, Richmond, Virginia

GENERAL PROJECT NOTES:

The goal of today's meeting was to initiate coordination and the Section 106 Concurrence process with the Virginia Department of Historic Resources on the Spotsylvania County – Brock Road Water Line Environmental Assessment project.

Project Review:

PURPOSE & NEED

- ▶ NPS is in favor of the project and recognizes the NPS benefits of the completion of the project (the new water line will provide much needed service to the NPS Visitor Interpretation Center which currently has water quality issues with the existing well). The new water main will also provide for a fire protection connection for the park.
- ▶ Continuation of the water main will create a connected and more effective water system (improve safety/health/water quality).

Alternatives carried forward in the EA:

❖ **No-Build Alternative**

❖ **Build Alternative 1 (Brock Road Alternative– ditch line)**

- This alternative will follow the ditch line on the Northern side of the existing Brock Road connecting to the existing water mains located at the intersection of Brock Road and Judiciary Drive and the intersection of Route 627 and Brock Road. The total project consists of approximately 11,340 feet of 16-inch ductile iron pipe, of which approximately 1,400 feet will be located on NPS property. It is anticipated that the water main and related structures required to meet regulations and to provide for the proper function of the system will be located within the existing ditch line of the road a few feet off the pavement edge. Construction should not affect the existing grading and all disturbed land will be returned to original conditions. Once construction is completed, the only visible features will be the fire hydrants (hydrants will not be located within NPS property).

- The alignment for this alternative must remain in the ditch line since the roadbed under Brock Road is considered historic. Archaeological resources beneath the existing roadbed are critical issue. The NPS owns to the centerline of Brock Road.
- VDOT ROW grant is 30 feet along Brock Road
- No new utilities have been added to this area since 1981
- No known land disturbance beneath the Brock Road roadbed has been done
- New water line depth will be approximately 3-5 feet below the existing ditch line

❖ **Build Alternative 2 (Park By-pass Alternative)**

- Includes the construction of a 16-inch water main buried adjacent to Route 608 (Robert E. Lee Drive) before turning north through easements, up to Hancock Road. The alternative would then follow Hancock Road onto Brock Road to the tie-in point on Route 627. The total project consists of approximately 26,800 feet of 16-inch ductile iron pipe. Like Build Alternative 1, the construction will include related structures and facilities to be located within the existing ditch line of the road a few feet off the pavement edge, where appropriate. This alternative would avoid the National Park Service property, although two river crossings would be necessary and multiple easements through privately held land bordering NPS property would be required. Existing grading and all disturbed land will be returned to original conditions and fire hydrants will be the only visible features.

Historic Issues to consider as the project develops:

- ▶ No above ground structures are permitted within the boundaries of the park.
- ▶ No archaeologist is required to be on site during the construction of the project as long as the design remains in the ditch adjacent to the pavement edge.
- ▶ No disturbance is permitted outside of the existing ditch line adjacent to Brock Road. Contractors must place a layer of sand on the existing roadbed during construction activities to contain spoils then return the spoils back to the ditch.
- ▶ Staging areas must be evaluated with the alternatives. No staging areas permitted on NPS property.
- ▶ An approved Section 106 Concurrence/Memorandum of Agreement must be approved if historic resources will be adversely affected with the Virginia Department of Historic Resources prior to completion of the EA process.

VDHR Process for the Project as determined from today's meeting:

1. Archive Research - must first be conducted at VDHR Archives for known archaeological sites within the project area. It is assumed that no historic (architectural) structures are located within the project area limits.
2. Project Area Limits Field Review – field reconnaissance of the project area for the Environmentally Preferred Alternative Build Alternative 1 (Brock Road Alternative– ditch line) must be conducted to determine existing areas of disturbance both within the NPS Park boundary and the adjacent project area limits. All areas of existing disturbance must be noted on the project field mapping.
3. Shovel Test Plan within the NPS Park Boundary – Based on the field reconnaissance for determining existing areas of disturbance, a Shovel Test Plan (STP) must be developed for the project limits of the Environmentally Preferred Alternative Build Alternative 1 (Brock Road Alternative– ditch line) within the NPS Park Boundary. It is assumed that a 50-foot grid pattern is sufficient within those areas deemed void of disturbance. The updated project field mapping and STP must be submitted to the NPS for concurrence prior to archaeological field investigation efforts. As part of the STP, field efforts should include determining the stratigraphy within the project limits but is not required at every 50-foot interval. The information obtained as part of this effort, will be used to obtain a broad view of the project area.
4. Artifact Review – The Area of Potential Effect cannot be limited to the project limits within the Environmentally Preferred Alternative Build Alternative 1 (Brock Road Alternative– ditch line); therefore, the results obtained from Shovel Test Plan within the NPS Park Boundary will be reviewed and a decision made to determine if additional archaeological field investigation efforts are warranted outside of the park boundary within those areas deemed void of disturbance along the project limits of the Environmentally Preferred Alternative Build Alternative 1 (Brock Road Alternative– ditch line). All artifacts found within the project limits of the NPS Park Boundary are deemed the property of the NPS.
5. Additional Shovel Test Plan outside of the NPS Park Boundary (if required) - Based on the field reconnaissance and artifact review within the NPS Park Boundary, a STP must be developed for the project limits of the Environmentally Preferred Alternative Build Alternative 1 (Brock Road Alternative– ditch line) outside of the park boundary within those areas deemed void of disturbance. It is assumed that a 50-foot grid pattern is sufficient within those areas deemed void of disturbance. All artifacts found within the project limits of the NPS Park Boundary are deemed the property of the property owner. Property owners will be asked to donate any/all artifacts to the NPS that are recovered as part of this field effort.

