
THE **JAMESTOWN PROJECT**

RECORD OF DECISION

FINAL DEVELOPMENT CONCEPT PLAN & ENVIRONMENTAL IMPACT STATEMENT

Location: Jamestown National Historic Site
Colonial National Historical Park, Jamestown Unit
Jamestown, Virginia

Responsible Agencies: National Park Service, United States Department of the Interior
Association for the Preservation of Virginia Antiquities

Selected Action: The Department of the Interior, National Park Service has prepared this Record of Decision for the Jamestown Project Final Development Concept Plan/Environmental Impact Statement (DCP/EIS). Often overlooked, Historic *Jamestowne* - America's Birthplace is the site of the first permanent English colony in North America, predating Plymouth, Massachusetts, by more than a decade. It marks the time and place of the beginning of the history of this nation. Based on Jamestown's importance to United States history and its numerous opportunities for research and discovery, the overriding purpose of the Jamestown Project is for the APVA and NPS to jointly **research, protect, and present** to the public the resources at Jamestown. The APVA and NPS would like to capitalize on their strong partnership and recent discoveries to enhance educational and research opportunities and connect the visitor more closely with the site, its past peoples, and their experiences. In order to reach and educate the broadest possible audience, the Jamestown Project goals are to: improve the quality of the visitor experience; protect the Jamestown collection and associated archival materials; enhance research and educational opportunities; and strengthen the APVA/NPS partnership.

Based on the information and analysis presented in the Final DCP/EIS issued in April 2003, the NPS and APVA will implement Alternative B. Alternative B most effectively fulfills the Jamestown Project purpose and goals, as well as meets APVA and NPS purposes, goals, and criteria for managing Historic *Jamestowne*. It includes strategies for an updated interpretive experience; the improvement or replacement of facilities (including the current Visitor Center, collections storage, and parking); the addition of comfort/hospitality services and new interpretive venues; and enhanced and multimodal transportation options (including water taxis/tours, hike/bike trails, and shuttle services).

The selection of Alternative B will not result in the impairment of the resources and values at Historic *Jamestowne* and will allow the NPS and APVA to preserve these resources and provide for their enjoyment by future generations.

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Founded in 1889, The Association for the Preservation of Virginia Antiquities (APVA) is the oldest statewide preservation organization in the nation. Today, thanks to the continuing support of members and generous donors, the APVA is sharing the rich heritage of Virginia through a portfolio of properties that span the centuries from early seventeenth through the mid-nineteenth centuries. The APVA's Revolving Fund adds a dimension to the organization's ability to preserve Virginia's historic past by partnering with individuals and organizations interested in preserving sites across the state. A nonprofit, charitable, and educational organization, the APVA is preserving, interpreting, and sharing significant landmarks across the Commonwealth of Virginia to benefit visitors today and future generations.



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 ofland 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 out 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.

June 2003

United States Department of the Interior- National Park Service



UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

RECORD OF DECISION

THE JAMESTOWN PROJECT DEVELOPMENT CONCEPT PLAN

FINAL ENVIRONMENTAL IMPACT STATEMENT

**Jamestown Unit, Colonial National Historical Park
and
Jamestown National Historic Site**

Virginia

The Department of the Interior, National Park Service (NPS) has prepared this Record of Decision (ROD) for the *Jamestown Project Final Development Concept Plan/Environmental Impact Statement* (DCP/EIS) for the Jamestown Unit of Colonial National Historical Park (Colonial NHP) and the Jamestown National Historic Site (collectively referred to as Historic *Jamestowne*). This ROD includes a statement of the decision made, a description of the project background, a detailed description of the alternative to be implemented, the basis for the decision, synopses of other alternatives considered, an overview of public and agency involvement in the decision-making process, findings on impairment of park resources and values, a description of the environmentally preferred alternative, and a listing of measures to minimize and/or mitigate environmental harm. In addition, the following materials are appended to this ROD:

- Appendix A
 - Table 1: Mitigation and Compliance
 - Table 2: List of Required Permits and Approvals for Project Completion
- Appendix B
 - Programmatic Agreement between the NPS, the Advisory Council on Historic Preservation (ACHP), and the Virginia State Historic Preservation Office (SHPO) for implementation of the *Jamestown Development Concept Plan*
- Appendix C
 - NPS Statement of Findings (SOF) on Floodplains and Wetlands
- Appendix D
 - U.S. Fish and Wildlife Service (FWS) Biological Opinion relating to the bald eagle and sensitive joint-vetch

DECISION (SELECTED ACTION)

The NPS will implement Alternative B as described in the *Jamestown Project Final Development Concept Plan/Environmental Impact Statement* issued in April 2003. Alternative B includes strategies for an updated interpretive experience; the improvement or replacement of facilities (including the current Visitor Center, collections storage, and parking); the addition of comfort/hospitality services and new interpretive venues; and enhanced and multimodal transportation options (including water taxis/tours, hike/bike trails, and shuttle services). Details of Alternative B are provided below under “Description of Alternative B.”

PROJECT BACKGROUND

Historic *Jamestowne* includes both the Jamestown Unit of Colonial National Historical Park, approximately 1,800 acres owned by the United States of America and managed by the NPS, and the Jamestown National Historic Site, 22.5 acres owned and managed by the Association for the Preservation of Virginia Antiquities or APVA. For both organizations, the purpose and primary significance of Jamestown is to preserve, interpret, and promote the history of the first permanent English colony in North America. In 1993, each organization prepared their own management plans for Jamestown. In 1996, in preparation for the 400th anniversary of the founding of Jamestown, the NPS and APVA explored and developed the initial concepts for the coordinated management of Jamestown. This *Joint Management Plan* laid the groundwork and began the planning process for the *Jamestown Project Development Concept Plan*. The document also created a unified mission statement for the integrated management of Jamestown: “...the APVA and NPS as partners will build upon our strong tradition as stewards of Jamestown’s cultural and natural resources. We are committed to reaching the broadest possible audience through preservation, research, scholarship, and education. We are committed to providing a high quality interpretive experience for each visitor to Jamestown.”¹

Working from the initial concepts of the *Joint Management Plan*, the NPS and APVA established goals and objectives that were used as a framework for evaluating and developing alternative design concept plans for Jamestown. The goals and objectives were developed in accordance with fundamental NPS and APVA guidelines, including: the *General Management Plan for Colonial National Historical Park*²; *An Agenda for Institutional Development*³; *Jamestown Rediscovery™ Archeological Project*⁴; *Jamestown Archeological Assessment*; *Long Range Interpretive Plan, Jamestown*⁵; *Management Policies 2001*⁶; the *National Park Service Strategic Plan*⁷; *Strategic Plan for Colonial National Historical Park Fiscal Year 2001-2005*⁸; and the *Resource Management Plan for Colonial National Historical Park*⁹. Public input and an understanding of the resources and values at Jamestown were also considered.

Prior to formalization of the *Jamestown Project DCP/EIS*, the NPS and APVA developed a *Draft Master Plan*¹⁰ to identify needed improvements to facilities and programs at Jamestown and to begin discussions of how to remedy these issues and implement the goals of the joint management plan. Lack of site recognition and

¹ NPS, U.S. Department of the Interior. February 1996. *Joint Management Plan for Jamestown: Initial Concepts*. Prepared for the APVA and Colonial NHP. Philadelphia, Pennsylvania: Philadelphia Support Office.

² NPS, U.S. Department of the Interior. 1993. Denver: Denver Service Center.

³ APVA. 1991.

⁴ APVA. 1993.

⁵ Colonial NHP, NPS, U.S. Department of the Interior. July 21, 2000.

⁶ NPS, U.S. Department of the Interior. 2000. Washington, D.C.

⁷ NPS, U.S. Department of the Interior. 2001. Washington, D.C.

⁸ Colonial NHP, NPS, U.S. Department of the Interior. April 12, 2000.

⁹ Colonial NHP, NPS, U.S. Department of the Interior. Revised April 20, 1999.

¹⁰ APVA and Colonial NHP. October 6, 1999.

education, limited visitor engagement and understanding, and inadequate operations and facilities were noted as the main reasons that Jamestown is not being fully recognized, understood, presented, or explored. Based on Jamestown's importance to United States history and its infinite opportunities for research and discovery, the overall purpose of the Jamestown Project is for the APVA and NPS to jointly research, protect, and present to the public the resources at Jamestown. Supporting that purpose, the project objectives are to:

- Improve the Quality of the Visitor Experience,
- Protect the Jamestown Collection and Associated Archival Materials,
- Enhance Research and Educational Opportunities, and
- Strengthen the APVA/NPS Partnership.

These are discussed in detail in "Chapter 1: Introduction: Purpose and Need" (Section 1.6) of the *Jamestown Project DCP/EIS*.

In addition, the DCP/EIS was developed in concert with the *Jamestown Island Interpretive Plan*¹¹, a document further defining the interpretive goals and objectives based on the fundamental NPS and APVA guidelines. The plan presents specific ideas to support the interpretive approach, engagement with the site, the concept of "Discovery," the proposed themes, and the notion of making choices. Most importantly, these ideas include:

- The approach to the Island and a clear sense of arrival,
- Interpretive anchors at the east and west ends of the site,
- Some collections displayed close to the historic core area to show their relationship to the Townsite landscape and 1607 James Fort site,
- Experimental archaeology sites and focused interpretive points, and
- Site overlooks.

These were considered essential elements of the interpretive approach, and they formed the basis for the physical expressions of that approach, as developed by the DCP/EIS.

DESCRIPTION OF ALTERNATIVE B

Alternative B includes the following main components that support the project purpose, goals, and objectives while enhancing Jamestown's cultural and natural values and minimizing environmental impacts.

The **Intermodal Transportation Terminal** is a new, 2,000 square-foot facility at Neck of Land that will provide orientation to the Jamestown area visitor experience (both Historic *Jamestowne* and Jamestown Settlement), destination/transport options, ticketing, and interpretation. Parking (implemented in phases) for up to 250 cars and 15 buses will be included. The facility will be unstaffed December through March but will remain open to visitors year-round.

The replacement **Visitor Center and educational facility**, an approximately 19,000 square-foot facility located in the Island parking lot, will provide an entry experience to the Island's historic resources, including the Townsite and the Jamestown Rediscovery™ Center, eliminating confusion and providing for the immediate needs of visitors. The new facility will provide restrooms, ticketing, orientation, staff offices, food and drink, and an interpretive overview of the entire site. It will also provide adequate space for educational needs, which has always been lacking at Jamestown.

¹¹ Haley Sharpe Design. 2001.

The **Jamestown Rediscovery™ Center** expansion (by approximately 8,000 square feet) will offer research facilities and state-of-the-art storage and protection for the APVA and NPS portions of the Jamestown collection. This facility will bring together, in a safe structure and location, one of the most important collections of 17th century artifacts in the United States.

The new **Observation Building** will be a hub of interpretation for the site through views, exhibits, and the use of virtual reality. This facility will be located at the site of the existing Visitor Center but will be much smaller in scale (5,000 square feet versus 29,000 square feet) and will not overpower the historic Townsite. The basis of the experience at the Observation Building is to allow visitors to view the objects, landscape, and personal stories or historical events all at a single moment in time.

The creation of **interpretive anchors** at the east and west ends of the Townsite will provide new exhibits and interpretation of archives, collections, and experiences of the historic site. The **Ludwell exhibit facility (Archaearium)** will anchor the western end of the Townsite. This 7,500 square-foot facility will provide an interpretive experience specifically examining the process of archaeological investigation at Jamestown and giving strong emphasis to key interpretive themes. Artifacts and objects will be displayed here to illustrate the themes while archaeologists, craftspeople, and students/interns may be seen demonstrating 17th century building techniques and current archaeological processes. Restrooms, shelter, and a conditioned environment are provided for visitors, and the change of pace and texture to the visit will provide a reinvigoration of interest and concentration for visitors. The **Outdoor Program area** will anchor the eastern end of the Townsite and provides an opportunity for visitors to see special programs dealing with a variety of themes, including the American Indian and African American stories. Restrooms, drinks, and seating and shade will also be offered at this site.

The **Dale House** interior will be modified for provision of light fare food and drink service. The Dale House site will also provide seating, shade and beautiful vistas to the James River.

New transportation options in Alternative B include waterborne transportation from Neck of Land to the Island and to Powhatan Creek Overlook, with boat docks constructed at all three sites. Water transport offers a new opportunity to tell interpretive stories that are currently not being told. Modal transfer opportunities are provided at Neck of Land, Jamestown Island, and the Powhatan Creek Overlook. The Neck of Land facility will have parking for buses (and bus turnarounds), a boat dock, and the trailhead for the pedestrian/bicycle path. The pedestrian/bicycle path will begin on Neck of Land at the Intermodal Transportation Terminal and will follow the pre-1957 road trace over Neck of Land. The asphalt still remains on most of this road and will be used for the pedestrian/bicycle path until reaching the tree line-marsh interface where it will traverse the marsh as an elevated boardwalk until reaching the Back River. A new pedestrian/bicycle bridge will connect the marsh boardwalk to Jamestown Island. These new transportation alternatives will also offer **new interpretive opportunities**, which will enhance the visitor experience. In particular, the hike/bike trail, the interpretive boat tour, and the Neck of Land facility will include interpretive opportunities that tell the stories of the American Indians and African Americans that have not been adequately told. These areas will provide venues for natural resource interpretation as well.

BASIS FOR DECISION

This section provides the rationale for selecting and implementing Alternative B for the *Jamestown Project Development Concept Plan*. In arriving at this decision, the NPS, APVA, and planning team members evaluated and compared each of the Jamestown Project alternatives with respect to how well they met the stated project purpose and need, improved the existing conditions at Historic *Jamestowne*, protected resources and values (including the potential for adverse impacts or impairment), and met NPS and APVA management policies.

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Not to Scale

Key

1. Intermodal Transportation Terminal and Parking/Drop Off	9. Reduced Parking on Jamestown Island	17. Ambler House Observation Platform
2. Colonial Parkway Widened for Access to Neck of Land	10. Replacement Visitor Center	18. Interpretive Anchor (East) Agricultural
3. Boat Dock at Neck of Land	11. Pedestrian Bridge to Observation Building	19. Reconfigured Glasshouse Parking
4. Hike / Bicycle Path on Old Road Trace (pre-1957)	12. Observation Building	20. Boat Dock at Powhatan Creek Overlook
5. Hike / Bicycle Path on Marsh Boardwalk	13. Walkway Transition / 'Hub'	21. Loop Drive with Wayside Signage
6. Hike Bicycle Bridge over Back River	14. Expanded Collections Storage at Jamestown Rediscovery ^(TM) Center	22. NPS Maintenance Facility
7. Boat Dock on Jamestown Island	15. Interpretive Anchor (West) Ludwell Exhibit Facility	23. Water / Sewer Restrooms
8. Walkway from Boat Dock	16. Dale House (Food / Drink, Shade & Seating)	24. Hike / Bicycle Path from Glasshouse to Jamestown Settlement

