

George Washington Boyhood Home at Ferry Farm

Site Treatment Plan

Environmental Assessment

Public Review - October 2013



National Park Service
U.S. Department of the Interior



THE GEORGE WASHINGTON FOUNDATION

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

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Stafford County, Virginia
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Proposed Action: Located on the Rappahannock River, across from Fredericksburg, Virginia, the George Washington Boyhood Home Site at Ferry Farm (Ferry Farm) in Stafford County, Virginia is one of the three primary domestic residences of George Washington. It is the place where he spent his youth and young adulthood. The National Park Service (NPS) holds a conservation easement over the site; however, the property is owned and managed by the George Washington Foundation (GWF). As such, the actions described in this Environmental Assessment (EA) are the result of collaboration between the GWF and the NPS. The proposed action adheres to the conditions of the NPS conservation easement, as described in Public Law 105-355 (Title V, Section 509, 112 Statute 3264), dated November 6, 1998. At Ferry Farm, the GWF provides visitors with educational and interpretive opportunities to examine what Washington's life might have been like on the farm. Ferry Farm houses a sizeable collection of known and unknown archeological resources related to Native American and colonial history, including evidence of the site's use during the Civil War. Continued archeological investigations at Ferry Farm have provided a more accurate understanding of the Washington home site, including more precise locations of some of the historic structures. To improve the visitor experience at Ferry Farm, the GWF is proposing several changes, including the replacement of historic Washington-era landscape features, enhanced vehicular and pedestrian circulation, a visitor center, an administration building, and a maintenance building. Enhanced access, circulation, and parking, including a relocated site entrance and extension of the pedestrian trail network, would both improve visitor flow around the site and support access to new administrative and visitor facilities.

The purpose of the proposed action is to ensure the stewardship of cultural resources, ecological and operational sustainability, and support an authentic, relevant, and inspiring interpretive visitor experience. To accomplish this, the GWF must enhance interpretation of the site resources and find means of effectively and accurately conveying to the visitors the known characteristics and features of the Washington-era landscape. The proposed action is needed because the site does not adequately reflect the historic Washington-era setting that once existed there; does not possess proper visitor facilities; and does not provide the GWF with enough administrative or maintenance space. As the site of George Washington's boyhood, Ferry Farm played an integral role in the formative years of his life and helped shape young George Washington into the man he would become. Despite its national significance, the site does not currently reflect the conditions that existed at Ferry Farm during the Washington era.

Implementation of the preferred alternative (Alternative D) would result in long-term, beneficial impacts on cultural landscapes, visual resources, visitor use and experience, and operations and infrastructure; long-term, negligible, adverse impacts on wetlands and streams; long-term, minor, adverse impacts on soils and topography, wildlife and wildlife habitat, Chesapeake Bay resources, and archeology; and long-term, moderate, adverse impacts on vegetation and historic structures. This document 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 (DO) 12 and its handbook: Conservation Planning, Environmental Impact Analysis, and Decision-making.

For Further Information Contact: Lucy Lawliss
Superintendent
Fredericksburg & Spotsylvania National Military Park
120 Chatham Lane
Fredericksburg, VA 22405
(540) 372-3032

Note to Reviewers and Respondents: The review period for this Environmental Assessment will end 60 days from release to the public. If you wish to comment on this Environmental Assessment, you may post comments electronically at <www.parkplanning.nps.gov> or mail comments within 60 days from the date of this document to the name and address above. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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ACRONYMS AND ABBREVIATIONS

ADA – Americans with Disabilities Act
BMPs – best management practices
CCB – Center for Conservation Biology
CEQ – Council on Environmental Quality
CWA – Clean Water Act
CZMA – Coastal Zone Management Act
CZMP – Coastal Zone Management Program
DCR – Virginia Department of Conservation and Recreation
DCR-DNH – Virginia Department of Conservation and Recreation – Division of Natural Heritage
DEQ – Virginia Department of Environmental Quality
DGIF – Virginia Department of Game and Inland Fisheries
DO – Director’s Order
EA – Environmental Assessment
EPA – Environmental Protection Agency
FEMA – Federal Emergency Management Agency
Ferry Farm – The George Washington Boyhood Home Site at Ferry Farm
FTE – full-time equivalent
GPS – global positioning system
GWF – George Washington Foundation
LID – low impact development
NAVD – North American Vertical Datum
NEPA – National Environmental Policy Act of 1969
NHL – National Historic Landmark
NMP – National Military Park
NOAA – National Oceanic and Atmospheric Administration
NPS – National Park Service
NRCS – Natural Resources Conservation Service
PA – programmatic agreement
RMAs – resource management areas
RPAs – resource protection areas
SHPO – State Historic Preservation Officer
USACE – U.S. Army Corps of Engineers
USCG – U.S. Coast Guard
USFWS – U.S. Fish and Wildlife Service
VCP – Virginia Coastal Zone Management Program
VDOT – Virginia Department of Transportation
VSMP – Virginia Stormwater Management Program

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INTRODUCTION: PURPOSE AND NEED

BACKGROUND

Located on the Rappahannock River across from Fredericksburg, Virginia, the George Washington Boyhood Home Site at Ferry Farm (Ferry Farm) in Stafford County, Virginia is one of the three primary domestic residences of George Washington and is the place where he spent his youth and young adulthood. Although the site has been known by several other names, including the Rappahannock River plantation, the Boyhood Home Property, or the Boyhood Home Site, the most widely used name today is Ferry Farm. The history of this name does not date back to the Washington era; however, it is believed that Union soldiers referred to the site as Ferry Farm during the Civil War, suggesting that the name has been in use at least since the middle of the 19th century (Warren 1999). The name Ferry Farm is likely the result of the ferries that formerly operated between the site and Fredericksburg from the early 18th century through the middle of the 19th century (GWF 2002).

The National Park Service (NPS) holds a conservation easement over the site; therefore, approval of the proposed project is considered a federal undertaking, pursuant to the National Environmental Policy Act of 1969 (NEPA). However, the property is privately owned and managed by the George Washington Foundation (GWF). As such, the actions described in this Environmental Assessment (EA) are the result of collaboration between the GWF and the NPS. The GWF acquired the property from the county in 1996 as a result of public outcry from what was seen as an imminent threat by commercial development. Specifically, 24 acres of Ferry Farm, including the location of the Washington home farm, were to be developed into a Wal-Mart shopping plaza.

The mission of the GWF is to “enhance the public understanding and appreciation of the lives, values, and legacies of George Washington, Fielding and Betty Washington Lewis, and their families” (GWF 2011a). At Ferry Farm, the GWF provides visitors with educational and interpretive opportunities to examine what Washington’s life might have been like on the farm. A considerable collection of archeological resources related to what is known as the Washington Period (1738-1772) and the Civil War Period (1862-1864) is currently housed at Ferry Farm. In addition to colonial and Civil war history, archeological finds suggest Native American presence at the site between 10,000 BC and 1500 AD. As archeological investigations reveal more information about life on the farm, the setting and environment

in which Washington and his family lived can be more accurately presented. This is especially challenging as the Fredericksburg area continues to grow. As described in the “History and Significance of Ferry Farm” section below, the site is listed on the National Register of Historic Places (National Register) as a nationally significant historic landmark (NPS 2000). A timeline outlining the history of Ferry Farm between 1666 and present-day is included with this EA as appendix D.

To improve the visitor experience in this developing environment, the GWF and the NPS propose to rehabilitate the historical landscape, including changes such as the interpretive development of the historic Washington Home Farm landscape and structures, a visitor center, an administration building, and a maintenance building. Proposed interpretive features include structures and landscapes representative of what would have existed during the Washington family’s time on the farm and discovery areas that would demonstrate different aspects of life during that period. Interpretive activities would be focused on sharing the site’s unique history in a way that makes it accessible, relevant, and inspiring to a broad spectrum of visitors. Support of a holistic interpretive experience is envisioned through all visitor activities, including logistical support and services. The rehabilitated landscape and features would be supported by enhanced visitor access, circulation, and parking, including a relocated site entrance and an expansion of the pedestrian trail system.

This EA evaluates four alternatives: a no-action alternative and three action alternatives. These alternatives have been developed by the GWF in close coordination with the NPS. The EA analyzes the potential impacts these alternatives would have on the natural, cultural, and human environment. This document has been prepared in accordance with NEPA, as amended; regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9); and NPS Director’s Orders (DO) 12: *Conservation Planning, Environmental Impact Analysis, and Decision-Making*. This EA also serves as compliance with the Coastal Zone Management Act of 1972. A Federal Consistency Determination is attached to this EA as appendix C. The proposed alternatives and associated impact analysis also have been developed in accordance with DO 28: *Cultural Resource Management Guideline; A Guide to Cultural Landscape Reports: Comments, Process, and Techniques*; and *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Compliance with section 106 of the National Historic Preservation Act (NHPA) is being completed separately from the NEPA process, pursuant to the *Programmatic Agreement between the United States Department of the Interior National Park Service, the George Washington Foundation, and the Virginia Department of Historic Resources for Treatment of the Site of George Washington’s Boyhood Home (“Ferry Farm”) National Historic Landmark Stafford County, Virginia*. The Programmatic Agreement (PA) implements procedures for compliance with section 106 of the NHPA and its implementing regulations outlined at 36 CFR Part 800. The PA is included in appendix B. Applicable cultural resource information, including potential impacts associated with the proposed alternatives, is documented in this EA but does not constitute section 106 compliance.

PURPOSE AND NEED FOR ACTION

The proposed treatment of this National Historic Landmark (NHL)—with its critical archeological resources and historic landscape—has been the product of intense study. Years of archeological investigation and documentary research have shed important new light on the life and world of young Washington, his mother Mary, and the physical world in which they lived. The purpose of this proposal for a rehabilitation of the historic landscape is to help communicate to the public the essential elements of the place that more than any other shaped the nation’s first president. In addition, the purpose of taking action at this time is to ensure the stewardship of cultural resources and ecological and operational sustainability; and support an authentic, relevant, and inspiring interpretive visitor experience. Action is needed because the site does not adequately reflect the historic Washington-era setting that once existed; does not provide sufficient protection of natural and cultural resources reflective of the Washington era; does not possess proper visitor facilities; does not provide adequate interpretation of George Washington’s youth at Ferry Farm; and does not provide the GWF with enough administrative or maintenance space. Since the 1990s, informal input from the interested community has consistently called for expanded interpretation of Washington history at Ferry Farm. Extensive archeological investigation and scholarly study since 1990 have yielded a wealth of knowledge about the Washington era. It is anticipated that continued study of Ferry Farm would greatly expand our understanding of the history of this site.

In 2000, Ferry Farm was designated a National Historic Landmark because:

- it has a “unique association with George Washington, a figure of transcendent importance in U.S. history”;
- “the site contains archeological resources that have yielded important new information about the material circumstances of Washington’s life, and have demonstrated potential to yield additional data that will affect the scholarly understanding of Washington’s early years”; and
- it has a “specific association with stories and traditions related to George Washington’s youth that have become a fundamental part of the American national culture and that illustrate ‘a great idea or ideal of the American people.’” (Warren 1999)

As the site of his boyhood, Ferry Farm played an integral role in the formative years of George Washington’s life and helped shape young George Washington into the man he would become. Ferry Farm also is home to a variety of myths and legends related to Washington’s life, such as the tale of Washington chopping down the cherry tree. It is where Washington began developing his professional surveying, horsemanship, and soldiering skills. More importantly, his proximity and accessibility to the city and society of Fredericksburg lead to and aided in Washington’s pursuit of self-improvement and refinement. The site’s location along the Ferry Road (see figures 1 and 2) and access to commerce using the river allowed Washington to meet travelers from different regions. Washington’s encounters were pivotal to his development, providing him with a growing knowledge about the region and the world. In particular, he developed a strong understanding for how the region and the world are connected as well as gaining knowledge about regional settlement patterns. Washington also developed his own sense of adventure. These conditions and experiences all led Washington down the path to become our country’s first president, and to lead the nation to independence.

Despite its NHL designation, the site does not currently reflect the conditions that existed at Ferry Farm during the Washington era. None of the buildings that existed during Washington's life remain, nor are they accurately delineated on site. The structures that do exist on site do not reflect Washington's time at the property. For the purposes of this EA, the portion of the site that was formerly occupied by the Washington family farm (i.e., where the highest concentration of Washington era artifacts has been found) is referred to as the historic Home Farm Site. The historic management zone, introduced in chapter 2 of this EA, encompasses a larger area, including portions of the Ferry Farm related to the Washington era and the Civil War, as well as other areas pertinent to Ferry Farm's historic uses. As part of the rehabilitation approach to the landscape, and in order to improve the understanding and interpretation of Washington's life, the structures within the historic core not associated with Washington's tenure should be removed and new interpretive landscape features, including structures, should be built to present what is known about the historical attributes of the property and provide opportunities for educational and interpretive programs.

The land use at the site also is inconsistent with Washington's time. The existing garden does not represent the size or volume of agriculture that the Washington's maintained. The agricultural practices of Washington's time also resulted in the removal of much of the surrounding vegetation. Today however, this vegetation is needed to screen the site from the developing community and to protect remaining archeological resources. Areas that do not have adequate vegetation, such as the entrance to the site, require additional vegetative screening. Without these plantings, the visual intrusions created by the surrounding community further deprive the site of its historical setting. Ferry Farm contains archeological resources that represent an important body of physical evidence for the study of Washington's early years. Continued stewardship of both natural and cultural resources is vital to protect these resources and support ongoing archeology and future discovery of artifacts that could further the understanding of George Washington's youth and the subsequent use of the site during the Civil War.

Both natural and cultural resources at Ferry Farm have contributed to an understanding of the site's rich history. Stewardship, of these resources, including interpretation and protection, is vital to fully capture the essence of the Washington era and ensure future generations of visitors have the opportunity to be educated about the site's significance. In particular, the city of Fredericksburg; the Chesapeake Bay watershed, which includes the Rappahannock River and natural springs that feed into the river; and Ferry Road all played an important part in the daily life of the Washington family and must be protected. These resources represent sources of recreation and transportation, as well as food and medicinal uses. The spring near the northern border of Ferry Farm, within the ravine, has been referred to as "Medicine Springs" due to its historical medicinal value. Recreational activities for Washington, outside of the farm, included dance and fencing lessons in Fredericksburg, just a short ferry ride away.

In addition to interpreting Washington's life, the GWF also must find means of educating the public about other regional events that shaped the history of Ferry Farm and our nation. These events include European settlers interacting with Native Americans; the role of slavery in the developing nation; and the Civil War. The current lack of adequate facilities makes this interpretation difficult.

New visitor, administrative, and maintenance facilities are needed at Ferry Farm to meet the educational and interpretive needs of the site. The existing visitor center serves a dual role as the primary visitor contact point and as administrative offices. It was not originally designed for either activity. As a result, programs offered to the public are limited as are the administrative offices. Curatorial choices and

opportunities also are limited because of the lack of climate control within the building. Climate control is needed to support appropriate storage and display of some types of collections; therefore, prohibiting the GWF from displaying such artifacts within the visitor center. The artifacts and other displays currently presented at the visitor center are comprised only of elements that are not threatened by the lack of climate control within the building. The age and use of the visitor center has created inefficient and potentially unsafe conditions as the building's utilities continue to fail and its structural integrity is threatened. Additionally, the current space for maintenance work and storage is inadequate, requiring vehicles and materials to be stored on the historic landscape. The existing maintenance facility is far from many of Ferry Farm's other structures or resources/points of interest, reducing the efficiency of the operation. In order to improve the maintenance operation and remove it from the historic core of Ferry Farm, new facilities are required.

Based on the purpose and need described above, information contained within related planning studies, and coordination between the NPS and the GWF, the objectives for the proposed action are as follows:

- enhance the site's most unique and important feature (illustration of the setting and conditions of George Washington's formative years)
- make the historic setting meaningful to lay visitors
- educate and inspire visitors with lessons of George Washington's youth
- provide valuable cultural and educational services that attract visitors to support the administration and stewardship of the site for the long term
- develop facilities to support the interpretive experience, as well as the administration of the site and the GWF
- use period construction techniques, to the extent possible (for safety purposes, modern systems such as fire protection; security; and heating, ventilation, and air-conditioning would be used as appropriate)

STUDY AREA DESCRIPTION

Ferry Farm occupies approximately 77 acres along the Rappahannock River in Stafford County, Virginia. The city of Fredericksburg is directly across the river from Ferry Farm. The site is bound by the Rappahannock River to the west, Virginia State Route 3 (King's Highway) to the east, and the Embrey Tract (another historic property owned by the GWF) to the north (figure 1). The southern portion of the property is bisected by the Route 3 East-West Connector (East-West Connector). The southern boundary is further defined by commercial development. Although the study area is bound by the East-West Connector to the south, Ferry Farm itself is not defined by this boundary. The Ferry Farm easement includes an undeveloped parcel adjacent to the south of the East-West Connector (see figures 1 and 2). However, because this parcel is not contiguous with (separated by the East-West Connector) or accessible from the rest of the site and the proposed action would not impact this undeveloped parcel, for the purposes of this EA the study area does not extend further south than the East-West Connector.

Ferry Farm is accessed directly from King's Highway via a gravel driveway connecting the state road to the visitor center (figure 2). Much of the site is visible from the driveway. Conversely, much of the development surrounding the entrance is visible from the site. A network of trails connects the visitor

center to the site's interpretive garden, education buildings, restrooms, and the 19th century surveyor's office (1870s agricultural building), which are in the central portion of the site. The trail system also leads to the lower portion of the site, along the Rappahannock River. The historic natural springs and Ferry Road are located near the river. A ravine, located just south of the Ferry Road, separates the northern portion of the site from the rest of Ferry Farm. To the south, a trail system leads to a cleared field that extends south until it meets the East-West Connector.

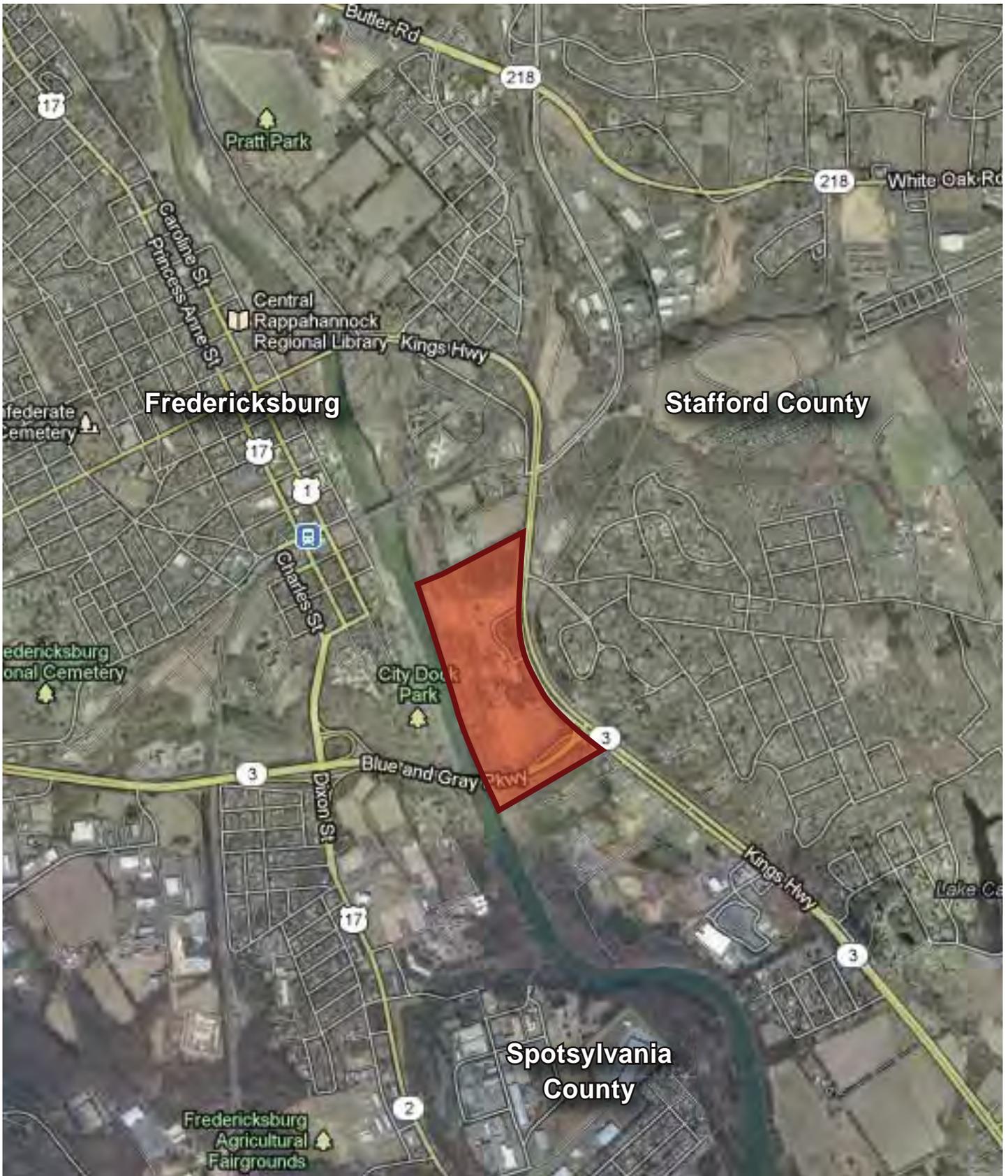
For the purposes of this document, the site is divided into six primary geophysical resource areas: the upper terrace, escarpment, lower terrace and river shoreline, ravine, middle terrace, and the Rappahannock River (figure 3). The upper terrace, characterized by open fields, extends across the majority of the site and would have been familiar to Washington during his residency at Ferry Farm. Land traces, shovel tests, and archeological findings confirm that the north-central portion of the upper terrace, which is bounded by the ravine to the north, the middle terrace to the south, King's Highway to the east, and the escarpment to the west, has great potential for containing artifacts from the Washington era.

The topography between the upper and lower terrace (the escarpment) appears to have been relatively stable since the Washington era. Although it is believed that the escarpment was deforested, open, and likely used for grazing during the Washington era, the majority of the escarpment is currently vegetated with medium-aged deciduous trees. A 250-foot wide section of the escarpment located west of the location of the Washington home is currently absent of trees to the river's edge, and vegetated with tall grass. Scattered along the toe of the escarpment are a series of small, non-tidal wetlands that are hydrologically fed by lateral groundwater seeps.

The lower terrace is largely wooded and is within the floodplain of the Rappahannock River. Beginning in 1871, the river bottom was dredged by the U.S. Army Corps of Engineers (USACE), and the sandy river-bottom soils were deposited on the left downstream bank of the river, making it substantially narrower than it was in the 18th century. A wooden retaining wall was constructed along the new bank to contain the soil. Despite the river narrowing, the lower terrace incurs seasonal flooding. Similar to the escarpment, the floodplain is predominantly covered with deciduous forest, with the exception of the area directly to west of the Washington home location, which is vegetated with meadow grasses and old field succession shrubs.

The middle terrace is at the south end of the site and is bound by the upper terrace to the north, the East-West Connector to the south, the lower terrace to the west, and King's Highway to the east. The middle terrace was historically level with and part of the upper terrace and is thought to have been planted with agricultural crops during the Washington era. However, in the early 1960s, the middle terrace was used as a sand and gravel quarry to support development of the East-West Connector. Excavations in this area have severely compromised any natural and cultural resources and altered the topography of the site, leaving a bowl-shaped depression. As such, this portion of the site is less likely to contain archeological resources from the Washington or Civil War periods. In 2005, the middle terrace was vegetated with meadow grasses and broadleaf herbaceous plants. Today, this meadow supports a variety of wildlife, including many species of birds.

The ravine at the north end of the site creates a natural edge to the upper terrace. As the only source of year-round fresh water in the area, this feature was important during both the Washington and Civil War periods. The Rappahannock River itself is brackish (contains both fresh and salt water) and not suitable for consumption. Road traces and remnants indicate that the ravine provided a connection point between King's Highway and the Rappahannock River from the colonial period through the 19th century. This area is currently forested.

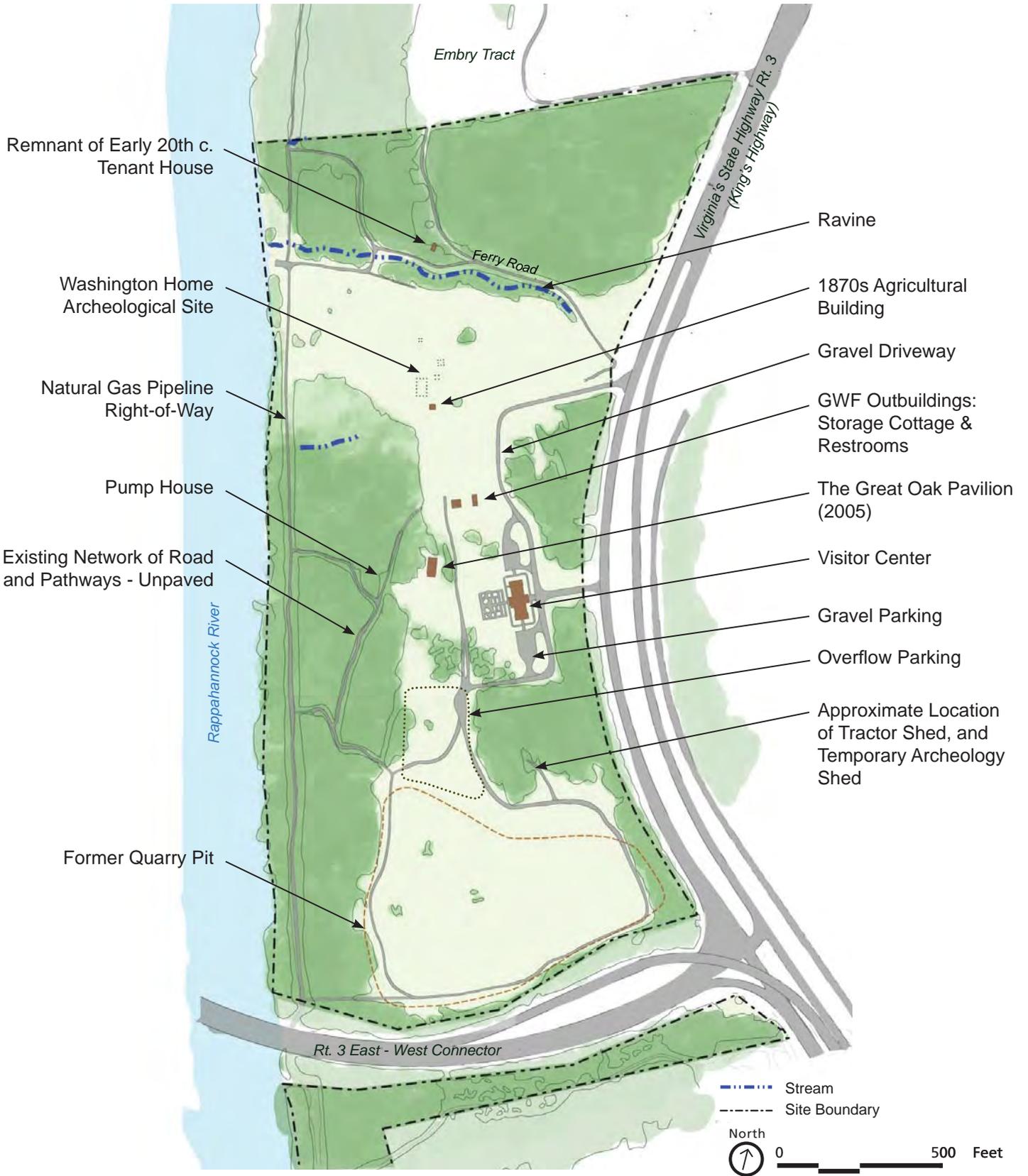


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Figure 1
REGIONAL OVERVIEW

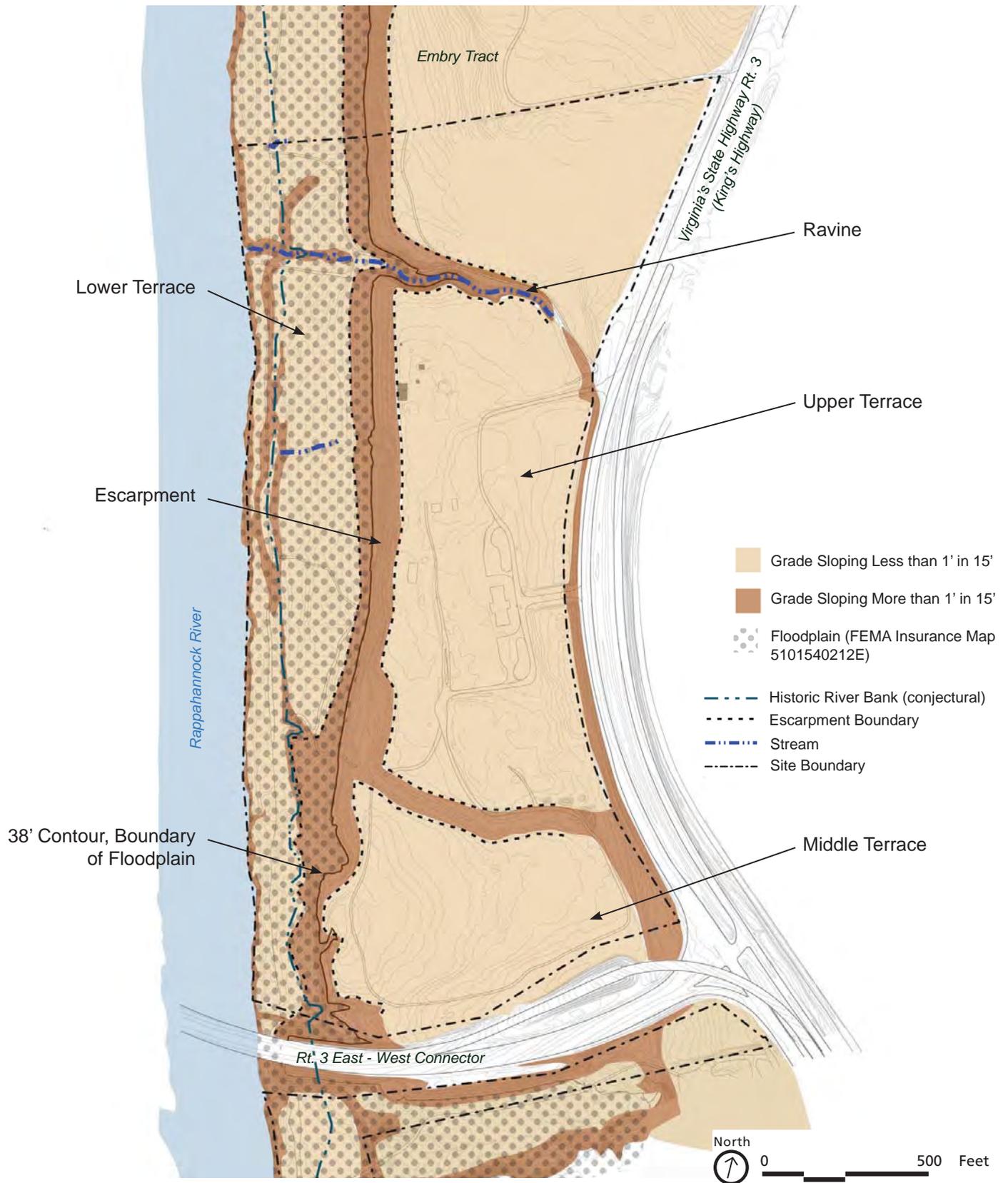


George Washington Boyhood Home Site at Ferry Farm



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Figure 2
PROJECT AREA



George Washington Boyhood Home Site at Ferry Farm

Figure 3
EXISTING NATURAL FEATURES



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The Rappahannock River was critical to the development of the Fredericksburg area and for colonial life on Ferry Farm. Although its shorelines were modified beginning in 1871, the river remains a defining feature of the site and represents the site's connection to the larger world.

HISTORY AND SIGNIFICANCE OF FERRY FARM

Ferry Farm is considered a nationally significant historic landmark due to its

“unique association with George Washington, a figure of transcendent importance in United States history (NSL Criterion 2), and because the site contains archeological resources that have yielded important new information about the material circumstances of Washington's life, and have demonstrated potential to yield additional data that will affect the scholarly understanding of Washington's early years (NHL Criterion 3)” (NPS 2000).

The period of significance for the site has been defined as 1738-1772 and represents the Washington's forty-four year ownership of Ferry Farm, including more than thirty-three years of continuous Washington occupancy. The National Historic Landmark nomination form identifies a broader period of 1738-1855 as the period of significance, encompassing both the Washington tenure and “the period during which the site began to [be] venerated and became associated with stories and traditions about Washington's youth” (NPS 2000). A timeline outlining the history of Ferry Farm between 1666 and present-day is included with this EA as appendix D.

WASHINGTON PERIOD

George Washington was born at his family's plantation along Pope's Creek in 1732 (now George Washington Birthplace National Monument). Washington spent the first six years of his life at Pope's Creek and at the family's property at Mount Vernon. In 1738, Washington's father purchased 538 acres along the Rappahannock River. The site later (after Washington's time) became known as Ferry Farm due to the many ferries that provided passage across the Rappahannock during the 18th and 19th centuries. In 1743, at the age of 11, Washington inherited the farm when his father died, and he continued to live there until he was 22 years old. During this time, Washington initiated his training as a surveyor, a horseman, a soldier, and a member of the gentry.

In 1754, Washington left Ferry Farm after inheriting the Mount Vernon property upon the death of his half-brother's widow. Washington's mother, Mary Ball Washington, continued to live at Ferry Farm until 1772 when she moved to Fredericksburg. Two years later, the farm was sold.

In 1972, the remaining portion of Ferry Farm was listed on the National Register of Historic Places (National Register) for national significance due to its history as the boyhood home of George Washington (VHLC 1971). In 2000, Ferry Farm was designated as a NHL. The significance of the site is related to the setting and circumstances of George Washington's youth, the archeological resources that preserve these conditions, and its role in the enduring stories about Washington that have become part of our national ideology (Warren 1999).

Recent archeological work has confirmed the locations of some of the Washington-era domestic complex structures such as the Strother-Washington House and slave quarters. In addition, the Washington House foundations are located at the crest of the escarpment, substantially to the west of where the house was previously thought to be located. Foundations of two nearby structures also have been located, as well as an early Washington-era kitchen. Available data suggests that the identified kitchen was replaced in the 1740s, but the replacement kitchen has not yet been located by archeologists. Based on local practices of the time, and the inventory recorded at the time of Augustine Washington's death, it is anticipated that the remains of a dairy and two store houses are likely to be nearby. A large domestic midden (refuse pile) has been identified east of the house. The house and outbuildings are arrayed in a semicircular arrangement along the crest of the escarpment. Land traces near the domestic complex suggest possible locations of site transitions, such as roadways, paths, and fences. Other site features whose locations have not yet been confirmed but which would have existed as part of the Washington's domestic complex include a kitchen garden, connecting paths between structures, and fencing. Inventoried site structures outside of the domestic complex whose locations have not been confirmed include a stable, chicken coop, hog pen, barn, cemetery, fences, and connecting paths. A natural location for north-south movement within the site is the crest of the escarpment, which would likely have coincided with the edge of planted fields and provided river breezes and vistas.

CIVIL WAR PERIOD

In addition to its national significance related to the Washington family farm, Ferry Farm also is significant in state and local history due to its role in the Fredericksburg campaigns of the Civil War (1862-1864). The farm housed Union troops during the occupation of Fredericksburg during the summer of 1862, and the soldiers used a pontoon bridge from the north side of the farm as a main passage into the city. The first shots of the Battle of Fredericksburg were fired at the City of Fredericksburg from Ferry Farm (across the Rappahannock River) by the Union Army in December 1862. The Union Army's unsuccessful attack is considered to be one of the most decisive battles of the Civil War; with Union Army casualties nearly double that of the Confederate Army. Ferry Farm still maintains archeology, road traces, and landscape features related to the period. Contemporary accounts and archeological research indicate that trenches and gun locations were arrayed north-south, east of the escarpment's crest. The precise location and extent of Civil War artifacts have not been confirmed, with some exceptions. Remnants of a Civil War-era trench have been located and excavated adjacent to, and through, the remains of the Washington-era domestic complex. Anomalies detected adjacent to that area also suggest a potential Civil War-era burial site. Specifically, the result of a remote sensing survey suggests a burial site adjacent to the 1870s agricultural building that may relate to the Civil War. It has been documented that several individual soldiers were removed for burial in the Fredericksburg Union Cemetery; however, it is unknown when this relocation occurred. Gun emplacements may have been situated in the field just east of the Washington House. Remnants of a Civil War era roadbed also have been detected at the escarpment and lower terrace, north of the ravine. The location of the Union's pontoon bridge landing is understood to be near the confluence of the ravine, approximately 50 feet inland from the current shore line.

RELATIONSHIP OF THE PROPOSAL TO OTHER PLANNING PROJECTS

Several plans and studies have informed and led to the development of alternatives for the Ferry Farm Site Treatment Plan and EA. These include the *George Washington Boyhood Home Special Resource Study and Environmental Assessment* (NPS 2002), the *Ferry Farm Master Plan* (GWF 2002), *Washington's Ferry Farm...An Update* (GWF 2007), the *Ferry Farm Interpretive Master Plan* (GWF 2009), the 2010 *Visitorship Study* (GWF 2011b), and *George Washington's Ferry Farm Program Requirements* (GWF 2011c) which are summarized below.

The *George Washington Boyhood Home Special Resource Study and Environmental Assessment* (NPS 2002) was a congressionally directed study by the NPS to consider if Ferry Farm should be added to the national park system. Although the study found that the site should not be included in the system, it also laid out goals and objectives for managing and developing the site to meet visitor's educational needs. The study also generally evaluated the impacts that developing the site would have on the existing natural and cultural resources at Ferry Farm.

The *Ferry Farm Master Plan* (GWF 2002) built upon the recommendations of the special resource study, while examining how the Foundation could operate the site outside of the national park system. The plan laid out four missions for GWF to aim to achieve at Ferry Farm. The first is to interpret the childhood and youth of George Washington and how it relates to his development as the leader of our nation. The second mission is to present broader themes of daily colonial life at the time of Washington's youth. The plan also instructed the GWF to interpret the site's role in the Civil War. Less than a century after Washington sold the property, it was the site of numerous troop movements related to the battles in and around Fredericksburg. Finally, the plan establishes a goal of developing the site in a sustainable manner that respects its ecology and location along the Rappahannock River. With these missions in mind, the plan developed ideas for an expanded visitor center, an improved trail system, and interpretive pavilions, while providing visitors with opportunities to access the archeological and historic artifacts contained within the site.

Washington's Ferry Farm... An Update (GWF 2007) built upon the plans laid out in the 2002 master plan. It included updates on the status of the archeological investigations and the role they would play in the site's educational programs; the decision to demolish the existing support structures and construct a new visitor center, administration building, and maintenance building; as well as more detail on the interpretive elements that would be included at the site. The plans laid out in the update have been modified and developed in the action alternatives evaluated in this EA.

Ferry Farm Interpretive Master Plan (GWF 2009) is the first step of a three-phase process to identify approaches for interpretation at Ferry Farm. This document considers a variety of elements for interpretation at the site including exhibits and the establishment of interpretive trails. The trails evaluated in the plan would provide visitors with an opportunity to experience three different aspects of Ferry Farm: Washington's era, the Civil War, and ecological components. The proposed interpretive exhibits could include a multimedia presentation; artifact displays; live interpreters; and three-dimensional simulations of the various people, landscapes, and structures that have occupied Ferry Farm.

The 2010 *Visitorship Study* (GWF 2011b) was developed to provide a comparison of the museums and attractions in the Fredericksburg region, including Ferry Farm. The other attractions evaluated in this study include the Chatham House at Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park (NMP) in Stafford County, Virginia; the Fredericksburg and Spotsylvania County Battlefields Memorial NMP; the Visitor Center at the Fredericksburg and Spotsylvania County Battlefields Memorial NMP; the Gari Melchers Home and Studio at Belmont in Falmouth, Virginia; Mount Vernon Gristmill and Distillery in Alexandria, Virginia; and Tryon Palace in New Bern, North Carolina. In particular, the study reported visitation at each of the attractions in 2010, including monthly fluctuations and a breakdown of visitor type (i.e., walk-ins, tour groups, special events). In 2010, Ferry Farm reported one of the lowest visitations (16,112 visitors), just ahead of the Gari Melchers Home (14,040). Of the attractions compared in this document, Tyron Palace reported the highest visitation in 2010 (134,757 visitors). The data reported in the *Visitorship Study* is included and evaluated in the Visitor Use and Experience sections of this EA.

The *Program Requirements* (GWF 2011c) for Ferry Farm provides a breakout of the staffing and facility requirements associated with the proposed action. In particular, requirements are included for a new visitor center, administrative center, and support buildings (including a new maintenance facility). The specifications documented in the *Program Requirements* have been used to define and evaluate the action alternatives.

SCOPING

Scoping is an early and open process to determine the breadth of environmental issues and alternatives to be addressed in a NEPA document. Scoping is used to identify which issues need to be analyzed in detail and which can be eliminated from in-depth analysis. It also allocates assignments among the NPS' interdisciplinary team members and/or other participating agencies; identifies related projects and associated documents; identifies permits, surveys, consultation, and other requirements; and creates a schedule that allows adequate time to prepare and distribute the EA for public review and comment before a final decision is made. Typically, both internal and public scoping is held to address these elements. Public scoping includes any interested agency or agency with jurisdiction by law or expertise to obtain early input.

Internal scoping for the proposed project is considered an extension of efforts associated with the *Ferry Farm Master Plan* (2002) and the 2007 Master Plan Update. Scoping efforts associated with the Master Plan and the Site Treatment Plan have included regular collaboration with the GWF Board of Trustees and Board of Regents (during bi-annual meetings since 2000), as well as review by a panel of experts in the field of architectural history (2011). To begin the planning process for the proposed action, staff from the GWF, Fredericksburg and Spotsylvania NMP, and their consultants met in September and October of 2007. These meetings were conducted to define the project's purpose and need, identify potential actions to address the need, determine the likely issues and impact topics, and identify the relationship of the proposed action to other planning efforts at Ferry Farm. Throughout the development of this EA, the GWF, the NPS, and their consultants conducted regular meetings and conference calls to review relevant issues, discuss the development of alternatives and impact analysis, and further develop means of

including agencies and the public in the planning process. Additional detail about the internal scoping process is provided in Chapter 5: Consultation and Coordination.

In 2007, the GWF and the NPS began discussions with the Virginia State Historic Preservation Officer (SHPO) about developing and executing a Programmatic Agreement (PA) that would address cultural resource impacts at the site related to the Site Treatment Plan, as required under section 106 of the National Historic Preservation Act of 1966, as amended. The executed PA is attached to this EA as appendix B. In August 2011, several agencies, tribes, and organizations also were contacted as part of the scoping process, including the Virginia Department of Game and Inland Fisheries (DGIF), the U. S. Fish and Wildlife Service (USFWS), the Virginia Department of Conservation and Recreation (DCR), the Virginia Department of Transportation (VDOT), the Virginia Department of Environmental Quality (DEQ), USACE, Friends of the Rappahannock, the Virginia Council on Indians, and the Catawba Indian Nation. Agency scoping letters are attached to this EA in Appendix A: Relevant Correspondence.

The GWF held a public open house, on February 6, 2013 at the Ferry Farm Visitor Center. A letter was sent to interested parties and online and printed news articles were published to inform the public about the meeting. The open house, which was attended by 65 members of the public, provided the opportunity for the GWF to present information about the proposed project and gather input and comments from the public. Display boards illustrating the proposed alternatives and other pertinent information about proposed project were set up around the room. Each board was manned by a GWF staff representative to answer any questions and provide the public with additional information. Verbal comments were recorded on computers and note pads, by GWF representatives stationed throughout the room. In addition, a comment card was distributed to all attendees to facilitate feedback. Completed comment cards were received from 59 members of the public during the meeting and an additional 85 verbal comments were recorded. One comment was also sent to the GWF via email after the meeting. A summary of public comment received is included in appendix F. Additional information about the public meeting can be found in Chapter 5: Consultation and Coordination.

The interested public and agencies also will have an opportunity to review and comment on this EA during a 60-day review period. For additional scoping and public participation information, see Chapter 5: Consultation and Coordination of this document and Appendix A: Relevant Correspondence.

PLANNING ISSUES AND IMPACT TOPICS

ISSUES SELECTED FOR DETAILED ANALYSIS

During the scoping process, specific considerations and concerns were identified as critical to the proposed action's development. The following were identified as most important to the planning process: increasing regional development, lack of relevant structures, lack of adequate administrative space, lack of adequate maintenance space, lack of adequate space for interpretation, lack of adequate space to display authentic historic objects, and protection of cultural and natural resources. Along with the purpose and need for the proposed action, these topics guided the development of alternatives and contributed to the selection of impact topics, as identified in the next section.

Increasing Regional Development

Ferry Farm is located in Stafford County, Virginia. The county's proximity to Washington, D.C. has made it one of the fastest growing counties in the nation. While Ferry Farm has been protected from this development, the surrounding properties continue to be developed. This growth has already detracted from the historic atmosphere at the site. In order to enhance the Washington-era setting at the site, any proposals made in this plan should identify means of improving the visual disconnect between the site and the surrounding community. Proposals, however, should avoid interfering with any existing or future development in the region.

Lack of Relevant Structures

None of the existing structures at Ferry Farm are related to the Washington era. This results in a failure to reflect conditions as they existed during the Washington era. It also creates confusion, as visitors mistake the existing structures for those from the Washington era. Any proposals made in this plan should seek to improve the landscape's ability to represent what is known about the historical period and aid in education, interpretation, and appreciation of the history of Ferry Farm.

Lack of Adequate Administrative Space

Currently, the visitor center at Ferry Farm provides the only onsite administrative offices for the GWF. The building was not designed for this use and does not offer appropriate space for office activities. The age of the building also hinders administrative activities. Failing systems and utilities and other concerns require GWF staff to spend time and financial resources addressing these deficiencies rather than focusing on improving the interpretation, education, and resource protection at the site. Any proposals made in this plan should seek to provide adequate administrative space for GWF staff at Ferry Farm.

Lack of Adequate Maintenance Space

The maintenance operation at Ferry Farm is currently housed in a small depot in a wooded section of the southern portion of the site. The depot comprises a few small sheds for equipment storage, with a number of materials stored in the small open space within the depot. There is not enough space at the depot to store the large pieces of equipment or materials. These pieces must be stored on the open landscape, in locations visible to many visitors. There is also not enough space at the depot for staff to conduct repairs or projects. These efforts must occur onsite where there is the potential to interrupt the visitor experience. Any proposals made in this plan should seek to provide adequate space in an appropriate location for maintenance storage and activities.

Lack of Adequate Space for Interpretation

The existing visitor center serves a dual role as the primary visitor contact point and as administrative offices. The facility, originally developed as an orphanage, was not designed for either activity. As a result, space is limited and programs and interpretation offered to the public are limited. Adequate interpretation is vital to ensuring visitors have the opportunity to fully understand the natural and cultural history of the site.

The visitor center, as the initial point of contact, is a natural starting point for interpretation. Any proposals made in this plan should seek to provide adequate space for interpretation at Ferry Farm.

Lack of Adequate Space to Display Authentic Historic Objects

The existing facilities at Ferry Farm do not provide sufficient space or conditions to store or display historic objects. Specifically, the lack of appropriate climate control within the existing visitor center prohibits the display or storage of archeological collections and other historic objects. These historic objects are an important part of the site's history and contribute to a complete understanding of George Washington's childhood and/or the use of Ferry Farm by Union soldiers during the Civil War. The inability to store or display the historic objects appropriately reduces the interpretation and educational opportunities available to visitors. Any proposals made in this plan should seek to provide adequate space to display authentic historic objects at Ferry Farm.

Protection of Cultural and Natural Resources

As the site of George Washington's Boyhood Home, as well as its role during the Civil War, Ferry Farm is home to a substantial array of cultural resources. These resources include archeological resources, cultural landscapes, and important viewsheds. The site also hosts a number of important natural resources. Any proposals made in this plan should not only seek to avoid adverse impacts to these resources but also find ways to connect them to the Washington-era legacy.

IMPACT TOPICS

Impact topics are resources of concern that could be affected, either beneficially or adversely, by the range of alternatives presented in this EA. They were identified based on the issues raised during scoping, site conditions, federal laws, regulations, executive orders, NPS *Management Policies 2006* (NPS 2006), NPS Director's Orders (DOs), and staff knowledge of the site's resources.

Impact Topics Retained for Analysis

Impact topics identified and analyzed in this EA are listed below along with a brief rationale for the selection of each impact topic. They include: soils and topography; vegetation; wildlife and wildlife habitat; wetlands and streams; Chesapeake Bay resources; archeological resources; historic structures; cultural landscapes; visitor use and experience; and operations and infrastructure. Each impact topic is further discussed in detail in Chapter 3: Affected Environment and Chapter 4: Environmental Consequences of this document.

Soils and Topography

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. The NPS *Management Policies 2006* (NPS 2006) and other NPS policies provide general direction for the protection of soils. The dominant soil types in the study area are Altavista fine sandy loam, Aura-Galestown-Sassafras complex, Congaree loam, and Wickham fine sandy loam. Because the proposed

actions could introduce new development to these soils or changes in topography, the impact topic of soils and topography is retained for further analysis.

Vegetation

NPS policy also requires the protection of the components and processes of naturally occurring vegetative communities including the natural abundance, diversity, and ecological integrity of plants. Vegetation within the study area is a mix of forest communities and grassland. Because the proposed action would include the removal of some native and nonnative vegetation, as well as the planting of new vegetation along Route 3 and near proposed buildings and parking lots, the impact topic of vegetation is retained for further analysis.

Wildlife and Wildlife Habitat

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. The NPS *Management Policies 2006* (NPS 2006) and other NPS policies provide general direction for the protection of wildlife and wildlife habitat. The study area represents one of the few undeveloped areas in the rapidly growing region. While many of the wildlife species found in the region have adapted to the developed environment, areas like Ferry Farm still represent an important aspect of their feeding, nesting, and breeding patterns. Proposed construction activities could result in temporary impacts to habitat for these species, while increased visitation and activity could result in more permanent impacts. Therefore, the impact topic of wildlife and wildlife habitat is retained for further analysis.

Wetlands and Streams

Executive Order 11990 “Protection of Wetlands” requires federal agencies to avoid, where possible, adversely impacting wetlands. NPS *Management Policies 2006* and Director’s Order 77-1: *Wetland Protection* mandate that the NPS will strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. For regulatory purposes, the term “wetlands” means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and other similar areas (NPS 2006). Non-tidal wetlands are scattered along the western side of the site, near the Rappahannock River and could be impacted by the proposed action. Specifically, Alternative C would include the clearing of trees from a forested wetland in the escarpment and lower terrace in central portion of the site, which could alter wetland conditions in this area. Therefore the impact topic of wetlands and streams was retained for further analysis. The preferred alternative (Alternative D) would not include forest clearing in the escarpment and lower terrace, and would avoid other impacts to wetlands and streams. DO 77-1 requires a Statement of Findings (SOF) for wetlands if the preferred alternative would have an adverse impact on wetlands. Therefore, pursuant to DO 77-1, a SOF for wetlands is not required for the proposed action.

Chesapeake Bay Resources

Ferry Farm is located within the Tidewater region of Virginia, which requires compliance with the regulations set forth in the Chesapeake Bay Preservation Act. The study area is located adjacent to the Rappahannock River, which is an important tributary to the Chesapeake Bay. Because the proposed action has the potential to alter these waters, the impact topic of Chesapeake Bay resources is retained for further analysis.

Archeological Resources

The NPS defines an archeological resource as any material remains or physical evidence of past human life or activities that are of archeological interest, including the record of the effects of human activities on the environment. Archeological resources are capable of revealing scientific or humanistic information through archeological research (NPS DO 28: *Cultural Resource Management*). Known archeological resources have been studied and preserved at Ferry Farm. The site contains a physical record of occupation from Native American inhabitants, property owners before Washington's family moved to the site, the Washington era, and beyond, including the Civil War. Because the proposed action includes development, including replacement of the historic Washington era landscape features, around known resources and the management of these resources, and ground disturbing activities in other areas may impact currently undiscovered cultural remains, the impact topic of archeological resources is retained for further analysis.

Historic Structures

A historic structure is defined by the NPS as "a constructed work, usually immovable by nature or design, consciously created to serve some human act" (NPS 1998). Ferry Farm contains one historic building, the existing 1870s agricultural building, within its boundaries. Because the proposed action would include relocation of and potential modifications to this historic structure, the impact topic of historic structures is retained for further analysis.

Cultural Landscapes

As described in DO 28, a cultural landscape is "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values." A 2001 cultural landscapes documentation effort initially identified several landscapes at Ferry Farm, which were further defined in the special resource study (NPS 2002; Oculus 2001). These landscapes directly contribute to the site's NHL designation. Because the proposed action has the potential to alter these landscapes, the impact topic of cultural landscapes is retained for further analysis.

Visual Resources

In the evaluation of visual resources, both the visual character of the site and the quality of the viewshed are considered. A viewshed comprises the limits of the visual environment associated with the proposed action, including both viewsheds within, into, and out of the project site. The viewshed within the site still maintains qualities that relate to the Washington era. However, the lack of structures related to Washington's life, as well as the increasing development outside of the site, detract from the overall viewshed. Several components of the proposed action would alter visual resources at the site; therefore, the impact topic of visual resources is retained for further analysis.

Visitor Use and Experience

The NPS strives to provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the natural and cultural resources found in parks. The visitor experience encompasses interpretation, understanding, enjoyment, safety, circulation, and accessibility of the study area. In addition, providing a safe and rewarding visitor experience is a goal that underlies all of the GWF missions at the site. GWF strives to meet this goal by providing opportunities for forms of enjoyment that are uniquely suited and appropriate to Ferry Farm's resources and environment. The proposed action was developed with the goal

of enhancing the visitor experience by providing new opportunities and enhancing the Washington-era environment. Therefore, the impact topic of visitor use and experience is retained for further analysis.

Operations and Infrastructure

The proposed action would result in changes to GWF operations and infrastructure. These changes would be related to the development of new administrative, visitor, and maintenance facilities, as well as opportunities to enhance the educational and interpretive programs offered at the site. Therefore, the impact topic of operations and infrastructure is retained for further analysis.

Impact Topics Considered but Dismissed from Further Analysis

The following impact topics were initially considered but dismissed from further analysis because the resource is not present in the project area or because any potential impacts would be no more than negligible to minor. They include floodplains, air quality, soundscapes, lightscapes, special status species, energy requirements and conservation potential, museum collections, ethnographic resources and sacred sites, Indian Trust resources, visual resources, site access and circulation, and socioeconomic resources, environmental justice.

Floodplains

Executive Order 11988, "Floodplain Management," and NPS DO 77-2: *Floodplain Management* require examination of impacts to floodplains and potential risks involved in placing facilities within floodplains. GWF's commitment to preserving the river ecology also makes this an important consideration. Portions of the study area are within the 100-year floodplain and other areas of special consideration related to floodplains. Proposed actions that could occur within the floodplain include modifications to the existing trails system, development of an interpretive node along the Rappahannock River, and the conversion of a forested area to open fields. These actions would not include significant construction to the extent that floodplain values or functions would be affected. For example, structures such as trail benches would be securely affixed to the ground so as not to become dislodged during a major flood event. The floodplain would continue to provide flood storage capacity at the site and buffer adjacent areas from flood waters. Therefore, then impact topic of floodplains was dismissed from the further analysis.

Air Quality

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.) requires land managers to protect air quality. section 118 of the Clean Air Act requires parks to meet all federal, state, and local air pollution standards, and *NPS Management Policies 2006* (NPS 2006) addresses the need to analyze potential impacts to air quality during park planning. Hauling of material, operation of construction equipment, and other construction-related activities could result in temporary increases in vehicle exhaust and emissions. However, hydrocarbons, nitrogen oxides, and sulfur-dioxide emissions, as well as any airborne particulates created by fugitive dust plumes, would be rapidly dissipated by air flow because stagnation is rare at the proposed project site. There could be temporary degradation of local air quality lasting only as long as construction; however overall air quality of Stafford County and the city of Fredericksburg would be unaffected by the proposed work at Ferry Farm. Therefore, the impact topic of air quality was dismissed from further analysis.

Soundscapes

As described in *NPS Management Policies 2006* (NPS 2006) and NPS DO #47: *Sound Preservation and Noise Management*, preservation of natural soundscapes associated with national park units is an important part of the NPS mission. Natural soundscapes exist in the absence of human-caused sound. The natural, ambient soundscape is the aggregate of all natural sounds that occur in the park beyond the range of sounds that humans can perceive. This sound can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sounds considered acceptable varies among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas. At the study area, natural soundscapes do not exist because of the developed nature of the region. GWF does make an effort to minimize the impact of human-caused sounds, where possible. Any construction associated with implementation of the proposed action (e.g., the hauling of material or the operation of construction equipment) could result in additional, dissonant sounds, but such sounds would be temporary and not out-of-place in such a developed region. Because the region is already developed and supports a variety of activities and traffic, the impact topic of soundscapes was dismissed from further analysis.

Lightscaapes

In accordance with *NPS Management Policies 2006* (NPS 2006), the NPS strives to preserve natural, ambient lightscaapes, which are natural resources and values that exist in the absence of human-caused light. The study area is located in a relatively developed region. As a result, the study area receives regular impacts to existing lightscaapes from passing vehicles, as well as surrounding developments. Any additional lighting would be confined to security lights. As a result, these additions would not elevate the existing lightscape impacts within the study area. Furthermore, because the site closes at dusk, any increased lighting would not affect the setting. Therefore, the impact topic of lightscaapes was dismissed from further analysis.

Special Status Species

Consultation with the USFWS, the DGIF, and the DCR Division of Natural Heritage (DCR-DNH) identified four protected species within the region: the green floater (*Lasmigona subviridis*), harperella (*Ptilimnium nodosum*), sensitive joint-vetch (*Aeschynomene virginica*), and small-whorled pogonia (*Isotria medoloides*). None of these species are recorded as occupying the study area. In addition, the green floater, a threatened freshwater mussel, is documented as occurring in the Rappahannock River along the Fredericksburg/Stafford County boundary (DGIF 2012). The proposed action would not include development within the Rappahannock River; therefore, would not disturb green floater habitat. Harperella is an endangered plant found along river shoals and stream gravel bars (DCR-DNH 2011). This stretch of the Rappahannock River adjacent to the study area does not contain suitable habitat for this species. Sensitive joint-vetch is a plant species that occupies freshwater or brackish tidal marshes along tidal rivers in the lower coastal plain (DCR-DNH 2011). The study area does not contain any marsh-like habitat that would be suitable for this species. The small-whorled pogonia is an endangered plant that occupies mature, open deciduous forests with few understory competition, often near small streams (USFWS 2008). The deciduous forests in the study area are noted as having dense understory shrubs and vines that are not conducive to the presence of this plant.

In addition, the Center for Conservation Biology (CCB) database for bald eagle nest sites was reviewed. The bald eagle was recently delisted from protection under the Endangered Species Act but is still protected by the Bald Eagle Protection Act of 1940 and its designation as a state-threatened species. The CCB database

cites a report in 2002 of a bald eagle observed flying over the Rappahannock River. Bald eagles have become more numerous in eastern Virginia over the decades, and observations of soaring eagles are relatively common. However, the CCB shows no active bald eagle nests along this stretch of the Rappahannock River. The closest bald eagle nest site is north of the study area along the Potomac River.

Based on this information, the impact topic of special status species was dismissed from further analysis.

Energy Requirements and Conservation Potential

The CEQ guidelines for implementing NEPA require examination of energy requirements and conservation potential as a possible impact topic in environmental documents. GWF strives to incorporate the principles of sustainable design and development into all facilities and park operations. The objectives of sustainability are to design structures to minimize adverse impacts on natural and cultural values; to reflect their 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 sustainable design and ecologically sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. The action alternatives presented in this document subscribe to and support the practice of sustainable planning and design in part through the design of new access roads and structures that would be consistent with low-impact development principles. The proposed action aims to develop alternatives that meet the purpose and need of the project while maintaining sustainable design. GWF would encourage suppliers and contractors to follow sustainable practices and address sustainable park and non-park practices in interpretive programs. Consequently, any adverse impacts relating to energy use, availability, or conservation would be negligible. Therefore, the impact topic of energy requirements and conservation potential is dismissed from further analysis.

Museum Collections

A museum collection is an assemblage of objects, works of art, historic documents, and/or natural history specimens collected according to a rational scheme and maintained so that they can be preserved, studied, and interpreted for public benefit (DO 28). While the proposed action may include placing exhibits within the study area, these exhibits would not be considered artifacts. These exhibits would be replicas and not original to the study area. Any objects discovered at the study area would be addressed under the impact topic of “Archeological Resources.” Improvements to museum collections related to the development of new infrastructure, such as improved climate control in the visitor center, which could enhance collections through proper storage, are addressed as part of the “Operations and Infrastructure” impact topic. Therefore, the impact topic of museum collections was dismissed from further analysis.

Ethnographic Resources and Sacred Sites

An ethnographic resource is defined 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 in the study area. Therefore, the impact topic of ethnographic resources and sacred sites was dismissed from further analysis. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001) would be followed. See Appendix A: Relevant Correspondence for correspondence with interested Native American tribes.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian Trust resources from a proposed project or action by U.S. Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian Trust responsibility is a legally enforceable 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 laws with respect to Native American tribes. There are no known Indian Trust resources in the study area, and 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, the impact topic of Indian Trust resources was dismissed from further analysis.

Site Access and Circulation

Safe and efficient access and circulation of all visitors at Ferry Farm is important to an enjoyable visitor experience. The current vehicular access and parking at Ferry Farm do not properly introduce the visitor to the Washington-era environment. Furthermore, the placement of proposed structures must consider existing or new trail systems. The proposed action would influence new access and circulation patterns at Ferry Farm. However, because impacts related to site access and circulation also are addressed for the visitor use and experience impact topic, impacts to site access and circulation are addressed under this resource topic. Therefore, the impact topic of site access and circulation is dismissed from further analysis.

Socioeconomic Resources

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Implementing the proposed action could result in a marginal boost to the economy of Stafford County and the city of Fredericksburg (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, lasting only as long as construction. Therefore the impact topic of socioeconomic resources was dismissed from further analysis.

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 their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency (EPA), environmental justice is the “...fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.”

The goal of “fair treatment” is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts. Environmental justice is dismissed as an impact topic for the following reasons:

- Implementation of the proposed action would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse impacts on any minority or low-income population.
- The impacts associated with implementation of the proposed action would not disproportionately affect any minority or low-income population or community.
- Implementation of the proposed action would not result in any identified effects that would be specific to any minority or low-income community.

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ALTERNATIVES

This EA examines four alternatives: a no-action alternative (Alternative A) and three action alternatives (Alternatives B, C and D). The action alternatives were developed by the GWF, in coordination with the NPS and have been designed to provide improved interpretation and presentation of the Washington-era site. Each action alternative includes elements aimed at rehabilitating the historic, Washington-era landscape and associated features; improved access and circulation; a new visitor center, parking lots, maintenance facility, and administration building; new interpretive displays and discovery areas; and the demolition of existing, non-historic structures at Ferry Farm.

DEVELOPMENT OF ALTERNATIVES

The development of alternatives for the Site Treatment Plan began in 2002 with the *George Washington Boyhood Home Special Resource Study and Environmental Assessment* (NPS 2002). The Special Resources Study/EA was developed to assess the potential for the Ferry Farm's inclusion in the national park system and considered potential options for providing interpretation, education, and other visitor services at the site. These initial options were expanded upon in the *Ferry Farm Master Plan* (GWF 2002). The Master Plan laid the foundation for how the GWF would operate and interpret the site. More specific plans were developed in the Master Plan Update, *Washington's Ferry Farm...An Update* (GWF 2007). In addition, the *Ferry Farm Interpretive Master Plan* proposed specific interpretive elements to be incorporated at the site (GWF 2009). Based on these documents and subsequent coordination between the NPS and GWF, six objectives were established for the proposed action. These objectives are discussed in Chapter 1: Purpose and Need and were considered during the alternatives development process. Using the planning document and objectives as a guide, the GWF and the NPS met several times during the planning process, and coordinated on a regular basis, to develop the alternatives presented in this EA. Most recently, on February 21, April 17, July 10, and September 18, 2012 the GWF and the NPS met to discuss the alternatives presented in the EA. These meetings, which were also attended by the SHPO (April, July, and September) and ACHP (September), lead to the development of Alternative D. Subsequent to these meetings, the GWF prepared the *Draft Washington Home Farm Interpretive Landscape: Contributing to the Rehabilitation of Ferry Farm* to "provide background on the serious consideration and thought that has gone into the development of the proposed approach toward developing the Washington Home Farm interpretive landscape within the a rehabilitated Ferry Farm site"

(GWF 2013). This document provides detailed information about the proposed interpretive elements, which are included as part of the alternatives described in this EA.