Other Issues:

- ▶ No archaeologist is required to be on site during the construction of the project as long as the design remains in the ditch adjacent to the pavement edge. However, as part of the contractor bid documents, a phone tree will be completed and included with the documentation for the project should artifacts be uncovered during the construction process.

August 26, 2003

Mr. Keith Tigner
VDACS-Division of Plants and Pests Services
P.O. Box 1163
1100 Bank Street
Richmond, Virginia 23218

***No response received during
the scoping process for the
project.***

**RE: Spotsylvania County – Department of Public Utilities
Brock Road Water Main Environmental Assessment**

Dear Mr. Tigner,

The Spotsylvania County – Department of Public Utilities is preparing an Environmental Assessment (EA) in cooperation with the National Park Service (NPS) for the construction of a 16-inch water main addition in Spotsylvania County, Virginia (refer to the attached project location map). The referenced project will evaluate two Build Alternatives that will connect existing water mains located at the intersection of Judiciary Drive and Brock Road (Route 613) and Gordon Road (Route 627) and Brock Road in order to create a connected and more efficient County-wide water system as well as provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse Exhibit Shelter.

Build Alternative 1 includes the construction of a 16-inch water main buried along Brock Road connecting to the existing water mains located at the intersection of Brock Road and Judiciary Drive and the intersection of Route 627 and Brock Road. The total project consists of approximately 11,340 feet of 16-inch ductile iron pipe, of which approximately 3,200 feet will be located on NPS property. It is anticipated that the water main and related structures required to meet regulations and to provide for the proper function of the system will be located within the existing ditch line of the road a few feet off the pavement edge. Construction should not affect the existing grading and all disturbed land will be returned to original conditions. Once construction is completed, the only visible features will be the fire hydrants (hydrants will not be located within NPS property).

Build Alternative 2 includes the construction of a 16-inch water main buried adjacent to Route 608 (Robert E. Lee Drive) before turning north through easements, up to Hancock Road. The alternative would then follow Hancock Road onto Brock Road to the tie-in point on Route 627. The total project consists of approximately 26,800 feet of 16-inch ductile iron pipe. Like Build Alternative 1, the construction will include related structures and facilities to be located within the existing ditch line of the road a few feet off the pavement edge, where appropriate. This alternative would avoid the National Park Service property, although two river crossings would be necessary and multiple easements through privately held land bordering NPS property would be required. Existing grading and all disturbed land will be returned to original conditions and fire hydrants will be the only visible features.

In addition to the Build Alternatives listed above, this EA will evaluate a No Build alternative.

As part of the EA scoping process for this project, I am requesting your comments and available information for the proposed project to compile sufficient data on the existing conditions within the project area. In order to adhere to the project's anticipated schedule, I am requesting your response no later than October 1, 2003 so that we can keep this project moving forward. If comments are not received from your agency within this timeframe, it is assumed that your agency has no concerns with the project moving forward. Please do not hesitate to call me directly at (757) 631-5418 or email me at cjenkins@mbakercorp.com if you have any questions regarding this request.

Sincerely,

Michael Baker Jr., Inc.

Claudette Jenkins, Ph.D.
Technical Environmental Manager

CC: Brent Elam, P.E.; Spotsylvania County – Department of Public Utilities
Michael Johnson; Chief Ranger; US Department of the Interior – National Park Service
Project File

Enclosure: Project Location Map

August 26, 2003

Ms. Elizabeth Locklear
DCR - Division of Natural Heritage
1500 East Main Street, Suite 312
Richmond, Virginia 23219

**RE: Spotsylvania County – Department of Public Utilities
Brock Road Water Main Environmental Assessment**

***No response received during
the scoping process for the
project.***

Dear Ms. Locklear,

The Spotsylvania County – Department of Public Utilities is preparing an Environmental Assessment (EA) in cooperation with the National Park Service (NPS) for the construction of a 16-inch water main addition in Spotsylvania County, Virginia (refer to the attached project location map). The referenced project will evaluate two Build Alternatives that will connect existing water mains located at the intersection of Judiciary Drive and Brock Road (Route 613) and Gordon Road (Route 627) and Brock Road in order to create a connected and more efficient County-wide water system as well as provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse Exhibit Shelter.