Legend

- Existing
- Proposed

Alternative B - Preferred Alternative

THE JAMESTOWN PROJECT

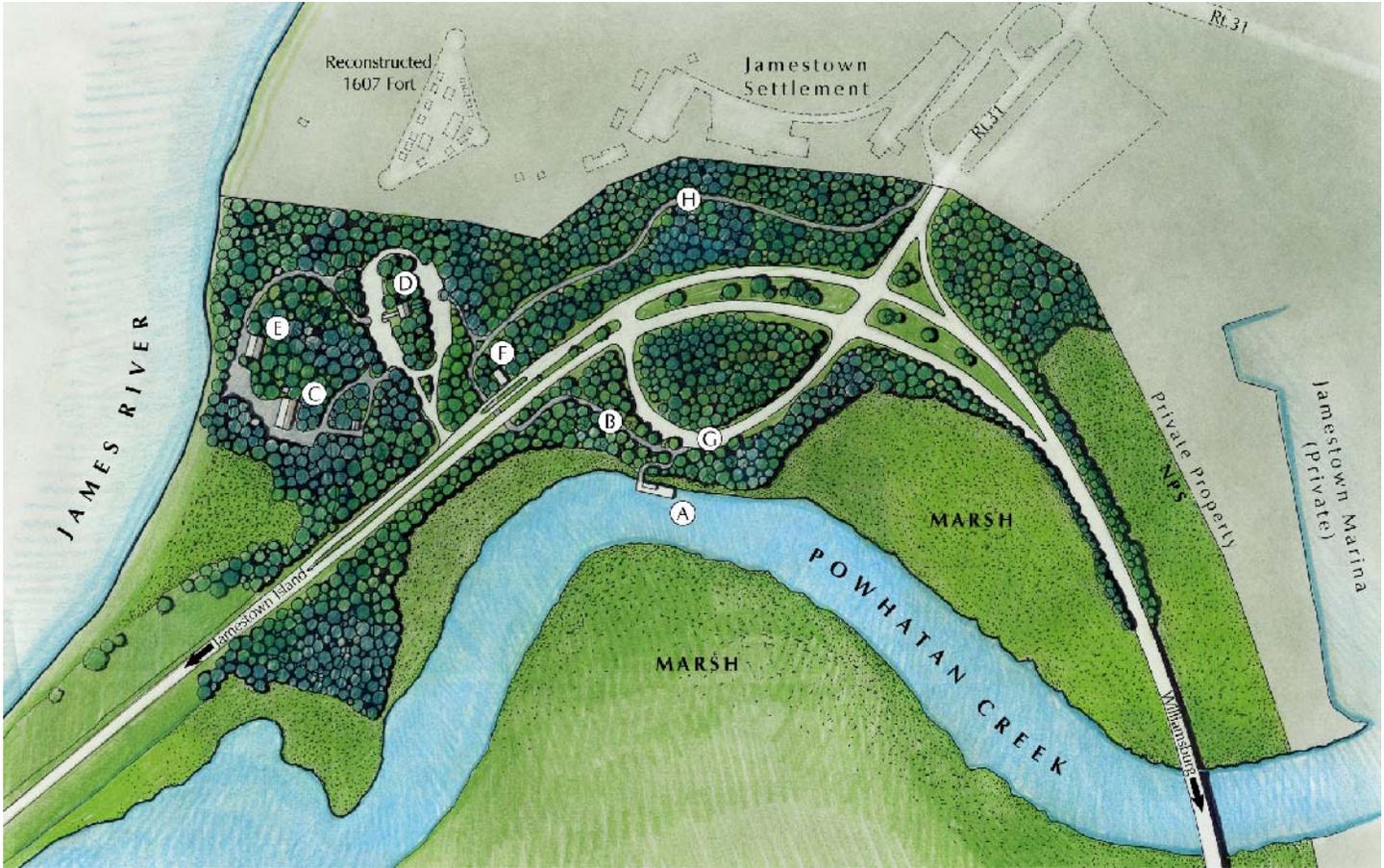


Key

- A. Hike / Bicycle Path over Marsh
- B. Hike / Bicycle Bridge over Back River
- C. Boat Dock
- D. Parking and Modal Transfer
100 Cars; 25 Buses
- E. Visitor Center / Educational Facility
- F. Pedestrian Bridge to Observation Building
- G. View to Historic Landscape
- H. Observation Building
- I. 'Hub' Walkway Transition
- J. Original 1607 Fort Site
- K. Joint Collections, Storage, Research
and Education Facility
- L. Ludwell Exhibit Facility
- M. Path from Boat Dock

Alternative B - Preferred Alternative - Jamestown Island

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Not to Scale

Key

- A. Proposed Boat Dock
- B. Proposed Trail
- C. Glasshouse (Existing)
- D. Restroom (Existing)
- E. Glasshouse Exhibit (Existing)
- F. Ranger Office (Existing)
- G. Powhatan Creek Overlook (Existing)
- H. Proposed Hike / Bicycle Path to Jamestown Settlement

Alternative B - Preferred Alternative - Powhatan Creek Overlook



Not to Scale

Key

- A. Colonial Parkway Entrance to Neck of Land
- B. Intermodal Transportation Terminal
- C. Parking and Modal Transfer
250 Cars; 15 Buses
- D. Walkway from Boat Dock
- E. Boat Dock on Back River
- F. Hike / Bicycle Path on Existing Road Trace

Alternative B - Preferred Alternative - Neck of Land

The selected alternative most completely supports the goals of the Jamestown Project, including conveying the significance of Jamestown; providing meaningful experiences for visitors of all ages, races, and nationalities; presenting the story of peoples from three continents and the environment they encountered here; interpreting the unique cultural and natural resources of the project area; and ensuring that the Island's cultural and natural resources are preserved for future generations. It is the only alternative to effectively solve all the remedial factors in the current visitor experience and to fully realize the goals and objectives of the interpretive approach, as outlined by the *Jamestown Island Interpretive Plan*¹². Alternative B provides the complete mix of elements that makes the visitor experience uniquely appropriate to the site, and it best fulfills the joint APVA/NPS Jamestown mission.

Improve the Quality of the Visitor Experience

Implementation of Alternative B will increase and expand visitor services and amenities, interpretation and telling of stories that have not been told before at Jamestown, options for transport to Historic Jamestowne, and the opportunity for the visitor to be engaged with the entire project site.

The Intermodal Transportation Terminal provides the best start to the interpretive visit. It allows the visitor to gain the best sense of anticipation, excitement, and specialness about the site. This is a very rare opportunity to truly engage visitors with the site before they arrive at it. New interpretation of the natural resources and the American Indian presence at Jamestown will be related to visitors as they either walk or cycle through the marsh or make their way by boat along the Back River. The facility structure itself is envisaged as a small-scale structure (2,000 square feet), low-key and sufficient only to provide the necessary orientation material and support functions to the transportation modal changes. In addition, parking (implemented in phases) for up to 250 cars and 15 buses will be included. This facility will help reduce automobile traffic on Jamestown Island and will help visitors understand their options for going to both Jamestown Settlement and Jamestown Island thus reducing visitor confusion between the two sites. The visitor will arrive by private vehicle, by bike or by public transportation at a welcome point at the Neck of Land area, on the mainland across the Back River from Jamestown Island. Visitors arriving by private vehicle will be encouraged to park at Neck of Land; those on public transportation have the option of alighting here or continuing on to the Island itself. Taken as a whole, this experience forms a transition from the world of marshalling kids into cars, driving and route-finding, gas stations, etc. and into the world of adventure, of human drama, of emotion, and of discovery. The orientation process starts at Neck of Land but must continue throughout the visit to Jamestown.

The replacement Visitor Center and educational facility will provide an entry experience to the Island's historic resources, including the Townsite and the Jamestown Rediscovery™ Center, eliminating confusion and providing for the immediate needs of visitors. The removal of the Visitor Center from the Townsite will lessen the impact this structure currently has on the cultural landscape. Visitors, having arrived on the Island, will make their way to the new Visitor Center through carefully landscaped surroundings that respect the cultural resource of the Colonial Parkway termination and provide opportunities for outdoor interpretive exhibits such as a site model or sculpture. The location of the Visitor Center and educational facility on the Island, in the existing parking lot, is important for several reasons: it provides a sense of arrival; it provides a re-orientation point and necessary visitor facilities such as restrooms; it provides the opportunity to introduce and set the scene for the start of the visit for those arriving onto the Island by car and bus and for the next stage of the visit for those arriving from the Neck of Land node by other means; it provides a base for educational activity and other interpretive programming close to the core historic site but not on top of the site; it removes some of the major visitor facility needs from the core site itself, while not over loading the functions of the building. It also allows

¹² Haley Sharpe Design. 2001.

a spreading of lower-key, smaller-scale visitor facility structures around the site, rather than creating a visually intrusive, monumental structure.

Sitting as it does at the pivotal point of the historic site, the new Observation Building is the ideal place to make connections. Views across the site are possible from this elevated position. Visitors not only view the historic objects as close as practicable to the historic sites where they were found, but they also overlook the site at the same time and are able, through the use of virtual reality, to “see” the site at chosen times in the past. This facility is designed to maximize the understanding of the Island as a cultural resource and as a laboratory of discovery.

Along with the Observation Building, the creation of interpretive anchors at the east and west ends of the Townsite will provide new exhibits and interpretation of archives, collections, and experiences of the historic site. The visitor experience will no longer be focused at the core of the historic Townsite, but visitors will be drawn to explore the entire site. These facilities offer new interpretive opportunities and programs, further enhancing the visitor experience and understanding of the site.

As previously noted, the new alternative modes of transportation will allow for new interpretive opportunities as well. These new transportation options also provide new physical experiences and approaches for visitors to Historic *Jamestowne*. Instead of seeing Jamestown by car or charter bus, visitors can enjoy the outdoor experience and hike, bicycle, or ride on the waterways via the water taxi or interpretive boat tour. Alternative B is the only alternative to offer direct routes to Jamestown Island using all three options.

Finally, the addition of amenities over the entire site will greatly enhance the visitor experience. By having features located at various and distinct parts of the Island, visitors have several choices how to structure their experience and to interact with the exhibits. Most importantly, restrooms and drinks will be included in major facilities and at the Outdoor Program area, allowing visitors to spend more time across the entire site, instead of limiting their visit to the core area.

Protect the Jamestown Collection and Associated Archival Material

The total Jamestown museum collection, owned by both the APVA and NPS, contains more than 1.1 million objects and is continuously growing. At present, the APVA and NPS portions of the Jamestown collection are physically separated on the Island, and the NPS portion is stored in an area that puts the collection at risk of damage or loss from flooding. Alternative B is the only alternative to bring together the Jamestown collection, on the Island, in a state-of-the-art storage and research facility. The expansion of the Jamestown Rediscovery™ Center will bring together, in a safe structure and location, one of the most important collections of 17th century artifacts in the United States.

Enhance Research and Educational Opportunities

Alternative B does the best job of facilitating the joint APVA and NPS management and coordination of research and educational opportunities at Historic *Jamestowne*. Storing the NPS and APVA portions of the Jamestown collection in one facility will allow for coordinated conservation, processing, documentation, research, and interpretation of the collection. A research and staff library will be centrally located within the facility and will include materials from each organization. This fosters collaboration between the APVA and NPS and eases the sharing of knowledge and discovery. For outside researchers, having the collection housed together with adequate workspace will allow for simultaneous access to the entire Jamestown collection, thus decreasing travel time and duplication of effort.

Under Alternative B, educational facilities for both the APVA and NPS will be located in the new Visitor Center. This will allow for coordinated programs and site tours. Also, the close proximity of the facility to the

Townsite will be advantageous to educational program directors, interpreters, and park rangers and volunteers providing visitor tours. Designated office and educational space will be provided within the facility.

Strengthen the APVA/NPS Partnership

Alternative B provides the best and most feasible solutions to foster the partnership between the APVA and NPS and to create an environment for active research. The story of Jamestown and its importance to the nation is not the single property of either institution. It is rather the collective obligation of the APVA and NPS to work together to disseminate new research and discoveries through exhibits, programs, and publications. By housing the research under one roof, sharing the responsibility of exhibition and program development, and promoting the 17th century story through the interpretive landscape, irrespective of the property line, the true essence and importance of this remarkable American landmark will be served.

OTHER ALTERNATIVES CONSIDERED

The following discussion provides a general description of the other alternatives considered for the *Jamestown Project DCP/EIS*. Each alternative is described in detail in Volume 1, Chapter 2 of the DCP/EIS.

Alternative A

This alternative assumes continuing current management practices at Jamestown without any substantive changes in facilities, infrastructure, or resource investment. This concept provides a baseline from which to compare other alternatives, to evaluate the magnitude of proposed changes, and to measure the environmental effects of those changes. This no action concept follows the guidance of the Council on Environmental Quality (CEQ), which describes the No Action Alternative as no change from the existing management direction or level of management intensity. In Alternative A, there would be no construction of new facilities and no infrastructure changes, except to accommodate many current approved plans of the NPS and APVA. Also, the NPS portion of the Jamestown collection would remain in the basement of the existing 1956 Visitor Center, at risk of damage and/or loss from flooding and leaks.

Access to Jamestown Island would remain unchanged, with visitors coming on the Colonial Parkway to both the Island and the Settlement. Visitors would also come to Jamestown Island from Route 31 (Jamestown Road) through the Jamestown Settlement property on Route 359 and onto the Colonial Parkway. There would be no pedestrian/bicycle path beyond the use of the Colonial Parkway, as it exists. There would also be no facility to accommodate boat access to the Island. Visitors would continue to go through the staffed gatehouse, stopping there for ticketing and orientation. Visitors would drive to the Island, then park, and walk to the existing Visitor Center.

Alternative C

This alternative concentrates new facilities at Neck of Land and removes all parking and the Visitor Center from Jamestown Island. The amount of development on Neck of Land would be extensive: the NPS portion of the Jamestown collection, the Intermodal Transportation Terminal, and the Visitor Center would be located on Neck of Land. Included with the facilities would be parking spaces for 300 cars and 20 buses. Alternative C would encourage vehicles to stay off the Island except for staff and operations. In addition, a small ticketing facility would be located in the existing Visitor Center parking lot. Neck of Land would function as a major gateway to both the region and the Jamestown Project so visitors could immediately understand their options for going to Jamestown Settlement and to Jamestown Island. The APVA portion of the Jamestown collection would remain in the existing Jamestown Rediscovery™ Center on Jamestown Island. Exhibits and lab functions would move into this facility from the existing Dale House.

Alternative D

This alternative differs from Alternatives B, C, and E because no development is proposed on Neck of Land and no alternative modes of transportation would be used except buses from Colonial Williamsburg that would go straight to the Island and hiking and biking on the existing Parkway. Alternative D also differs from the other alternatives in the scale, design, and location of the Visitor Center/educational facility. In this alternative, the Visitor Center, NPS collections and research, educational facilities, and the Observation Building would be accommodated in one large, three-story building on the site of the existing Visitor Center. Collections would be relocated from the basement to the third floor in order to place them above the 500-year flood zone. The enlarged building would serve visitors with orientation, food, restrooms, retail, exhibits, educational classrooms, and views and interpretation of the historic site. The facility would serve researchers by giving access to the collections and research opportunities in very close proximity to the sources of the artifacts and ongoing archaeology. Enlargement of the existing 1956 Visitor Center would cause additional visual intrusion onto the historical site. The APVA and NPS portions of the Jamestown collection would remain separated. Parking would remain in its current location on the Island, retaining the existing 333 spaces for cars and 25 for buses. There would be no boat transport to Jamestown Island, and pedestrians and cyclists would have to use the existing pavement of the Colonial Parkway because no separate trails would be constructed.

Alternative E

In this alternative, the NPS portion of the Jamestown collection would be relocated from the Jamestown Project area to a remote location in the Williamsburg/James City County area. This would keep the Jamestown collection separated, and NPS artifacts would be removed from their place of discovery. In this alternative the proposed replacement Visitor Center would be in the existing Island parking lot. Alternative E also has an Intermodal Transportation Terminal at Neck of Land, but the parking would accommodate fewer cars than in Alternative B. This facility at Neck of Land would give visitors basic choices from the Colonial Parkway, including information about alternative modes of transportation to the Island. The pedestrian/bicycle path in this alternative would begin on Neck of Land at the Intermodal Transportation Terminal and proceed west over the marsh. Once off the upland area, the path would turn into a boardwalk and cross the Powhatan Creek on a new pedestrian/bicycle bridge. Pedestrians and cyclists could then get on the Colonial Parkway, go to the Glasshouse or Jamestown Settlement, or continue on to Jamestown Island.

PUBLIC INVOLVEMENT

On September 29, 2000, the NPS published in the *Federal Register* Volume 65, Number 190 a Notice of Intent to prepare a Development Concept Plan/Environmental Impact Statement for the Jamestown Project. The *Final Development Concept Plan/Environmental Impact Statement* has been developed pursuant to Sections 102(2)(c) of the National Environmental Policy Act (NEPA) (Public Law 91-190) and the CEQ regulations (40 CFR 1508.22). Public involvement included a visioning process; intensive charrettes; formal scoping; briefings for NPS and APVA staff, as well as government officials; a formal public comment process; public meetings and outreach; and meetings with affected federal, state, and local governments and agencies, tribal groups, and interested organizations and individuals. These activities are briefly summarized below, and a detailed discussion is presented in Volume 2, Chapter 5 of the DCP/EIS.

Visioning Process and Scoping

In 1997 and 1998, as part of the ICON Architecture, Inc. study, a visioning process was initiated to identify major stakeholders and develop a common “vision” for Jamestown. Out of this process, a framework/outline for interpretive approaches and the visitor experience were established. The charrette brought together a distinguished group of nationally recognized scholars, planners, architects, cultural resource specialists, and

educators to review the vision and offer recommendations and constructive analyses. Input from the design charrette was described and visualized in the *Draft Master Plan for Jamestown*¹³.

The Jamestown Project planning process began with a series of scoping meetings. Individuals and groups were informed in advance of the meetings and invited to participate. This project has engaged interested individuals and organizations outside as well as inside the APVA and NPS. The scoping meetings included: media representatives; business and tourism representatives; Jamestown-Yorktown Foundation staff and board members; representatives of the African-American community; Colonial Williamsburg Foundation staff and board members; educators; representatives of the Virginia Indian community; representatives of the Virginia Department of Conservation and Recreation, Division of Natural Heritage; representatives of the Virginia Department of Historic Resources; representatives of the Chesapeake Bay Local Assistance Department; the Executive Director of the James River Association; the Vice President in charge of special projects for Colonial Williamsburg; local government officials; representatives of area attractions; historians and researchers; adjacent and local homeowners; historic preservationists; transportation stakeholders; and local church representatives.

