

**U.S. Department of the Interior
National Park Service
Fredericksburg & Spotsylvania National Military Park
Fredericksburg, Virginia**

**Finding of No Significant Impact
Brock Road Water Main Improvements Project
September 26, 2005**

Introduction

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.

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.

An environmental assessment (EA) was released on March 4, 2005 for a 60-day public comment period in accordance with the National Environmental Policy Act (NEPA) and NPS Director’s Order 12 (DO 12). The EA described the goals of the project, analyzed the effects of each alternative on the environment, and solicited public comment on the proposed action.

NPS Selected alternative

The NPS Selected alternative involves three components: (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. 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 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. The County has determined that the Spotsylvania County Courthouse area and the 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 residence 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.

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. The NPS Selected alternative is described in detail on pages 12-13 of the environmental assessment.

Other Alternatives Considered

No Action Alternative

The environmental assessment prepared for this project analyzed the NPS Selected alternative described above, and a no-action alternative. The action alternative was developed to (1) improve hydraulic reliability, (2) to improve fire flow hydraulics, and (3) to improve water quality within a 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 Selected 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.

Environmentally Preferred Alternative

In accordance with NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision Making*, the National Park Service is required to identify the "Environmentally Preferred Alternative" in all environmental documents, including environmental assessments. 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 Selected 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.

Why the NPS Selected alternative will not have a Significant Effect on the Environment

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. Consideration of effects described in the EA and a finding that they are not significant is a necessary and critical part of this Finding of No Significant Impact (FONSI) as required by the Code of Federal Regulations (40 CFR 1508.13). Mitigation measures described in the EA and incorporated into the NPS Selected alternative, including sediment and erosion control, are generally required by laws, regulations, or NPS policies and are adopted by this decision. Soil erosion and sediment control measures consistent with the Virginia Erosion and Sediment Control Handbook will be implemented during construction operations including the use of silt fencing, soil stabilization and construction entrances to control off-site sediment run-off. The NPS would develop an erosion and sedimentation plan to be implemented by the contractor.

As defined in 40 CFR Section 1508.27 significance is determined by examining the following criteria:

- (1) Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an EIS.
- (2) The degree to which public health and safety are affected.
- (3) Any unique characteristics of the area (proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains, and so forth).
- (4) The degree to which impacts are likely to be highly controversial.
- (5) The degree to which the potential impacts are highly uncertain or involve unique or unknown risks.
- (6) Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.
- (7) Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects. Significance cannot be avoided by terming an action temporary or breaking it down into small component parts.
- (8) The degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources.
- (9) The degree to which an action may adversely affect an endangered or threatened species or its habitat.
- (10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an Environmental Impact Statement (EIS)

None have been identified. As described in the EA, the NPS Selected Alternative would have negligible to minor adverse impacts on Public Safety, Socioeconomics, Natural and Physical Resources and Cultural Resources.

Overall, the environmental impacts associated with construction of Brock Road Water Main Improvements Project at the Fredericksburg & Spotsylvania National Military Park located in Fredericksburg, Virginia have been avoided or minimized to the greatest extent practicable. In summary, implementation of the selected alternative will have no significant negative impacts to the natural or human environment. Based on the lack of significant archaeological finds, no further archaeological study is recommended for the site.

Degree of effect on public health or safety

The NPS Selected 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. 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.

No hazardous materials are located within the project areas.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

As described in the environmental assessment, Fredericksburg and Spotsylvania National Military Park is a site of significant historic importance. The archaeological testing and pedestrian survey conducted along the Brock Road Alternative within NPS property 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. 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.

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.

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.

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.

There would be no impact to floodplains since the proposed action area is not within the 100-year floodplain.

The NPS Selected alternative will have no to negligible long-term effects that will not impair soils, topography, prime farmlands, wetlands, or ecologically critical areas.

Degree to which effects on the quality of the human environment are likely to be highly controversial

As measured by public comment, this project is not likely to be highly controversial. During the 60-day public review and comment period, no public comments were received. The Commonwealth of Virginia, DEQ concurred that the proposed activity is consistent with the Virginia Coastal Resources Management Program.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

No highly uncertain, unique, or unknown risks were identified during preparation of the EA or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

The NPS Selected alternative neither establishes NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration. Future projects would be evaluated through additional, project-specific planning processes that incorporate requirements of NEPA and NPS policies.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

Impacts to Public Safety, Socioeconomics, Natural and Physical Resources and Cultural Resources were identified in the NPS Selected alternative in the EA. As described in the EA, cumulative impacts were determined by combining the impacts of the NPS Selected alternative with other past, present, and reasonably foreseeable future actions. The negligible, minor, and moderate impacts of other past, present, and reasonably foreseeable future actions on natural, cultural, and socioeconomic resources, in conjunction with the impacts of the NPS Selected alternative, would result in both beneficial and adverse cumulative impacts ranging in intensity from negligible to minor.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources

As described in the environmental assessment, the FSNMP required consultation with the Advisory Council and State Historic Preservation Office is complete in compliance with Section 106 of the National Historic Preservation Act. The archaeological testing and pedestrian survey conducted along the Brock Road Alternative within NPS property 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.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

According to the U.S. Fish and Wildlife Service, the Virginia Department of Game and Inland Fisheries, the Virginia Department of Conservation and Recreation Division of Natural Heritage, and information in NPS documents and files, no special status species or critical habitat would be affected by the actions proposed in the EA.

Whether the action threatens a violation of federal, state, or local environmental protection law

The NPS Selected alternative violates no federal, state, or local environmental protection laws.

Impairment of Park Resources or Values

In addition to reviewing the list of significance criteria, the NPS has determined that implementing the NPS Selected alternative will not constitute an impairment of park resources and values. This conclusion is based on a thorough analysis of the impacts described in the EA, agency and public comments received, and the professional judgment of the decision-maker in accordance with *NPS Management Policies 2001*. As described in the EA, implementation of the NPS Selected alternative would not result in major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of FRSP; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal by the park.

Public Involvement

An Environmental Assessment, prepared in accordance with NEPA and CEQ regulations, was made available for public review and comment for 60 days and has been distributed to a variety of interested individuals, agencies, and organizations. This EA was available on the Internet at <http://www.nps.gov/FSNMP> and at local libraries. 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 State Historic Preservation Office is complete in compliance with Section 106 of the National Historic Preservation Act. The archaeological testing and pedestrian survey conducted along the Brock Road Alternative within NPS property 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.

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 selected 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 for each of the enforceable regulatory programs of Virginia's Coastal Resources Management Program. These agencies indicated that the project would not impact regulated resources.

Finding of No Significant Impact

The NPS Selected alternative does not constitute an action that normally requires preparation of an EIS and will not have a significant effect on the natural, cultural, or human environment. Adverse environmental impacts that could occur are negligible, minor, or moderate in intensity. There are no significant impacts on public health, public safety, threatened or endangered species, historic properties either listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified during the impact assessment. Implementing the action will not violate any federal, state, or local environmental protection laws.

Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Recommended:

Russell P. Smith	Date
Superintendent, Fredericksburg & Spotsylvania National Military Park	

Approved:

Mary Bomar	Date
Acting Regional Director, Northeast Region	