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Sincerely,

Michael Baker Jr., Inc.

Claudette Jenkins, Ph.D.
Technical Environmental Manager

CC: Brent Elam, P.E.; Spotsylvania County – Department of Public Utilities
Michael Johnson; Chief Ranger; US Department of the Interior – National Park Service
Project File

Enclosure: Project Location Map

August 26, 2003

Mr. Bruce Williams
USACOE - Fredericksburg Field Office
1420 Central Park Boulevard, Suite 210
Fredericksburg, Virginia 22404

**RE: Spotsylvania County – Department of Public Utilities
Brock Road Water Main Environmental Assessment**

Michael Baker Jr., Inc.

A Unit of Michael Baker Corporation

770 Lynnhaven Parkway, Suite 240
Virginia Beach, Virginia 23452
Main Phone (757) 463-8770
Fax (757) 463-0503

***No response received during
the scoping process for the
project.***

Dear Mr. Williams,

The Spotsylvania County – Department of Public Utilities is preparing an Environmental Assessment (EA) in cooperation with the National Park Service (NPS) for the construction of a 16-inch water main addition in Spotsylvania County, Virginia (refer to the attached project location map). The referenced project will evaluate two Build Alternatives that will connect existing water mains located at the intersection of Judiciary Drive and Brock Road (Route 613) and Gordon Road (Route 627) and Brock Road in order to create a connected and more efficient County-wide water system as well as provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse Exhibit Shelter.

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Sincerely,

Michael Baker Jr., Inc.

Claudette Jenkins, Ph.D.
Technical Environmental Manager

CC: Brent Elam, P.E.; Spotsylvania County – Department of Public Utilities
Michael Johnson; Chief Ranger; US Department of the Interior – National Park Service
Project File

Enclosure: Project Location Map

August 26, 2003

Mr. Ronald K. Wisniewski
USDA/NRCS - Fredericksburg Service Center
Natural Resource Team Leader
4802 Carr Drive
Fredericksburg, Virginia 22408

**RE: Spotsylvania County – Department of Public Utilities
Brock Road Water Main Environmental Assessment**

Michael Baker Jr., Inc.

A Unit of Michael Baker Corporation

770 Lynnhaven Parkway, Suite 240
Virginia Beach, Virginia 23452
Main Phone (757) 463-8770
Fax (757) 463-0503

***No response received during
the scoping process for the
project.***

Dear Mr. Wisniewski,

The Spotsylvania County – Department of Public Utilities is preparing an Environmental Assessment (EA) in cooperation with the National Park Service (NPS) for the construction of a 16-inch water main addition in Spotsylvania County, Virginia (refer to the attached project location map). The referenced project will evaluate two Build Alternatives that will connect existing water mains located at the intersection of Judiciary Drive and Brock Road (Route 613) and Gordon Road (Route 627) and Brock Road in order to create a connected and more efficient County-wide water system as well as provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse Exhibit Shelter.

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Sincerely,

Michael Baker Jr., Inc.

Claudette Jenkins, Ph.D.
Technical Environmental Manager

CC: Brent Elam, P.E.; Spotsylvania County – Department of Public Utilities
Michael Johnson; Chief Ranger; US Department of the Interior – National Park Service
Project File

Enclosure: Project Location Map

August 26, 2003

Mr. Kevin Curling
Virginia Marine Resources Commission
2600 Washington Avenue
P.O. Box 756
Newport News, Virginia 23607***No response received during
the scoping process for the
project.*****RE: Spotsylvania County – Department of Public Utilities
Brock Road Water Main Environmental Assessment**

Dear Mr. Curling,

The Spotsylvania County – Department of Public Utilities is preparing an Environmental Assessment (EA) in cooperation with the National Park Service (NPS) for the construction of a 16-inch water main addition in Spotsylvania County, Virginia (refer to the attached project location map). The referenced project will evaluate two Build Alternatives that will connect existing water mains located at the intersection of Judiciary Drive and Brock Road (Route 613) and Gordon Road (Route 627) and Brock Road in order to create a connected and more efficient County-wide water system as well as provide a solution for the NPS to improve the existing degraded water quality at the Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse Exhibit Shelter.