Consultation with American Indian Tribes

Potentially relevant to the development of the Jamestown Project are the laws and regulations that deal with American Indian relationships and discovery of human remains. American Indian archaeological resources (including two Clovis points) have been located at the Jamestown Project site, and several Virginia tribes, including the Mattaponi, Pamunkey, and Chickahominy, have historical connections to the site. No tribes now use the site or surrounding areas for traditional purposes. In addition, none of the tribes with historical ties to the Jamestown Project site are federally recognized.

Stakeholder meetings were held specifically for the American Indian community; in addition, APVA and NPS representatives met twice with the United Indians of Virginia, a consortium of seven tribes, for presentation of and consultation on the alternatives. On January 20, 2001, there was a presentation and discussion of the Jamestown Project with the board of the United Indians of Virginia at Tsena Commocko Church in New Kent County, Virginia. The second meeting was held on March 31, 2001, again with the board of the United Indians of Virginia. During this meeting at the Chickahominy Tribal Center in Charles City, Virginia, project representatives presented preliminary alternatives. On May 15, 2001, the NPS Jamestown Project Director presented the preliminary alternatives to the Council of Virginia Indians, an official entity established by the Commonwealth of Virginia, at the council's monthly meeting. Project representatives met again with the United Indians of Virginia in November 2001 and March 2002.

To date, comments received from these consultations have been related to interpretation and how the stories and histories of Jamestown have been and will be told. Currently, interpretation of the American Indian story is fairly limited at Jamestown. Representatives are excited about Alternative B and the telling of the American Indian story at Neck of Land and on the proposed tour boat. No direct comments have been related to the proposed facilities themselves.

Consultation with the African-American Community

Because Jamestown is recognized as the first landing place for Africans coming to an English colony in North America (1619), efforts have been made specifically to gather perspectives from the African-American community about Jamestown and its history, including experiences of free and enslaved Africans and African-Americans. In addition to the stakeholder meeting held to gather perspectives from the African-American

¹³ APVA and Colonial NHP. October 6, 1999.

community, various discussions have been held to gather their input, particularly on the interpretive themes and how they can best be reflected in the proposed facilities. These discussions included a meeting with the NPS Jamestown Project Director on April 23, 2001, and a round table discussion at Hampton University on May 16, 2001.

Comments received at the stakeholder meetings, public meetings, and round table discussions have focused mainly on how the African and African-American story is told at Jamestown. As with the American Indian representatives, comments related to proposed facilities have been limited. Although the Jamestown Project does not focus on how stories will be told, these comments have been carefully considered by the interpretive planners and will be addressed during future phases of the project related to interpretive and exhibit planning.

Public Meetings

Early in the process, the planning team held a series of public meetings to inform people of the project and gain public input. A total of six public meetings were held. The first two meetings were held in October 2000 at Jamestown Island to introduce the concept of enhancing research and educational opportunities, improving the visitor experience, and protecting the collections at Jamestown. Those attending the public meeting were asked for their reaction to making changes on the Island in general and for their views regarding potential alternative concepts. Comments reinforced views expressed during the scoping process. Most of the interest and concern centered on interpretation: what stories would be told and how. Points that were emphasized pertaining to the physical changes included maintaining the tranquil nature and aesthetics of the Island; the need to reduce visitor confusion between Historic *Jamestowne*, the original site, and Jamestown Settlement, the living history museum; and the need for the NPS and APVA to work together with the Jamestown Settlement for joint programs and tickets. Providing a gateway to orient visitors to all of Jamestown (both the Island and the Settlement) was requested.

The second series of public meetings were held in May 2001. Five preliminary alternatives (including the No Action Alternative) were presented, and those in attendance were asked to comment on the elements of each. Comments and concerns included keeping new Neck of Land facilities seasonal; considering the impact of the Neck of Land facilities on the residents of Neck-O-Land Road and on the water quality of the area; the addition of docks and boat traffic within the narrow passage of Back River; keeping the APVA and NPS collections together on the Island; and limiting vehicular traffic on the Island to maintain the tranquility and sacredness of the historic site.

On July 29, 2002, the Notice of Availability for the *Jamestown Project Draft Development Concept Plan/Environmental Impact Statement* was published in the *Federal Register* Volume 67, Number 145. The document was available for public review for 60 days. Copies of the document were available at local libraries and at both the Yorktown and Jamestown Visitor Centers. Documents were also sent to interested individuals, agencies and organizations. Approximately 30 days into this review, public meetings were held on September 12, 2002, to solicit comments and inform the public of the Preferred Alternative, Alternative B. Press releases and public notices were used to announce the availability of the document as well as the public meeting times.

Approximately 18 federal, state, and local agencies and organizations provided comments on the document. Letters and emails were received from the U.S. Environmental Protection Agency, Region III; U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers; U.S. Coast Guard; Federal Highway Administration; Virginia Department of Conservation and Recreation; Virginia Department of Environmental Quality; Virginia Department of Agriculture and Consumer Services; Virginia Department of Health; Virginia Department of Transportation; Virginia Marine Resources Commission; Virginia Department of Mines, Minerals, and Energy; Virginia Department of Forestry; Chesapeake Bay Local Assistance Department; Virginia Department of Historic Resources; Virginia Tourism Corporation; James City County; James River Association; and the

Williamsburg Area Bicyclists. In addition, approximately 76 individuals provided formal comments: 48 of which were part of a campaign to allow non-motorized personal watercraft access at Jamestown.

In general, the majority of the comments received were in support of the Preferred Alternative (Alternative B). Agency comments offered guidance on implementing the Preferred Alternative and ways to successfully mitigate and minimize potential impacts to resources. Several individuals gave testimony at the public meeting that they supported the No Action Alternative because they were concerned with the effect of proposed actions on existing boat traffic and water skiing within Back River.

Interagency Consultation

Consultation with the Advisory Council on Historic Preservation and the Virginia Department of Historic Resources

Both the APVA and NPS properties are listed on the *National Register of Historic Places* as National Historic Sites. To ensure that any proposals that could potentially affect properties listed on the *National Register* comply with the provisions of Section 106 of the National Historic Preservation Act, the Advisory Council on Historic Preservation and the Virginia State Historic Preservation Officer, as represented by the Virginia Department of Historic Resources (VDHR), were invited to participate early in the planning process. On October 24, 2000, the NPS and APVA held an initial scoping meeting with regulatory agencies that included both the ACHP and VDHR. Representatives of the SHPO have participated in core planning efforts, including the presentation of draft alternatives and provided comments on the Draft DCP/EIS.

On August 24, 2001, APVA and NPS representatives met with Ms. Ethel Eaton of the SHPO to discuss compliance issues related to the Jamestown Project. Those issues included the archaeological compliance needs for the APVA property; potential impacts of the addition to the Jamestown Rediscovery™ Center proposed in Alternative B; and the construction proposed near the Ludwell site in all of the alternatives. Ms. Eaton brought examples of programmatic agreements, discussed their content, and outlined what the planning team needed to do. That discussion focused on the need for any construction-related excavation to be very closely supervised by the APVA archaeologists. This supervisory approach applies to NPS lands as well. Prior to any ground-disturbing action by the NPS or APVA, a professional archaeologist will determine the need for any additional archaeological inventory or data recovery.

In another meeting on September 7, 2001, the project team discussed with Ms. Eaton the procedure to be followed for compliance with Section 106 of the National Historic Preservation Act. Since time was of the essence, Ms. Eaton suggested that rather than combine the NEPA and 106 compliance documents, the 106 compliance documentation could be prepared through a programmatic agreement. In early December 2001, Karen Rehm, Chief Historian with Colonial NHP, consulted with Ms. Eaton on the development of a draft programmatic agreement. Based upon this consultation it was decided that a three-way programmatic agreement for the implementation of the Preferred Alternative would be developed between the NPS, SHPO, and ACHP once the SHPO and ACHP had reviewed the DCP/EIS. The APVA would serve as a concurring party. This Programmatic Agreement has been finalized and signed, and a copy is located in Appendix B.

Consultation with Agencies Related to Threatened and Endangered Species

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) requires all federal agencies to consult with the FWS to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continue existence of listed species or critical habitat. Communications with the Virginia Department of Conservation and Recreation Division of Natural Heritage (VDNH), the Virginia Department of Game and Inland Fisheries (VDGIF), and the FWS indicated that several federal- and state-listed species, as well as species of special concern, have been documented within and adjacent to the Jamestown Project site. According to

studies by the VDNH, Colonial NHP hosts the second-highest number of rare, threatened, and endangered species of all the NPS units in Virginia.

Of special concern, the bald eagle and bald eagle habitat and the sensitive joint-vetch and its habitat were located in the project area during the planning process. The NPS initiated informal consultation with FWS and met with the agency on October 25, 2000; February 22, March 5, June 22, August 27, and October 2, 2001; and September 20, 2002, in order to discuss ways to avoid and/or minimize impacts to these species as well as potential mitigation and compensation measures for unavoidable impacts. During the development of alternatives, changes were made to accommodate recommendations of the FWS, as well as VDNH and VDGIF. Colonial NHP contracted with VDNH to prepare a Biological Assessment. The Assessment was completed in November 2002 and submitted to the FWS, thus initiating formal consultation under the Endangered Species Act. Based on the information provided in the Biological Assessment, the FWS prepared its Biological Opinion in January 2003. The signed Biological Opinion is attached to this ROD (Appendix D).

FINDINGS ON IMPAIRMENT OF PARK RESOURCES AND VALUES

The NPS has determined that implementation of Alternative B will not constitute an impairment to the resources and values at Jamestown. This conclusion is based on a thorough analysis of the environmental impacts described in the *Jamestown Project Final Development Concept Plan/Environmental Impact Statement*, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in Director's Order 55. While the proposed plan has some adverse impacts, in all cases these adverse impacts are the result of actions taken to preserve and restore other park resources and values. Overall, the plan results in major benefits to park resources and values, opportunities for their enjoyment, and does not result in impairment.

In determining whether an impairment may occur, park managers consider the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action. According to NPS policy, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: a) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; b) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or c) identified as a goal in the park's general management plan or other relevant NPS planning documents" (Director's Order 55 and *NPS Management Policies 2001*).

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Environmentally Preferred Alternative is defined by CEQ as "the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act Section 101 (b)." Section 101 (b) states that the Environmentally Preferred Alternative should: "...(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; (5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." Basically, "this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ 1981).

While Alternative D would not maximize the interpretive use of the resource and does not physically allow for meeting the purpose and need of the project to the extent that the other alternatives do because it is consolidated on the original footprint of the existing Visitor Center, it has the fewest physical impacts to cultural and environmental resources. Therefore, Alternative D has been identified as the Environmentally Preferred Alternative. Alternative D would fulfill all of the goals of NEPA set forth by the CEQ by protecting cultural and natural resources for future use (goals 1 and 3) while adding amenities that would promote a safe and aesthetically-pleasing interpretive experience (goals 2, 4, and 6).

Alternative D proposes very little new construction in undisturbed areas; nothing is proposed at Neck of Land, there is no boat tour within Back River, and there are no hike/bike trails or bridges. Therefore, the upland and wetland habitats at Neck of Land remain intact, and the sensitive joint-vech and bald eagle habitats are avoided. In addition, no modifications to the Colonial Parkway would be required at Neck of Land or within the Island parking lot.

On the other hand, there are various impacts related to Alternative D that the NPS Preferred Alternative, Alternative B, either does not have or may negatively impact the visitor experience. By keeping all of the parking on the Island, bus and vehicular traffic would greatly increase as visitation growth occurs. A bald eagle nest is within close proximity to the Island parking lot, and the increased traffic may have an adverse impact on the eagles. In addition, the reconfigured existing Visitor Center would increase in height by an additional story. Not only would this structure continue to be a physical and visual intrusion within the cultural landscape, but also its volume would increase the minor impact this structure currently has on the 100-year flood zone.

Alternative D was not chosen as the NPS Preferred Alternative because it lacks many elements that would contribute to meeting the purpose and need of the project. There is no collocation of collections for collaboration and research of the entire Jamestown collection. This also weakens the existing partnership. Alternative D does not open up the historical and cultural landscape for viewing due to the large multi-story building in the middle of the historic site. There is nothing in Alternative D that helps orient the visitor to choices within the context of the Jamestown Project. The huge problem of visitor confusion would continue with the implementation of this alternative. Also, there is no opportunity for new interpretive stories of settlers of all nationalities to be told via different approaches to the Island, either by water or on foot or bicycle. This diminishes the capacity of the project to attract and educate a wider, more diverse audience to the site. The visitor in Alternative D is totally dependent on the automobile and will not become engaged with Jamestown until they come to the Visitor Center in the historic Townsite. This alternative also does not encourage alternative modes of transport.

Although Alternative D is identified as the Environmentally Preferred Alternative, the NPS Preferred Alternative, Alternative B, is environmentally supportive. It does fulfill the goals established by CEQ for an Environmentally Preferred Alternative. It would maximize the interpretive use of the resource, while promoting in the most effective way, public recognition of the need to continue to preserve, protect, and cherish the site long into the future (goals 1, 4, and 5). Alternative B maintains a high level of protection to natural and cultural resources while concurrently attaining the widest range of visitor uses of the site without further degradation (goals 2, 3, 4, and 5).

MEASURES TO MINIMIZE ENVIRONMENTAL HARM (MITIGATION)

During preparation of the *Jamestown Project Development Concept Plan*, the APVA and NPS incorporated measures to minimize the adverse effects of construction activity associated with Alternative B. Tables 1 and 2 (Appendix A) provide a list of the mitigative and compliance measures that the APVA and NPS will implement as part of the Jamestown Project. The NPS will have the primary and full responsibility for coordinating the specific elements of each mitigation measure, including those that involve cooperation or approval of other

agencies, including the APVA. The NPS will also be responsible for ensuring that each mitigation measure has been implemented as specified in the *Jamestown Project Final Development Concept Plan/Environmental Impact Statement* and summarized in Tables 1 and 2. A mitigation monitoring plan will be developed prior to the start of construction and will also be implemented prior to construction to obtain appropriate baseline information. In addition, because the project scope will require a phased construction plan spanning several years, the NPS will perform additional environmental analyses to tier off of the DCP/EIS if time and conditions change enough to warrant it.

CONCLUSION

The above factors and considerations warrant implementing Alternative B, as identified in the *Jamestown Project Final Development Concept Plan/Environmental Impact Statement* and this Record of Decision. Alternative B provides the most comprehensive and effective method among the alternatives considered for meeting the National Park Service’s purposes, goals, and criteria for managing the Jamestown Unit of Colonial NHP and for meeting national environmental policy goals. The selection of Alternative B would not result in the impairment of park resources and values and will allow the NPS to preserve park resources and provide for their enjoyment by future generations.

APPROVED: _____ DATE: _____
Marie Rust
Regional Director, Northeast Region

RECOMMENDED: _____ DATE: _____
Alec Gould
Superintendent, Colonial National Historical Park

RECOMMENDED: _____ DATE: _____
Sandy Rives
Jamestown 400th Project Director

Appendix A: Mitigation and Compliance

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
Ethnographic Resources	All actions	<ul style="list-style-type: none"> ▪ APVA and NPS will consult with American Indian groups and the National Association for the Advancement of Colored People (NAACP) on planning and management activities that would affect their historical connection with Jamestown. ▪ Programs will be developed in ways that reflect respect for the beliefs, traditions, and other cultural values of the tribes with ancestral ties to Jamestown. ▪ A prompt and effective notification system to consult with the SHPO and concurring parties regarding discovery of human remains and associated objects will be developed.
Archaeological Sites	Increased visitation	Provision of controlled access, fences or other barriers, and other means to protect archaeological sites and keep visitors from directly contacting the resource.
	All construction activities	<ul style="list-style-type: none"> ▪ Data recovery prior to construction in unexcavated areas. ▪ Construction access mats will be used for temporary access in sensitive areas. ▪ APVA and/or NPS archaeologist present during construction activities in case of inadvertent discoveries. ▪ Sensitive areas marked with snow fencing and depicted on construction drawings.
	Ludwell exhibit facility	Bearing pads in areas with archaeological strata below will be constructed upon layers of sand, filter, cloth, and gravel.
	Hike/bike trails	Constructed on fill, above grade.
Historic Buildings and Structures*	All actions	<p>Powhatan Creek boat dock</p> <p>Construction will initiate from the waterside.</p> <ul style="list-style-type: none"> ▪ All historic buildings and structures that are physically impacted by construction activities will be fully documented prior to impact. ▪ Compatible materials will be in character with the existing buildings and overall design vocabulary of the site.
Cultural Landscapes	All actions	<ul style="list-style-type: none"> ▪ All contributing cultural landscape features that are physically impacted by construction activities will be documented prior to impact. ▪ New structures will have low profiles (when possible), using natural and compatible colors and materials to blend with the existing landscape. ▪ Native and/or non-invasive vegetative screening will be used in all areas of new construction. ▪ Original fabric will be preserved as much as possible. ▪ The addition of new features is preferable to removing existing features. ▪ The overall spatial character of each landscape area will be retained. ▪ The nature of each landscape design will be recognized and maintained (i.e. commemorative, interpretive, etc.). ▪ Contributing trees that are not to be removed will be clearly flagged and marked on construction drawings.