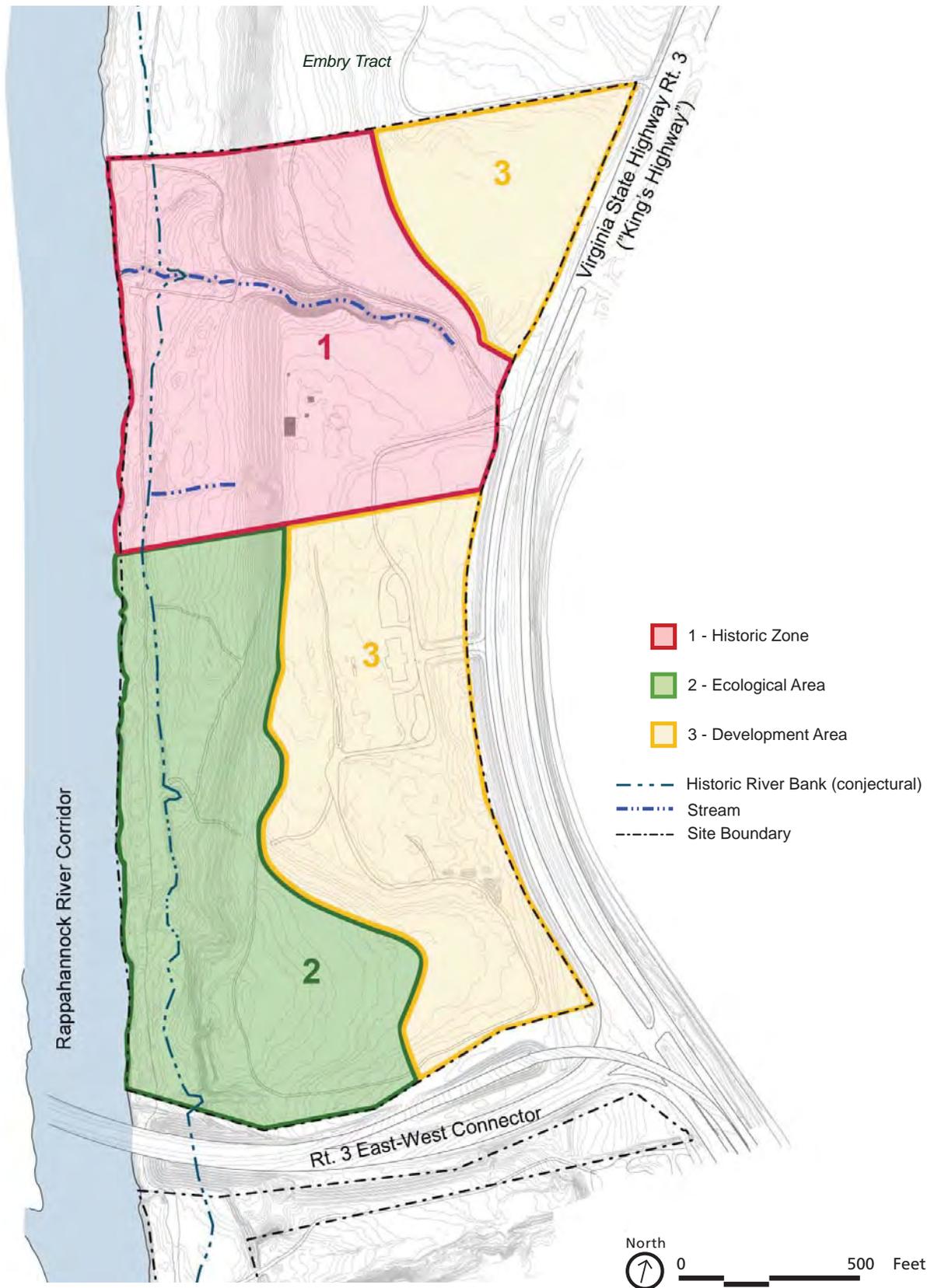
The development of the action alternatives also considered stewardship of cultural resources (including archeological resources, historic structures, and cultural landscapes), ecological and operational sustainability, and support of an interpretative visitor experience as the purpose of the proposed action. Based on these principles, the site has been divided into three zones to guide future management decisions while taking into account the existing resources and best use for each area. Identification and stewardship of historic resources is included in all three management zones. The following three zones have been identified, and are illustrated on figure 4:

- Zone 1: Historic Zone
- Zone 2: Ecological Zone
- Zone 3: Development Zone

Site investigations as well as documentary and pictorial evidence have indicated that the area designated as the historic zone has the highest concentration of historic artifacts; therefore, the greatest likelihood of encountering additional artifacts exists within this area. Additionally, the continuity of topography and views within the historic zone give this area the potential to most powerfully and authentically illustrate the setting and circumstances of George Washington's youth. The primary objective for the historic zone is to rehabilitate the historic landscape and provide a means of authentically illustrating the site's unique history to visitors while preserving the historic resources for future generations.

In contrast, portions of Ferry Farm adjacent to King's Highway, designated as the development zone, have been (and continue to be) impacted by the adjacent highway and have experienced the greatest amount of change. Expansion and development of King's Highway resulted in topographic changes to the eastern edge of Ferry Farm, including the construction of drainage swales that extend the length of the site. The topography of the site was further modified during construction of road drainage features, a culvert that connects with the ravine, and the removal of borrow material from the south end of the site. Therefore, the development area is least likely to yield archeological or ecological benefits. The primary objective for the development area is to concentrate modern support facilities and infrastructure within this area, as needed. This would relieve development pressure from the historic zone and ecological area while allowing for facilities and amenities to help make the site self-sufficient. New facilities would be designed to have minimal visual or ecological impacts. To maintain clarity, new facilities would also be designed to appear distinct from but sympathetic to the interpretive structures. A visual separation between the modern world and the historic resources and interpretive structures would be incorporated into planning concepts.

Lastly, the ecological zone is defined by its topographic and ecological attributes. Alternative elements within this area would maintain and enhance those defining features. The main objective of the ecological area is to protect local ecosystems and the natural resources to include the river. To this end, the action alternatives consider best management practices for water quality and support of native ecosystems and their plants and animals.



George Washington Boyhood Home Site at Ferry Farm

Figure 4
FUTURE MANAGEMENT ZONES



THE GEORGE WASHINGTON FOUNDATION

ALTERNATIVE A (NO-ACTION)

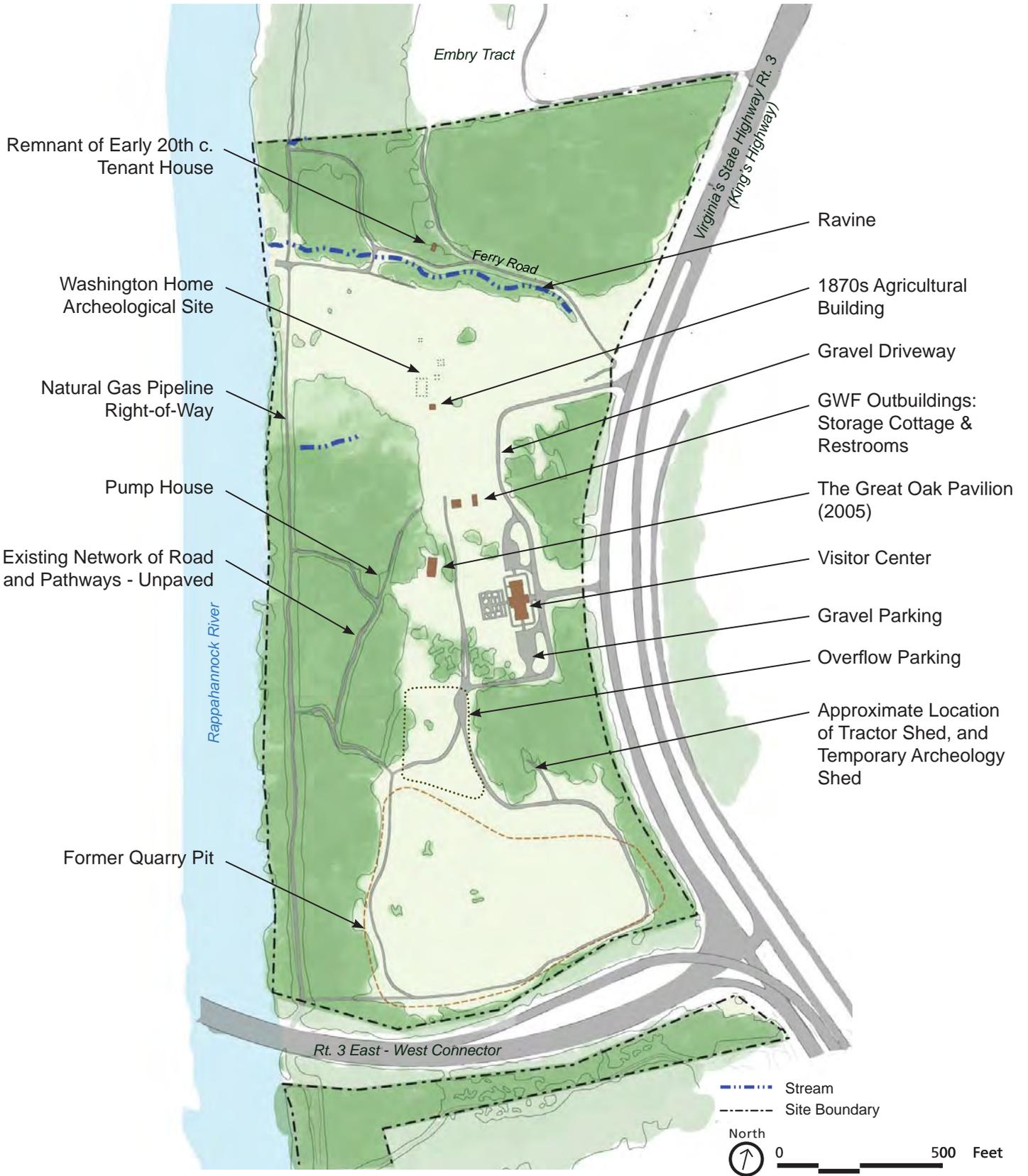
Alternative A, the No-action Alternative, would maintain the current management operations and existing facilities at Ferry Farm (see figure 5). The GWF would respond to future needs and conditions associated with circulation, facilities, and interpretation at the site, although no major actions or changes in the present course would occur.

Alternative A would continue archeological investigations at the site. These investigations are currently aimed at uncovering additional evidence from the Washington era. The areas under investigation would be roped off but could be viewed by the public. Views of the ongoing investigations would be supplemented with small displays that explain the archeological investigation process as well as what has been discovered. Other than these small displays and the brick and stone outline of the locations where historic foundations have been discovered, there would be no interpretation of the actual location of Washington-era structures.

In addition to archeology-related interpretation and events, it is anticipated that the GWF would continue to host periodic special events such as George Washington's Birthday and a July 4th celebration. Local birding clubs also would continue to offer periodic bird watching tours at the site (primarily in the middle terrace). The existing visitor center would continue to support limited visitor contact and educational materials. Limited administrative activities would also continue in the shared visitor center/administrative facility. While the first floor of this building is used for visitor contact, the second floor is currently used for offices and meeting rooms. These spaces were not designed for these activities and consequently limit the number of people or office equipment that can be maintained in the building. The deteriorating condition of the visitor center would continue to require regular maintenance.

In general, existing structures at Ferry Farm would be maintained in their current state. The restrooms and storage cottage would be maintained in close proximity to the 1870s agricultural building and near the Washington-era archeological features. The GWF would continue to rely on The Great Oak Pavilion for educational programming. However, the pump house, located approximately 150 feet west of The Great Oak Pavilion, is not operational and would be removed from the site. The park's maintenance operations would continue to be based out of the small depot located in the wooded section of Ferry Farm, along the southeastern border of the site. Maintenance materials would be stored in the small storage shed located in the depot, as well as within locations visible to visitors. Maintenance staff would conduct most repairs or other projects onsite, rather than at the depot.

The existing access and circulation patterns at the site would be maintained under Alternative A. Specifically, an unpaved, driveway would provide access from King's Highway via an opening in the tree-lined road. The driveway would terminate at the visitor center parking lot, which would remain unpaved. The parking lot provides space for approximately 70 vehicles. An area southwest of the visitor center and north of the field in the middle terrace (the former sand/gravel pit), is used for overflow parking and can accommodate up to approximately 250 vehicles. An additional exit would also be maintained from the driveway, immediately west of the visitor center, to the southbound lane of King's Highway (see figure 2).



George Washington Boyhood Home Site at Ferry Farm



THE GEORGE WASHINGTON FOUNDATION

Figure 5
ALTERNATIVE A: NO-ACTION

Onsite, the existing, unpaved pedestrian trail system would continue to connect the visitor center with the restrooms and storage cottage. The trail system does not extend to the 1870s agricultural building or the archeological investigation locations. A separate pedestrian trail would continue to provide access from the upper terrace to the lower terrace, via a staircase dug into the side of the hill and supported with wood beams. The GWF would continue to maintain some interpretive activities in the lower terrace. These activities would be supported by a series of wooden benches that are located at the base of the staircase.

ELEMENTS COMMON TO THE ACTION ALTERNATIVES

Elements common to Alternatives B, C and D are summarized below and depicted on figures 6-8. Common components not summarized below include some components of the rehabilitated historic landscape features and the construction of a new maintenance facility and a new administration building. Although these elements would be generally the same under each action alternative, their placement and some of their components would be different. The specific configurations of these elements are described under the respective alternatives. Several alternative elements would be the same under all action alternatives and are described below. It is not the intent of the GWF to construct all components of the alternatives immediately and/or simultaneously. Rather, the elements of the Site Treatment Plan would be incorporated incrementally at Ferry Farm over several years, after many detailed design phases, and once appropriate permitting and approvals are in place.

ARCHEOLOGICAL INVESTIGATIONS

Similar to Alternative A, under the action alternatives, the GWF would continue archeological investigations to identify the location of the original buildings associated with the Washington family farm, remnants of Civil War and Antebellum Period uses, and evidence of the site's prehistoric use. As appropriate, artifacts uncovered at Ferry Farm would continue to be systematically documented, collected, and curated, pursuant to the PA between the GWF, NPS, and SHPO. As described in chapter 1, archeological investigations have identified the Washington home and some of the associated structures, including the kitchen and slave quarters. Additional information about archeological resources at Ferry Farm is described in the "Archeological Resources" section of chapter 3.

INTERPRETATION

Interpretive stories and programming at Ferry Farm would be designed to educate visitors about the significance the site has played over the course of time, with a focus on the period of significance (1738-1774). The action alternatives would include the rehabilitation of the NHL site, including the interpretive development of the Washington Home Farm landscape and structures that represent the Washington era. The rehabilitation of the site would facilitate new programs and events for visitors. The proposed interpretive elements, including an explanation of how and why each was developed, are described and summarized here. Focusing on Washington's time at Ferry Farm (the site's period of significance), interpretive activities would share the site's unique history in a way that makes it accessible, relevant, and

inspiring to a broad spectrum of visitors. Support of a holistic interpretive experience is envisioned through all visitor activities. A visitor's experience would begin with entry to the rehabilitated Ferry Farm. Progress via the entry drive, parking area, and visitor center, and would provide a transition from the modern/commercial (King's Highway) landscape to a distinctive, rehabilitated Ferry Farm setting. Introductory experiences at the visitor center, including a brief orientation film, interpreter interactions, and exhibits, would provide wayfinding and historical overview, the archeology and historical research that contributed to what is known and what is conjectured about the site during the Washingtons' tenure. Further, the introductory experience would inform visitors that the rehabilitated landscape incorporates both known elements and conjectural details. These exhibits would be updated periodically to reflect new research and discoveries. These exhibits would convey the characteristics, culture, and way of life of the Washington Plantation while positioning it within larger cultural, geographical, and historical contexts. Further, exhibits would describe how the march of time obscured Ferry Farm's Washington era legacy, then highlight recent and current investigations helping to reverse that loss.

After experiencing the exhibits/information offered within the visitor center, visitors would move out into the interpretive landscape, which would demonstrate the culture and routines characteristics of the lifestyle of the Washington family during their tenure at Ferry Farm. Specifically, the rehabilitated interpretive landscape of the Washington Family Farm would replace missing landscape features including fences, paths, crops, yards, and structures to demonstrate the 18th century plantation setting as authentically as possible. Although archeology and research have told us much, gaps in our knowledge remain, and the proposed rehabilitation would be acutely sensitive to that reality. The rehabilitation would seek to capitalize on and communicate what is known—the location and nature of the main residence and the inclusion of outbuildings where their location and function have been determined (as new discoveries are made that confirm the location and nature of additional outbuildings, they may be added to the landscape). Outbuildings associated with the Washington Family Farm that have been discovered to date include a root cellar, an icehouse, and an early Washington-era kitchen. Additional information about the Washington's main residence and associated outbuildings that have been discovered to date is provided in chapter 3. Rehabilitated historic structures would be constructed using period techniques and tools to maximize interpretive opportunities and visitor understanding. On-site construction would go to great lengths to not disturb archeological resources, including the main residence or outbuildings and resources related to the site's Civil War history. Civil War era, prehistoric, and any other archeological features that are encountered through archeological activities would be systematically documented. Those that have structural characteristics would be sampled and the rest would be protected in place.

Construction required to provide interpretive access to the archeological remains may be provided contiguous with the remains. To facilitate future interpretation and study, structures at or near archeological resources would be designed in such a way to protect and provide future access to the resources. GWF is fully committed to construction in such a way that remaining archeological elements are not harmed. Above-ground constructed elements could be removed with minimal impact if so desired at a later date. The placement of the rehabilitated landscape features and structures would vary by alternative, as described in the following sections. It is the goal of the GWF to provide a collection of structures and treatments to provide an immersive, multi-sensory experience that portrays a way of life, and complements the analytical exhibits within the visitor center. The proposed landscape elements would be based on available pictorial, material, and documentary evidence, such as inventories from the Washington Era, period descriptions, and material analysis. For the foreseeable future, the core

interpretive landscape would coexist with ongoing archeological investigations, and a phased approach to implementation is anticipated. Onsite interpretative nodes (described below) would range from self-guided tours with the use of hand-held aids, to interactions with costumed interpretive staff.

Visitors returning to the visitor center from the interpretive landscape would have access to additional detailed information and exposition of the site's main themes, including Washington family history, Ferry Farm in other periods, and the process of discovery afforded by archeological, and documentary investigations, and a closure activity.

Visitors with more time and energy may venture out beyond the historic core to experience more of the site through a series of self-guided interpretive trails. Hand-held interpretive materials (using both cutting edge technologies, such as cell phones or tablet computers, and traditional methods, such as maps or brochures) would be oriented to the site through a series of low-impact interpretive nodes. A maximum of 50, low-impact, self-service nodes would be developed throughout the site to facilitate interpretation of both natural and cultural resources, including the historic landscape at Ferry Farm. The nodes would be placed along the existing circuit of interpretive trails and could include a combination of built features, interpretive and/or wayfinding signs, and touchable models. At a minimum, the interpretive nodes would include a post or stone with a marker, keying the location to orientation materials. One of the interpretive nodes would be dedicated to interpretation of the history of the Rappahannock River. This node would be entirely land based in the northwestern portion of the site, near the former pontoon bridge, and would likely be limited to visitor seating and interpretive signage, such as information about the former pontoon bridge and the importance of the Rappahannock River to the site's history (i.e. represents the site's connection to the larger world). The markers at each interpret node would identify each point of interest for those following along with a self-guided tour (see the "Use of Cutting Edge Technologies" section below). Where there are interpretive nodes within the Washington family farm, node markers may be limited to small tags or plates attached to the site element. As necessary, the existing trails would be improved to provide access to the nodes. Details about the trail improvements are provided in the "Access and Circulation – Pedestrian" section below.

In addition to the interpretive nodes, discovery areas would be implemented throughout the site to maximize interpretation opportunities. Each of these discovery areas would focus on a different aspect of the site's natural and cultural history, such as wildlife and native plants, colonial life, or the Civil War. Each discovery area would likely evolve over time. These discovery areas could incorporate interpretive signage, live interpreters, small interpretive structures or shelters, facilities for visitor resting (such as benches), and small storage structures. It is anticipated that the discovery areas would vary in size, but would be designed in such a way that they remain low profile and out of sight of the core historic zone. A Civil War discovery area would be implemented north of the ravine, on an area up to 0.5 acre in size. This discovery area would be accessed via a new pedestrian bridge and associated trail. A discovery area could also be implemented at the remnants of an early 20th century tenant house (currently a concrete pad) located in the northern portion of the site, north of the ravine and Ferry Road.

As described in chapter 1, in addition to Ferry Farm's use by the Washington's, the site was used by the Union Army in the Battle of Fredericksburg during the Civil War. The Civil War discovery area would be designed to interpret the important role Ferry Farm played in this battle, including the significance of Ferry Farm's topography, making it the perfect location for the Union Army to position itself before

firing its first shots at the City of Fredericksburg. The discovery area also could include signage to identify the location of known and potential Civil War-related archeology at Ferry Farm, such as the identified trench (proximal to the Washington home site) and potential burial sites; however, most interpretation of this discovery area would be provided electronically using a tablet computer or smart phone. Development within this discovery area would include small, low impact structures that could easily be removed and/or relocated. Vegetation along the ravine would shield views to and from the Washington family farm, visually separating the historic landscape of the farm's core from the discovery area. Structures and signage would be immobile but placed on above-ground supports, or placed on an extant early 20th century concrete foundation in this area. If any installations require in-ground placement, efforts would be made to place such structures in areas previously subject to excavation and data recovery, or would be subject to archeological investigation prior to the beginning of construction.

The action alternatives would also include an interactive, interpretive play area. The play area would occupy a maximum area of 10,000 square feet and would be sited at the top of the bluff in the central portion of the site (adjacent to the west of the new visitor center parking lot and south of the new visitor center and Great Oak Pavilion). The facility would be designed primarily to engage visiting children and educate them about colonial life and provide them with an opportunity to learn more about the historic significance of the site and methods used by archeologists to uncover artifacts. The play area would include minimal structural elements. Interpretive elements could include gardens, a simulated kitchen, work yard, small ship, and simulated shallow archeology discovery boxes. Structural components would remain in place year-round, but would be low-maintenance and would be installed at-grade, potentially with anchors into the ground. Surface materials within the play area would be pervious and would require some level of ground disturbance. The play area would be screened from the historic core, using deciduous vegetative plantings. A detailed plan for the play area would be developed during the final design phases.

VISITOR CENTER

Under the action alternatives, a new state of the art visitor center would be constructed in the central portion of the site, in the general vicinity of the existing visitor center. As described in the "Interpretation" section above, elements of the visitor center would include a brief orientation film, interpreter interactions, and exhibits, and would provide wayfinding and historical overviews. Where appropriate, cutting edge technologies, such as the use of tablet computers, would be incorporated into the visitor center, including exhibits. The new facility would be sited slightly further south under Alternative C to avoid overcrowding with the more southerly Washington-era interpretive structures. The new facility would include space for additional displays and programs. In addition, a café would be developed within the visitor center. The café would be of the "grab and go" style and would include an indoor dining area capable of accommodating 65 visitors, as well as an outdoor dining area that could accommodate an additional 35 visitors (GWF 2011c). It is estimated that the café would be operated by two full-time and two part time staff. A single loading dock/area would be incorporated at the visitor center to receive deliveries. Large deliveries would be made to the new maintenance facility, from which smaller vehicles would provide distribution throughout the site. The foundation of the new visitor center would occupy approximately 16,000 square feet of land and is anticipated to have 27,000 square feet of interior space, including a basement. The new building would be equipped with energy efficient

mechanical systems. Existing vegetation would be protected and/or supplemented surrounding the facility to screen the visitor center from the historic management zone. Deciduous vegetation would likely be planted and would change with the seasons.

REMOVAL/RELOCATION OF EXISTING STRUCTURES

Under Alternatives B, C and D, once construction of the new facilities is complete, the existing visitor center/administrative building, parking lot, and maintenance facility would be demolished and removed from the property. In addition, the more modern outbuildings on the property would be removed. These modern facilities currently include restrooms, a storage cottage, and an in-ground pump structure located in the central portion of Ferry Farm, near the Washington home foundation; a pump house west of the visitor center, at the edge of the escarpment; and a tractor shed, equipment shed, and temporary archeology shed located to the south of the visitor center, within the upper terrace.

The 1870s agricultural building, which is listed on the National Register, would be preserved and relocated from the historic zone to the development zone. Specifically, the structure would be moved approximately 400 feet, to a location near the visitor center, and would be screened from the interpretive landscape and features of the rehabilitated Washington Home Farm by deciduous vegetation. This building is currently located to the south of but in close proximity to the Washington home foundation and is often incorrectly identified as a surveying shed from the Washington family period of occupation. Vegetative screening would be incorporated around the building so that it is not visible from the historic core of the site. Deciduous vegetation would likely be planted and would change with the seasons.

ACCESS AND CIRCULATION

Vehicular Access and Circulation

Under the action alternatives, the existing site entrance would be removed and a new entrance would be constructed approximately 300 feet to the north to align with a new left-turn lane at an existing stoplight at the intersection of Ferry Road and King's Highway. In addition, the new entrance would require that a new paved right-turn lane be installed along southbound King's Highway extending approximately 300 feet northward within the King's Highway right-of-way. The new entrance would be designed/constructed as part of the proposed action; however, the new left-turn lane, which would provide access to Ferry Farm and any associated development on the east side of King's Highway, is being constructed as part of a separate project by Stafford County and VDOT (see the cumulative actions section in chapter 4 of this EA). To accommodate the new entrance, approximately 65 linear feet of asphalt apron connecting the existing gravel driveway to King's Highway would be demolished. A portion of the gravel driveway bisecting the property would be removed while another section would be left for integration into the proposed pedestrian trail system (described in the following section). The new entrance driveway would be approximately 50 feet wide. From King's Highway, the driveway would be extended through the currently wooded eastern border of the site and then would be routed south to the new visitor center and parking lot. The new alignment would create a tree-lined entrance to the site that would run parallel to King's Highway. Upon entering the site, the entrance road would extend to the south approximately 1,900

feet for Alternative B, 2,100 feet for Alternative C (due to the more southern location of the visitor center and parking lot), and 2,300 feet for Alternative D (due to the southeastern location of the maintenance facility). An approximately 30 square foot manned entrance/security station, equipped with a controlled access gate, would be installed approximately 150 feet from the site entrance, within the new access road. The entrance station would be manned by one person responsible for security, taking tickets, and/or providing general information. The entrance station would be designed to be consistent with the architecture of the other new buildings. Beyond the gate, the road would provide access to the visitor center and parking lot. The new administrative building proposed under Alternative C and maintenance facility proposed under Alternative D would also be accessed, beyond the visitor center parking lot, using the new road. As described in the “Pedestrian Access and Circulation” section below, the existing trail network would be improved as part of the proposed action. On an as needed basis, those trails would be used by small service and emergency vehicles to access portions of the site. Vehicular use of the pedestrian trails would be coordinated during periods of no/low visitation, or in the event of an emergency, to ensure visitor safety on the trails.

Additionally, a new parking lot would be constructed adjacent to and south of the new visitor center. The size of the parking lot would vary by alternative, but each would support approximately 90 parking spaces for standard vehicles, including 4 Americans with Disabilities Act (ADA) compliant spaces, and 4 spaces for buses. The existing exit-only driveway, currently centered on and located east of the visitor center, would be aligned with the new parking lot, though its use would likely be unchanged. Under each of the action alternatives, the visitor center parking lot would include low-impact design features, such as the use of pervious paving materials, to efficiently manage stormwater.

New driveways/access roads and parking lots would be constructed using sustainable, environmentally friendly methods and materials, as practical. Stormwater management efforts that would be implemented under each of the alternatives are described below in the “Natural Resources Management” section.

To screen the site from traffic and development along King’s Highway, the action alternatives would incorporate a combination of intensive pine plantings, fencing, and/or berms. It is anticipated that up to 2,745 linear feet would be screened along King’s Highway. Deciduous vegetation would likely be incorporated into the screening feature. As such, the visibility of the site from King’s Highway would change with the seasons.

Pedestrian Access and Circulation

Currently, pedestrian (including bicycle) access to Ferry Farm, from outside the site, is limited and requires the use of King’s Highway which does not have sidewalks. As part of a separate project, Stafford County is in the initial planning stages to extend an existing pedestrian trail to connect various points of interest throughout the county. As the planning progresses, the GWF will work with the county to coordinate improved access to Ferry Farm. Additional information about the county’s proposed bike trail is described in the cumulative actions discussion in chapter 4.

Pedestrian access to the discovery areas, interpretive nodes, and other portions of the site would be provided via modifications to the existing onsite trail system. Modifications would include an extension of the existing trail network as well as resurfacing with a porous material to make them more stable and

permanent. The trails would be up to 10 feet wide and would be designed to be minimally intrusive to the historic setting of Ferry Farm (including the color, texture, etc.). Two trails would begin from a central location, at or near the visitor center and associated parking lot. Both of these trails would initially extend west to the tree line and The Great Oak Pavilion. From the pavilion, one of the trails would lead north to provide access to the rehabilitated historic landscape and features and then would connect with existing trails to provide access to the lower terrace and discovery areas north of the ravine. Wooden steps currently connect the upper and lower terraces in the vicinity of the Washington home foundation. Each of the alternatives would remove these steps and construct a new, winding trail down the escarpment. A new pedestrian bridge would also be constructed over the ravine to provide access between to the proposed Civil War discovery area and the rest of the site. The bridge would be approximately 6 feet wide and 50 feet long. Concept plans call for a single span without supports. Work would include the installation of bridge abutments placed deep within soils for long-term stability and support. In addition, the bridge would not be visible from the historic core of Ferry Farm and would be designed to avoid substantial changes to the existing topography and protect against erosion (see the ravine stabilization discussion in the “Natural Resource Management” section below). It is understood that additional information may be needed to assess the impacts of this work. The specific design of the bridge would be developed and documented at a later date therefore; associated impacts are not included in this document.

The second trail would head south from The Great Oak Pavilion to the ecological zone and discovery areas where it would connect with the existing trail network. This second trail would loop around to the east and end at the new visitor center parking lot and would serve to educate visitors about conservation efforts at Ferry Farm, regional ecology, and natural history. This trail would use a combination of new and existing pathways. Although the trails would primarily be surfaced with gravel or a similar material, new and existing trails near the visitor center and within the historic zone would incorporate ADA accessible elements, such as a lane of pervious pavement.

In total, approximately 3,200 feet of new pedestrian trails would be developed under Alternatives B and D, while 3,500 feet of new trails would be developed under Alternative C to accommodate a new trail loop near the Washington home site.

NATURAL RESOURCE MANAGEMENT

The action alternatives would include stabilization measures in the vicinity of the Medicine Springs to prevent further erosion. A specific approach to stabilization has not yet been determined. These efforts could include protection of the banks with erosion control matting or blanketing and stabilization with a permanent covering that is capable of handling steep slopes. The covering selected would be of a material that would disappear into the landscape once the banks have been stabilized. Stabilization efforts would also evaluate flow within the ravine and implement measures to either divert water or slow down the flow to reduce the impact of the flow on erosion. The specific stabilization measures would be developed and documented at a later date. This document assesses the impacts of ravine stabilization from a conceptual level.

Under each of the alternatives, best management practices for water quality would be incorporated using low-impact development (LID) techniques throughout the site. For the purposes of this EA, and based on preliminary plans, it was assumed that the following stormwater management techniques would be

implemented under all alternatives. The parking lots would comprise of pervious pavers with no curb and minimal piping in combination with bioretention areas within parking lot islands. To the extent possible, runoff (via sheet flow) would flow into bioretention basins within the parking islands where water would be filtered using plantings and soil infiltration. Water from the new impervious (asphalt) entrance road would be captured by an adjacent grassy swale for soil infiltration. All water quality measures to be implemented would be designed in accordance with the Virginia stormwater management regulations and the Virginia Stormwater Management Handbook. The specific stabilization and stormwater management measures to be implemented would be determined during final design. This document assesses the impacts of these components from a conceptual level.

As described in the pedestrian access section above, a recreational nature trail would also be developed in the ecological zone to educate visitors about conservation efforts at Ferry Farm, regional ecology, and natural history. This trail would be part of the interpretive trail network to be expanded throughout the site, and described in the “Pedestrian Access and Circulation” section above. The southernmost portion of the interpretive trails, which extends through the ecological zone, would be considered the nature trail. The nature trail could be used by local bird-watching clubs that offer periodic bird watching tours at Ferry Farm.

Each action alternative would include removal of vegetation from the site to accommodate new elements such as buildings, driveways, views, and rehabilitated historic landscapes and features. Up to 5 acres of trees would be removed from the eastern side of Ferry Farm to accommodate the new facilities, parking lots, and driveway (AECOM 2013). An additional 1.3 acres of forest vegetation would be removed from the northeastern portion of the site to accommodate the realigned entrance road. It is anticipated that up to 24 trees would be removed from the escarpment between the historic core and the Rappahannock River to accommodate historic views. For the purposes of this EA, it is assumed that selectively thinning would involve cutting trees and associated root systems to ground surface, not uprooting. However, under Alternative C, which would include additional vegetation removal from the escarpment and flood plain, as described in the Alternative C discussion below, trees would likely be uprooted due to the extent of clearing required. Under all alternatives, up to 0.5 acre of forest vegetation would also be removed from the northwestern corner of the site to allow for development of the Civil War discovery area.

Under each of the alternatives vegetation removal would adhere to an Invasive Species Management Plan and/or Forest Management Plan, which would be developed by the GWF as part of the proposed action. Invasive species are found throughout the wooded areas of Ferry Farm, and primarily include English ivy (*Hedera helix*), Chinese privet (*Ligustrum sinense*), and exotic bush honeysuckle (*Lonicera spp.*). Invasive species would be removed from the site on an as needed basis to more accurately reflect the vegetation types extant at the time of Washington’s occupancy of the site. Although specific removal/management methods have not yet been determined, strategies could include hand removal of mature trees and/or seedlings, use of herbicides, removal of saplings with a weed wrench, bush hogging of understory species, culling of woody plants, mulching, and/or supplemental planting of native species (AECOM 2013). An invasive species and/or forest management plan would guide the removal and maintenance of invasive plant species or other vegetation removal from the property to enhance the cultural landscapes and associated views. The specific approach to be included in the Invasive Species Management Plan and/or Forest Management Plan would be determined at a later date. This EA assesses the impacts of these components from a conceptual level. It is understood that additional information may be needed to fully assess impacts associated with an invasive

species management or forest management plan; therefore, further impact analysis, beyond this EA, may be required prior to implementation of the plans.

In addition to vegetation removal, under each of the alternatives, forest vegetation would be planted in the middle terrace, adjacent to the East-West Connector. The acreage of vegetation to be planted would vary by alternative. The specific type of vegetation to be planted would be determined during final design but could include various native oaks, pines, and eastern red cedar. This new forested area also would serve to screen the site from surrounding commercial development. Trees would also be planted throughout the site to screen modern development from the historic core. Specifically, a small stand of trees would be planted east of the Washington home site to provide screening from the realigned access road. Small stands of trees would be planted between the new buildings in the development zone and the historic core. The specific configuration and location of the vegetative screening would vary by alternative. Deciduous vegetation would likely be planted and would change with the seasons. A combination of grasses and trees would also be planted in islands within the visitor center parking lot.

Invasive species are found throughout the wooded areas of Ferry Farm. To address this issue, invasive species would be removed from the site on an as needed basis to more accurately reflect the vegetation types extant at the time of Washington's occupancy of the site. Removal strategies could include hand removal of mature trees and/or seedlings, use of herbicides, removal of saplings with a weed wrench, bush hogging of understory species, culling of woody plants, mulching, and/or supplemental planting of native species (AECOM 2013). A forest and/or invasive species management plan would be developed to identify the specific strategies to be implemented at Ferry Farm. The three primary invasive species found at Ferry Farm are English ivy (*Hedera helix*), Chinese privet (*Ligustrum sinense*), and exotic bush honeysuckle (*Lonicera* spp.).

USE OF CUTTING EDGE TECHNOLOGIES

Alternatives B, C and D would incorporate cutting edge technologies throughout the site, including within the visitor center introduction and conclusion exhibits. The GWF would implement self-guided tours using tablet computers (such as iPads) or smart phones to aid in interpreting the features of Ferry Farm such as the site's use during the Washington and Civil War periods, existing natural resources, archeological discoveries, and 18th century construction techniques. Additional technologies such as global positioning system (GPS) could be incorporated to provide visitors with applicable information as they move around the site, including for each interpretive node and discovery area. The use of GPS in combination with tablet computers and smart phones also could provide visitors with the option to obtain directions from their specific location to other points of interest within Ferry Farm. Self-guided tours, directions, and general information could be accessed using personal computers and smart phones, though the GWF also would have a selection of these devices for visitors to borrow.

ALTERNATIVE B

As described in the “Elements Common to the Action Alternatives,” in addition to the elements described in this section, Alternative B would include the following components:

- continued archeological investigations
- rehabilitated Washington era landscapes and features
- development and implementation of an invasive species and/or forest management plan
- new visitor center, including a “grab-and-go” café
- removal of the existing visitor center/administration building, parking lots, maintenance depot, restroom building, storage cottage, in-ground pump structure, pump house, tractor shed, equipment shed, and temporary archeology shed
- relocation of the 1870s agricultural building
- up to 50 low-impact interpretive nodes
- discovery areas
- 10,000 square foot interpretive play area
- relocated site entrance
- new access driveway (1,900 feet long for alternative B)
- 2,745 linear feet of screening between the access road and King’s Highway
- a security/entrance station
- new parking lot at the visitor center
- extended pedestrian trails (3,200 feet for alternative B)
- new pedestrian bridge over the ravine
- removal of wooden steps to lower terrace removed and replaced with a winding trail
- stabilization of the ravine near Medicine Spring
- implementation of stormwater management features
- use of cutting edge technologies at the visitor center and for self-guided tours

As part of the rehabilitation of the historic landscape for a new interpretive function, Alternative B would include the replacement of missing historic landscape features (see figure 6). Historic features and structures would be rehabilitated on or near their historic foundations, within the historic core of Ferry Farm. To accommodate views within the historic landscape, tree removal may occur between the Washington home site and the Rappahannock River. Invasive species and unhealthy vegetation would be removed first and, if necessary, a few additional trees could be removed for aesthetic purposes. It is not anticipated that vegetation would be removed from the existing wetlands, unless necessary to maintain the health of the system.

It is estimated that a total of 8.9 acres of trees would be removed from the site under this alternative and approximately 4.5 acres of new forest vegetation would be planted in the middle terrace along the East-West Connector (see “Elements Common to all Action Alternatives). In total, approximately 9.1 acres of new trees would be planted on the site. This would include trees scattered on the escarpment to support historic viewsheds, the reforestation in the middle terrace, and areas in the upper terrace for aesthetic purposes. Small stands of deciduous trees would also be planted around new facilities to screen them from the historic core. The western side of the new parking lot would be lined with deciduous trees to screen it from view in the historic zone and ecological zone.



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Figure 6
ALTERNATIVE B

A mechanical support building of less than 15 feet by 15 feet in size would be constructed in the vicinity of the rehabilitated landscape and features. The mechanical building would be designed so as not to detract from the cultural landscape in the historic core of the site or interpretation of the Washington-era features. The exact location of the rehabilitated landscape features and the mechanical building would be determined during the detailed design phases.

In addition, a new 3.5-acre maintenance facility would be constructed in the northeast corner of the property. This portion of the site is currently vegetated, predominantly with an intermediate red cedar (*Juniperus virginiana*) that is 30-50 years old (AECOM 2013). The understory here in this area is mostly un-vegetated, with the exception of moss and scattered American holly (*Ilex opaca*). To accommodate construction of the new maintenance facility, and the associated access road, approximately 3.5 acres of this forest vegetation would have to be removed. The building footprint would be large enough to store GWF maintenance materials and equipment. The building also would provide enough space for GWF staff to conduct smaller maintenance projects. Elements of the maintenance facility could include an equipment storage shed, a tractor and ATV garage, a material storage facility, a service road, office space, a loading dock, a workshop, and additional storage space. The design of the building would also include a stockpile area for gravel and sand. The specific design for the operations and maintenance yard would be developed at a later date, during the design phases. The facility would be sited between 50 and 200 feet from the northern property boundary (border of the Embrey tract) and at least 200 feet from all historic resources. To support access to the new maintenance facility an approximately 200-foot driveway would be constructed in the northeast portion of the site, off the main entrance road. With the exception of the access road corridor, the maintenance facility would be screened from the rest of Ferry Farm by a forested area.

A new two-story administration building would also be constructed south of the new visitor center. The building footprint would be approximately 9,250 square feet and would incorporate approximately 18,500 square feet of interior space, including a basement. The new facility would contain enough office space to allow the GWF staff to carry out all necessary administrative functions.

As described above, a new parking lot would be constructed on the south side of the new visitor center. The parking lot would be approximately 90,000 square feet in area and would include the components described above in the “Elements Common to the Action Alternatives” section.

ALTERNATIVE C

In addition to the elements described in this section, Alternative C would include the following components, which are common to all action alternatives:

- continued archeological investigations
- rehabilitated Washington era landscapes and features
- development and implementation of an invasive species and/or forest management plan
- new visitor center, including a “grab-and-go” café
- removal of the existing visitor center/administration building, parking lots, maintenance depot, restroom building, storage cottage, in-ground pump structure, pump house, tractor shed, equipment shed, and temporary archeology shed
- relocation of the 1870s agricultural building

- up to 50 low-impact interpretive nodes
- discovery areas
- 10,000 square foot interpretive play area
- relocated site entrance
- new access driveway (2,100 feet long for alternative C)
- 2,745 linear feet of screening between the access road and King's Highway
- a security/entrance station
- new parking lot at the visitor center
- extended pedestrian trails (3,500 feet for alternative C)
- new pedestrian bridge over the ravine
- removal of wooden steps to lower terrace removed and replaced with a winding trail
- stabilization of the ravine near Medicine Spring
- implementation of stormwater management features
- use of cutting edge technologies at the visitor center and for self-guided tours

Although each of the action alternatives would include continued archeological investigations to identify the original buildings associated with the Washington family farm, Alternative C proposes to replace the historic landscape features approximately 250 feet south of their original location, within the development zone (see figure 7). As described under Alternative B, a mechanical building of less than 15 feet by 15 feet in size would also be constructed in the vicinity of these interpretive structures. The mechanical building would be designed so as not to detract from the cultural landscape or interpretation of the Washington-era structures. The exact location of the interpretive structures and the mechanical building would be determined during the detailed design phases. In order to maintain a visual connection with the Rappahannock River, an estimated 3.0 acres of forest would be cleared between the interpretive Washington Home Farm features and the river (in addition to the selective thinning of up to two dozen trees on the escarpment described in "Elements Common to All Action Alternatives"). Vegetation between the historic Washington home site and the Rappahannock River would continue to be managed to maintain connecting views. Under Alternative C, the new visitor center would be sited approximately 350 feet south of its location under Alternative B and D, providing views of the entire site.

It is estimated that a total of 11.9 acres of trees would be removed from the site under this alternative. To mitigate vegetation removal, approximately 4.5 acres of new forest vegetation would be planted in the middle terrace and along the East-West Connector (see "Elements Common to all Action Alternatives"). In total, approximately 9.6 acres of new trees would be planted on the site under Alternative C. New trees would be scattered on the escarpment to support historic viewsheds and planted in the middle and upper terrace for aesthetic purposes. Small stands of trees would also be planted around new facilities in the developed zone to screen them from the historic core. Specifically, small stands of deciduous trees would be planted north and east of the new visitor center, and a few additional trees would be planted to the west to screen the building from view in the historic core. The western and southern sides of the new parking lot would be lined with deciduous trees to screen it from view in the historic zone and ecological zone.

A new 3.5-acre maintenance facility would be constructed in the northeast corner of the property, in the same location and configuration as described under Alternative B, requiring the removal of approximately 3.5 acres of forest vegetation to accommodate the maintenance facility and associated access road. The building footprint would be large enough to store GWF maintenance materials and equipment. The building also would provide enough space for GWF staff to conduct smaller maintenance projects at the facility.



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Figure 7
ALTERNATIVE C

Elements of the maintenance facility could include an equipment storage shed, a tractor and ATV garage, a material storage facility, a service road, office space, a loading dock, a workshop, and additional storage space. The design of the building would also include a stockpile area for gravel and sand. The specific design for the operations and maintenance yard would be developed at a later date, during the design phases. The facility would be sited between 50 and 200 feet from the northern property boundary (border of the Embrey tract) and at least 200 feet from all historic resources.

To avoid overcrowding the site under Alternative C, the administration building would be constructed in the northeast corner of the property, near the proposed maintenance facility. The administrative building would be constructed within the approximately 3.5 –acres area cleared for the maintenance facility; therefore, no additional clearing would be required in this area. Consistent with Alternative B, the new administrative building would be two stories with a basement and would occupy approximately 9,250 square feet of land and approximately 18,500 square feet of interior space. The new facility would contain enough office space to allow the GWF staff to carry out all necessary administrative functions.

To support access to the new maintenance facility and administrative building, an approximately 200-foot driveway would be constructed in the northeast portion of the site, off the main entrance road. With the exception of the access road corridor, these facilities would be screened from the rest of Ferry Farm by a forested area. A second parking lot would be constructed near the new administrative building. This lot would support 25 parking spaces, including 1 ADA-accessible space. Similar to the visitor center parking lot, the lot for the administrative building would include low-impact design features, such as the use of pervious paving materials, to efficiently manage stormwater. The new visitor center parking lot associated with Alternative C would be approximately 103,000 square feet in area and would include the components described in the “Elements Common to the Action Alternatives” section. The overall circulation system for Alternative C would be similar to Alternative B, except that the driveway would be slightly longer to provide access to the more southern parking lot and visitor center.

ALTERNATIVE D (PREFERRED ALTERNATIVE)

In addition to the elements described in this section, Alternative D would include the following components, which are common to all action alternatives:

- continued archeological investigations
- rehabilitated Washington era landscapes and features
- development and implementation of an invasive species and/or forest management plan
- new visitor center, including a “grab-and-go” café
- removal of the existing visitor center/administration building, parking lots, maintenance depot, restroom building, storage cottage, in-ground pump structure, pump house, tractor shed, equipment shed, and temporary archeology shed
- relocation of the 1870s agricultural building
- up to 50 low-impact interpretive nodes
- discovery areas
- 10,000 square foot interpretive play area
- relocated site entrance
- new access driveway (2,300 feet long for alternative D)
- 2,745 linear feet of screening between the access road and King’s Highway

- a security/entrance station
- new parking lot at the visitor center
- extended pedestrian trails (3,200 feet for alternative D)
- new pedestrian bridge over the ravine
- removal of wooden steps to lower terrace removed and replaced with a winding trail
- stabilization of the ravine near Medicine Spring
- implementation of stormwater management features
- use of cutting edge technologies at the visitor center and for self-guided tours

The components of Alternative D would be the same as those described for Alternative B, with the exception of the location of the proposed maintenance facility and administrative building. Under Alternative D the GWF would continue archeological investigations to identify the original buildings associated with the Washington family farm. Historic features and structures would be rehabilitated on or near their historic foundations, within the historic core of Ferry Farm. To accommodate views within the historic landscape, selective tree removal could occur between the Washington home site and the Rappahannock River. It is anticipated that up to 24 individual trees would be removed from the escarpment for this purpose. Invasive species and unhealthy vegetation would be removed first and, if necessary, a few additional trees could be removed for aesthetic purposes. It is not anticipated that vegetation would be removed from the existing wetlands, unless necessary to maintain the health of the system. Similar to the other action alternatives, a mechanical support building of less than 15 feet by 15 feet in size would be constructed in the vicinity of the rehabilitated landscape and associated features. The mechanical building would be designed so as not to detract from the cultural landscape or interpretation of the Washington-era features. The exact location of the rehabilitated landscape features and the mechanical building would be determined during the detailed design phases.

It is estimated that a total of 6.1 acres of trees would be removed from the site under this alternative. To mitigate vegetation removal, approximately 2 acres of new forest vegetation would be planted in the middle terrace and along the East-West Connector (see “Elements Common to all Action Alternatives”). In total, approximately 5.8 acres of new trees would be planted on the site under Alternative D. New trees would be scattered on the escarpment to support historic viewsheds. In addition, new trees would be planted on the middle terrace to screen the new maintenance facility from view for aesthetic purposes, and small stands of deciduous trees would also be planted around the new visitor center and administrative building to screen them from the historic core. Specifically, small stands of deciduous trees would be planted north, east, and west of the new visitor center to screen the building from view in the historic core. The northern, western and southern sides of the new parking lot would also be lined with deciduous trees to screen it from view in the historic zone and ecological zone. Additional stands of deciduous trees would be planted to the north, east, and west of the administrative building to screen it from the historic core and pedestrian trails.

A new maintenance facility would be constructed in the southeast corner of the property, approximately 850 feet south of the proposed visitor center. As described under Alternatives B and C, the new facility would include approximately 3.5 acres and the building footprint would be large enough to store GWF maintenance materials and equipment. The building would also provide enough space for GWF staff to conduct routine maintenance projects at the facility. The specific design for the operations and maintenance yard would be developed at a later date, during the design phases. The facility would be well removed from the historic core of Ferry Farm. With the exception of the access road corridor, the maintenance facility would be screened from the rest of Ferry Farm with deciduous vegetation.



George Washington Boyhood Home Site at Ferry Farm

Figure 8
ALTERNATIVE D



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A new parking lot would be constructed on the south side of the new visitor center. The parking lot would be approximately 90,000 square feet in area and would include the components described above in the “Elements Common to the Action Alternatives” section. A new one- to two-story administration building would be constructed south of the new parking lot (approximately 100 feet southwest of the location proposed under Alternative B). Like Alternative B, the building footprint would be approximately 9,250 square feet and would incorporate approximately 18,500 square feet of interior space, potentially including a basement. The new facility would contain enough office space to allow the GWF staff to carry out all necessary administrative functions. The overall circulation system for Alternative D would be similar to Alternative B, except that the driveway could be slightly longer to provide access to the maintenance facility.

ALTERNATIVES/ELEMENTS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

During the alternatives development process described above, and in consideration of the project purpose, need, and objectives, several alternative components were considered but dismissed from further analysis in this EA. These elements are described below.

OPEN AIR PAVILIONS

The 2002 *Ferry Farm Master Plan* included the development of multiple open air pavilions to “support diverse educational adventures and community events” (GWF 2002). As a result, The Great Oak Pavilion was constructed in 2004 in the central portion of the property, west of the visitor center. The structure is a stand-alone open air pavilion. Although multiple open air pavilions were considered during the initial planning process, it was later determined that some of the interpretive nodes proposed under the action alternatives could include small shelters that would support interpretation similar to that envisioned for the open air pavilions. These smaller structures would have less potential for impact to natural and cultural resources than the larger open air pavilions. For these reasons, the construction of additional multiuse open air pavilions was considered but dismissed.

OUTDOOR FAMILY PICNIC AREA

The 2002 *Ferry Farm Master Plan* included the development of an outdoor family picnic area at Ferry Farm. Outdoor seating may be included as part of the proposed café, to be incorporated into the new visitor center. In addition, the proposed interpretive play area could include outdoor seating and/or tables for outdoor dining. To minimize impacts to natural and cultural resources at the site, and because the new visitor center and interpretive play area could accommodate outdoor dining opportunities, a separate family picnic area was considered but dismissed from further analysis.

RESTORED SPECIAL EVENTS MEADOW

The 2002 *Ferry Farm Master Plan* proposed to use the middle terrace to “increase regional awareness of Ferry Farm, by welcoming diverse segments of the public to the site to enjoy a wide range of community events in a restored natural setting” (GWF 2002). The 2002 *Ferry Farm Master Plan* proposed improvements to the middle terrace such as clearing some of the vegetation to allow visitors to view the Rappahannock River and beyond during events, restoring soil conditions, and restoring native vegetation (GWF 2002). It was envisioned that a wide range of events and programs could take place at the meadow, such as Civil War reenactments, festivals, camping, and performing arts. Such a variety of events could attract a more diverse public to Ferry Farm. To support these activities, the 2002 *Ferry Farm Master Plan* proposed the construction of a small pavilion in the middle terrace that would provide restroom facilities, including a shower for campers; drinking water fountains; interpretive signs; programming space; and a general shelter for visitors. To minimize impacts to natural and cultural resources associated with development of the restored special events meadow, this component was considered but dismissed from further analysis.

The 2007 *Washington’s Ferry Farm... An Update* provided a modified plan for the middle terrace. In response to the proposal in *Washington’s Ferry Farm... An Update*, in 2007, the GWF planted native grasses and wildflowers and installed bluebird houses, hawk posts, and brush piles to create habitat that attracts various types of birds and small animals to the former quarry pit. Subsequently, the GWF began programming about nature from the middle terrace, including bird watching and native plant tours. These programs could be expanded as part of the proposed discovery area development, discussed above.

VISITOR CENTER LOCATION

During the alternative development process, various options for locating the visitor center were considered. Locations considered included the central portion of the development zone, the southern portion of the development zone, and the northeast corner of the site (north of the ravine). The southernmost location was dismissed because of the undesirable walking distance for visitors to the Washington home site (1500 feet), which could necessitate a second visitor services facility near the Washington home site. In addition, the Washington home site would be situated at an elevation approximately 10 feet higher than the visitor center, requiring visitors to walk up hill. Siting the visitor center in the northeast corner would not provide visitors with immediate recognition of the historic features associated with Ferry Farm and would not allow for the visitor’s transitional experience of entry into the historic site. Instead, arrival to the visitor center from King’s Highway would be immediate. Additionally, this location would not support interpretation of the site as a whole. Based on this reasoning, constructing the visitor center in the extreme southern and/or northeast corner of the site was dismissed from further analysis.

HISTORIC CONSTRUCTION LEARNING CENTER

The development of an interpretive facility related to historic construction techniques was considered during alternatives development. Such a facility would provide visitors with the opportunity to experience

the craft of historic construction methods which were used to develop the Washington home and which would be used, as feasible, to construct the interpretive structures at Ferry Farm. It was determined that although such knowledge would be appreciated by some visitors, it is not central to the unique features at the site and is not related to the GWF's core mission. For these reasons, and to maintain focus on the goals of the Site Treatment Plan, this element was considered but dismissed from further analysis.

STATE OF THE ART VISITOR CENTER AS PRIMARY SOURCE OF INTERPRETATION

As part of the alternative planning process, development of a new state of the art interpretive visitor center, to serve as the primary point of interpretation of historic Washington-era landscapes and features was considered. Although visitors would also be provided with interpretive opportunities by observing onsite archeology, no rehabilitation would occur within the historic landscape. While the action alternatives described previously in this chapter (Alternatives A-D) would incorporate a state of the art visitor center, the facility would not serve as the main interpretive vehicle. The visitor center-focused approach to interpretation considered but dismissed would not restore the historic, Washington-era scenes or clarify historic relationships. The size of the visitor center that would be required to accommodate expanded visitation at Ferry Farm would be out of scale compared to the ongoing archeology, creating an overall experience that feels modern and taking the focus away from the site's colonial history. The site development necessary to take visitors to and through archeological site (i.e., vehicular and/or pedestrian access) also could overwhelm interpretation of the minimal resources exposed at the surface. This would further result in a site imbalance toward the contemporary rather than historic interpretation. In addition, community feedback to the GWF suggests that limiting the focus Ferry Farm to one that is primarily archeological would only attract the interest of a narrow audience. This approach would not appropriately tell the story of Washington's boyhood home and how it influenced the man he would become. For these reasons, and to maintain focus on the goals of the Site Treatment Plan, this element was considered but dismissed from further analysis.

ABSTRACT REPRESENTATIONAL STRUCTURES

The development of abstract representational structures, such as wire frames and glass houses, were considered during the alternatives planning process as potential ways to illustrate site relationships within the historic zone. However, such structures would not convey the cultural, technological, and material environmental factors that characterized colonial life at the Washington family farm. Such an approach would shift the interpretive focus away from the colonial history of Ferry Farm, instead featuring modern architecture. For most visitors, the construction of abstract, contemporary structures within the historic zone would distract and detract from efforts to illustrate George Washington's boyhood. Specifically, the presence of the abstract features would make it more difficult for visitors to accurately differentiate between contemporary and historic features of the site, as they may interpret only the abstract structures as modern and assume all others are relevant to site's history. In addition, input from the community suggests that the abstract representational structures would draw a narrow visitor base. For the reasons summarized above, this element was considered but dismissed from further analysis.

EXTENSIVE ESCARPMENT CLEARING

During the alternatives planning process, extensive vegetative clearing from the escarpment to allow new forest growth was considered. Period descriptions indicate that during the Washington era, the escarpment would have been mainly clear of trees. Clearing the new growth from the escarpment could more accurately represent the landscape of the Washington era. However, extensive clearing of vegetation from the escarpment could have substantial adverse impacts on environmental factors such as storm water and erosion potential, both during and after construction; water quality; speed and volume of water drainage directly into the open waters of the Rappahannock River; loss of wildlife habitat for food and shelter; reduction in species diversity and extent; loss of habitat mobility/migration patterns along the Rappahannock River corridor; increased urban heat island effects; and loss of present and future carbon sequestration. The existing tree cover also provides desirable screening from contemporary developments across the river and provides shade and cooling for visitors which is especially important during the hot summer months. For these reasons, extensive clearing of vegetation from the escarpment was dismissed from further analysis.

OTHER SITE ENTRY AND EXIT LOCATIONS

A variety of site entry and exit locations were considered and evaluated by VDOT, in coordination with GWF. For safety reasons, locating the site entrance away from the signaled intersection on King's Highway was dismissed from further consideration. Based on the anticipated increased traffic to the site and coordination with planned improvements to Ferry Road, it was determined that the safest and most accessible option for an entrance to the site would be to add a fourth "leg" to the existing intersection at King's Highway and Ferry Road. There are no other signaled intersections that would facilitate safe entrance to property within the boundaries of the current site. In addition, any entrance location south of the location proposed in the action alternatives would require northbound vehicles to perform a U-turn at the current intersection to access the site entry. Southern entrances to the site are also restricted by the grade separation between the site and King's Highway (including guardrail barrier and a limited width shoulder), vertical curve sight distance restrictions (as defined in the VDOT Road Design Manual), and entrance grade transitions from super elevation on the existing road.

Site exits to King's Highway at the south end of Ferry Farm were also considered by VDOT. However, VDOT maintains specific requirements related to safe access onto the East-West Connector from King's Highway. At the southern end of the property there is an exit ramp for the East-West Connector. No entrances are permitted within the length of the ramp and turn lane due to traffic movement, driver reaction, and permissible design speeds associated with the road. The site exit proposed in the action alternatives would be allowed because it is pre-existing and because it is at the top (north end) of the ramp where impacts on safety are minimized. For these reasons, alternate site entry and exist locations were considered by dismissed from further analysis.

MITIGATION MEASURES

To prevent and minimize potential adverse impacts associated with the preferred alternative, best management practices (BMPs) and mitigation measures would be implemented during the construction and post construction phases of the project. General and resource-specific BMPs and mitigation measures are listed below. This list is not all-inclusive, as there would be additional mitigation measures included in the construction contractor's specifications. Furthermore, the state and federal permits that would be required before this project proceeds with construction typically include a variety of conditions specifically related to the protection of water quality and natural resources from additional construction-related impacts (see Chapter 5: Consultation and Coordination).

GENERAL MEASURES

- The GWF would be responsible for overseeing on-site contractors, conducting regular field inspections, and taking prompt action against non-compliance, if necessary. Appropriate erosion and siltation controls would be maintained during construction, as appropriate.
- A contractor kickoff meeting would be held to ensure that all workers are apprised of proper protocol to follow in the event of an emergency, including contact information for first responders, as well as environmental and cultural resource considerations.
- Appropriate measures would be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering waterways or wetlands. These include safe handling and refueling procedures and proper deployment of containment measures such as oil booms. Actions would be consistent with state water quality standards and Clean Water Act section 401 certification requirements. A hazardous spill plan would be approved by the park prior to construction. This plan would state what actions would be taken in the case of a spill, notification measures, and preventive measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials, etc.
- BMPs for drainage and sediment control would be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. BMPs would include all or some of the following actions, depending on site-specific requirements:
 - Disturbed areas would be kept as small as possible to minimize exposed soil and the potential for erosion
 - Regular site inspections would occur during construction to ensure that erosion-control measures were properly installed and are functioning effectively
- The contractor would not leave vehicles idling for more than five minutes when parked or not in use.
- A traffic control plan would be implemented, as warranted. Standard measures include strategies to maintain safe and efficient traffic flow during the construction period.

NATURAL RESOURCES

- Equipment use in vegetated wetland areas would be avoided to the greatest extent possible.
- Any vegetation lost during the construction process could be replaced, at least in part, with native plantings (approximately 4.5 acres are proposed in the southern portion of the property).
- Invasive plants would be removed in compliance with applicable regulations and pursuant to an Invasive Species Management Plan and/or Forest Management Plan, which would be developed as part of a separate undertaking. These plans are included in the cumulative impact analysis in chapter 4 of this EA.
- An Erosion & Sedimentation Control Plan would be developed and implemented during construction to prevent erosion and minimize soil impacts during construction.

CULTURAL RESOURCES

- GWF cultural resources staff would be available during construction to advise or take appropriate actions should any archeological resources be uncovered during construction.
- If any unknown significant archeological resources are uncovered during ground disturbing activities, NHPA section 106 procedures would be immediately implemented. All work in the immediate vicinity of the discovery would be halted. Construction may proceed only after it has been determined that implementation of the actions undertaken to address the discovery are complete.
- The GWF would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites, historic properties, or elements of the cultural landscape. Contractors and subcontractors also would be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction.
- Proposed changes to the cultural landscape and historic structures would adhere to the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, *Secretary of the Interior's Standards for Rehabilitation*, and the site-specific programmatic agreement between GWF, NPS, and the SHPO
- It is unlikely that Native American burials would be encountered during construction. However, as a conservative approach, the GWF would comply with the Native American Graves Protection and Repatriation Act (NAGRA) should any cultural items or graves protected by NAGPRA be encountered on federal land. The GWF will reach out to non-federally recognized tribes should cultural items or graves be encountered in the project area.

SUMMARY OF THE ALTERNATIVES

Table 1 provides a summary of the alternatives presented above.

TABLE 1. SUMMARY OF ALTERNATIVES

Alternative Elements	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Archeological Investigations	Continued investigations, focused in the vicinity of the Washington home site, but also related to prehistoric and historic use of the site, including during the Civil War and Commemorative periods.	Same as Alternative A	Same as Alternative A	Same as Alternative A.
Interpretation	No new structures would be built to interpret archeological findings or other site resources.	As archeological and scholarly investigations identify additional structures from the Washington home site, historic landscape features would be replaced within the historic zone, at or near their original location.	Same as Alternative B, except the replacement landscape features would be sited in the development zone, approximately 250 feet south of their original location.	Same as Alternative B.
	Vegetation between the historic Washington home site and the Rappahannock River would continue to be managed to maintain connecting views.	Some vegetation (up to 24 trees) could be selectively thinned from the escarpment to enhance the connecting view of the historic landscapes.	Approximately 3.0 acres of vegetation between the rehabilitated landscape features and the river would be removed to provide open views between the historic landscapes/features and the river.	Same as Alternative B.
	No opportunities for active interpretive play area at the site.	An active interpretive play area would be constructed adjacent to the west of the new parking lot to engage children, educate them about colonial life, and provide them with an opportunity to learn more about the historic significance of the site and methods used by archeologists to uncover artifacts.	Same as Alternative B.	Same as Alternative B.

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

Alternative Elements	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Interpretation (cont.)	Interpretation remains as is.	A variety of interpretive discovery areas and up to 50 low-impact, self-service interpretive nodes would be developed along the pedestrian trail network. These features would focus on different aspects of the site's natural and cultural history and could include a combination of live interpretation, built features, interpretive shelters, and/or signage.	Same as Alternative B	Same as Alternative B.
Visitor Center	The existing visitor center would continue to function as the point of arrival and interpretation for visitors.	A new visitor center would be constructed in the central portion of the site. The existing visitor center/ administrative building would be demolished and removed from the property. Enhanced programming/interpretive activities offered. A café would be included in the visitor center providing visitors with "grab and go" food options.	Same as Alternative B, except the new visitor center would be constructed approximately 350 feet further south.	Same as Alternative B.
Administration Building	The existing visitor center would continue to function as the only onsite administrative center.	A new administrative building would be constructed in the southeastern portion of the site to provide appropriate space for staff. The new facility would accommodate GWF staff from both Ferry Farm and the Kenmore property.	Same as Alternative B, except the new administrative building would be sited in the northeast corner of Ferry Farm.	Same as Alternative B, except the new administrative building would be sited approximately 100 feet northwest to accommodate the southern location of the maintenance facility.

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

Alternative Elements	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Maintenance Area	Existing site maintenance structures and routines would be maintained.	A new approximately 3.5-acre maintenance facility would be constructed in the northeast corner of the site. The existing maintenance facility would be demolished and removed from the property.	Same as Alternative B.	Same as Alternative D, except the maintenance facility would be in the southeast corner of the site.
Vehicular Circulation Systems	No changes would be made to the existing vehicular access/ egress, parking, or circulation patterns.	The site entrance would be moved approximately 300 feet to the north to align with a new left-turn lane at Ferry Road. The driveway would be 50 feet wide and would extend approximately 1,900 feet south from King's Highway, through the tree-lined eastern border of the site, to the new visitor center, administration building, and parking lot. A northern branch of the driveway would extend approximately 200 feet from the site entrance to the new maintenance facility.	Same as Alternative B, except the driveway would be longer (approximately 2,100 feet) due to the more southerly visitor center and associated parking lot and the northern branch would provide access to both the maintenance facility and the new administrative building.	Same as Alternative B, except the driveway would be slightly longer (approximately 2,300 feet total) to provide access to the new maintenance facility in the southeast corner of the property. In addition, Alternative D would not have a northern branch since the maintenance facility would be situated in the southeast corner of the property.
	The site's parking lot would continue to provide 70 parking spaces, with overflow parking for special events provided in the upper terrace, southwest of the visitor center.	The new visitor center parking lot would provide a total of 90 parking spaces, including 4 ADA accessible spaces, and 4 bus spaces.	Same as Alternative B except a second parking lot would also be constructed in the northeast corner of the site to accommodate the new administrative facility. This lot would support a total of 25 parking spaces, including 1 ADA accessible space.	Same as Alternative B.

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

Alternative Elements	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Pedestrian Circulation Systems	No changes would be made to the existing pedestrian circulation patterns. The existing trails network would remain and would provide access to select resources including the gardens, The Great Oak Pavilion, the middle terrace, and the restrooms. Visitors would continue to access additional resources, such as the archeological sites and the lower terrace, by walking across the lawns.	The existing trail network would be extended by approximately 3,200 feet to provide access to the natural and cultural resources at the site. The existing staircase to the lower terrace would be removed and replaced with a meandering trail down the slope. The new trails also would connect to the current driveway in the northern portion of the site to create a large loop. As part of the trail extension, a new bridge would be constructed over the ravine to provide access to a Civil War discovery area.	Same as Alternative B, except the existing trail network would be extended by approximately 3,500 feet to accommodate a new trail loop near the Washington home site. The existing site driveway would be removed.	Same as Alternative B.
Screening at King's Highway Corridor	No new screening elements would be incorporated.	Elements would be considered to screen Ferry Farm from development along King's Highway. This could be achieved through a combination of fencing, berms, and/or intensive plantings along a 2,745-foot corridor.	Same as Alternative B.	Same as Alternative B.
1870s Agricultural Building	The existing 1870s agricultural building would be maintained in its current location.	The 1870s agricultural building would be relocated from the historic zone to a location approximately 400 feet, to a location near the visitor center and would be screened from the interpretive landscape and features by deciduous vegetation.	Same as Alternative B.	Same as Alternative B.

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

Alternative Elements	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Modern Support Buildings	The in-ground pump house structure would be removed from the site. The remaining modern buildings would be retained onsite.	Modern support buildings would be removed from the property including the restroom facilities, storage cottage, in-ground pump structure, pump house, tractor shed, equipment shed, and temporary archeology storage shed.	Same as Alternative B.	Same as Alternative B.
Ravine	Continue periodic maintenance efforts to stabilize.	Stabilize erosion occurring at the Medicine Springs, including an evaluation of stream flow, and provide an accessible crossing (see New Pedestrian Circulation Systems).	Same as Alternative B.	Same as Alternative B.
Middle Terrace	No changes would be made to the middle terrace.	Approximately 4.5 acres of trees would be planted along the East-West Connector to mitigate for vegetation loss elsewhere on the site and to screen the site from commercial development.	Same as Alternative B.	Approximately 2.0 acres of trees would be planted along the East-West Connector to mitigate for vegetation loss elsewhere on the site and to screen the site from commercial development.
Cutting Edge Technologies	Cutting edge technologies would not be incorporated at Ferry Farm.	Cutting edge technologies such as tablet computers (i.e., iPads or similar), smart phones, and global positioning systems (GPS) would be used at the site to enhance interpretation during self-guided tours and provide directions to other points of interest.	Same as Alternative B.	Same as Alternative B.

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

Alternative Elements	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Meets Purpose and Need?	<p>No. Improvements would not be made to the existing facilities at Ferry Farm. Therefore, this alternative would not ensure the stewardship of cultural resources and ecological and operational sustainability or support an authentic, relevant, and inspiring interpretive visitor experience.</p>	<p>Yes. A variety of improvements would be made to ensure the stewardship of cultural resources and ecological and operational sustainability and would support an authentic relevant and inspiring interpretive visitor experience.</p>	<p>Yes. A variety of improvements would be made to ensure the stewardship of cultural resources and ecological and operational sustainability and would support an authentic relevant and inspiring interpretive visitor experience. However, rehabilitated historic landscapes and features would be sited in the development zone, away from their original location.</p>	<p>Yes. A variety of improvements would be made to ensure the stewardship of cultural resources and ecological and operational sustainability and would support an authentic relevant and inspiring interpretive visitor experience.</p>

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 2 provides a summary of the environmental consequences related to each alternative. A more detailed explanation of the impacts is presented in Chapter 4: Environmental Consequences.