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Sincerely,

Michael Baker Jr., Inc.Claudette Jenkins, Ph.D.
Technical Environmental ManagerCC: Brent Elam, P.E.; Spotsylvania County – Department of Public Utilities
Michael Johnson; Chief Ranger; US Department of the Interior – National Park Service
Project File

Enclosure: Project Location Map



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405



February 18, 2004

Dr. Ethel Eaton
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Dear Dr. Eaton:

You may recall that on October 31, 2003, you met with me and Claudette Jenkins of Michael Baker Jr., Inc. to discuss Spotsylvania County's proposed Brock Road Water Line project. During the course of our meeting, we discussed strategies for archaeological testing of the Brock Road Alternative, which proposed having the water line follow an existing ditch line on the northern side of the Brock Road, thus running through National Park Service lands on the Spotsylvania Battlefield.

On February 5, 2004, I met with Ms Jenkins and Dr. Matthew Laird of James River Institute for Archaeology, Inc. and we walked the project area. Based upon our site visit and discussions, Dr. Laird has formulated a testing strategy, which I have included with this letter. The plan has already been reviewed by Dr. Douglas Campana, of the National Park Service's Northeast Region Archaeology Program and has approved it. We are now asking for your review. I'm sure you will find it in compliance with what we discussed in your office back in October. If you concur with the plan, please sign on the space provided and return the original signature sheet and document to me, keeping a copy for your files.

If you have any questions, please feel free to contact me.

Sincerely,

Eric J. Mink
Historian and Cultural Resources Manager



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405



May 11, 2004

Doug Campana
Rte. 23 and North Gulph Road
Valley Forge NHP
Valley Forge, PA 19481

Doug:

Please find enclosed a copy of the report *Phase I Archaeological Survey of Approximately 5,000 Linear Feet for the Brock Road Water Main Environmental Assessment Project Build Alternative 1 Spotsylvania County, Virginia*. The report was prepared by James River Institute for Archaeology, Inc. and summarizes the investigations completed by JRIA for a Spotsylvania County waterline being proposed to run through NPS property on the Spotsylvania Court House Battlefield.

Please take a look at the report and provide me with your comments. In particular, I am interested in whether you concur with the findings, and whether the report meets NPS requirements and the Secretary of the Interior standards.

Sincerely,

Eric J. Mink
Historian and Cultural Resources Manager



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405



May 24, 2004

Dr. Ethel Eaton
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Dear Dr. Eaton:

Please find enclosed two copies of the draft report entitled *Phase I Archaeological Survey of Approximately 5,000 Linear Feet for the Brick Road Water Main Environmental Assessment Project Build Alternative 1 Spotsylvania County, Virginia*. The report was prepared by James River Institute for Archaeology, Inc. (JRIA) and summarizes the investigations completed by JRIA for a Spotsylvania County waterline being proposed to run through NPS property on the Spotsylvania Court House Battlefield.

The results of the testing identified one previously unrecorded site (44SP460). Dr. Laird's assessment of this site is that it has been disturbed through previous road/ditch construction. His recommendation is that this site "does not meet the criteria for inclusion in the National Register, and that no further testing in this area is warranted." (p.24) Furthermore, Dr. Laird suggests a pedestrian survey be conducted along the corridor of the proposed waterline that is outside NPS boundaries. You may remember that we discussed this strategy at our October 31, 2003 meeting at DHR offices.

A copy of this report was forwarded to Dr. Douglas Campana of the Northwest Region Archaeology Program in Valley Forge. Dr. Campana concurs with the findings and recommendations.

Please review the report at your earliest convenience. If you concur with the findings and recommendations, the results of the pedestrian survey will be included in the next draft of the report and I will make sure to forward copies to you. Should you have any comments or questions, please feel free to contact me.

Sincerely,

Eric J. Mink
Historian and Cultural Resources Manager

Concurrence with the findings and recommendations of the report entitled *Phase I Archaeological Survey of Approximately 5,000 Linear Feet for the Brick Road Water Main Environmental Assessment Project Build Alternative 1 Spotsylvania County, Virginia* (2004).

Virginia State Historic Preservation Officer or Designee



United States Department of the Interior



IN REPLY REFER TO:

NATIONAL PARK SERVICE

Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405

July 1, 2004

Dr. Ethel Eaton
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Dear Dr. Eaton:

Under cover of letter dated May 24, 2004, I forwarded to your office a draft copy of a report entitled *Phase I Archaeological Survey of Approximately 5,000 Linear Feet for the Brock Road Water Main Environmental Assessment Project Build Alternative 1 Spotsylvania County, Virginia*. The report was prepared by James River Institute for Archaeology, Inc. and is the county's effort to identify potentially eligible archaeological sites along the corridor for a proposed Spotsylvania County waterline being proposed to run through NPS property on the Spotsylvania Court House Battlefield.

Since the 30-day comment period has expired, and we have not received any comments from your office, we will assume that you concur with the report's findings and recommendations.

We will send our comments to JRIA and when we receive copies of the final report I will make sure that two copies are sent to your office for filing.

Sincerely,

Eric J. Mink
Historian and Cultural Resources Manager