*The Colonial Parkway is also considered a historic structure; however, impacts to this resource were addressed under cultural landscapes.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
Cultural Landscapes (cont'd.)	Ludwell exhibit facility and Jamestown Rediscovery™ Center and parking lot expansion	Several contributing and non-contributing trees will need to be removed and some will be replanted in appropriate areas to increase vegetative screening.
	Neck of Land Intermodal Transportation Terminal and parking lot	<ul style="list-style-type: none"> ▪ Approximately 0.55 acres of open space along the Colonial Parkway will be forested to limit viewshed impacts. ▪ New intersection will be designed as a divided island using compatible materials based on the traffic divider design such as the granite block pavers at the Route 359 intersection. ▪ Widening of the Parkway will be carefully integrated into the existing alignment to minimize impacts to this historic structure.
	Powhatan Creek Overlook boat dock and access trail	New grading will follow existing contours, where possible, to minimize impacts on the surviving historic landforms in this steep area.
Cultural Resources (cont'd.)	Collection exhibits	<ul style="list-style-type: none"> ▪ Provision of suitable environmental controls, fire and flood protection, and security for displayed objects. ▪ Where protection cannot be provided, other display and interpretive techniques will be used to minimize harm. ▪ Provision of structural flood-proofing. ▪ Development of an operational response plan for evacuating and/or protecting the collections during flood or storm events.
	Collocated APVA and NPS portions of the Jamestown collection in the expanded Jamestown Rediscovery™ Center	<ul style="list-style-type: none"> ▪ Strict adherence to both APVA and NPS policies and procedures in order to preserve the integrity of each collection and satisfy independent ownership requirements. ▪ An operational management plan will be prepared in a Memorandum of Agreement to address concerns over organizational control. The plan will specify ways to prevent inadvertent mixing of the separate collections (especially when being simultaneously researched), identify common emergency procedures to ensure protection of the two collections, and clearly identify requirements for access. ▪ Provision of structural flood-proofing of the addition to the Jamestown Rediscovery™ Center to ensure that no flooding of the collection storage area or from the area beneath the collection could occur. ▪ Provision of HVAC, humidity, and security equipment and controls capable of maintaining a proper environment for the collections during worst-case flood conditions (i.e., being self-contained with generators, emergency supplies, etc.). ▪ Development of an operations response plan for protecting the collections, facility, and staff during flooding. ▪ New construction will be designed to protect the collection against nor'easters and hurricanes.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
<p>Physical and Natural Resources</p>	<p>General</p> <p>All activities</p>	<p>NPS will fund a Long Term Monitoring (LTEM) Plan to inventory and monitor potential and known impacts to the biological and physical environment and ensure the protection of those environments. Monitoring will occur prior to, during, and after construction. The plan will include:</p> <ul style="list-style-type: none"> ▪ Baseline inventory data that needs to still be collected as determined by peer review of scientists involved in the Northeast Coastal and Barrier Network (CBN) and the NPS Natural Resource Program Center and the park's natural resource manager. Some examples include sediment data, preconstruction stormwater quantity and quality data, surface water quality and nutrient data, and benthics data. ▪ Visitor use and construction impacts to rare, threatened, and endangered species, including the bald eagles, sensitive joint-vech, and their associated critical habitat areas. ▪ Visitor use and construction impacts to terrestrial and aquatic habitats including native and invasive vegetation. ▪ Faunal populations and health, water and wetland quality. ▪ Impacts from increased visitation and changes in visitor use patterns. ▪ Effects of boat traffic, visitor use and construction on shoreline, channel, marsh health, water quality, bald eagles, and sensitive joint-vech. If necessary, NPS will manage and control its water taxi and interpretive tour, visitor use, and construction, if above resources are being adversely affected. ▪ Funding one FTE, GS-11 Biologist or contracting with a qualified company or institution to oversee and coordinate the Jamestown LTEM program and to conduct some of the monitoring/inventory assignments. This position will be funded so that LTEM activities will start before any construction. Funding will include sufficient operating funds to conduct and contract (CA, IA, etc.) the necessary LTEM protocols. In addition, a combination of NPS staff, cooperative and interagency agreements, volunteers, and interns will be used. ▪ LTEM becoming a permanent part of base operations for Colonial NHP with annual evaluations and modifications as determined by peer review. ▪ Integrating LTEM with CBN long-term protocols and activities. In most instances, the LTEM will go beyond the minimum the CBN is funding, thus needing support ONPS and FEE funds.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
<p>General (cont'd.)</p>	<p>All activities (cont'd.)</p>	<p>In addition to the LTEM Plan:</p> <ul style="list-style-type: none"> ▪ NPS will reforest and/or convert selected/identified fields to warm season grasses and shrubs as outlined in the Center for Conservation Biology's (CCB) Field Biodiversity Plan for Colonial NHP to mitigate the Neck of Land development. Reduced mowing will not improve biodiversity or make up for lost biodiversity, changing parkwide-mowing patterns, different maintenance equipment, and changing fields to warm season grasses and brush/shrub based on CCB recommendations can make a difference. Any reforestation will meet Chesapeake Bay Preservation Act/NPS riparian forest buffer goals. ▪ Low impact methods for construction of the boardwalk and bridge will be utilized: build as you go type construction. Boardwalk will be elevated to certain height to allow sunlight to shine on wetland vegetation and thus reduce impacts from the boardwalk. ▪ Stormwater will be managed as outlined by the Center for Watershed Protection. Monitoring will be conducted, as noted above, to determine success and any needs for modifications.
<p>Soils</p>	<p>All activities</p>	<ul style="list-style-type: none"> ▪ Preparation and implementation of an erosion and sediment control plan. ▪ Use of best management practices (BMPs), such as placing construction staging areas on impervious surfaces, use of platforms for heavy equipment, matching operating techniques to soil types and moisture levels, conducting phased development to minimize size of disturbed areas, and temporary seeding to control soil stockpiles and disturbed areas. ▪ Field and/or lab evaluation of soils to determine if conditions are appropriate on the site.
<p>Physical and Natural Resources (cont'd.)</p>	<p>All construction activities</p>	<ul style="list-style-type: none"> ▪ Designs will incorporate best management practices and sustainable designs and operations. ▪ Preparation and implementation of erosion and sediment control plan. ▪ Stormwater collection and retention systems for water quality and quantity will direct filtered stormwater to wetland areas. ▪ Coordination and consultation with the Center for Watershed Protection. ▪ Removal of the existing Visitor Center and adjacent dirt parking area from within the RPA. Once removal and construction of the Observation Building is complete, this area will be revegetated.
<p>Chesapeake Bay Resources</p>	<p>Pedestrian footbridge</p>	<ul style="list-style-type: none"> ▪ Once old footbridge and comfort station are removed, site will be revegetated. ▪ New footbridge will be constructed at an appropriate height to allow for sunlight penetration to the vegetation below.
	<p>Jamestown Rediscovery™ Center and parking lot expansion</p>	<ul style="list-style-type: none"> ▪ Removal of the sanitary drain field located within the RPA once the site is connected to public water and sewer. ▪ Use of pervious pavers in place of asphalt, sand, or gravel for the existing parking lot and expansion. ▪ Best Management Practice stormwater management facility. ▪ Low-impact, sustainable design and development. ▪ Restoration of the RPA buffer in the area of the Mule Barn and APVA service shed. ▪ Use of silt fences to minimize disturbance to water quality. ▪ Trenches for the water and sewer lines will be kept within the existing road bed. If vegetation removal is required, the area will be revegetated upon completion of construction.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
<p>Physical and Natural Resources (cont'd.)</p>	<p>All construction activities</p>	<ul style="list-style-type: none"> ▪ Preparation and implementation of erosion and sediment control plans, including diverting runoff to grassed areas, installing temporary erosion controls, stabilizing disturbed soils, and dissipating runoff across the site. ▪ Revegetation of shoreline areas using native plants once construction is complete. ▪ Implementation of Shoreline Management Plan structures prior to or during Jamestown Project construction. ▪ Use of best management practices, including stormwater management collection and retention facilities. ▪ Coordination and consultation with the Center for Watershed Protection. ▪ Addition of educational signage and fines to help limit littering into the waterways.
	<p>Surface and Ground Waters</p> <p>Water taxi and interpretive tour</p>	<ul style="list-style-type: none"> ▪ Work with Virginia Marine Resources Commission (VMRC) and Virginia Institute of Marine Science (VIMS) to determine proper speeds to limit boat wake from the water taxi and interpretive tour. ▪ An environmentally friendly gas engine or electric powered boat will be used to minimize impacts to water quality. ▪ With regard to the boat, no fueling or changing of oil will be done on NPS property.
	<p>Hike/bike trails</p>	<ul style="list-style-type: none"> ▪ Trails will be designed to follow natural contours to control runoff. ▪ Permeable surfaces will be used, where feasible. ▪ Educational signage will help minimize off-trail hiking.
	<p>Bridges and boat docks</p>	<ul style="list-style-type: none"> ▪ Structures will be built at a height sufficient to allow angled light to reach the water's surface in order to minimize impacts to aquatic habitat.
	<p>Sewer and utility lines</p>	<ul style="list-style-type: none"> ▪ Sewer systems and utility lines will be inspected and monitored regularly to ensure integrity and limit impacts.
	<p>Floodplains/ Flood Zones</p>	<ul style="list-style-type: none"> ▪ Structures will be designed so as to be consistent with the Standards and Criteria of the National Flood Insurance Program. ▪ Flood warning and evacuation plans will be designed. ▪ Floor levels of Ludwell exhibit facility and replacement Visitor Center will be above the 100-year flood zone. ▪ Floor level of Jamestown Rediscovery™ Center expansion will be above the 500-year flood zone. ▪ Permanent structures will also be structurally sound to withstand hurricane-type winds.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
<p>Physical and Natural Resources (cont'd.)</p>	<p>All construction activities</p>	<ul style="list-style-type: none"> ▪ Top-down construction will be used for driving piles in wetland areas. ▪ Frequent and strategically placed waste disposal bins, educational signage, and fines and enforcement to minimize litter within the wetland areas. ▪ Preparation and implementation of erosion and sediment control plans, including diverting runoff to grassed areas, installing temporary erosion controls, stabilizing disturbed soils, and dissipating runoff across the site. ▪ Revegetation of shoreline areas using native plants once construction is complete. ▪ Implementation of Shoreline Management Plan structures prior to or during Jamestown Project construction. ▪ Use of best management practices, including stormwater management collection and retention facilities. ▪ Preparation and implementation of an invasive species monitoring and control plan.
	<p>Wetlands</p> <p>Pedestrian footbridge and hike/bike boardwalk</p>	<ul style="list-style-type: none"> ▪ Structures built at a height sufficient to allow angled light to reach the wetland surface in order to minimize impacts to wetland vegetation. ▪ Once old pedestrian footbridge is removed, area will be revegetated with native wetland species.
	<p>Jamestown Rediscovery™ Center and parking lot expansion</p>	<ul style="list-style-type: none"> ▪ Removal of sanitary drain field located within the RPA and beneath a non-jurisdictional wetland.
	<p>Water taxi and interpretive tour</p>	<ul style="list-style-type: none"> ▪ Work with VMRC and VIMS to determine proper speeds to limit boat wake from the water taxi and interpretive tour. ▪ An environmentally friendly gas engine or electric powered boat will be used to minimize impacts to water quality. ▪ With regard to the boat, no fueling or changing of oil will be done on NPS property.
<p>Vegetation</p>	<p>All activities</p>	<ul style="list-style-type: none"> ▪ Revegetation using native plants in areas temporarily impacted by construction, once construction is complete. Minimize disturbance of areas by using phased development and temporary seeding of soil stockpiles and disturbed areas. ▪ Preparation and implementation of an invasive species monitoring and control plan. ▪ Monitoring prior to, during, and after construction, as outlined by the LTEM plan. ▪ Approximately 0.55 acres of open space along the Colonial Parkway will be forested to limit viewshed impacts. Maximize removal/control of current invasive vegetation, especially silt grass and bamboo.
	<p>Neck of Land Intermodal Transportation Terminal and parking lot</p>	<ul style="list-style-type: none"> ▪ Invasive bamboo located southeast of the lot will be removed and replaced with native species.
	<p>Glasshouse Point parking lot reconfiguration</p>	<ul style="list-style-type: none"> ▪ Invasive bamboo located southeast of the lot will be removed and replaced with native species.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
<p>Wildlife</p>	<p>All activities</p>	<ul style="list-style-type: none"> ▪ Revegetation using native plants in areas temporarily impacted by construction, once construction is complete. To minimize disturbed areas, phased development and temporary seeding of disturbed areas and soil stockpiles will be done. ▪ Preparation and implementation of an invasive species monitoring and control plan. ▪ Monitoring prior to, during, and after construction, as outlined by the LTEM plan. In particular the effects of boat traffic, visitor use, and construction on water quality, fisheries, and wildlife. ▪ Erosion and sediment control plans and use of best management practices, in particular stormwater management facilities, to limit impacts to aquatic habitat. ▪ Approximately 0.55 acres of open space along the Colonial Parkway will be forested to limit viewshed impacts. ▪ Reforest and /or convert selected fields within the area to warm season grasses and shrub habitat, as outlined in the Center for Conservation Biology's (CCB) Field Diversity Plan for Colonial NHP.
	<p>Neck of Land Intermodal Transportation Terminal and parking lot</p>	<ul style="list-style-type: none"> ▪ Meet and implement all mitigation requirements of the Biological Opinion (Appendix D), as outlined in the Terms and Conditions section, as well as the previous Biological Opinion issued for park operations (dated April 11, 2001).
<p>Physical and Natural Resources (cont'd.)</p> <p>Rare, Threatened, and Endangered Species</p>	<p>Neck of Land Intermodal Transportation Terminal and parking lot</p>	<p>Use of best management practices and implementation of an erosion and sediment control plan to minimize soil erosion, run-off, and pollution to the sensitive joint-vetch habitat.</p>
	<p>Hike/bike trail and bridge</p>	<ul style="list-style-type: none"> ▪ Boardwalk remains at least 100 feet from the old road trace and the location of the last observed sensitive joint-vetch population. In addition, remain at least 750 feet from the bald eagle nest located near the Island parking lot. ▪ Preparation and implementation of an invasive species monitoring and control plan, in particular for Phragmites. ▪ Structures will be built at a height sufficient to allow angled light to reach the wetland surface in order to minimize impacts to wetland vegetation. ▪ Top-down construction will be used.
	<p>Boat docks</p>	<ul style="list-style-type: none"> ▪ Dock construction will follow best management practices and use materials that minimize toxic chemical leaching. ▪ Consultations with the Virginia Institute of Marine Science for appropriate materials and design.
	<p>Water taxi and interpretive tour</p>	<ul style="list-style-type: none"> ▪ Will work with VMRC and VIMS to determine proper speeds to limit boat wake from the water taxi and interpretive tour. ▪ An environmentally friendly gas engine or electric powered boat will be used to minimize impacts to water quality. ▪ With regard to the boat, no fueling or changing of oil will be done on NPS property.

Table 1: Mitigation and Compliance

Affected Environment		Action	Mitigation
Physical and Natural Resources (cont'd.)	Visual Quality and Aesthetics	All construction activities	<ul style="list-style-type: none"> ▪ Vegetative screening using native plants for all new construction activities. ▪ New structures will have low profiles (when possible), using natural and compatible colors and materials to blend with the existing landscape.
	Air Quality	All construction activities	<ul style="list-style-type: none"> ▪ Monitoring during construction. ▪ Actions to limit the spread of fugitive dust. ▪ Control and/or limit the burning of fossil fuels. ▪ Minimize bus idling times. ▪ Follow limitations and time of year restrictions related to the use of "cut-back" (liquefied asphalt cement, blended with petroleum solvents), if "cut-back" needs to be used. ▪ If open burning, meet the requirements of 9 VAC 5-40-5600 et seq. as well as James City County requirements.
		Water taxi and interpretive tour	An environmentally friendly gas engine or electric powered boat will be used to minimize impacts to air quality.
	Noise	Bus traffic	<ul style="list-style-type: none"> ▪ Minimize bus travel speeds within the Jamestown Project area. ▪ Minimize bus idling times. ▪ Evaluate the locations of the bus waiting areas. ▪ Evaluate a sound wall (such as thick vegetative screening) blocking line of sight from the bus waiting area to historic areas.
		Water taxi and interpretive tour	<ul style="list-style-type: none"> ▪ NPS will develop a plan to evaluate noise mitigation measures for the boat service, if wildlife and/or visitors are adversely affected.
	Hazardous Materials/Contamination	All construction activities involving asbestos-containing material (ACM)	<ul style="list-style-type: none"> ▪ Removal of friable ACM by a licensed Asbestos Abatement Contractor. ▪ Notify the EPA 10 days prior to the start of work: notify Virginia Department of Labor 20 days prior to the start of work. ▪ Wet demolition of Category I non-friable ACM (packings, gaskets, resilient flooring materials, and asphalt roofing products) that are in good condition. ▪ Notify the landfill where the construction and demolition debris will be disposed that the waste contains non-friable ACM.
		All construction activities involving lead-based paint (LBP)	<ul style="list-style-type: none"> ▪ Materials identified as RCRA-Hazardous (TCLP testing results > than 5 mg/L) will be packaged, transported, and disposed of as hazardous waste. ▪ Demolition/renovation contractors will be provided with X-ray fluorescence (XRF) screening results prior to start of work. ▪ If dust-generating activities on LBP-coated building materials, such as sanding, grinding, chipping, sawing, welding, etc., the LBP must be removed prior to disturbance.