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Soils and Topography	<p>No changes to current operations except removal of the pump house.</p> <p>Soils removed during archeological investigations would be temporarily stockpiled on site and stabilized with required erosion and sediment control devices.</p> <p>Repeated storage and movement of equipment on the landscape would expose and compact soils and could limit natural soil functions.</p> <p>Erosion also could become apparent from exposed soils.</p>	<p>Soils removed during archeological investigations would be temporarily stockpiled on site and stabilized with required erosion and sediment control devices.</p> <p>New construction, demolition, relocation of the 1870s agricultural building, and paving would require soil disturbance in the form of grading, compaction, and/or displacement of soils.</p> <p>Modifications to the existing trail system and the development of interpretive nodes and discovery areas would result in the compaction of soils and some regrading.</p> <p>Planting and removal of 8 trees would displace soils.</p> <p>Stabilize of the ravine would reduce erosion into Medicine Spring.</p> <p>Erosion and sedimentation control practices would be incorporated into the site plan.</p>	<p>Similar to Alternative B except:</p> <p>Removal of vegetation between on the escarpment and lower terrace would disturb the underlying soils and could increase erosion potential.</p> <p>The driveway and extensions to the pedestrian trail network would be approximately greater under Alternative B, due to the more southerly location of the visitor center and parking lot.</p>	<p>Similar to Alternative B except:</p> <p>No construction would occur in the northeast corner of the site; therefore there would be no impacts to soils and/or topography in this area. Instead, some grading, compaction, and displacement of soils would occur in the southeast corner of the site in connection with the new maintenance facility.</p>

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Soils and Topography (cont.)	No impact to prime farmland in the upper terrace.	Compared to the other action alternatives, would likely convert more acres of prime farmland in the upper terrace to developed land due to the placement of the administrative building. The upper terrace is not currently being used for agricultural purposes.	Some development of prime farmland soils would occur in the upper terrace, but would be less than Alternative B, and similar to Alternative D.	Some development of prime farmland soils would occur in the upper terrace, but would be less than Alternative B, and similar to Alternative C.
	Overall impact: long-term, minor, adverse	Overall impact: short-term, moderate, adverse; long-term, minor, adverse	Overall impact: short-term, moderate, adverse; long-term, minor, adverse	Overall impact: short-term, moderate, adverse; long-term, minor, adverse
	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate adverse cumulative impacts
Vegetation	No changes to current operations. Visitors would walk across the lawn to reach the 1870s agricultural building, the archeological dig site, or the steps that provide access to the lower terrace. Vegetation (field grasses) mortality resulting from continued use of the lawn to access the archeological dig site, steps to the lower terrace, and 1870s agricultural building; and from storage of maintenance equipment.	A total of approximately 8.9 acres of mostly forest vegetation removed. Approximately 9.1 acres of vegetation to be planted, including vegetative screening of new facilities. Mature trees removed for new driveway to visitor center and administrative building. Impacts to a pine dominated forest would occur in the northern end of the property for development of the maintenance facility.	Similar to Alternative B except: A total of approximately 11.9 acres of mostly forest vegetation removed. Approximately 3.0 acres of tree and shrub clearing on the escarpment and lower terrace. Approximately 9.6 acres of vegetation to be planted, including vegetative screening of new facilities.	Similar to Alternative B except: No impacts to the pine dominated forest in northern end of the property. Instead, approximately 3.5 acres of field vegetation would be impacted to accommodate the new maintenance facility in the southeast corner of the property. A total of approximately 6.1 acres of mostly forest vegetation removed.

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Vegetation (continued)	Continued field grass mortality could allow invasive species to take root in the lawn.	Primarily deciduous trees removed in the center of the site to accommodate the new visitor center, parking lot, and administrative building. Selective removal of vegetation (up to 24 trees) between the Washington home farm site and the Rappahannock River to enhance historic landscapes, including the removal of nonnative, invasive species. Vegetation loss would be mitigated by re-establishing approximately 4.5 acres of successional growth forest in the southern portion of the site.	Subsequent to vegetation removal, the soil would be graded and the area would be seeded with various native field grasses and herbs to mimic pasture conditions common in the day of the Washington era. This alternative would mitigate vegetation losses using the same approach described under Alternative B.	Approximately 5.8 acres of vegetation to be planted, including vegetative screening of new facilities.
	Overall impact: long-term, minor, adverse	Overall impact: short-term, minor, adverse; long-term, moderate, adverse	Overall impact: short-term, minor, adverse; long-term, moderate, adverse	Overall impact: short-term, minor, adverse; long-term, moderate, adverse
	Cumulative impact: contributes an imperceptible adverse increment to long-term, minor, adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Wildlife and Wildlife Habitat	<p>No changes to current operations at Ferry Farm.</p> <p>Continued minimal disruptions to current wildlife feeding, breeding, or nesting patterns due to routine maintenance and operations.</p> <p>Most visitors isolated in certain areas, minimizing disturbances to wildlife.</p>	<p>Diverse habitats would be maintained over the long-term.</p> <p>New developments would disrupt vegetation that may serve as habitat for local wildlife.</p> <p>Species could be temporarily displaced during construction due to noise disturbances and machinery activity.</p> <p>New forested areas would be established in middle terrace and would mitigate impacts to existing wildlife habitats.</p>	<p>Similar to Alternative B, except:</p> <p>Approximately 3.0 acres of forested wildlife habitat in the escarpment and lower terrace would be converted to open field habitat. Specifically, forested habitat used by a wide variety of migrant and resident songbirds, white-tailed deer, and various small mammals would be converted to an open field available to other species, such as meadow larks, field sparrows, wild turkeys, and eastern kingbirds.</p>	<p>Similar to Alternative B, except:</p> <p>The type of habitat impacted would vary slightly. The location southeastern location of the new maintenance facility would disrupt approximately 3.5 acres of field habitat (as compared to approximately 3.5 acres of forest habitat under Alternatives B and C).</p>
	Overall impact: long-term, negligible, adverse	Overall impact: short-term, moderate, adverse; long-term, minor, adverse	Overall impact: short-term, moderate, adverse; long-term, minor, adverse	Overall impact: short-term, moderate, adverse; long-term, minor, adverse
	Cumulative impact: contributes an imperceptible adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Wetlands and Streams	<p>Current management would continue.</p> <p>Impacts to wetlands and streams would be avoided.</p> <p>Yard maintenance and cultural resource studies are not expected to noticeably impact wetlands and streams.</p>	<p>No direct impacts to wetlands and streams would occur. Most development is the upper terrace, away from wetlands and streams.</p> <p>Trail extension would require construction of a new pedestrian foot bridge crossing the ravine over Medicine Spring. Encroachment into the stream channel is not anticipated; however, sediment pollution could enter the stream channel during construction. Erosion and sedimentation control practices would be incorporated into the site plan.</p> <p>The Rappahannock River interpretive node would be just south of a seep wetland where surface water originates from the escarpment. Soils could be disturbed during construction that could enter the wetland and be transported into the Rappahannock River.</p>	<p>Similar to Alternative B, except:</p> <p>Clearing of 3.0 acres forested wetlands in the lower terrace, including three small wetland seeps would cause water quality impacts and a conversion of the wetlands from a palustrine forested habitat to a palustrine emergent habitat.</p> <p>This action would require permit authorization from the Virginia DEQ and USACE.</p>	Same as Alternative B
	Overall impact: no impact	Overall impact: long-term, negligible, adverse	Overall impact: long-term, moderate, adverse	Overall impact: long-term, negligible, adverse
	Cumulative impact: none	Cumulative impact: none	Cumulative impact: none	Cumulative impact: none

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Chesapeake Bay Resources	<p>No changes to current operations.</p> <p>Current management actions primarily occur landward of the Resource Protection Area (RPA) within the upper terrace</p> <p>Some trail maintenance could occur within, but is not anticipated to noticeably impact, the RPA.</p>	<p>Disturbance would occur within the RPA for construction of the new pedestrian bridge over the ravine and Medicine Spring, development of the interpretive node on the shoreline of the Rappahannock River, and stabilization of the ravine.</p> <p>Stormwater management would be implemented to capture runoff from new infrastructure and would enhance water quality entering the Rappahannock River.</p> <p>All actions would be permissible in accordance with the Stafford County Ordinance, but would require county approval, including an Erosion & Sedimentation plan approved by Stafford County, prior to construction.</p>	<p>Similar to Alternative B, except:</p> <p>Clearing of approximately 1.2 acres of vegetation within the 100-foot wide riparian RPA buffer adjacent to the Rappahannock River. This would reduce riparian buffer's ability to filter surface runoff pollutants. Permit authorization needed by Stafford County. Water quality mitigation would be required to offset impacts to the RPA upland buffer.</p>	Same as Alternative B
	Overall impact: long-term, negligible, adverse	Overall impact: long-term, minor, adverse	Overall impact: long-term, moderate, adverse	Overall impact: long-term, minor, adverse
	Cumulative impact: none	Cumulative impact: none	Cumulative impact: none	Cumulative impact: none

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Archeological Resources	<p>No changes to operations at Ferry Farm.</p> <p>Continued archeological investigations would provide additional information about the history of the site. Artifacts uncovered during the investigations would be systematically documented, collected, and curated.</p> <p>Additional information would only be conveyed to the public via small displays and viewing of the on-going field work and the outlines of the brick and stone outlines of the locations where historic foundations have been discovered.</p>	<p>Archeological investigations would continue.</p> <p>New development and vegetative plantings/removals could disturb underlying archeological resources. Most development would occur within the development zone or other areas of the site that have been previously disturbed during construction of King's Highway, the existing visitor center, and/or the East-West Connector. For former gravel pit in the middle terrace has substantially altered soils and diminished the potential for intact archeological resources in that area.</p> <p>Protective fill would be provided over archeological extant elements to remain.</p> <p>Further archeological investigations would be conducted, in areas of development, demolition/removal, or plantings, if no previous survey has been conducted (see figure 12). These areas include the northern portion of the site and along the escarpment.</p>	<p>Similar to Alternative B, except:</p> <p>Replacement historic landscape features from the Washington era would be constructed within the development zone and would be sited to avoid adverse impacts to known archeological resources.</p>	<p>Same as Alternative B, except:</p> <p>There would be no ground disturbance in the northeastern corner of the site. This area has not previously been surveyed and has the potential to contain archeological resources.</p>

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Archeological Resources (continued)	Overall impact: long-term, minor, adverse	Overall impact: long-term, minor, adverse	Overall impact: long-term, minor, adverse	Overall impact: long-term, minor, adverse
	Cumulative impact: contributes a an imperceptible adverse increment to a long-term, moderate, adverse cumulative impact	Cumulative impact: contributes an imperceptible adverse increment to a long-term, moderate, adverse cumulative impact	Cumulative impact contributes an imperceptible adverse increment to a long-term, moderate, adverse cumulative impact	Cumulative impact: contributes an imperceptible adverse increment to a long-term, moderate, adverse cumulative impact
Historic Structures	No changes to current conditions. The 1870s agricultural building would continue to be a source of confusion to visitors who tend to associate the building with the Washington era.	Relocating the 1870s agricultural building from its current and original location to a location approximately 400 feet, to a location near the visitor center. However, It is the intention of this plan to consult with the SHPO and appropriate parties per the programmatic agreement to produce and implement architectural mitigation measures for the building's removal. Mitigation measures would likely include documentation of the existing structure, and possible interpretation of why it was relocated.	Same impacts as Alternative B.	Same as Alternative B.
	Overall impact: no impact	Overall impact: long-term, moderate, adverse	Overall impact: long-term, moderate, adverse	Overall impact: long-term, moderate, adverse
	Cumulative impact: contributes an imperceptible adverse increment to long-term, beneficial cumulative impact	Cumulative impact: contributes a noticeable adverse increment to the long-term, beneficial cumulative impact	Cumulative impact: contributes a noticeable adverse increment to the long-term, beneficial cumulative impact	Cumulative impact: contributes a noticeable adverse increment to the long-term, beneficial cumulative impact

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Cultural Landscapes	<p>The cultural landscape at the site would remain unchanged, except the pump house would be removed from the upper terrace.</p> <p>Continued disruption by the presence of the 1870s agricultural building, the series of mid-20th century buildings, and the other modern structures at the site.</p> <p>Natural views would be of value, but would not reflect the historic, agricultural view shed that existed during the Washington era.</p>	<p>Removal of existing, non-historic structures from the historic zone and the construction of new, more sympathetic, service buildings and infrastructure in the development zone would provide greatly needed functions and present a more orderly appearance.</p> <p>Replacement historic landscape features would significantly add to visitors' understanding of the nature of the Washington-era complex within its original setting.</p> <p>Approximately 4.5 acres of forest planted in the middle terrace along the East-West Connector would provide additional screening from modern day intrusions.</p> <p>The Civil War and Commemorative landscapes would be adversely impacted slightly to accommodate the Washington home farm landscape.</p>	<p>Similar to Alternative B, except,</p> <p>The benefits would be slightly reduced because the replacement historic landscape features would be developed approximately 250 south of the original location.</p>	<p>Similar to Alternative B, except:</p> <p>The southeastern location of the new maintenance facility would be more visible from the landscape. However, the difference would be minimal since the new maintenance facility would be sited generally away from the primary interpretive areas to avoid intruding on the scenery.</p> <p>Approximately 2.0 acres of forest planted in the middle terrace along the East-West Connector would provide additional screening from modern day intrusions.</p>
	Overall impact: long-term, minor, adverse	Overall impact: short-term, minor, adverse and long-term, beneficial	Overall impact: short-term, minor, adverse and long-term, beneficial	Overall impact: short-term, minor, adverse and long-term, beneficial
	Cumulative impact: contributes an imperceptible adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes an imperceptible beneficial increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes an imperceptible beneficial increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes an imperceptible beneficial increment to long-term, moderate, adverse cumulative impacts

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Visual Resources	<p>Viewsheds at the site would remain unchanged, except the pump house would be removed from the upper terrace.</p> <p>Archeological dig sites would be visible in the historic core of the site.</p> <p>The entrance to Ferry Farm would continue to be difficult to identify.</p> <p>Surrounding development would continue to intrude on the landscape.</p> <p>Natural views would be of value, but would not reflect the historic, agricultural view shed.</p> <p>Visitor center would be the most prominent feature on the landscape.</p>	<p>Realigned site entrance to make it more visible to visitors. Screening would be installed between the entrance road and King's Highway to reduce the impacts of the surrounding commercial development.</p> <p>Vegetative plantings and removal/clearing would alter the appearance of the site. The 4.5 acres of new forest in the middle terrace also would screen the site from surrounding commercial development.</p> <p>The visitor center and most of the other more modern structures demolished and/or removal from the landscape.</p> <p>New developments would be modern in appearance and would be screened from the historic core.</p> <p>New facilities would be primarily concentrated in one location on the site.</p>	<p>Same as Alternative B, except:</p> <p>Administrative building constructed in the northeast corner of the site, and out of view from most portions of Ferry Farm.</p> <p>Replacement historic landscape features would be developed approximately 250 feet south of the original location.</p> <p>More vegetation would be removed and slightly more vegetation would be planted, than Alternative B, further altering viewsheds.</p>	<p>Same as Alternative B, except:</p> <p>No development in the northeast corner of the site. Viewsheds in this area would be unchanged.</p> <p>Less vegetative plantings and removals than the other action alternatives, therefore, less change in viewsheds.</p> <p>All new development (except interpretive nodes and discovery areas) would be concentrated in one area, reducing the overall impact on viewsheds.</p>
	Overall impact: long-term, moderate, adverse	Overall impact: short-term, moderate, adverse; long-term beneficial	Overall impact: short-term, moderate, adverse; long-term beneficial	Overall impact: short-term, moderate, adverse; long-term beneficial
	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes a noticeable beneficial increment to long-term, minor, adverse cumulative impacts	Cumulative impact contributes a noticeable beneficial increment to long-term, minor, adverse cumulative impacts	Cumulative impact: contributes a noticeable beneficial increment to long-term, minor, adverse cumulative impacts

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Visitor Use and Experience	<p>No changes to the visitor use and experience at Ferry Farm.</p> <p>Access would continue to be provided only from the southbound side of King's Highway. Visitors would continue to drive by the site, reducing their anticipation of reaching Ferry Farm.</p> <p>Many visitors would incorrectly believe the visitor center and 1870s agricultural buildings are from the Washington era.</p> <p>Limited space within the visitor center would limit educational opportunities and programs offered to visitors.</p> <p>No ADA compliant parking accessibility.</p> <p>No formal access to the archeological site, the 1870s agricultural building, or the stairs that lead to the lower terrace.</p> <p>The lack of historic structures and visual intrusions both onsite and from surrounding properties would continue to hinder interpretation efforts at the site.</p>	<p>Anticipated increase in visitation.</p> <p>Relocated site entrance would be safer, more visible, and accessible to visitors.</p> <p>Parking lot capacity would increase and include 4 ADA compliant spaces.</p> <p>Replacement historic landscape features in original locations would provide visitors with a better understanding of how the landscape was laid out during Washington's time.</p> <p>Visitor center would have ample space for educational and interpretive programs and would include a café to provide visitors with an opportunity to rest and eat while onsite.</p> <p>Removal of existing buildings from the historic zone would eliminate any confusion between modern and historic buildings and remove intrusions from the Washington-era landscape.</p> <p>Interpretive nodes, discovery areas, and interpretive play area would enhance interpretation of natural and cultural resources.</p> <p>Extension of the pedestrian trail network by 3,200 feet would make the site resources more accessible and provide a clear route for visitors to follow.</p>	<p>Similar to Alternative B, except:</p> <p>The benefits would be slightly reduced because the Washington-era interpretive landscapes would be developed approximately 250 feet south of original location.</p> <p>Redundancy between the interpretive landscape and the historic site may be confusing to visitors.</p> <p>Location of the visitor center would extend the distance visitors would need to walk to reach resources in the northern portion of the site (total of 3,500 feet of new pedestrian trails).</p>	<p>Similar to Alternative B, except:</p> <p>The new maintenance facility would be more apparent to visitors because maintenance staff, vehicles, and equipment would use the same access road and would pass proximal to the visitor center. Deliveries to the maintenance facility, and other maintenance-related traffic would be carefully coordinated to limit the overall impact on the visitor experience.</p>

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Visitor Use and Experience (cont.)		Cutting edge technologies, such as GPS, tablet computers, and smart phones would make self-guided tours more productive and reach a younger generation.		
	Overall impact: no impact	Overall impact: short-term, moderate, adverse; long-term, beneficial	Overall impact: short-term, moderate, adverse; long-term beneficial	Overall impact: short-term, moderate, adverse; long-term, beneficial
	Cumulative impact: contributes an appreciable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes an appreciable beneficial increment to long-term, beneficial cumulative impacts	Cumulative impact: contributes an appreciable beneficial increment to long-term, beneficial cumulative impacts	Cumulative impact: contributes an appreciable beneficial increment to long-term, beneficial cumulative impacts
Operations and Infrastructure	<p>No changes to current operations or infrastructure.</p> <p>Staff split between Ferry Farm and the Historic Kenmore property, limiting regular coordination and resulting in less efficient operations.</p> <p>Insufficient staffing would prevent the GWF from offering visitors a greater variety of programs and events.</p> <p>Volunteers and local universities would support Ferry Farm.</p> <p>Lack of Washington related structures would limit the effectiveness of Ferry Farm educational staff and volunteers.</p>	<p>New buildings would require less maintenance, allowing more time and budget to improve and maintain other facilities at Ferry Farm.</p> <p>Administrative building would provide additional office space and could accommodate both Ferry Farm and Kenmore staff.</p> <p>Added storage space within the maintenance facility would house all maintenance equipment and supplies.</p> <p>Visitor center would include ample space and improved conditions to support a wider variety of programs and displays.</p> <p>Increased interpretation activities and visitor center café would increase staffing needs.</p>	<p>Similar to Alternative B, except:</p> <p>The location of the new administrative building would site the GWF staff at Ferry Farm but at a separate location from the visitor center allowing for somewhat improved coordination.</p> <p>Any maintenance required within the administrative building would require less effort to transport supplies and equipment.</p> <p>The removal of vegetation from the escarpment would require routine maintenance to preserve the historic views.</p>	<p>Similar to Alternative B, except:</p> <p>The benefits could be slightly less beneficial under if visitor access to the visitor center/parking lot prevents efficient staff access to the maintenance facility.</p> <p>Maintenance activities would be carefully coordinated to minimize visitor conflicts, which could limit when maintenance activities could occur.</p>

TABLE 2. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Impact Topic	Alternative A (No-action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Operations and Infrastructure (cont.)	<p>The condition of the visitor center and administrative building would continue to degrade, requiring increased maintenance.</p> <p>Limited space within the visitor center would restrict the number of staff that would be available to visitors.</p> <p>Maintenance activities would occur onsite, because no shop space.</p> <p>Lack of interpretive and educational activities and perceived relevance to today limit fundraising opportunities to support operations and stewardship.</p>	<p>Access road, interpretive trails, and vegetative screening would require periodic maintenance/landscaping.</p> <p>Appropriate collections facilities for enhanced stewardship of archeological collections.</p>		
	Overall impact: long-term, moderate, adverse	Overall impact: short-term, moderate, adverse; long-term, beneficial	Overall impact: short-term, moderate, adverse; long-term, beneficial	Overall impact: short-term, moderate, adverse; long-term, beneficial
	Cumulative impact: contributes a noticeable adverse increment to long-term, moderate, adverse cumulative impacts	Cumulative impact: contributes an appreciable beneficial increment to long-term, beneficial cumulative impacts	Cumulative impact: contributes an appreciable beneficial increment to long-term, beneficial cumulative impacts	Cumulative impact: contributes an appreciable beneficial increment to long-term, beneficial cumulative impacts

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

In accordance with the D0-12 Handbook, the NPS identifies the environmentally preferable alternative in its NEPA documents for public review and comment [Sect. 4.5 E(9)]. The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative (43 CFR 46.30).

Alternatives B, C, and D would enhance the cultural landscape at the site and improve stewardship of natural and cultural resources. However, as described in “Chapter 4: Environmental Consequences” the development of these alternatives would have a more adverse impact on natural, cultural, and physical resources in the study area than Alternative A. Alternative A would not enhance existing conditions but would protect the existing natural and cultural resources in the study area because no new construction would occur. Based on the analysis of environmental consequences of each alternative in Chapter 4: Environmental Consequences, Alternative A is the environmentally preferable alternative. However, as described below, Alternative D is the preferred alternative.

PREFERRED ALTERNATIVE

Alternative D was identified as the preferred alternative. In identifying the preferred alternative, the GWF and the NPS considered which alternative would most fully meet the purpose and need for the proposed action; minimize impacts to natural, cultural, and physical resources; and uphold the mission of the GWF. Although Alternative A would result in the least impact to natural, cultural, and physical resources, it does not ensure the stewardship of cultural resources and ecological and operational sustainability or support an authentic, relevant, and inspiring interpretive visitor experience. Alternative C would meet the purpose and need of the proposed action and support the GWF’s mission; however, would have reduced benefits on visitor use and experience, visual resources, and cultural landscapes and would result in greater impacts to natural resources when compared to Alternatives B and D (especially with respect to vegetation and wetlands and stream). The replacement of the historic features of the Washington era within the development zone, and not their original location, would not support visitor understanding and interpretation of Washington’s life and the setting of the Washington family farm. In addition, Alternative C includes clearing approximately 3.0 acres of vegetation in the central escarpment and lower terrace, which would not be required for Alternatives B and D. In comparison, both Alternatives B and D would support an enhancement of the public understanding and appreciation of the lives, values, and legacies of George Washington, Fielding and Betty Washington Lewis, and their families. Alternatives B and D would have the most benefits to the cultural landscape and the visitor experience because the replacement historic landscape features related to the Washington era would be sited in the immediate vicinity of their original location. This approach would provide visitors with the opportunity to experience the views of Fredericksburg and the surrounding environment experienced by George Washington; thereby enhancing

interpretation and visitor understanding of the physical relationships that made George Washington the man he became. However, Alternative B (and Alternative C) would require disturbance to the northeast corner of Ferry Farm for construction of a new maintenance facility. Geotechnical testing has not been conducted in this location, and archeological survey has not been completed. Although the GWF recognizes that there is little unaltered ground on the property, the northeast corner of the site (previously disturbed to some extent during construction of King's Highway) may in fact be a relatively unaltered landscape, a contrast to the surrounding development. Alternative D does not include development in the northeast corner of the site and would preserve the undeveloped appearance of this area. Therefore, the GWF and the NPS have identified Alternative D as the preferred alternative.

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3

AFFECTED ENVIRONMENT

Located just east of Fredericksburg, Virginia, Ferry Farm encompasses approximately 77 acres along the Rappahannock River in Stafford County. The site is within the Tidewater Region of Virginia and retains a variety of natural and cultural resources. The proposed action is confined to the study area, which is outlined on figures 1 and 2. Organized by resource topic, this chapter describes the resources that could be impacted by the proposed action, including a description of the environmental conditions within the study area. Resources examined in detail include soils and topography, vegetation, wildlife and wildlife habitat, wetlands and streams, Chesapeake Bay resources, archeological resources, historic structures, cultural landscapes, visitor use and experience, and operations and infrastructure. Resources dismissed from further consideration were discussed in Chapter 1: Purpose and Need.

SOILS AND TOPOGRAPHY

The soils within the study area are influenced by their proximity to the Rappahannock River. The Natural Resources Conservation Service (NRCS 2012) identifies five dominant soil types occurring on the property. Soils immediately adjacent to the Rappahannock River within the lower terrace and river floodplain are mapped as alluvial land, sandy and gravelly. This soil type consists generally of coarse textured alluvium on nearly level to gently sloping land. The water table is at a depth of 3 to 5 feet in some places while other areas have saturation at the surface. Runoff is slow and permeability is rapid. This soil experiences periodic river flooding. The Aura-Galeston-Sassafras complex with 15 to 30 percent slopes occurs immediately east of the floodplain in the form of a relatively steep escarpment connecting the lower and upper terraces and carved by ancient fluvial processes. This soil is compatible to woodland uses and maintains a severe erosion hazard if exposed. The upper terrace contains mostly Wickham fine sandy loam ranging from 2 to 12 percent slopes. This soil is a well-drained loam with moderate permeability and has been observed at the site from the visitor center north to the Washington home site. Common uses of this soil are agriculture and woodlots. Other soils of the upper terrace are the Altavista fine sandy loam, which has 2 to 10 percent slopes, and the Dogue loam with 2 to 6 percent slopes. The Altavista and Dogue soils are moderately well drained and formed from ancient loamy alluvium. The water table of the Altavista soil can reach 2.5 feet during the wet season. The middle terrace, located south of the upper terrace, and east of the escarpment, comprises disturbed soil from historic sand and gravel mining. Soil textures are generally sandy in composition, rapid in permeability, and mixed as a result of mechanical alterations and overburden deposition.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The Wickham, Altavista, and Dogue soil types are listed as prime farmland soils comprising approximately 16 to 18 acres of the upper terrace. None of these soils currently support agricultural activities. The upper terrace is primarily open fields with some vegetation (including a small ornamental and vegetable garden) and structural developments.

Topography at the site ranges from an elevation of approximately 2 to 3 feet at the edge of the Rappahannock River to 82 feet at the northern project limits on the upper terrace (North American Vertical Datum of 1988 or NAVD). The lower terrace gently slopes towards the river shoreline with the higher elevations approximating 10 to 20 feet. The lower terrace gives rise to the toe of the escarpment marking the edge of the floodplain. The escarpment rises sharply from elevation 20 feet to 55 to 60 feet over a horizontal distance of 120 feet in some locations (a 33 percent slope) until it reaches the upper terrace between elevation 60 and 80 feet. A steep ravine with a stream channel (named Medicine Spring) is carved into the escarpment at the northern end of the study area, reaching the upper terrace where a spring fed discharge of water begins the stream flow.

VEGETATION

Vegetation at Ferry Farm can be divided into three categories: deciduous woodlands, evergreen wooded areas, and large mowed grass fields (figure 8). The deciduous woodlands are located throughout the lower terrace and are associated with the Rappahannock River floodplain. These woodlands extend up the escarpment leading to the upper terrace. Drier woodlands in the lower terrace and escarpment include sweet-gum (*Liquidambar styraciflua*), yellow poplar (*Liriodendron tulipifera*), sycamore (*Platanus occidentalis*), elm (*Ulmus* sp.), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), and hackberry (*Celtis occidentalis*) in the overstory. White oak (*Quercus alba*) and northern red oak (*Quercus rubra*) become more prevalent on the escarpment. The understory includes a mixture of saplings regenerated from the overstory, and shrubs comprised mostly of spicebush (*Lindera benzoin*) and Chinese privet (*Ligustrum sinense*) with occasional pawpaw (*Asimina triloba*). Vines include poison ivy (*Toxicodendron radicans*) and greenbriar (*Smilax rotundifolia*). Wetland seeps contain mostly green ash and red maple with understory herbaceous species such as sedges (*Carex* spp.), soft rush (*Juncus effusus*), wood reedgrass (*Cinna arundinacea*), and arrow arum (*Peltandra virginica*). A 40-foot wide, cleared utility corridor for an underground natural gas pipeline runs parallel to the river through the lower terrace occupied by a dirt service road.

The upper terrace comprises forested sections and open fields. Forests are found throughout the eastern portions of the site in areas that have a long-history of being cultivated for agriculture or pasture. Evergreen dominated tree species of eastern red cedar (*Juniperus virginianus*), Virginia pine (*Pinus virginiana*) and loblolly pine (*Pinus taeda*) can be found in the northeast portion of the study area. Other wooded areas contain higher proportions of deciduous trees such as white oak, northern red oak, southern red oak (*Quercus falcata*), and hickory (*Carya* spp.).

Maintained fields and meadows occur in and around the interpretive/administrative features and within the old sand and gravel pit located in the southern part of the study area. Scrub species of black locust

(*Robinia pseudoacacia*), tree-of-heaven (*Ailanthus*), eastern red cedar (*Juniperus virginiana*), Virginia pine, blackberry (*Rubus* spp.), and mimosa (*Albizia julibrissin*) can be found along field edges. The maintained fields are vegetated with fescue grasses (*Festuca* spp.) mixed with broadleaf herbaceous plants such as sericea lespedeza (*Lespedeza cuneata*), white clover (*trifolium repens*), cinquefoil (*Potentilla* sp.), yarrow (*Achillea millefolium*), woolly mullein (*Verbascum Thapsus*), broomesedge (*Andropogon virginiana*), and daisy fleabane (*Erigeron annuus*). The grass species included in these areas extend across the site to comprise the mowed lawns at the property.

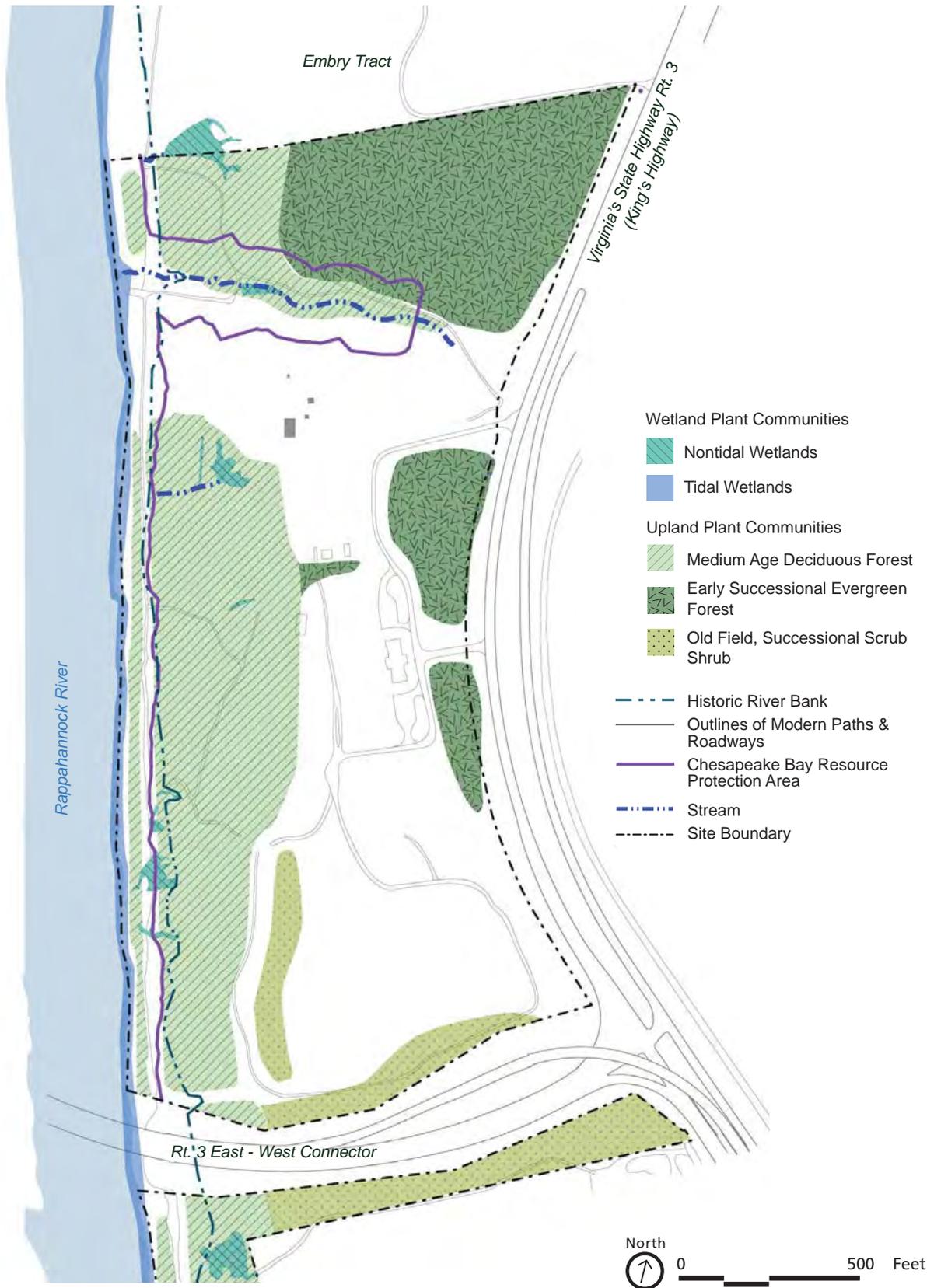
Nonnative invasive plants occupy various vegetative community types. Chinese privet is most common in the lower terrace associated with the river floodplain, in addition to multiflora rose (*Rosa multiflora*). These species are prevalent across the entire lower terrace. Other notable invasive plant species found on the escarpment and upper terrace include mimosa, tree-of-heaven, Japanese honey suckle (*Lonicera japonica*), and sericea lespedeza.

WILDLIFE AND WILDLIFE HABITAT

Ferry Farm is home to a variety of wildlife that exists throughout the region despite being located in a developing portion of Virginia. In a sense, the study area has become green space in an area surrounded by residential housing and commercial development whereby the site has played an increasingly important role as a habitat refuge for a number of local species. The variety of habitats that exist at the site, along with the undisturbed access to the river, make it an attractive spot for nesting, feeding, or breeding. A number of species that are often seen throughout the site include white-tailed deer (*Odocoileus virginianus*), gray fox (*Urocyon cinereoargenteus*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), eastern box turtle (*Terrapene carolina*), eastern cottontail (*Sylvilagus floridanus*), striped skunk (*Mephitis mephitis*), gray squirrel (*Sciurus carolinensis*), and a few snake species.

The forest and field habitats are important resources for avian species, both residents and migrants. Songbirds such as the northern cardinal (*Cardinalis cardinalis*), Carolina wren (*Thryothorus ludovicianus*), American robin (*Turdus migratorius*), wood warblers (*Dendroica* spp.), finches (*Carpodacus* spp.), and sparrows (*Spizella* spp.) use the project site for nesting and feeding. Birds of prey to include hawks (*Buteo* spp.) and owls (*Megascops asio* and *Bubo virginianus*) also use the site. The middle terrace of Ferry Farm includes some exceptional bird habitat. This setting attracts local birding clubs, which offer periodic bird watching tours at the site.

The majority of the Rappahannock River, including the portion that passes Ferry Farm, has been confirmed as an anadromous fish reach (DGIF 2012). Anadromous fish are those species that spend much of their lives in saltwater habitats but return to fresh water systems to spawn. Although many anadromous species are not federally protected species, the systems used by these species are protected to ensure that their spawning practices remain unaffected. Specific species of these fish identified near Ferry Farm include the alewife (*Alosa pseudoharengus*), striped bass (*Morone saxatilis*), blueback herring (*Alosa aestivalis*), yellow perch (*Perca flavescens*), white perch (*Morone americana*), American shad (*Alosa sapidissima*), and hickory shad (*Alosa mediocris*) (NPS 2002).



George Washington Boyhood Home Site at Ferry Farm

Figure 9
ECOLOGICAL RESOURCES



THE GEORGE WASHINGTON FOUNDATION

WETLANDS AND STREAMS

The identification of wetlands within the study area is necessary to ensure their protection in accordance with federal laws (section 404 of the Clean Water Act [CWA] and the Rivers and Harbors Act of 1899) and state laws (9VAC25-210-50). At the state and federal level, wetlands are defined as follows:

“Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b]; 40 CFR 230.3[t])

A wetland scientist performed a delineation of jurisdictional wetlands and streams in the study area in accordance with the *Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain* (USACE 2010). Several jurisdictional water bodies were identified (figure 9). Wetlands occur as broad groundwater seeps emerging from the escarpment and saturating small portions of the lower terrace. These wetlands are occupied by green ash, red maple, sweet-gum, soft rush, sedges, wood reedgrass, and arrow arum. A common feature of these systems is for surface waters to become concentrated further down the slope to form narrow stream channels that convey the water to the Rappahannock River.

Near the northern project boundary, Medicine Spring is located within a relatively steep ravine cut into the upper terrace. The width of the ravine ranges between 20 feet at the eastern end, where the ravine is deepest, to near 60 feet at the western end where the ravine meets the escarpment. Water exiting the soil in the ravine becomes concentrated to form a small stream channel in the bottom of the ravine that conveys the surface flows to the Rappahannock River.

CHESAPEAKE BAY RESOURCES

The state of Virginia enacted the Chesapeake Bay Preservation Act with the purpose to regulate activities within surface waters, wetlands, riparian areas determined by the state to be important to the filtering capacity of runoff that eventually enters the Chesapeake Bay. Chesapeake Bay Preservation Areas are those areas that have been deemed vital to the health of the Chesapeake Bay. Such areas are divided into three categories: Resource Protection Areas (RPAs), Resource Management Areas (RMAs), and Intensely Developed Areas. Construction within these areas is limited and regulated to ensure that non-point source pollution is remediated and that construction does not lead to an increase in pollution. The state has delegated responsibility for the protection of these areas to the localities through mandated ordinances. The study area contains both RPAs and RMAs.

The city of Fredericksburg is considered to be in the Tidewater District of Virginia and is therefore subject to requirements of the Chesapeake Bay Preservation Act. Fredericksburg and Stafford County continually work with the Federal Emergency Management Agency (FEMA) to address and protect these resources. Stafford County considers all land that does not fall within an RPA to be an RMA.

RPAs are defined under county ordinance as including the following land features:

- tidal wetlands
- nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow
- tidal shores
- 100-foot vegetated buffer area located adjacent to and landward of the components listed above, and along both sides of any water bodies with perennial flow

The RPA at Ferry Farm includes the Rappahannock River and Medicine Spring, connecting wetlands to these systems, and a 100-foot upland buffer surrounding these features (figure 9). Within the RPA, there is a mix of wetland and shoreline habitats, along with other vegetative communities that support the area's natural environments and buffer along the water. The shoreline is relatively stable, though there is clear evidence that during storm events, or other high tides, erosion is occurring.

The RPA at Medicine Spring includes the perennial stream channel and a 100-foot upland buffer that encompasses the steeply sloped ravine. The ravine contains a mixture of trees, shrubs and vines that serve to minimize ravine sloughing and soil erosion. Historically, the site's RPA supported a ferry landing, the ferry road, and activities at the Medicine Spring. Currently, a few wooden benches used for educational programs are located within the RPA. No other infrastructure exists within the RPA.

ARCHEOLOGICAL RESOURCES

Archeological resources at Ferry Farm have been the subject of several intensive archeological investigations since approximately 1990 (Dovetail 2009). Archeological evidence uncovered to date suggests the use of the site throughout history and prehistory. Recent investigations have focused on the northern sector of the upper terrace, which is the location most likely to contain significant Washington-era remains (see figures 10-12). Most other portions of the site have been significantly disrupted in connection with the former gravel pit/quarry, construction of King's Highway, and/or construction of the East-West Connector. In each excavation all cultural layers were investigated down to the subsoil. The investigations in the northern portion of Ferry Farm have focused specifically on an approximately 5 acre area (identified on figure 12 as the "10' Interval Shovel Test Pits – GWF 1996-2001). These investigations have identified several structures, including the Strother-Washington House cellar; what appears to be an early Washington-era kitchen; the Clark family house and Bray House, which preceded and succeeded the Strother-Washington House, respectively; root cellars; the foundation of an icehouse that likely dates to the early 20th century; features within a south service yard that may have been the slave quarters; and a civil war defensive trench (NPS 2002; Muraca, Nasca, and Levy 2010, 2011). Additional archeological investigations are expected to find a number of other features which have been described in historical records.

In addition to Washington era remnants, Civil War features have been uncovered in the upper terrace. In general, the precise location and extent of Civil War artifacts have not been confirmed. Contemporary accounts and archeological research indicate that trenches and gun locations were arrayed north-south, east of the escarpment's crest. Based on archeological investigations conducted to date, approximately 115 linear feet of a Civil War fortification trench, dating to 1862, has been uncovered on the crest of the terrace overlooking the Rappahannock River (figure 11). It is believed that the trench extended along the ridge from Medicine Springs south to an unknown point (Muraca, Nasca, and Levy 2011). Gun

emplacements may also have been situated in the field just east of the Washington House. Additionally, evidence suggests that anomalies detected adjacent to that Washington home site is a potential Civil War-era burial site. It has been documented that several individual soldiers were removed for burial in the Fredericksburg Union Cemetery; however, it is unknown when this relocation occurred. Remnants of a Civil War era roadbed also have been detected at the escarpment and lower terrace, north of the ravine. The density of artifacts from the Civil War uncovered in the upper terrace, including glass bottle fragments, buttons, knapsack hooks, and exploded artillery shells, indicate that a relatively small group of soldiers camped at Ferry Farm, potentially associated with a picket (Muraca, Nasca, and Levy 2011). Materials recovered from within the trench were mostly domestic in nature, suggesting that the trench was filled by farmers returning to Ferry Farm after the Civil War (Muraca, Nasca, and Levy 2011).

Archeological investigations have also uncovered prehistoric artifacts in the vicinity of the Washington home farm as well as other portions of the site, including projectile points, pottery shards, a variety of tools, and a ground axe. A lithic scatter indicative of a prehistoric camp site of unknown temporal affiliation has been uncovered in the central portion of the site, west of the visitor center (Dovetail 2009). Most projectile points in the vicinity of the Washington home farm date to the Late Archaic (2,500-1,200 BC) and Early Woodland (1,200-500 BC) periods, although points from the Early Archaic (8,000-6,000 BC), Middle Archaic (6,000-2,500), and Middle Woodland (500 BC-AD 900) Periods and one from the Late Woodland (AD 900-1421) were discovered as well (Muraca, Nasca, and Levy 2010). Prehistoric pottery uncovered at the site dates to the Early Woodland Period (1,200-500 BC) (Muraca, Nasca, and Levy 2010).

No archeological investigations have been conducted in the northern portion of Ferry Farm above the floodplain, which is currently undeveloped. As described in chapter 2, expansion and development of King's Highway resulted in significant topographic changes to Ferry Farm, including the construction of drainage swales that extend the length of the site. As such, despite the lack of formal archeological survey in the northwestern portion of the site, it is anticipated that limited intact archeological resources remain in this area. However, northern areas of the site, further from King's Highway have a higher potential for maintaining intact archeological resources. Figure 12 identifies portions of Ferry Farm that have and have not been surveyed for archeological resources to date.

The topography of the site was also modified during construction of road drainage features along King's Highway, a culvert that connects with the ravine, and the removal of fill material from the south end of the site. As shown on figure 12, archeological investigations have also been conducted in the lower terrace (Dovetail 2009). This area has been heavily disturbed, most significantly during its use as a former gravel pit/quarry, but also during the construction of the adjacent East-West Connector. An archeological investigation conducted in 2007 identified three isolated artifact occurrences in the immediate vicinity of the former gravel pit (Dovetail 2009). Isolated artifacts are defined as those when "radial shovel tests were placed around the positive hole, [and] no additional artifacts were recovered" (Dovetail 2009). Two of these artifacts were identified along the edges of the gravel pit and no other archeological resources were identified within the lower terrace. During the investigation, shovel test pits were excavated at 100-foot intervals in the lower terrace due to the extent of previous disturbance (Dovetail 2009).

HISTORIC STRUCTURES

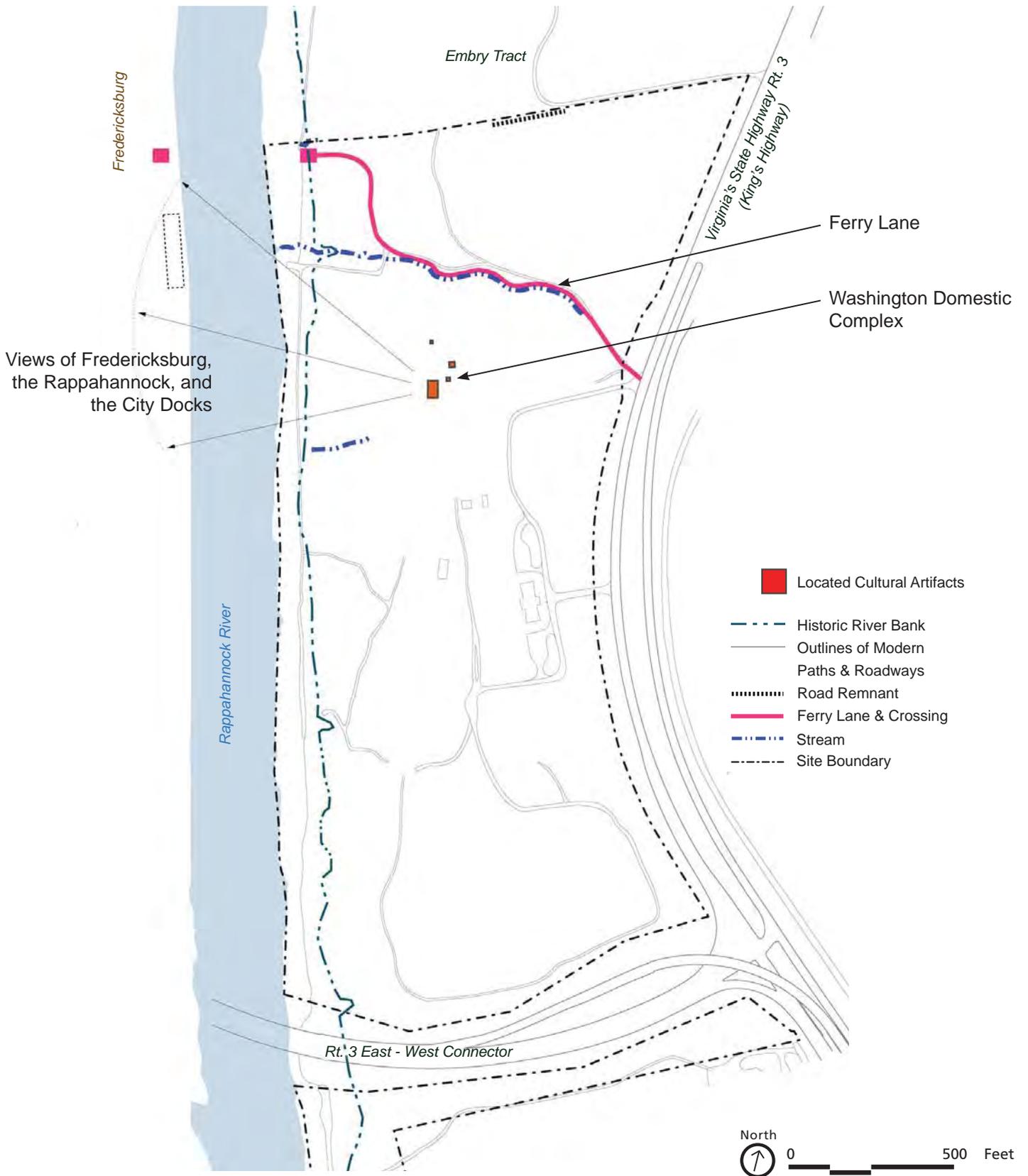
Only one standing historic structure currently exists at Ferry Farm. This structure, identified as an 1870s agricultural building (usually referred to as the Surveying Office) was associated with a domestic complex just southwest of the Strother-Washington House cellar. The 1870s agricultural building is a one-room, single story wood building with a side gable roof and massive gable end brick chimney on one side. Traditionally named and recognized as the “George Washington’s Surveying Office,” it was the center of memorialization attempts beginning in the early 20th century through the middle of the 20th century (NPS 2002).

The *National Historic Landmark Nomination* for Ferry Farm identifies the 1870s agricultural building as a non-contributing resource in the context of the site’s period of national significance of 1738-1855, as it post-dates that period (Warner 1999).¹ However, the building was recognized as possessing local and regional significance for its association with a strong local tradition as a Washington-era building and long-standing symbolic association with George Washington’s youth. The building has been severely altered, first when it was joined to a new house circa 1914 and then during its renovation the 1950s when the circa 1914 house was demolished. The 1950s renovation included the addition of concrete footings, new siding and roof materials, and other alterations that have additionally compromised any of its original integrity (Warner 1999).

CULTURAL LANDSCAPES

The Ferry Farm cultural landscape was assessed in the 2001 *Cultural Landscape Documentation for the George Washington Boyhood Home* (Oculus 2001). Although the site and the surrounding region have been notably altered over the centuries since Washington left Ferry Farm, a number of historic landscape features that existed during the Washington era remain. These features include the slopes and streams that lead to the Rappahannock River, the terrace overlooking the river, several circulation features, and certain views. Topography of the site remains unchanged from the Washington era. The upper terrace hosted the domestic complex and agricultural activities, which provided the inhabitants with expansive views up and down the river valley. The slopes leading down to the river edge have remained relatively unchanged. A notable change in the landscape exists along the river edge, where the ferry landing has been removed and timber bulkheads were installed in the mid-19th century when the river was narrowed. The ferry landing, which may date to 1726, was located in the northwest corner of the site. The pontoon bridge, which was used at the end of the Washington era, was located south of the ferry landing, where the ravine flows into the Rappahannock River. The pontoon bridge remained in use until the early 19th century and marks the site of the Union Army’s pontoon bridges constructed during the Civil War. Views across the upper terrace and looking out onto the Rappahannock River and the city of Fredericksburg beyond are important elements of the cultural landscape. These views are historic and contribute to the significance of the property.

¹ At the time the nomination was written, the date of the building was still unclear; the nomination stated that there was a possibility that the building may pre-date the Civil War. Warren, Jack D. Jr., National Historic Landmark Nomination, George Washington Boyhood Home Site, 1999, page 19.

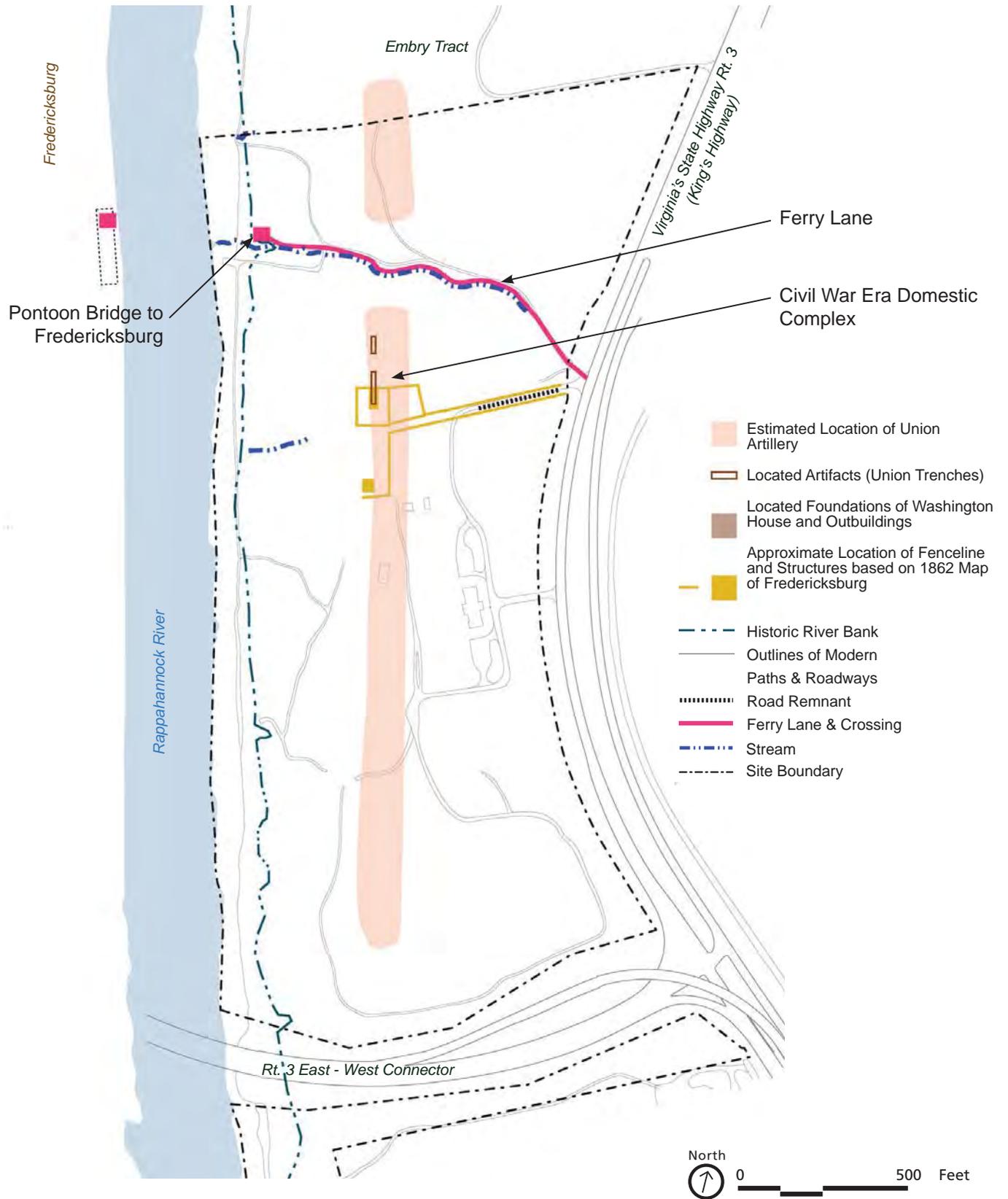


George Washington Boyhood Home Site at Ferry Farm

Figure 10
**RESOURCES FROM THE GEORGE WASHINGTON
 PERIOD 1738-1774**



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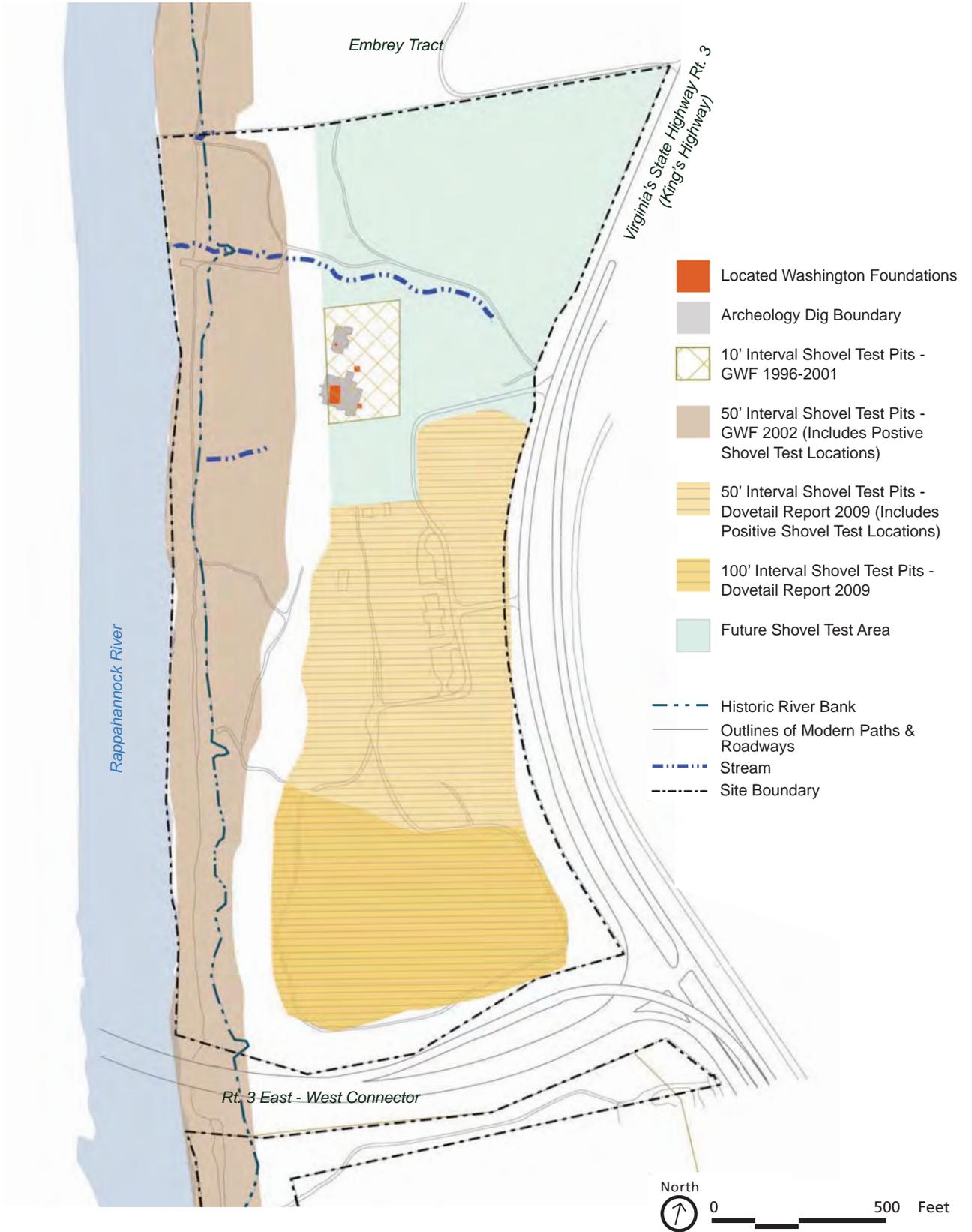


George Washington Boyhood Home Site at Ferry Farm

Figure 11
**RESOURCES FROM THE CIVIL WAR PERIOD
 1862-1864**



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George Washington Boyhood Home Site at Ferry Farm

Figure 12
SITE INVESTIGATION FOR HISTORIC RESOURCES



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The open fields, wooden fences, and surrounding forest stands dominate the viewshed throughout the property. The 1870s agricultural building and other outbuildings also come into view as visitors approach the parking lot, in the central portion of the site. As visitors reach the parking lot, the visitor center is the primary structure on the landscape. The visitor center is not an original structure and has no connection to the Washington era; however, due to the lack of other historic structures on the property, it is often incorrectly assumed to be historic. From the visitor center, views of the site open up to a variety of undeveloped, natural settings. The storage cottage, restroom facility, and 1870s agricultural building are the only permanent structures in the viewshed. Although the 1870s agricultural building is often misinterpreted by visitors to be symbolic of the Washington era, none of the existing structures contribute to a landscape that is representative of what existed during George Washington's lifetime. The undeveloped, forested nature of the site, in particular along the Rappahannock River, also is uncharacteristic of the Washington era.

The elements remaining from the Civil War era include remnants of a long north-south trench that parallels the Rappahannock River and runs through the site of the Strother-Washington home, similar viewsheds experienced during the Washington era, and road remnants that led to the ferry on the north end of the property.

Along with these landscape remains of the Washington and Civil War eras, the cultural landscape investigation noted evidence of a commemorative landscape dating to the early or mid-20th century. These elements were confined to the 1870s agricultural building, several tree specimens, and the surrounding mowed lawns.

Many of the circulation features also have remained the same. The King's Highway corridor has been an active roadway since Washington's time and actually passed through the Washington family property when the holdings were much larger. Today, the size of the property has been reduced and the road forms its eastern border. The existing Ferry Road represents another historic road trace that existed during Washington's life. At that time, there were several roads that connected King's Highway to different ferry landings along the Rappahannock. Historic maps and surveys suggest that the ravine that currently bisects the northern portion of the site was once used as such a road. Today, that ravine is overgrown with thick stands of vegetation.

The overall vegetation on the site is not characteristic of the landscape during the Washington and Civil War eras. The agricultural use of the property in the 18th century and the strategic military siting of the Union encampment would have resulted in the removal of most of the existing trees. The absence of many mature trees would have opened up larger views to the river, up and down the river valley, and across the property. The visual connection between the upper terrace and the river is an important historic feature of the property. The only vegetation that is reminiscent of the historic landscape is the mix of woods and open fields that lead to the Embrey property on the north edge of Ferry Farm.

The cultural landscape at Ferry Farm also is interrupted by the surrounding developments. Although much of Ferry Farm is screened by thick vegetation, the area surrounding the entrance is relatively open, allowing a number of the nearby business to be seen from the core of the site.

VISUAL RESOURCES

The visual experience at Ferry Farm begins during the approach to the site, influencing the visitor anticipation before they arrive at the property. King's Highway a busy road that forms the site's eastern border, serves as the only access route to the site. The East-West Connector, another heavily traveled roadway, forms the southern boundary of the study area, and bisects the southern portion of Ferry Farm. The surrounding area consists of fully developed lots that support residential and commercial development. These developments dominate the visual environment near Ferry Farm and prevent recognition of this historic property.

Upon entering the site, views across the upper terrace and looking out onto the Rappahannock River, and the City of Fredericksburg beyond, are important elements of the visual environment. These views are historic and contribute to the significance of the property. The open fields, wooden fences, and surrounding forest stands dominate the viewshed throughout the property. The 1870s agricultural building and other outbuildings also come into view as visitors approach the parking lot, in the central portion of the site. As visitors reach the parking lot, the visitor center is the primary visual resource. The visitor center is not an original structure and has no connection to the Washington era; however, due to the lack of other historic structures on the property, it is often incorrectly assumed to be historic.

From the visitor center, views of the site open up to a variety of undeveloped, natural settings. The storage cottage, restroom facility, and 1870s agricultural building are the only permanent structures in the viewshed. Although the 1870s agricultural building is often misinterpreted by visitors to be symbolic of the Washington era, none of the existing structures create a visual environment that is representative of what existed during George Washington's lifetime. The undeveloped, forested nature of the site, in particular along the Rappahannock River, also is uncharacteristic of the Washington era.

In addition to lacking a connection to the site's history, the visual environment at Ferry Farm is interrupted by the surrounding developments. Although much of Ferry Farm is screened by thick vegetation, the area surrounding the entrance is relatively open, allowing a number of the surrounding business to be seen from the core of the site. This further diminishes the visual environment within Ferry Farm. Additional visual intrusions exist around the maintenance depot, where vehicles and equipment must be stored in locations visible to visitors.

VISITOR USE AND EXPERIENCE

The visitor experience at Ferry Farm begins before arrival. Ferry Farm is accessible via major regional roads, including Interstate 95 and State Route 3. The surrounding development screens the site from view and detracts from the visitor anticipation of reaching the Ferry Farm as well as the visitors' ability to identify the site. The existing entrance does not have a traffic signal. In some cases, this may cause the visitor to pass the site requiring them to make a U-turn at the next traffic signal. Access to Ferry Farm is only provided on the southbound side of King's Highway. Therefore, visitors who miss the entrance and those approaching from the south (northbound side of King's Highway) must travel two lights past the entrance to make a U-turn and access the property from the southbound side of the road. This indirect route contributes to a loss of visitor anticipation before reaching the site.

A second access point is located approximately 250 feet south of the entrance but is designed to provide exit-only circulation from the visitor center onto King's Highway. Despite this layout, some visitors mistakenly attempt to enter the site from this point, creating unsafe conditions for passing motorists or vehicles trying to exit the site. When visitors are ready to exit the site, they have two options. The first is to use the same driveway they used to enter the site. This driveway is wide enough to accommodate two-way traffic but is not striped to delineate the different lanes. The second option is to exit via the access point located east of the visitor center. Both points of egress provide access only to the southbound lanes of King's Highway.

Upon entering Ferry Farm, visitors may view the open fields, surrounding forests, and a few structures on the landscape. As the driveway turns, visitors can see the parking lot and visitor center. The existing parking lot can accommodate approximately 70 vehicles. An area southwest of the visitor center and north of the field in the middle terrace (the former sand/gravel pit) is used for overflow parking during special events and can accommodate up to 250 additional vehicles. Sidewalks lead the visitor from the parking lot to the visitor center. The first floor of the visitor center is ADA accessible. Handicap access is available from the visitor center into the garden. From this point, access through the site is only possible via unpaved trails or over the grass lawns. The existing trail system leads to several points in the southern portion of the site, including the maintenance area and the fields in the middle terrace. The trail system also provides access to a storage building and the restrooms located northwest of the visitor center, at which point the trail terminates. The 1870s agricultural building, archeological sites, and the lower terrace, along the Rappahannock River, are only accessible by walking over the lawn. A wood and gravel staircase provides access from the upper terrace down the hill to the natural springs and river bank.

Anecdotal evidence suggests that many visitors mistake the visitor center for Washington's home or another Washington-era house. Upon entering the visitor center, guests are provided with displays and maps of the site; however, the size of available display space limits the information that can be presented to visitors. An approximately 820 square-foot exhibit room displays artwork, artifacts found at the site, and informational panels related to George Washington's boyhood and surrounding lore. Staff from the GWF are available at the visitor center to answer questions and provide information about Ferry Farm to visitors. There is limited climate control within the visitor center.

The primary means by which visitors are able to connect to the Washington era is by observing the archeological investigations occurring near the 1870s agricultural building and through educational programs offered at the visitor center and The Great Oak Pavilion. GWF provides a variety of programs and events throughout the year, based on archeological findings and the site's historical past. Common offerings include educational school programs, youth camps, tours, discovery workshops, and live interpretation. One form of live interpretation at the site includes a staged interaction between modern-day archeologists and Washington-era interpreters to illustrate the connection between archeological finds and Ferry Farm's history. Visitors also have the opportunity to attend one of the many special events at Ferry Farm such as George Washington's Birthday, the July 4th celebration, and archeology lectures. Recent plantings in the middle terrace offer a pleasant, but non-historic appearance for visitors to experience. However, the area includes some exceptional bird habitat which attracts numerous visitors. Local clubs offer periodic bird watching tours at the site. The area also provides a visual buffer between the site, the East-West Connector, and the surrounding development.