Table 1: Mitigation and Compliance

Affected Environment	Action	Mitigation
Physical and Natural Resources (cont'd.)	All construction activities involving disposal of mercury-containing light tubes and thermostats and polychlorinated biphenyl (PCB)-containing light ballasts	<ul style="list-style-type: none"> ▪ Obtain EPA Generator ID number. ▪ Certified hazardous waste contractor to segregate, package, transport, and properly dispose of the materials.
Hazardous Materials/ Contamination (cont'd.)	Removal of underground storage tanks (USTs)	<ul style="list-style-type: none"> ▪ Obtain appropriate local permits and notify local government fire and/or building officials. ▪ USTs will be emptied of all product, cleaned, and removed. ▪ Submit a closure assessment with Notification Form to Virginia DEQ within 30 days of tank closure.
Visitor Experience	All construction activities involving other hazardous materials (OHM)	<ul style="list-style-type: none"> ▪ Materials will be safely moved to another location during construction.
Operations	All activities	APVA and NPS will develop plans for administration and operations at Jamestown to keep the site open to visitors during the construction period. Temporary structures will be used, if necessary.
	All activities	APVA and NPS will develop plans for administration and operations at Jamestown to keep the site open to visitors during the construction period. Temporary structures will be used, if necessary.

Table 2: List of Potentially Required Permits and Approvals for Project Completion

Action Triggering Need for Permit	Permit/Approval Required	Issuing Agency
Activity adversely affecting habitat or population of threatened or endangered species	Formal consultation under Section 7 of the Endangered Species Act; Signed Biological Opinion (Appendix D)	U.S. Department of the Interior – Fish and Wildlife Service
Encroachment in, on, or over subaqueous bottoms	Subaqueous Bottoms Permit	Virginia Marine Resources Commission
Bridge construction over navigable waterways	Bridge Construction Permit	U.S. Coast Guard
Discharge of dredged or fill material into navigable waters and adjacent wetlands	Section 404 Permit	Norfolk District, U.S. Army Corps of Engineers
Encroachment into or over navigable waters and adjacent wetlands	Section 10 of Rivers and Harbors Act Permit	Norfolk District, U.S. Army Corps of Engineers
Construction altering greater than one acre	Virginia Pollutant Discharge Elimination System General Permit	Virginia Department of Environmental Quality – Water Division
Excavating, filling, dumping, discharge, flooding, impounding, draining, altering, or degrading state waters including wetlands	Water Protection Permit / 401 Water Quality Certification	Virginia Department of Environmental Quality – Water Division
Activity in the intertidal zone from mean low water to mean high water or to a point 1 ½ times the mean tide range if a vegetated tidal wetland	James City County Local Wetland Permit	James City County Wetlands Board
Activity affecting cultural resources	Compliance with the NHPA, specifically Section 106 and as elaborated upon in the Programmatic Agreement (Appendix B). Consultation with the Virginia SHPO, ACHP, and the Concurring Parties. Construction plans which also detail mitigation activities will be submitted to the SHPO for review.	Virginia Department of Historic Resources (State Historic Preservation Officer) and the Advisory Council on Historic Preservation
Installing a sewage system, modifying an existing well, or modifying an existing sewage system	Permit	Virginia Department of Health
Visual changes to Community Character Corridors (APVA property only*)	Plan review and approval	James City County Planning Department

Table 2: List of Potentially Required Permits and Approvals for Project Completion

Action Triggering Need for Permit	Permit/Approval Required	Issuing Agency
Development or construction in Chesapeake Bay Resource Preservation Areas	Variance and plan review and approval	James City County Environmental Division and Division of Code Compliance / Chesapeake Bay Local Assistance Department
Demolition of building with lead-based paint	Sampling of construction debris for Toxicity Characteristic Leachate Procedure	EPA-RCRA (40 CFR, Part 261, Subpart C)
Disposal of lead-based paint containing > 5 mg/L of Toxicity Characteristic Leachate Procedure	Disposal of materials by certified hazardous waste hauler to haz-mat facility; Hazardous Waste Manifest	EPA-RCRA
Disturbance of friable asbestos-containing material	Removable by licensed asbestos abatement contractor; 10 day notification to EPA prior to work	EPA
Disturbance of friable asbestos-containing material	20 day notification prior to work	Virginia Department of Labor
Demolition of non-friable asbestos-containing material	Wet-demolition notification to landfill that waste contains non-friable asbestos-containing material	EPA National Emission Standards of Hazardous Air Pollutants
Underground storage tank removal	Virginia Department of Environmental Quality notification form and Tank Closure Report within 30 days of removal	Virginia Department of Environmental Quality
Disposal of mercury light fixtures and thermostats	Obtain EPA ID #; hire haz-mat contractor to segregate, package, transport, and dispose of	EPA-RCRA
PCB-containing light ballasts	Obtain EPA ID #; hire haz-mat contractor to segregate, package, transport, and dispose	EPA Toxic Substance Control Act
Improvements to site over 2,500 square feet (APVA property only*)	Land Disturbing Permit / Erosion and Sediment Control Plan	James City County
Utility extensions from Neck-O-Land Road to Neck of Land facilities	Right-of-Way Permit	Virginia Department of Transportation
Building addition or renovation (APVA property only*)	Building Permit (and related specific permits--Plumbing, Mechanical, Electrical, etc.) and Inspection	James City County Codes Compliance James City County Fire Department James City County Service Authority James City County Planning Division James City County Environmental Division

Table 2: List of Potentially Required Permits and Approvals for Project Completion

Action Triggering Need for Permit	Permit/Approval Required	Issuing Agency
New construction (APVA property only*)	Site plan review and approval	James City County Codes Compliance James City County Fire Department James City County Service Authority James City County Planning Division James City County Environmental Division
Commercial passenger vessel operations	Certificate of Inspection	U.S. Coast Guard
Collections building access, utilities, and BMP (best management practice) on APVA property	Easement for Facilities	APVA/NPS Agreement
Impacts to wetlands and/or floodplains by non-exempted actions	NPS Statement of Findings (Appendix C)	National Park Service
Federal activities which are likely to affect any land or water use or natural resources of Virginia's designated coastal resources management area	Coastal Zone Consistency Determination (Appendix L of the Final DCP/EIS)	Virginia Coastal Resources Management Program (coordinated by Virginia Department of Environmental Quality)

*Federal actions are not subject to local government regulation for matters such as building or zoning permits; however, the NPS will provide James City County with the opportunity to comment on the plans, as they are prepared.

Appendix B: Programmatic Agreement

**PROGRAMMATIC AGREEMENT
AMONG THE NATIONAL PARK SERVICE, THE ADVISORY COUNCIL ON
HISTORIC PRESERVATION, AND THE VIRGINIA STATE HISTORIC
PRESERVATION OFFICE
FOR IMPLEMENTATION OF THE JAMESTOWN DEVELOPMENT CONCEPT PLAN**

March 2003

WHEREAS Colonial National Historical Park (CNHP) is a unit of the National Park Service (NPS) and is charged to meet the directives of the NPS Organic Act of 1916 (P.L. 64-235, 39 Stat. 535) to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations", as it applies to the Jamestown unit;

WHEREAS The NPS has determined that the Jamestown DCP (DCP) is an implementation plan of the park's General Management Plan (*Colonial NHP General Management Plan*, [GMP] approved September 1993) as defined in NPS Director's Order No.2, that the undertaking, consisting of a series of actions as described in the DCP may have an effect on historic properties, and that the actions will be implemented over an extended period of time (twenty years) depending upon funding and other factors;

WHEREAS The NPS has determined that the undertaking described in the "Development Concept Plan/Environmental Impact Statement for Jamestown" (DCP/EIS) 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 Advisory Council on Historic Preservation (Council) and the Virginia State Historic Preservation Officer (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. 470f);

WHEREAS The Association for the Preservation of Virginia Antiquities (APVA), a non-profit 501(3)(c) organization, owns Jamestown National Historic Site (an affiliated area of the National Park Service) and is a partner in preserving and interpreting the cultural resources;

WHEREAS, as part of the DCP/EIS processes, the NPS and the APVA have informed the public about the DCP through stakeholder meetings in 2001, public meetings held in 2002, and requests for comments on the DCP/EIS in August 2002 and have identified various parties that were invited to participate in the development of this Programmatic Agreement (PA); and

WHEREAS, the following American Indian tribes, organizations, agencies, and institutions were invited to participate in consultation towards this agreement and to concur in this PA:

The Chickahominy Tribe

The Eastern Chickahominy Tribe

The Mattaponi Tribe

The Monacan Nation

The Nausemond Tribe

The Pamunkey Tribe

The Rappahannock Tribe

The United Indians of Virginia

The Upper Mattaponi Tribe

The Virginia Council on Indians

The National Association for the Advancement of Colored People

James City County, which is the local government with jurisdiction over the FNOD, and

The Jamestown-Yorktown Foundation.

WHEREAS The NPS may at some future time apply to the Federal Highway Administration (FHWA) for funding for road improvements and/or construction associated with the DCP; and

WHEREAS The NPS and FHWA have agreed that the NPS will serve as the lead Agency Official who shall act in cooperation with the FHWA, in fulfilling their collective responsibilities under Section 106; and

WHEREAS The NPS and APVA may at some future time apply to the United States Army Corps of Engineers (COE) for permits pursuant to the Section 10 of the River and Harbors Act and Section 404 of the Clean Water Act for road improvements and/or construction associated with the DCP; and

WHEREAS The NPS and the COE have agreed that the NPS will serve as the lead Agency Official who shall act on behalf of the COE when NPS is the applicant for a COE permit, fulfilling their collective responsibilities under Section 106; and

WHEREAS The COE has agreed to fulfill its responsibilities under Section 106 separately when the APVA is the applicant in accordance with the 1996 Programmatic Agreement Among the United States Army Corps of Engineers Norfolk District Regulatory Branch, the Advisory Council on Historic Preservation, and the Virginia State Historic Preservation Office Regarding Implementation of the Norfolk District's Permit Program;

WHEREAS This PA builds upon and does not supercede the 1995 Programmatic Agreement (1995 PA, Appendix A) executed by the NPS, the Council, and The National Conference of State Historic Preservation Officers (NCSHPO) that encourages the development of park and project specific programmatic agreements that may be independent of and supplement the 1995 PA;

WHEREAS The DCP stipulates that compliance for undertakings potentially affecting cultural resources will be completed prior to the implementation of the DCP; and in addition, the County of James City, Virginia, and the Virginia Council on Indians and other concurring parties (listed on pages 1 and 2 of this document) have had an opportunity to review and provide their views on the DCP/EIS and this PA;

WHEREAS, The NPS will consult with the APVA, Virginia Council on Indians and other concurring parties in the development of an Interpretive Plan that will require a separate Environmental Assessment and may serve as mitigation for actions identified in this PA;

WHEREAS. The list of actions covered by and exempt from this PA are provided in Appendix B and are applicable throughout the term of this PA;

NOW, THEREFORE, The NPS, the Council, and the SHPO agree that the implementation of any of the alternatives described in the DCP/EIS at Jamestown shall be administered consistent with Section 106 of the National Historic Preservation Act as concurred by the Virginia Council on Indians, other concurring parties, the Federal Highway Administration and the COE.

Stipulations

The NPS will ensure that the following measures are carried out:

I. Consultation

NPS shall consult with the APVA, SHPO, the Virginia Council on Indians, and other concurring parties that have expressed interest in participating 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.

NPS shall consult with each of the participating Virginia Indian tribes on a government-to-government basis and shall solicit each tribe's view of what constitutes such consultation, including information on points of contact, protocols, and submission of comments procedures.

II. Planning and Compliance Preparation

A. NPS

1. Consistent with the provisions of the 1995 PA, the NPS will prepare documentation for the actions listed in Appendix A, Section I using the "Assessment of Actions Having an Effect on Cultural Resources" form (also called the Assessment of Effect form). Any forms will be reviewed by 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 programmatic exclusions, found in Stipulation IV.B of the 1995 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 programmatic exclusions, found in Stipulation IV.B of the 1995 PA. If the criteria for programmatic exclusions are not met, the NPS will submit the assessment forms to the SHPO for review and comment.
3. The NPS will develop plans and specifications for implementing the preferred alternative to include project location map, and drawings, for the proposed work, and will provide the APVA, the Virginia SHPO and the Council with a set of the approved plans and specifications for review.
4. The NPS shall ensure that the design of the proposed actions is compatible with the historic structures, contributing landscapes and landscape features of Jamestown and is consistent with the recommended approaches to preserving its historic setting set forth in the draft Cultural Landscape Report (2002).
5. If the NPS determines that the proposed improvements may alter the qualities that make a contributing structure, landscape or landscape feature significant, the NPS will prepare design alternatives and/or landscape treatment plans to avoid, minimize, or mitigate the project's adverse effects for submission to the SHPO for review and approval prior to implementation.

B. Identification, Evaluation and Treatment of Archeological Sites

1. If the NPS determines in consultation with the SHPO that further efforts are needed to identify archeological sites, the NPS shall ensure that an archeological testing program is developed in consultation with the SHPO. Prior to affecting any potentially eligible archeological site, the NPS will develop a testing program 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 800.4(c).
2. If as a result of the testing program, archeological sites are identified that are eligible for the National Register of Historic Places, the NPS shall develop a plan for their avoidance, protection, recovery of information or destruction without data recovery, in consultation with the SHPO. The plan shall be submitted to the SHPO for review and approval prior to implementation.
3. 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 NPS and the SHPO 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.
 - f) Proposed methods for disseminating results for the work to the interested public (e.g. slide packet for use in the local schools, an exhibit in the James City County

Libraries during Virginia Archaeology Month, etc.); and

- g) Proposed methods by which the Virginia Council on Indians and Indian tribes (cited on pages 1 and 2 of this document), and other concurring parties will be kept informed of the work, and if human remains or grave goods are expected to be encountered, information on consultation with the Virginia Council on Indians, and any other relevant Indian tribe regarding final disposition of the materials.

D. Review of Documentation

1. The NPS shall submit two copies of the draft of all technical reports bound in a spiral binding and on acid free paper to the SHPO and the Council for review and comment. The NPS shall ensure that all comments received within thirty (30) days of report receipt shall be addressed in the final technical reports. Two copies of all final technical reports shall be provided to the SHPO and the Council.
2. Unless otherwise specified in this PA, concurring 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. Any concurring party may request in writing to the NPS an extension of the review period for up to an additional thirty (30) days.

E. Curation of all archeological materials and appropriate field and research notes, maps, drawings and photographic records collected as part of this PA (with the exception of human skeletal remains and associated funerary objects) 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*.

F. 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 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*).
4. Work concerning traditional cultural properties will be carried out by or under the supervision of a qualified cultural anthropologist, rural sociologist, or folklife specialist, in accordance with the guidelines set forth in National Register Bulletin 38 (*Guidelines for Evaluating and Documenting Traditional Cultural Properties*).

G. Reporting Standard

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. 2000, and shall take into account the Council's publications, *Consulting About Archeology Under Section 106* (1990) and *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (1999).
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. When the NPS is determined to be the lead agency and has obtained the consent of the participating federal agency or agencies, NPS will coordinate the Section 106 review activities of all federal agencies that participate in the actions associated with the Jamestown Project on NPS property or funded by the federal government.
- B. To coordinate compliance with project contracting, the NPS will submit the Assessment of Effect forms to the Virginia SHPO to document actions that NPS considers to meet the criteria for programmatic exclusions found in Stipulation IV.B of the 1995 PA that will require no further review. If the criteria for programmatic

exclusions are not met, the NPS will submit the Assessment of Effect forms to the SHPO for review and comment.

- C. The APVA will coordinate with the COE all actions with non-federal funds on APVA property.