Approximately 16,000 visitors traveled to Ferry Farm in 2010; representing 3.4 percent of the 469,466 total recreational visits to NPS sites within Fredericksburg that year (GWF 2011b). More than half of these visitors (52 percent) were walk-ins. The remaining visitors traveled to Ferry Farm to attend special events (25 percent) or as part of youth/school groups (21 percent) or an adult group (2 percent) (GWF 2011b).

OPERATIONS AND INFRASTRUCTURE

GWF currently employs 10 full-time equivalent (FTE) and 21 part-time staff dedicated to Ferry Farm operations. An additional 15 FTE are employed by GWF to support operations at the Historic Kenmore property. The staff dedicated to the Kenmore property also work at that site. At Ferry Farm, staff are primarily focused on ongoing archeological investigations, educational programs, tours, and general site administration and maintenance. The archeological investigations receive additional support from volunteers and local universities. Similarly, many of the tours and educational programs are run by volunteers who work with the GWF staff to develop these activities. There are no structures on the landscape to aid with tours and educational programming.

The visitor center/administrative building was built in the neo-colonial style in the early 1960s as an orphanage. The structure is not connected to the Washington era. The building provides limited administrative and programming space and requires frequent maintenance.

The existing maintenance depot is located at the southern end of Ferry Farm, away from the other structures. The depot provides limited storage space for the site's equipment.

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ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences associated with the alternatives presented in Chapter 2: Alternatives. It is organized by impact topic, which distills the issues and concerns into distinct subjects for discussion analysis. NEPA requires consideration of context, intensity, and duration of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. The CEQ regulations that implement NEPA require assessment of impacts to the human environment, which includes natural and cultural resources.

METHODOLOGY FOR ASSESSING IMPACTS

As required by NEPA, potential impacts are described in terms of type (beneficial or adverse, direct or indirect), context (site-specific, local, or regional), duration (short-term or long-term), and level of intensity (negligible, minor, moderate, or major). These terms are defined below. Overall, these impact analyses and conclusions were based on the review of existing literature and studies, information provided by on-site experts and other agencies, professional judgments and park staff insight, and federal agencies.

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 is later in time or farther removed in distance, but still reasonably foreseeable.

CONTEXT

Context is the setting within which an impact is analyzed.

Local: The impact would affect the site.

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

DURATION

In general, the following definitions are used to describe duration. For some resources, duration may differ due to each resource's individual time for recovery.

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

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

LEVEL OF INTENSITY

Because level of intensity definitions (negligible, minor, moderate, or major) vary by impact topic, they are provided separately for each impact topic. Beneficial impacts are described but are not assigned a level of intensity.

CUMULATIVE IMPACT METHODOLOGY

The CEQ regulations that 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 nonfederal) or person undertakes such other actions (40 CFR 1508.7).

To determine the potential cumulative impacts, existing and anticipated future projects at Ferry Farm and in the surrounding area were identified. These included lands administered by the NPS, the commonwealth of Virginia, Stafford County, and the city of Fredericksburg. Potential projects identified as cumulative actions included any planning or development activity currently being implemented or expected to be implemented in the reasonably near future. The projects identified as contributing to cumulative impacts on the resources addressed by this EA include the proposed left-turn lane along King's Highway, the Belmont-Ferry Farm trail system, restoration of the historic Kenmore property, and commercial development around Ferry Farm.

Left-turn Lane

Concurrent to the Site Treatment Plan, GWF is working with VDOT and Stafford County to plan and construct a left-turn lane along King's Highway. The new turn lane would provide direct access to Ferry

Farm (the new entrance to Ferry Farm is included in the proposed action). The left turn lane would be created by cutting into the existing median along King's Highway, avoiding any impacts to current traffic patterns. The lane would be approximately 200 feet long and would provide access to the site approximately 300 feet to the north of the existing entrance. This left-turn lane would provide northbound traffic with direct access to the site, eliminating the need to make a U-turn at the second traffic signal past the site entrance, and would provide much needed safety and accessibility improvements. A turn taper would be added to the south bound traffic on King's Highway, allowing for a safer deceleration condition not available today. This project has the potential to impact soils and topography, visitor use and experience, and operations and infrastructure. The left-turn lane would only be constructed if the proposed action described in this EA is implemented.

Belmont-Ferry Farm Trail System

Stafford County is planning to extend the existing "Heritage Trail" system to connect various parks and historic resources along the Rappahannock River with tourist attractions/points of interest in Stafford County (Stafford County 2011). The initial segments of the trail have already been constructed through John Lee Pratt Memorial Park in Fredericksburg, and a second section is under development at St. Clair Brooks Memorial Park, also in Fredericksburg. The county is hoping to work with the VDOT to fund and develop the remaining portions of the trail system, which would include a segment that would connect Gari Melchers Home and Studio at Belmont, the Chatham House, and Ferry Farm. It is anticipated that the trail, as a whole, would improve pedestrian safety and improve tourism along its route, leading to increased economic opportunities for the county, the city and the parks. This project has the potential to impact soils and topography, vegetation, archeological resources, visitor use and experience, and operations and infrastructure.

Kenmore Restoration

As GWF plans to improve its Ferry Farm property, it is also working to improve its Kenmore property. Kenmore is the historic home of George Washington's sister Betty Washington Lewis. The house represents the life of a wealthy merchant family during the Washington era. Current restoration efforts at the site are focused on the dining room. The room's wallpaper, woodwork, and paint have already been restored. Current efforts are focused on appropriately refurnishing the restored house. As these restoration efforts continue, they have the potential to impact historic structures, visitor use and experience, and operations and infrastructure.

Commercial Development

Commercial development is abundant in the vicinity of Ferry Farm, including lands adjacent to the east and south of the site. Urban development also is widespread across the Rappahannock River, in and around the city of Fredericksburg. Establishments in these areas include fast food restaurants, strip malls, individual retailers, a dock facility, and major roadways. Residential subdivisions also are common near Ferry Farm. Commercial development in the vicinity of Ferry Farm has the potential to impact soils and topography, vegetation, wildlife and wildlife habitat, archeological resources, cultural landscapes, visitor use and experience, and operations and infrastructure.

Cumulative Impact Contribution Definitions

In defining the contribution of each alternative to the cumulative impact, the following terminology is used.

Imperceptible: The incremental effect contributed by the alternative to overall cumulative impact is such a small increment that it is impossible or extremely difficult to discern.

Noticeable: The incremental effect contributed by the alternative, while evident and observable, is still relatively small in proportion to the overall cumulative impact.

Appreciable: The incremental effect contributed by the alternative constitutes a large portion of the overall cumulative impact.

SOILS AND TOPOGRAPHY

METHODOLOGY

Soil mapping information available from the Natural Resources Conservation Service (NRCS) was used to evaluate the potential impacts on soils caused by the proposed actions. Map locations of sensitive soils were compared with locations of proposed development and modifications of existing facilities. Predictions about short- and long-term site impacts were based on the physical properties of the soils and the extent of soil disturbance. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impacts to soils and topography would be imperceptible, or below or at the lower levels of detection.

Minor: The impacts to soils and topography would be detectable and small. Mitigation may be needed to offset adverse impacts and would be relatively simple to implement and likely be successful.

Moderate: The impacts on soils and topography would be readily apparent and result in a change to soils across a relatively wide area. Mitigation measures would be necessary to offset adverse impacts and likely be successful.

Major: The impacts on soils and topography would be readily apparent and would substantially change the character of the soils 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.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under the No-Action Alternative, no changes would be made in current operations. Archeological investigations would continue to occur on the site resulting in meticulous, hand excavations in small confined areas of exposed soils within areas identified as prime farmland soils. Soils removed during archeological investigations would be temporarily stockpiled on site and stabilized with required erosion and sediment control devices such as silt fencing. Once an investigation is complete, stockpiled soils would be replaced in their original location and seeded with upland grasses until vegetation had taken root to further restore natural conditions and to deter the occupation by invasive plant species.

Under Alternative A, the existing pump house, located approximately 125 feet west of the Great Oak Pavilion, would be demolished and removed from the site. This would result in temporary impacts to soil during demolition. However, once the facility is removed, the soil would be regraded to match adjacent topographic grades and planted with native trees and grasses to stabilize the soil. Due to the small size of this structure, impacts associated with its removal would be minor.

Other impacts to soils and topography would occur through the continued storage of maintenance equipment and the continued presence of existing structures, including the visitor center/administrative facility, storage shed, and restroom. The continued presence of large structures on the landscape would continue to compact soils. The repeated storage and movement of equipment on the landscape would expose and further compact soils. Continued compaction and exposure could limit natural soil functions, such as the ability to support vegetation or absorb stormwater. Erosion also could become apparent from exposed soils due to equipment operations. Mitigation efforts could include restoring these conditions, but restoration efforts and erosion control would need to be continually implemented, as there would be no other options for maintenance storage.

Overall, Alternative A would result in long-term, minor, adverse impacts on soil and topography.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on soils and topography in and around Ferry Farm. These projects include the Belmont-Ferry Farm trail system, and the existing commercial development. The Belmont-Ferry Farm segment of the proposed "Heritage Trail" through Fredericksburg and Stafford County, Virginia, would conclude adjacent to the site. Soil and topography disturbances associated with the trail would include grading and soil compaction. Commercial development around Ferry Farm, including fast food restaurants, retailers, and major roadways also has disrupted soil and topography around the site. These projects would result in a long-term, moderate, adverse impact to soils and topography. These projects, along with Alternative A, would apparently impact soils and topography in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative A would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative A would result in a long-term, minor, adverse impact on soils and topography. This is because archeological investigations would continue in the historic zone. The storage and movement of equipment on the landscape also would continue to erode, expose, and compact the existing soils. Such disturbances could reduce natural soil functions. The impacts associated with this alternative would be detectable and small. Mitigation may be needed to offset adverse impacts, but these efforts would likely be relatively simple and would be successful. Alternative A would contribute an imperceptible adverse increment to long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Under Alternative B, archeological investigations at the site would continue in a manner consistent with current efforts and techniques. As described for Alternative A, continued archeological investigations would result in meticulous, hand excavations in small confined areas of exposed soils within areas identified as prime farmland soils. Soils removed during archeological investigations would be temporarily stockpiled on site and stabilized with required erosion and sediment control devices such as silt fencing. Once an investigation is complete, stockpiled soils would be replaced in their original location and seeded with upland grasses until vegetation had taken root to further restore natural conditions and to deter the occupation by invasive plant species.

Under Alternative B, the entrance to Ferry Farm would be relocated to provide a direct route between the proposed parking area and King's Highway. The new entrance would align with the intersection of King's Highway and Ferry Road at an existing stoplight. In addition, the new entrance would require that a new paved right turning lane be installed along southbound King's Highway extending approximately 300 feet northward within the King's Highway right-of-way. This paving would require soil disturbance for grading to create the desired road bed and new manned security entrance gate. The repositioning of a new entrance would require the removal of the existing entrance resulting in the demolition of approximately 65 linear feet of an asphalt apron connecting the gravel drive to King's Highway. A portion of the gravel driveway bisecting the property would be removed while another section would be left for integration into the pedestrian trail system. Soil disturbances would occur with the demolition of the old entrance roadbed. Once the road is removed, the soil would be regraded to match adjacent topographic grades and planted with native trees and grasses to stabilize the soil. The new driveway would be approximately 1,900 feet long and 50 feet wide. The work area for the new road would be lined with silt fencing to prevent exposed sediments from leaving the area of disturbance, cleared of vegetation, and graded to the desired elevations. As part of the entrance drive, a small berm planted with trees would be installed on the eastern side to screen the historic zone from King's Highway affecting the topography in the construction zone. Soils would be temporarily disturbed and exposed during the construction process. Once construction is complete, the exposed soils would be replanted with native grasses to ensure soil stability, and native trees would be planted along the entrance road.

Alternative B would include rehabilitating historic landscape features from the Washington era within the historic zone. This work would include erecting new structures closely authenticating the Washington home and accompanying structures in the upper terrace on soils that are relatively flat and occupied by grass. No trees would be removed for the buildings that could cause soil disturbances from uplifting roots. The construction of the buildings would cause the temporary disturbance to localized soils until such time that the construction concludes and grass seed is sown to stabilize the soils. Furthermore, silt fencing would be installed surrounding the work area to keep any unstable soils from eroding away from the construction site.

To enhance the cultural interpretation of the historic zone, Alternative B would include the removal of select trees located on the escarpment or further down in the lower terrace between the Washington home site and the Rappahannock River. Furthermore, this alternative would remove select trees on approximately 0.3 acres located between the existing natural gas pipeline corridor and the Rappahannock River channel for the purpose of enhancing the view of the river and the city of Fredericksburg on the opposite side of the river. Trees would be removed by cutting trees and associated root systems to ground surface, bucking the tree boles and branches into smaller sizes for handling, and hauling the woody material off the site. Trees would not be uprooted that could cause impacts to local soils from exposure to erosion. Temporary disturbances to soil from the tree removal operation would be mitigated by leveling disturbed soils back to natural grade and seeding exposed soils with a grass seed mix for stability.

Impacts associated with implementation of an invasive species and/or forest management plan would be dependent on the scale of vegetation removal, and the approach to removal. For example, clear cutting of trees would result in more adverse impacts to underlying soils than selective removal that only requires cutting trees to grade. It is anticipated that there would be some level of disturbance to soils from invasive species and/or forest management efforts, but that GWF would select techniques that limit ground disturbance.

In addition to vegetative clearing, most existing structures would be removed from the upper terrace to enhance historic landscapes. During demolition and removal of these structures, including the existing restrooms, in-ground pump structure, pump house, and storage cottage, soils would be temporarily disturbed. Upon removal of the structures, the soils would be leveled, if necessary, and seeded with native grasses to ensure soil stability.

Site improvements associated with this alternative would include a new mechanical building in the immediate vicinity of the rehabilitated landscape and features, a new parking lot and a 16,000-square foot visitor center. The mechanical building would be approximately 15 feet by 15 feet in size and could result in minor disturbance to native soils associated with construction. The presence of the structure would compact underlying soils, reducing its ability to absorb water. The visitor center and associated parking lot would be positioned generally in the center of the property on previously disturbed soils. The existing parking area and visitor center would be removed to make room for the new facilities. During construction, approximately 5 acres of soil would be disturbed to accommodate the new facilities, including excavation to accommodate the basement for the new building. Specifically, the existing visitor center would be demolished, the gravel parking lot would be removed, and additional land would be cleared by heavy equipment to make room for the new infrastructure. An excavator would be required to clear soils for the new basement. Because the new visitor center would be sited in an area that has been

heavily disturbed in connection with construction of the existing visitor center and King's Highway, it is unlikely that excavation activities associated with the new visitor center would substantially disturb native soils or result in noticeable impacts to topography. Both construction areas would be encircled by silt fencing prior to construction to prevent unstable soils from eroding outside the construction zone. Pursuant to state regulations, contractors would abide by a Sediment and Erosion (E & S) control plan prepared by licensed engineers to prevent soil erosion outside of the work area. The mechanical building, visitor center, and parking area would occur on relatively flat land on the upper terrace, and no major changes in topography in this area are expected as a result of the new facilities. The final grade of the parking area would be designed to direct any runoff to vegetated islands for capture and absorption into the soil as bioretention basins. Water from the bioretention basins would be directed to a grassy swale on the west side of the parking area that would convey the water to a location in the middle terrace where the water would be allowed to infiltrate into the soil. Little runoff would leave the parking area that could create unstable soil conditions and erosion. This work would require temporary soil and topographic disturbance for construction. Furthermore, once the facilities are constructed, trees would be planted on the northern side of the visitor center to screen the visitor center from the historic zone. The installation of trees is expected to provide long-term soil stability with canopy protection to the soil surface.

Alternative B includes the installation of a new children's playground immediately west of the proposed parking area within the upper terrace. This work would include the removal of select trees, the grading of the soil surface, and the placement of the playground surface and playground equipment. Soils would be impacted during construction. However, the contractor would install a silt fence enclosing exposed soils within the work area and preventing erosion of sediment leaving the work site. The proposed playground area occurs on relatively flat land, and no changes in local topography are expected.

Alternative B would relocate the existing 1870s agriculture building out of the historic zone to an unspecified area near the visitor center within a part of the grassy field in the upper terrace. Soils would be temporarily disturbed to create a new building foundation to accept the agriculture building. Silt fencing would be placed around the work area to keep unstable soils from eroding out of the work zone. The original location of the agriculture building would also incur soil disturbances as equipment is used to remove the building from the foundation. Once the building is transferred to the new location, soils at the original location would be leveled to original grade and seeded with grass for soil stability. No changes in topography are expected.

Under Alternative B, the existing pedestrian trail system would be expanded to include approximately 3,200 linear feet of additional trail that would be tied into the existing system. The expanded trail system would include the removal of wooden steps currently connecting the upper and lower terraces in the vicinity of the Washington home foundation and replacing the steps with a new, winding trail down the escarpment. Only the space necessary for the construction and maintenance of the trails would be disturbed. Trees would be avoided as much as possible so as to eliminate soil disturbances from the uplifting of tree roots. The trail system would incorporate the use of best management practices to prevent soil erosion during and after construction. Such practices may include the use of small berms, rock check dams, swales, and water bars to dissipate energy from flowing water during rain events and to direct runoff away from exposed soils on trail slopes. The trail system would also include the installation of a maximum of 50 interpretive nodes where additional infrastructure would be added such as resting benches, small shelters, trail directional signage, and/or interpretive signs. Associated soil disturbances

would temporarily occur during construction. Soils would be stabilized after construction by sowing grass seeds with mulch or planting landscaping shrubs. In addition, gravel may be deposited, graded, and packed on existing trails where stability to the trail bed is warranted.

As part of the trail system, Alternative B would include a new foot bridge across the northern ravine and Medicine Spring. The bridge would begin at the southern edge of the ravine at the upper terrace and slope downward to connect to the existing Ferry Road towards the north which is located on the opposite side of Medicine Spring. The span of the bridge is estimated to be approximately 50 feet. Concept plans call for a single span without supports. Work would include the installation of bridge abutments placed deep within soils for long-term stability and support. Soil would be excavated at the edge of the upper terrace and at the edge of Ferry Road for the placement of concrete or stone abutments. Excavated soils would be placed into hauling trucks for immediate removal from the site. Exposed soils at the abutments would be vulnerable to erosion due to the steep slopes of the ravine. The construction contractor would be exceptionally cognizant of the sensitivity of the environment at this location and to follow erosion and sediment control practices. Vegetation within the bridge corridor would be trimmed to make room for the bridge rather than uprooting trees and shrubs causing impacts to soil and risking severe soil erosion into the stream channel.

The ravine at Medicine Spring is currently experiencing erosion and soil instability adjacent to Ferry Road where water runoff from Ferry Road is directed down the ravine slope. The erosion has caused a tree to become uprooted and fall into the ravine further exposing soils for erosion. Specific stabilization efforts would be identified during the final design stage of the planning process, and could include removing the felled tree, reshaping the slope, and either placing stone to stabilize the slope from further erosion or planting of native trees, shrubs, and native herbaceous vegetation. Temporary soil disturbances would occur during the ravine restoration effort. However, long term benefits to the protection of soils would occur once the vegetation has become rooted to stabilize the ravine slope.

The foot bridge crossing Medicine Spring is designed to direct visitors to a new Civil War discovery area north of the ravine in the upper terrace. Development of this discovery area would include the clearing of trees and shrubs to form a grassy field up to 0.5 acre in size. The clearing would occur on moderately sloping land, and would include the mechanical uprooting of trees with a bulldozer. Soils and local topography would be temporarily impacted by the clearing operation as soil becomes exposed and vulnerable to erosion. The land clearing operation would be guided by rules and regulations affecting land disturbance and sedimentation and erosion control, to include the placement of a protective silt fence surrounding the discovery area prior to land disturbance. Once the site is cleared, the soil would be regraded to nearly match existing grade and seeded with a grass seed mix to stabilize any exposed soil.

This alternative includes construction of a new maintenance facility and a new administrative building. The maintenance facility would be developed in the northeast corner of the site within the upper terrace, requiring 3.5 acres of land clearing and associated soil disturbances. Work would include the removal of trees and tree roots temporarily exposing soils that would be vulnerable to erosion. Furthermore, minor reshaping of the local topography may be needed to level the building and parking pads. This work would likely be done by a bulldozer, and any excess dirt would be placed in haul trucks for removal offsite. Impacts to soils and local topography would be expected during construction. Before site work begins, the contractor would line the outer limits of the clearing with protective silt fencing and abide by all rules and

regulations affecting sediment erosion and control. After construction of the parking area and maintenance building, the soil would be graded and seeded with grass.

The administrative building would be located immediately southeast of the new parking lot at the edge of the upper terrace where it slopes down to the middle terrace. Development of the administrative building would require land clearing and construction activities, resulting in disturbance to soils for vehicular construction access and erection of the building. The southeast portion of the site was formerly used as a sand and gravel pit to support construction of Route 3, resulting in previously heavy disturbance to existing soils and natural topography in this location. As such, the construction of the administrative building would have minimal effect on undisturbed soil conditions and existing topography in the immediate area. The terrain at the location of the proposed administrative building is gently sloping. Therefore, extensive leveling is not anticipated. Excavation would be required to provide for the building's basement. However, due to the highly disturbed nature of subsurface soils in this location, the excavation is not anticipated to have a substantial impact on native soils. During construction, the work area would be surrounded by a silt fence to prevent exposed soils from eroding out of the work zone. Once the administrative building is constructed, surrounding disturbed soils would be leveled and seeded with grass for stability and the silt fences removed. These actions would be integrated into the Erosion and Sedimentation (E & S) control plan.

This alternative also would include the planting of approximately 9.1 acres of new trees throughout the property. The largest concentration (4.5 acres) of new trees would be in the middle terrace, adjacent to the East-West Connector. Additional trees would be planted throughout the site to screen the new facilities (visitor center, administrative building, interpretive play area, etc.) from the historic core of Ferry Farm. During planting, soils would be disturbed and exposed. However, once complete, the new vegetation would help stabilize the soils.

Under Alternative B, site management would continue to be focused on cultural resources and visitor experience, not agriculture. Ferry Farm does not contribute to the nation's short- or long-range needs for food and fiber. However, the new buildings and infrastructure proposed under this alternative, including the new visitor center, parking lot, administrative building, and maintenance facility, would occur over prime farmland soils. Although exact acreages of disturbance are unknown at this time, it is anticipated that Alternative B would convert more prime farmland soils to developed land than the other action alternatives because the visitor center, administrative building, and associated access roads/trails and parking lot would all be constructed in upper terrace in the vicinity of existing prime farmland. However, as noted in chapter 3, the upper terrace is not currently being used for agricultural purposes.

Overall, Alternative B would result in a short-term, moderate, adverse and a long-term, minor, adverse impacts on soils and topography.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on soils and topography at and near Ferry Farm. These projects would include those described under Alternative A, as well as a new left-turn lane at the relocated site entrance. The addition of a left-turn lane on King's Highway would disturb underlying soils and could include some grading. These

projects would result in a long-term, moderate, adverse impact to soil and topography. These projects, along with Alternative B, would apparently impact soils and topography in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative B would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative B would result in a short-term, moderate, adverse and long-term, minor, adverse impact on soils and topography. Construction equipment and vehicles in the project area would noticeably compact, expose, and displace soils during the construction period. In addition, some grading would be required to accommodate the new development, including new trail segments, the driveway, and rehabilitated historic landscape features. Soils also could be disturbed during implementation of an invasive species and/or forest management plan. These impacts would be readily apparent and would result in the temporary exposure of soils across a relatively wide area. Mitigation measures would be necessary to offset adverse impacts to include erection of silt fences, but would likely be successful. After construction, soils would be stabilized using techniques such as sowing grass seeds with mulch, planting landscaping shrubs, or depositing gravel. In the long-term, soils would be compacted by the new onsite facilities, new pedestrian trail segments, and the paved driveway. Archeological investigations also would continue in the historic zone. The long-term impacts associated with Alternative B would be detectable but small. Mitigation may be needed, but would be relatively simple and likely successful. Alternative B would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Alternative C has many similarities with Alternative B. Although the configuration of the entrance road, visitor parking lot, visitor center, playground, and administrative/maintenance area for Alternative C would be slightly different compared to those actions described for Alternative B, the size, type, and intensity of impacts to soils in the upper terrace would be nearly the same as described for Alternative B. However, unlike Alternative B, Alternative C would include approximately 3.0 acres of land clearing on the escarpment and lower terrace to create a new vista between the proposed rehabilitated historic landscape features and the Rappahannock River. Prior to land disturbance activities, silt fencing would be installed around the work area. All woody vegetation (trees, shrubs, and vines), to include their roots, within the vista would likely be cleared by bulldozer, loaded onto haul trucks, and removed from the site. As described for Alternative B, this alternative would include implementation of an invasive species and/or forest management plan which would likely result in some level of disturbance to soils, but it is anticipated that GWF would select techniques that limit ground disturbance. After vegetation removal, the cleared area would be graded to smooth the soil surface to nearly match existing topographic conditions, and the exposed soil would be planted with grass seed to mimic Washington-era conditions. Disturbed soils along the steep escarpment would be particularly vulnerable to erosion. Such action would require authorization by Stafford County via an approved Land Disturbance and Erosion and Sedimentation (E & S) control plan.

In addition, because this alternative would involve a longer driveway (approximately 200 feet longer) and approximately 300 more feet of trails than Alternative C, to slightly larger area of soils would be impacted; therefore, the impacts to soils and topography would be slightly more under adverse compared to Alternative B.

Alternative C includes the placement of the administrative building within the same 3.5-acre cleared area for the maintenance building. In this manner, Alternative C would have slightly fewer impacts to soils and topography than Alternative B which has the administrative building located south of the visitor parking lot.

This alternative also would include the planting of approximately 9.6 acres of new trees throughout the property. The largest concentration (4.5 acres) of new trees would be in the middle terrace, adjacent to the East-West Connector. Additional trees would be planted throughout the site to screen the new facilities (visitor center, parking lot, interpretive play area, etc.) from the historic core of Ferry Farm. During planting, soils would be disturbed and exposed. However, once complete, the new vegetation would help stabilize the soils.

Under Alternative C, site management would continue to be focused on cultural resources and visitor experience, not agriculture. Ferry Farm does not contribute to the nation's short- or long-range needs for food and fiber. However, the new buildings and infrastructure proposed under this alternative, including the new visitor center, parking lot, administrative building, and maintenance facility, would occur over prime farmland soils. Although total acreages for development are unknown at this time, it is anticipated that Alternative C would convert fewer acres of prime farmland soils in the upper terrace to developed land than Alternative B. This is because under Alternative C, only the visitor center, associated parking lot, and access roads/trails would be developed over potential prime farmland soils. The proposed administrative building would be constructed in the northeast corner of the site, in an area previously disturbed during construction of King's Highway.

Overall, Alternative C would result in a short-term, moderate, adverse and a long-term, minor, adverse impact on soils and topography.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on soils and topography at and near Ferry Farm. These projects would be consistent with those described for Alternative B and would result in a long-term, moderate, adverse impact to soil and topography. These projects, along with Alternative C, would apparently impact soils and topography in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative C would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative C would result in a short-term, moderate, adverse and long-term, minor, adverse impact on soils and topography. Construction equipment and vehicles in the project area would noticeably compact, expose, and displace soils during the construction period. In addition, some grading would be

required to accommodate the new development, including new trail segments, the driveway, and rehabilitated historic landscape features. Soils also could be disturbed during implementation of an invasive species and/or forest management plan. These impacts would be readily apparent and would result in changes to soils across a relatively wide area. Mitigation measures would be necessary to offset adverse impacts, but would likely be successful. After construction, soils would be stabilized using techniques such as sowing grass seeds with mulch, planting landscaping shrubs, or depositing gravel. In the long-term, soils would be compacted by the new onsite facilities, new pedestrian trail segments, and the paved driveway. Archeological investigations also would continue in the historic zone. Due to the longer driveway and new pedestrian trails, the impacts of Alternative C would be slightly more adverse than Alternative B. Impacts to soils also would be greater under Alternative C because approximately 6.1 acres of forested area in the lower terrace would be removed, disturbing the soils beneath and increasing erosion potential. The long-term impacts associated with Alternative C would be detectable but small. Mitigation measures such as silt fencing, hay bales, and vegetative plantings would be needed, but would likely be successful. Alternative C would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

The impacts associated with Alternative D would be similar to those described under Alternative B in relation to the entrance relocation, interpretive trails, visitor center, new parking area, the new playground, the rehabilitated historic landscape and features, and the implementation of an invasive species and/or forest management plan. However, because this alternative would involve a the longest driveway (approximately 400 feet longer than Alternative B and 200 feet longer than Alternative C) a slightly larger area of soils would be impacted; therefore, the impacts to soils and topography would be slightly more under adverse compared to Alternative B and C.

Similar to the other action alternatives, Alternative D would include construction of a new maintenance facility and a new administrative building. However, under this alternative the maintenance facility would be developed in the southeast corner of the site, which is currently a field associated with the middle terrace (an old gravel/sand pit). Impacts to soil would occur on an approximate 3.5 acre foot print that would incorporate the maintenance building, equipment storage area, and laydown areas for supplies. An approximately 200 feet access road/driveway would be required to connect the visitors parking lot to the new maintenance facility. This alternative would not require construction, tree clearing, or other disturbances to the northeast corner of the site as would the other action alternatives. Therefore, this alternative would not impact soils and/or topography in this portion of the site.

Impacts associated with the new administrative building would be generally the same as those described for Alternative B, except would occur approximately 100 feet to the southwest of the location under Alternative B. The two-story administration building would be constructed in close proximity to the new visitor center/visitor center parking lot. The building footprint would be approximately 9,250 square feet and would incorporate approximately 18,500 square feet of interior space to include a basement. Soils would be disturbed and exposed during the construction of the maintenance facility, administration

building, and associated parking areas and access roads. Silt fencing would be installed prior to land disturbance activities. As described under Alternative B, soils and topography in the southeast corner of Ferry Farm have been heavily disturbed in connection with a former sand and gravel pit; therefore, construction of the new facilities would have minimal impact on natural soil and topography conditions. The southeast corner of the site is gently sloping; therefore, extensive earth cutting and leveling is not anticipated. The exception is the location of the new administrative building, which, under Alternative D, would be sited on a steeper slope than in the other alternatives. This would require an increased disturbance to soils and topography compared to Alternatives B and C. The building would be set into the slope to minimize the scale of its appearance from the north. Once construction is complete, soil amendments may be added to the exposed soils, and native vegetation would be seeded to ensure soil stabilization. These actions would be integrated into the Erosion and Sedimentation (E & S) control plan.

This alternative also would include the planting of approximately 5.8 acres of new trees throughout the property. The largest concentration (2.0 acres) of new trees would be in the middle terrace, adjacent to the East-West Connector. Additional trees would be planted throughout the site to screen the new facilities (visitor center, parking lot, administrative building, interpretive play area, etc.) from the historic core of Ferry Farm. During planting, soils would be disturbed and exposed. However, once complete, the new vegetation would help stabilize the soils.

Like Alternatives B and C, the new buildings and infrastructure proposed in this alternative, including the new visitor center, parking lot, administrative building, and maintenance facility, would occur over prime farmland soils. Although the total acreage of development is unknown at this time, it is anticipated that Alternative D would convert approximately fewer acres of prime farmland soils in the upper terrace to developed land than Alternatives B and C. Similar to Alternative C, only the visitor center, associated parking lot, and access roads/trails would be developed over potential prime farmland soils. The proposed administrative building would be constructed in the middle terrace, which was formerly used as a sand/gravel pit and soils have been heavily disturbed. The administrative building proposed under Alternative D would be constructed in the escarpment between the upper and middle terrace, which does not contain potential prime farmland soils.

Overall, Alternative D would result in a short-term, moderate, adverse and a long-term, minor, adverse impact on soils and topography.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on soils and topography at and near Ferry Farm. These projects would be consistent with those described for Alternative B and would result in a long-term, moderate, adverse impact to soil and topography. These projects, along with Alternative D, would apparently impact soils and topography in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative D would contribute a noticeable adverse increment to this impact.

Conclusion

Alternative D would result in a short-term, moderate, adverse and long-term, minor, adverse impact on soils and topography. Construction equipment and vehicles in the project area would noticeably compact, expose, and displace soils during the construction period. In addition, some grading would be required to accommodate the new development, including new trail segments, the driveway, and rehabilitated historic landscape features. Soils also could be disturbed during implementation of an invasive species and/or forest management plan. These impacts would be readily apparent and would result in changes to soils across a relatively wide area. Mitigation measures would be necessary to offset adverse impacts, but would likely be successful. After construction, soils would be stabilized using techniques such as sowing grass seeds with mulch, planting landscaping shrubs, or depositing gravel. In the long-term, soils would be compacted by the new onsite facilities, new pedestrian trail segments, and the paved driveway.

Archeological investigations also would continue in the historic zone. The long-term impacts associated with Alternative D would be detectable but small, though they would be incrementally more adverse than under Alternative B because the new administrative building would be set into a steeper slope, requiring increased disturbances to topography in that location. In addition, the new entrance road would be slightly longer under this alternative than the other action alternatives. Mitigation may be needed, but would be relatively simple and likely successful. Alternative D would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

VEGETATION

METHODOLOGY

All available information on plants and vegetative communities potentially impacted at Ferry Farm was compiled for this document in addition to general observations from site visits and botanical references such as Radford et al (1983), Stein et al. (2003), Godfrey and Wooten (1979). Predictions about short- and long-term site impacts were based on recent studies and previous projects with similar vegetation. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** No vegetation would be affected, or some individual plants could be affected as a result of the alternative, but there would be no impact to native species populations. The impacts would be on a small scale.
- Minor:** The alternative would affect some individual plants and would also affect a relatively small portion of that species' population. Mitigation to offset adverse impacts could be required and would likely be successful.
- Moderate:** The alternative would affect some individual plants and would also affect a sizeable segment of the species' population over a relatively large area. Mitigation to offset adverse impacts could be extensive but would likely be successful.

Major: The alternative would have a considerable impact on plant populations and affect a relatively large area in and out of the park. Mitigation measures to offset the adverse impacts would be required and extensive, and success of the mitigation measures would not be guaranteed.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under the No-Action Alternative, no changes would occur to current operations. Because the site's trail system would not provide access to all of the areas of interest at Ferry Farm, visitors would continue to walk across the lawn to reach the 1870s agricultural building, the archeological dig site, or the steps that provide access to the lower terrace. However, without any action to address the situation, vegetation mortality to field grasses would occur from continued pedestrian use. The loss of vegetation could allow invasive species to take root in the lawn, requiring a greater level of maintenance.

Under Alternative A, the existing pump house, located approximately 125 feet west of the Great Oak Pavilion, would be demolished and removed from the site. Upon removal, this area would be graded, as necessary, and planted with native grasses. Due to the small size of the structure, the benefits would be minor.

Other impacts to vegetation, under Alternative A, would occur through the continued storage of maintenance materials and equipment outside of the maintenance depot. This practice is necessary due to the lack of space available at the maintenance depot. Over the short-term, simple maintenance and mitigation efforts could address these conditions. However, over the long-term, repeated use and movement of maintenance equipment on the landscape could result in the loss of grasses and introduction of invasive species.

Overall, Alternative A would result in a long-term, minor, adverse impact on vegetation.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on vegetation in and around Ferry Farm. These projects include the Belmont-Ferry Farm trail system and existing commercial development. The Belmont-Ferry Farm segment of the proposed "Heritage Trail" through Fredericksburg and Stafford County, Virginia, would conclude adjacent to the site. It is anticipated that some vegetation would be removed to accommodate the trail. The existing commercial development in the vicinity of the site has removed vegetation from these areas. These projects would result in a long-term, moderate, adverse impact to vegetation. These projects, along with Alternative A, would affect a sizeable segment of plant population in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative A would contribute an imperceptible adverse increment to this impact.

Conclusion

Overall, Alternative A would result in a long-term, minor, adverse impact on vegetation. This is because visitors would continue to walk across the lawn to access many of the site's natural and cultural resources, including the site of the Washington home foundation and the lower terrace. Maintenance equipment also would continue to be stored on the lawns. Such activities would increase field grass mortality and could facilitate the growth of invasive species in those areas. The impacts associated with this alternative would affect some individual plants and a small portion of that species' population. Mitigation could be required, but would likely be successful. Alternative A would contribute an imperceptible adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Under Alternative B, the site entrance would be relocated to a new alignment that would connect to King's Highway at the existing stoplight at the intersection of King's Highway and Ferry Road, approximately 300 feet north of the existing entrance. The new entrance road would include a security check station within the right of way near the entrance. Along much of the alignment, the road would bisect forested areas, requiring the removal of mature trees across a 50-foot wide area. Specifically, impacts to a cedar/pine dominated forest would occur in the northern end of the property, while a higher density of deciduous trees would be removed in the center of the site. It is estimated that this element would impact approximately 1.3 acres of forest vegetation at the site causing a permanent opening in the forest canopy. The remaining 0.9 acres of roadway alignment would occur within existing fields resulting in the impacts to various grasses and broadleaf weeds. Alternative B also could include planting up to 2,750 linear feet of new trees (which could be combined with fencing and/or berms) along King's Highway and north of the new visitor center to screen the developed areas from the historic zone and to screen the site from the modern development along King's Highway.

Alternative B includes the relocation of the 1870s agriculture building. Impacts to herbaceous grasses and weedy plants as part of the existing field would occur to make room for the new location. Once the building is moved, the area would be seeded with native grasses and allowed to grow and become integrated into the overall field ecosystem. In addition, existing structures, such as the restroom, pump house, in-ground pump structure, and the storage cottage would be demolished and removed from the upper terrace. Once removed, these areas also would be seeded with native grasses.

Alternative B also would include the removal of forest vegetation to develop the maintenance area in the northeast corner of the site (3.5 acres), a Civil War discovery area in the northern part of the property (up to 0.5 acre), and the new parking facility and administrative building south of the visitor center (1.5 acres). These cleared areas would become a permanent fixture within the landscape of the property. Where demolition of existing buildings and infrastructure occurs, no impacts to vegetation are expected. All vegetation impacts for the new improvements would occur in the upper terrace. These areas would be cleared of vegetation to make room for the improvements. In total, it is estimated that approximately 5 acres

of forest vegetation would be removed under Alternative B. In addition, some individual trees would be removed, as needed, to accommodate the proposed playground adjacent to the west of the new parking lot.

While Alternative B calls for the removal of vegetation for the new facilities, this alternative also includes the re-planting of vegetation within disturbed areas once construction is completed. An example includes the bioretention areas within the new parking lot, where trees and shrubs would be planted after the site was initially disturbed. Likewise, trees would be planted along the entrance road and adjacent to the visitor center and associated parking lot, administrative building, and interpretive play area after construction of these facilities.

Selective removal of vegetation would occur between the rehabilitated historic landscape features, including the Washington family farm, and the Rappahannock River to enhance interpretation of historic landscapes and manage invasive species. Much of the vegetation removal would occur between the existing natural gas pipeline and the shoreline of the Rappahannock River in the lower terrace covering an area approximately 0.3 acre in size. Trees and associated root systems would be removed to the ground surface in this area, and hauled off the property for disposal. Vegetation removal would adhere to an invasive species management plan and/or forest management plan, which would be developed by the GWF as part of this project. On an as-needed basis, and through the direction of the invasive species and/or forest management plan, invasive and unhealthy vegetation would be removed, and if necessary, a few additional trees could be removed for aesthetic purposes. It is estimated that no more than 24 trees would be removed to accommodate the historic landscapes. If the implementation of the invasive species and/or forest management plan would require a substantial increase in the quantity of vegetation to be removed from the site, additional impact analysis would be required. Vegetation would not be removed from the existing wetlands areas. It is not anticipated that the selective tree thinning would noticeably impact vegetation in this portion of the site. A mechanical support building would be constructed in the immediate vicinity of the proposed rehabilitated Washington era feature. Construction of this structure would require clearing of an approximately 15-foot by 15-foot area in the upper terrace. This area is currently planted with grasses. Due to the small size of the structure, the overall impact would be minor.

Alternative B would include approximately 3,200 linear feet of new trails that would route visitors from the parking area and visitor center to interpretive areas. Where feasible, existing unpaved trails would be used to avoid impacts to vegetation. Most of the new trails would be located within existing fields where vegetation impacts would be minimal and limited to existing grassy areas. The new trails would be sited to avoid removal of individual trees and shrubs as much as possible. Interpretive nodes and discovery areas would be established alongside the trails to provide guests with information on the history of the site and cultural landscape. Some of these interpretive nodes could require a small degree of infrastructure such as benches, signage, and/or small shelters. Designers would attempt to avoid impacts to large woody vegetation for the construction of these interpretive nodes. However, a few small trees and shrubs may require removal.

The new pedestrian bridge to be constructed over the ravine and Medicine Spring also would require the removal of vegetation during construction of the abutments and the clearing of trees within the corridor of the pedestrian bridge. Slight impacts to vegetation due to shading beneath the bridge are possible. The extent of shading would depend on the final design of the bridge. Additional short-term impacts could occur during the construction process. Mats could be used to reduce the impact to soils from this

equipment resulting in the temporary coverage of vegetation. Once construction was complete, the GWF could evaluate the need to re-plant grasses or install shrubs and trees to mitigate any impacts to vegetation.

The ravine at Medicine Spring is very steeply sloped, and it is common for trees on the unstable ravine to easily fall from soil erosion or windthrow. Alternative B, as well as all action alternatives, would explore methods in which to stabilize the ravine slopes, remove unstable vegetation, and possibly enhance stability through new vegetative plantings. This action would have a beneficial impact to vegetation in the ravine.

Alternative B would mitigate vegetation losses by utilizing other portions of the site to re-establish a total of approximately 9.1 acres of newly planted forests in areas where none exist. The largest percentage of the new plantings (approximately 4.5 acres) would occur in the southern portion of the site, along the East-West Connector. Trees to be planted may include various native oaks, pines, and eastern red cedar. The planting of native trees and shrubs is expected to have a long-term beneficial impact to vegetation on the property.

Overall, Alternative B would remove approximately 8.9 acres of vegetation result in a short-term, minor, adverse and long-term, moderate, adverse impact on vegetation.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on vegetation at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on vegetation. These projects, along with Alternative B, would affect a sizeable segment of plant population in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative B would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative B would result in a short-term, minor, adverse and long-term, moderate, adverse impact on vegetation. Short-term impacts would occur during construction and could include the storage of construction vehicles and materials on grassy areas and increased foot traffic over vegetation. These impacts would affect some individual plants and/ or a relatively small portion of that species' population. Alternative B would require approximately 8.9 acres of vegetative clearing to make room for new developments such as the entrance road, parking area, Civil War discovery area, and maintenance facility. Included in this total, some individual trees would be removed, as needed, from both the upper terrace and along the escarpment to accommodate historic viewsheds. Approximately 3,200 linear feet would be added to the pedestrian trail network, mostly in open fields. The removal of trees for the trails and interpretive nodes would be avoided, if possible, although the proposed bridge over the ravine would shade the vegetation beneath. Some vegetation also would be selectively removed from the escarpment and lower terrace to enhance the rehabilitated historic landscape and features associated with the Washington home site. Invasive and unhealthy vegetation would be removed first and, if necessary, additional trees could be cleared for aesthetic purposes. Vegetation removal would be conducted pursuant

to the invasive species management plan and/or forest management plan to be developed as part of the proposed action. The impacts associated with this alternative would affect some individual plants and a sizeable segment of the species' population over a relatively large area. Mitigation to offset adverse impacts, including planting of 4.5 acres of successional growth forest in the middle terrace, could be extensive but would likely be successful. In total 9.1 acres of new vegetation would be planted at the site, compared to the loss of approximately 8.9 acres, for a net gain of 0.2 acres of vegetation. Despite the net gain, much of the new vegetation would be associated with small stands of trees around new buildings to screen them from the historic core, whereas most of the vegetation lost would be forest clearing to accommodate new facilities and the entrance road. Therefore, the overall impact would be adverse. Alternative B would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE C

Impact Analysis

The impacts associated with Alternative C would be similar to those described for Alternative B in relation to the entrance relocation, entrance road, new parking area, and maintenance area. While the visitor center and parking area would be sited approximately 350 feet south of the location proposed under Alternative B, the parking area would be slightly larger, and the entrance road would be approximately 200 feet longer, the level of vegetation impacts to accommodate these components would be relatively the same (approximately 4.6 acres). The interpretive trails would be slightly longer under this alternative than the other action alternatives (by 300 feet) resulting in slightly more adverse impacts on grasses in the upper terrace. The vegetation removal necessary for the creation of the northern maintenance area and administrative building also would be the same as that described under Alternative B (3.5 acres).

The most distinguishing vegetation impact under Alternative C, compared to the other alternatives, is the proposed tree and shrub removal along the escarpment and lower terrace to create a sight vista of the Rappahannock River in line with the proposed rehabilitated historic landscape features. Woody vegetation in this area would be removed by heavy machinery across an approximately 3.0 acre area. Vegetation to be removed would include hardwood species typical of the lower terrace such as sycamore, sweet-gum, red maple, and green ash. Afterward, the soil would be graded and the area would be seeded with various native grasses and herbs to mimic pasture conditions common in the day of the Washington era. At least two years of regular maintenance would be required to ensure that invasive species do overtake the cleared landscape.

Alternative C would mitigate vegetation losses using the same approach described under Alternative B by replanting forested vegetation at selective sites across the upper and middle terraces. A total of 9.6 acres of new vegetation would be planted under Alternative C, slightly more than that proposed for Alternative B.

Overall, Alternative C would remove approximately 11.9 acres of vegetation from Ferry Farm, resulting in a short-term, minor adverse and long-term, moderate, adverse impact on vegetation.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on vegetation at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on vegetation. These projects, along with Alternative C, would affect a sizeable segment of plant population in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative C would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative C would result in a short-term, minor, adverse and long-term, moderate, adverse impact on vegetation. Short-term impacts would occur during construction and could include the storage of construction vehicles and materials on grassy areas and increased foot traffic over vegetation. These impacts would affect some individual plants and/ or a relatively small portion of that species' population. Alternative C would require approximately 11.9 acres of vegetative clearing to make room for new developments such as the entrance road, parking area, Civil War discovery area, and maintenance and administrative facilities as well as clearing 3.0 acres to create a historic vista from the upper terrace across the Rappahannock River. In addition, approximately 3,500 linear feet would be added to the pedestrian trail network, mostly in open fields. The removal of trees for the trails and interpretive nodes would be avoided, if possible, although the proposed bridge over the ravine would shade the vegetation beneath. Vegetation removal would be conducted pursuant to the invasive species management plan and/or forest management plan to be developed as part of the proposed action. The impacts associated with this alternative would affect some individual plants and a sizeable segment of the species' population over a relatively large area. Mitigation to offset adverse impacts, including planting of 4.5 acres of successional growth forest in the upper and middle terraces, could be extensive but would likely be successful. In total 9.6 acres of new vegetation would be planted at the site, compared to the loss of approximately 11.9 acres, for a net loss of 2.3 acres of vegetation. Alternative C would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Alternative D would have generally the same layout of buildings, parking, trails, and rehabilitated historic landscapes and features as Alternative B, with the exception of the maintenance facility and the administrative office building. Under Alternative D, the administrative building would be shifted approximately 100 feet southwest compared to Alternative B, and the maintenance facility would be located in the far southeast corner of the site. The entrance road would be slightly longer under this alternative than the other action alternatives, but this would not result in an increased impact on vegetation. Thus, impacts to vegetation would be the same as Alternative B except for impacts related to these two structures.

The placement of the administration building for Alternative D would avoid forested areas and tree removal. The approximate 9,250 square-foot building footprint would impact field vegetation associated with the large clearing that was once a sand and gravel pit. Plant species common to this area such as broomsedge (*Andropogon virginicus*) and goldenrod (*Solidago* spp.) would be removed. Likewise, the maintenance facility would be located in the same field further to the south, impacting approximately 3.5 acres of meadow vegetation. An access road to the maintenance area would be needed from the visitors parking lot across the meadow habitat, impacting approximately 200 linear feet. At this location, the maintenance building and equipment yard would be visibly exposed to visitors utilizing the parking lot. Alternative D would include screening, likely to include vegetation, between the King's Highway and the parking lot and maintenance facility, similar to the screening described for Alternative B. The re-creation of a 2.0-acre natural forest community in the southern portion of the site would serve to mitigate for vegetation impacts caused by the project. A total of approximately 5.8 acres of new vegetation would be planted at the site under Alternative D.

Overall, Alternative D would remove approximately 6.1 acres of vegetation from Ferry Farm, resulting in short-term, minor, adverse and long-term, moderate, adverse impacts on vegetation.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on vegetation at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on vegetation. These projects, along with Alternative D, would affect a sizeable segment of plant population in a relatively wide area, resulting in a long-term, moderate, adverse cumulative impact. Alternative D would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative D would result short-term, minor, adverse and long-term, moderate, adverse impacts on vegetation; however, these adverse impacts would be less adverse than the other action alternatives. This is due to the placement of both the administration and maintenance buildings in the open meadow at the southern end of the study area. Impacts to forested vegetation would not occur in the northern end of the property. Approximately 6.1 acres of vegetation would be removed for the construction of the entrance road, parking lots, Civil War discovery area, and to enhance the field/agricultural historic landscape. Similar to Alternative B, some vegetation would be removed for the creation of 3,200 linear feet of new trails with interpretation stations. Some vegetation also would be selectively removed from the escarpment and lower terrace to enhance the viewshed between the rehabilitated historic landscape and features associated with the Washington home site and the Rappahannock River. Invasive and unhealthy vegetation would be removed first and, if necessary, additional trees could be cleared for aesthetic purposes. Vegetation removal would be conducted pursuant to the invasive species management plan and/or forest management plan to be developed as part of the proposed action. The impacts associated with this alternative would affect some individual plants and a sizeable segment of the species' population over a relatively large area. Mitigation to offset adverse impacts could be extensive and likely successful. In total 5.8 acres of new vegetation would be planted at the site, compared to the loss of

approximately 6.1 acres, for net loss of 0.3 acre of vegetation. In addition to the overall loss of vegetation, much of the new vegetation gained would be associated with small stands of trees around new buildings to screen them from the historic core, whereas most of the vegetation lost would be forest clearing to accommodate new facilities and the entrance road. Alternative D would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

WILDLIFE AND WILDLIFE HABITAT

METHODOLOGY

The NPS Organic Act, which directs all parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean that native animal life should be protected and perpetuated as part of the park's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; otherwise they are protected from harvest, harassment, or harm by human activities. According to *NPS Management Policies 2006* (NPS 2006), the restoration of native species is a high priority. Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and the ecological integrity of animals. Information on wildlife was taken from park documents (NPS 2002) and on-line databases managed by the USFWS, and the DGIF. The thresholds of impact are as follows:

- Negligible:** There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be of short duration and well within natural fluctuations.
- Minor:** Impacts would be detectable, but they would not be expected to be outside the natural range of variability and would not be expected to have any long-term impacts on native species, their habitats, or the natural processes sustaining them. Mitigation measures, if needed to offset adverse impacts, would be simple and likely successful.
- Moderate:** Breeding animals of concern are present; animals are present during particularly vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they could be outside the natural range of variability for short periods of time. Mitigation measures, if needed to offset adverse impacts, would be extensive and likely successful.
- Major:** Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or permanent. Loss of habitat might affect the viability of at least some native species. Extensive mitigation measures would be needed to offset any adverse impacts, and their success would not be guaranteed.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, no changes would be made to current operations at Ferry Farm. The absence of new development would avoid disruptions to current feeding, breeding, or nesting patterns of wildlife. Management activities such as mowing the fields and maintaining roadways and buildings would create temporary disturbances to local wildlife. The removal of the existing pump house from the upper terrace also could temporarily disturb local wildlife. However, Alternative A is not expected to affect population levels of existing animals that inhabit the property.

Overall, Alternative A would result in a long-term, negligible, adverse impact on wildlife and wildlife habitat.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on wildlife and wildlife habitat in and around Ferry Farm. These projects include the commercial development around the site. Impacts to wildlife resulting from commercial development include the removal of vegetation and other habitat types, and increased traffic and noise. Commercial development also has the potential to disrupt wildlife habitat on adjacent undeveloped lands due to an increased human presence and noise. The existing commercial development has resulted in a long-term, moderate, adverse impact on wildlife and wildlife habitat. This development, along with Alternative A, could impact native species, their habitats, or the natural processes sustaining them such that they are outside of the natural range of variability, resulting in a long-term, moderate, adverse cumulative impact. Alternative A would contribute an imperceptible adverse increment to this impact.

Conclusion

Overall, Alternative A would result in a long-term, negligible, adverse impact on wildlife and wildlife habitat. This is because the passive use of the property for historical interpretation and research would continue to provide a sanctuary for local wildlife populations. Although localized disturbance such as occasional mowing and maintenance activities would occur, existing wildlife populations would be expected to continue to use the site for feeding, breeding, and/or nesting. The impacts on wildlife and wildlife habitat associated with this alternative would not be observable or measurable. Impacts would be of short duration and well within natural fluctuations. Alternative A would contribute an imperceptible adverse increment to the long-term, moderate, adverse cumulative impact.

IMPACTS OF ALTERNATIVE B

Impact Analysis

In general, while few wildlife species prefer very specific habitat types, most wildlife species enjoy a diversity of habitats that include forested areas, fields, and the transitional zones between ecological communities. Under Alternative B, the presence of these diverse habitats would continue to be maintained over the long-term. However, Alternative B would include a number of site disturbances/modifications that would affect local wildlife in the short-term. These modifications would include:

- relocation of the site entrance approximately 300 feet to the north of the existing entrance from King's Highway
- construction of a new security/entrance station
- construction of a new visitor center and associated parking lot
- construction of a new 3.5-acre maintenance area in the forested portion of the property north of the ravine
- rehabilitation of Washington era structures and feature in the historic core
- construction of a 15-foot by 15-foot mechanical building
- construction of an interpretive play area
- relocation of the 1870s agriculture building
- clearing of trees to make room for the new maintenance facility, Civil War discovery area
- demolition of existing improvements

These actions would temporarily disrupt existing field and forested vegetation that serve as habitat for local wildlife, particularly songbirds such as the northern cardinal (*Cardinalis cardinalis*), American robin (*Turdus migratorius*), Carolina wren (*Thryothorus ludovicianus*), and migrating warblers (*Dendroica* spp.). Although local wildlife may be accustomed to the noise and traffic from King's Highway, such as the gray squirrel (*Sciurus carolinensis*) and white-tailed deer (*Odocoileus virginianus*), these species could be temporarily displaced as the sounds and presence of construction activities and equipment would disturb their normal behavior patterns. It is expected that wildlife use of the property and behavior would resume near current levels after construction is completed.

The construction of the new trails, interpretive nodes, ravine bridge, and discovery areas also would have the potential to temporarily displace some wildlife species during the construction process. The impacts related to these activities would be short term and localized during construction. Wildlife would be expected to re-use these areas once the level of disturbance appreciably decreases after construction. Similarly, impacts to wildlife from the implementation of an invasive species and/or forest management plan could temporarily displace wildlife species during any vegetation removal and periodic maintenance efforts. However, it is expected that wildlife use of the property and behavior would resume near current levels after such activities are completed. Alternative B would include the establishment of a new forested area in the middle terrace, near the East-West Connector (totally approximately 4.5 acres). Additional planting would be incorporated in the developed zone to screen the new development from the historic core of Ferry Farm. The addition of these forested areas, in time, would serve to provide habitat to various birds and gray squirrels, and mitigate for the impacts to existing wildlife habitats caused by the proposed improvements.

The introduction of site improvements would be expected to bring increased human activity at the site which may cause some localized disturbance to animals residing on the property. However, wildlife common to the area are generally habituated to the presence of humans and are expected to adjust to additional visitors. This would allow Ferry Farm to continue to serve as a refuge for many species in the developing region.

Under Alternative B, the overall impact on wildlife and wildlife habitat would be short-term, moderate, adverse and long-term, minor, adverse.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on wildlife at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on wildlife and wildlife habitat. These projects, along with Alternative B, could impact native species, their habitats, or the natural processes sustaining them such that they are outside of the natural range of variability, resulting in a long-term, moderate, adverse cumulative impact. Alternative B would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative B would result in a short-term, moderate, adverse and long-term, minor, adverse impact on wildlife and wildlife habitat. During the construction period, noise from construction vehicles, equipment staging and the displacement of soils could have a short-term, moderate, adverse impact on wildlife abundance and/or diversity in the study area. These impacts would be detectable and could be outside the natural range of variability for short periods of time. Mitigation measures would be implemented during construction to minimize such impacts, and likely would be successful. In the long-term, new development such as the driveway, parking area, Civil War discovery area, and maintenance facility would include the removal of existing vegetation and alter existing wildlife habitat. Disturbances to wildlife also would occur due to an anticipated increase in visitation. However, the impact would be minimal because most wildlife populations near the site are habituated to suburbia and would adjust to the increase in visitors. Impacts associated with this alternative would be detectable but would not be expected to be outside the natural range of variability and would not be expected to have any long-term impacts on native species, their habitat, or the natural processes sustaining them. To mitigate for lost forested habitat, approximately 4.5 acres of forest would be planted in the middle terrace as part of this alternative. Alternative B would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Alternative C would include the impacts to wildlife habitats described for Alternative B, as well as additional land clearing for the riverfront vista of 3.0 acres in the lower terrace and escarpment. Although

the new visitor center and administrative building would be sited differently under Alternative C, compared to Alternative B, the overall impact on wildlife and wildlife habitat would be generally the same because these components would not affect the amount or type of habitat area to be disturbed. The new administrative building would be constructed adjacent to the maintenance facility in the same 3.5-acre footprint evaluated under Alternative B. The more southerly location of the visitor center would require the entrance driveway to be approximately 200 feet longer and the interpretive trails would be approximately 300 feet longer, but it is still expected that wildlife use of the property and behavior would resume near current levels after construction is completed. The proposed clearing in the lower terrace and escarpment, however, would result in the conversion of forested habitat utilized by a wide variety of migrant and resident songbirds, white-tailed deer (*Odocoileus virginianus*), and various small mammals to an open field available to other species such as meadow larks (*Sturnella magna*), field sparrows (*Spizella pusilla*), wild turkeys (*Meleagris gallopavo*), and eastern kingbirds (*Tyrannus tyrannus*). As such, the adverse impacts associated with Alternative C would be more adverse than those described for Alternative B.

As described for Alternatives B, impacts to wildlife and wildlife habitat would be partially mitigated with the reestablishment of forested habitat in the southeast corner of the site near the maintenance facility. Approximately 4.5 acres of a mixed deciduous and pine evergreen forest would be planted, providing additional habitat for species such as the eastern gray squirrel (*Sciurus carolinensis*), eastern flying squirrel (*Glaucomys volans*), white-tailed deer, and passerine birds.

Overall, impacts on wildlife and wildlife habitat under Alternative C would be short-term, moderate, adverse and long-term, minor, adverse.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on wildlife and wildlife habitat at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on wildlife and wildlife habitat. These projects, along with Alternative C, could impact native species, their habitats, or the natural processes sustaining them such that they are outside of the natural range of variability, resulting in a long-term, moderate, adverse cumulative impact. Alternative C would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative C would result in a short-term, moderate, adverse and long-term, minor, adverse impact on wildlife and wildlife habitat. During the construction period, noise from construction vehicles, equipment staging and the displacement of soils could have a short-term, moderate, adverse impact on wildlife abundance and/or diversity in the study area. These impacts would be detectable and could be outside the natural range of variability for short periods of time. Mitigation measures would be implemented during construction to minimize such impacts, and likely would be successful. In the long-term, new development such as the driveway, parking area, Civil War discovery area, and maintenance facility would include the removal of existing vegetation and would alter existing wildlife habitat.

Impacts to wildlife would be greater under Alternative C due to the conversion of 6.1 acres of forested habitat to open field in the escarpment and lower terrace. This would particularly affect arboreal species such as eastern gray squirrels and migratory passerines. Disturbances to wildlife also would occur due to an anticipated increase in visitation. However, the impact would be minimal because most wildlife populations near the site are habituated to suburbia and would adjust to the increase in visitors. Impacts associated with this alternative would be detectable but would not be expected to be outside the natural range of variability and would not be expected to have any long-term impacts on native species, their habitat, or the natural processes sustaining them. To mitigate for lost forested habitat, approximately 4.5 acres of forest would be planted in the middle terrace as part of this alternative. Alternative C would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Impacts of Alternative D on wildlife and wildlife habitat would be similar to those described for Alternative B, especially in relation to the new visitor center, entrance road, visitor parking, playground, and rehabilitated historic landscape and features. However, Alternative D would not include impacts to forested wildlife habitat in the northeast corner of the property for the maintenance facility. Instead, construction of the new maintenance facility and administrative building would impact approximately 3.7 acres (3.5 acres for the maintenance facility and 0.2 acres (9,250 square feet) for the administrative building) of field habitat in the southern end of the site. These impacts would mostly affect wildlife species that prefer open field conditions for cover, grazing, and/or hunting such as the eastern meadowlark (*Sturnella magna*), various sparrows (*Spizella* spp.), loggerhead shrike (*Lanius ludovicianus*), white-tailed deer, small mammals, hawks (*Buteo* spp.), and reptiles.

The more southerly location of the maintenance facility would require the entrance driveway to be approximately 400 feet longer under this alternative than Alternative B, and 200 feet longer than Alternative C. However, it is still expected that, as a result of this element, wildlife use of the property and behavior would resume near current levels after construction is completed.

Overall, impacts to wildlife under Alternative D would likely require some displacement of individual animals due to the added infrastructure. In addition wildlife would likely incur human-induced noise disturbances from visitors walking across the park and maintenance workers using equipment after construction is completed. However, it is expected that wildlife use of the property and behavior would resume near current levels after construction is completed.

Similar to Alternatives B and C, impacts to wildlife and wildlife habitat would be partially mitigated with the reestablishment of forested habitat in the southeast corner of the site near the maintenance facility. Approximately 2.0 acres of a mixed deciduous and pine evergreen forest would be planted, providing additional habitat for species such as the eastern gray squirrel (*Sciurus carolinensis*), eastern flying squirrel (*Glaucomys volans*), white-tailed deer, and passerine birds.

Overall, impacts on wildlife and wildlife habitat under Alternative D would be short-term, moderate, adverse and long-term, minor, adverse.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on wildlife at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on wildlife and wildlife habitat. These projects, along with Alternative D, could impact native species, their habitats, or the natural processes sustaining them such that they are outside of the natural range of variability, resulting in a long-term, moderate, adverse cumulative impact. Alternative D would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative D would result in a short-term, moderate, adverse and long-term, minor, adverse impacts on wildlife and wildlife habitat. Alternative D would result in fewer impacts to forested wildlife habitat than Alternatives B and C, but would have the greatest impact on open field habitats. In total, approximately 3.5 acres of forested habitat would be converted to infrastructure uses such as buildings, roadways, and parking. Impacts to open field habitat would amount to approximately 3.7 acres for the maintenance and administration buildings to be located in the southern end of the property. During the construction period, noise from construction vehicles, equipment staging and the displacement of soils could have a short-term, moderate, adverse impact on wildlife abundance and/or diversity in the study area. These impacts would be detectable and could be outside the natural range of variability for short periods of time. In the long-term, new development such as the driveway, parking area, Civil War discovery area, and maintenance facility would alter existing wildlife habitat. Disturbances to wildlife also would occur due to an anticipated increase in visitation. However, the impact would be minimal because most wildlife populations near the site are habituated to suburbia and would adjust to the increase in human presence. Impacts associated with this alternative would be detectable but would not be expected to be outside the natural range of variability and would not be expected to have any long-term impacts on native species, their habitat, or the natural processes sustaining them. Mitigation measures would be implemented during construction to minimize such impacts, and likely would be successful. One such mitigation measure includes the planting of tree species within a 4.5 acre area in the southern end of the study area to reestablish forested habitat. Alternative D would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

WETLANDS AND STREAMS

METHODOLOGY

The NPS has adopted a goal of ‘no net loss’ of wetlands, and has also set goals for a long-term net gain of wetlands service wide (NPS 2011). An inventory and delineation of waters of the U.S. and waters of the state was completed in the project area. Fieldwork for the wetland inventory and delineation was

performed using the technical criteria outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* and associated guidance to identify jurisdictional boundaries within the property (USACE 2010). Wetlands were classified using the Cowardin et al. (1979) classification system. Best professional judgment was used to evaluate wetland functional values in terms of impacts to the aquatic environment and water quality. The planning team based the impact analysis and conclusions for possible impacts to wetlands on the onsite inspection of known and potential jurisdictional wetlands at Ferry Farm, review of existing literature and studies, information provided by GWF, and professional judgment. Where possible, map locations of wetlands were compared with locations of proposed development and modifications of existing facilities. Predictions about short-and long-term site impacts were based on previous studies of impacts to wetlands from similar projects and recent scientific data. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** Wetlands and streams would not be affected or the impacts to the resources would be below or at the lower levels of detection.
- Minor:** The impacts on wetlands and/or streams would be detectable and relatively small in terms of area and the nature of change.
- Moderate:** The impacts on wetlands and/or streams would be readily apparent over a relatively small area, but the impact could be mitigated by restoring previously degraded wetlands.
- Major:** The impacts on wetlands and/or streams would be readily apparent over a relatively large area. The action would have measurable consequences for the wetland or stream that could not be mitigated.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Management of the property under current conditions would continue to avoid impacts to wetlands and streams on the site. Actions such as yard maintenance and archeological investigations are not expected to require impacts to these resources.

Overall, Alternative A would have no impact on wetlands and streams.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on wetlands and streams. These projects include the implementation of an invasive species and/or forest management plan. As such, this project could result in a long-term, minor, adverse impact on wetlands and streams. This project, along with Alternative A, could result in detectable but relatively small impacts on wetlands and streams, in terms of area and the nature of change; therefore, having a long-term, minor, adverse cumulative impact. Alternative A would contribute an imperceptible adverse increment to this impact.

Conclusion

No other past, present, or reasonably foreseeable future actions have the potential to impact wetlands and streams within the project area; therefore, there are no cumulative impacts on wetlands and streams within the project area.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Most of the proposed actions associated with Alternative B would occur in the upper terrace and away from wetlands and streams and would have no impact on wetlands and/or streams. The series of wetland seeps near the Rappahannock River, southwest of the rehabilitated Washington home farm would not be impacted by this alternative. Actions associated with Alternative B could impact streams and wetlands. First, this alternative would include the installation of a new pedestrian foot bridge across the northern ravine and Medicine Spring. This bridge would connect the new trail to Ferry Road which runs along the northern side of the ravine, to provide access to a proposed Civil War discovery area. The bridge concept includes spanning the ravine and stream channel with no intermediate supports. It is anticipated that the bridge construction would not require encroachment into the stream channel. However, there is a risk of sediment pollution entering the stream channel during construction as the abutments are installed. Erosion and sedimentation control practices would be incorporated into the site plan to prevent sediments from entering the stream channel.