IV. Report Requirements

- A. The NPS shall ensure that any documentation pertaining to activities carried out pursuant to this agreement is provided to the SHPO in draft and final format, as appropriate. Concurring 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 Draft NPS Guidelines for Withholding Information About Historic Resources (February 15, 2000) (to be superceded by the final document once completed for purposes of the PA). 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 Council in reaching determinations under subsections (a) and (b).

V. Monitoring of Performance under the Agreement

A. Annual Report

1. On or before October 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 NPS will prepare and provide an annual 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 NPS 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.
3. The NPS shall review the annual 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 NPS, the SHPO, and the Council will consult to determine whether this PA shall continue in force, be amended, or be terminated.

- B. The Council and the SHPO may monitor activities carried out pursuant to this PA, and the Council may review such activities if so requested. The NPS and the APVA will cooperate with the Council and the SHPO in carrying out their monitoring and review responsibilities.

VI. Post Review Discoveries

- A. In the event that a previously unidentified archeological resource is discovered during ground disturbing activities, the NPS shall immediately notify the SHPO. All construction work involving subsurface disturbance will be halted in the area of the resource and in the surrounding area where further subsurface remains can reasonably be expected to occur. 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. Construction work may then continue in the project area outside the site area. Within two working days of the original notification of discovery, the NPS in consultation with the SHPO will determine the National Register eligibility of the resource.

If the resource is determined to meet National Register Criteria (36 CFR Part 60.6), the NPS will ensure compliance with Section 800.13 of the Advisory Council on Historic Preservation'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 remains are not eligible for inclusion on the National Register.

VII. Human Remains

Human remains and associated funerary objects encountered during the course of actions taken as a result of this agreement shall be treated in the manner consistent with the provisions of the *Native American Graves and Repatriation Act* (25 U.S.C. 300) and the *Virginia Antiquities Act*, Section 10.1-2305 of the *Code of Virginia*, final regulations adopted by the Virginia Board of Historic Resources and published in the Virginia Register on July 15, 1991.

VIII. Dispute Resolution

- A. Should any party to this PA object to any action carried out or proposed by the 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 Council, including the proposed response to the objection.
- C. Within forty-five (45) days after receipt of all pertinent documentation, the Council shall exercise one of the following options:
 1. Advise the Federal Agency that the Council concurs in 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 Council comment pursuant to Section 110(1) of the National Historic Preservation Act and 36 CFR 800.7(c), and proceed to refer the objection for comment. Any Council 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 Council not exercise one of the above options within forty-five (45) days after receipt of all pertinent documentation, the NPS may assume the Council'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.

IX. Amending the Agreement

Any party 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, SHPO, ACHP, FHWA and COE) to the PA must agree to the proposed amendment in accordance with 800.5(e) (5).

X. Terminating the Agreement

- A. If the NPS determines that it cannot implement the terms of this PA, or if the SHPO or Council determines that the agreement is not being properly implemented, the NPS, the SHPO or the Council may propose to the other parties that it be terminated.
- B. Termination shall include the submission of any outstanding technical reports on any work done up to and including the date of termination.
- C. 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.
- D. Should such consultation fail and the agreement be terminated, the NPS will comply with the 1995 PA and 36 CFR 800.3 through 800.6 with regard to individual actions covered by this PA.

XI. Duration of the Agreement

This PA will continue in full force and effect until 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 signatory parties 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.

Signatures

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:  Date: 3/24/03John M. Fowler
Executive Director

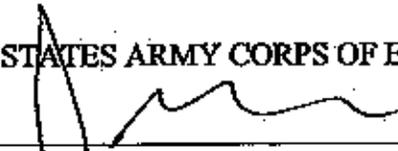
NATIONAL PARK SERVICE

By:  Date: 3/17/03Alec Gould, Superintendent
Colonial National Historical Park

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By:  Date: 3/18/03Kathleen S. Kilpatrick
Director, Department of Historic Resources

UNITED STATES ARMY CORPS OF ENGINEERS

By:  Date: 2/19/03J. Robert Hume III
Chief, Norfolk District Regulatory Branch

FEDERAL HIGHWAY ADMINISTRATION

By:  Date: 3-21-03Melisa Ridenour
Division Engineer

Concurring Parties

By: Elizabeth Kostelny

Date: 3/18/2003

Elizabeth Kostelny

Association for the Preservation of Virginia Antiquities

By: Reeva G. Tilley

Date: 3/31/03

Reeva Tilley

Virginia Council on Indians

By: Frank Adams

Date: 3/26/03

Frank Adams

Upper Mattaponi Tribe

By: Fred Bright

Date: _____

Fred Bright

Nansemond Tribe

By: Philip G. Emerson

Date: 3-21-03

Philip G. Emerson

Jamestown-Yorktown Foundation

**Appendix A:
1995 Servicewide Programmatic Agreement**

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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

WHEREAS, the National Park Service (NPS) plans for, operates, manages, and administers the National Park System, and is responsible for preserving, maintaining, and interpreting the cultural resources of the System unimpaired for the enjoyment of future generations; and

WHEREAS, the operation, management, and administration of the System entail undertakings that may affect historic properties (as defined in 36 CFR 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 U.S.C. 470 *et seq.*) and the regulations of the Advisory Council on Historic Preservation (Council) (36 CFR Part 800); and

WHEREAS, the NPS has established management policies, guidelines, standards, and technical information designed for the treatment of cultural resources consistent with the spirit and intent of the NHPA; and

WHEREAS, the NPS has a qualified staff of cultural resources specialists in parks, System Support Offices, and archeological and preservation centers to carry out programs for cultural resources; and

WHEREAS, the NPS has consulted with the National Conference of State Historic Preservation Officers (Conference) and the Council regarding ways to ensure that NPS operation, management, and administration of the System provide for management of the System's cultural resources in accordance with the intent of NPS policies and with Sections 106, 110, and 111 of the NHPA; and

WHEREAS, the National Park Service, the Conference, and the Council executed a Nationwide Programmatic Agreement in 1990 that is superseded with the execution of this Programmatic Agreement; and

WHEREAS, the NPS has restructured in order to place more resources and delegations of authorities with park managers.

NOW, THEREFORE, the NPS, Conference, and Council mutually agree that the NPS will carry out its Section 106 responsibilities with

respect to management of the System in accordance with the following stipulations:

STIPULATIONS

I. POLICY

The NPS will continue to preserve and foster appreciation of the cultural resources in its custody through appropriate programs of protection, research, treatment, and interpretation. These efforts are and will remain in keeping with the NHPA, the National Environmental Policy Act (NEPA), the American Indian Religious Freedom Act, The Archaeological Resources Protection Act, the Archeological and Historic Preservation Act of 1974, the Native American Graves Protection and Repatriation Act, the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, NPS Management Policies, and the Guidelines for Federal Agency Responsibilities Under Section 110 of the National Historic Preservation Act. It remains the NPS goal to implement these programs in consultation with other Federal agencies, State Historic Preservation Officers (SHPOs), Indian Tribes, local governments and the public.

Other guidelines, standards, and regulations relevant to this Agreement and its purposes include:

- NPS-28, Cultural Resource Management Guideline
- NPS-2, Planning Process Guideline
- NPS-6, Interpretation and Visitor Services Guideline
- NPS-12, NEPA Compliance Guideline
- NPS-38, Historic Property Leasing Guideline
- 36 CFR Part 18, Leases and Exchanges of Historic Property

II. IDENTIFYING CULTURAL RESOURCES

The NPS will coordinate with SHPOs activities for research related to resource management needs and identification, evaluation, and registration of park historic properties. NPS fulfills these responsibilities under Section 110 of the NHPA and 36 CFR Part 800.4, with regard to properties potentially significant at national, State, or local levels and mindful of State preservation planning and inventory programs.

III. DELEGATION OF AUTHORITY

- A. Park superintendents are the responsible agency officials as defined in 36 CFR Part 800.1(c) (1) (i) for purposes of Section 106 compliance. They will assume this responsibility in accordance with Stipulation VIII below.
- B. Superintendents will be held accountable for their performance in

Section 106 compliance through NPS procedures for performance and program evaluation.

- C. To meet this responsibility, each park will have the following:
 - 1. a commitment to training park staff, including an invitation to the appropriate SHPO and the Council to participate in that training, so that park staff are generally familiar with Section 106 processes; and
 - 2. at least one staff person qualified to act as the park's 106 coordinator, whose 106 responsibilities are specified in his or her position description and performance standards; and
 - 3. a formally designed set of CRM advisers whose qualifications are consistent with OPM standards, the intent of 36 CFR Part 61, Appendix A, and the intent of Section 112 (a) (1) (B) of the National Historic Preservation Act. Inpark staff, System Support Offices, other parks, NPS cultural preservation and archeological centers, Denver Service Center, other government agencies, and specialists and scholars outside NPS are all possible sources for needed expertise. Specialists who are not federal employees must meet the standards in 36 CFR Part 61, Appendix A.

- D. SHPOs and the Advisory Council may at any time raise with the appropriate Field Director any programmatic or project matters where they wish the Field Director to review a park superintendent's decision.

IV. PROJECT REVIEW—NATIONWIDE PROGRAMMATIC EXCLUSIONS

- A. Undertakings listed in IV.B will be reviewed for Section 106 purposes within the NPS, without further review by the Council or SHPOs, provided:
 - 1. that these undertakings are based upon information adequate to identify and evaluate affected cultural resources [except for IV.B.(5)];
 - 2. that the NPS finds that their effects on cultural resources in or eligible for the National Register will not be adverse based on criteria in 36 CFR Part 800.9; and
 - 3. that decisions regarding these undertakings are made and carried out in conformity with applicable policies, guidelines, and standards as identified in Stipulation I, and are documented by NPS using the form for "Assessment of Actions Having and Effect on Cultural Resources" or another appropriate format. (See Stipulation VII below.)

B. The following undertakings may be reviewed under the terms of IV.A:

1. preservation maintenance (housekeeping, routine and cyclic maintenance, and stabilization) as defined in NPS-28;
2. routine grounds maintenance, such as grass cutting and tree trimming;
3. installation of environmental monitoring units, such as those for water and air quality;
4. archeological monitoring and testing and investigations of historic structures and cultural landscapes involving ground disturbing activities or intrusion into historic fabric for research or inventory purposes (see also Stipulations II and IX. C);
5. acquisition of lands for park purposes, including additions to existing parks;
6. rehabilitation and widening of existing trails, walks, paths, and sidewalks within previously disturbed areas;
7. repaving of existing roads or existing parking areas within previously disturbed areas;
8. placement, maintenance, or replacement of utility lines, transmission lines, and fences within previously disturbed areas;
9. rehabilitation work limited to actions for retaining and preserving, protecting and maintaining, and repairing and replacing in kind materials and features, consistent with the Secretary of the Interior's Standards for Rehabilitation and the accompanying guidelines;
10. health and safety activities such as radon mitigation, and removal of asbestos, lead paint, and buried oil tanks;
11. installation of fire detection and suppression systems, and security alarm systems, and upgrading of HVAC systems;
12. erection of signs, wayside exhibits, and memorial plaques;
13. leasing of historic properties consistent with NPS-38, if proposed treatments are limited to those consistent with IV.B(1) and (9) and other activities excluded under IV.A and B.

- C. Park superintendents and SHPOs may develop additions to Stipulation IV.B that identify other types of undertakings that they mutually agree will be excluded from further review. Proposals for such additions will be provided for review to the Executive Director of the Council, the NPS Director, and the Executive Director of the Conference. Upon their acceptance, the Council, the Conference, and NPS will maintain records on those additions as amendments to this Agreement, and provide for dissemination to other appropriate SHPOs and NPS offices.
- D. In the event that a SHPO questions whether a project should be considered a programmatic exclusion under Stipulation IV. A and B, the superintendent and SHPO will make every effort to resolve the issue informally. If those efforts fail, the question will be referred to the Field Director. If the matter is still not resolved, it will be referred to the Advisory Council in accordance with Stipulation XI.A.

V. PROJECT AND PROGRAM REVIEW—OTHER UNDERTAKINGS

- A. All undertakings (as defined in 36 CFR Part 800), with the exception of those that meet provisions in Stipulation IV, will be reviewed in accord with 36 CFR Part 800.
- B. Superintendents are encouraged to evaluate their park's program and discuss with SHPOs ways to develop programmatic agreements for park undertakings that would otherwise require numerous individual requests for comments.
- C. Memoranda of Agreement and Programmatic Agreements specific to a project, plan, or park may be negotiated between park superintendents and SHPOs, pursuant to 36 CFR Part 800.5 (e) or 800.13, and may be independent of or supplement this Agreement.

VI. RELATIONSHIP OF PROJECT REVIEW TO PLANS

- A. To the extent that the requirements of Section 106 and NEPA overlap for a given plan or project, superintendents are encouraged to coordinate these two processes, including the preparation of documentation and public involvement processes, in accordance with the guidance in 36 CFR Part 800 or otherwise provided by the Advisory Council.
- B. In conformity with 36 CFR Part 800.3(c), park superintendents will ensure that the Section 106 process is initiated early in the planning stages of any given undertaking, when the widest feasible range of alternatives is open for consideration.

- C. General Management Plans (GMPs) establish a conceptual framework for subsequent undertakings, and can thus play an important role in this process. GMPs may constitute the basis for consultation under 36 CFR Part 800.4-6 on individual undertakings, if sufficient information exists for resource identification, determination of National Register eligibility, and assessment of the effect of a proposed undertaking on the property in question. In the absence of such information, Section 106 consultation will normally be initiated or completed at subsequent stages in the planning process [such as Development Concept Plans (DCPs) or other subsequent implementing plans, as defined in NPS-2].
- D. The park superintendent will notify the appropriate SHPO and the Council when a GMP or DCP is scheduled for preparation, amendment, revision, or updating. The superintendent will request comments regarding preservation concerns relevant to the plan, such as management objectives, identification and evaluation of historic properties, and the potential effects of individual undertakings and alternatives on historic properties.
- E. During the planning process, the park superintendent, in consultation with the SHPO, will make a determination about which undertakings are programmatic exclusions under IV.A and B, and for all other undertakings, whether there is sufficient information about resources and potential effects on those resources to seek review and comment under 36 CFR Part 800.4-6 during the plan review process. In cases where consultation is completed on specific undertakings, documentation of this consultation will be included in the GMP or DCP.
- F. The approved plan will list all undertakings in the plan that are subject to further consultation, and the stage of planning at which consultation is most likely to be completed.
- G. NPS GMPs will include a statement about the status of the park's cultural resources inventory and will indicate needs for additional cultural resource information, plans, or studies required before undertakings can be carried out.

VII. NPS PROCESS FOR DOCUMENTING ACTIONS HAVING AN EFFECT ON CULTURAL RESOURCES

All system-related undertakings that may have an effect on cultural resources will be appropriately documented and carried out in accordance with applicable policies, guidelines, and standards, as identified in Stipulation I. Formats for documentation include those outlined in published Advisory Council guidance (see "Preparing Agreement Documents," for example), the NPS "Assessment of Actions Having an Effect on Cultural Resources" forms, programmatic agreements and, where appropriate, NEPA documentation that

addresses cultural resources issues with information consistent with requirements of 36 CFR Part 800.

Cultural resources specialists will review all such actions prior to their implementation, and parks will maintain documentation of this review. Documentation of NPS reviews not already provided to SHPOs and the Council will be available for review by the Council and the appropriate SHPO upon request. Individual SHPOs who wish to review this documentation are responsible for specifying scheduling, frequency, and types of undertakings of concern to them.

VIII. PUTTING THIS AGREEMENT INTO EFFECT

The delegation of Section 106 responsibility to park superintendents will take place as of October 1, 1995. As a condition of this delegation, each park will identify:

- A. the specialists, on or off park staff, who will provide the park with advice and technical services for cultural resource issues related to Section 106 compliance. These specialists must be qualified in their areas of expertise and have a specified term of commitment to advise the park; and
- B. a contact person to coordinate the park's Section 106 compliance processes.

Parks supplement on-staff expertise through advice and technical services from CRM specialists in SSOs, the Denver Service Center, preservation centers, and other specified CRM specialists inside and outside the NPS, for advice and technical services involved in responsible agency official for 106 purposes, who ensures the implementation of this agreement and 36 CFR Part 800 procedures, and who signs correspondence to SHPOs and the Advisory Council and documentation of programmatic exclusions.

IX. COOPERATION AND COMMUNICATIONS

- A. Within six months of the date of the signature of this PA by all parties, and every two years thereafter, each park superintendent will invite the appropriate SHPO(s) to meet to discuss the compliance process and any actions necessary to improve communications between the park and SHPO.
- B. SHPOs, the Conference, and the Council will be informed and consulted about revisions to NPS standards and guidelines listed in Stipulation I.
- C. SHPOs, parks and NPS System Support Offices will share information about inventories of historic properties, preservation planning processes, and historic contexts developed by each, as

well as other reports and research results related to cultural resources.