Additionally, an interpretive node would be installed at the shoreline of the Rappahannock River, near the historic pontoon bridge location. This location is near a seep wetland that originates from the escarpment. The interpretive node would include interpretive signage and possibly a resting bench adjacent to the river. These improvements could require the disturbance of soils that could potentially erode into the Rappahannock River. The existing dirt road (Ferry Road), would be used as part of the trail system, and would serve to carry visitors to the Rappahannock River interpretive node without the need to impact wetlands.

Alternative B also includes the removal of select trees and shrubs along the shoreline of the Rappahannock River on approximately 0.3 acres, likely through the direction of an invasive species and/or forest management plan, for the purpose of manipulating the site vista to mimic the Washington home era. The removal of trees in close proximity to the river has the potential to cause soil disturbances that could result in sediment entering the river channel. Similarly, work crews have the potential to fell trees into the river channel rather than on land causing impacts to the river. If implementation of the invasive species and/or forest management plan would involve the removal of substantially more than 0.3 acres of vegetation, additional impact assessment would be required.

Lastly, stabilization efforts along the ravine could be designed to evaluate flow within the ravine and measures could be implemented to either divert water or slow down the flow to reduce the impact of the flow on erosion. Depending on the approach taken, stabilization efforts could improve or reduce stream flow in some areas. Stabilization efforts could include elements such as protection of the banks with

erosion control matting or blanketing and stabilization with a permanent covering that is capable of handling steep slopes.

Overall, Alternative B is would result in long-term, negligible, adverse impacts on wetlands and streams.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact wetlands and streams within the project area; therefore, there are no cumulative impacts on wetlands and streams within the project area.

Conclusion

Overall, Alternative B would result in a long-term, negligible, adverse impact on wetlands and streams. Construction associated with this alternative would primarily occur in the upper terrace and impacts to wetlands and streams would be avoided. Although some selective thinning of vegetation would occur in the escarpment and lower terrace, no vegetation would be removed from the existing wetlands and stream. The construction of a new footbridge over the ravine would also avoid impacts to wetlands. Any impacts to wetlands would be below or at low levels of detection. Alternative B would contribute a noticeable adverse increment to the long-term minor adverse cumulative impact.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Actions proposed under Alternative C that would affect wetlands and streams would be similar to those described for Alternative B, including those related to stabilization of the ravine, the construction of the ravine bridge, implementation of an invasive species and/or forest management plan, and the interpretation node at the former pontoon landing area. Alternative C differs in impacts to wetlands and streams, however, with the proposed work in the lower terrace to create the open vista. The area of clearing includes three small wetland seeps, located southwest of the rehabilitated Washington home site, that collectively total approximately 0.6 acres. The clearing of trees and shrubs in these wetlands would require that heavy equipment enter the wetlands in order to uproot the woody vegetation, causing rutting and water quality impacts. The work would eventually cause a conversion of the wetlands from a palustrine forested habitat to a palustrine emergent habitat, considered by the State of Virginia and the USACE to be a regulated activity. As such, the clearing of wetlands would require permit authorization from the Virginia DEQ and USACE. No other impacts to wetlands and streams are proposed.

Overall, Alternative C would result in a long-term, moderate, adverse impact on wetlands and streams.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact wetlands and streams within the project area; therefore, there are no cumulative impacts on wetlands and streams within the project area.

Conclusion

Overall, Alternative C would result in a long-term, moderate, adverse impact on wetlands and streams. This is because three, small wetland seeps are present in the lower terrace, within the 3.0 acres of vegetation that would be cleared to enhance interpretive landscapes at the site. Clearing vegetation from this area would result in conversion of the wetlands from a palustrine forested habitat to a palustrine emergent habitat. Regulatory permit authorization would be required, including some form of compensatory mitigation. Additional development activities associated with this alternative would primarily occur in the upper terrace and impacts to wetlands and streams would be avoided. The construction of a new footbridge over the ravine also would avoid impacts to wetlands. Wetland and stream impacts would be readily apparent over a relatively small area, and the impact could be mitigated by restoring previously degraded wetlands. The action would have a measureable impact on plant and/or wildlife species within the wetlands, but all species would remain indefinitely viable. Alternative C would contribute an appreciable adverse increment to the long-term moderate adverse cumulative impact.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Actions proposed under Alternative D that would affect wetlands and streams would be the same as those described for Alternative B. Alternative D differs from Alternative B with respect to the location of the new administrative building and maintenance facility and length of the entrance driveway; however, under both alternatives, these elements would have no noticeable impact on wetlands or streams at Ferry Farm. No other impacts to wetlands and streams are proposed.

Overall, Alternative D would result in a long-term, negligible, adverse impact on wetlands and streams.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact wetlands and streams within the project area; therefore, there are no cumulative impacts on wetlands and streams within the project area.

Conclusion

Overall, Alternative D would result in a long-term, negligible, adverse impact on wetlands and streams. Like Alternative B, construction would primarily occur in the upper terrace and impacts to wetlands and streams would be avoided. Although some selective thinning of vegetation would occur in the escarpment

and lower terrace, no vegetation would be removed from the existing wetlands and stream. The construction of a new footbridge over the ravine would also avoid impacts to wetlands. Any impacts to wetlands would be below or at low levels of detection. Alternative D would contribute a noticeable adverse increment to the long-term minor adverse cumulative impact.

CHESAPEAKE BAY RESOURCES

METHODOLOGY

Chesapeake Bay Preservation Areas are environmentally sensitive areas necessary for the protection of water quality entering the Chesapeake Bay. These areas are defined by Stafford County as tidal waters, perennial streams, wetlands adjacent to perennial streams, and a 100-foot upland buffer all known as Resource Protection Areas (RPA). The purpose of protecting RPA areas is to maintain a natural buffer of riparian forests and wetlands to filter non-point sources of runoff pollution. The planning team based the impact analysis and conclusions for possible impacts to the RPA in this document on the review of existing literature and studies, site specific data collected by professional wetland scientists, and professional judgment. Where possible, maps showing the RPA were compared with locations of proposed development and modifications of existing facilities. Predictions about short-and long-term site impacts were based on expected actions for each alternative. Intensity thresholds are described below.

Negligible: Impacts on Chesapeake Bay resources would be so small as to incur undetectable changes to water quality, and would be well below water quality standards.

Minor: Impacts on Chesapeake Bay resources would incur detectable and relatively small changes to water quality, but would be at or below water quality standards.

Moderate: Impacts on Chesapeake Bay resources would be readily apparent over a relatively small area including changes to water quality that could exceed water quality standards, but could be offset through mitigation measures.

Major: Impacts on Chesapeake Bay resources would be readily apparent over a relatively large area including changes to water quality that would exceed water quality standards. Mitigation success to off-set impacts would be uncertain.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, there would be no changes to current operations. Current management actions, which primarily occur landward of the RPA within the upper terrace, would continue. This alternative would not include new encroachments within the RPAs on the property, although some trail maintenance

could occur. Additionally, the existing pump house, which would be removed under Alternative A is located in the upper terrace, well outside of the RPAs.

Overall, Alternative A would result in a long-term, negligible, adverse impact on Chesapeake Bay resources.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact Chesapeake Bay resources within the project area; therefore, there are no cumulative impacts on Chesapeake Bay resources within the project area.

Conclusion

Overall, Alternative A would result in a long-term, negligible, adverse impact on Chesapeake Bay resources. Ongoing activities such as routine maintenance and archeological investigations would occur primarily in the upper terrace, outside of the RPA. Some trail maintenance could occur with the RPA, but would be unlikely to adversely impact Chesapeake Bay resources. Impacts associated with this alternative would be so small as to incur undetectable changes to water quality, and these changes would be well below water quality standards. Alternative A would contribute an imperceptible adverse increment to the long-term minor adverse cumulative impact.

IMPACTS OF ALTERNATIVE B

Impact Analysis

The purpose of establishing and protecting the RPA through regulatory permitting is to protect water quality of surface water systems in Virginia that feed the Chesapeake Bay. This is done by regulating work within surface waters and establishing a protective vegetative buffer adjacent to surface waters. The intent of the state law is to reduce non-point source pollution caused by land disturbances that would directly runoff into surface waters. The importance of protecting the RPA riparian buffer is to insure the establishment of natural vegetation that can serve to filter surface waters from nutrients and sediments before the water enters the adjacent stream, lake, river, or estuary. For those instances that require encroachment into a protective resource, specific water quality standards apply, and mitigative actions may be necessary to achieve those water quality standards such as vegetative plantings, swales, infiltration basins, etc.

Work proposed under Alternative B that would affect RPA buffer areas would include the placement of a new pedestrian bridge over the ravine, the creation of an interpretive node at the historic ferry site on the shoreline of the Rappahannock River, removal of trees along the shoreline of the Rappahannock River downslope from the Washington home place to improve the site vista, implementation of an invasive species and/or forest management plan, and stabilization efforts within the ravine. Each of these actions, except the stabilization of the ravine, would require the removal of vegetation within the RPA that could result in lowered filtering capacity offered by the presence of natural vegetation. The amount of vegetation removal within the RPA would determine the degree to which the resource is impacted, though

it is anticipated that mitigation measures would be implemented as appropriate to minimize adverse impacts to the RPA. These actions would require regulatory authority as part of the site plan approval process in accordance with the Stafford County zoning ordinance. Typically, such actions would require some form of offsetting water quality mitigation such as the installation of BMPs and/or the establishment of RPA buffer vegetation elsewhere.

Stabilization efforts could include measures to either divert water or slow down the flow to reduce the impact of the flow on erosion as well as elements such as protection of the banks with erosion control matting or blanketing and stabilization with a permanent covering that is capable of handling steep slopes. BMPs would be implemented during construction to minimize impacts to water quality. It is not anticipated that stabilization efforts would have a noticeable or long-term impact on water quality.

Alternative B also includes an engineered stormwater management system to capture and treat surface runoff from new infrastructure (parking area, visitor center, administrative building, etc.) pursuant to Virginia stormwater management regulations. Runoff would be captured within the parking area and building rooftops and piped to a grassy swale that will be installed immediately adjacent to the western edge of the parking area. Water would be allowed to flow southward to the middle terrace where the surface water will be captured by a slight berm located where a new trail will be placed along the tree line at the crest of the escarpment. The stormwater would infiltrate into the soil at this location to become part of the local groundwater, and not allowed to discharge directly into the Rappahannock River. The stormwater plan also includes a small treatment and storage basin adjacent to the entrance road where treated water will be allowed to infiltrate into the soil. The design would include a method for excessive flows to directly exit the basin and enter Medicine Spring. The stormwater management plan for Alternative B is expected to increase water quality entering the Rappahannock River.

Overall, Alternative B would result in a long-term, minor, adverse impact on Chesapeake Bay resources.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact Chesapeake Bay resources within the project area; therefore, there are no cumulative impacts on Chesapeake Bay resources within the project area.

Conclusion

Overall, Alternative B would result in a long-term, negligible, adverse impact on Chesapeake Bay resources. Construction associated with this alternative would primarily occur in the upper terrace, and outside of the Chesapeake RPA. Minor encroachments in the RPA would include the installation of a pedestrian bridge over the ravine and an interpretive node along the Rappahannock River, near the location of the historic pontoon bridge. Additionally, some selective thinning of vegetation would occur in the escarpment and lower terrace. Impacts associated with Alternative B would be so small as to incur undetectable changes to water quality, and these changes would be well below water quality standards. Alternative B would contribute a noticeable adverse increment to the long-term minor adverse cumulative impact.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Alternative C also would include the installation of a new pedestrian bridge and Rappahannock River interpretive node, implementation of an invasive species and/or forest management plan, and stabilization efforts within the regulated RPA, as described under Alternative B. In addition, this alternative would include the clearing of approximately 1.2 acres of vegetation within the 100-foot wide riparian RPA buffer adjacent to the Rappahannock River. The purpose of this clearing is to restore the historic vista from the interpretive structures to be constructed in the upper terrace to the Rappahannock River. The forested area would be cleared and converted to an open field to mimic historic conditions during the Washington era. This action would be regulated by Stafford County. Loss of the forested buffer would cause degradation of the ability of the riparian buffer to filter surface runoff pollutants. Mitigation would be required such as bioretention facilities, BMPs, and/or the planting of vegetation within the RPA at other locations, which would have a reasonable likelihood of success.

Overall, Alternative C would result in a long-term, moderate, adverse impact on Chesapeake Bay resources.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact Chesapeake Bay resources within the project area; therefore, there are no cumulative impacts on Chesapeake Bay resources within the project area.

Conclusion

Overall, Alternative C would result in a long-term, moderate, adverse impact on Chesapeake Bay resources. This is because approximately 1.2 acres of vegetation within the 100-foot riparian RPA buffer around the Rappahannock River would be cleared to enhance the interpretive landscape at the site. This clearing would degrade the ability of the riparian buffer to filter surface runoff pollutants. Additional construction associated with this alternative would primarily occur in the upper terrace, and outside of the Chesapeake RPA. Minor encroachments in the RPA would include the installation of a pedestrian bridge over the ravine and an interpretive node along the Rappahannock River, near the location of the historic pontoon bridge. Impacts associated with Alternative C would be readily apparent over a small area, including changes to water quality that could exceed water quality standards. These impacts could be offset through mitigation, which would likely be successful. Alternative C would contribute an appreciable adverse increment to the long-term moderate adverse cumulative impact.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Impacts to the RPA under Alternative D would be the same as those described in Alternative B. Work proposed under Alternative D that would affect RPA areas would include the placement of a new pedestrian bridge over the ravine, the creation of an interpretive node at the historic ferry site on the shoreline of the Rappahannock River, selective clearing of trees/shrubs along the Rappahannock River shoreline within a 0.3 acre segment, implementation of an invasive species and/or forest management plan, and stabilization of the ravine. Although the location of the new administrative building and maintenance facility would be different under Alternative D than Alternative B, the construction/presence of these structures would have no noticeable impact on the RPA (under either alternative).

Overall, Alternative D would result in a long-term, minor, adverse impact on Chesapeake Bay resources.

Cumulative Impacts

No other past, present, or reasonably foreseeable future actions have the potential to impact Chesapeake Bay resources within the project area; therefore, there are no cumulative impacts on Chesapeake Bay resources within the project area.

Conclusion

Overall, Alternative D would result in a long-term, negligible, adverse impact on Chesapeake Bay resources. Construction associated with this alternative would primarily occur in the upper terrace, and outside of the Chesapeake RPA. Minor encroachments in the RPA would include the installation of a pedestrian bridge over the ravine and an interpretive node along the Rappahannock River, in the location of the historic pontoon bridge. Additionally, some selective thinning of vegetation would occur near the escarpment and lower terrace. Impacts associated with Alternative B would be so small as to incur undetectable changes to water quality, and these changes would be well below water quality standards. Alternative D would contribute a noticeable adverse increment to the long-term minor adverse cumulative impact.

ARCHEOLOGICAL RESOURCES

METHODOLOGY

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such research questions. Archeological resources are the remains of past human activity and the records documenting the analysis of such remains (NPS 1998).

An archeological site can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national (NPS 1990). In order for an archeological site to be listed on or

eligible for listing on the National Register it must have yielded, or be likely to yield, information important in prehistory or history. Additionally, it must possess integrity of those features necessary to convey its significance. Archeological significance is determined by the assessment that the archeological resource, and the scientific analysis of it, will add to or revise the understanding of history. The two requirements for this significance are:

- The property must have, or have had, information to contribute to our understanding of human history or prehistory, and
- The information must be considered important, in that it helps fill in a research gap or support an alternative theory of cultural development. It may also be associated with specific areas – geographical or academic – identified as important by a state or federal agency management plan) (NPS 1990).

Integrity is based on the property's potential to yield specific data that addresses important research questions (NPS 1990). Evaluation of integrity for archeological sites is related mostly to the location, design, materials, association, and workmanship. This means that the site must be relatively undisturbed with discernible stratigraphy intact, to yield reliable data regarding cultural materials over time and its relationship to associated floral and faunal remains. It also means that the site must possess the data potential to answer the relevant research questions, such as identifiable artifact types and/or time periods. Potential impacts on archeological resources are assessed based on the amount of disturbance to an archeological resource and the degree to which the integrity remains or is otherwise lost without recordation of the remains.

Negligible: Impact is at the lowest level of detection with neither adverse nor beneficial consequences.

Minor: Disturbance of a site(s) results in little, if any, loss of integrity.

Moderate: Disturbance of a site (s) results in some loss of integrity.

Major: Disturbance of a site(s) results in total loss of integrity.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under the Alternative A, there would be no changes to operations at Ferry Farm. The GWF would continue its archeological investigations at the site, pursuant to the NPS conservation easement (Public Law 105-355). These investigations would provide additional information about the history of the site before, during, and following the Washington era as well as provide additional insight about the site's use during the Civil War. New features and artifacts discovered during future investigations, especially those determined to be associated with the Washington era or the Civil War, would be maintained, preserved and interpreted. Continued excavations at the site would have an adverse impact on archeological deposits due to the disturbance of soils in order to facilitate data collection. However, since archeological

excavations, analyses, and reporting have beneficial impacts on our understanding of the past, value would also be added to archeological resources from these activities.

No development would take place within the historic zone without oversight by the NPS, as required in their easement, and consultation with the SHPO and other appropriate parties.

In addition to continued archeology, Alternative A would include the removal of the existing pump house, which is located approximately 125 feet west of the Great Oak Pavilion. The area of the pump house has not previously been surveyed for archeological resources. Therefore, prior to demolition, archeological investigations would be required to identify any resources in the immediate vicinity of the structure. Additionally, GWF archeological staff would be present to oversee demolition and advise on or take appropriate actions should any archeological resources be uncovered.

Based on this information, Alternative A would result in a long-term, minor, adverse impact on archeological resources. The collection of artifacts would disturb the integrity of existing resources; however, systematic documentation, collection, and curation of identified resources would minimize this loss.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on archeological resources in and around Ferry Farm. These projects include the existing commercial development in the vicinity of the site (outside of the Ferry Farm boundaries) and the proposed Belmont-Ferry Farm Trail System. Construction associated with the commercial development would have disrupted any underlying archeological features or artifacts. Additional construction associated with the installation of the Belmont-Ferry Farm Trail System would further disturb the subsurface in the vicinity and could result in adverse impacts to archeological features or artifacts in its path. These projects result in a long-term, moderate, adverse impact on archeological resources. These projects, along with Alternative A, would result in a long-term, moderate, adverse cumulative impact due to the associated loss of integrity. Alternative A would contribute imperceptible noticeable adverse increment to this impact.

Conclusion

Overall, Alternative A would result in a long-term, minor, adverse impact on archeological resources. This is because archeological investigations would continue at the site, resulting in some loss of integrity of archeological resources. However, through systematic documentation, collection, and curation of artifacts, these investigations would provide additional, valuable information about Ferry Farm's history. New features and artifacts discovered during these investigations would be maintained, preserved and interpreted. In addition, the existing pump house would be removed from the site, and could impact existing archeological resources. Alternative A would contribute imperceptible noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Under Alternative B, archeological investigations would continue at Ferry Farm, pursuant to the NPS conservation easement and the 2010 PA. As described for Alternative A, new features and artifacts discovered during future investigations, especially those determined to be associated with the Washington era or the Civil War, would be maintained, preserved and interpreted. Continued excavations at the site would have an adverse impact on archeological deposits due to the disturbance of soils in order to facilitate data collection. However, since archeological excavations, analyses, and reporting have beneficial impacts on our understanding of the past, value would also be added to archeological resources from these activities. Alternative B proposes the rehabilitation of historic landscape features over the corresponding Washington-era foundations, which have been located during archeological investigation. This could include rehabilitation of the Strother-Washington house, root cellar, icehouse, and potential slave quarters in their original locations. The rehabilitated structures would be constructed in a manner that would only minimally contact the historic resources below, therefore, protecting the existing archeological features (Keast & Hood 2013). It has been determined that such an approach is feasible (Keast & Hood 2013) (see appendix E). Below-grade foundations for rehabilitated Washington era landscape features would be located only in areas that have been previously investigated, where no archeological elements remain. Protective fill would be provided over existing archeological elements to remain. Archeological monitoring during construction also would ensure that any previously unknown features or deposits would be dealt with appropriately. A new mechanical building to support the rehabilitated Washington era features would be carefully sited to avoid any impacts to archeological resources. In addition, GWF staff would be present during construction to monitor the work. Protocols would be in place to clearly identify actions that must be taken if previously unknown resources are encountered during construction. If previously undiscovered architectural features or archeological deposits are encountered, work would cease and only continue after the SHPO and appropriate parties (pursuant to the programmatic agreement) are notified and consulted on the proper measures to address the discovery.

Selective thinning of up to 24 trees from the escarpment, to rehabilitate the historic landscape and associated views would cause minimal, if any ground disturbance. It is assumed that trees to be removed would be cut, with associated root systems, to the ground surface, and not uprooted. However, pursuant to Commonwealth of Virginia requirements the escarpment has not previously been surveyed for archeological resources (other than visual monitoring). Therefore, if ground disturbance would occur as part of the selective vegetation thinning, an archeological survey would be conducted prior to removal. Ground disturbance within the lower terrace would occur in areas shown to be void of archeological resources. If these steps are followed, this element of Alternative B would not likely impact archeological resources.

Other changes to the vegetation on the property would include the implementation of an invasive species and/or forest management plan, removal of trees to accommodate new development in the upper terrace, and the development of a buffer (a combination of fencing, berms, and/or vegetation) along King's Highway. Through the direction of the invasive species and/or forest management plan, invasive plant species would be removed from the site on an as needed basis to more accurately reflect the vegetation types extant at the time of Washington's occupancy of the site. This vegetation removal would likely result in some level of ground disturbance, unless all vegetation could be removed by cutting trees and

root systems at grade. If under these plans vegetation could not be cut at grade, and ground disturbance would be required in areas not previously surveyed for archeological resources, such surveys would be conducted prior to removal. Ground disturbing vegetation removal would only be conducted if it could be determined that there would be disturbance to archeological resources.

The removal of trees to accommodate the new buildings, parking lot, entrance road, and the proposed interpretive play area would primarily take place in the development zone, which consists of disturbed soils. These soils were previously disrupted during construction of King's Highway and/or the existing visitor center. As such, vegetation removal in this area is not expected to impact archeological resources. The exceptions are the relocated site entrance, the location of which has not been surveyed for archeological resources, and a few areas along the access road where archeological resources have been identified during previous investigations. Similarly, a portion of the buffer along King's Highway would be developed near areas that have archeological sensitivity as well as through areas that have not yet been surveyed. Prior to construction, the location of the new entrance and any sections of the access road and buffer that have not been investigated, would undergo archeological survey. If surveys are conducted and the entrance, access road, and buffer along King's Highway are sited in areas void of archeological resources, there would be no impact on archeological resources from these components.

Vegetative screening is proposed throughout the site to screen the new facilities from the historic core of the site. Most of the new plantings would occur within the development zone, in areas previously shown to be void of archeological resources. However, prior archeological survey would be conducted in some areas, which have not previously undergone archeological investigation, such as the northern portion of the site.

The mitigation planting of approximately 4.5 acres of forest vegetation in the southern portion of the site, along the East-West Connector is not anticipated to adversely impact archeological resources on the property. This area was heavily disturbed during its use as a gravel pit and also during construction of the adjacent East-West Connector. Previous archeological investigations in this area have identified some isolated artifacts, but no coherent archeological sites. As such, these plantings are not anticipated to have an adverse impact on archeological resources.

The 1870s agricultural building, would be relocated approximately 400 feet, to a location near the proposed visitor center in the development zone. The relocated structure would be screened from the interpretive landscape and features of the historic core by deciduous vegetation. Non-invasive archeological investigation of the current location of the 1870s building has located a potential burial associated with the Civil War. The extent of this feature has not been extensively investigated, and therefore it is unknown whether the removal of this building would impact the burial site. As such, ground disturbance during removal of the 1870s agricultural building would be as limited as possible. In addition, archeological investigations would be conducted in this area prior to ground disturbance and mitigation measures would be implemented, as necessary. Previous archeological investigations have been conducted in the portion of the site to which the building would be relocated, and shovel test pits have generally been negative. Using information from previous investigations, the 1870s agricultural building would be sited away from areas with archeological sensitivity. It is possible the removal of the building could adversely impact existing archeological resources, but archeological monitoring procedures would be in place during removal.

Additional elements associated with Alternative B that could adversely impact archeological resource include removal of existing buildings, construction of new buildings within the development zones, development of an interpretive play area, installation of interpretive nodes and discovery areas, and improvements to the existing trail network, site entrance/access road, and new parking lots. Of primary concern would be the new maintenance facility, administrative building and visitor center, and the Civil War discovery area. The maintenance facility would be sited in an area that has not previously undergone archeological investigations, and that is currently heavily vegetated. In addition to grading, excavation, and other ground disturbances associated with construction of the maintenance facility, entrance, and access road, this area would have to be cleared of vegetation prior to construction which would disrupt underlying soils. This portion of Ferry Farm may have been previously disturbed during development of King's Highway; however, further archeological investigations would be required prior to construction to ensure archeological resources would not be affected. Similarly, the Civil War discovery area would be located in the northwestern portion of the site, which also has not been surveyed for archeological resources. Ground disturbance in this area would include clearing forest vegetation to accommodate the discovery area, and minor disturbances associated with the installation of low impact development, which could include interpretive signage, benches, and/or a storage shed. Interpretation in the Civil War discovery area would primarily be conducted through tablet computers or smart phones; therefore, it is anticipated that built components of this discovery area would be limited. Since these areas have not been surveyed, archeological investigations would be conducted prior to construction to minimize adverse impacts to archeological resources. Temporary activity sites associated with the construction of the new buildings, trails, roads, interpretive nodes and discovery areas could include staging areas, vehicular access driveways, and equipment lay-down areas. The location of these temporary measures in an area that has not been subject to archeological investigation could cause ground disturbance and adversely impact underground resources.

Alternative B would include the removal of current buildings and structures, such as the administration building, tractor shed, pump house, and restrooms as well as other outbuildings. Construction of the current administration building has already disturbed much of the immediate area, and impacts of its removal are likely to be minimal unless activity occurs outside the current footprint for the building and associated grading. The ancillary nature of the other structures minimizes potential impacts resulting from their removal. Most have been set on minimal foundations and above-ground pads, and their removal is not likely to result in ground disturbance or adversely impact archeological resources.

The new visitor center and administrative building both would be constructed in the development zone, in areas where previous archeological investigations (test pits) have yielded no artifacts. Previous ground disturbance in this portion of the site has resulted from construction of the existing visitor center and King's Highway; therefore, reducing the likelihood that intact archeological resources remain. However, these facilities could include basements, therefore, requiring greater excavation/disturbance depths, and increasing the potential for uncovering unknown archeological resources. Archeological monitoring procedures would be in place during construction. If previously undiscovered architectural features or archeological deposits are encountered, work would cease and only continue after the SHPO and appropriate parties (pursuant to the programmatic agreement) are notified and consulted on the proper measures to address the discovery.

In general, ground disturbance would be limited for the proposed trail extensions, interpretive nodes, and discovery areas. The exceptions would be the Civil War discovery area, as described above, the new ravine bridge, and the replacement of wooden stairs down the escarpment with a winding trail. Prior to construction of the new pedestrian bridge over the ravine and replacement of the existing wooden stairs down the escarpment, an archeological survey would be conducted to determine if the area contain archeological resources. It is anticipated that both features would be sited in areas that have been shown to be void of archeological resources. In general, the interpretive trails would follow existing trails, any only made formal with gravel or a similar material to formalize them. The majority of new trails would occur within previously surveyed areas and would avoid areas of known archeological resources. Similarly, the proposed interpretive nodes and discovery areas would include few built components (at a minimum a post or stone to identify its purpose). These elements would be installed in areas that have previously undergone archeological survey and in areas where test pits have yielded negative results. If any of these elements would be sited in an area that has not previously undergone archeological investigation, a survey would be conducted prior to development. In addition, archeological monitoring procedures would be in place during development of each of these elements to ensure disturbances to archeological resources are avoided, where possible.

Therefore, Alternative B would result in a long-term, minor, adverse impact on archeological resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on archeological resources at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on archeological resources. These projects, along with Alternative B, would result in a long-term, moderate, adverse cumulative impact due to the potential for some loss of integrity. Alternative B would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative B would result in a long-term, minor, adverse impact on archeological resources. If archeological investigations are conducted prior to any activities that would require ground disturbance in areas that have been previously surveyed, and new facilities are sited to avoid existing resources to the extent feasible, the impact from that component of Alternative B would be minor and adverse. Archeological investigations would continue at the site, resulting in disturbances to archeological resources that cause some loss of integrity. However, through systematic documentation, collection, and curation of artifacts, these investigations would provide additional, valuable information about Ferry Farm's history. New features and artifacts discovered during these investigations would be maintained, preserved and interpreted. The new maintenance facility, Civil War discovery area, relocated site entrance, and portions of the new access road would be constructed in an area that has not been previously surveyed for archeological resources. Therefore, an archeological survey would be conducted prior to construction to minimize adverse impacts to existing resources. If necessary, an archeological survey would also be conducted to ensure vegetation removal, pursuant to the invasive species and/or forest management plan, would not disrupt archeological resources. The rehabilitated Washington-era

structures, the security station, and any structures associated with the Civil War discovery area, are the only buildings proposed for development in the historic zone. It is unlikely that the construction of these structures would adversely impact known or unknown archeological resources. Interpretive nodes and trails extensions within the historic zone would include minimal, if any, ground disturbance and are unlikely to impact archeological resources. If archeological features are discovered during any of the construction/demolition activities or plantings, appropriate action would be taken to ensure protection of those resources. It is not anticipated that construction activities outside of the historic zone would interfere with known or unknown archeological features. Alternative B would contribute a noticeable adverse increment to the overall long-term, moderate, adverse, cumulative impacts.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Under Alternative C, the impacts to archeological resources would be similar to that described for Alternative B, except that the proposed rehabilitated historic landscape features, would be constructed approximately 250 feet south of their original location, along with the associated mechanical support building. To facilitate historic views to and from the Washington home site, approximately 3.0 acres of forest vegetation would be cleared from the escarpment under this alternative. The proposed structures would be placed within the development zone, an area that has previously been disturbed and is less likely to contain archeological resources than the historic zone. Due to the extent of clearing, and desired viewshed, it is anticipated that the 3.0 acres would be uprooted, not cut to the ground surface. Due to its sloping nature, and pursuant to Commonwealth of Virginia requirements, the escarpment has not previously been surveyed for archeological resources. Prior to clearing, an archeological survey would be conducted to identify any archeologically sensitive areas. Because the intent is to clear the entire area of trees, if archeological resources are present along the escarpment, it is likely that some loss of integrity would occur. Resources uncovered on the escarpment would be systemically documented, collected, and curated, consistent with the NPS easement and the PA. In addition to these actions, archeological investigations would continue as proposed in the other alternatives, and all other facilities associated with Alternative C would be sited in approximately the same location as under Alternative B; therefore, the overall impacts associated with these components would be generally the same. The interpretive trails and access road would be slightly longer under this alternative than under Alternative B. However, this difference would only incrementally increase the potential for impacting archeological resources because minimal ground disturbance would occur to facilitate the added length. This is particularly noteworthy for the additional loop around the rehabilitated Washington era features. In this location the trails would extend through an area of known archeological resources. As such, any ground disturbing activities would be closely monitored.

Overall, Alternative C would have a long-term, minor adverse impact on archeological resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on archeological resources at and near Ferry Farm. These projects would be consistent with those

described for Alternative A and would result in a long-term, moderate, adverse impact on archeological resources. These projects, along with Alternative C, would result in a long-term, moderate, adverse cumulative impact due to the potential for some loss of integrity. Alternative C would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative C would result in a long-term, minor, adverse impact on archeological resources. If archeological investigations are conducted prior to any activities that would require ground disturbance in areas that have been previously surveyed, and new facilities are sited to avoid existing resources to the extent feasible, the impact from that component of Alternative C would be minor and adverse. The impacts associated with Alternative C are likely to be slightly more adverse than the other alternatives due to the proposed vegetative clearing on the escarpment. Like the other alternatives, archeological investigations would continue at the site, resulting in disturbances to archeological resources that cause some loss of integrity. However, through systematic documentation, collection, and curation of artifacts, these investigations would provide additional, valuable information about Ferry Farm's history. New features and artifacts discovered during these investigations would be maintained, preserved and interpreted. The new maintenance facility, Civil War discovery area, relocated site entrance, and portions of the new access road would be constructed in an area that has not been previously surveyed for archeological resources. Therefore, an archeological survey would be conducted prior to construction to minimize adverse impacts to existing resources. If necessary, an archeological survey would also be conducted to ensure vegetation removal, pursuant to the invasive species and/or forest management plan, would not disrupt archeological resources. The rehabilitated Washington-era structures, the security station, and any structures associated with the Civil War discovery area, are the only buildings proposed for development in the historic zone. It is unlikely that the construction of these structures would adversely impact known or unknown archeological resources. Although the interpretive trails would be slightly longer under this alternative than the other action alternatives, interpretive nodes and trail extensions within the historic zone would include minimal, if any, ground disturbance and are unlikely to impact archeological resources. Therefore, the overall impact would be the same. If archeological features are discovered during any of the construction/demolition activities or plantings, appropriate action would be taken to ensure protection of those resources. It is not anticipated that construction activities outside of the historic zone would interfere with known or unknown archeological features. Alternative C would contribute a noticeable adverse increment to the overall long-term, moderate, adverse, cumulative impacts.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Impacts to archeological resources from Alternative D would be similar to those described for Alternative B. However, due to the more southerly location of the new maintenance facility, this alternative would be less likely to impact archeological resources. This structure would be placed within the development zone, an area that has previously been disturbed (and surveyed) and that is unlikely to contain archeological resources. The slightly more southern location of the new administrative building under this alternative would have no impact on the potential for disturbing archeological resources. In addition, the

access road would be slightly longer under Alternative D than for Alternative B. However, the added length (approximately 200 feet) would only incrementally increase the potential for encountering archeological resources.

Overall, Alternative D would have a long-term, minor adverse impact on archeological resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on archeological resources at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on archeological resources. These projects, along with Alternative D, would result in a long-term, moderate, adverse cumulative impact due to the potential for some loss of integrity. Alternative D would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative D would result in a long-term, minor, adverse impact on archeological resources. If archeological investigations are conducted prior to any activities that would require ground disturbance in areas that have been previously surveyed, and new facilities are sited to avoid existing resources to the extent feasible, the impact of that component would be minor and adverse. Archeological investigations would continue at the site, resulting in disturbances to archeological resources that cause some loss of integrity. However, through systematic documentation, collection, and curation of artifacts, these investigations would provide additional, valuable information about Ferry Farm's history. New features and artifacts discovered during these investigations would be maintained, preserved and interpreted. The Civil War discovery area, relocated site entrance, and portions of the new access road would be constructed in areas that have not been previously surveyed for archeological resources. Therefore, an archeological survey would be conducted prior to construction to minimize adverse impacts to existing resources. If necessary, an archeological survey would also be conducted to ensure vegetation removal, pursuant to the invasive species and/or forest management plan, would not disrupt archeological resources. The rehabilitated Washington-era structures, the security station, and any structures associated with the Civil War discovery area, are the only buildings proposed for development in the historic zone. It is unlikely that the construction of these structures would adversely impact known or unknown archeological resources. Interpretive nodes and trails extensions within the historic zone would include minimal, if any, ground disturbance and are unlikely to impact archeological resources. If archeological features are discovered during any of the construction/demolition activities or plantings, appropriate action would be taken to ensure protection of those resources. It is not anticipated that construction activities outside of the historic zone would interfere with known or unknown archeological features. Alternative D would contribute a noticeable adverse increment to the overall long-term, moderate, adverse, cumulative impacts.

HISTORIC STRUCTURES

METHODOLOGY

A historic structure is defined by the NPS in Director's Order 28: *Cultural Resource Management* (NPS 2002) as "a constructed work, usually immovable by nature or design, consciously created to serve some human act." In order for a structure or building to be listed on or eligible for listing on the National Register, it must possess historic integrity of those features necessary to convey its significance, particularly with respect to location, setting, design, feeling, association, workmanship, and materials. For purposes of analyzing potential impacts to historic structures/buildings, the thresholds of change for the intensity of an impact are defined as follows:

Negligible	Impact is at the lowest levels of detection and barely measurable with no perceptible consequences.
Minor	Alteration of a feature(s) would not diminish the overall integrity of the resource.
Moderate	Alteration of a feature would diminish the overall integrity of the resource. Mitigation measures would be implemented and would be successful in reducing the overall adverse effect on the resource.
Major	Alteration of a feature would diminish the overall integrity of the resource. Mitigation measures would not be implemented or would not be successful in reducing the adverse effect on the resource.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, there would be no changes to current conditions. The 1870s agricultural building, the only structure at the site that has been determined to be historic, would be maintained in its current location.

Overall, Alternative A would have no impact on historic structures.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on historic structures at and near Ferry Farm. These projects include the restoration of the historic Kenmore home. Current efforts include interior restoration of the dining room and refurnishing of the home with period-appropriate pieces. The restoration activities enhance the authenticity of the home. These actions result in a long-term beneficial impact to historic structures. These projects, along with

Alternative A, would result in a long-beneficial cumulative impact. Alternative A would not contribute to the overall impact.

Conclusion

Alternative A would have no impact on historic structures. The only historic structure on the property (1870s agricultural building) would be retained on the property, with no changes. Therefore, this alternative would not alter the historic structure. Alternative A would have no impact on the long-term beneficial cumulative impacts.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Under Alternative B, the 1870s agricultural building would be moved from its current and original location within the historic zone to the development zone, near the new visitor center (approximately 400 feet). The building would be maintained and preserved in its new location and would likely be interpreted to acknowledge its former commemorative role in the early 20th century.

Under Alternative B this historic structure would be removed from its original location, resulting in a loss of integrity. This would be considered an adverse effect on the historic structure. However, prior to relocation, the GWF would consult with the SHPO and appropriate parties, pursuant to the programmatic agreement, to produce and implement mitigation measures for the building's removal. Mitigation measures would likely include documentation of the existing structure, and possible interpretation of why it was relocated. Implementation of these mitigation measures would reduce the adverse effect on the historic structure. Therefore, Alternative B would result in a long-term, moderate, adverse impact on historic structures.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on historic structures at and near Ferry Farm. These projects would be consistent with those described under Alternative A and would result in a long-term beneficial impact to historic structures. These projects, along with Alternative B, would result in a long-term beneficial cumulative impact. Although Alternative B would contribute a noticeable adverse increment to this impact, the beneficial impacts from past and present actions are more apparent.

Conclusion

Overall, Alternative B would result in a long-term, moderate, adverse impact on historic structures. This is because the 1870s agricultural building would be relocated from its original location to the development zone, diminishing the structures integrity. However, consultation with the SHPO and appropriate parties would produce and implement mitigation measures for the building's removal,

reducing the adverse effect on the historic structure. GWF would continue to consult with the SHPO and appropriate parties, pursuant to the programmatic agreement, to mitigate adverse impacts. Alternative B would contribute a noticeable adverse increment to the long-term beneficial cumulative impacts.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Under Alternative C, the impacts to historic structures would be the same as those described in Alternative B. As such, Alternative C would result in a long-term, moderate, adverse impact on historic structures.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on historic structures at and near Ferry Farm. These projects would be consistent with those described under Alternative A and would result in a long-term beneficial impact to historic structures. These projects, along with Alternative C, would result in a long-term beneficial cumulative impact. Although Alternative C would contribute a noticeable adverse increment to this impact, the beneficial impacts from past and present actions are more apparent.

Conclusion

The impacts on historic structures would be the same under each of the action alternatives. Like Alternative B, Alternative C would result in a long-term, moderate, adverse impact on historic structures because the 1870s agricultural building would be relocated from its original location to a site approximately 400 feet from its current location, to the new visitor center. The relocated structure would be screened from the interpretive landscape and features of the rehabilitated Washington Home Farm by deciduous vegetation. The relocation would diminish the integrity of the structure and result in an adverse impact on the resource. However, the GWF would consult with the SHPO and appropriate parties to produce and implement mitigation measures for the building's removal, reducing the adverse effect on the historic structure. Alternative C would contribute a noticeable adverse increment to the long-term beneficial cumulative impacts.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Under Alternative D, the impacts to historic structures would be the same as those described in Alternative B and C. As such, Alternative D would result in a long-term, moderate, adverse impact on historic structures.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on historic structures at and near Ferry Farm. These projects would be consistent with those described under Alternative A and would result in a long-term beneficial impact to historic structures. These projects, along with Alternative D, would result in a long-beneficial cumulative impact. Although Alternative D would contribute a noticeable adverse increment to this impact, the beneficial impacts from past and present actions are more apparent.

Conclusion

The impacts on historic structures would be the same under each of the action alternatives. Like Alternatives B and C, Alternative D would result in a long-term, moderate, adverse impact to historic structures because the 1870s agricultural building would be relocated from its original location to the development zone, near the new visitor center. The relocation would diminish the integrity of the structure and result in an adverse impact on the resource. However, the GWF would consult with the SHPO and appropriate parties to produce and implement mitigation measures for the building's removal, reducing the adverse effect on the historic structure. Alternative D would contribute a noticeable adverse increment to the long-term beneficial cumulative impacts.

CULTURAL LANDSCAPES

METHODOLOGY

Cultural landscapes are the result of the long interaction between people and the land, and the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by historical land-use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past, as well as a visual chronicle of its history. The cultural landscapes from both the Washington era and the Civil War era are mostly represented by natural features, archeological resources, viewsheds, and circulation systems. These cultural landscape elements provide a powerful and important association with both eras.

In order for a cultural landscape to be listed in the National Register, it must possess significance (the meaning or value ascribed to the landscape) *and* have integrity of those features necessary to convey its significance. The character-defining features of a cultural landscape include spatial organization and land patterns; topography; vegetation; circulation patterns; water features; and structures/buildings, site furnishings and objects (NPS 1996). For purposes of analyzing potential impacts to cultural landscapes, the thresholds of change for the intensity of an impact are defined as follows:

Negligible Impact is at the lowest levels of detection and barely measurable with no perceptible consequences.

Minor	Alteration of a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the landscape.
Moderate	Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the cultural landscape but not affect its National Register eligibility.
Major	Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape which would affect its National Register eligibility.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, the cultural landscape at Ferry Farm would remain unchanged in comparison to the current conditions. The viewshed would continue to be dominated by natural scenery such as open fields and the surrounding forest stands, as well as wooden fences. The recently planted fields in the middle terrace would dominate much of the viewshed in the southern portion of the site. The center of the study area would remain open, with forested areas bordering the site. In some locations, the forested areas would break to provide views of the Rappahannock River. Likewise, the area along the river would remain undeveloped and thick with vegetation. Although these natural views would be of value, they would not reflect the historic, agricultural viewsheds that existed during the Washington era. This alternative would maintain the site's topography and the streams that lead to the Rappahannock River, both of which were present during Washington's youth and are important components of the cultural landscape. Elements of the landscape associated with the Civil War and Commemorative periods, including the remnants of a wartime trench and road, tree specimens, mowed lawns, and the location of the c. 1870s agricultural building within the Washington home farm cultural landscape would be retained.

The visitor center would remain the most prominent structure on the landscape. This structure does not date back to the Washington era and its presence in the landscape would not allow for historically accurate scenery. The significant components of the landscape, such as the views from the upper terrace across the Rappahannock River, would continue to be disrupted by the presence of the 1870s agricultural building, the series of mid-20th century buildings (restrooms, storage cottage, Great Oak Pavilion, etc.), existing parking lots and roads, and the other modern structures. The existing pump house, located approximately 125 feet west of the Great Oak Pavilion would be removed under this alternative; however, this structure is currently only minimally visible on the landscape. Therefore the benefits of removing the pump house would be slight. Commercial development surrounding Ferry Farm would continue to impede the cultural landscapes in some areas of the site. However, this alternative would not introduce any new buildings or infrastructure to the site; therefore, those components of the cultural landscape that are currently intact would be preserved.

Overall, Alternative A would have a long-term, minor, adverse impact on cultural landscapes.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on the cultural landscape at and near Ferry Farm. These projects include the existing commercial development around the site. The existing commercial development has resulted in a modern landscape that is very different from its historic appearance. Development includes retail shops, fast food restaurants, and major roadways. The existing commercial development has resulted in a long-term, moderate, adverse impact on the cultural landscape. These projects, along with Alternative A, would result in diminished integrity of the cultural landscapes without affecting its National Register eligibility, therefore, having a long-term, moderate, adverse cumulative impact. Alternative A would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative A would result in a long-term, minor, adverse impact to cultural landscapes. This is because existing modern structures, parking lots, and roads would continue to intrude on the landscape. In addition, although topography at the site has not noticeably changed since Washington's youth, the majority of the existing vegetation would not be consistent with its appearance during the Washington era. Impacts associated within this alternative would not alter patterns or features of the landscape or diminish the overall integrity of the landscape. Alternative A would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impacts.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Alternative B would include the removal of several buildings from the historic zone, including the 1870s agricultural building, maintenance facility, and visitor center. The existing visitor center and maintenance facility would be demolished, and removed from the landscape. Smaller modern buildings such as the restrooms, storage cottage, pump house, and temporary archeology shed also would be removed from the landscape. The removal of the non-historic structures and relocation of the 1870s agricultural building to the development zone would aid interpretation of the landscape. These structures are not from the Washington era and intrude on the cultural landscapes. The removal of the visitor center, the most prominent structure on the landscape, would have the most beneficial impact on the landscape, despite the construction of new, more modern facilities in its place. Although the new buildings would not be historically accurate, they would be sited away from the primary interpretive areas to avoid intruding on the cultural landscape. The maintenance facility would be located in the northeast corner of Ferry Farm and surrounded by heavy vegetation, and would not be visible on the landscape. The other new facilities, including the interpretive play area and the visitor center parking lot, would also be screened from the landscape with deciduous vegetation. The deciduous vegetation would change with the seasons, so that the new facilities would be more visible in the winter, when the trees would be without leaves. However, the presence of the trees would still serve to reduce the visibility of the structures. The visitor center and administrative building, and associated parking lot would be constructed in the center of site, in close

proximity to each other, and would detract from the cultural landscape in this area. However, this adverse impact would be somewhat reduced since the modern development would be concentrated in one area.

In addition to screening around the new facilities, the new driveway would include screening from King's Highway, furthering reducing modern day intrusions to the east of the site. Approximately 4.5 acres of successional forest would also be planted in the middle terrace, adjacent to the East-West Connector. This vegetation would further screen the site from surrounding commercial development to the south of the site. Tree cover along the highway frontage and around the perimeter of the property would enforce a consistent and unified boundary condition and emphasize a protected character. Over time, the level of screening would be enhanced as the forest develops.

The relocated site entrance and the associated security station would also be screened with deciduous vegetation on its west side to reduce its visibility from the historic core of the site. This screening, however, would reduce the openness of the landscape, resulting in an adverse impact on the cultural landscape. Additionally, the presence of the paved road would not be consistent with the Washington home farm cultural landscape. The road would be visible, to some degree, from most portions of the upper terrace, and would, therefore, have a slight adverse impact on the cultural landscape.

This alternative would include the rehabilitation of historic landscape features in the historic zone, in the immediate vicinity of the landscape elements present during the Washington era. Features to be rehabilitated would include the Washington home site, root cellars, a potential icehouse, and a potential slave quarters. The rehabilitation of these historic features and landscapes would also provide an accurate visual setting on the landscape. These structures would be aligned with a clearing in the tree line to provide views from the upper terrace at Ferry Farm to the Rappahannock River and the City of Fredericksburg beyond. In addition, to mimic the landscape present during Washington's youth, some trees would be selectively removed from the escarpment and/or lower terrace in order to promote the visual link between Washington Home Farm, the Rappahannock River, and the City of Fredericksburg. Invasive and unhealthy vegetation would be removed first, as needed, and then the GWF would consider thinning additional areas for aesthetic purposes. Invasive plants (and other vegetation as needed) would be removed from the site under an invasive species and/or forest management plan, to be developed as part of the proposed action. Vegetation removal would not only be conducted to enhance views across the Rappahannock River but also to create a setting that more accurately reflects the vegetation types extant at the time of Washington's occupancy of the site; therefore, improving the cultural landscape throughout Ferry Farm. A modern mechanical support structure would also be constructed in the immediate vicinity of the rehabilitated Washington era features and would have a slightly adverse impact on the cultural landscape. However, the structure would be small (15 feet by 15 feet) and would be screened with deciduous vegetation from the historically accurate components to reduce its impact. In addition, while continued archeology would help identify remaining features of the Washington home farm, the appearance of the archeological dig sites themselves would have an adverse impact on the Washington-era landscape.

The interpretive focus of the Washington home farm cultural landscape would adversely affect remaining elements associated with the Civil War and Commemorative periods. Trench remnants associated with Civil War activities and located within the Washington home farm would be avoided, to the extent practicable, during rehabilitation of the landscape. The relocation of the 1870s agricultural building would

diminish the building's erroneous association with George Washington. The building was largely developed during the early 20th century Commemorative period and has incorrectly become a part of Ferry Farm's local story. Additionally, trees dating from the Civil War and Commemorative periods have the potential to be removed if they hinder the rehabilitation of the Washington home farm landscape and/or are in locations of proposed development. The current configuration of mowed lawns also would be alternative to more accurately reflect the Colonial period and to accommodate proposed developments, thereby, reducing components of the Civil War and Commemorative period that are not consistent with the Washington home farm landscape.

In addition to the new buildings to be constructed in the central portion of the site, a series of interpretive nodes, discovery areas, and trails would be implemented throughout the site. The presence of these features would adversely impact the cultural landscape, because they are modern developments and would be scattered throughout the property. The overall impact would be minor due the small size of the interpretive nodes and discovery areas (primarily signage, but could also include built features and/or touchable models). In addition, interpretation of the discovery areas would be conducted primarily through tablet computers and smart phones, limiting the need for built components. It is also anticipated that only a few of the nodes/discovery areas would be visible from any one location at Ferry Farm; therefore, the intrusion of these elements on the cultural landscape from a given viewpoint would be limited. For example, the Civil War discovery area would be north of the ravine, and surrounded by vegetation; therefore it would only be visible from portions of the site proximal and to the south of the discovery area. Additionally, the interpretive node at the former pontoon bridge location would be at a significantly lower elevation than the historic core and would not be visible on the landscape from most viewpoints. Interpretive nodes and discovery areas could be used to interpret the Civil War and Commemorative period elements of the landscape which have been removed or are isolated within the more robust Washington home farm landscape. Understanding and interpretation of a road remnant located north of the ravine, which was used by Civil War soldiers to access the pontoon bridge across the river in Fredericksburg, would be enhanced by its proximity to the Civil War discovery area. Where more developed features would be incorporated, such as benches or storage shelters, deciduous vegetative screening could be planted to reduce impacts. Similarly, the proposed trails would be designed to have minimal impact on the cultural landscape. In many areas, the trails would be unpaved, making them less visible from distant vantage points. Two sections of the trail would traverse the historic core, and these sections would be the most evident and therefore, result in the most adverse impact on the cultural landscape.

Construction activities associated with the implementation of Alternative B would result in temporary adverse impacts to cultural landscapes at Ferry Farm. Specifically, construction equipment staged on the landscape would diminish the historic landscape. These interferences would be greatest in the development zone where the majority of the construction activities would occur. The GWF would implement measures to limit these intrusions. Upon removal of this equipment, the landscapes would be restored.

Overall, Alternative B would result in a short-term, minor adverse, and long-term beneficial impact on the cultural landscapes.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on cultural landscapes at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on the cultural landscapes. These projects, along with Alternative B, would diminish the integrity of the cultural landscapes without affect its National Register eligibility, resulting in a long-term, moderate, adverse cumulative impact. Alternative B would contribute an imperceptible beneficial increment to this impact.

Conclusion

Overall, Alternative B would result in a short-term, minor, adverse and long-term beneficial impacts on cultural landscapes. The short-term, adverse impacts would be related to the use and storage of construction equipment and supplies during development, which would obstruct cultural landscapes. These impacts would be noticeable but, because they would be temporary, would not alter patterns or features of the landscape such that the overall integrity of the landscape would be diminished. In the long-term, the removal of buildings that do not relate to the Washington era, including the 1870s agricultural building, the visitor center, and the maintenance facility, would beneficially impact the landscape, especially in the historic zone. The replacement of historic landscape features, including the removal of vegetation to provide clear views across the Rappahannock River, including the implementation of an invasive species and/or forest management plan, would create a cohesive representation of landscapes that would have existed during Washington's youth and Civil War use of the site. New structures would be designed in a manner that would limit the intrusion on the landscape. These buildings, the interpretive play area, the parking lot, and the access road would be set back from the historic zone and screened from view using deciduous vegetation. Interpretive nodes and discovery areas would be small and spread out, so that they would have limited impact on the landscape. The new trails also would be designed to limit their visibility and would not be a prominent feature on the landscape. Additional measures would be taken to further screen the cultural landscape from the surrounding development. Impacts associated with this alternative would not result in alteration of patterns or features of the landscape or diminish the overall integrity of the landscape. Alternative B would contribute an imperceptible beneficial increment to the overall long-term, moderate, adverse, cumulative impacts.

IMPACTS OF ALTERNATIVE C

Impact Analysis

The short-term and long-term impacts to the cultural landscape associated with this alternative would be similar to those described under Alternative B. The major difference between the two alternatives is that, under Alternative C, the replacement of historic landscape features would be sited in the development zone, approximately 250 feet south of the Washington home foundation. The southerly location of the interpretive landscape and features still would provide a historic context to the site. However, in order to enhance these historic views, approximately 3.0 acres of forest would be cleared along the edge of the upper terrace to simulate the open view across the Rappahannock River to Fredericksburg that were originally seen from the Washington's home. The removal of trees in this southerly location would not be

considered adverse because it would be consistent with the appearance of the land during the Washington and Civil War periods. Similarly to Alternative B, an invasive species and/or forest management plan would be developed to guide vegetation removal throughout the site, and would be primarily focused on vegetation management to enhance the cultural landscape. The significant open viewshed from the site of the Washington's home also would be maintained to represent the views present during the Washington's time at Ferry Farm. The benefits to the cultural landscape associated with Alternative C would be slightly less than the benefits of Alternative B because the southern location of the rehabilitated Washington-era landscape and features would not be historically accurate.

Although the visitor center, parking lot, and interpretive play area would be sited approximately 250 further south under this alternative, compared to the other action alternatives, the associated impact would be the same. These structures would adversely impact the cultural landscape as they would not be consistent with the site's appearance during Washington's youth. However, the structures would be screened from the historic core with deciduous vegetation and would be constructed in close proximity to each other to consolidate the modern intrusion on the landscape. The deciduous vegetation would change with the seasons, so that the new facilities would be more visible in the winter, when the trees would be without leaves. However, the presence of the trees would still serve to reduce the visibility of the structures. Because the administrative building would be constructed in the northeast corner of the site under this alternative, and not visible from the historic core, the overall impact of the modern buildings on the landscape would be incrementally less under this alternative.

Construction activities associated with the implementation of Alternative C would result in temporary adverse impacts to cultural landscapes at Ferry Farm. Specifically, construction equipment staged on the landscape would diminish the historic. These interferences would be greatest in the development zone where the majority of the construction activities would occur. The GWF would implement measures to limit these intrusions. Upon removal of this equipment, the landscapes would be restored.

Overall, Alternative C would result in a short-term, minor, adverse and long-term beneficial impact on the cultural landscapes.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on cultural landscapes at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on the cultural landscapes. These projects, along with Alternative C, would diminish the integrity of the cultural landscapes without affecting its National Register eligibility, resulting in a long-term, moderate, adverse cumulative impact. Alternative C would contribute an imperceptible beneficial increment to this impact.

Conclusion

Overall, Alternative C would result in a short-term, minor, adverse and long-term beneficial impact on cultural landscapes. The short-term, adverse impacts would be related to the use and storage of construction equipment and supplies during development, which would obstruct cultural landscapes.

These impacts would be noticeable but, because they would be temporary, would not alter patterns or features of the landscape such that the overall integrity of the landscape would be diminished. In the long-term, the removal of buildings that do not relate to the Washington era, including the 1870s agricultural building, visitor center, and the maintenance facility would aid accurate interpretation of the landscape, especially in the historic zone. The replacement of historic landscape features, including the removal of vegetation to provide clear views across the Rappahannock River, including the implementation of an invasive species and/or forest management plan, would create a cohesive representation of the landscapes that would have existed during Washington's youth and Civil War use of the site. However, because these interpretive structures would be sited approximately 250 feet south of their original locations, benefits would be slightly less under this alternative. New structures would be designed in a manner that would limit the intrusion on the landscape. These buildings, the interpretive play area, the parking lot, and the access road would be set back from the historic zone and screened from view using deciduous vegetation. Interpretive nodes and discovery areas would be small and spread out, so that they would have limited impact on the landscape. The new trails also would be designed to limit their visibility and would not be a prominent feature on the landscape. Impacts associated with this alternative would not result in alteration of patterns or features of the landscape or diminish the overall integrity of the landscape. Alternative C would contribute an imperceptible beneficial increment to the overall long-term, moderate, adverse, cumulative impacts.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

The impacts on cultural landscapes from Alternative D would be similar to those described for Alternative B. The southeastern location of the new maintenance facility proposed under Alternative D would be more visible from the landscape than the location proposed under Alternative B. However, the difference in impacts would be minimal since the new maintenance facility would be sited generally away from the primary interpretive areas to avoid intruding on the scenery and its modern appearance would prevent it from being confused as a Washington-era structure. The facility would also be screened from the landscape. As described for the other action alternative, deciduous trees would be planted to screen the proposed facilities from the historic core. The deciduous vegetation would change with the seasons, so that the new facilities would be more visible in the winter, when the trees would be without leaves. However, the presence of the trees would still serve to reduce the visibility of the structures. Since the new maintenance facility proposed under Alternative D would be in closer proximity to the historic core of Ferry Farm, the short-term impacts on the cultural landscape, related to construction, would be expected to be incrementally greater under Alternative D than the other action alternatives.

In addition, the administrative building would be sited approximately 100 feet southwest of its location under Alternative B. Under Alternative D, the administrative building would be set into the existing slope, minimizing the scale of its appearance from the north (i.e. from the historic core of Ferry Farm). Location the administrative building within the slope would slightly improve the cultural landscape, though the overall effect would be negligible (when compared to the other action alternatives) because this facility would be screened from the historic core under all action alternatives.

Overall, Alternative D would result in a short-term, minor adverse, and long-term beneficial impact on the cultural landscapes. For the reasons described above, the short-term impacts would be incrementally more adverse under Alternative D than the other action alternatives, and the long-term beneficial impacts would be incrementally less beneficial, despite setting the new administrative building into the slope.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on cultural landscapes at and near Ferry Farm. These projects would be consistent with those described for Alternative A and would result in a long-term, moderate, adverse impact on the cultural landscapes. These projects, along with Alternative D, would diminish the integrity of the cultural landscapes without affecting its National Register eligibility, resulting in a long-term, moderate, adverse cumulative impact. Alternative D would contribute an imperceptible beneficial increment to this impact.

Conclusion

Overall, Alternative D would result in a short-term, minor, adverse and long-term beneficial impact on cultural landscapes. The short-term, adverse impacts would be related to the use and storage of construction equipment and supplies during development, which would obstruct cultural landscapes. These impacts would be noticeable but, because they would be temporary, would not alter patterns or features of the landscape such that the overall integrity of the landscape would be diminished. The short-term adverse impacts associated with Alternative D would be incrementally more adverse than the other action alternatives because of the southeastern location of the new maintenance facility. In the long-term, the removal of buildings that do not relate to the Washington era, including the 1870s agricultural building, visitor center, and the maintenance facility would aid accurate interpretation of the landscape, especially in the historic zone. The replacement of historic landscape features, including the removal of vegetation to provide clear views across the Rappahannock River, including the implementation of an invasive species and/or forest management plan, would also create a cohesive representation of the landscapes that would have existed during Washington's youth and Civil War use of the site. New structures would be designed so as not to be confused for Washington-era structures; however, due to its location, the new maintenance facility could be more visible on the landscape under Alternative D than the other action alternatives. Like the other alternatives, the new buildings, parking lot, interpretive play area, and access road would be set back from the historic zone and screened from view using deciduous vegetation. Interpretive nodes and discovery areas would be small and spread out, so that they would have limited impact on the landscape. The new trails also would be designed to limit their visibility and would not be a prominent feature on the landscape. Additional measures would be taken to further screen the cultural landscape from the surrounding development. Impacts associated with this alternative would not result in alteration of patterns or features of the landscape or diminish the overall integrity of the landscape. Alternative D would contribute an imperceptible beneficial increment to the overall long-term, moderate, adverse, cumulative impacts.

VISUAL RESOURCES

METHODOLOGY

The existing visual environment is defined as what is seen by the visitor during the approach to Ferry Farm, as well as what is seen within the study area. The visual environment impacts both the anticipation and experience at the site. The quality of the visual environment is a vital resource and is instrumental in setting the stage for the Ferry Farm experience and its history.

All available information on viewsheds potentially impacted in various areas of the park was compiled for this document. Where possible, map locations of important areas were compared with locations of proposed developments and modifications of existing facilities. Predictions about site impacts were based on previous projects with similar results. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** The visual quality of the landscape would not be affected or the impacts would be at or below the level of detection, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience.
- Minor:** Impacts to the visual quality of the landscape would be detectable, although the impacts would be localized and would be small and of little consequence to the visitor experience. Mitigation measures, if needed to offset adverse impacts, would be simple and likely successful.
- Moderate:** Impacts to the visual quality of the landscape would be readily apparent and localized, and would have a noticeable impact on the visitor experience. Mitigation measures, if needed to offset adverse impacts, would be extensive and likely successful.
- Major:** Impacts to the visual quality of the landscape would be obvious and would have substantial consequences to the visitor experience in the region. Extensive mitigation measures would be needed to offset any adverse impacts, and their success would not be guaranteed.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, there would be no changes to the existing conditions at Ferry Farm. Archeological investigations would continue in the historic core of the site, therefore the dig sites and associated tools/equipment would continue to be visible on the viewshed. The site entrance would remain in its present location along King's Highway, making it hard to identify. The surrounding development and presence of major roadways adjacent to the site would continue to intrude on the historic viewshed.

Within Ferry Farm, the visual environment would be unchanged in comparison to the current conditions. The viewshed would continue to be dominated by natural scenery such as open fields and the surrounding forest stands, as well as wooden fences. The recently planted fields in the middle terrace would dominate much of the viewshed in the southern portion of the site. In some locations the presence of maintenance equipment and materials would disrupt these natural views. The remainder of the site also would provide undisturbed, natural views. The center of the study area would remain open, with forested areas bordering the site. In some locations, the forested areas would break to provide views of the Rappahannock River. Likewise, the area along the river would remain undeveloped and thick with vegetation. Although these natural views would be of value, they would not reflect the historic, agricultural viewsheds that existed during the Washington era (as described in the “Cultural Landscapes” section above), therefore, making it more difficult for visitors to understand the historic context of the site. This includes not only the viewshed across the site, but also the views from Ferry Farm, across the Rappahannock River to Fredericksburg, as well as views from Fredericksburg to Ferry Farm.

The visitor center would remain the most prominent structure on the landscape. This structure does not date back to the Washington era and its presence in the viewshed would not allow for historically accurate scenery. Under Alternative A, the existing outbuildings, which are not historically accurate, including the 1870s agricultural building, would remain on the landscape. This would further the non-historic scene at Ferry Farm.

The existing pump house, located approximately 125 feet west of the Great Oak Pavilion would be removed under this alternative; however, this structure is currently only minimally visible. Therefore the benefits of removing the pump house would be negligible.

Overall, Alternative A would have a long-term, moderate, adverse impact on visual resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visual resources in and around Ferry Farm. These projects include restoration of the historic Kenmore property and commercial development. Restoration of the Kenmore property would enhance visual resources at that property. In particular, the restoration efforts would improve visual experiences within the historic home of Betty Washington Lewis by incorporating period-appropriate furnishings. Due to the existing commercial development, the landscape is dominated by modern intrusions. Development includes retail shops, fast food restaurants, and major roadways. Although the restoration of the Kenmore property would improve visual resources in that location, overall, these projects would result in a long-term, minor, adverse impact on visual resources. These projects, along with Alternative A, would result in a long-term, moderate, adverse cumulative impact. Impacts to the visual quality of the landscape would be readily apparent and localized, and would have a noticeable impact on the visitor experience. Alternative A would contribute an appreciable adverse increment to this impact.

Conclusion

Overall, Alternative A would have a long-term, moderate, adverse impact on visual resources at Ferry Farm. It very difficult for visitors to envision the visual landscape as it existed at Ferry Farm during Washington's youth. This is because existing structures would continue to intrude on the landscape. Some of these structures, such as the 1870s agricultural building and the visitor center would continue to mislead visitors because they do not date to the period of significance for Ferry Farm. Modern development adjacent to Ferry Farm also would continue to intrude on the viewshed. Impacts to the visual quality of the landscape would be readily apparent and localized, and would have a noticeable impact on the visitor experience. Alternative A would contribute a noticeable increment to the long-term, moderate, adverse cumulative impact on visual resources.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Under Alternative B, the site entrance would be moved north approximately 300 feet. This new location would make the entrance more noticeable to visitors. The entrance would be sited in a stand of trees, screening the site from the surrounding development and creating a more scenic entrance for visitors. In addition to the screening around the entrance, approximately 2,745 linear feet of combined berms, plantings, and/or fencing would be installed between King's Highway and the new access road to screen the site from view. Deciduous vegetation would be used to screen the site entrance and the site entrance road from modern developments along King's Highway. The deciduous vegetation would change with the seasons, so that the new facilities would be more visible in the winter, when the trees would be without leaves. However, the presence of the trees would still serve to reduce the visibility to and from the site. Tree cover along the highway frontage and around the perimeter of the property would enforce a consistent and unified boundary condition and emphasize a protected character. This consistent boundary also would help create a psychological distancing from the commercial development outside Ferry Farm's boundaries. The manned security station and associated access gate that would be developed at the site entrance would have a minimal adverse impact on visual resources. The structure would be small and therefore only visible from the access road and immediately surrounding area.

Under Alternative B, archeological investigations would continue in the historic core of the site, therefore the dig sites and associated tools/equipment would continue to be visible on the viewshed. However, Washington era landscapes and features would be rehabilitated in the immediate vicinity of their original locations. Features to be constructed would include the Washington home site, root cellars, a potential icehouse, and potential slave quarter. This would provide an accurate visual setting on the landscape, with the exception of the proposed modern mechanical support building. The proposed enhancements would provide visitors with views that the Washington family may have experienced during their time at Ferry Farm. Of primary importance, these features would be aligned with a clearing in the tree line to help focus visitor attention on the visual and geographic relationship between Ferry Farm and downtown Fredericksburg and its waterfront. This alignment also would provide clear views between Fredericksburg and Ferry Farm. In addition to the natural clearing in the tree line, vegetation removal would be conducted under an invasive species and/or forest management plan, to facilitate a setting that more accurately reflects

the vegetation types extant at the time of Washington's occupancy of the site. Invasive species would be removed first, as needed, to enhance views and the historic atmosphere of the site, and then additional vegetation could be removed to further enhance viewsheds. The remaining tree line would not represent a historically accurate viewshed, but would screen the surrounding development from the site.