- D. SHPOs will treat the appropriate park superintendent as an interested party for purposes of State environmental and preservation laws as they may relate to park undertakings and cultural resources.
- E. The Council and SHPOs will treat the appropriate park superintendent as an interested party under 36 CFR Part 800 for purposes of undertakings by other Federal agencies and Indian tribes that may affect NPS areas, including undertakings in areas in and around parks.
- F. As required in NPS-2, NPS-12, the Section 110 Guidelines, and 36 CFR Part 800, NPS will provide opportunities for Indian tribes and other interested persons to participate in the processes outlined in this Agreement.

X. RELATIONSHIP TO OTHER EXISTING AGREEMENTS

- A. This Programmatic Agreement will become effective on October 1, 1995 and shall supersede the following existing Programmatic Agreements:
 - 1. the Memorandum of Understanding executed in June 1976, regarding NPS planning documents;
 - 2. the Programmatic Memorandum of Agreement executed on December 19, 1979, and its amendments dated September 1981 and December 1985 regarding planning documents, energy management, and preservation maintenance;
 - 3. the Programmatic Memorandum of Agreement executed on December 19, 1982, regarding leasing of historic properties; and
 - 4. the nationwide Programmatic Agreement of 1990.
- B. Signature and implementation of this Agreement does not invalidate park-, Region-, or project-specific Memoranda of Agreement or programmatic agreements negotiated for Section 106 purposes prior to the effective date of this Agreement.

XI. DISPUTE RESOLUTION

- A. Should a SHPO or the Council object to a park superintendent's decisions or actions pursuant to any portion of this Agreement,

the superintendent will consult the objecting party to resolve the objection. If the park superintendent or the objecting party determines that the objection cannot be resolved, the superintendent will forward all documentation relevant to the dispute to the Field Director for further consultation. If the objection still cannot be resolved, the Field Director will forward to the Council relevant documentation not previously furnished to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

1. provide the Field Director with recommendations, which the Field Director will take into account in reaching a final decision regarding the dispute; or
2. notify the Field Director that it will comment pursuant to 36 CFR Part 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the Field Director with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute. The NPS responsibility to carry out all actions under this Agreement that are not the subjects of the dispute will remain unchanged.

- B. When requested by any person, the Council will consider NPS findings under this Agreement pursuant to the provisions of 36 CFR Part 800.6(e) on public requests to the Council.

XII. MONITORING, TERMINATION, AND EXPIRATION

- A. The National Park Service will convene a meeting of the parties to this Agreement on or about November 15, 1996, to review implementation of the terms of this Agreement and determine whether revisions or amendments are needed. If revisions or amendments are needed, the parties will consult in accordance with 36 CFR Part 800.13.
- B. Any party to this Agreement 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. In the event of termination, the NPS will comply with 36 CFR Part 800 with regard to individual undertakings otherwise covered by this Agreement.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: _____

Chairman

NATIONAL PARK SERVICE

By: _____ Date: _____

Director

**NATIONAL CONFERENCE OF STATE HISTORIC
PRESERVATION OFFICERS**

By: _____ Date: _____

President

Updated April 30, 2002

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Appendix B

Section 1:

List of Actions Subject to the Provisions of this Programmatic Agreement:

- Construct new Visitor Center, reconfigure existing parking lot and construction of the Boat Dock
- Construction of Collection Storage Building, including the expansion of the Jamestown Rediscovery parking lot and upgrading the APVA service road
- Construction of water and sewer lines to new facilities
- Construction of new Pedestrian Bridge from Visitor Center to Monument and the demolition of the existing footbridge and footbridge restrooms
- Modify Ambler House Ruins
- Construct Bike/Hike Trail from Glasshouse Point to Jamestown Settlement
- Reconfigured Parking Lot at Glasshouse Point
- Construction of Intermodal Transportation Center and Parking Lot at Neck of Land, including the alteration to the Colonial Parkway
- Construction of the Powhatan Creek Overlook Boat Dock, Shelter, and Pathway to Parkway and Jamestown Settlement
- Removal of Entrance Station booths
- Construction of the Observation Building and demolition of current Visitor Center
- Rehabilitation of Observation Plaza at Jamestown Monument
- Construction of the Agricultural Exhibit Area and Restrooms east of New Towne
- Replace Waysides along Island Loop Drive
- Interpretive Plan

Section 2:

List of Actions Not Subject to the Provisions of this Programmatic Agreement:

The following actions are not subject to the provisions of the NHPA as no federal funds are being expended and no federal property is involved:

- APVA Archaearium
- Dale House Renovations
- Alterations to the Mule Shed
- Jamestown Interpretive Plan, which is not covered by the DCP/EIS

Appendix C: Statement of Findings for Floodplains and Wetlands

Statement of Findings for Floodplains and Wetlands

Colonial National Historical Park
Jamestown Unit, Virginia

Recommended:  3/15/03
Superintendent, Colonial National Historical Park Date

Certified for Technical Adequacy and Servicewide Consistency:

 3/14/03
Acting Chief, Water Resources Division Date

Approved:  3-26-03
Northeast Regional Director Date

INTRODUCTION

Colonial National Historical Park (Colonial NHP) has prepared and made available this Development Concept Plan/Environmental Impact Statement (DCP/EIS) for proposed improvements at the Jamestown unit of the park.

Executive Orders 11988, "Floodplain Management" and 11990, "Protection of Wetlands" require the NPS and other federal agencies to evaluate the likely impacts of actions in floodplains and wetlands. NPS *Director's Order 77-1: Wetland Protection* and *Procedural Manual 77-1* provide NPS policies and procedures for complying with Executive Order 11990, and NPS *Special Directive 93-4: Floodplain Management Guideline* provides NPS procedures for complying with Executive Order 11988. This Statement of Findings (SOF) documents compliance with these NPS wetland protection and floodplain management procedures.

PROPOSED ACTION

The proposed action is described in "Chapter 2: Alternatives" under "Section 2.6: Elements Common to the Action Alternatives" and "2.7: Alternative B: Preferred Alternative." Major elements of the proposed action include:

- A facility at Neck of Land that provides a directed approach, interpretive experience, and Intermodal Transportation Terminal, including a boat service, boat docks, a shuttle system, and a hike/bike trail;
- A small Observation Building on the site of the existing Visitor Center;
- A replacement Visitor Center and educational facility in the existing Island parking lot;
- An expanded Jamestown Rediscovery™ Center to house the Jamestown collection;

- Interpretive anchors: Ludwell exhibit facility and agricultural exhibit site; and
- Reconfigured parking throughout the site.

SITE DESCRIPTION

Jamestown Island is part of Colonial NHP in Tidewater, Virginia. It is situated in the Lower James River-Middle Tidal watershed at the base of the Chesapeake Bay (see DCP/EIS Figure 3-5).

The Island topography follows a typical ridge and swale pattern with the higher elevations mostly found along the Colonial Parkway, at Glasshouse Point, and the northern portion of Neck of Land. The *Geological Development and Environmental Reconstruction of Jamestown Island* (Johnson et al. 2000) divides the Jamestown Project site into eight natural landscape regions, based on elevation, distinctive landforms, and vegetative/ hydrographic features. The regions consist of the Mill Creek ridges, Back River marsh, Church Point ridge, Pitch and Tar trough, Confederate Ruins ridge, Passmore Creek lowland, Lower Point platform, and James River thalweg (see DCP/EIS Figure 3-6).

Several tidally influenced waterways and their associated wetlands cover a large portion of the Jamestown Project site. The James River borders the site to the west, south, and east. At this point, the James River is wide and sluggish and maintains an average water elevation near sea level, thus resembling a bay and estuary system.

In addition, Powhatan Creek flows onto the site from the north and empties into the James River via the Sandy Bay, Back River, and The Thorofare system. This system divides Jamestown Island from Neck of Land and Glasshouse Point. The southern portion of the Island is mainly composed of Passmore Creek and several of its tributaries, which drain eastward toward the James River. In addition, the Pitch and Tar Swamp, located on the Island, feeds Kingsmill Creek, which flows into The Thorofare.

Floodplains and Flood Zones

The James River, at the location of Jamestown Island, more closely resembles a bay and estuary system than a true floodplain because the river maintains an average water elevation near sea level. For this reason, the river can be viewed as having an expansive flood storage capacity. It can largely be assumed, therefore, that the Jamestown Island area is not at risk of severe flooding as a result of water cresting the banks of the James River due to upstream influxes. Additionally, the downstream limit of the Powhatan Creek floodplain that is subject to flooding from upstream water sources occurs approximately three miles upstream from Jamestown Island (FEMA 1991).

On the other hand, flooding as a result of a tidal storm surge is a more likely scenario. For example, the most severe flood on record occurred in 1933 as a result of an unnamed hurricane when the tidal surge reached an elevation of 9.8 feet above mean lower low water (MLLW) in the Hampton Roads area (FEMA 1991). Areas having a high risk of flooding from tidal storm surges have been identified by the Federal Emergency Management Agency (FEMA) based on a particular elevation. FEMA has determined the 100-year and 500-year flood zone elevations for the Jamestown Project area to be 8.5 and 9.8 feet, respectively. Approximately 1,611 acres (87%) of the project area are at or below 8.5 feet, implying that these areas have the probability of flooding as a result of a storm surge 1 out of every 100 years. Additionally, 63 acres (3%) at or below elevation 9.8 feet (but above 8.5 feet) are identified as being within the 500-year flood zone (moderate risk), meaning the probability of flooding is at least once in 500 years (see DCP/EIS Figure 3-13).

Several structures are present within the 1,611 acres of the project area that are below the 100-year flood zone elevation of 8.5 feet. These include the Glasshouse, the Jamestown Rediscovery™ Center (formerly the Yeardley House) and storage sheds, the Dale House, the existing 1956 Visitor Center, and parking areas. In addition, the top of the seawall along the James River shoreline of the Townsite has an approximate elevation of 7.4 feet.

The Glasshouse is an open-air structure built at ground level that is used as an interpretive center for guests to observe glassblowing and the making of glasswares. The floor elevation appears to approximate +/-5.5 feet, which is 3 feet lower than the 100-year flood elevation and 4.3 feet lower than the 500-year flood elevation.

The Jamestown Rediscovery™ Center, located in the Townsite, is used as the APVA collections and research center. This structure was constructed at a site having a ground elevation of 6.5 to 7.3 feet. The floor elevation, however, was measured to be above the 500-year flood zone elevation of 9.8 feet by approximately 0.35 feet (10.15 feet).

The Dale House is located at the Townsite just landward of the seawall along the James River shoreline. This structure was built on land that has an elevation of approximately 5.1 to 6.6 feet. The eastern side of the house maintains a door entrance at the ground level of approximately 6.6 feet, which is also the internal floor elevation. The floor of this structure, therefore, is 1.9 feet below the 100-year flood zone elevation.

The existing 1956 Visitor Center is a multilevel structure built on sloping land and straddling the 8.5-foot contour elevation. The lower level of the building is currently being used as the collections storage facility for all NPS Jamestown artifacts and as office space for the curator. The northernmost side of the structure leading into the storage area was built below grade and has a back door entrance with a floor elevation of 3.9 feet. The land surrounding this entrance is a parking area and rises to elevations of 5.5 feet and 6.4 feet before the elevation drops again toward the edge of Pitch and Tar Swamp. This configuration causes considerable problems due to rainwater flowing toward the building, into the northern entrance, and pooling outside the artifact storage area and offices. Colonial NHP staff has had to use sand bags during heavy rain events to protect the first floor from flooding. On the other hand, the southernmost

portion of the building is on land approximately 15 feet in elevation, approximately 5.2 feet above the 500-year flood zone.

The Colonial Parkway is entirely above the 100-year flood zone elevation with the exception of a portion of the parking area on the Island. One small section of the Parkway just north of the Sandy Bay bridge has an elevation of 8.8, which is 1 foot lower than the 500-year flood zone elevation of 9.8 feet.

Wetlands and Deepwater Habitat

The Jamestown study area was found to comprise a total of approximately 1,055 acres of estuarine tidal deepwater habitats and wetlands, nontidal wetlands, and palustrine open-water habitats (see DCP/EIS Figures 3-14 and 3-15). Open waters associated with the main channels of Powhatan Creek, Sandy Bay, Back River, The Thorofare, and James River were not included in the acreage figures.

The tidal wetlands surrounding Jamestown Island and Neck of Land lie very close to the upper range of the estuarine environment and the lower range of the freshwater environment. Cowardin et al. (1979) distinguish the boundary between estuarine and palustrine (freshwater) systems to be the point where salinity reaches 0.5 parts per thousand (ppt) during low flow periods. The U.S. Fish and Wildlife Service's *National Wetlands Inventory* identifies the wetlands surrounding the Island as palustrine. However, the agency performed a fisheries and water quality study in 1991 in the vicinity of Jamestown Island (Swihart et al. 1991), which indicated that salinity levels for the main rivers and marsh creeks were 0.0 ppt during the spring of that year, but rose to between 4 to 8 ppt during the month of October (period of low flow). Assuming the data represents a normal year, the designation of the area's tidally influenced marshes and adjacent wetland forests may more appropriately be called estuarine. All other wetlands are classified as palustrine.

Table 3-16 of the DCP/EIS itemizes the wetland and deepwater habitat types using the Cowardin et al. (1979) classification system, and Figure 3-15 of the DCP/EIS depicts their locations. Most of the wetlands are tidal marshes affiliated with Powhatan Creek, Sandy Bay, Back River, Kingsmill Creek, and Passmore Creek. Pitch and Tar Swamp is a large system composed of forested areas, scrub-shrub wetlands, marsh, and open water. A large beaver dam that crosses the entire marsh influences wetland hydrology of the Pitch and Tar Swamp. It is believed that tidal waters are able to overtop the dam and enter Pitch and Tar Swamp during seasonally high tides. Other wetlands include two small areas delineated adjacent to the NPS Maintenance Facility next to the Colonial Parkway and a large, isolated wetland on Glasshouse Point.

As noted above, tidally influenced marshes dominate the Jamestown Project site. The oligohaline marshes (E2EM1R) of Passmore Creek and Back River consist primarily of rice cut grass (*Leersia oryzoides*), giant bulrush (*Scirpus validus*), and big cordgrass (*Spartina cynosuroides*). The boundary between the freshwater and oligohaline marsh is not distinct, although plants such as arrow arum (*Peltandra virginica*), duck potato (*Sagittaria latifolia*), and cattails (*Typha latifolia*) indicate the change in salinity to a freshwater system (PEM2R). These species dominate at upstream locations along Powhatan Creek, north of the Colonial Parkway. For this reason, the Parkway was conveniently used as the boundary between the oligohaline and freshwater environments.

Estuarine deepwater habitats occur in the study area in the form of tidal creeks (E1UB3R) and shallow-water ponds (E1UB3V, E1UB3Vb). Numerous tidal creeks (120.6 acres) can be found within the marshes of Neck of Land, Kingsmill Creek, The Thorofare, and Passmore Creek. These channels function as flow ways important to the distribution of tidal waters throughout the large marsh systems. They also serve as habitat to the

area fisheries for spawning, cover for fingerlings, and foraging for adults. In addition, waterfowl and wading birds seek these narrow creeks for protection from harsh weather and foraging.

Four ponds also add to the deepwater habitats on the project site comprising approximately 14.2 acres. A 0.3-acre pond (E1UB3Vb) is located adjacent to the bus parking facility on the Island, which is hydrologically connected to a beaver pond within Pitch and Tar Swamp via an upland cut ditch. A second pond (E1UB3V) is located south of Pitch and Tar Swamp next to an old pecan orchard. This 1.3-acre water body is tidally influenced due to an upland cut ditch and outfall pipe connected to the James River shoreline. While water normally flows out of the pond into the James River, it appears that during extreme high tides, water will reverse flow and tidal water will enter the pond. Two additional ponds (PUBF and E1UB3Vb) are located in the southeastern section of the Island and would not be impacted by proposed improvements.

Small, forested wetland systems are also scattered across the study area. A small isolated depression of deciduous hardwoods (PFO1E) is located behind the NPS Maintenance Facility; another, just south of the Glasshouse, contains bald cypress (*Taxodium distichum*), loblolly pine (*Pinus taeda*), and red maple (*Acer rubrum*) (PFO2E); and several others on the eastern end of the Island (PFO1A, PFO1C, and PFO1E). Dominant species in these areas consist of black gum (*Nyssa sylvatica*), green ash (*Fraxinus pennsylvanica*), willow oak (*Quercus phellos*), and cherrybark oak (*Q. falcata* var. *pagodaefolia*). Most of these systems function as a result of a high water table, although some of the pine wetlands (E2FO4R) adjacent to Passmore Creek are influenced by seasonally high tides. Dominant species within the pine wetlands include loblolly pine, sweetgum (*Liquidambar styraciflua*), red maple, wax myrtle (*Myrica cerifera*), and greenbriar (*Smilax rotundifolia*).