In addition, the existing visitor center and maintenance facility would be demolished and removed from the landscape, and a new visitor center, parking lot, interpretive play area, and administrative building would be constructed in the central portion of the site. A new maintenance facility also would be developed in the northeast corner of the property. The combined effect of removing the existing facilities from the landscape and replacing them with new, more visually sympathetic, service buildings and infrastructure within the development zone would provide greatly needed functions and create a more orderly appearance at Ferry Farm. The removal of smaller, modern building such as the restrooms, storage cottage, and the pump house, would minimally improve viewsheds on the property due to the small size of these structures. The new facilities would detract from the intended Washington era setting, but would be screened from view with new deciduous vegetation. Although the new buildings would not be historically accurate, they would be sited away from the primary interpretive areas to minimize their intrusion on the historic viewsheds. The new maintenance facility would be the least intrusive on the viewshed as it would be located furthest from the historic core of the site, and away from visitor use areas. Most importantly, the new maintenance facility would eliminate the need to store equipment and/or materials in areas visible to visitors. The existing visitor center and maintenance facility would be demolished, and removed from the visual environment. Existing modern support structures including the pump house, storage cottage, restroom facility, in-ground pump structure, tractor shed, equipment shed, and temporary archeology shed also would be removed from the property and would no longer impede the visual environment. The 1870s agricultural building would be relocated from the historic zone to the development zone, near the visitor center, reducing its impact on historic viewsheds. In addition, the structure would be screened from the historic core of the site with deciduous vegetation.

The new visitor center parking lot would also be screened from the visual landscape using deciduous vegetation. The parking lot would be situated between the new visitor center and administration building, but would be screened by deciduous trees and other vegetation. By screening the driveway and parking lot from the remainder of the site, this alternative further eliminates modern day intrusions on the Ferry Farm viewshed. In addition to screening around new facilities, approximately 4.5 acres of successional forest would be planted in the middle terrace, adjacent to the East-West Connector. This vegetation would further screen Ferry Farm from surrounding commercial development to the south of the site. The 4.5 acres of plantings also would provide visitors with more natural views in this area. Over time, the level of screening would be enhanced as the forest develops.

Alternative B would include the installation of a maximum of 50 low-impact, self-service interpretive nodes and discovery areas to facilitate interpretation of natural and cultural resources throughout the site. These features would be visible throughout the site, and would detract from historic viewsheds. However, the overall impact would be minor due the small size of the interpretive nodes and discovery areas, which would primarily include signage but could include a combination of built features, interpretive signage, and touchable models. Interpretation of the discovery areas would be conducted primarily through tablet computers and smart phones, reducing the need for built features. In addition, the discovery areas and interpretive nodes would be designed to minimize impacts to the visual environment and, where

appropriate, could be partially screened by deciduous vegetation to avoid creating inaccurate intrusions on the landscape. It is anticipated that only a few of the nodes/discovery areas would be visible from any one location at Ferry Farm; therefore, the intrusion of these elements on the landscape from a given viewpoint would be limited. Due to their small size, it is unlikely that the nodes and/or discovery areas would be visible from outside Ferry Farm, such as if viewed from Fredericksburg. The exception would be the interpretive node along the Rappahannock River which could be visible from areas proximal to, but across the river from Ferry Farm. The Civil War discovery area would require clearing up to 0.5 acre of forest vegetation in the northwest portion of the site. However, the clearing would occur in the center of a vegetated area, therefore, would be surrounded by trees and only minimally visible from areas outside the forested area.

The proposed interpretive trails would be designed to have minimal impact on existing viewsheds. In many areas, the trails would be unpaved, making them less visible from distant vantage points. Two sections of the trail would traverse the historic core, and these sections would be the most evident and therefore, result in the most adverse impact on existing viewsheds. In addition, much of the trail network would utilize existing trails, so the overall change to viewshed, with respect to the trails, would be minimal.

This alternative would include the removal of approximately 8.6 acres of vegetation, most of which would be trees. Much of this would be associated with the clearing of vegetation in the northern portion of the site to accommodate the new maintenance facility, site entrance and access road, and the Civil War discovery area, but would also include tree removal throughout the upper terrace for new developments as well as selective thinning along the escarpment. In addition to tree removal, 9.1 acres of new trees would be planted throughout the site. Approximately half of this vegetation would be planted in the middle terrace, adjacent to the East-West Connector as described above. Additional plantings would occur throughout the upper terrace for aesthetic purposes and to screen the new buildings, parking lot, interpretive play area, and access road from the historic core of the site. These changes would substantially alter viewsheds across the property.

Construction activities associated with the implementation of Alternative B would result in temporary adverse impacts to visual resources at Ferry Farm. Specifically, construction equipment staged on the landscape would diminish the historic viewshed and make it more difficult for visitors to envision the Washington era conditions. The visual interferences would be greatest in the development zone where the majority of the construction activities would occur. The GWF would implement measures to limit these intrusions. Upon removal of this equipment, the historic viewsheds would be restored.

Overall, Alternative B would have a short term, moderate, adverse and long-term, beneficial impact on visual resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visual environment at Ferry Farm. These projects would include those described under Alternative A, as well as a new left-turn lane at the relocated site entrance. The addition of a left-turn lane on King's Highway, at the site entrance would enhance visual recognition of Ferry Farm upon approach. These projects would result in a long-term, minor, adverse impact on visual resources. These projects,

along with Alternative B, would result in a long-term, minor, adverse cumulative impact. Impacts to the visual quality of the landscape would be detectable, although the impacts would be localized and would be small and of little consequence to the visitor experience. Alternative B would contribute a noticeable beneficial increment to this impact.

Conclusion

Overall, Alternative B would result in a short-term, moderate, adverse and long-term, beneficial impact on visual resources. The short-term, adverse impacts would be related to the use and storage of construction equipment and supplies during development. During construction, these impacts would be readily apparent and could noticeably affect the visitor experience. In the long term, existing structures would be removed from the site and eliminated from the visual environment. The rehabilitation of Washington era features and landscapes would provide a historically accurate visual setting on the landscape, and would support historically accurate views across the Rappahannock River both to and from Fredericksburg. New deciduous vegetation would be planted along the East-West Connector, around new facilities on the site, and along King's Highway to further screen the site from modern developments. The new facilities proposed under Alternative B, with the exception of the Washington era interpretive structures, would be clearly modern so as not be confused for Washington era structures and would be screened from the rest of the site by vegetation. The modern design and vegetative screening would minimize adverse impacts associated with the presence of the buildings on the viewshed. In addition, the small size of the interpretive nodes and discovery areas would limit their intrusion on the viewshed. The new trail system would be visible throughout the site, though would be designed so that only portions of the trail would be visible from any given vantage point. The removal and planting of vegetation throughout the site would substantially alter existing viewsheds, but would aid in providing visitors with historic viewsheds and minimal modern intrusions. Alternative B would contribute a noticeable beneficial increment to the long-term, minor, adverse cumulative impact.

IMPACTS OF ALTERNATIVE C

Impact Analysis

The short-term and long-term impacts on the visual environment associated with this alternative would be similar to those described under Alternative B, except that they would occur further south. Under Alternative C, the rehabilitated Washington era landscapes and features would be sited in the development zone, approximately 250 feet south of the Washington home foundation. The southerly location of these landscapes and features would provide a historic context to the site. However, in order to enhance these historic views, approximately 3.0 acres of forest would be cleared along the edge of the upper terrace to visually connect the rehabilitated Washington era landscape and features with the Rappahannock River. Similar to Alternative B, vegetation removal would be conducted in accordance with an invasive species and/or forest management plan that would be focused on creating a setting that more accurately reflects the vegetation types extant at the time of Washington's occupancy of the site.

To avoid overcrowding with the rehabilitated features, the new visitor center, parking lot, and interpretive play area would be constructed further south as well. In addition, the new administrative building would

be developed in the northeast corner of the site, near the new maintenance facility. Although the location of these facilities would differ under Alternative C, the use of visual screening would minimize the impact of these structures on the viewshed. Moving the administrative building to the northeast corner of the site would make it less visible throughout Ferry Farm.

This alternative would include the removal of approximately 11.9 acres of vegetation, most of which would be trees. Much of this would be associated with the clearing of vegetation in the northern portion of the site to accommodate the new maintenance facility, site entrance and access road, and the Civil War discovery area, as well as the clearing of 3.0 acres of the trees from the escarpment to accommodate historic viewsheds. Tree removal also would be required throughout the upper terrace for new developments. In addition to tree removal, approximately 9.6 acres of new trees would be planted throughout the site. Approximately half of this vegetation would be planted in the middle terrace; adjacent to the East-West Connector as described in Alternative B. Additional plantings would occur throughout the upper terrace for aesthetic purposes and to screen the new buildings, parking lot, interpretive play area, and access road from the historic core of the site. These changes would substantially alter viewsheds across the property.

Overall, Alternative C would have a short term, moderate, adverse and long-term, beneficial impact on visual resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visual environment at Ferry Farm. These projects which would be consistent with those described under Alternative B, would result in a long-term, minor, adverse impact to visual resources. These projects, along with Alternative C, would result in a long-term, minor, adverse cumulative impact. Impacts to the visual quality of the landscape would be detectable, although the impacts would be localized and would be small and of little consequence to the visitor experience. Alternative C would contribute a noticeable beneficial increment to this impact.

Conclusion

Overall, Alternative C would result in a short-term, moderate, adverse and long-term, beneficial impact to visual resources. The short-term, adverse impacts would be related to the storage of construction equipment and supplies during development. During construction, these impacts would be readily apparent and could noticeably affect the visitor experience. In the long term, existing structures would be removed from the site and eliminated from the visual environment. The rehabilitation of Washington era features and landscapes would provide a historically accurate visual setting on the landscape, and would support historically accurate views across the Rappahannock River both to and from Fredericksburg. The benefits associated with the rehabilitated features and landscape would be slightly less than under Alternative B, because they would be sited approximately 250 feet from their original location. New deciduous vegetation would be planted along the East-West Connector, around new facilities on the site, and along King's Highway to further screen the site from modern developments. The new facilities proposed under Alternative B, with the exception of the rehabilitated Washington era features, would be

clearly modern so as not be confused for Washington era structures and would be screened from rest of the site by vegetation. The modern design and vegetative screening would minimize adverse impacts associated with the presence of the buildings on the viewshed. In addition, the small size of the interpretive nodes and discovery areas would limit their intrusion on the viewshed. The new trail system would be visible throughout the site, though would be designed so that only portions of the trail would be visible from any given vantage point. The removal and planting of vegetation throughout the site would substantially alter existing viewsheds, but would aid in providing visitors with historic viewsheds and minimal modern intrusions. Alternative C would contribute a noticeable beneficial increment to the long-term, minor, adverse cumulative impact.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

The impacts of Alternative D on visual resources would be similar to those described for Alternative B, except the new maintenance facility would be constructed in the southeastern portion of the site and fewer trees would be planted in the southern portion of the site. Although the new administrative building also would be in a slightly different location under Alternative D, the associated impacts on existing viewsheds is not anticipated to be measurably different.

Under Alternative D, the new maintenance facility would be more visible on the landscape because it would be closer to the core of the site and the associated visitor use areas. However, keeping the northern portion of the site wooded, and concentrating development near the visitor center, would have net benefits on the existing historic viewsheds. The northern portion of the site would remain wooded and continue to serve as a natural barrier between the site and the commercially developed surrounding area. Like the other alternatives, vegetation removal would be conducted in accordance with an invasive species and/or forest management plan that would be focused on creating a setting that more accurately reflects the vegetation types extant at the time of Washington's occupancy of the site.

Additionally, by concentrating modern developments in one area, there is less visual intrusion on the viewshed as a whole. To further reduce adverse impacts associated with the new maintenance, visitor, and administrative facilities, the new buildings would be screened from the rest of Ferry Farm with deciduous vegetation. As described for the other action alternatives, the deciduous vegetation would change with the seasons, so that the new facilities would be more visible in the winter, when the trees would be without leaves. However, the presence of the trees would still serve to reduce the visibility of the structures. Most importantly, this screening would reduce visual impacts on the historic core, including the rehabilitated landscape and features.

This alternative would include the removal of approximately 6.1 acres of vegetation, most of which would be trees. Much of this would be associated with the clearing of vegetation in the northern portion of the site to accommodate the new site entrance and access road, and the Civil War discovery area, but would also include tree removal throughout the upper terrace for new developments as well as selective thinning along the escarpment. In addition to tree removal, 5.8 acres of new trees would be planted throughout the site. Approximately one third of this vegetation (2 acres) would be planted in the middle

terrace, adjacent to the East-West Connector, as described above. Additional plantings would occur throughout the upper terrace for aesthetic purposes and to screen the new buildings, parking lot, interpretive play area, and access road from the historic core of the site. Although there would be no net loss in trees, these changes would substantially alter viewsheds across the property.

Similar to the other action alternatives, Alternative D would plant mitigative forest vegetation in the southern portion of the site, adjacent to the East-West Connector. However, to accommodate the maintenance facility, only 2.0 acres of new vegetation would be planted in this area. As such, changes to existing viewsheds in this area would be somewhat reduced.

Like Alternative B, phasing of construction would be implemented to limit impacts on visual resources; however, construction activities would be readily apparent to visitors and would have a temporary, adverse impact on visual resources. These temporary impacts would include visual disturbances due to the presence of construction equipment and materials. The short-term impacts would be slightly less adverse under this alternative because, in general, construction activities would be concentrated in one area of the site.

Overall, Alternative D would result in a short-term, moderate, adverse and long-term, beneficial impact on visual resources. Visual impacts would be slightly more beneficial under Alternative D than those associated with Alternative B due to the location of the new maintenance facility.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visual environment at Ferry Farm. These projects which would be consistent with those described under Alternative B, would result in a long-term, minor, adverse impact to visual resources. These projects, along with Alternative D, would result in a long-term, minor, adverse cumulative impact. Impacts to the visual quality of the landscape would be detectable, although the impacts would be localized and would be small and of little consequence to the visitor experience. Alternative D would contribute a noticeable beneficial increment to this impact.

Conclusion

Overall, Alternative D would result in a short-term, moderate, adverse and long-term, beneficial impact on visual resources. The short-term, adverse impacts would be related to the use and storage of construction equipment and supplies during development. During construction, these impacts would be readily apparent and could noticeably affect the visitor experience. In the long term, existing structures would be removed from the site and eliminated from the visual environment. The rehabilitation of Washington era features and landscapes would provide a historically accurate visual setting on the landscape, and would support historically accurate views across the Rappahannock River both to and from Fredericksburg. New vegetation would be planted along the East-West Connector, around new facilities on the site, and along King's Highway to further screen the site from modern developments. The new facilities proposed under Alternative D, with the exception of the Washington era interpretive structures, would be clearly modern so as not be confused for Washington era structures and would be

screened from rest of the site by deciduous vegetation. The modern design and vegetative screening would minimize adverse impacts associated with the presence of the buildings on the viewshed. In addition, the small size of the interpretive nodes and discovery areas would limit their intrusion on the viewshed. The new trail system would be visible throughout the site, though would be designed so that only portions of the trail would be visible from any given vantage point. The removal and planting of vegetation throughout the site would substantially alter existing viewsheds, but would aid in providing visitors with historic viewsheds and minimal modern intrusions.

Although this alternative would site the new maintenance facility near the visitor center, making it more visible on the landscape, the northern portion of the site would continue to be wooded. In addition, concentrating development near the visitor center would have net benefits on the historic viewsheds because modern developments would only be visible in one area of the site. Alternative D would contribute a noticeable beneficial increment to the long-term, minor, adverse cumulative impact.

VISITOR USE AND EXPERIENCE

METHODOLOGY

NPS *Management Policies 2006* (NPS 2006) states that enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy parks. The visitor use and experience includes a consideration of visual resources, visitor health and safety, and site access and circulation. Circulation also is dependent on site access via entry roads and regional roadways. Past interpretive and administrative planning documents provided background on changes to visitor use and experience over time. Anticipated impacts to visitor use and experience were analyzed using information from previous studies. Based on these findings, the following intensity levels were developed:

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

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, there would be no changes to the visitor use and experience at Ferry Farm. Visitors would continue to access the site via the entrance along the southbound side of King's Highway. Visitors coming from the south would continue to have to pass the site, make a U-turn and then enter the site. In addition, many visitors coming from the north would not immediately recognize the entrance and would drive past the site, requiring them to make a U-turn at the next traffic light and then another U-turn to get back on the southbound side of King's Highway. The entrance to the site would continue to be obscured by the surrounding development causing visitors to drive by the site, reducing their anticipation of reaching Ferry Farm. Due to the location of the entrance, upon entering the site, visitors would not immediately be separated from the surrounding development, making it difficult to initially comprehend the historic nature of Ferry Farm. This exit only, located east of the visitor center would continue to be used incorrectly as an entrance on occasion, creating unsafe conditions at the site and on King's Highway.

Once onsite, visitors would travel down a short driveway to the visitor center parking lot. The parking lot would retain access for 70 vehicles. The first floor of the visitor center would remain universally accessible. There would be no ADA compliant accessibility to the second floor of the visitor center, which is used for administrative purposes.

The visitor center does not date back to the Washington era and its presence in the viewshed would not allow for historically accurate scenery. The neo-colonial style of the visitor center would continue to confuse visitors who often incorrectly believe the structure is from the Washington era. The deteriorating condition of the visitor center could also create unsafe conditions for visitors. The limited space within the visitor center would prevent the GWF from offering a wide variety of educational opportunities and programs to visitors and would limit the staff's ability to interact with visitors and display interpretive materials (i.e., exhibits, signage). The visitor center could not be used as a curatorial facility because the required climate controls are not available within the building. The garden outside of the visitor center would continue to create further confusion for visitors. It is not related to the Washington era or other historic uses of the site.

Programs and events offered by the GWF would be consistent with the current activities including tours, live interpretation, youth groups, and discovery workshops. These programs would be aimed at interpreting the resources and history of the site, specifically the Washington era, but would be limited by the lack of a setting that is representative of the Washington era.

In addition, the vegetated middle terrace would continue to attract wildlife, including several bird species. Such sightings are rare in the developing region and would be unique to Ferry Farm. As such, local birding clubs would continue to offer periodic bird watching tours in the middle terrace.

From the visitor center, the existing, limited, trail system would provide visitors with access to the fields in the middle terrace, the restrooms, storage cottage, and The Great Oak Pavilion. There would be no formal access to the archeological site. However, small displays would be maintained at the site to educate visitors about the archeological process and what resources had been discovered. The Washington-era foundations,

including the family's home, the 1870s agricultural building, and the lower terrace would be accessible by walking across the lawn. The GWF would continue to provide some interpretation of the lower terrace; however, without any existing structures, it would be difficult to explain the site's historic use. It also would be difficult for visitor to understand the conditions that existed during the Washington era. Those structures that are present are not symbolic of the Washington era. The location and condition of these structures detracts from the visitor experience by occupying the historic landscape and misleading visitors about the condition of the site during its historic use. The 1870s agricultural building in particular would continue to be mistaken by visitors to be representative of the Washington home. Understanding of the site's history would be further hindered by the visual intrusions from the surrounding properties and from the maintenance equipment and materials stored on the landscape.

The existing maintenance depot would remain at the southern edge of the upper terrace. The existing facility, and associated equipment, are located adjacent to an existing trail to/from the middle terrace and would be readily apparent to visitors using this trail. The presence of this facility could detract from some visitors' enjoyment of the landscape.

Alternative A would result in no impact on visitor use and experience at Ferry Farm.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visitor use and experience in and around Ferry Farm. These projects include the Belmont-Ferry Farm trail system, restoration of the historic Kenmore property and commercial development. The Belmont-Ferry Farm segment of the proposed "Heritage Trail" through Fredericksburg and Stafford County, Virginia, would improve visitor access to various parks and other historic resources in the region. The Belmont-Ferry Farm segment would improve pedestrian and bicycle access to Ferry Farm and would connect the site to the other historic resources in the area. Restoration of the Kenmore property would enhance the visitor experience at that property by incorporating period-appropriate furnishings. Such efforts would enhance interpretation of this historic residence. Commercial development around Ferry Farm dominates the landscape surrounding the site. This development can also be viewed throughout the property. Development includes retail shops, fast food restaurants, and major roadways. Despite the commercial development around the site, these projects would result in a long-term beneficial impact to visitor use and experience. These projects, along with Alternative A, would improve visitor experience both in and around Ferry Farm, resulting in a long-term beneficial cumulative impact. Alternative A would not contribute to this impact.

Conclusion

Alternative A would have no impact on visitor use and experience at Ferry Farm. The site entrance would continue to be obscured by the surrounding development, causing visitors to accidentally drive by the entrance. GWF would continue to offer a variety of programs, tours, and special events at the site. However, the effectiveness of these programs would be limited by the lack of setting representative of the Washington era. Some of the existing structures would continue to confuse visitors because they appear historic. In addition, the size and condition of the visitor center would continue limit the programs and

displays that could be offered there and could pose a safety risk to visitors. The existing trail network would provide access to site of the sites resources; however, the archeological sites, the lower terrace, and other site features would have no formal access. This alternative would not change existing visitor use opportunities or experiences. Alternative A would not contribute to the long-term beneficial cumulative impact on visitor use and experience.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Under Alternative B, the entrance to Ferry Farm would be moved approximately 300 feet to the north to align with a new left-turn lane that is being constructed as part of a different project. By aligning with this road feature, the site entrance would be more visible and accessible to visitors. The entrance also would be surrounded by deciduous trees, creating a wooded entry into the site. The trees would provide immediate screening of the surrounding development as visitors enter the Washington-era site, allowing them to transport themselves to the intended setting more quickly. Specifically, tree cover along the highway frontage and around the perimeter of the property would enforce a consistent and unified boundary condition and emphasize a protected character. This consistent boundary also would help create a psychological distancing and some attenuation of noise from the commercial development outside Ferry Farm's boundaries. The deciduous vegetation would change with the seasons, so that less screening would be provided in the winter, when the trees would be without leaves. However, the presence of the trees would still serve to reduce the visibility to and from the site. Immediately upon entering the site, visitors would arrive at a manned security/welcome gate where they could obtain information about the site, if desired. The presence of the gate could cause minor delays along the entrance road, during peak visiting hours/days. However, these minor delays are not anticipated to be great enough to significantly diminish the visitors' enjoyment of the site.

An approximately 200-foot driveway would be constructed from the site entrance north to the new maintenance facility. The realigned entrance would require development of a new approximately 1,900-foot driveway to the new visitor center, administrative building, and parking lot. The new parking lot would be approximately 90,000 square feet in size and have a capacity of approximately 90 vehicles, including 4 ADA compliant spaces and 4 bus parking spaces. The larger parking lot would accommodate more visitors than the existing lot. The new parking lot would be constructed immediately to the south of the new visitor center, to provide visitors with an easy transition to the site.

The new state-of-the-art visitor center and the administrative structure would have ample space for educational and interpretive programs, along with opportunities for visitors to interact with GWF staff. Interpretive activities would include an orientation film focused on the Washington Plantation, interpretive exhibits and activities dedicated to the site use through history and prehistory, including the Civil War and colonial periods. This would provide visitors with a broad view of the site's use over time and its importance beyond the period of significance. Interpretation would be updated periodically to reflect new research/discoveries. Changing exhibits and programming would also enhance the experience for repeat visitors. The new visitor center also would have climate control, expanding the kinds of exhibits that could be displayed. A new interpretive play area would also be constructed for visitor use.

The play area would be constructed southwest of the new visitor center, adjacent to the west of the visitor center parking lot. The play area would provide children with opportunities to learn about colonial life and learn more about the historic significance of the site and methods used by archeologists to uncover artifacts. In addition, a “grab and go” style café within the visitor center would allow visitors to rest/take a break and eat during their visit to Ferry Farm. The café would provide seating for 65 visitors inside and 35 visitors outside.

A new administrative building would be developed approximately 100 feet south of the new parking lot. In addition, a new maintenance facility would be constructed in the northeast corner of the property. These structures would be screened with vegetation to avoid adding any intrusions on the landscape, in particular the historic core of the site. The location of the new maintenance facility would allow GWF staff to isolate operations away from the visitors and would allow the GWF to stop storing maintenance materials and equipment on the landscape. The absence of these materials would further reduce any intrusion onto the landscape and provide the visitor with a better appreciation of the site’s history. The new facilities would be screened with vegetation to avoid any intrusions onto the landscape. This screening plus the modern design of the buildings would avoid any confusion with Washington-era structures.

Under Alternative B, the existing visitor center, maintenance facility and modern support structures such as the pump house, restrooms and storage cottage would be demolished, and removed from the property. The removal of these structures would eliminate any confusion between modern and historic buildings and allow the new landscape to reflect the Washington era without any intrusions. The 1870s agricultural building also would be relocated approximately 400 feet from the historic zone to a location near the visitor center in the development zone, reducing the chance that this structure would be confused for a Washington-era structure. The relocated structure also would be screened from the interpretive landscape and rehabilitated Washington era features with deciduous vegetation.

This alternative would include the replacement of historic landscape features from the Washington era in the immediate vicinity of their original locations. These structures would offer unlimited potential for interpretive and educational programs. They also would provide visitors with a better understanding of how the landscape was laid out during Washington’s time and how it was connected to the nearby roads and river. The selective thinning of tree cover near the historic core would help focus visitor attention on the visual and geographic relationship to downtown Fredericksburg and its waterfront, and on the archeological site itself. Selective vegetation thinning would be conducted under an invasive species and/or forest management plan which would be aimed at creating a setting that more accurately reflects the vegetation types extant at the time of Washington’s occupancy of the site. Archeological investigations would continue, and as additional discoveries are made, could facilitate the development of more rehabilitated features. In addition to Washington era features, continued archeological investigations would likely provide new information about the use of Ferry Farm throughout history and prehistory. Artifacts uncovered during investigations would either be interpreted in place, or would be systematically documented, collected and curated for interpretation in the visitor center. Prehistoric, Washington era, and Civil War resources that have been identified to date would continue to be interpreted at the site.

The visitor use and experience enhancements associated with Alternative B would likely increase visitation at the site. In addition, the café proposed to be incorporated at visitor center would necessitate

regular deliveries, likely by trucks. As such, traffic within the site would increase, and would be limited to the 1,900-foot access road, the only access route to the visitor center parking lot. However, large deliveries would be made to the new maintenance facility, from which smaller vehicles would provide distribution throughout the site. Loading and delivery space at the visitor center could become congested if multiple deliveries arrive at the same time. Such congestion would be temporary and would have limited and would have a temporary adverse impact on traffic conditions at the site. When feasible, the GWF would make efforts to carefully coordinate deliveries to avoid this issue.

It is assumed that the proposed parking lot would be sufficient for accommodating visitor use during all seasons, and that circling vehicles (looking for parking) would not cause noticeable congestion along the access road or King's Highway. However, the increased visitation could cause increased traffic and congestion along King's Highway as vehicles enter and exit the site, and if there are backups getting through the security gate near the site entrance. This would be most apparent during the peak months in the summer.

Additional plantings (approximately 4.5 acres) in the middle terrace would enhance the visual buffer between the site, the East-West Connector, and the surrounding development. It is anticipated that under this alternative, local clubs would continue to offer periodic bird watching tours in this area.

Alternative B would include the development of low-impact, self-service interpretive nodes and discovery areas to facilitate interpretation of natural and cultural resources throughout the site. Each site would provide interpretive displays and/or programs to educate the visitor on life during each time. These areas could include built features, such as an interpretive shelter, benches, and signage, as well as live interpreters. Although not historically accurate in their location, the presence of these areas would allow visitors to visually connect to the times and conditions that existed before, during, and following the Washington era at Ferry Farm. For example, the development of an interpretive node near the former pontoon bridge along the Rappahannock River would provide some historic perspective to the lower terrace. This interpretive node would be designed in a manner that would complement the surrounding area and not impede upon any existing viewsheds within the river valley. A Civil War discovery area also would be developed north of the ravine. This discovery area would provide visitors with the opportunity to learn about the non-Washington era use of Ferry Farm. Interpretation in this discovery area would be primarily sign-based and could include explanations of the Union Army's use of the site during the Civil War, including how the site topography and associated views of Fredericksburg were important. This discovery area would be sited away from the historic core of the site so as not confuse the site's Civil War and Washington era use. Civil War interpretation in the historic core would be limited to existing archeological resources that have been identified in that location.

To connect visitors to the interpretive structures, The Great Oak Pavilion, the middle terrace, and the proposed interpretive nodes and discovery areas, Alternative B would include modifications to the existing trail system. Modifications would include an extension of the existing trail network, including construction of a new bridge over the ravine, and resurfacing with a porous material to make the trails more stable and permanent. In total, approximately 3,200 feet of trail would be added to the existing network. The new trails would make the site resources more accessible and would provide a clear route for visitors to follow. The trails would begin at the centrally located visitor center and parking lot, a relatively short walk to the various points of interest. A portion of the existing driveway would be

incorporated into the trail network to support access from the northern portion of the site to the visitor center. Near the visitor center and within the historic core, trails would be improved to provide ADA accessibility. A new pedestrian bridge would be constructed over the ravine to provide access between the proposed Civil War discovery area and the rest of the site. Currently, there is no ravine crossing in this location. The proposed trail from the parking lot, south to the lower terrace would be developed as a recreational nature trail to educate visitors about conservation efforts at Ferry Farm, regional ecology, and natural history. The centrally located visitor center and parking lot would create relatively short walks to the various points of interest. The GWF would continue to work to develop additional educational and interpretive programs throughout the site.

Under Alternative B, the GWF also would incorporate the use of cutting edge technologies, such as GPS, tablet computers, and smart phones to enhance the visitor experience at Ferry Farm. The combined use of these technologies would provide visitors with the option of a self-guided tour of the site via a tablet computer or smart phone (either their own or borrowed from Ferry Farm). As the visitor moves throughout the site, thematic information would be provided relative to the visitor's location. The visitor also could obtain directions to other points of interest at Ferry Farm. The use of technology not only makes interpretation more efficient at Ferry Farm, but also would make the presentation of information more relevant to younger generations, potentially enhancing its educational value.

Although phasing of construction would be implemented to limit impacts on visitor use and experience, construction activities would be readily apparent to visitors and would have a temporary, adverse impact on visitor use and experience. These temporary impacts would include visual disturbances due to the presence of construction equipment and materials, noise intrusions, changes in circulation around the site, and congestion along King's Highway. Construction impacts would be most apparent in the central, development zone where the majority of the development would occur.

Overall, Alternative B would result in a short-term, moderate, adverse and long-term, beneficial impact on visitor use and experience.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visitor use and experience at Ferry Farm. These projects would include those described under Alternative A as well as a new left-turn lane at the relocated site entrance. The addition of a left-turn lane on King's Highway would provide access to the site from both directions and help make the entrance more apparent to visitor. This would reduce the number of visitors that drive by the entrance on their first approach and would enhance visitor anticipating of arriving at Ferry Farm. These projects would result in a long-term, beneficial impact on visitor use and experience. These projects, along with Alternative B, would improve visitor experience both in and around Ferry Farm, resulting in a long-term, beneficial cumulative impact. Alternative B would contribute an appreciable beneficial increment to this impact.

Conclusion

Overall, Alternative B would result in short-term, moderate, adverse and long-term beneficial impacts on visitor use and experience. The short-term, adverse impacts would be related to the presence of construction equipment and supplies during development, which could impede access to and circulation within the site and make it more difficult for visitors to transport themselves to the Washington era. These impacts would be readily apparent and visitors would be able to express an opinion about them. In the long term, improvements such as the replacement of historic landscape features, implementation of an invasive species and/or forest management plan, and removal of existing modern structures would enhance the visitor experience by providing a better understanding of how the landscape at Ferry Farm was laid out during Washington's youth and the role the site has played in prehistory and history. Removal of the existing structures would eliminate any confusion between modern and historic buildings and allow the landscape to more accurately reflect the Washington era. The new visitor center also would provide more space and better conditions for displays and educational programming, while the interpretive play area and extended interpretive trails would provide visitors with a wider variety of activities. As archeological investigations continue at the site, new discoveries would provide additional opportunities for visitor programming and interpretation. In addition, the relocated site entrance, interpretive nodes, discovery areas, and the use of cutting edge technologies all would further enhance the visitor experience at Ferry Farm. Alternative B would contribute an appreciable beneficial increment to the long-term, beneficial cumulative impact.

IMPACTS OF ALTERNATIVE C

Impact Analysis

Impacts to visitor use and experience under this alternative would be similar to those described for Alternative B, except that they would occur further south. Under Alternative C, the replacement of historic landscape features would be sited in the development zone, approximately 250 feet south of the Washington home foundation. The southerly location of the rehabilitated landscape features would provide the same educational and interpretive opportunities as Alternatives B and D. However, because the landscape and features would be somewhat removed from their original location, the beneficial impacts associated with them would be slightly less when compared to the other action alternatives. In addition, redundancy between the interpretive landscape and the historic site may be confusing to visitors.

Under Alternative C, to avoid overcrowding with the interpretive landscape features, the new visitor center, parking lot, and interpretive play area would be constructed further south as well. The new parking lot would be located immediately south of the visitor center and the interpretive play area would be developed adjacent to the west of the parking lot. The more southerly siting of the visitor center would extend the distance visitors would need to walk to reach some of the resources in the northern portion of the site, such as the Washington home foundation, Civil War interpretation, and the pontoon bridge interpretive node. Alternative C would eliminate use of a portion of the existing visitor center driveway and instead would close the loop just south of the Washington home foundation. Access to and from the visitor center from that point would be provided along one linear trail. In total, approximately 3,500 feet of trail would be added to the existing network (compared to 3,200 feet for Alternatives B and D). As described under Alternative B, the extended trail network would make the site resources more accessible

and would provide a clear route for visitors to follow. Alternative C also would require a longer driveway from the site entrance to the more southerly visitor center and parking lot (by 200 feet); that component is anticipated to have a minor impact on the visitor experience. The added distance could be inconvenient or difficult for visitors with limited mobility.

In addition, a new administrative building would be developed in the northeast corner of the site, near the new maintenance facility. To accommodate the administrative staff, Alternative C would include a second parking lot to be constructed in the northeast corner of the property so the GWF staff do not have to walk from the central portion of the site. This lot would accommodate 25 vehicles, including 1 ADA accessible space. Providing a parking lot for administrative staff in the northeast corner of the site would reduce traffic on the main driveway and on the pedestrian trails.

Overall, Alternative C would result in a short-term, moderate, adverse and long-term, beneficial impact on visitor use and experience.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visitor use and experience at Ferry Farm. These projects would include those described under Alternative B and would result in a long-term, beneficial impact to visitor use and experience. These projects, along with Alternative C, would improve visitor experience both in and around Ferry Farm, resulting in a long-term, beneficial cumulative impact. Alternative C would contribute an appreciable beneficial increment to this impact.

Conclusion

Overall, Alternative C would result in short-term, moderate, adverse and long-term beneficial impacts on visitor use and experience. The short-term, adverse impacts would be related to the presence of construction equipment and supplies during development, which could impede access to and circulation within the site and make it more difficult for visitors to transport themselves to the Washington era. These impacts would be readily apparent and visitors would be able to express an opinion about them. In the long term, improvements such as the replacement of historic landscape features, implementation of an invasive species and/or forest management plan, and removal of existing modern structures would enhance the visitor experience by providing a better understanding of how the landscape at Ferry Farm was laid out during Washington's youth, and the role the site played throughout prehistory and history. However, the benefit would be slightly less than under Alternative B because the Washington-era interpretive structures would be approximately 250 feet south of their original location. Removal of the existing structures would eliminate any confusion between modern and historic buildings and allow the landscape to more accurately reflect the Washington era. The new visitor center also would provide more space and better conditions for displays and educational programming, while the interpretive play area and extended interpretive trails would provide visitors with a wider variety of activities. As archeological investigations continue at the site, new discoveries would provide additional opportunities for visitor programming and interpretation. In addition, the relocated site entrance, interpretive nodes, discovery areas, and the use of cutting edge technologies all

would further enhance the visitor experience at Ferry Farm. Alternative C would contribute an appreciable beneficial increment to the long-term, beneficial cumulative impact.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

The impact of Alternative D on visitor use and experience would be similar to that described for Alternative B, except the new maintenance facility would be constructed in the southeastern portion of the site. Although the new administrative building would be in a slightly different location under Alternative D than Alternative B, the associated impacts would be the same under both alternatives.

Under Alternative D, the new maintenance facility would be sited in the southeast portion of the site, in closer proximity to visitor areas. The building itself would be screened from the rest of Ferry Farm to reduce visual impacts on the historic core, including the rehabilitated landscape and features. Access to the new facility would be provided using the same driveway used by visitors to access the visitor center parking lot. The increased use of the access road would make maintenance vehicles, equipment, and staff more apparent to visitors, especially near the visitor center. This could reduce the overall experience for visitors by slowing access to the parking lot and temporarily increasing noise near the visitor center. Deliveries to the maintenance facility would be carefully coordinated to limit the overall impact on the visitor experience in the historic core and surrounding areas, but could temporarily increase traffic along the new 2,300-foot access road, resulting in minor congestion for visitors.

Although impacts to the visitor experience in the immediate vicinity of the visitor center would be slightly more adverse under this alternative (as described above), keeping the northern portion of the site wooded, and concentrating development, would also have benefits on the visitor experience. The northern portion of the site would continue to serve as a natural barrier between the site and the commercially developed surrounding area, making it easier for visitors to transport themselves to the desired Washington era setting. Additionally, by concentrating modern developments in one area, there is less visual intrusion on the landscape as a whole, providing the visitor with more opportunity to experience the Washington era setting without modern intrusions.

Like Alternative B, phasing of construction would be implemented to limit impacts on visitor use and experience; however, construction activities would be readily apparent to visitors and would have a temporary, adverse impact on visitor use and experience. These temporary impacts would include visual disturbances due to the presence of construction equipment and materials, noise intrusions, changes in circulation around the site, and congestion along King's Highway. Construction impacts would be most apparent in the central, development zone where the majority of the development would occur. Construction of the new maintenance facility would be more apparent to visitors under this alternative than under Alternatives B and C.

Overall, Alternative D would result in a short-term, moderate, adverse and long-term, beneficial impact on visitor use and experience. The benefits would be incrementally less beneficial than those associated with Alternative B due to the location of the new maintenance facility.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on visitor use and experience at Ferry Farm. These projects would include those described under Alternative A, as well as a new left-turn lane at the relocated site entrance. The addition of a left-turn lane on King's Highway would provide access to the site from both directions and help make the entrance more apparent to visitor. This would reduce the number of visitors that drive by the entrance on their first approach and would enhance visitor anticipating of arriving at Ferry Farm. These projects would result in a long-term, beneficial impact on visitor use and experience. These projects, along with Alternative D, would improve visitor experience both in and around Ferry Farm, resulting in a long-term, beneficial cumulative impact. Alternative B would contribute an appreciable beneficial increment to this impact.

Conclusion

Overall, Alternative D would result in short-term, moderate, adverse and long-term beneficial impacts on visitor use and experience. The short-term, adverse impacts would be related to the presence of construction equipment and supplies during development, which could impede access to and circulation within the site and make it more difficult for visitors to transport themselves to the Washington era. These impacts would be readily apparent and visitors would be able to express an opinion about them. Although the intensity would be the same, the short-term impacts would be slightly more adverse under Alternative D than the other action alternatives because of the location of the new maintenance facility, which could be more visible to visitors, while under construction, than in the northeastern location. In the long term, improvements such as the replacement of historic landscape features, implementation of an invasive species and/or forest management plan, and removal of existing modern structures would enhance the visitor experience by providing a better understanding of how the landscape at Ferry Farm was laid out during Washington's youth and the role the site has played throughout prehistory and history. This would further enhanced by concentrating development in one location and keeping the northern portion of the site wooded to screen the site from the commercial development along King's Highway. Removal of the existing structures would eliminate any confusion between modern and historic buildings and allow the landscape to more accurately reflect the Washington era. The new visitor center also would provide more space and better conditions for displays and educational programming, while the interpretive play area and extended interpretive trails would provide visitors with a wider variety of activities. As archeological investigations continue at the site, new discoveries would provide additional opportunities for visitor programming and interpretation. In addition, the relocated site entrance, improved trail network, interpretive nodes, discovery areas, and the use of cutting edge technologies all would further enhance the visitor experience at Ferry Farm. Similar to the short-term impacts, the new maintenance facility would be more apparent to visitors under Alternative D because maintenance staff, vehicles, and equipment would use the same access road as visitors and would pass proximal to the visitor center. Alternative D would contribute an appreciable beneficial increment to the long-term, beneficial cumulative impact.

OPERATIONS AND INFRASTRUCTURE

METHODOLOGY

Operations, for the purpose of this analysis, refer to the quality of effectiveness of the infrastructure and the ability to maintain the infrastructure used in the operation of Ferry Farm in order to adequately protect and preserve vital resources and provide for an effective visitor experience. This includes an analysis of staffing and the condition and usefulness of the facilities and developed features used to support the operations of Ferry Farm. Impact analyses are based on the current description of operations presented in Chapter 3 Affected Environment of this document. The thresholds of change for the intensity of this impact are defined as follows:

- Negligible:** Operations and infrastructure would not be affected, or the impacts would be at low levels of detection and would not have an appreciable impact on operations.
- Minor:** The impact to operations and infrastructure would be detectable but would be of a magnitude that would not have an appreciable impact on operations. If mitigation was needed to offset adverse impacts, it would be simple and likely successful.
- Moderate:** The impacts would be readily apparent and would result in a substantial change in operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.
- Major:** The impacts would be readily apparent, would result in a substantial change in operations and infrastructure in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse impacts would be needed, would be extensive, and their success could not be guaranteed.

IMPACTS OF ALTERNATIVE A (NO-ACTION)

Impact Analysis

Under Alternative A, there would be no changes to current operations or infrastructure at Ferry Farm, with the exception of the removal of the pump house. The GWF staff would continue to be split between Ferry Farm and the Historic Kenmore property, limiting regular coordination and resulting in inefficient operations. The administrative office space at Ferry Farm is limited; therefore, staffing could not increase. It is anticipated that staffing would remain at current levels of 10 FTE and 21 FTE and efforts would continue to be focused on archeological investigations, educational programs, tours, and general site administration and maintenance. Volunteers and local universities would continue to support Ferry Farm by aiding with archeological investigations and assisting with the development of some of the tours and educational programs. Despite this support, staff would still be inadequate at the site. Insufficient staffing would prevent the GWF from planning for and offering visitors a greater variety of programs and events.

Removal of the pump house, which is located approximately 125 feet west of the Great Oak Pavilion, would likely occur within a couple of days, and require minimal staff time. At least one GWF archeological staff member would be required to monitor for archeological resources during removal of the structure, while the actual removal could be conducted by a few maintenance staff.

The lack of Washington-era structures also limits the effectiveness of Ferry Farm educational staff and volunteers. For example, more time must be spent planning for programs to ensure visitors of transported to the Washington-era ambiance. Time must be spent explaining to visitors what the landscape would have looked like during Washington's boyhood because there are no representative structures on the landscape. To avoid confusion, time also must be spent explaining to visitors that the existing structures such as the visitor center and 1870s agricultural building are not symbolic of the Washington era. The lack of interpretive and educational activities and perceived relevance to today limit fundraising opportunities to support operations and stewardship.

In addition, the existing infrastructure would continue to impede operations at the site. The condition of the visitor center and administrative building would continue to degrade, requiring increased maintenance efforts. Maintenance associated with the visitor center/administrative office building would continue to expend time and budget that could otherwise be used to improve trails, interpretive facilities, or other resources at Ferry Farm. The space available for administrative and visitor use also would continue to be limited. Staff would be available at the visitor center to answer questions and provide information about the site. However, due to the lack of space within the facility, overcrowding would continue to occur, resulting in uncomfortable conditions. The lack of space also limits the number of staff that can be available within the visitor center, which increases the number of visitors that each staff member must attend to.

The maintenance depot would continue to be located in the southern portion of the site, separated from other facilities. Ongoing maintenance activities would be conducted as needed at the visitor center/administrative building, access roads, and other facilities. However, the isolated location of the maintenance facility would make these operations less efficient because of the time required to go back and forth to get supplies and equipment. The size of the maintenance facility also would continue to limit interior storage space, requiring vehicles and equipment to remain on the landscape and visible to visitors.

Overall, Alternative A would have a long-term, moderate, adverse impact on operations and infrastructure.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on operations and infrastructure in and around Ferry Farm. These projects include the Belmont-Ferry Farm trail system, restoration of the historic Kenmore property and commercial development. The Belmont-Ferry Farm segment of the proposed "Heritage Trail" through Fredericksburg and Stafford County, Virginia, would improve pedestrian and bicycle access to Ferry Farm and would connect the site to the other historic resources in the area. The presence of the trail could increase the overall visitation to the site, which may result in a need for additional GWF staff. The trail also would increase pedestrian and bicyclist traffic in the immediate vicinity of Ferry Farm, increasing the need for law enforcement staff or

other security measures at the site. Restoration of the Kenmore property would enhance interpretation opportunities at the Betty Washington Lewis by incorporating period-appropriate furnishings. The existing commercial development has increased modern intrusions around Ferry Farm. These intrusions require increased efforts by GWF staff to screen the site and protect its cultural value. These projects would result in a long-term, minor, adverse impact to operations and infrastructure. These projects, along with Alternative A, would be readily apparent and would result in a substantial change in operations in a manner noticeable to staff and the public, resulting in a long-term, moderate, adverse cumulative impact. Alternative A would contribute a noticeable adverse increment to this impact.

Conclusion

Overall, Alternative A would result in a long-term, moderate, adverse impact on operations and infrastructure. Coordination between Ferry Farm and Kenmore staff would continue to be ineffective and inefficient because of their physical separation. The condition of the administrative offices and visitor center at Ferry Farm would require regular maintenance by GWF staff and would continue to limit the number of staff that can be accommodated in the building. Additionally, due to the lack of structures that are representative of the Washington era, tours and programming at Ferry Farm would have limited effectiveness because it would be more difficult to explain what the landscape would have looked like during Washington's youth. The lack of interpretive and educational activities and perceived relevance to today limit fundraising opportunities to support operations and stewardship. These impacts would be readily apparent and would be noticeable to GWF staff and the public. Alternative A would contribute a noticeable adverse increment to the long-term, moderate, adverse cumulative impact.

IMPACTS OF ALTERNATIVE B

Impact Analysis

Alternative B would include the construction of several new facilities, including a visitor center, administrative building, maintenance facility and a parking lot. The new buildings would require less maintenance than the existing structures, allowing more time and budget to improve and maintain other facilities at Ferry Farm. The construction of a new administrative building would also provide additional administrative office space and could accommodate both Ferry Farm and Kenmore staff. Combining office space would facilitate regular coordination and collaboration between these GWF employees, resulting in more efficient operations. The new facility would support an estimated 49 FTE and 29 PTE committed to Ferry Farm operations and the 15 FTE currently dedicated to the Kenmore property. New buildings would be equipped with energy efficient mechanical systems. This would result in reduced costs to use/occupy the buildings.

The new maintenance facility, which would be sited in the northeast corner of the site, would still be isolated from other facilities, but the added storage space would be sufficient to house all maintenance equipment and supplies. Therefore, equipment would not disrupt the visible landscape at Ferry Farm. The new facility also would make operations more efficient and would allow GWF staff to conduct some maintenance projects onsite.

The new visitor center would include ample space and improved conditions to support a wider variety of programs and displays, including appropriate curation and collections facilities for enhanced stewardship of archeological collections. Improvements to the curation and collection facilities would include enhanced climate control to support appropriate storage of artifacts. The larger visitor center also would allow more staff to be available for answering visitor questions and providing information about the site. The new facilities, some of which would include live interpretation, would require increased staffing; however, would provide the GWF with more tools to educate visitors and transport them back to the Washington-era ambiance. Less time would be required during programs to explain the Washington-era conditions to visitors because the conditions could be physically observed both at the Washington Home Farm interpretive structures and on the landscape. In addition to interior exhibits and an orientation film, an interpretive play area would be constructed southwest of the visitor center, adjacent to the west of the new parking lot.. This feature could include live interpretive elements, requiring at least 1 dedicated staff member. A café would also be incorporated into the visitor center. The café would provide “grab and go” service and both indoor and outdoor seating for visitors. This style café would require 2 FTE and 2 part-time staff to operate. Additional staff time would be required to coordinate deliveries of food and other materials for the facility.

This alternative also would include the realignment of the existing entrance road, and construction of a security/welcome station. The security station would be approximately 30 square feet in size and would be equipped with a controlled access gate. The facility would be manned by one person responsible for security, taking tickets, and/or providing general information. The new entrance road would provide access to a new parking lot, which would accommodate 90 automobile parking spaces, 4 of which would be ADA-compliant spaces, and 4 bus parking spaces. The parking lot would be lined to support more orderly parking at the site.

The new interpretive nodes, discovery areas, and use of cutting edge technologies, combined with expansion of the pedestrian trail system would enhance opportunities for interpretive programming, events, and tours. The trails would make the site resources more accessible and would provide a clear route for visitors to follow. The interpretive nodes and discovery areas, which would be developed along the trails, would provide visitors with ample information about the site. In addition, under Alternative B, visitors would have the option of a self-guided tour using a tablet computer or smart phone. The computers/smart phones would connect to GPS to aid visitors in interpreting the features of Ferry Farm such as the site’s use during the Washington and Civil War periods, existing natural resources, archeological discoveries, and 18th century construction techniques. As a visitor moves around the site, the information on the tablet or smart phone would change so that it is applicable to the visitor’s current location. Directions also could be obtained to other points of interest at Ferry Farm, providing efficient passage around the site. The self-guided tours using computers and smart phones would reduce the need for live interpretation, thereby, allowing interpretive staff to focus their efforts on other tasks (i.e., answering questions in the visitor center, development new programs).

Improvements associated with this alternative would increase the relevance of the site through educational and interpretive activities. These enhancements could encourage the support of the community, providing the GWF with more opportunities to improve the site.

The proposed interpretive trails would require short-term increases in staff to formalize existing trails and construct new trails. In addition, the trails would require periodic maintenance to manage vegetation the surrounding vegetation (i.e. ensure the trails do not become overgrown) and to repair any damage that may occur to the trails. Periodic landscaping may also be required along the new entrance road and to maintain trees and shrubs that would serve as screening between the new facilities and the historic core of the site.

The removal of existing vegetation, planting of new vegetation, development of the new facilities and the subsequent demolition and removal of the existing non-historic structures would result in temporary increases of staff time and budget. In particular, GWF would be required to spend additional time planning for and coordinating planting, demolition, and construction efforts, as well as managing completion of the work. Additionally, increased GWF staff time and budget would be needed to design and implement invasive species/forest management efforts as well as for conducting ongoing maintenance and monitoring of invasive species. Development of the invasive species and/or forest management plan would require a temporary increase in staff time and budget; however, the ongoing maintenance and monitoring of invasive species would occur over the long-term. The extent of additional staff and budget that would be required for these efforts over the long-term would be determined during plan development.

It is anticipated that a separate contractor would conduct most of the work associated with this alternative, including the construction of new facilities, forest clearing, and structural demolition and removal. However, GWF staff would provide oversight during these activities. Increased staff could also be required during construction to guide visitors to/through any temporary access road and/or parking areas to ensure visitor safety. Additional staff also would be required to move the contents of the former visitor center, administrative offices and maintenance depot to the new facilities. However, over the long term, the improvements would support the GWF mission “to enhance the public understanding and appreciation of the lives, values, and legacies of George Washington, Fielding and Betty Washington Lewis, and their families,” thereby benefiting operations and infrastructure at Ferry Farm (GWF 2011a).

Although the specific approach has not yet been determined, stabilization of the ravine would require a temporary increase in staff time to implement improvements. It is anticipated that implementation could occur over a couple days, but occasional, periodic, monitoring would be required to ensure effectiveness of the selected approach.

Overall, Alternative B would have a long-term, beneficial impact on operations and infrastructure.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on operations and infrastructure at Ferry Farm. These projects would include those described under Alternative A, as well as a new left-turn lane at the relocated site entrance. The addition of a left-turn lane on King’s Highway would provide access to the site from both directions and help make the entrance more apparent to visitors. These projects would result in a long-term, minor, adverse impact to operations and infrastructure. These projects, along with Alternative B, would improve park infrastructure in and access to Ferry Farm, resulting in a long-term, beneficial cumulative impact. Alternative B would contribute an appreciable beneficial increment to this impact.

Conclusion

Overall, Alternative B would result in a short-term, moderate, adverse and long-term, beneficial impact to operations and infrastructure. During construction, including development of an invasive species and/or forest management plan, increased staff time and budget would be required to plan, manage, and implement the new development, plantings, and demolition/removal. Development of the new visitor center, administrative offices, and maintenance depot also would require staff time to move the contents of each building to the new facilities. These temporary impacts would be readily apparent to GWF staff and the public. In the long term, the new buildings would require less maintenance, leaving more time and budget for improvements to and upkeep of the site's resources, such as maintenance and monitoring of invasive plant species. The improved administrative offices would accommodate the current Ferry Farm and Kenmore employees, as well as provide additional space for new employees. The new visitor center, interpretive play area, and rehabilitated historic landscapes and features would provide the GWF with more opportunities for visitor programming and education. In addition, the improved trail network, interpretive nodes, discovery areas, and the use of cutting edge technologies all would contribute to the reduced need for staff guided tours at Ferry Farm. Improvements associated with this alternative would increase the relevance of the site through educational and interpretive activities; thereby encouraging the support of the community. Alternative B would contribute an appreciable beneficial increment to the long-term, beneficial cumulative impact.

IMPACTS OF ALTERNATIVE C

Impact Analysis

The impacts to operations and infrastructure associated with Alternative C would be similar to those described for Alternative B. Although the new visitor center and parking lot would be constructed further south under Alternative C, the level of effort required to develop, operate, and maintain these facilities would be generally the same that described for Alternative B. The exceptions would be the location of the administrative building and the removal of trees from the central portion of the site.

Under Alternative C, the new administrative building would be located in the northeast corner of the site, proximal to the new maintenance facility. The location would site the GWF maintenance and administrative staff at Ferry Farm in the same areas, but would separate the administrative facility from the visitor center, allowing for somewhat improved coordination. To accommodate staff parking, a parking lot would be constructed adjacent to these new structures. The lot would accommodate 25 parking spaces, one of which would be ADA compliant. Because the visitor center and administrative facilities would be further apart under this alternative, the associated benefits would be slightly reduced. However, any maintenance required within the administrative building would require less effort to transport supplies and equipment.

In addition, Alternative C would include the removal of 3.0 acres of vegetation between the interpretive structures and the Rappahannock River. The cleared land would be planted with grasses and could require periodic mowing. Grasses to be considered by the GWF include fescue grasses, which has been effective elsewhere at the site at choking out invasive species and does not need mowing, and pasture grasses. The

removal of these trees would temporarily increase staff time and budget. Over the long term, the cleared area would require routine maintenance to preserve the historic views. Routine maintenance would be required for at least two years to ensure invasive species do not overtake the cleared landscape.

Overall, Alternative C would have a long-term beneficial impact on operations and infrastructure.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on operations and infrastructure at Ferry Farm. These projects would be consistent with those described for Alternative B, and would result in a long-term, minor, adverse impact to operations and infrastructure. These projects, along with Alternative C, would improve park infrastructure in and access to Ferry Farm, resulting in a long-term, beneficial cumulative impact. Alternative C would contribute an appreciable beneficial increment to this impact.

Conclusion

Overall, Alternative C would result in a short-term, moderate, adverse and long-term, beneficial impact to operations and infrastructure. The impacts would be slightly less beneficial than Alternative B because the administrative building and visitor center would be further apart, requiring more time for staff to travel between the two facilities. During construction, including development of an invasive species and/or forest management plan, increased staff time and budget would be required to plan, manage, and implement the new development, plantings, and demolition/removal. Development of the new visitor center, administrative offices, and maintenance depot also would require staff time to move the contents of each building to the new facilities. Short-term impacts associated with Alternative C would be slightly greater than Alternative B because more vegetation removal would occur. These temporary impacts would be readily apparent to GWF staff and the public. In the long term, the new buildings would require less maintenance, leaving more time and budget for improvements to and upkeep of the site's resources, such as maintenance and monitoring of invasive plant species. The improved administrative offices would accommodate the current Ferry Farm and Kenmore employees, as well as provide additional space for new employees. However, because the visitor center and administrative building would be further apart under this alternative the associated benefits would be slightly reduced. The new visitor center, interpretive play area, and interpretive landscape features would provide the GWF with more opportunities for visitor programming and education. In addition, the improved trail network, interpretive nodes, discovery areas, and the use of cutting edge technologies all would contribute to the reduced need for staff guided tours at Ferry Farm. Alternative C would contribute an appreciable beneficial increment to the long-term, beneficial cumulative impact.

IMPACTS OF ALTERNATIVE D (PREFERRED ALTERNATIVE)

Impact Analysis

Impacts of Alternative D on operations and infrastructure would be the same as those described for Alternative B, except that the maintenance facility and administrative buildings would be sited differently. The new administrative building would be approximately 100 feet southwest of the location proposed under

Alternative B, although the size and function of the facility would be the same as under Alternative B. Therefore, the impacts would be generally the same. Maintenance activities would be carefully coordinated, especially during peak visitation, to minimize conflicts between visitors and maintenance staff. Siting the new maintenance facility in the southeast corner of the property would allow sufficient space for all maintenance equipment and supplies. The benefits associated with this structure could be slightly less beneficial under Alternative D if visitor access to the visitor center/parking lot prevents efficient staff access to the maintenance facility or reduces the timeframes during which maintenance activities can be performed.

Overall, Alternative D would have a long-term, beneficial impact on operations and infrastructure.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impact on operations and infrastructure at Ferry Farm. These projects would include those described under Alternative A, as well as a new left-turn lane at the relocated site entrance. The addition of a left-turn lane on King's Highway would provide access to the site from both directions and help make the entrance more apparent to visitors. These projects would result in a long-term, minor, adverse impact to operations and infrastructure. These projects, along with Alternative D, would improve park infrastructure in and access to Ferry Farm, resulting in a long-term, beneficial cumulative impact. Alternative D would contribute an appreciable beneficial increment to this impact.

Conclusion

Overall, Alternative D would result in a short-term, moderate, adverse and long-term, beneficial impact to operations and infrastructure. The overall impact would be slightly more beneficial than Alternatives B and C because the visitor center, maintenance facility, and administrative building would all be located in close proximity. During construction, including development of an invasive species and/or forest management plan, increased staff time and budget would be required to plan, manage, and implement the new development, plantings, and demolition/removal. Development of the new visitor center, administrative offices, and maintenance depot also would require staff time to move the contents of each building to the new facilities. These temporary impacts would be readily apparent to GWF staff and the public. In the long term, the new buildings would require less maintenance, leaving more time and budget for improvements to and upkeep of the site's resources, such as maintenance and monitoring of invasive plant species. If visitor access to the visitor center/parking lot prevents efficient staff access to the maintenance facility under this alternative, the overall benefits would be incrementally reduced. The improved administrative offices would accommodate the current Ferry Farm and Kenmore employees, as well as provide additional space for new employees. The new visitor center, interpretive play area, and replacement of historic landscape features would provide the GWF with more opportunities for visitor programming and education. In addition, the improved trail network, interpretive nodes, discovery areas, and the use of cutting edge technologies all would contribute to the reduced need for staff guided tours at Ferry Farm. Improvements associated with this alternative would increase the relevance of the site through educational and interpretive activities; thereby encouraging the support of the community. Alternative D would contribute an appreciable beneficial increment to the long-term, beneficial cumulative impact.

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5

CONSULTATION AND COORDINATION

This Consultation and Coordination chapter describes the public involvement and agency consultation conducted during the preparation of the EA. A combination of activities, including public scoping, internal workshops, and agency briefings, has helped to guide the NPS in developing this EA. This chapter provides a detailed list of the various consultations initiated during the development of the EA, as well as a list of preparers and the list of recipients for this document.

THE SCOPING PROCESS

The NPS divides the scoping process into two parts: internal scoping and external (public) scoping. Internal scoping involved discussions among GWF and the NPS personnel regarding the purpose of and need for action, issues, available references and guidance, and other related topics. Public scoping is the early involvement of the interested and affected public in the environmental analysis process. The public scoping process helps ensure that people have been given an opportunity to comment and contribute early in the decision-making process. For this EA, project information was made available to individuals, agencies, and organizations early in the scoping process, and people were given opportunities to express their views and identify important issues and alternatives or alternative elements. Internal and public scoping are essential elements of the NEPA planning process. The following sections provide information regarding the scoping activities that were conducted for this project.

INTERNAL SCOPING

As described in chapter 2, development of the Site Treatment Plan began in 2002 with the completion of the *Ferry Farm Master Plan* (2002) and continued during preparation of the 2007 Master Plan Update. Scoping efforts associated with the Master Plan and the Site Treatment Plan have included regular collaboration with the GWF Board of Trustees and Board of Regents (during bi-annual meetings since 2000), as well as review by a panel of experts in the field of architectural history. The Board of Trustees (24 members) has met bi-annually since 2000 to discuss the proposed project and other pertinent items. The Board of Regents (which meets annually) is made up of one or more Regents from most states. In

2011 a panel of 9 architectural history experts reviewed the architectural and archeological evidence of the Washington home site. The panel included representatives from the GWF, St. Mary's College, the Colonial Williamsburg Foundation, the Virginia Department of Historic Resources, the Maryland Historical Trust, and the Old Salem Museums. Internal scoping for the proposed project is considered an extension of these previous efforts and continued in September 2007 when representatives from the GWF and their consultants met to discuss the purpose and need of the project, alternative components that could meet these needs, resource conditions and issues at Ferry Farm, and existing conditions and data sources. Subsequently, in October 2007, the GWF and their consultants met with staff from the Fredericksburg and Spotsylvania County Battlefields Memorial NMP. During the October meeting, the group discussed the components of the proposed alternatives, impact topics and issues to be evaluated in the EA, and general compliance with NEPA and section 106. Subsequently, in December 2011, the GWF and their consultants met to review revisions to the proposed alternatives and discuss potential impacts. The GWF and the NPS met again on February 21, April 17, July 10, and September 18, 2012 the GWF and the NPS to discuss the alternatives presented in the EA. These meetings lead to the development of Alternative D as well the preparation of the *Draft Washington Home Farm Interpretive Landscape: Contributing to the Rehabilitation of Ferry Farm* (NPS 2013) and the *George Washington's Ferry Farm Feasibility Study – Memorandum* (Keast & Hood 2013) (see appendixes E and F). Throughout the development of this EA, the group conducted regular conference calls to review relevant issues, discuss the development of alternatives and impact analysis, and further develop means of including agencies and the public in the planning process.

PUBLIC SCOPING

The GWF staff conducted a public open house at the Ferry Farm Visitor Center in Fredericksburg, Virginia on February 6, 2013. A total of 65 members of the public attended the open house. The open house provided the opportunity for the GWF to present information about the proposed project and gather input and comments from the public. Display boards illustrating the proposed alternatives and other pertinent information about proposed project were set up around the room. Each board was manned by a GWF staff representative to answer any questions and provide the public with additional information. Verbal comments on the project were recorded on computers and note pads, by GWF representatives stationed throughout the room. In addition, a comment card was distributed to all attendees to facilitate feedback. The comment card provided four topic questions to guide comments and asked attendees to rate each topic (except the first question) using a scale from 1 (Not Important) to 5 (Very Important). The card also included space for additional comments. The questions were as follows:

1. Of the 4 Alternatives, which do you feel is the most appropriate plan for the site would provide the most informative and engaging visitor experience?
2. How important is it to restore the historic Washington era scene by constructing features that represent historic structures and landscape elements such as a representation of George Washington's home?
3. How important is it to portray the following:

- Authentic site locations
 - Authentic period materials and construction techniques
 - Way of life during the Washington era
4. Would the addition or improvement of the following site amenities enhance your visitor by making it more educational or enjoyable?
- Exhibits
 - Bathrooms
 - Retail
 - Food

During the open house, 59 comment cards were returned, providing input on each of the topics above, and 85 verbal comments were recorded. One additional public comment was received, via email, after the meeting. Public comments overwhelmingly commended the action alternatives and favored alternative D in particular. A summary of the verbal and written comments received during the open house is provided in appendix F.

AGENCY CONSULTATION

Agency scoping for the proposed action began in August 2011. At that time, scoping letters were sent to various local, state, and federal agencies including the USFWS, USACE, U.S. Coast Guard (USCG), VDOT, DCR, DEQ, DGIF, the city of Fredericksburg, Stafford County, and the Chesapeake Bay Programs Office, to inform them about the project and ask for their input. Scoping letters and agency responses are included in Appendix A: Relevant Correspondence.

In a letter dated December 6, 2011 the DEQ responded to the NPS, providing detailed information related to the preparation of a Federal Consistency Determination. As required by the Coastal Zone Management Act of 1972, section 307(c)(1) and 15 CFR Part 930, subpart C (detailed below), a Federal Consistency Determination has been prepared for this project and is attached to this EA as appendix C.

The Corps responded to the NPS scoping letter, providing details about section 404 of the Clean Water Act and related requirements. As described below, subsequent to completion of the NEPA compliance process, the NPS will obtain all necessary permits before proceeding with construction.

Additional agency consultation is discussed by statutory category below.

Section 7 of the Endangered Species Act

Consultation with the USFWS, the DGIF, and the DCR-DNH identified four protected species within the region: the green floater (*Lasmigona subviridis*), harperella (*Ptilimnium nodosum*), sensitive joint-vetch (*Aeschynomene virginica*), and small-whorled pogonia (*Isotria medoloides*). However, as described in Chapter 1: Purpose and Need, under “Impacts Topics Dismissed from Further Analysis” none of these species are recorded as occupying the project area. Based on information from the DCR-DNH, the study area does not provide suitable habitat for any of the listed species.

In addition, the CCB database for bald eagle nest sites was reviewed. The bald eagle was recently delisted from protection under the Endangered Species Act but is still protected by the Bald Eagle Protection Act of 1940 and its designation as a state-threatened species. The CCB shows no active bald eagle nests along this stretch of the Rappahannock River. The closest bald eagle nest site is north of the study area along the Potomac River.

Section 106 of the National Historic Preservation Act

The proposed undertaking may affect properties listed in or eligible for listing in the NRHP, therefore, is subject to review under section 106 of the NHPA. In 2007, the GWF and the NPS began discussions with the Virginia State Historic Preservation Officer (SHPO) about developing and executing the *Programmatic Agreement between the United States Department of the Interior National Park Service, the George Washington Foundation, and the Virginia Department of Historic Resources for Treatment of the Site of George Washington's Boyhood Home ("Ferry Farm") National Historic Landmark, Stafford County, Virginia*. The PA was established to address cultural resource impacts at the site related to the Site Treatment Plan, as required under section 106 of the National Historic Preservation Act of 1966, as amended. This PA details the steps that would be taken in the event that significant resources are found to be present in direct or indirect impact areas. As is usual in a section 106 evaluation, these steps involve the assessment of actions having an effect on cultural resources and the avoidance, minimization, or mitigation options that would be developed in response to adverse and no adverse effects determinations. The executed PA, signed between November 2010 and January 2011, is attached to this EA as appendix B. Subsequently, in August 2011, a scoping letter was sent to the SHPO and the Stafford County Historical Society to provide the agencies with information about the proposed action and ask for their input. Neither the SHPO nor the Stafford County Historical Society has responded to the scoping letter. However, on April 17, July 10, and September 18 of 2012, the SHPO visited Ferry Farm to meet with GWF and NPS staff, tour the site, and discuss the proposed action. A representative from ACHP was also in attendance during the September 18, 2012 meeting.

Tribal Consultation

Tribal consultation for the proposed project began in August 2011. At that time scoping letters were sent to the Catawba Indian Nation and the Virginia Council on Indians to inform them about the project. Scoping letters and tribal responses are included in Appendix A: Relevant Correspondence. To date, no response has been received from the Catawba Indian Nation or the Virginia Council on Indians.

REQUIRED PERMITS AND APPROVALS

Implementation of the GWF/NPS preferred alternative would require that the GWF/NPS abide by applicable laws and regulations. The GWF would continue to coordinate with the SHPO and the ACHP throughout the life of the project. Prior to any ground disturbance, the proper authorities would obtain, at a minimum, a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit, a Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharge from Construction Activities (VAR 10), local erosion and sediment control permits, wetland permits, and Chesapeake Bay

Preservation Act permits, as appropriate. The contractor would consult with the appropriate authority having jurisdiction in the study area to ensure the proper permits are in place prior to any development or demolition activities.

COASTAL ZONE MANAGEMENT CONSISTENCY

Coastal zone management (CZM) for the proposed action is federally authorized by the Coastal Zone Management Act (CZMA), as amended. The coastal zone management program (CZMP) federal consistency review process is described in federal regulation 15 CFR 930: Federal Consistency with Approved Coastal Management Programs. The Coastal Programs Division within the National Oceanic and Atmospheric Administration (NOAA) Office of Ocean and Coastal Resource Management is in charge of the program. The Coastal Programs Division is responsible for advancing national coastal management objectives and maintaining and strengthening state and territorial coastal management capabilities. It supports states through financial assistance, mediation, technical service and information, and participation in priority state, regional, and local forums. The CZMP leaves day-to-day management decisions at the state level in the 34 states and territories with federally approved coastal management programs, including Virginia.

Pursuant to the CZMA, in 1986, NOAA approved the Virginia Coastal Zone Management Program (VCP). Accordingly, federal activities which are reasonably likely to affect any land or water use or natural resources of Virginia's designated coastal resources management area must be consistent with the enforceable policies of the VCP. The VCP is a networked program with several agencies administering the enforceable policies. Virginia also has several advisory policies which were established to serve as a discretionary guide during project planning. As the lead agency for the VCP, DEQ is responsible for coordinating the Commonwealth's review of federal consistency determinations and certifications with cooperating agencies and responding to the appropriate federal agency or applicant.

The VCP comprises nine enforceable policies: Fisheries Management, Subaqueous Lands Management, Wetlands Management, Dunes Management, Non-point Source Pollution Control, Point Source Pollution Control, Shoreline Sanitation, Air Pollution Control, and Coastal Lands Management. All federal development projects inside the coastal zone are automatically subject to the consistency regulations and require a federal consistency determination. This determination is included in appendix C.

LIST OF PREPARERS AND CONTRIBUTORS

The NPS prepared this EA with assistance from the GWF and a contractor in accordance with CEQ regulations (1506.5).

TABLE 3. LIST OF PREPARERS AND CONTRIBUTORS

Name	Title	Responsibility
Vanasse Hangen Brustlin, Inc.		
Kimberly Threlfall	Project Manager	Guidance of NEPA process; document preparation and review; project management; visitor use and experience and operations and infrastructure impact topic review and analysis
Tricia Wingard	NPS Program Manager	Guidance of NEPA process; document review; and project management
Jake Hoogland	NPS Market Leader	Guidance of NEPA process
Tim Davis	Senior Environmental Scientist	Natural resources review and analysis
Rita Walsh	Senior Preservation Planner	Cultural resources review and analysis
Mariah Murphy	Environmental Planner	Document preparation
Margaret Beavers	Environmental Scientist	GIS analysis
Quinn Evans Architects		
Julia Siple	Architectural Technical Staff	Graphic and content coordination
Alyson Steele	Principal Architect and Planner	Team leader; development and coordination of planning approach, content, and graphics.
AECOM		
Roger Courtenay	Principal Landscape Architect	Landscape and site planning
Aiman Ducksworth	Associate Landscape Architect	Landscape and site coordination
George Washington Foundation		
Bill Garner	Project Leader	
Dave Muraca	Director of Archeology	GWF Project Manager

LIST OF RECIPIENTS

The EA will be available for formal public and agency review for 60 days and has been distributed to a variety of interested individuals, agencies, and organizations, including those listed below. It also is available for public review on the Internet at <www.parkplanning.nps.gov>, and hard copies are available at the local library.

FEDERAL AGENCIES

U.S. Coast Guard
U.S. Fish and Wildlife Services
U.S. Army Corps of Engineers

STATE AGENCIES

Virginia Department of Conservation and Recreation
Virginia Department of Game and Inland Fisheries
Virginia Department of Historic Resources
Virginia Department of Transportation
Virginia Department of Environmental Quality²

LOCAL AGENCIES

City of Fredericksburg
Stafford County Administrator's Office
Stafford County Historical Society

TRIBES

Catawba Indian Nation

ORGANIZATIONS AND UNIVERSITIES

Civil War Preservation Trust
Friends of the Rappahannock
University of Mary Washington, Department of Historic Preservation

² The Virginia Department of Environmental Quality, Office of Environmental Impact Review coordinates the federal consistency review of the document with other state and local agencies, as needed.

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APPENDIX A: RELEVANT CORRESPONDENCE

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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



April 19, 2013

Mr. Bill Garner
President & CEO
The George Washington Foundation
1201 Washington Avenue
Fredericksburg, Virginia 22401

Dear Bill,

As requested, here is a copy of the wording we all agreed on concerning the treatment of the historic landscape. If this could be incorporated in the EA, we can then have it reviewed by our advisers. Please keep the term "Draft" on the document for the time being.

Interpretive Landscape

The proposed treatment of this National Historic Landmark—with its critical archaeological resources and historic landscape—has been the product of intense study. Years of archaeological investigation and documentary research have shed important new light on the life and world of young Washington, his mother Mary, and the physical world in which they lived. The purpose of this proposal for a rehabilitation of the historic landscape is to help communicate to the public the essential elements of the place that more than any other shaped the nation's first president.

Although archaeology and research have told us much, gaps in our knowledge remain, and the proposed rehabilitation will be acutely sensitive to that reality. The rehabilitation will seek to capitalize on and communicate what is known—the location and nature of the main residence and the inclusion of outbuildings where their location and function have been determined (as new discoveries are made that confirm the location and nature of additional outbuildings, they may be added to the landscape).

The interpretive structure built over the archaeological remains of the Washington House will from a distance give the impression in form and mass of a plantation house. Interpretive media and personal services will constantly remind visitors that what they are seeing is a rehabilitated landscape that incorporates both known elements and some conjectural details. The interpretive structure will distinguish conjectural details by different treatments (paint and/or materials), and as visitors approach the house, their focus will move from mass and scale and place on the landscape to a design scheme that helps communicate what is known (or not) about the Washington home site.

On-site construction will go to great lengths to not disturb archaeological resources—of the main residence or outbuildings. The interpretive structure over the house site will rest on supports that will avoid archaeological remains. Construction required to provide interpretive access to the archaeological remains may be provided contiguous with the remains.

The interior of the house will be designed so as to use the archaeological resources to place Washington and his family on the site. The space will focus on the influences that the site, the family and plantation culture had on forming the character of young Washington.

Outbuildings that have been located by archaeology will be constructed as typical buildings of the period (details of such buildings are well documented and varied relatively little). Fences and other at-grade details will be constructed with materials and techniques as would have been found typically in the region at that period, with interpretive features to convey their period resonance and conjectural elements.

Sincerely,


Russell P. Smith
Superintendent

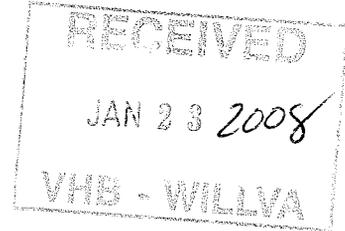


DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
FORT NORFOLK, 803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

REPLY TO
ATTENTION OF:

CENAO-REG

January 3, 2008



Northern Virginia Regulatory Section
(Unnamed tributaries to the Rappahannock River)
NAO-2007-4279

Re: Confirmation of wetland delineation

Mr. Douglas A. DeBerry
Vanasse Hangen Brustlin, Inc.
351 McLaws Circle, Suite 3
Williamsburg, Virginia 23185-6316

Dear Mr. DeBerry:

This letter is in reference to the delineation completed by you on the Ferry Farm property also known as "George Washington's Boyhood Home" located adjacent to Route 3 in Stafford County, Virginia.

The wetland delineation as flagged in the field and shown on the plan prepared by Vanasse Hangen Brustlin, Inc. entitled "WETLAND DELINEATION MAP" dated August 20, 2007 is hereby verified as accurate. Our basis for this includes application of the Corps' 1987 Wetland Delineation Manual and the positive indicators of wetland hydrology, hydric soils, hydrophytic vegetation and the presence of an ordinary high water mark.

Any mechanized landclearing that disturbs the soil surface, such as with a bulldozer and/or root rake, and/or any filling or excavation in the wetlands on this site may require a permit from the Department of the Army and/or the Virginia Department of Environmental Quality prior to such activities occurring.

Should you have questions, please call Mr. Hal Wiggins at (540) 548-2517 at our Fredericksburg Field Office. For, and on behalf of, Keith Lockwood, Chief, Northern Virginia Regulatory Section:

Sincerely,

Hal Wiggins
Project Manager
Northern Virginia
Regulatory Section

Copies furnished:

Virginia Department of Environmental Quality, Woodbridge
Stafford County Department of Planning, Stafford
George Washington's Fredericksburg Foundation, Fredericksburg

Douglas W. Domenech
Secretary of Natural Resources



David A. Johnson
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Division of Natural Heritage
217 Governor Street
Richmond, Virginia 23219-2010
(804) 786-7951

May 19, 2011

Diane Ditzel
Vanasse Hangen Brustlin, Inc
351 McLaws Circle, Suite 3
Williamsburg, VA 23185

Re: George Washington Boyhood Home – Ferry Farm Implementation Plan

Dear Ms. Ditzel:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Yellow lance (*Elliptio lanceolata*, G2G3/S2S3/SOC/NL) has been historically documented within the Rappahannock River. The Yellow lance occurs in mid-sized rivers and second and third order streams. To survive, it needs a silt-free, stable streambed and well-oxygenated water that is free of pollutants. This species has been the subject of taxonomic debate in recent years (NatureServe, 2009). Currently in Virginia, the Yellow lance is recognized from populations in the Chowan, James, York, and Rappahannock drainages. Its range also extends into Neuse-Tar river system in North Carolina. In recent years, significant population declines have been noted across its range (NatureServe, 2009). Please note that this species is currently classified as a species of concern by the United States Fish and Wildlife Service (USFWS) however, this designation have no official legal status.

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization, and dredging, and the invasion of exotic mollusk species. The Yellow lance may be particularly sensitive to chemical pollutants and exposure to fine sediments from erosion (NatureServe, 2009).

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations.

*State Parks • Soil and Water Conservation • Natural Heritage • Outdoor Recreation Planning
Chesapeake Bay Local Assistance • Dam Safety and Floodplain Management • Land Conservation*

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

A fee of \$125.00 has been assessed for the service of providing this information. Please find enclosed an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, **DCR - Division of Natural Heritage, 217 Governor Street Richmond, VA 23219**. Payment is due within thirty days of the invoice date. Please note the change of address for remittance of payment as of July 1, 2008. Late payment may result in the suspension of project review service for future projects.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Shirl Dressler at (804) 367-6913.

Should you have any questions or concerns, feel free to contact me at (804) 692-0984. Thank you for the opportunity to comment on this project.

Sincerely,



Alli Baird, LA, ASLA
Coastal Zone Locality Liaison

CC: Tylan Dean, USFWS

Accounts Payable

COMMONWEALTH OF VIRGINIA

Department of Conservation and Recreation
217 Governor Street
Richmond, VA 23219

Make checks payable to the
TREASURER OF VIRGINIA
and mail to the address shown

Fed I.D. # 54-6004497
DUNS # 809-74-4444

Payment is due 30 days
after receipt of invoice.

INVOICE

Diane Ditzel
Vanasse Hangen Brustlin, Inc
351 McLaws Circle, Suite 3
Williamsburg, VA 23185

Invoice: H- 9303

Date: May 19, 2011

Please detach and return remittance
copy with payment to ensure proper
credit to your account.

Taxpayer I.D.# 04-2931679

Contact: René Hypes
Division of Natural Heritage
(804) 371-2671 FAX# (804) 371-2674 TDD (804) 786-2121

DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
Impact Review	1	EA	90.00	90.00
Element Occurrences	1-5	AT	35.00	35.00

Site Reference

George Washington Boyhood Home –
Ferry Farm Implementation Plan

Credit Information: 199 02 00 **11** 50317 02199 645

Amount Due: \$125.00

The Department of Conservation and Recreation may charge interest on all past due accounts receivable in accordance with guidelines promulgated by the Department of accounts and at the underpayment rate prescribed in Section 58.1-15 of the Code of Virginia. Each past due account receivable may also be charged an additional amount which shall approximate the administrative cost incurred in collecting the past due amount. The Department may also assess late payment penalty fees as appropriate.

1 – Recipient Copy 2 – Remittance Copy 3 – Accounting Copy

Literature Cited

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: April 5, 2010).

Williams, J.D., M.L. Warren, Jr., K.S. Cummings, J.L. Harris, and R.J. Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. *Fisheries* 18: 6-9.



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

August 3, 2011

Mr. Tom Wilcox
Virginia Department of Game and Inland Fisheries
Environmental Service Section
4010 West Broad Street
Richmond, VA 23230

Re: George Washington (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Wilcox:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

The National Park Service (NPS) holds a conservation easement on the Ferry Farm site. Provisions of the easement require the NPS to evaluate and comment on proposed alterations or improvements to the lands covered by the easement. As a part of the planning process, the GWF plan is being developed in conjunction with NPS requirements under the provisions of the National Environmental Policy Act (NEPA), the National Historic Preservation Act of 1966, and related laws. The Environmental Assessment (EA) will evaluate impacts on the natural and cultural resources resulting from implementation of potential actions at the boyhood home of George Washington. This will enable the NPS to take appropriate and timely actions as holder of the conservation easement. Vanasse Hangen Brustlin, Inc. (VHB) has been engaged by the GWF to assist in preparation of the NEPA document and related compliance for this undertaking.

This letter serves as notification that we have begun the NEPA compliance process and are proposing to have the EA available for public and agency review by winter 2011-2012. At this time, we are asking interested agencies and organizations for their input early in the planning process to ensure the EA addresses all potential issues associated with project planning and design. This letter also serves as a record that the NPS and GWF are initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended, and NPS *Management Policies 2006*. As part of the scoping for this project, we request any information regarding listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, and any special management considerations for such species. The project area is depicted on the enclosed Hopewell, Virginia USGS Quadrangle. We have obtained and reviewed file information from the Wildlife Information Online service that your agency currently operates. We have also initiated review through the Natural Heritage Data Explorer database, as well as through the Fish and Wildlife Service Project Review process. This letter serves as a formal request for additional

Mr. Tom Wilcox
August 3, 2011
Page 2

information your agency may have concerning federal and state rare, threatened, and endangered species documented or reasonably suspected within 2 miles of the project site.

Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB

enc.: Project Vicinity Quad Map
DGIF Search Map
DGIF Species Results List
DCR Natural Heritage Report



United States Department of the Interior

NATIONAL PARK SERVICE

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

IN REPLY REFER TO:

August 3, 2011

Mr. John Tippett
Executive Director
Friends of the Rappahannock
P.O. Box 7254
Fredericksburg, VA 22404

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Tippett:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Mr. John Tippet
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Ms. Cindy Schulz
U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Schulz:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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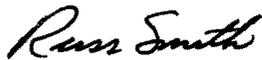
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Ms. Cindy Schulz
August 3, 2011
Page 2

request for additional information your agency may have concerning federal and state rare, threatened, and endangered species documented or reasonably suspected within 2 miles of the project site.

Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB

enc.: Project Vicinity Quad Map
DGIF Search Map
DGIF Species Results List
DCR Natural Heritage Report



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

August 3, 2011

Dr. Doug Sanford
Department of Historic Preservation
University of Mary Washington
1301 College Avenue
Fredericksburg, VA 22401

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Dr. Sanford:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

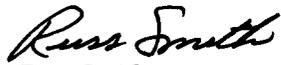
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Dr. Doug Sanford
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Mr. Anthony Romanello
County Administrator
Stafford County
1300 County Road 630
Stafford, VA 22554-7232

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Romanello:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Mr. Anthony Romanello
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Ms. Kathy Robertson
The Civil War Preservation Trust
1156 15th Street, NW, Suite 900
Washington, DC 20005

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Robertson:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Ms. Kathy Robertson
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Ms. Dannette Poole
Director
Planning and Recreational Resources
Virginia Department of Conservation and Recreation
203 Governor Street, Suite 213
Richmond, VA 23219-2094

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Poole:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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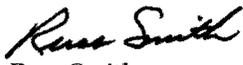
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Ms. Dannette Poole
August 3, 2011
Page 2

Explorer database, as well as through the Fish and Wildlife Service Project Review process. This letter is a formal request for additional information your agency may have concerning federal and state rare, threatened, and endangered species documented or reasonably suspected within 2 miles of the project site.

Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB

enc.: Project Vicinity Quad Map
DGIF Search Map
DGIF Species Results List
DCR Natural Heritage Report



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

August 3, 2011

Mr. Keith Lockwood
Chief, Northern Virginia Regulatory Section
U.S. Army Corps of Engineers
803 Front Street
Norfolk, VA 23510

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Lockwood:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

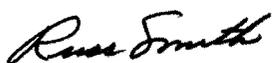
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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Mr. Keith Lockwood
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



United States Department of the Interior

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

IN REPLY REFER TO:

August 3, 2011

Ms. Ellie L. Irons
Program Manager
Department of Environmental Quality
Division of Environmental Enhancement
Office of Environmental Impact Review
P.O. Box 10009
Richmond, Virginia 23240

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Irons:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Ms. Ellie L. Irons
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Ms. Marion Hearn
President
The Stafford County Historical Society
P.O. Box 1664
Stafford, VA 22555

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Hearn:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me at by email (russ_smith@nps.gov).

Ms. Marion Hearn
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Commander (DPW)
5th Coast Guard District
Attention: Mr. Albert Grimes
Room 100
431 Crawford Street
Portsmouth, VA 23704-5004

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Grimes:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

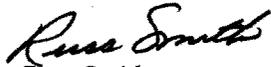
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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Mr. Albert Grimes
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



United States Department of the Interior

NATIONAL PARK SERVICE

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

IN REPLY REFER TO:

August 3, 2011

Ms. Tanya Gossett
Heritage Preservation Services
The American Battlefield Protection Program
National Park Service
1201 Eye Street, NW, 2255
Washington, DC 20005

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Gossett:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Ms. Tanya Gossett
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Mr. Quintin Elliot
Fredericksburg Residency Administrator
Virginia Department of Transportation
86 Deacon Road
Fredericksburg, VA 22405

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Elliot:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

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Thank you for your interest in this project. We look forward to receiving any guidance or comments you may have regarding the process or the project itself. If you need any additional information or have any questions regarding this matter, please feel free to contact me by email (russ_smith@nps.gov).

Mr. Quintin Elliot
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Mr. Jim Edward
Director
Chesapeake Bay Program Office
410 Severn Avenue, Suite 109
Annapolis, MD 21403

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Edward:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

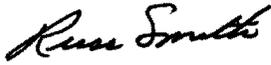
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Mr. Jim Edward
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Dr. Ethel Eaton
Manager, Office of Review and Compliance
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Dr. Eaton:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

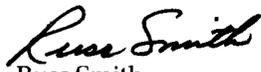
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Dr. Ethel Eaton
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



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

August 3, 2011

Mr. Beverly Cameron
City Manager
City of Fredericksburg
715 Princess Anne Street, Room 203
P.O. Box 7447, Fredericksburg, VA 22404

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Mr. Cameron:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

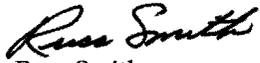
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Mr. Beverly Cameron
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



United States Department of the Interior

NATIONAL PARK SERVICE

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

IN REPLY REFER TO:

August 3, 2011

Catawba Indian Nation
Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
1536 Tom Steven Road
Rock Hill, SC 29730

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Dr. Haire:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

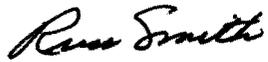
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Dr. Wenonah G. Haire
August 3, 2011
Page 2

Sincerely,

A handwritten signature in cursive script that reads "Russ Smith".

Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



United States Department of the Interior

NATIONAL PARK SERVICE

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

IN REPLY REFER TO:

August 3, 2011

Karenne Wood
Executive Director
Virginia Council on Indians
c/o Monican Indian Nation
3024 North Underwood Street
Arlington, VA 22313

Re: George Washington Boyhood Home (Ferry Farm) Implementation Plan
Environmental Assessment
Stafford County, Virginia

Dear Ms. Wood:

The George Washington Foundation (GWF) is initiating a planning process to implement improvements at the Ferry Farm property in Stafford County, Virginia. We anticipate that these improvements may include a new or upgraded visitor center, replicas of the structures that existed during the Washington-era, new interpretive waysides, new or upgraded park operations facilities, and improved access and circulation routes.

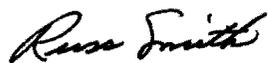
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Ms. Karenne Wood
August 3, 2011
Page 2

Sincerely,



Russ Smith
Superintendent
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park

cc: John Hennessy, NPS-FRSP
Noel Harrison, NPS-FRSP
Bill Garner, GWF
Alyson Steele, QEA
Tricia Wingard, VHB



**DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096**

Reply to the attention of: 8 December 2011

Northern Virginia Regulatory Section
(Unnamed tributaries to the Rappahannock River)
NAO-2011-02117

Gregg Kneipp
Natural Resources Manager, Park FMO
National Park Service
Fredericksburg and Spotsylvania National Military Park
120 Chatham Lane
Fredericksburg, VA 22405

Dear Mr. Kneipp:

This is in reference to your request for Corps' comments on the George Washington Ferry Farm located on Route 3 in Stafford County, Virginia.

Based on the recent review of your wetland delineation map, wetlands and Waters of the US (unnamed tributaries to the Rappahannock River) located within the boundaries of Ferry Farm projected are regulated under Section 404 of the Clean Water Act (33 U.S.C. 1344) and may require a Department of the Army Permit.

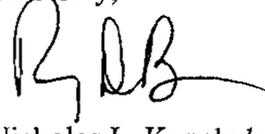
In order for us to adequately review your proposed project, we request that the following information be provided:

1. A complete project plan with a depiction of all work that is subject to regulation under Section 404 of the Clean Water Act (trenching, backfilling and or sidelaying material in jurisdictional waters and/or wetlands) should be submitted. The plan should depict all wetland and stream impacts as determined from the wetland delineation. Drawings for both temporary and permanent impacts to streams and/or wetlands should include plan-view, cross-sectional view, ordinary high water mark (OHW) and wetland limits.
2. Evidence that discharges of dredged or fill material into waters of the United States are avoided or minimized to the maximum extent practicable for each impact associate with the ranges.
3. Identification of any archaeological, cultural, and historic properties that may exist on the subject site within the Corps' permit area. These areas should be clearly marked on the development plans. The requirements of the National Historic Preservation Act must be satisfied before the Corps can issue a permit.

In addition, work in these areas may also require authorization by state and local agencies. Please find the Joint Permit Application located at <http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/JPA.asp>

Should you have questions, please call Regena Bronson at (540) 548-2838 at our Fredericksburg Field Office.

Sincerely,



The image shows a handwritten signature in black ink. The signature is stylized and appears to read 'N. Konchuba'. To the left of the signature, there is a handwritten 'For' with an arrow pointing towards the signature.

Nicholas L. Konchuba
Chief, Northern Virginia
Regulatory Section

Copies furnished:
Virginia Department of Environmental Quality, Woodbridge
Department of Planning, Stafford County



RS
JA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

December 6, 2011

Mr. Russell P. Smith
Superintendent
Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405

RE: Environmental Assessment: Implementation Plan, George Washington Boyhood Home (Ferry Farm) National Historic Landmark, Stafford County, Virginia

Dear Mr. Smith:

Thank you for your November 29, 2011 letter (received November 30) regarding the George Washington Foundation (GWF) plan being developed in conjunction with National Park Service requirements under the National Environmental Policy Act, the National Historic Preservation Act, and related laws.

PROJECT DESCRIPTION

According to your letter, the National Park Service holds a conservation easement on the George Washington Boyhood Home (Ferry Farm). Provisions of the easement require the Park Service to evaluate and comment on proposed alterations to the lands covered by the easement. The Environmental Assessment required by the National Environmental Policy Act will evaluate impacts on natural and cultural resources resulting from implementation of actions at Ferry Farm. The consulting firm VHB is assisting in preparation of the EA and related compliance for this endeavor.

ENVIRONMENTAL REVIEW UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

The roles of the Virginia Department of Environmental Quality (DEQ) in relation to the project are as follows. First, DEQ's Office of Environmental Impact Review

(OEIR) will coordinate Virginia's review of the EA and comment to the Park Service on behalf of the Commonwealth. A similar review process will pertain to the Federal Consistency Determination (FCD) (next paragraph). If the FCD is provided as part of the environmental document, there can be a single review.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities affecting Virginia's coastal resources or coastal uses must be consistent with the Virginia Coastal Zone Management Program (VCP) (see section 307(c)(1) of the Act and the *Federal Consistency Regulations*, 15 CFR Part 930, subpart C, sections 930.30 *et seq.*). The Park Service must provide a consistency determination which includes an analysis of the proposed activities in light of the enforceable policies of the VCP (first enclosure) and a commitment to comply with the enforceable policies. In addition, we invite your attention to the advisory policies of the VCP (second enclosure). As indicated, the FCD may be provided as part of the environmental document or independently, depending on the Park Service's preference. We recommend, in the interests of an effective review, that the FCD be provided with the environmental document and that 60 days be allowed for review, in keeping with the *Federal Consistency Regulations* (see section 930.41(a)). Section 930.39 of these *Regulations*, and Virginia's *Federal Consistency Information Package* (available at <http://www.deq.virginia.gov/eir/federal.html>) give content requirements for the FCD.

PROJECT SCOPING AND AGENCY INVOLVEMENT

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the EA. Accordingly, we are sharing our response to the letter with selected state and local Virginia agencies which have responsibilities bearing on the subject of the EA. These are likely to include the following (note: starred (*) agencies administer one or more of the enforceable policies of the VCP):

Department of Environmental Quality:

- Office of Environmental Impact Review
- Northern Regional Office*
- Air Division*
- Division of Land Protection and Revitalization (formerly Waste Division)

Department of Conservation and Recreation:

- Division of Stormwater Management*
- DSM –Local Implementation*
- Division of Planning and Recreation Resources

Department of Health (Division of Water Programs)*

Department of Game and Inland Fisheries*

Department of Historic Resources

George Washington Regional Commission

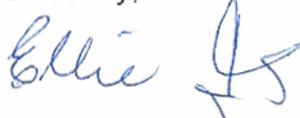
Stafford County.

In order to ensure an effective coordinated review of the environmental document and FCD, we will require 18 copies of the EA and FCD when they are published. This submission may include 4 printed copies and 14 CDs, or 4 printed copies and an electronic copy available for download at a web site or ftp site. The document should include a U.S. Geological Survey topographic map as part of its information. We recommend, as well, that project details unfamiliar to people outside the Park Service be adequately described.

If you have questions about the environmental review process or the federal consistency review process, please feel free to call me at (804) 698-4325 or John Fisher at (804) 698-4339.

I hope this information is helpful to you.

Sincerely,



Ellie L. Irons, Program Manager
Environmental Impact Review

Attachments

cc: David Hartshorn, DEQ-NRO
Kotur S. Narasimhan, DEQ-Air
Stephen Coe, DEQ-DLPR
Roberta Rhur, DCR
Amy M. Ewing, DGIF
Barry Mathews, VDH
Roger W. Kirchen, DHR
Eldon James, GWRC
Anthony Romanello, Stafford County



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Zone Management Program (VCP)

- a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC); Virginia Code 28.2-200 to 28.2-713 and the Department of Game and Inland Fisheries (DGIF); Virginia Code 29.1-100 to 29.1-570.

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities; Virginia Code 3.1-249.59 to 3.1-249.62.

- b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Marine Resources Commission; Virginia Code 28.2-1200 to 28.2-1213.
- c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.
- (1) The tidal wetlands program is administered by the Marine Resources Commission; Virginia Code 28.2-1301 through 28.2-1320.
 - (2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands --both tidal and non-tidal; Virginia Code §62.1-44.15:5 and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

Attachment 1 continued

Page 2

- d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission; Virginia Code 28.2-1400 through 28.2-1420.

- e. Non-point Source Pollution Control – (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation; Virginia Code 10.1-560 et seq.).

(2) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater (see i) Virginia; Virginia Code §10.1-2100 –10.1-2114 and 9 VAC10-20 et seq.

- f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code 62.1-44.15. Point source pollution control is accomplished through the implementation of:
 - (1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.
 - (2) The Virginia Water Protection Permit (VWPP) program administered by DEQ; Virginia Code §62.1-44.15:5 and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

- g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code 32.1-164 through 32.1-165).

- h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code 10-1.1300 through §10.1-1320).

- (i) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code §10.1-2100 –10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative Code 9 VAC10-20 et seq.



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Director

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Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

- a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:
- a) Wetlands
 - b) Aquatic Spawning, Nursery, and Feeding Grounds
 - c) Coastal Primary Sand Dunes
 - d) Barrier Islands
 - e) Significant Wildlife Habitat Areas
 - f) Public Recreation Areas
 - g) Sand and Gravel Resources
 - h) Underwater Historic Sites.
- b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:
- i) Highly Erodible Areas
 - ii) Coastal High Hazard Areas, including flood plains.
- c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:
- i) Commercial Ports
 - ii) Commercial Fishing Piers
 - iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged.

Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

- i) water access dependent activities;
- ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

Advisory Policies for Shorefront Access Planning and Protection

- a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.
- b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.
- c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.
- d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.
- e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.
- f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

**APPENDIX B: PROGRAMMATIC
AGREEMENT FOR THE TREATMENT OF
FERRY FARM**

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COMMONWEALTH of VIRGINIA

Department of Historic Resources

Douglas W. Domenech
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

December 15, 2010

Russ Smith, Superintendent
National Park Service
Fredericksburg and Spotsylvania National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405

RE: Treatment of the Site of George Washington's Boyhood Home ("Ferry Farm")
Stafford County, Virginia
DHR File No. 2000-1681

Dear Mr. Smith:

Thank you for offering us the opportunity to participate in the agreement for the referenced project. Our director's signature on the documents evidences our concurrence.

We greatly appreciate the enthusiasm and tenacity shown by you and your staff, in particular Noël Harrison, required to bring this agreement to a successful conclusion.

If we may provide any further assistance, please do not hesitate to contact me at (804) 367-2323, ext. 112; fax (804) 367-2391; e-mail eeaton@dhr.state.va.us. We look forward to working with you and the George Foundation under this agreement.

Sincerely,

Ethel R. Eaton, Ph.D., Senior Policy Analyst
Office of Review and Compliance

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6416
Fax: (804) 862-6196

Capital Region Office
2801 Kensington Office
Richmond, VA 23321
Tel: (804) 367-2323
Fax: (804) 367-2391

Tidewater Region Office
14415 Old Courthouse Way 2nd
Floor
Newport News, VA 23608
Tel: (757) 886-2807
Fax: (757) 886-2808

Western Region Office
Hundley Hall
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5428
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7031
Fax: (540) 868-7033

PROGRAMMATIC AGREEMENT
between the
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE,
the
GEORGE WASHINGTON FOUNDATION,
and the
VIRGINIA DEPARTMENT OF HISTORIC RESOURCES
for
TREATMENT OF THE SITE OF GEORGE WASHINGTON’S BOYHOOD
HOME
(“FERRY FARM”)
NATIONAL HISTORIC LANDMARK
STAFFORD COUNTY, VIRGINIA

WHEREAS The National Park Service owns and administers a protective conservation easement on the lands commonly known as George Washington’s Boyhood Home National Historic Landmark (hereafter “Ferry Farm”)—an easement authorized by Section 509 of the Act of November 6, 1998, Public Law 105-355, and subsequently acquired from the George Washington Foundation (formerly known as George Washington’s Fredericksburg Foundation, and hereafter “the Foundation”) for consideration, and

WHEREAS the easement governing Ferry Farm describes the right of the National Park Service to protect in perpetuity the natural, cultural, archeological, ecological, open space and aesthetic features of the Protected Property, as defined in the June 2000 “Conservation Easement over Ferry Farm” and

WHEREAS Ferry Farm has been designated a National Historic Landmark by the Secretary of the Interior, and

WHEREAS The Foundation owns and operates Ferry Farm as a historic site for the benefit of the public and intends to develop an appropriate interpretive setting at Ferry Farm by investigating, rehabilitating, and, where possible restoring the Washington-era landscape, developing public access and facilities, and installing interpretive media and other improvements for the benefit of the public, and

WHEREAS under terms of the existing conservation easement, the National Park Service must approve all proposed alterations or improvements to the lands covered by the easement, and

WHEREAS, all approvals given under terms of the easement constitute a Federal action subject to review under Sections 110 and 106 of the National Historic Preservation Act (hereinafter understood to include the *Secretary of the Interior’s standards for the Treatment of Historic Properties*) and relevant sections of the National Environmental Policy Act (NEPA), and

WHEREAS The NPS has determined that the undertakings proposed by the Foundation may have an effect upon properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) and has consulted with the Virginia Department of Historic Resources (the Virginia State Historic Preservation Office, or SHPO) pursuant to Section 800.14(a) of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470); and

WHEREAS The NPS has invited the participation of the Advisory Council on Historic Preservation (ACHP) in this consultation, and the ACHP has declined to participate; and

WHEREAS The NPS has invited the participation of the Foundation as an invited signatory in this consultation, and the Foundation has agreed to participate; and

WHEREAS, the following tribes, nations, organizations, agencies, and institutions were invited to participate in consultation toward this agreement and to concur in this Programmatic Agreement (PA):

- The City of Fredericksburg, Virginia
- The County of Stafford, Virginia
- The Absentee-Shawnee Tribe of Indians of Oklahoma
- The Eastern Band of Cherokee Indians of North Carolina
- The Tuscarora Nation
- The Cherokee Nation
- The Eastern Shawnee Tribe of Oklahoma
- The Shawnee Tribe
- The Catawba Indian Nation
- The Virginia Council on Indians
- The Stafford County Historical Society
- The American Battlefield Protection Program
- The Civil War Preservation Trust
- The Friends of the Rappahannock

The Virginia Department of Environmental Quality

Department of Historic Preservation, University of Mary Washington

WHEREAS, of the invitees above, The Catawba Indian Nation, The Virginia Council on Indians, and The City of Fredericksburg have responded in the affirmative and are considered concurring parties to this agreement

WHEREAS This PA builds upon and does not supercede the 2008 Nationwide Programmatic Agreement (Appendix A) executed by the NPS, the ACHP, and The National Conference of State Historic Preservation Officers that encourages the development of park and project specific programmatic agreements that may be independent of and supplement the 2008 Nationwide PA; and

NOW, THEREFORE, the signatories below agree that the implementation of any of the alternatives to re-habilitate, restore, or improve Ferry Farm shall be administered consistent with Section 106 of the National Historic Preservation Act.

STIPULATIONS

Responsibilities

The Foundation shall be responsible for preparing and bearing the cost of preparing all relevant plans, narrative descriptions, alternatives, supporting documentation, and forms (most notably the “Assessments of Actions Having an Effect on Cultural Resources”) needed to comply with the requirements of this programmatic agreement and both Section 106 and NEPA. Collectively, these documents will constitute the Foundation’s formal request to the NPS for approval of an action or actions under terms of the existing Conservation Easement. The Foundation shall prepare and print a number of plans sufficient to provide all the signatories to this agreement with copies.

The National Park Service, in consultation with the other signatories, shall review all submitted documentation, plans, alternatives, and proposed actions. NPS concurrence on a preferred alternative will constitute the proposed action that is subject to review under Section 106 and other relevant laws.

The National Park Service shall assume primary responsibility for initiating consultation and formal review of the proposed actions under Section 106 and other relevant laws.

Review Teams: Under terms of the 2008 Nationwide PA, Fredericksburg and

Spotsylvania NMP has in place a team of qualified cultural resource advisors. This team will be used to fulfill NPS obligations for review under terms of the programmatic agreement. The Foundation is encouraged to assemble its own panel of qualified experts and advisors to help guide the development of alternatives, proposed actions, and supporting documentation.

Stipulation: The National Park Service will submit for review under Section 106 and NEPA only those undertakings that it deems comply with the terms of the June 2000 easement governing Ferry Farm.

The Process

Jointly, the NPS and Foundation shall ensure that the following measures are carried out:

I. Consultation

NPS and the Foundation shall consult with the signatories and consulting parties in carrying out the terms of this agreement. Such consultation may include but not be limited to:

- Written correspondence
- Conference calls
- Face-to-face meetings
- Field visits.

II. Planning and Compliance Preparation

A. Foundation/NPS

1. Consistent with the provisions of the 2008 Nationwide PA, the Foundation will prepare documentation for the actions listed in Appendix C, Section 1 (“Generalized Development Plan”) using the “Assessment of Actions Having an Effect on Cultural Resources” form (also called the Assessment of Effect form). All forms will be reviewed by NPS cultural resource advisors who meet the professional qualifications set forth in the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation in the fields of archeology, history, historic landscape architecture, and historic architecture.

2. Actions that meet the criteria for the Streamlined Review Process, found in Stipulation III.C of the 2008 Nationwide PA, will require no further review. NPS will submit Assessment of Effect forms to the SHPO to document actions that NPS considers to meet the criteria for the Streamlined Review Process, found in Stipulation III.C of the 2008 Nationwide PA. If the criteria for the Streamlined Review Process are not met, the NPS will submit the assessment forms to the SHPO for review and comment.
3. The Foundation will develop plans and specifications for implementing the preferred alternative compatible with the historic structures, contributing landscapes, landscape features, and archeological resources of Ferry Farm and consistent with the recommended approaches to preserving its historic setting; and will provide the NPS—who in turn will supply the other signatories—with copies of design plans for review.
4. If the NPS determines that the proposed improvements may alter the qualities that make a contributing structure, landscape feature, or archeological site significant, the Foundation will prepare design alternatives and/or landscape treatment plans to avoid, minimize, or mitigate the project's adverse effects for NPS for approval and to the other signatories for review and comment prior to implementation.

B. Identification, Evaluation and Treatment of Archaeological Sites

1. Although the archeological resources associated with George Washington's occupation of the National Historic Landmark property contribute to its landmark status, other resources might be identified that expand the landmark's boundaries. If the NPS determines in consultation with the other signatories that further efforts are needed to identify archeological sites, the Foundation shall ensure that an archeological testing program is developed and submitted to NPS for approval and to the SHPO and other concurring parties for review and comment prior to implementation. Such inventory work shall conform to the standards of National Park Service Director's Order No. 28,

Cultural Resource Management Guideline, chapter 6, sec. 2 (“Evaluation and Identification”), including the listed standard document types: Archeological Overview and Assessment, Archeological Identification Study, Archeological Evaluation Study.

2. Prior to affecting any potentially eligible archeological resource, the Foundation will develop a testing program of sufficient intensity to provide an evaluation of eligibility for the National Register of Historic Places (NRHP), as confirmed by NPS in consultation with the SHPO and with the City of Fredericksburg, the Virginia Council on Indians (VCI), and the Catawba Indian Nation (CIN), following the regulations outlined in 36 CFR Part 800.4(c).
3. If as a result of the testing program, archeological resources are identified that are eligible for the NRHP, the Foundation shall develop a plan sufficient for their avoidance, protection, recovery of information or destruction without data recovery, as confirmed by NPS in consultation with the SHPO and with the City of Fredericksburg, the VCI, and the CIN. NPS shall submit the plan to the SHPO and other consulting parties for review and comment prior to implementation.
4. All data recovery plans prepared under the terms of this agreement shall include the following elements:
 - a) Information on the archeological property or properties where data recovery is to be carried out, and the context in which such properties are eligible for the National Register;
 - b) Information on any property, properties, or portions of properties that will be destroyed without data recovery;
 - c) Discussion of the research questions to be addressed through the data recovery with an explanation/ justification of their relevance and importance;

- d) Description of the recovery methods to be used, with an explanation of their pertinence to the research questions;
 - e) Information on arrangements for any regular progress reports or meetings to keep the other signatories and the City of Fredericksburg, the VCI, and the CIN up to date on the course of the work. The plan should contain the expected timetable for excavation, analysis and preparation of the final report.
5. In consultation with the other signatories and the City of Fredericksburg, the VCI, and the CIN, the Foundation shall prepare a Research Design outlining the overall goals and methods for archeology across the entire National Historic Landmark property.
 6. In consultation with the other signatories and the City of Fredericksburg, the VCI, and the CIN, the Foundation shall prepare and submit for NPS review an annual Scope of Work detailing each forthcoming year's proposed archeological undertakings, prior to seeking NPS approval of those undertakings. The Scope of Work shall place the proposed undertakings in the context of the overall Research Design and/or of discoveries and new information that may suggest modification of the Design. The scope of work shall be submitted no later than January 15 of each year.
 7. In consultation with the other signatories and the City of Fredericksburg, the VCI, and the CIN, the Foundation at the conclusion of each work year shall submit a summary of the work accomplished and a preliminary assessment of results (such as they are known) of from 3-5 pages. This "Interim Technical Report" will be due January 15 of each year. The Scope of Work for the following year will not be reviewed and approved without submission of the "Interim Technical Report."
 9. Because of the expense and complexity of the archeological work at Ferry Farm, the Foundation shall

be granted two years to complete and submit to the NPS a Monograph Technical Report defining the results of each year's archeological work. The first Technical Report under terms of this agreement will be for the work year 2010 and will be due by April 1, 2012; the second Technical Report, for 2011, will be due April 1, 2013; each subsequent Technical Report will be due April 1 two years after the year being reported. Reasonable requests for extensions may be granted at the discretion of the NPS.

C. Identification, Evaluation and Treatment of Cultural Landscapes

1. If the NPS determines in consultation with the SHPO that further efforts are needed to identify cultural landscapes, the Foundation shall ensure that an identification effort is developed in consultation with the NPS and the SHPO. Prior to affecting any potentially eligible cultural landscapes, the Foundation will develop a report of sufficient intensity to provide an evaluation of eligibility for the National Register of Historic Places by NPS in consultation with the SHPO, following the regulations outlined in 36 CFR Part 800.4(c).
2. If the NPS determines that the proposed improvements may alter the qualities that make a contributing structure, landscape or landscape feature significant, the Foundation will prepare design alternatives and/or landscape treatment plans to avoid, minimize, or mitigate the project's adverse effects. The alternatives—including the preferred alternative—shall be submitted to the NPS for approval and to the SHPO for comment and approval and other consulting parties for comment prior to implementation.
3. If as a result of the identification efforts, cultural landscapes are identified that are eligible for the NRHP, the Foundation shall develop a plan for their avoidance, protection, and recovery of information in consultation with the NPS, the SHPO, and other consulting parties. The plan shall be submitted to NPS for approval and to the SHPO and other consulting parties for review and comment prior to implementation.

D. Identification, Evaluation and Treatment of Architectural Resources

1. If the NPS determines that further efforts are needed to identify architectural resources, the Foundation shall ensure that an identification effort is developed in consultation with the NPS and the SHPO. Prior to affecting any potentially eligible structure, the Foundation will develop a report of sufficient detail to provide an evaluation of eligibility for the NRHP by NPS in consultation with the SHPO, following the regulations outlined in 36 CFR Part 800.4(c).
2. If the NPS determines that the proposed improvements may alter the qualities that make a contributing structure significant, the Foundation will prepare design alternatives and/or landscape treatment plans to avoid, minimize, or mitigate the project's adverse effects. The alternatives—including the preferred alternative—shall be submitted to the NPS for approval and to the SHPO and other consulting parties for review and comment prior to implementation.
3. If as a result of the identification efforts, architectural resources are identified that are eligible for the NRHP, the Foundation shall develop a plan for their preservation, avoidance, protection, and recovery of information. The plan shall be submitted to the NPS for approval and to the SHPO and other consulting parties prior to implementation.

E. Review of Documentation

All reports, plans, and proposals shall be submitted in both digital form and in hard copy, as stipulated below.

1. The Foundation shall submit to the NPS a single hard copy for each consulting party, two (2) copies for the SHPO, and five (5) copies for the NPS, of all plans, reports, and other items that by virtue of this contract must be distributed to consulting parties. The NPS will distribute copies to the SHPO and other consulting parties. The Foundation shall ensure that all comments shall be addressed in the final technical reports. In addition, the Foundation shall submit to the NPS and to the SHPO two copies of the approved final draft of all technical reports bound in a spiral binding and on acid free paper,

as well as a digital copy in Adobe Portable Document Format (PDF) to the SHPO for its archives.

2. Unless otherwise specified in this PA, the SHPO and other consulting parties shall have thirty (30) calendar days after receipt of any document distributed by the NPS for review and comment. Failure to comment within this time period shall be construed as agreement with the document's findings, conclusions, and/or recommendations.
 3. The NPS will have a total sixty (60) calendar days after the distribution of documents to consolidate the comments of the SHPO and other consulting parties and render its own judgment as to the appropriateness of a proposed action with respect to the terms of the easement held by the Federal government.
- F. Curation of all archeological materials and appropriate field and research notes, maps, drawings and photographic records collected as part of this PA will be cared for in accordance with the requirements of 36 CFR Part 79, *Curation of Federally Owned and Administered Archeological Collections* and the *National Park Service Museum Handbook*.
- G. Professional Qualifications
1. All archeological work will be conducted by or under the direct supervision of a qualified archeologist who meets, at a minimum, the qualifications set forth in the Secretary of the Interior's *Professional Qualifications Standards* (48 FR 44 738-9).
 2. Work concerning historic structures and districts will be carried out by or under the supervision of a qualified historical architect, architectural conservator, or architectural historian or historians who meets, at a minimum the qualifications set forth in the Secretary of the Interior's *Professional Qualifications Standards* (48 FR 44738-9).
 3. Work concerning rural historic landscapes will be carried out by or under the supervision of a qualified landscape historian or landscape architect, and in accordance with the applicable

guidelines set forth in the National Register Bulletin 30 (*Guidelines for Evaluating and Documenting Rural Historic Landscapes*).

H. Reporting Standards

1. All archeological studies, resulting from this PA, including data recovery plan(s), shall be consistent with the *Secretary of the Interior's Standards and Guidelines for Archeological Documentation* (48 FR 4434-37), the Director's Order 28, Technical Guidelines, and the SHPO's *Guidelines for Conducting Cultural Resource Survey in Virginia: Additional Guidance for the Implementation of the Federal Standards Entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44742, September 29, 1983) 1999, rev. 2003, and shall take into account the ACHP's Section 106 Archaeology Guidance (June 2007) and *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (1999; updated 2002), or subsequent revisions or replacements thereof).
2. All historical and architectural studies resulting from the PA shall be consistent with pertinent standards and guidelines of the Secretary of the Interior, including as applicable the Secretary of the Interior's *Standards and Guidelines for Historical Documentation* (48 FR 44728-30) and for *Architectural and Engineering Documentation* (48 FR 44730-34).

III. Project Coordination and Implementation

- A. The NPS will coordinate the Section 106 review activities of all federal agencies that participate in the actions associated with the development and preservation of Ferry Farm.
- B. To coordinate compliance with project contracting, the Foundation will submit to the NPS the Assessment of Effect forms for review and submission to the SHPO to document actions that Foundation and NPS consider to meet the criteria for streamlined review found in Stipulation III.C of the 1995 Nationwide PA that will require no further review. If the criteria for streamlined review are not met, the Foundation will prepare and the NPS will submit the Assessment of Effect forms to the SHPO for review and comment.

IV. Report Requirements

- A. The Foundation shall ensure that any documentation pertaining to activities carried out pursuant to this agreement is provided to the NPS for distribution to the signatories in draft and final format, as appropriate. Consulting parties will be notified of the status of the documentation and will be provided copies upon request.
- B. The NPS shall ensure that decisions regarding the dissemination of information generated as a result of carrying out the terms of this agreement are made in accordance with Section 304 of the NHPA and the NPS *Bulletin 29: Guidelines for Restricting Information About Historic and Prehistoric Resources* 1990. When the information in question has been developed in the course of an agency's compliance with Section 106 or 110(f), the Secretary shall consult with the ACHP in reaching determinations under subsections (a) and (b).

V. Monitoring of Performance under the Agreement

A. Annual Report

1. On or before December 31 of each year until the NPS determines that the terms of this PA have been fulfilled and so notifies the other consulting parties, the Foundation will prepare and provide an annual status report to all parties to this agreement, addressing:
 - Status of project implementation
 - Progress in work
 - Coordination of work with planning and construction schedules
 - Any problems or unexpected issues encountered during the year, and
 - Any proposed changes to this agreement.
2. The Foundation shall ensure that its annual report is made available for public inspection, that potentially interested members of the public are made aware of its availability, and that interested members of the public are invited to provide comments. The method and media for public access will be determined in consultation with the NPS and SHPO, but will minimally include posting on both the Foundation and NPS websites.
3. The NPS shall review the annual status report and any comments it receives from the public and will provide comments to the parties to this agreement. Based on this review any party to this agreement may request that the parties meet to facilitate review and comment, to resolve questions or to resolve adverse comments.

4. Based on this review, the signatories will consult to determine whether this PA shall continue in force, be amended, or be terminated.
- B. The SHPO may monitor activities carried out pursuant to this PA, and the ACHP may review such activities if so requested. The NPS and Foundation will cooperate with the other signatories in carrying out their monitoring and review responsibilities.

VI. Unanticipated Discoveries

- A. In the event that a previously unidentified archeological resource is discovered during ground disturbing activities, the Foundation will immediately notify the NPS, which shall immediately notify the SHPO, the City of Fredericksburg, the VCI, and the CIN. All construction work involving subsurface disturbance will be halted in the area of the resource and in the surrounding area where further subsurface materials can reasonably be expected to occur. Work in areas not associated with the discovery may continue without interruption, unless the NPS or SHPO deems that the method or nature of the work poses an unforeseen risk to historic resources. The NPS and the SHPO, or an archeologist approved by them, immediately will inspect the work site and determine the area and the nature of the affected archeological property. Within two working days of the original notification of discovery, the NPS in consultation with the SHPO and consulting parties will determine the NRHP eligibility of the resource.

If, in consultation with the other signatories and the City of Fredericksburg, the VCI, and the CIN, the resource is determined to meet NRHP Criteria (36 CFR Part 60.6), the NPS shall ensure compliance with Section 800.13 of the ACHP's regulations. Work in the affected area shall not proceed until either (a) the development or implementation of appropriate data recovery or other recommended mitigation procedures, or (b) the determination is made that the located archeological resource(s) is not eligible for inclusion on the NRHP.

The Foundation shall make all reasonable efforts to avoid disturbing gravesites, including those containing Native American human remains and associated funerary artifacts. The Foundation shall treat all human remains in a manner consistent with the ACHP's *Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects* (February 23, 2007; <http://www.achp.gov/docs/hrpolicy0207.pdf>). The Foundation shall take into account the Commonwealth of Virginia's Regulations Governing Permits for the Archaeological Removal of Human Remains (Virginia Register 390-01-02) found in the Code of Virginia

(10.1-2305 et seq., Virginia Antiquities Act). If removal is proposed, the Foundation shall apply for a permit from the SHPO for the removal of human remains in accordance with the regulations stated above.

The Parties to this PA recognize that culturally significant objects, sites, and human remains may be encountered, and that these may be subject to the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA). If determined necessary by the NPS and the other signatories and the City of Fredericksburg, the VCI, and the CIN, the parties to this agreement shall execute an addendum to this agreement that describe procedures and processes for complying with the regulations governing the implementation of NAGPRA as it relates to this project.

VII. Dispute Resolution

- A. Should any signatory to this PA object to any action carried out or proposed by the Foundation or NPS with respect to implementation of this agreement, the NPS will consult with the objecting party to resolve the objection.
- B. If after initiating such consultation, the NPS determines that the objection cannot be resolved through consultation, the NPS shall forward all documentation relevant to the objection to the ACHP, including the proposed response to the objection.
- C. Within forty-five (45) days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options:
 1. Advise the NPS that the ACHP concurs with the proposed response to the objection, whereupon the NPS will respond to the objection accordingly;
 2. Provide the NPS with recommendations, which the Federal agency shall take into account in reaching a final decision regarding its response to the objections; or
 3. Notify the NPS that the objection will be referred for ACHP comment pursuant to Section 110(1) of the National Historic Preservation Act and 36 CFR Part 800.7(c), and proceed to refer the objection for comment. Any ACHP comment rendered pursuant to this stipulation shall be understood to apply only to the subject of the objection; all other responsibilities of the parties stipulated in agreement shall remain unchanged.

- D. Should the ACHP not exercise one of the above options within forty-five (45) days after receipt of all pertinent documentation, the NPS may assume the ACHP's concurrence in its proposed response to the objection.
- E. At any time during implementation of the measures stipulated in this agreement, should an objection pertaining to this agreement be raised by a member of the public, the party to this agreement receiving the objection shall notify the other parties to this agreement and the NPS will take the objection into account, consulting with the objector and, should the objector so request, with any of the parties to this agreement to resolve the objection.

VIII. Amending the Agreement

Any signatory to this PA may propose to the NPS that the PA be amended, whereupon the NPS will consult with the other parties to this PA to consider such an amendment. All signatories (NPS and the SHPO) to the PA must agree to the proposed amendment in accordance with 800.5(e) (5).

IX. Terminating the Agreement

- A. If the NPS determines that it cannot implement the terms of this PA, or if the SHPO determines that the agreement is not being properly implemented, the NPS or the SHPO may propose to the other parties that it be terminated.
- B. If the Foundation determines that it cannot implement the terms of this PA and thus proposes termination of the agreement, the NPS will consider prior approvals given under the terms of the PA that have not been implemented to be revoked—requiring reconsideration at such a time and in such a form that the parties can again come to agreement upon a process for review.
- C. Termination shall include the submission of any outstanding technical reports on any work done up to and including the date of termination.
- D. A party proposing to terminate this agreement shall so notify all parties to the agreement, explaining the reasons for termination and affording them at least thirty (30) days to consult and seek alternatives to termination. The parties shall then consult.

- E. Should such consultation fail and the agreement be terminated, the NPS will comply with the 2008 Nationwide PA and 36 CFR Part 800.3 through 800.6 with regard to individual actions covered by this PA.
- F. It is understood that the Conservation Easement over Ferry Farm and other agreements governing the management of and operations on the property shall remain in effect irrespective of the status of this PA *vis-à-vis* termination.
- G. The NPS shall notify the City of Fredericksburg, the VCI, and the CIN in the event that any modifications of the terms of this Programmatic Agreement are proposed by the NPS, the Foundation, or the SHPO.

X. Duration of the Agreement

This PA will continue in full force and effect for five years after the date of the last signature. At any time in the sixth-month period prior to such date, the NPS may request the signatories to consider an extension or modification of this agreement. No extension or modification will be effective unless all parties to the PA have agreed with it in writing.

Execution and implementation of this PA evidences that the NPS has satisfied its Section 106 responsibilities for all actions of the undertaking.

ADDENDUM

Archeological Investigations at Locations of Proposed Undertakings

1. Locations of documented substantial ground disturbance: In locations not subject to prior archeological survey work but where substantial and destructive prior ground disturbance can be documented, within a proposed undertaking's defined Area of Potential Effect (APE) for direct effects, no additional investigation will be required. Proposals to disturb such locations shall be considered as "exclusions" (i.e., reviewed through an assessment of action report, rather than through a full section-106 report) under the terms of the Programmatic Agreement, with the Foundation required only to submit such documentation for review as is needed to establish the extent and effect of disturbances that would preclude the presence of archeological resources.

Documentation of prior ground disturbance. The form of that documentation shall be determined by the NPS.

2. Locations where prior survey work has not identified archeological resources but where the extent of substantial, archeologically destructive ground disturbance is unknown: In locations where prior survey work has not suggested the presence of archeological resources within a proposed undertaking's APE, additional investigative work sufficient to definitively confirm the absence or presence of such resources shall precede the NPS review of the proposal. As is customarily required by the NPS and SHPO, testing will occur at twice the density performed in the initial survey—that is, at 25-foot intervals rather than 50-foot intervals—throughout the location proposed for disturbance. Assuming this additional testing does not suggest the presence of previously unknown archeological resources within the zone of construction, the NPS will approve the proposed work as it relates to archeological resources (bearing in mind that all such work must also be measured against the Secretary of the Interior's Standards relating to historic landscapes and architecture).

3. Locations where prior survey work has identified archeological resources: In locations where prior survey work has suggested the presence of archeological resources that in the estimation of the NPS may constitute eligible or contributing features, prior to the submission of plans for an undertaking, the Foundation will be required to complete a program of additional investigation and testing sufficient to, in the opinion of the NPS, determine the eligibility or contributing status of those resources. These investigations will be governed by a research design formulated by the Foundation in consultation with the NPS and its consulting parties and will be designed to identify and evaluate all archeological resources within the APE. Additional testing and investigation may include any or all of the following: documentary investigation, more intensive shovel-test-pit coverage, remote sensing, test units, and partial excavation. No decision on the appropriateness of development at a location possessing documented archeological resources will be made by the NPS until NPS and the SHPO concur as to the significance, eligibility, or contributing status (or not) of the location.

While Section 106 of the NHPA provides for a process of mitigation should impacts to historic resources be determined to be unavoidable, the parties to this agreement understand that the ultimate decision whether or not to adversely affect historic resources is governed by the terms of the easement for Ferry Farm. It is expressly understood that the NPS, as administrator of that easement, may determine after review by its staff advisors and the consulting parties to this agreement that any impact on an historic resource is

unacceptable under terms of that easement, should the impact substantially affect the values and resources that the easement is expressly intended to protect.

SIGNATURES

Department of the Interior, National Park Service

By: *Russell P. Smith* Date: 11/18/2010

Russell P. Smith
Superintendent, Fredericksburg and Spotsylvania National Military Park

George Washington Foundation

By: *William E. Garner* Date: 1/10/2011

William E. Garner, President

Virginia State Historic Preservation Officer

By: *Kathleen S. Kilpatrick* Date: 12/9/10

Kathleen S. Kilpatrick
Director, Virginia Department of Historic Resources

APPENDIX A

Programmatic Agreement Among the National Park Service (U.S. Dept. of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act, 2008

WHEREAS, the National Park Service (NPS) plans for, operates, manages, and administers the National Park System (System) and is responsible for identifying, preserving, maintaining, and interpreting the historic properties of the System unimpaired for the enjoyment of future generations in accordance with the 1916 National Park Service Organic Act, the NPS Management Policies (2006), and applicable NPS Directors Orders; and

WHEREAS, the operation, management, and administration of the System entail undertakings that may affect historic properties (as defined in 36 CFR Part 800), which are therefore subject to review under Sections 106, 110(f) and 111(a) of the National Historic Preservation Act as amended (NHPA) (16 USC 470 et seq.) and the regulations of the Advisory Council on Historic Preservation (ACHP) (36 CFR Part 800); and

WHEREAS, the NPS has established management policies, director's orders, standards, and technical information designed for the identification, evaluation, documentation, and treatment of historic properties consistent with the spirit and intent of the NHPA; and

WHEREAS, the NPS has a qualified staff of cultural resource specialists to carry out programs for historic properties; and

WHEREAS, the purpose of this Programmatic Agreement (PA) is to establish a program for compliance with Section 106 of the NHPA and set forth a streamlined process when agreed upon criteria are met and procedures are followed; and

WHEREAS, signature and implementation of this PA does not invalidate park-, Region-, or project-specific memoranda of agreement (MOA) or programmatic agreements negotiated for Section 106 purposes prior to the effective date of this PA; and

WHEREAS, Federally recognized Indian Tribes are recognized by the U.S. government as sovereign nations in treaties and as unique political entities in a government-to-government relationship with the United States; and

WHEREAS, the NPS has conducted a series of "listening" meetings with Indian Tribes, has requested the input of a number of Native Advisors in the process of preparing this PA, and has held consultation meetings with Federally recognized Indian Tribes, Native Hawaiian organizations, and other parties on the content of the PA; and

WHEREAS, 36 CFR Part 800.2 (c)(2)(i)(A) and (B) provide for consultation with Indian Tribes on the same basis as the State Historic Preservation Officer (SHPO) when an undertaking will occur on or affect historic properties on tribal lands; and

WHEREAS, in accordance with 36 CFR Part 800.14(b)(2)(iii), a PA shall take effect on tribal lands only when the designated representative of the tribe is a signatory to the agreement; and

WHEREAS, for those parks located partly or wholly within tribal lands, the NPS has invited the applicable Tribal Historic Preservation Officer (THPO) or Indian Tribe to sign this PA as an Invited Signatory; and

WHEREAS, the NPS has consulted with the NCSHPO and the ACHP regarding ways to ensure that NPS operation, management, and administration of the Parks provide for management of the Parks' historic properties in accordance with the intent of NPS policies, director's orders and Sections 106, 110, 111, and 112 of the NHPA.

NOW, THEREFORE, the NPS, the NCSHPO, the ACHP, and the signatory tribes mutually agree that the NPS will carry out its Section 106 responsibilities with respect to operation, management, and administration of the Parks in accordance with the following stipulations.

PURPOSE AND NEED

NPS park operations, management, and administration require a large number of low-impact or repetitive activities on a daily basis that have the potential to affect properties listed in or determined eligible for the National Register of Historic Places and require consultation under Section 106. This PA provides an efficient process for compliance with Section 106 for daily NPS park operations, management, and administration activities. It establishes two processes for Section 106 review: a "streamlined" review process for designated undertakings that meet established criteria and a "standard" review process for all other undertakings. This PA also provides programmatic procedures and guidance for other activities related to the Section 106 compliance process, including identification of resources, consultation, and planning.

The NPS shall ensure the following measures are implemented.

I. RESPONSIBILITIES, QUALIFICATIONS, AND TRAINING

The following sections list the responsibilities and required qualifications for those individuals responsible for implementing this PA.

A. Responsibilities

1. Director, National Park Service

The Director has policy oversight responsibility for the agency's historic preservation program. The Director, through the Deputy Director for Operations, executes this PA for the NPS and provides policy level oversight within the NPS to ensure that stipulations of the PA are met.

2. Associate Director for Cultural Resources

The Associate Director for Cultural Resources (ADCR) provides national leadership for policy implementation through establishing standards and guidance for managing cultural resources within the Parks. The ADCR works with the NPS regions and parks to ensure and support compliance with the stipulations of this PA and provides accountability to the signatories of this PA with regard to its implementation. The ADCR is responsible for working with Regions and Parks to develop and fund training needs related to Section 106 and the implementation of the PA. The ADCR in cooperation with the regions and parks, is responsible for issuing a guidance document for this agreement within 12 months of its execution. At the time of execution of this PA, the ADCR also holds the title of Federal Preservation Officer (FPO).

3. Regional Directors

The Regional Director is the line manager for all Superintendents within his/her region. The Regional Director is responsible for policy oversight, strategic planning, and direction for parks and programs within the region and reports to the Director through the NPS Deputy Director for Operations. Review and support of Park and Superintendent implementation of this PA and training to achieve Section 106 compliance is the responsibility of the Regional Director.

4. Regional Section 106 Coordinators

The Regional Section 106 Coordinators work with parks and other NPS offices to provide support for Section 106 compliance and implementation of this PA. The Regional Section 106 Coordinators provide guidance materials and technical assistance for implementing the PA and assist the parks to meet the training, reporting, and consultation requirements of the PA.

5. Superintendents

Superintendents are the responsible agency officials as defined in 36 CFR Part 800.2(a) for purposes of Section 106 compliance and the implementation of this PA. Each Superintendent shall do the following within his/her park:

- a. Designate a Park Section 106 Coordinator and a Cultural Resource Management (CRM) Team meeting the necessary qualifications;
- b. Develop and maintain relationships with Federally recognized Indian Tribal governments and Native Hawaiian organizations (if applicable);
- c. Develop and maintain relationships with SHPOs/THPOs;
- d. Ensure early coordination among the Section 106 Coordinator, the CRM Team, and other park and regional staff, concessionaires, park partners, neighboring communities, groups affiliated with park resources, and others in the planning of projects and activities that may affect historic properties;
- e. Ensure that Section 106 consultation with the SHPO/THPO and other consulting parties is initiated early in the planning stages of any given undertaking, when the widest feasible range of alternatives is available for consideration;
- f. Ensure that the Park Section 106 Coordinator, CRM Team Members and the park cultural resources staff receives the NHPA training needed to carry out their responsibilities. Provide opportunities for other involved staff to receive NHPA training as funding and opportunities permit.

6. Park Section 106 Coordinator

The Park Section 106 coordinator provides day-to-day staff support for Section 106 activities and serves as liaison among park personnel, the NPS Regional Office, NPS Centers, and others involved in undertakings. The coordinator makes recommendations to the Superintendent regarding the appropriate course of action under this PA, including whether a project constitutes a Section 106 undertaking.

7. Cultural Resource Management (CRM) Team

The CRM Team shall provide expertise and technical advice to the Superintendent and the Park Section 106 Coordinator for purposes of Section 106 compliance and implementation of this PA.

B. Qualifications

1. Park Section 106 Coordinator

The Superintendent shall designate at least one (1) person to act as the park's Section 106 Coordinator, whose Section 106 responsibilities are specified, as appropriate. The designee may be chosen from the park staff, other NPS parks, NPS archeological and preservation centers, and the NPS Regional Office. The Park Section 106 Coordinator

shall have an appropriate combination of professional training and/or experience to effectively carry out the responsibilities of the position.

2. Cultural Resource Management (CRM) Team

The Superintendent shall designate a CRM Team with expertise to fulfill and implement the requirements of this PA, whose Section 106 responsibilities are specified, as appropriate.

a. Subject matter experts chosen must be appropriate to the resource types found in the park. Therefore, the number of individuals who comprise the CRM Team is not static and will be appropriate to include all necessary disciplines. Multi-disciplinary reviews of proposed undertakings are recommended.

b. CRM Team members may be on the park staff or in other parks, or from NPS Regional Offices, NPS Centers, Federally recognized Indian Tribes, Native Hawaiian organizations, or elsewhere in the public or private sector.

c. CRM Team members who are federal employees shall meet the qualifications for the applicable discipline as defined in Appendix E to NPS-28: Cultural Resource Management Guideline. CRM Team members who are representing Federally recognized Indian Tribes may be traditional cultural authorities, elders, and others experienced in the preservation of tribal culture. All other CRM team members, who are not federal employees or representing a Federally recognized Indian Tribe, must meet the Professional Qualification Standards in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

C. Training

Periodic training on Section 106 compliance issues and the provisions of this PA is needed to maintain an understanding of the requirements of each. Such training may be accessed through the NPS, the ACHP, SHPOs/THPOs, Indian Tribes, Native Hawaiian organizations, other Federal or state agencies or private industry. Training may be in a classroom setting, electronic media, meetings, or other formats that allow for the conveyance of information. The NPS Washington Office, in consultation with the NPS parks, regions, and training centers, will work with the ACHP and NCSHPO to establish options for training in accordance with this PA, within 12 months from the time of execution of this PA.

1. All Superintendents and Section 106 coordinators will be notified of the opportunity to receive training on the provisions of this programmatic agreement once it has been made available by the NPS Washington Office. The NPS ADCR will work with the Regional 106 coordinators to accomplish this training throughout the Regions and parks within 12 months of its availability.

2. Superintendents will report on Section 106 training received by Superintendents and park staff as part of the biennial report (Section VIII.B of this agreement).

II. CONSULTATION

A. Consultation with Federally Recognized Indian Tribes and, THPOs, and Native Hawaiian Organizations Government-to-government consultation with Federally recognized Indian Tribes and consultation with Native Hawaiian organizations shall occur at the Superintendent level and be initiated during planning and prior to undertaking an activity, program or project that may affect historic properties of significance to Federally recognized Indian tribes or Native Hawaiian organizations. Maintaining an on-going consultative relationship with THPOs and/or staff of Federally recognized Indian Tribes and Native Hawaiian organizations is essential.

1. Consultation on Undertakings off Tribal Lands

Superintendents shall identify, compile a list of, and consult with Federally recognized Indian Tribes, THPOs and Native Hawaiians that are known to have aboriginal lands within the park boundaries, assert an interest in historic properties within the park boundaries, or have lands or interest in lands adjacent to the park.

a. Such consultation will be in accordance with 36 CFR Part 800.2(c)(2)(ii), NPS Director's Order 75A: Public Engagement and Public Involvement, and with Sections III and IV of this PA.

b. Each Superintendent, with the assistance of park and Regional Office ethnographers, will be responsible for identifying aboriginal lands within the park boundary, working cooperatively with the appropriate Federally recognized Indian Tribes and Native Hawaiian organizations.

c. Superintendents, in consultation with the Park Section 106 Coordinator and the CRM Team, shall establish a process and develop consultation agreements, where appropriate, that provide for early coordination between the park and Federally recognized Indian tribes, THPOs, and/or Native Hawaiian organizations in identification and evaluation of historic properties and the planning of projects and activities that may affect historic properties.

d. Identification and evaluation of historic properties on aboriginal lands must be based upon consultation with the appropriate traditionally associated communities.

2. Consultation on Undertakings on Tribal Lands

For those undertakings that either occur on tribal lands or will otherwise have the potential to affect historic properties on tribal lands, including cumulative impacts

from collectively significant actions taking place over a period of time, the Superintendent shall consult with that tribe on the same basis as he or she consults with the SHPO.

a. Where the Tribe has assumed the SHPO's responsibility for Section 106 pursuant to Section 101(d)(2) of the NHPA, the Superintendent shall consult with the THPO in lieu of the SHPO, except as provided for in Section 101(d)(2)(D)(iii).

b. Where the Tribe has not assumed the SHPO's responsibility for Section 106, the Superintendent shall consult with the Tribe's designated representatives in addition to and on the same basis as the SHPO. The Tribe shall have the same rights of consultation and concurrence as the SHPO.

3. Applicability of this PA on Tribal Lands

When a park is located partly or wholly within the boundaries of tribal lands, and the tribe has not signed this PA as an Invited Signatory, any undertaking that may occur on those tribal lands shall require consultation with the Tribe and/or THPO in accordance with 36 CFR Part 800, and the provisions of this PA are not applicable. A tribe may sign this PA by written notification to the Director of such intent, signed by the THPO, Indian tribe, or a designated representative of the tribe. Once such a written and signed notification is received by the Director, the provisions of this PA will be applicable to undertakings occurring on those lands where a park is located partly or wholly within the boundaries of that particular tribe's tribal lands.

4. Development of Agreements to Facilitate Government-to-Government Consultation with Federally recognized Indian Tribes and Consultation with Native Hawaiian Organizations

Development of consultation protocols, memoranda of agreement and programmatic agreements is encouraged. Such agreements may be negotiated between Superintendents and Federally recognized Indian Tribes, THPOs, or Native Hawaiian organizations and may be independent of or supplement this PA. For example, such agreements may be specific to a project, plan, or park activity, or may set forth specific consultation protocols between the park and a specific tribe or group of Native peoples. Superintendents will provide an informational copy of all agreements to the Regional Section 106 Coordinator and to the ACHP and appropriate SHPO/THPO in accordance with 36 CFR Part 800.2(c)(2)(ii)(E).

B. Consultation with SHPOs

Consultation with SHPOs on projects reviewed in accordance with the Standard Review Process will occur in accordance with the procedures set forth in Section IV of this PA.

Consultation with SHPOs on implementation of this PA will occur biennially in accordance with Section VIII of this PA.

C. Consultation with Local Governments and Applicants for Federal Assistance, Licenses, Permits, and Other Approvals

Where appropriate, the Superintendent shall actively seek the views and comments of local governments and certified local governments. Those seeking Federal assistance, licenses, permits, or other approvals are entitled to participate as a consulting party as defined in 36 CFR Part 800.2(c)(4) and will be consulted, as applicable.

D. Consultation with the Public

Superintendents will consult with interested members of the public.

E. General Consultation Provisions

1. Section 110 Inventory of Historic Properties

The parks implement a program to identify, evaluate, and, when appropriate, nominate historic properties to the National Register of Historic Places in accordance with Section 110(a)(2)(d) of the NHPA. Research and testing of all types of historic properties for purposes of identification and evaluation must be limited to the minimum necessary to obtain the required inventory and evaluative information. Early coordination on the identification and evaluation of historic properties should be undertaken with Federally recognized Indian Tribes or Native Hawaiian organizations, as appropriate, utilizing tribal knowledge and expertise wherever applicable. Knowledge and data from appropriate sources of expertise should be utilized, including SHPOs, local governments, Indian Tribes, Pacific Islanders, and national and local professional and scientific organizations. Inventory records should be periodically reviewed and updated, as necessary, to ensure data on historic properties, including condition information, is current, and any previous evaluations of significance remain accurate.

2. Information Sharing: Historic Property Inventories

Parks, NPS Regional Offices, NPS Centers, and SHPOs will share information with each other regarding inventories of historic properties and historic contexts developed, as well as other reports and research results related to historic properties in the parks, whenever such studies become available. In addition, parks, NPS Regional Offices, and NPS Centers will make such information available to interested Federally recognized Indian Tribes, THPOs, and Native Hawaiian organizations. Federally recognized Indian Tribes who are signatories to this PA will, likewise, make such information available to NPS parks and Regional Offices, as appropriate. Information will be shared with the understanding that sensitive information will be withheld by the recipient of the

information from public disclosure pursuant to Section 304 of NHPA and other applicable laws. Procedures for information sharing and format for information (i.e. electronic, hard copy, etc.) should be agreed upon between the parties.

3. Notification of Park Section 106 Coordinator

The National Park Service will provide contact information on Section 106 coordinators to Indian Tribes, SHPOs/THPOs, and Native Hawaiian organizations for each park through the Regional Office from the Regional 106 Coordinator within six months of this PA and updated biennially.

4. Review and comment on guidance and training documents

The ADCR will consult with the ACHP and NCSHPO in the development of training materials and guidance for this PA.

F. Development of Agreements to Facilitate Consultation

Development of consultation protocols, memoranda of agreement, and programmatic agreements is encouraged. Such agreements may be negotiated between Superintendents and organizations or governments and may be independent of or supplement this PA. For example, such agreements may be specific to a project, plan, or park activity, or may set forth specific consultation protocols between the park and a specific group, state, or local government. Superintendents will provide an informational copy of all agreements to the Regional Section 106 Coordinator and to the ACHP and appropriate SHPO/THPO in accordance with 36 CFR Part 800.2(c)(2)(ii)(E).

III. STREAMLINED REVIEW PROCESS

Where the Park Section 106 Coordinator determines the following criteria are met for a proposed undertaking, no further consultation is required unless otherwise specifically requested by the SHPO/THPO, Federally recognized Indian Tribe(s) or Native Hawaiian organization(s), or the ACHP.

A. Criteria for Using the Streamlined Review Process

All of the following criteria must be met in order to use the Streamlined Review Process:

1. The proposed undertaking must be an activity eligible for streamlined review, listed in Section III.C of this PA. These undertakings shall be known as "streamlined activities" for purposes of reference and replace the term "nationwide programmatic exclusions" set forth in the 1995 Programmatic Agreement between the NPS, the ACHP, and the NCSHPO; and

2. Identification and evaluation of all types of historic properties within the project area of potential effect (APE) must have been previously undertaken, sufficient to assess effects on those resources (with the exception of V.C (16)). Identification and evaluation of historic properties of religious and cultural significance to Indian tribes and Native Hawaiian organizations must be based upon consultation with those entities. All properties within the APE must have previously been evaluated for eligibility to the National Register of Historic Places and the SHPO/THPO must have concurred with the eligibility determination. Inventory records should be periodically reviewed and updated, as necessary, to ensure data on historic properties, including condition information, is current, and any previous evaluations of significance remain accurate; and

3. The Section 106 Coordinator, in consultation with appropriate members of the CRM Team must have reviewed the project and certified that the effects of the proposed undertaking on historic properties on or eligible for the National Register will not be adverse based on criteria in 36 CFR Part 800.5, including consideration of direct, indirect, and cumulative effects. The Effect Finding must be "No Historic Properties Affected" or "No Adverse Effect".

B. Streamlined Review Process

1. Evaluate Whether the Proposed Undertaking is Eligible for Streamlined Review: The Park Section 106 Coordinator, in consultation with appropriate members of the CRM Team, determines whether the proposed undertaking is an activity listed as an undertaking eligible for streamlined review in Section III.C of this PA. If not, compliance for the undertaking must be accomplished through the Standard Review Process, outlined in Section IV of this PA.

2. Identify the Undertaking's Area of Potential Effect (APE): The Park Section 106 Coordinator, in consultation with members of the CRM Team with expertise in the appropriate discipline(s), determines the project's APE, taking into account direct, indirect, and cumulative effects.

3. Identify Historic Properties within APE: The Park Section 106 Coordinator, in consultation with members of the CRM Team with expertise in the appropriate discipline(s), identifies the location, number, and significance of historic properties within the APE. If properties are located within the APE that have not yet been documented or evaluated for eligibility for the National Register of Historic Places, or if the SHPO/THPO has not yet concurred with the eligibility determination, compliance for the undertaking must be accomplished through the Standard Review Process, outlined in Section IV of this PA.

4. Evaluate Effect of Undertaking on Historic Properties in APE: The Park Section 106 Coordinator, in consultation with members of the CRM Team with expertise in the appropriate discipline(s), evaluates the effect of the proposed undertaking and cumulative

effects on historic properties, applying the Criteria of Adverse Effect set forth in 36 CFR Part 800.5(a)(1).

5. Document Streamlined Review Process: If, after following steps one through four (1-4) listed above, the Park Section 106 Coordinator determines no historic properties are within the APE, or the proposed undertaking would result in a determination of "no historic properties affected" or "no adverse effect", no further consultation is required. The Park Section 106 Coordinator shall document the determination as follows:

a. The Streamlined Review process will be documented using the NPS "Assessment of Actions Having an Effect on Cultural Resources" form, or another appropriate format. Parks are encouraged to use Servicewide automated project planning and tracking systems, such as the NPS Planning, Environment and Public Comment (PEPC) system, to track and document Section 106 compliance activities.

b. Documentation will include the comments of each member of the CRM Team involved in the review process and the signature of the Superintendent. Electronic signatures are acceptable.

c. Documentation will be permanently retained by the Park Section 106 Coordinator for review by consulting parties and to facilitate the preparation of the Annual Report.

d. Annual Report: An annual report of all undertakings reviewed using the Streamlined Review process will be prepared by the Park Section 106 Coordinator, using existing and readily available data sources and reporting systems such as the NPS Planning, Environment and Public Comment (PEPC) system, for transmittal to the SHPO/THPO.

C. Undertakings Eligible for Streamlined Review

1. Preservation Maintenance and Repair of Historic Properties: The Streamlined Review Process is intended to be used for:

- Mitigation of wear and deterioration of a historic property to protect its condition without altering its historic character;
- Repairing when its condition warrants with the least degree of intervention including limited replacement in-kind;
- Replacing an entire feature in-kind when the level of deterioration or damage of materials precludes repair; and
- Stabilization to protect damaged materials or features from additional damage.

Use of the Streamlined Review Process is limited to actions for retaining and preserving, protecting and maintaining, and repairing and replacing in-kind, as necessary, materials and features, consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) and the accompanying guidelines. Emergency stabilization, including limited replacement of irreparably damaged features or materials and temporary measures that prevent further loss of historic material or that correct unsafe conditions until permanent repairs can be accomplished, may use the Streamlined Review Process. For archeological sites and cultural landscapes, the Streamlined Review Process may also be used for work to moderate, prevent, or arrest erosion. If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring. The Streamlined Review Process may be used for routine repairs necessary to continue use of a historic property, but it is not intended to apply to situations where there is a change in use or where a series of individual projects cumulatively results in the complete rehabilitation or restoration of a historic property. If an approved treatment plan exists for a given historic property (such as a historic structure report, cultural landscape report, or preservation maintenance plan), the proposed undertaking needs to be in accordance with that plan. This streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

- a. Removal of non-historic debris from an abandoned building.
- b. Cleaning and stabilizing of historic structures, features, fences, stone walls, plaques, and cannons using treatment methods that do not alter or cause damage to historic materials.
- c. Repainting in the same color as existing, or in similar colors or historic colors based upon an approved historic structure report, cultural landscape report, or a historic paint color analysis.
- d. Removal of non-historic, exotic species according to Integrated Pest Management principles when the species threatens cultural landscapes, archeological sites, or historic or prehistoric structures.
- e. Energy improvements limited to insulation in the attic or basement, and installation of weather stripping and caulking.
- f. In-kind repair and replacement of deteriorated pavement, including, but not limited to, asphalt, concrete, masonry unit pavers, brick, and stone on historic roads, paths, trails, parking areas, pullouts, etc.

- g. Repair or limited in-kind replacement of rotting floorboards, roof material, or siding. Limited in-kind replacement refers to the replacement of only those elements of the feature that are too deteriorated to enable repair, consistent with the Standards.
- h. In-kind replacement of existing gutters, broken or missing glass panes, retaining walls, and fences.

Rehabilitation and/or Minor Relocation of Existing Trails, Walks, Paths, and Sidewalks: The Streamlined Review Process may be used for undertakings proposed on existing non-historic trails, walks, paths, and/or sidewalks that are located within previously disturbed areas and do not exceed the depth of the previous disturbance. The Streamlined Review Process may also be used for undertakings proposed on existing historic trails, walks, paths, and/or sidewalks, provided that the proposed undertaking is conducted in accordance with an approved treatment plan (such as a historic structure report, cultural landscape report, or preservation maintenance plan). If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring.

This streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

- a. In-kind regrading, graveling, repaving, or other maintenance treatments of all existing trails, walks and paths within existing disturbed alignments.
- b. Minor realignment of trails, walks, and paths where the ground is previously disturbed as determined by a qualified archeologist.
- c. Changing the material or color of existing surfaces using materials that are recommended in an approved treatment plan or in keeping with the cultural landscape.
- d. Construction of water bars following the recommendations of an approved treatment plan or in keeping with the cultural landscape.

3. Repair/Resurfacing/Removal of Existing Roads, Trails, and Parking Areas:

The Streamlined Review Process may be used as follows:

- a. Existing roads, trails, parking areas, and associated features that have been determined not eligible for the National Register in consultation with the SHPO/THPO, may be repaired or resurfaced in-kind or in similar materials as long as the extent of the project, including staging areas, is contained within the existing surfaced areas. The repair or resurfacing cannot exceed the area of the existing road surface and cannot exceed the

depth of existing disturbance.

b. Existing roads, trails, parking areas, and associated features, that have been determined eligible for the National Register in consultation with the SHPO/THPO, may be repaired or resurfaced in-kind. The project, including staging areas, cannot exceed the area of the existing surface and cannot exceed the depth of existing disturbance.

c. Existing surfaced areas may be expanded or new surfaces constructed if the extent of new surfacing can be demonstrated to occur on land that has been disturbed by prior excavation or construction and has been shown not to contain buried historic properties. New or expanded surface may not be an addition to, or continuation of, existing surfaces that are listed in or eligible for the National Register and all project activities, including staging areas, must be located in non-historic areas to be eligible for streamlined review,

d. Existing surfaced areas may be removed if the surfaced area is not a historic property, it is not located within a historic property and all project activities, including staging areas, will occur on land that has been disturbed by prior excavation or construction and has been shown not to contain buried historic properties.

Health and Safety Activities:

The Streamlined Review Process may be used for health and safety activities that do not require the removal of original historic elements or alteration of the visual character of the property or area. If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring.

This streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

a. Sampling/testing historic fabric to determine hazardous content, e.g. lead paint, asbestos, radon.

b. Limited activities to mitigate health and safety problems that can be handled without removal of historic fabric, surface treatments, or features that are character-defining elements, or features within previously disturbed areas or areas inventoried and found not to contain historic properties.

c. Testing of soil and removal of soil adjacent to buried tanks, provided the project does not exceed the area of existing disturbance and does not exceed the depth of existing disturbance, as determined by a qualified archeologist.

- d. Removal of oil or septic tanks within previously disturbed areas or areas inventoried and found not to contain historic properties.
- e. Removal of HAZMAT materials within previously disturbed areas or areas inventoried and found not to contain historic properties.
- f. Safety activities related to black powder regulations.
- g. Replacement of septic tanks and systems in previously disturbed areas, or areas inventoried and found not to contain historic properties.
- h. Common pesticide treatments.
- i. Removal of both natural and anthropogenic surface debris following volcanic activity, tropical storms, hurricanes, tornados, or similar major weather events, provided removal methods do not include ground disturbance or otherwise cause damage to historic properties.

5. Routine Grounds Maintenance:

The Streamlined Review Process may be used for routine grounds maintenance activities. If an approved treatment plan exists for a given historic property (such as a historic structure report, cultural landscape report, or preservation maintenance plan), the proposed undertaking needs to be in accordance with that plan. If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring.

This streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

- a. Grass replanting in same locations with approved species.
- b. Woodland and woodlot management (including tree trimming, hazard tree removal, thinning, routine removal of exotic species that are not a significant component of a cultural landscape, stump grinding).
- c. Maintaining existing vegetation on earthworks, trimming trees adjacent to roadways and other historic roads and trails.
- d. Routine maintenance of gardens and vegetation within cultural landscapes with no changes in layout or design.

- e. Routine grass maintenance of cemeteries and tombstones with no tools that will damage the surfaces of stones (i.e. weed whips).
- f. Trimming of major specimen trees needed for tree health or to address critical health/safety conditions.
- g. Routine roadside and trail maintenance and cleanup with no ground disturbance.
- h. Planting of non-invasive plant species in non-historic areas.
- i. Removal of dead and downed vegetation using equipment and methods that do not introduce ground disturbance.
- j. Replacement of dead, downed, overgrown, or hazard trees, shrubs, or other vegetation with specimens of the same species.
- k. Replacement of invasive or exotic landscape plantings with similar non-invasive plants.
- l. Routine lawn mowing, leaf removal, watering, and fertilizing.
- m. Routine orchard maintenance and pruning.

6. Battlefield Preservation and Management:

The Streamlined Review Process may be used only if the park has approved planning documents (General Management Plan, cultural landscape report, treatment plan) that specify preservation and management protocols for the subject battlefield. If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring.

Consistent with that plan(s), activities include:

- a. Maintenance and preservation work limited to retaining, protecting, repairing, and replacing in-kind materials and features that contribute to the National Register significance of the battlefield landscape.
- b. Earthworks maintenance to prevent erosion and ensure preservation of existing profile, based on current and accepted practices identified in "Sustainable Military Earthworks Management" found on the NPS Cultural Landscape Currents website.

- c. Removal of hazard trees with no ground disturbance and with use of stump grinding provided the grinding is limited to the diameter of the stump and a depth of no greater than 6 inches.
- d. Repairing eroded or damaged sections of earthworks in-kind following archeological documentation and recordation in appropriate NPS inventory and management databases resulting in complete, accurate, and reliable records for those properties.
- e. Maintaining a healthy and sustainable vegetative cover.

7. Hazardous Fuel and Fire Management:

The Streamlined Review Process may be used only if the park has an approved fire management plan or forest management plan.

If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring. Following completion of activities under this section, post-burn inspection and monitoring should be conducted by a qualified archeologist to ensure no archeological sites were impacted or previously unknown sites revealed. Consistent with the approved fire management plan or forest management plan, this streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

- a. Removal of dead and downed vegetation, outside of historic districts, cultural landscapes, and archeological sites, using equipment and methods that do not introduce ground disturbance beyond documented natural or historic disturbance.
- b. Removal of dead and downed vegetation, as well as trees and brush located within historic properties, if the vegetation does not contribute to the significance of the historic property and equipment and methods are used that do not introduce ground disturbance beyond documented natural or historic disturbance.
- c. Forest management practices, including thinning of tree stands, outside of historic districts, cultural landscapes, and archeological sites, using equipment and methods that do not introduce ground disturbance beyond documented natural or historic disturbance.
- d. Restoration of existing fire line disturbances, such as hand lines, bulldozer lines, safety areas, helispots, and other operational areas.

e. Slope stabilization, to include reseeded with native seeds, replanting with native plants and/or grasses, placement of straw bales, wattles, and felling of dead trees when the root ball is left intact and in situ.

8. Installation of Environmental Monitoring Units:

The Streamlined Review Process may be used for the placement of small-scale, temporary or permanent monitoring units, such as weather stations, termite bait stations, water quality, air quality, or wildlife stations, in previously disturbed areas, as determined by a qualified archeologist, or areas inventoried and found not to contain historic properties. Borings must be limited to pipes less than 2 inches in diameter and surface samples to less than 12 inches in size and minimal in number.

9. Maintenance or Replacement of Non-Historic Utility Lines, Transmission Lines, and Fences:

If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring. This streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

- a. Maintenance or replacement of buried linear infrastructure in previously disturbed areas. The area of previous disturbance must be documented by a qualified archeologist and must coincide with the route of the infrastructure in its entirety.
- b. Replacement of non-historic materials, provided the undertaking will not impact adjacent or nearby historic properties and is not located in a historic property, or visible from an above-ground historic property.
- c. Maintenance or replacement of infrastructure, such as old water distribution systems, that has been determined to be not eligible for the National Register, in consultation with the SHPO/THPO.
- d. Maintenance of above-ground infrastructure.
- e. Replacement of above-ground infrastructure provided the undertaking is not located in a historic property or visible from an above-ground historic property.
- f. Enhancement of a wireless telecommunications facility, including the updating of mechanical equipment, provided the activities do not involve excavation nor any increase to the size of the existing facility.

10. Erection of Signs, Wayside Exhibits, and Memorial Plaques:

If an approved treatment plan exists for a given historic property (such as a historic structure report, cultural landscape report, or preservation maintenance plan), the proposed undertaking needs to be in accordance with that plan. If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring. This streamlined activity includes the following undertakings, as well as others that are comparable in scope, scale, and impact:

- a. Replacement of existing signage in the same location with similar style, scale and materials.
- b. New signs that meet NPS standards, e.g. at entrance to the park or related to the park's interpretive mission, provided the sign is not physically attached to a historic building, structure, or object (including trees) and the sign is to be located in previously disturbed areas or areas inventoried and found not to contain historic properties.
- c. Replacement of interpretive messages on existing signs, wayside exhibits, or memorial plaques.
- d. Small developments such as paved pads, benches, and other features for universal access to signs, wayside exhibits, and memorial plaques in previously disturbed areas or areas inventoried and found not to contain historic properties.
- e. Temporary signage for closures, repairs, detours, safety, hazards, etc. in previously disturbed areas or areas inventoried and found not to contain historic properties.
- f. Memorial plaques placed within established zones that allow for such placement.

11. Culvert Replacement: The Streamlined Review Process may be used when culvert replacement will occur within existing cut and fill profiles, and:

- a. The existing culvert and/or associated road, rail bed, or cultural landscape has been determined not eligible for the National Register, either individually or as a contributing element to a historic district or cultural landscape, in consultation with the SHPO/THPO; or
- b. The existing culvert is less than 50 years old.

12. Reburial of Human Remains and Other Cultural Items Subject to the Native American Graves Protection and Repatriation Act (NAGPRA):

The Streamlined Review Process may be used for the reburial of human remains and other cultural items subject to NAGPRA. The Streamlined Review Process may only be used when:

- a. The reburial is in previously disturbed areas and does not introduce ground disturbance beyond documented disturbance; or
- b. The reburial is in previously inventoried areas found to not contain historic properties. Any reburial in NPS-administered areas must be in conformance with NPS policies on cemeteries and burials including cultural resource policies.

13. Meeting Accessibility Standards in Historic Structures and Cultural Landscapes:

The Streamlined Review Process may only be used for the following undertakings intended to meet accessibility standards:

- a. Reconstruction or repair of existing wheel chair ramps and sloped walkways provided the undertaking does not exceed the width or depth of the area of previous disturbance.
- b. Upgrading restroom interiors in historic structures within existing room floor area to achieve accessibility, unless the historic features and/or fabric of the restroom contribute to the historic significance of the structure.

14. Mechanical, Electrical and Plumbing Systems:

The Streamlined Review Process may be used as follows for activities related to mechanical, electrical, and plumbing systems. Such systems may include HVAC systems, fire detection and suppression systems, surveillance systems, and other required system upgrades to keep park lands and properties functional and protected.

- a. Park areas, landscapes, buildings, and structures that have been determined not eligible for the National Register in consultation with the SHPO/THPO, may undergo installation of new systems or repair/upgrading of existing systems in accordance with the Streamlined Review Process.
- b. Properties that have been determined eligible for the National Register in consultation with the SHPO/THPO may undergo limited upgrading of mechanical, electrical, and plumbing systems. However, the Streamlined Review Process may not be used for the installation of new systems or complete replacement of these systems. If proposed activities include the removal of original historic elements or alter the visual character or the property's character-defining materials, features, and spaces, then the Streamlined Review Process may not be used.

c. If the project activities include ground disturbance, archeological monitoring may be appropriate throughout the ground disturbing activities, in accordance with any recommendation of the CRM Team. When monitoring is recommended, members of any appropriate Federally recognized Indian Tribes or Native Hawaiian organizations may be invited to participate in monitoring.

15. Acquisition of Lands for Park Purposes:

The Streamlined Review Process may be used for the acquisition of land for park purposes, including additions to existing parks. The second criterion for use of the Streamlined Review Process (identification and evaluation of all types of historic properties within the project APE; see Section III.A.2) does not apply to this activity, provided the acquisition does not include any further treatment or alteration of properties, since access to land for inventory and evaluation prior to NPS acquisition may be limited. Any known or potential historic properties on the land acquired should be protected from demolition by neglect. Pursuant to 36 CFR Part 800.5(a)(2)(vi), demolition by neglect constitutes an adverse effect. If any undertakings are proposed in conjunction with the acquisition that have the potential to affect historic properties, the Streamlined Review Process may not be used.

16. Leasing of Historic Properties:

The Streamlined Review Process may be used provided all treatment of historic properties proposed in relation to the leasing action is consistent with undertakings eligible for Streamlined Review, set forth in Section III.C of this PA. The Streamlined Review Process may not be used where there is a change of use or where a series of individual projects cumulatively results in the complete rehabilitation or restoration of a historic property.

D. Adding to List of Undertakings Eligible for Streamlined Review

Any proposed additions or revisions to the list of undertakings eligible for streamlined review must be developed through a region-, state- or park-specific Programmatic Agreement and pursuant to 36 CFR Part 800.14(b). The Regional Director or Superintendent, as appropriate, will develop such agreements with SHPOs/THPOs, in consultation with Federally recognized Indian Tribes and the ACHP or others, as appropriate. If such an agreement is developed by the Superintendent, s/he will notify the Regional Director. Regional Directors will report the development of supplemental, region-, state-, or park-specific programmatic agreements to the Director on an annual basis. The NPS FPO will maintain records on supplemental agreements and provide annual notification of any such agreements to all signatories to this agreement.

IV. STANDARD REVIEW PROCESS

All undertakings that do not qualify for streamlined review as described in Section III above, will be reviewed in accordance with 36 CFR Part 800. Superintendents are responsible for compliance with these regulations. Compliance may also be accomplished through park- and/or project-specific programmatic agreements. Specific activities required will be undertaken by the Park Section 106 Coordinator, in consultation with appropriate members of the CRM Team. Parks are encouraged to use Servicewide automated project planning and tracking systems, such as the NPS Planning, Environment and Public Comment (PEPC) system, to track and document Section 106 compliance activities and to make such automated systems accessible to compliance partners, including SHPOs/THPOs, Federally recognized Indian Tribes, Native Hawaiian organizations, and/or the ACHP. If a park executes a MOA or PA with consulting parties to resolve adverse effects, the Superintendent will provide an informational copy of the agreement to the Regional Section 106 Coordinator.

V. NATIONAL HISTORIC LANDMARKS

The NHPA provides heightened protection for designated National Historic Landmarks (NHLs) through Section 110(f) and the NHPA's implementing regulations (36 CFR Part 800.10). Specifically, the NHPA requires that Federal agencies shall, to the maximum extent possible, undertake planning and actions necessary to minimize harm to any NHL that may be directly and adversely affected by an undertaking. Where the other criteria as listed in Section III.A are met, proposed undertakings that may affect a designated NHL may follow the Streamlined Review Process. Where preliminary planning activities indicate that a proposed undertaking has the potential to have an adverse effect on an NHL, prior to initiating a formal consultation process, the Superintendent will initiate an internal review process in accordance with NPS Management Policies to determine alternatives to avoid or minimize the adverse effects and to assess the possibility of impairment.

VI. INADVERTENT DISCOVERIES

In the event that historic properties are inadvertently encountered during an undertaking for which review has been previously conducted and completed under Section III or Section IV of this PA, or through other events such as erosion or animal activity, the Superintendent will notify the SHPO/THPO, Federally Recognized Indian Tribe(s), and or Native Hawaiian organization, as appropriate, within 48 hours, or as soon as reasonably possible. The Superintendent in consultation with the Section 106 Coordinator and the appropriate members of the CRM Team, will make reasonable efforts to avoid, minimize, or mitigate adverse effects on those historic properties in consultation with the SHPO/THPO, Federally recognized Indian Tribe (s), and/or Native Hawaiian organization(s), as appropriate. If human remains or other cultural material that may fall under the provisions of NAGPRA are present, the Superintendent will comply with NAGPRA and ARPA. The Superintendent will ensure that any human remains are left in

situ, are not exposed, and remain protected while compliance with NAGPRA, ARPA, or other applicable federal, state, and/or local laws and procedures is undertaken.

VII. EMERGENCY ACTIONS

Emergencies are those actions deemed necessary by the Superintendent as an essential and immediate response to a disaster or emergency declared by the President, a tribal government, or the Governor of a State, or another immediate threat to life or property. Emergency actions are only those actions required to resolve the emergency at that time and they are limited to undertakings that will be started within thirty (30) days after the emergency has been declared. Such emergency actions will be consistent with the NPS Environmental Safeguards Plan for All-Hazards Emergencies and any other approved servicewide emergency response plans. The Superintendent will notify the SHPO/THPO within 24 hours of the declared emergency or as soon as conditions permit.

VIII. REVIEW AND MONITORING OF PA IMPLEMENTATION

The purpose of the PA review and monitoring process is to ensure NPS protection of historic properties in its stewardship. This is accomplished through the review of undertakings that were completed during the reporting period, review of programmed undertakings, review of implementation of the PA, and review of completion of training requirements.

A. Superintendents Biennial Review and Monitoring Meeting

In order to foster cooperative relations, each Superintendent will, at a minimum, invite consulting parties to a review meeting every two years (biennial), with the first meeting initiated within six months of the signing of this PA by all parties. If all parties agree that such a meeting is not necessary at that time, the meeting may be waived. However, Superintendents shall remain responsible for initiating biennial meetings in subsequent years. More frequent meetings may be appropriate based on specific park circumstances and therefore an alternative meeting schedule may be established, if mutually agreed upon by the parties.

1. Meetings may be conducted in any mutually agreeable location and/or format, including in- person, video conferencing or teleconferencing.
2. The primary invitees to each park's biennial review and monitoring meeting will include the applicable SHPO/THPO, Federally recognized Indian Tribes, and Native Hawaiian organizations with an interest in that park's properties. Superintendents may also consider inviting other interested parties, including Pacific Islanders, concessionaires, lessees, friends groups, historic societies, or gateway communities, as appropriate.

3. Superintendents may instead choose to meet individually with some parties, particularly those that have strong interest in specific historic properties.
4. Attendance and meeting minutes will be recorded and distributed to all invited parties after the conclusion of the meeting.
5. Specific discussion items may include the following:
 - a. Any documentation pursuant to this PA.
 - b. Any inventories of historic properties developed in the previous two years, or opportunities for future inventory and research, as well as other reports and research results related to historic properties.
 - c. Programmed undertakings that are scheduled, or are likely to be scheduled, for the next two fiscal years.
 - d. Provisions of this PA as well as any project- or program-specific Memoranda of Agreement or Programmatic Agreements.
 - e. Training received by park staff during the reporting period and opportunities for cooperative training arrangements.
 - f. Names of and contact information for the Park Section 106 Coordinator and the CRM Team Members.

B. Superintendents Reporting to NFS Regional Directors

In order to inform park program review and potential ACHP evaluation of PA implementation, Superintendents will report biennially to Regional Directors on implementation of the PA. The Biennial Report shall include the streamlined review data prescribed in Section III B of this PA, training completed and basic data demonstrating compliance with the provisions of this PA as outlined in the guidance document for this agreement (Section I.A.2). ACHP, SHPOs, or THPOs may request hard copies of biennial reports.

C. Park Section 106 Program Review by NPS Regional Directors, SHPOs, THPOs, and the ACHP

1. The Regional Director may, at his/her discretion, initiate a review of a park's implementation of this PA. The ACHP, either at its own discretion, or upon request of a Federally recognized Indian Tribe, SHPO/THPO, or Native Hawaiian organization, may at any time raise with the appropriate Regional Director any programmatic or project matters where they wish the Regional Director to review a Park Superintendent's Section

106 decisions. The Regional Director will consult with the ACHP, and the Regional Director shall provide a written response to the ACHP, and where applicable, the SHPO or THPO, that documents the outcome of the consultation and the resolution. The Regional Director has the option to suspend a park's use of this PA, and subsequently reinstate it as appropriate.

2. Documentation of NPS Section 106 reviews not already provided to SHPOs, THPOs, and the ACHP will be available for review by the ACHP and the appropriate SHPO/THPO upon request. Individual SHPOs/THPOs who wish to review this documentation are responsible for specifying scheduling, frequency, and types of undertakings of concern to them.

D. NPS Regional Directors Reporting to the Director of the NPS

Regional Directors will report biennially to the Director on implementation of this PA within his/her region. Each Regional Biennial Report will be submitted within six (6) months following receipt of Park Biennial Reports by the Regional Director as required in Section VIII.B of this PA. A hardcopy of the biennial reports will be sent to the ACHP and upon request from a SHPO or THPO.

IX. SUBSEQUENT AGREEMENTS

A. Upon execution of this PA, Superintendents are encouraged to evaluate their park's programs and discuss with SHPOs/THPOs, Federally recognized Indian Tribes, Native Hawaiian organizations, and/or the ACHP ways to develop supplemental programmatic agreements for park undertakings that would otherwise require numerous individual requests for comments.

B. Development of programmatic agreements specific to a project, plan, or park may be negotiated between Superintendents and SHPOs/THPOs, Federally recognized Indian Tribes, Native Hawaiian organizations, the ACHP, and/or other consulting parties where appropriate, pursuant to 36 CFR Part 800.14(b), and may be independent of or supplement this PA. Superintendents will provide an informational copy of all agreements to the Regional Section 106 Coordinator.

C. Memoranda of agreement developed to resolve adverse effects for specific projects shall be negotiated between Superintendents and SHPOs/THPOs, Federally recognized Indian Tribes, Native Hawaiian organizations, and/or the ACHP, pursuant to 36 CFR Part 800.6(c), and shall be independent of this PA Superintendents will provide an informational copy of all agreements to the Regional Section 106 Coordinator.

X. DISPUTE RESOLUTION

A. Should disputes arise, the Superintendent, SHPO/THPO, and/or the ACHP will consult with the objecting parties to resolve the objection. All work that is the subject of the dispute will stop until the dispute is resolved in accordance with the procedures in this section. If the dispute cannot be resolved, all documentation relevant to the dispute will be forwarded to the parties named above. If the SHPO/THPO objects to a Park Superintendent's decision, the information will be forwarded to the Regional Director. If the National Park Service objects to the SHPO/THPO's opinion, the information will be forwarded to the ACHP. If the Regional Director cannot resolve a SHPO/THPO objection, the Regional Director will forward to the ACHP relevant documentation not previously furnished to the ACHP and notify the Director of the dispute. Within thirty (30) days after receipt of all pertinent documentation, the ACHP will either:

1. Provide the Regional Director with a recommendation, with an information copy provided to the Director, which the Regional Director will take into account in reaching a final decision regarding the dispute; or

2. Notify the Regional Director that it will comment to the Director pursuant to the provisions of 36 CFR Part 800.7 and proceed to comment. Any ACHP comment provided in response to such a request will be taken into account by the NPS with reference to the subject of the dispute.

B. In the event the ACHP does not respond within thirty (30) days of receipt of all pertinent documentation, the Regional Director may proceed with his or her recommended resolution.

C. At the request of any individual, agency, or organization, the ACHP may provide the NPS with an advisory opinion regarding the substance of any finding, determination, or decision made in accordance with this PA or regarding the adequacy of the NPS' compliance with Section 106 and this PA.

XI. MONITORING AND TERMINATION

A. The NPS will convene a meeting of the signatories to this PA within two (2) years of execution of the PA and as needed thereafter, to review implementation of the terms of this PA and determine whether revisions or amendments are needed. Meetings may be conducted in any mutually agreeable location and/or format, including in-person, video conferencing, or teleconferencing. If revisions or amendments are needed, the parties will consult in accordance with 36 CFR Part 800.14.

B. This PA may be amended when such an amendment is agreed to in writing by all signatories. When major revisions are proposed to NPS policies that will affect the manner in which the NPS carries out its Section 106 responsibilities, the signatories shall consult to determine whether an amendment to this PA is needed. Any amendments will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

C. Any party to this PA may terminate it by providing ninety (90) days notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. Termination by any Federally recognized Indian Tribe signatory will be limited to termination of this PA on the tribal lands of the subject tribe. In the event of termination, the NPS will comply with 36 CFR Part 800 with regard to individual undertakings otherwise covered by this PA.

XII. SEVERABILITY

A. If any section, subsection, paragraph, sentence, clause, or phrase in this PA is, for any reason, held to be unconstitutional or invalid or ineffective, such decision shall not affect the validity or effectiveness of the remaining portions of this PA.

B. If any section, subsection, paragraph, sentence, clause, or phrase in this PA is, for any reason, held to be unconstitutional or invalid or ineffective, the signatories shall consult to determine whether an amendment to this PA is needed.

XIII. ANTI-DEFICIENCY ACT STATEMENT

The stipulations of this Agreement are subject to the provisions of the Anti-Deficiency Act (31 U.S.C. 1341 (1998)). If compliance with the Anti-Deficiency Act alters or impairs NPS ability to implement the stipulations of this Agreement, NPS will consult in accordance with the dispute resolution, amendment or termination stipulations as specified in Sections X and XI of this PA.

APPENDIX B

Additional Undertakings Eligible for Streamlined Review

In 1994, the NPS, the SHPO, and the ACHP executed a Memorandum of Agreement that added the following undertakings to those eligible for streamlined review, under the terms of the NHPA, when reviewed by Fredericksburg and Spotsylvania National Military Park staff and advisors:

1. installation of barriers across unauthorized trails that directly damage or encourage damage to archeological sites, earthworks, or other cultural resources
2. scattering of dated metal disks of different alloys to deter illegal relic hunting
3. removal of twentieth-century refuse dumps. It is understood that the dumps removed under this exclusion will not include those on the immediate grounds of

dwelling sites older than 50 years. It is further understood that work crews will utilize only existing roads and/or trails.

4. planting of vegetative buffers to screen park resources from visual intrusions. It is understood that no "tree spaders" or other heavy equipment will be utilized for this undertaking without an appropriate archeological survey.

APPENDIX C

Glossary

NPS Organic Act 1916 Public Law 64-235, 39 Stat. 535 1916

Established the National Park Service; directed it to manage the parks "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide to the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs, 1998 Guidelines for federal agency preservation programs. Discussion the National Historic Preservation Act (16 USC 470) 1966 as amended in 1980 and 1992.

Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, 1997. Technical advice about archeological and historic preservation activities and methods.

Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995. Professional standards and advice on the preservation and protection of buildings, sites, structures, objects and districts and addresses four treatments: preservation, rehabilitation, restoration, and reconstruction.

National Environmental Policy Act of 1969 Public Law 91-190 31 Stat. 852, 1969 (NEPA). Declared federal policy to "preserve important historic, cultural, and natural aspects of our national heritage"; required federal agencies to "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences in planning and in decision-making which may have an impact on man's environment."

National Historic Preservation Act of 1996, Public Law 89-665, 80 Stat. 915; as amended in 1976 and 1992 (NHPA). Declared a national policy of historic preservation, including the encouragement of preservation on state and private levels; authorized the Secretary of the Interior to expand and maintain a National Register of Historic Places

including properties of state and local as well as national significance; established the Advisory Council on Historic Preservation; and required federal agencies to consider the effects of their undertakings on National Register properties and provide the Advisory Council an opportunity to comment.

APPENDIX D

List of Actions Subject to the Provisions of this Programmatic Agreement:

[examples]

- Archeological investigations
- Installation of trails, paths, fences, parking areas, and all other visitor amenities
- Improvements or alteration to the landscape
- Reconstruction, restoration, and rehabilitation of historic buildings
- The placement of media and exhibits within the landscape
- Tree removal Establishment of agricultural demonstration area
- New construction
- Etc.

APPENDIX C: FEDERAL CONSISTENCY DETERMINATION

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INTRODUCTION

This document provides the Consistency Determination as required by the Coastal Zone Management Act of 1972, section 307(c)(1) and 15 CFR Part 930, subpart C. Based upon the information, data, and analysis provided below and in the EA, the NPS finds that the proposed action is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program.

PROPOSED ACTION

The proposed action is described in Chapter 2: Alternatives under “Elements Common to All Action Alternatives” and “Alternative D: Preferred Alternative.” The study area has been divided into three separate zones (historic zone, ecological area, and development area) to guide future management decisions while taking into account the existing resources and best use for each area. Major elements of the proposed actions include:

- Construction of new buildings including a visitor center, administrative building, and maintenance facility in the southeast portion of Ferry Farm.
- Construction of a new parking lot between the visitor center and the administrative building.
- Replacement of historic, Washington era landscapes and features.
- Improvements to the pedestrian trail system, including new segments of trail and modifications to the trail surface.
- Construction of interpretive nodes and discovery areas along the pedestrian trail system.
- Relocation of the site entrance, approximately 300 feet north of its current location, and construction of a new driveway.
- Removal of the existing non-historic structures on the property.
- Removal of a total of approximately 6.1 acres of forest and field vegetation.
- Installation of approximately 2 acres of new forest in the southern portion of the site, near the East-West Connector. In total, approximately 5.8 acres of new trees would be planted on the site under Alternative D.

ASSESSMENT OF EFFECT

FISHERIES MANAGEMENT

No fisheries would be impacted by the preferred alternative.

SUBAQUEOUS LANDS MANAGEMENT

No subaqueous lands would be impacted by the preferred alternative.

WETLANDS MANAGEMENT

A wetland scientist performed a delineation of jurisdictional wetlands and streams in the study area in accordance with the *Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain* (USACE 2010). Several jurisdictional water bodies were identified near the Rappahannock River and associated streams. Actions associated with the preferred alternative would mostly occur in the upper terrace and away from wetlands and streams. There are four actions associated with Alternative D that could impact streams and wetlands:

- the installation of a new pedestrian foot bridge across the northern ravine and Medicine Spring
- installation of an interpretive node at the shoreline of the Rappahannock River, near the historic pontoon bridge location
- removal of select trees and shrubs along the shoreline of the Rappahannock River on approximately 0.3 acres for the purpose of manipulating the site vista to mimic the Washington home era
- stabilization efforts along the ravine

The trail improvements, interpretive nodes, and tree removal along the shoreline would not likely require encroachment into the Rappahannock River or associated stream channel. However, there is a risk of sediment pollution during construction/tree removal. Erosion and sedimentation control practices would be incorporated into the site plan to prevent sediments from entering the river or stream channels. Stabilization efforts near Medicine Spring could include elements such as protection of the banks with erosion control matting or blanketing and stabilization with a permanent covering that is capable of handling steep slopes. These elements could be designed to either divert water or slow down the flow to reduce the impact of the flow on erosion. Depending on the approach taken, stabilization efforts could improve or reduce stream flow in some areas. Impacts to wetlands would be avoided for all other elements of the preferred alternative, including during construction.

Prior to construction, the GWF would prepare and implement Erosion and Sediment Control Plans that comply with the Virginia Erosion and Sediment Control Law. The GWF would be responsible for overseeing onsite contractors, conducting regular field inspections, and taking prompt action against noncompliance, if necessary.

A more detailed description of the existing conditions related to wetlands can be found in Chapter 3: Affected Environment under “Wetlands and Streams” and the subsequent impacts of the alternatives on wetland habitats can be found in Chapter 4: Environmental Consequences under “Wetlands and Streams.”

DUNES MANAGEMENT

No dunes exist within the study area that would be impacted by the preferred alternative.

NON-POINT SOURCE POLLUTION CONTROL

The preferred alternative would introduce new structures into the project area including new buildings, a parking lot and driveway, and improvements to the pedestrian trail system. The use of porous paving materials in the parking lot and pedestrian trails would reduce increases in non-point source pollution. Site improvements also would incorporate stormwater management elements and mitigation measures would be implemented, as needed, to minimize runoff and increase filtration. Specifically, the preferred alternative would implement best management practices for water quality using low-impact development (LID) techniques throughout the site. Based on preliminary plans, it was assumed that the following stormwater management techniques would be implemented (see the “Natural Resource Management” section of chapter 2 of the EA):

- The parking lots would comprise of pervious pavers with no curb and minimal piping in combination with bioretention areas within parking lot islands
- To the extent possible, runoff (via sheet flow) would flow into bioretention basins within the parking islands where water would be filtered using plantings and soil infiltration.
- Water from the new impervious (asphalt) entrance road would be captured by an adjacent grassy swale for soil infiltration.

All water quality measures to be implemented would be designed in accordance with the Virginia stormwater management regulations and the Virginia Stormwater Management Handbook. Prior to construction, the GWF would prepare and implement Erosion and Sediment Control Plans that comply with the Virginia Erosion and Sediment Control Law. The GWF would be responsible for overseeing onsite contractors, conducting regular field inspections, and taking prompt action against noncompliance, if necessary.

POINT SOURCE POLLUTION CONTROL

The preferred alternative would not introduce any point sources that would require regulation. However, because land disturbance in this project would exceed one acre, the project would require a Virginia Stormwater Management Program (VSMP) general permit for stormwater discharges from construction activities.

SHORELINE SANITATION

No wells and no new drain fields would be required for the project.

AIR POLLUTION CONTROL

The preferred alternative could increase visitation to Ferry Farm, resulting in increased vehicular traffic at the site. However, this increase is not likely to be large enough to noticeably increase future pollution levels of carbon monoxide, volatile organic compounds, sulfur-dioxide, nitrous oxide, and particulates in the region. Construction of the preferred alternative could result in a localized, temporary increase in pollution from diesel exhaust from the operation of heavy equipment. These pollutants would quickly

dissipate when construction is completed. In the long-term, improvements associated with the preferred alternative would not affect air quality in Stafford County or the city of Fredericksburg (See the “Impact Topics Considered but Dismissed” section of this document).

COASTAL LANDS MANAGEMENT

Direct impacts to the 100-foot RPA buffer would occur for the following actions (see the “Chesapeake Bay Resources” section in chapter 4 of the EA):

- the construction of a new bridge over the ravine and development of an interpretive node near the historic pontoon bridge along the Rappahannock River
- Improvements to the existing trail network, including the installation an interpretive node at the historic ferry landing along the shoreline of the Rappahannock River, and future maintenance of the trails
- removal of trees along the shoreline of the Rappahannock River downslope from the Washington home place to improve the site vista
- and stabilization efforts within the ravine

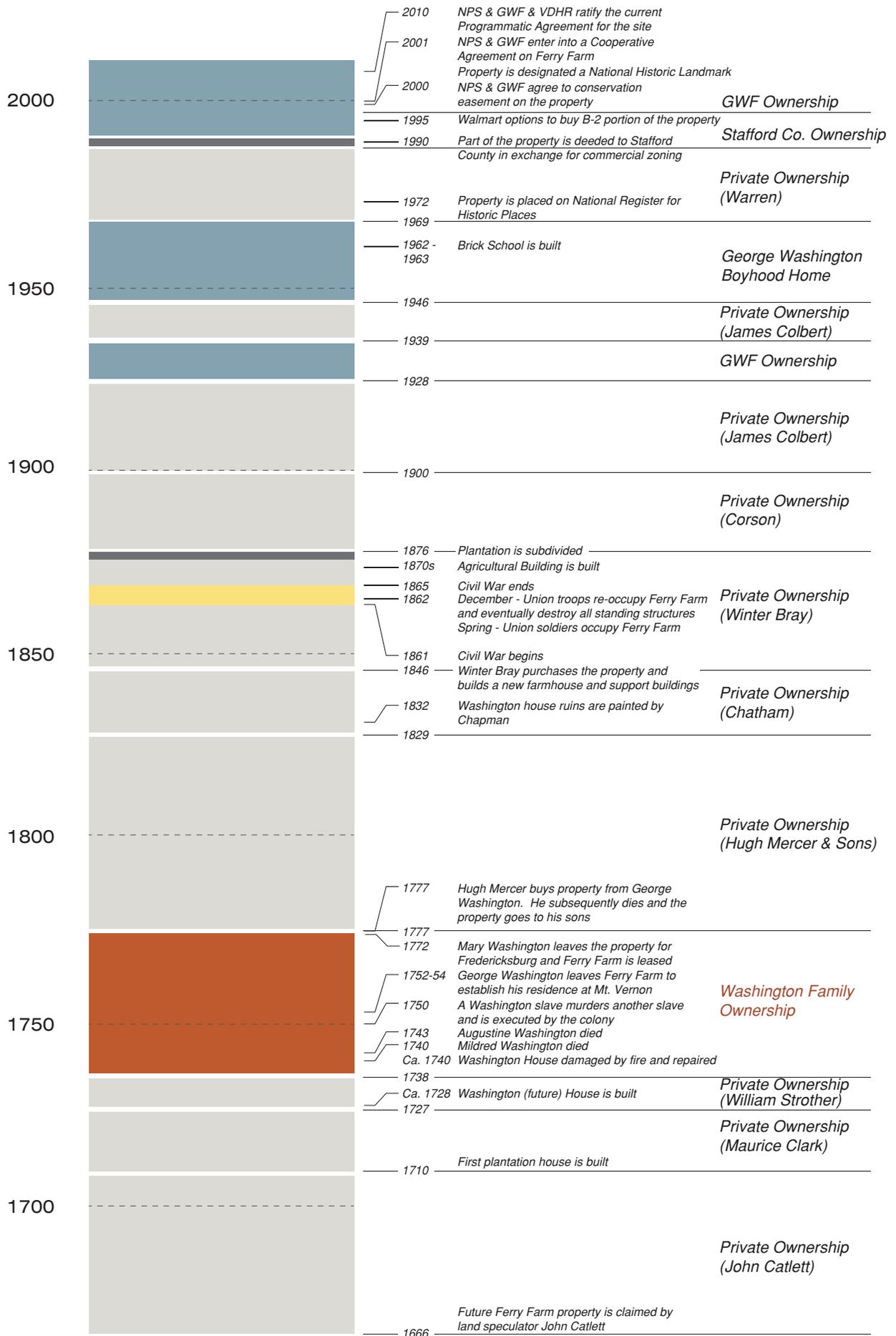
As described above, the preferred alternative also includes an engineered stormwater management system to capture and treat surface runoff from new infrastructure (parking area, visitor center, administrative building, etc.) pursuant to Virginia stormwater management regulations. The stormwater management plan for Alternative B is expected to increase water quality entering the Rappahannock River.

Overall, these actions would have a minor impact on the RPA and impacts would be mitigated in accordance with DCR’s Riparian Buffers Modification & Mitigation Guidance Manual.

The GWF would coordinate directly with the Stafford County Environmental Division and Chesapeake Bay Local Assistance Department, who would review site plans as prepared, to ensure maximum compliance with Chesapeake Bay Preservation Regulations. Any necessary permits would be obtained prior to construction (See the “Chesapeake Bay Resources” and “Wetlands and Streams” sections of this document).

APPENDIX D: FERRY FARM TIMELINE (1666-2011)

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Ferry Farm Timeline

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APPENDIX E: GEORGE WASHINGTON'S FERRY FARM FEASIBILITY STUDY

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MESICK ■ COHEN ■ WILSON ■ BAKER ■ ARCHITECTS, LLP

388 BROADWAY

ALBANY NEW YORK 12207

February 1, 2013

David Muraca
The George Washington Foundation
1201 Washington Avenue
Fredericksburg, VA 22405

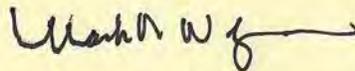
Dave,

Attached is an assessment of feasibility for lifting the Washington House at Ferry Farm above the original archaeology, as a means of preserving the resource. The assessment was performed by Keast and Hood, Structural Engineers, a firm which has a long and distinguished record in the field of historic preservation.

Our goal has been to maintain the resource intact and visually accessible for purposes of interpretation—the latter by direct viewing through the hatches of the root cellars, or by webcam/video feeds. We envision carrying the stone walls of the cellar foundation up the bottom of the framing, so that none of the structure would be visible from the reconstructed cellar.

Don't hesitate to let me know if there is anything here we need to discuss.

Best regards,



Mark R. Wenger

TEL: 518 433-9394
FAX: 518 433-9397
mcwb@mcwb-arch.com
www.mcwb-arch.com

VIRGINIA OFFICE
3302 CRAGGY OAK COURT, SUITE 101
WILLIAMSBURG, VIRGINIA 23188
TEL: 757 221-0713
FAX: 757 221-0714

January 31, 2013

Mark Wenger
Mesick Cohen Wilson Baker Architects
3302 Craggy Oak Court
Williamsburg, VA 23188

Re: George Washington's Ferry Farm Feasibility Study - Memorandum

Dear Mark:

Keast & Hood Co. has reviewed and discussed the concept proposed by your firm for the reconstruction of the Ferry Farm farmhouse. It is proposed to site the house over the existing site and foundation ruins while only minimally contacting the site.

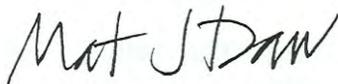
In coordination with your firm, Keast & Hood has proposed a foundation system consisting of helical piles. These piles can be visualized as screws of approximately 12" diameter, typically turned into the soil to depths of between 10 and 20 feet. An advantage of this foundation system is that there are minimal spoils; essentially leaving all the soil in its current location. A geotechnical investigation would be required to validate this foundation system, but Keast & Hood's previous experience is that it or something similar would be capable of supporting the required loads.

The piles would support a grid of pre-cast concrete beams set just at the existing grade level, with their depth creating the "crawl space" below the reconstructed house. Exterior beams would have continuous ledges to support an exterior brick masonry foundation wall matching the historic construction. All the beams could have wood sills anchored to them as a base for the wood framing of the remainder of the structure. The same system with precast concrete planks and additional piles would be used to support the three masonry fireplaces and chimneys of the reconstruction.

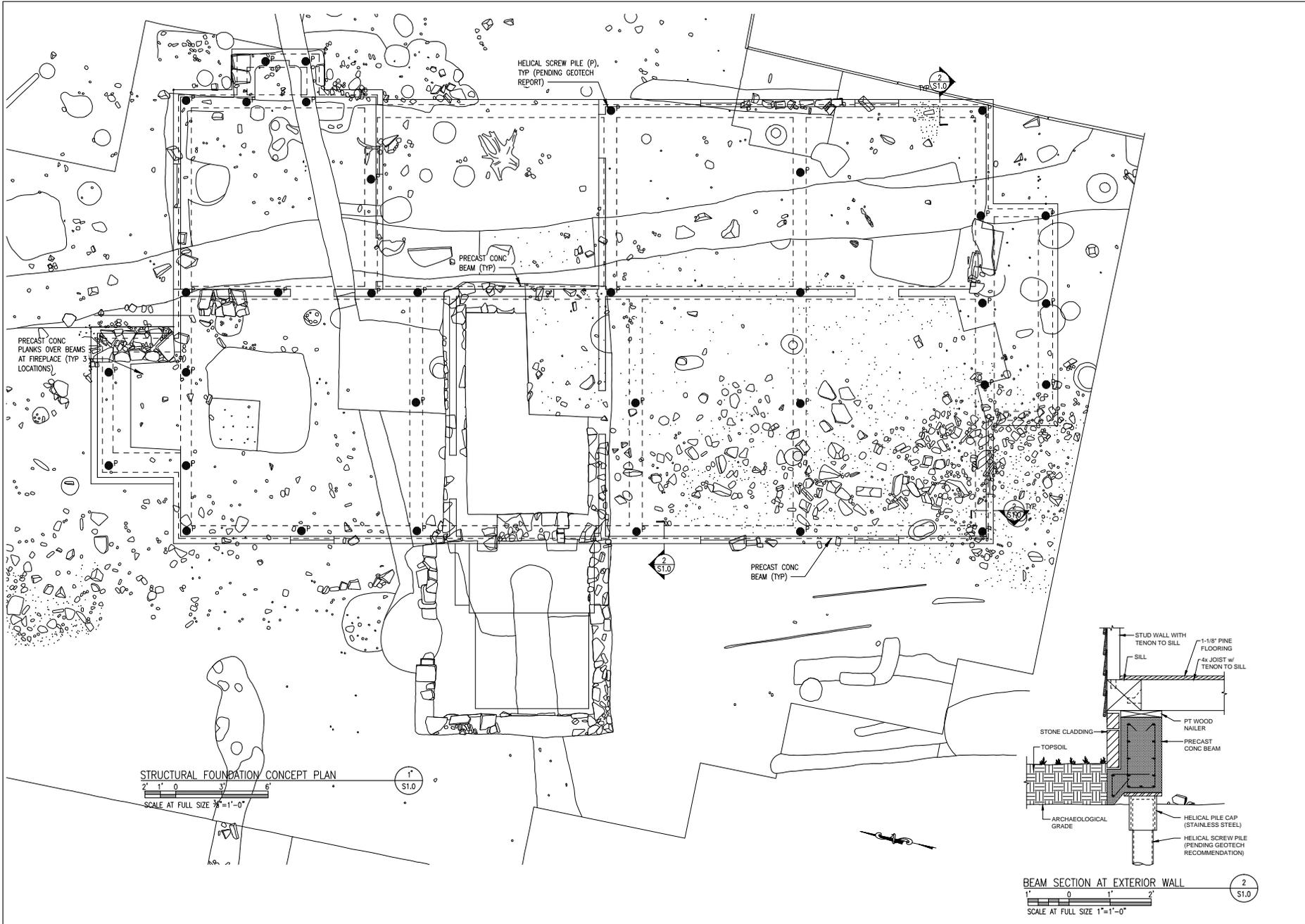
In summary, Keast & Hood has reviewed the proposed concept for the project and believes that the solution discussion above is a feasible means to reconstruct the structure over the existing archaeology. For reference, this concept is further illustrated on drawing sheet S1.0.

Sincerely,

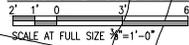
KEAST & HOOD CO.



Matthew J. Daw, PE, LEED® AP Craig D. Swift, PE, LEED® AP

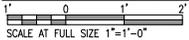


STRUCTURAL FOUNDATION CONCEPT PLAN



1'
S1.0

BEAM SECTION AT EXTERIOR WALL



2
S1.0

MESICK-COHEN-WILSON-BAKER ARCHITECTS

STRUCTURAL FOUNDATION CONCEPT PLAN
GEORGE WASHINGTON'S FERRY FARM

SCALE AS NOTED
COMMISSION NO.
DRAWN BY KSB
DATE JANUARY 14, 2013
REVISED

DRAWING NO.
S1.0



300 BROADWAY ALBANY, NY 12207
3000 CRANDY OAK COURT, WALLINGBURG, VA 23188
P. (757) 932-6075 F. (757) 932-6074

FREDERICKSBURG, VIRGINIA

APPENDIX F: PUBLIC OPEN HOUSE COMMENT SUMMARY

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question	EA Alternative A no action	EA Alternative C alternative 2	EA Alternative B alternative 3	EA Alternative D preferred option	total
which alternative is the most appropriate plan for the site and provide most informative and engaging visitor experience	0	0	0	59	
Restore the historic Washington landscape era scene by constructing features that represent historic structures and landscapes such as representation of the Washington house					57
Importance of Authentic Site locations			3	6	59
Importance of Authentic period materials and construction technique		1	4	8	58
Importance of Way of life during Washington Era			1	5	58
addition or improvements to exhibits	0	1	4	3	58
additions or improvements to bathrooms	0	1	4	10	58
additions or improvements to retail	0	9	15	13	58
additions or improvements to food	1	6	9	19	56

Ferry Farm Environmental Assessment Open House Comments – February 6, 2013

Building on the actual archaeology remains

At first I was skeptical about building on the actual remains but after hearing about the effort to protect the site, I am all for it.

It is important to see, smell and touch what Washington once did.

This plan makes the most sense in terms of archaeological sensitivity.

I have no problem with developing on historic locations if it is done responsively and correctly.

I like both alternatives that build on the site, but the preferred alternative seems more responsible to archaeology.

Am absolutely thrilled with the idea of being able to walk down in the cellar of the Washington House.

This is my favorite mainly because they're going to rebuild the historic house.

Cool – about being able to walk in the cellars.

I like the whole idea about the house being above the archaeology.

I like this idea [for the house], This is a nice thing ya'll are doing.

You'd have something tangible with the cellar to see it and go inside

"I can't imagine they would do it any other way than placing the re-imagined house on top of the original house site]."

Employing a system to communicate to visitors what architectural elements are known and what is more conjectural

The general public needs to see representative architecture.

Re-construction of the house is key to [good] visitation numbers.

All should be done to insure that visitors have entered another world.

Would like to see accurate reproductions of buildings on the original site.

Wow, that's cool. – to code of elements of buildings.

So you're going to recreate it just as he would have seen it? "I like the idea. You would see it through his eyes. I like the idea of bringing in the new stuff without disturbing anything.

Comments on Alternative 1 (EA Alternative A)

The site has so much potential that to do nothing would be a shame!

Nothing changes?? Who decides no action, we want some things to be done, we do not like no action, we should move forward.

I am interested in old stuff and I am usually a do nothing guy and I am usually wrong. The change that you plan to do is neat and I am for the change.

I am always afraid I am going to get rear ended coming out of Ferry Farm.

Let's talk about the road and the entrance, no action heaven forbid!

No action no! Doing something is good.

We know what Action we want.

No action-not good.

No action????

We can't function the way we are now. ...visitors are terribly disappointed

The no action alternative is not really an alternative.

Comments on Alternative 2 (EA Alternative C)

I would like to see the archaeology site protected by a structure and an interpretive structure located nearby.

Main features being a replica house and farm site south of the actual house and farm site – is better than doing nothing, but still didn't quite ring true. It put me in mind of Washington's Birthplace on Popes Creek, where a Memorial House was built some yards from the foundation of the actual house.

This is an improvement over no action.

You can declare it authentic but my feeling is that people are very, very interested in it; I don't see anyone turning it around. You're playing to a smaller and smaller audience. This leaves me unmoved.

This alternative seems a little confusing, yes." "I look for authenticity, to be able to say 'this is where this happened.

Comments on Alternative 3 (EA Alternative B)

When I first heard of building a replica house over the foundation of the actual house, I was a little taken aback. But after Dave Muraca explained how it would be done, it makes a lot of sense, both in terms of visitor experience and protection of the archaeological site.

Oooh! I like this alternative.

Wow! Like Jamestown. Wow. Wow. Wow. That's incredible! Fascinating. Very exciting option. No concerns at all. Exciting. Wow. Very good. Appreciate your explanation.

People can walk into the real cellar? Ooh. That's exciting!

Yeah, Right, right. Yep. Cool. I like the idea of building the house on the cellar. Heard about the cellar discovery in '08.

You can see across the river like GW did.

Love it. Makes the most sense. Don't really see any other choice.

I don't understand why it wouldn't be on the actual site. Makes sense to me. What about the bike path? More Mount Vernonish. Looks good. Thanks!

No objections at all about building on archaeology

Ready to move on this.

Makes sense that the house would protect the site. I don't have any objections.

Sounds interesting.

I had no idea people were going to actually get to go in the cellar. Wonderful!

Great!

Like the idea of preserving the cellar.

I like the idea of seeing the artifacts in the cellar through plexiglass.

Wondered about ongoing archaeology around building. Glad it will continue.

Like to see all the work that been put into these plans. Our money is well spent.

Comments on Alternative 4 (EA Alternative D)

I like putting admin and maintenance down by Rt. 3 corridor

Creates the most interactive environment

I like moving the maintenance and admin bldgs. to south.

First class educational and experiential experience for the visitor

Amazing, so exciting.

This option would draw the most people and give them a reason to keep coming back.

Must be done.

I like the fact that most of the necessary that a lot of the new construction would be located within the footprint of the old quarry.

Should only be one alternative – this one.

Interpretive area critical.

All this must be done.

Combines the best features of Alternative 3 and adding other enhancements – offers the best options for efficient use of the site, conservation of natural resources, protection of the archaeological site, visitor flow, and educational experiences. The proposed “three trails” – the Washington Family Trail, the Civil War Trail, and the Nature Trail – offer history-based experiences for visitors with different interests.

Should be the only alternative.

More historically accurate. The historic landscape needs to be interpreted to the public.

I like the location of the admin and maintenance bldgs.

I think it is extremely important to strike a good balance between the preservation of the site and its features and the interpretation.

I’m excited.

Best option to maximize authenticity. Least invasive with most upside for future programming.

Yes, I think the maintenance and admin bldgs. are better down there. (Gesturing to new location of buildings on South end of FF) I hope I live long enough to see this one. I hope I live long enough to see the house built. That will be so exciting.

This is exciting!

This is a better option based on the totality of it.

I also think this is my favorite option because they're going to rebuild the house and there's going to be a new entrance and I also like the landscaping. I really like the way this is constructed. I like that it's not just one building but a whole interactive area where you can be out on the trails and interacting with the landscape. I really like the idea. Thank you!

I like this Alternative.

Miscellaneous

I would like to see a connection to the Belmont-Ferry Farm bike trail.

Would like to see the Civil War areas explored thru archaeology

Move the boat landing in Fredericksburg so that historic ferry could operate properly.

I love exhibits and seeing artifacts and objects.

I like the new entranceway at the light.

The ferry is a huge asset.

Is there no way of moving the ferry south to below the Washington house?

It's great that the bike trail is coming here.

Having a Civil War park (activity area) and the nature trails will keep people coming back, I think.

I'm surprised at how many people are here (at the open house). It is great.



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

October 2013

United States Department of the Interior – National Park Service