Wetland Functional Values Assessment

A wetland functional values assessment was completed for all wetlands within the project area. The methodology, *Evaluation for Planned Wetlands Functional Capacity Index* (EPW) (Bartoldus et al. 1994), was developed to compare six functions and values of proposed impacted wetlands to those wetlands created for mitigation using a scoring system between 0 and 1.0. A higher score implies a higher functional capacity. A full description of the methodology and results can be found in “Section 3.3.2.7: Wetlands and Deepwater Habitats” of the DCP/EIS, and Appendix G contains the appropriate data sheets for each wetland assessed. Generally, the Jamestown Project functional values analysis analyzed seven functions:

- Shoreline Bank Erosion Control
- Sediment Stabilization
- Water Quality
- Wildlife
- Fish (tidal and non tidal)
- Uniqueness/Heritage
- Floral Diversity¹

According to methodology criteria, all of the wetlands, except Wetland 3 (which was too small, based on the size requirement), offer some functional value. The analysis has shown that the marshes associated with Powhatan Creek, Sandy Bay, and Back River (Wetlands 4 through 8, 10, and A1) offer the most overall functional values of the wetlands studied. Wetlands A1, 4, and 5 offer the highest level of shoreline bank erosion control, while Wetlands 7 and A2, although adjacent to tidal waters, contained steeply eroded banks, resulting in lower shoreline bank erosion control scores.

¹ Floral diversity was added to the study, and to determine floral diversity, wetland scientists visited wetlands in the study area to document the common species of plants occupying each wetland. The total number of species within each wetland type was used as a floral diversity relative index.

Most of the wetlands scored high for sediment stabilization and water quality. Under the normal process for scoring wetlands in this category, isolated wetlands or wetlands with one outlet would have no score (N/A). However, it was the opinion of the wetland scientists that several wetlands, because of their ability to capture surface runoff from neighboring upland areas, did offer water quality functions, and their scores were determined. Systems with large amounts of vegetative cover to filter pollutants scored the highest in this category. Other than those with a N/A score, Wetland 7, with its steep, eroded bank, scored the lowest due to its lack of vegetation.

Wetlands with multiple vegetative layers, fallen logs, and organic debris tend to provide the highest value for wildlife habitat. These conditions were most exemplified by Wetland 1, an isolated depression behind the NPS Maintenance Facility (score 0.64). Wetland 12, the Pitch and Tar Swamp, had the second-highest score as wildlife habitat (score 0.56), and Wetland 2, a mowed depression in front of the NPS Maintenance Facility, had the lowest score due to its lack of vegetative cover layers.

Those wetlands that contain fisheries habitat were scored as tidally influenced systems. Wetlands A1, 4, 5, and 10 rated the highest due to the vegetative cover for foraging, protection, and potential for spawning habitat. Wetland 7 offers very little vegetation for fingerling protection and adult spawning, although downed trees lying in the channel do provide some cover.

Unique wetlands – wetlands occupied by rare, threatened, and endangered species, or wetlands within parks – have been viewed as important to human interests. In taking this into consideration, the EPW methodology views all wetlands within natural parks and conservation areas as unique. Similarly, wetlands occupied by rare, threatened, and endangered species are, by virtue of their importance to the species, given the highest rating

for heritage values. Wetlands within the Jamestown Project study area provide both unique and heritage values as part of the NPS and APVA property and as habitat for the bald eagle and sensitive joint-vetch. Therefore, all wetlands were given the score of 1.0, with the exception of Wetland 3. This wetland is a very small, temporarily saturated, isolated depression with virtually no functional importance.

JUSTIFICATION FOR USE OF THE FLOODPLAIN AND WETLANDS

Because of its low elevation and lack of topography, Jamestown Island is almost entirely within the 100- and 500-year flood zones. The majority of the existing structures at Jamestown are located in the flood zone areas; therefore, improvements or additions to these structures, as well as associated parking and trails, would necessarily be located in the flood zone. Facilities proposed for construction within the flood zone would have finished floor elevations above either the 100-year flood zone elevation of 8.5 or the 500-year flood zone elevation of 9.8, depending on the building purpose.

Construction within jurisdictional wetlands would consist only of walkways and boardwalks designed to interpret the wetlands and natural resources of the Jamestown Project area. In addition, adding utilities along the APVA service road would not, as previously thought, impact the adjacent Pitch and Tar Swamp. The existing roadbed is wide enough to allow for trenching to install a water main and sewer line at least 10 feet apart and within 4-foot trenches without impacts to the wetland (Figure 1).

A small, non-jurisdictional wetland (1,485 square feet or 0.035 acre) located behind the Jamestown Rediscovery™ Center (formerly the Yeardley House) would be directly impacted by construction of a stormwater management facility and removal of an existing sanitary drain field (see Figure 1 and DCP/EIS Figure 4-1). The estuarine, emergent

wetland (E2EM1Rb), which consists primarily of cattails and *Juncus spp.*, is periodically mowed by the APVA. Based on the EPW methodology criteria, this wetland does not provide any special functions or values, such as habitat for rare, threatened, or endangered species, because of its minimal size. Based on best professional judgement and the fact that the wetland probably formed as a result of the sanitary drain field located below it, wetland scientists at Vanasse Hangen Brustlin, Inc. (VHB) concurred that the isolated wetland was of negligible value and did not provide any of the functional values assessed (shoreline bank erosion control, sediment stabilization, water quality, wildlife and/or fisheries habitat, uniqueness/heritage, and floral diversity).

Construction of the stormwater management facility in this area is required to limit impacts on the adjacent Pitch and Tar Swamp and Chesapeake Bay Protection Areas of the Jamestown Rediscovery™ Center and parking lot expansion. The facility is being expanded to accommodate the NPS portion of the Jamestown collection. Expansion of the facility is limited to this side of the building because of potentially adverse impacts to the cultural landscape and/or archaeological resources. Most importantly, the removal of the sanitary drain field from within the Chesapeake Bay Protection Area would be a beneficial impact to this resource and is looked upon favorably by the regulatory agencies. The impact to the wetland would not require compensation because it is below the NPS threshold (0.1 acre).

INVESTIGATION OF ALTERNATIVES

In addition to the proposed action, three action alternatives and a no action alternative were considered. A full description of the Action Alternatives can be found in the DCP/EIS sections “2.8: Alternative C,” “2.9: Alternative D,” and “2.10: Alternative E.”

SITE SPECIFIC FLOOD RISK

In addition to structures already within the flood zone, Alternative B proposes parking and structural features on Neck of Land adjacent to the Parkway. Although the majority of Neck of Land is above the 500-year flood zone, a small drainage ditch does cross the central portion. Therefore, the westernmost portions of the new parking area would be constructed in the 100- and the 500-year flood zones.

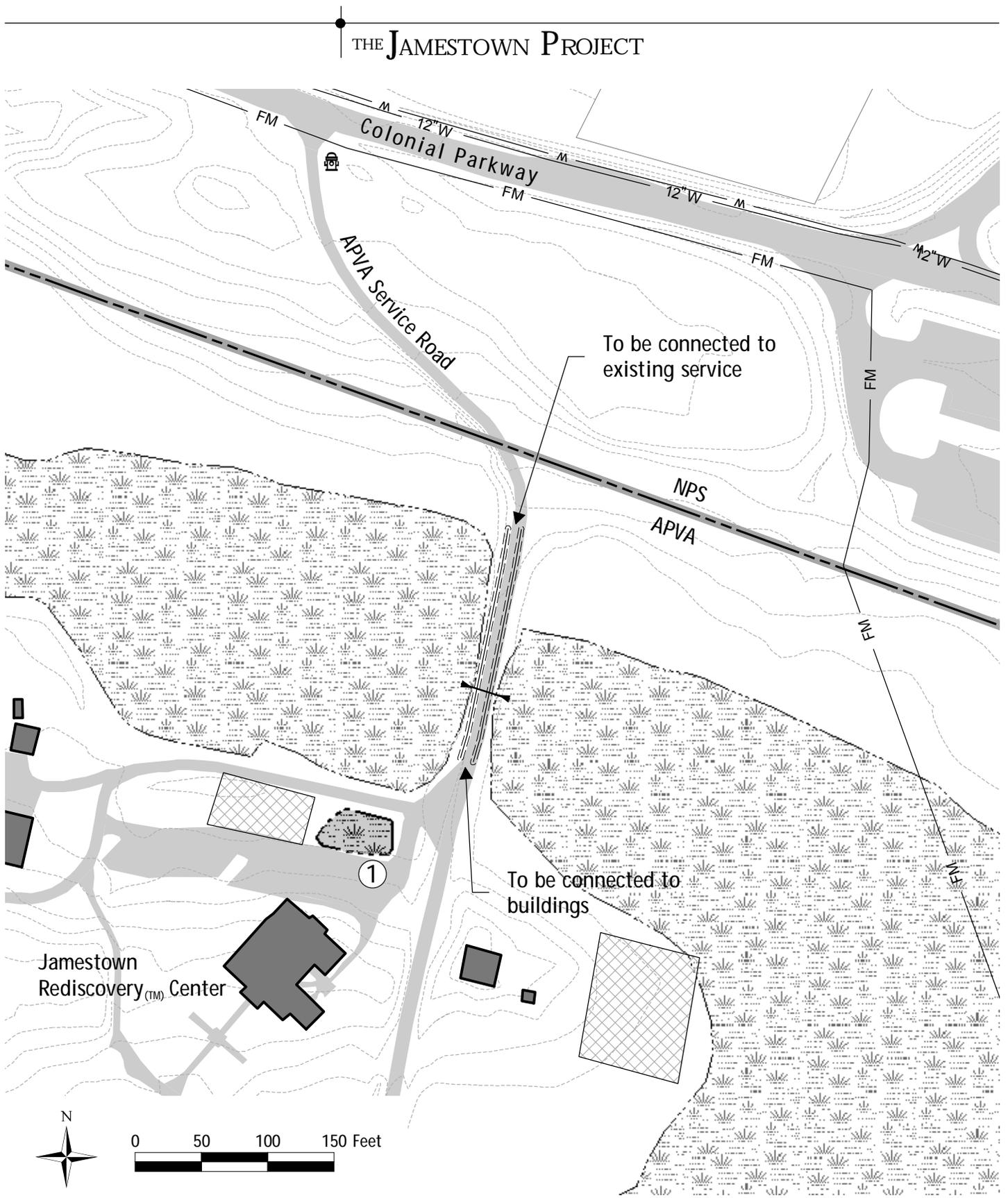
Portions of the existing 1956 Visitor Center now extend into both the 100- and 500-year flood zones. Renovations to the Visitor Center are proposed to create the Observation Building. The existing building would be substantially downsized from 29,000 square feet to approximately 5,000 square feet, and that portion of the building within the flood zones would be removed resulting in the entire, new facility being outside of the flood zones.

A replacement Visitor Center/educational facility would be located in the existing Island parking lot, out of the 100-year flood zone. Additionally, approximately 8,000 square feet would be added to the existing Jamestown Rediscovery™ Center. The existing floor level of the Rediscovery Center is at 10.15 feet, and the addition would match this, placing the Jamestown collection out of the 100- and 500-year flood zones, in a two-story structure.

Other improvements such as the hike/bike trail and boat docks would be constructed within the 100-year flood zone, but these structures would not increase the potential for flooding.

Total impacts to the 100-year flood zone have been minimized as much as possible given the limited areas of high elevation within the project area. New buildings, parking areas (both paved and unpaved), and trails would impact 1.52 acres of the 100-year flood zone in the proposed alternative. The majority of this area, however, is parking (both paved and unpaved) and would not hinder the movement of waters during a flood.

THE JAMESTOWN PROJECT



Legend

	Jurisdictional Wetlands		Culvert
	Non-Jurisdictional Wetlands	FM	Forcemain
	Sanitary Drain Field	12" W	12 in. Water Line
	Proposed Utility Location	w	4 in. Water Line
	4' Utility Corridor		

Figure 1: Proposed Infrastructure Impacts

① Non-jurisdictional wetland (1485 sq.ft.) will be directly impacted by stormwater management system.

An additional 0.85 acres of buildings, parking, and trails would be constructed within the 500-year flood zone. Impacts resulting from elevated structures would be minimal, but bridges, boardwalks, and docks could become dislodged during a large flood event or could trap flowing debris. These raised structures would impact approximately 1.04 acres of the 100-year flood zone and 0.03 acre of the 500-year flood zone.

MITIGATIVE ACTIONS

Avoidance and minimization measures were applied throughout the project design to reduce impacts to sensitive wetland and floodplain resources. General mitigative measures would also include sustainable design and use of durable building materials, application of best management practices (BMPs), and use of standard erosion and sediment control measures throughout the construction process.

Floodplain Mitigation

Parking areas, docks, and trails would be constructed within the flood zone. As flooding of these features would not have adverse impacts to the environment, they have been exempted from the *NPS Floodplain Management Guidelines*. However, as a precautionary measure, appropriate structural design and a flood warning system would mitigate for any impacts from construction of the trail and docks. Signs could also be placed in these areas to warn of the potential hazard, should it be deemed necessary.

As with all new construction at Jamestown, precautions would be taken to ensure that the buildings would be structurally able to withstand flooding. Structures would be consistent with National Flood Insurance Program standards, and flood warning and evacuation plans would be prepared. In addition, facilities proposed for construction within the floodplain would have finished floor elevations above either the 100-year

flood zone elevation of 8.5 or the 500-year flood zone elevation of 9.8, depending on the building purpose. Buildings housing collections would have finished floors above the 500-year flood zone elevation.

Wetland Mitigation

Consideration was given to minimizing work performed in wetlands and open waters, including using pile-supported boardwalks and boat docks rather than discharging dredge or fill material. In addition, the boardwalks would be installed at such an elevation as to provide no expected loss of wetland function, further minimizing wetland impacts. While the boardwalk alignment proposed under the Preferred Alternative would result in greater aerial cover of wetland habitat than other alternatives, this alignment is dictated by the need to avoid impacts to federally-listed endangered species: a population of sensitive-joint vetch and a nesting pair of bald eagles. Avoiding these protected resources requires locating the boardwalk over open marsh rather than along an old road trace. Indirect impacts would include shading from the boardwalk, observation deck, and boat docks. In total, these elevated structures would indirectly impact 0.87 acres of tidal oligohaline marsh (0.68 acres of E2EM1R and 0.19 acres of E2EM1Rb). While these actions are exempt from the full procedures of the Statement of Findings, their impacts would be minimized by constructing decking at a height appropriate to allow angled light to penetrate the marsh surface and by using top-down construction methods. There would be no discharge of fill material, and the structures would not replace the bottom of the water body, reduce the reach or impair the flow or circulation of waters, nor cause an adverse alteration or elimination of aquatic functions. As such, no compensatory mitigation or permits for fill would be required by the U.S. Army Corps of Engineers (COE) or the Virginia Department of Environmental Quality (VDEQ).

Extending a water main and sewer line to the Jamestown Rediscovery™ Center would not result

in impacts to the Pitch and Tar Swamp along the APVA service road (Figure K-1). The water main and sewer line must be separated by at least 10 feet, requiring two separate trench corridors. Trenching would be done with a small backhoe using a 1-foot wide bucket at a depth of approximately 4 feet. One line would be installed along the right shoulder approaching Pitch and Tar Swamp, and the other would be installed along the left road shoulder. At the point where the road crosses the swamp, the width of the roadbed would provide enough space to allow installation of both utility lines without dredging or filling in wetlands.

The proposed action would result in direct impacts to a small, non-jurisdictional wetland behind the Jamestown Rediscovery Center (Yeardley House). The wetland, 0.035 acre, would be eliminated from installation of a stormwater management facility and removal of a sanitary drain field. The stormwater management facility would likely consist of infiltration piping and a grassed swale. No compensation would be required for this impact.

COMPLIANCE

The Coastal Zone Management Act of 1972 requires that federal activities that affect land, water, or natural resources of Virginia's designated coastal resources management area be consistent with the enforceable policies of the Virginia Coastal Resources Management Program. A Federal Consistency Determination (Appendix L) has found the project to be consistent to the maximum extent practicable with these policies. Further, in order to comply fully, permits will be obtained under the following regulations:

Consultation under Section 7 of the Endangered Species Act

U.S. Fish & Wildlife Service

Subaqueous Lands Permit

Virginia Marine Resources Commission

Bridge Construction Permit

U.S. Coast Guard

Section 10 of Rivers and Harbors Act Permit

Norfolk Division – U.S. Army Corps of Engineers

Virginia Pollutant Discharge Elimination System General Permit

Virginia Department of Environmental Quality

Water Quality Protection Permit/401 Water Quality Certification

Virginia Department of Environmental Quality

Consultation under Section 106 of the National Historic Preservation Act/Preparation of New Programmatic Agreement

Virginia Department of Historic Resources and the Advisory Council on Historic Preservation

Plan Review and Approval

James City County Planning Department

James City County Environmental Division and Division of Code Compliance

James City County Local Wetlands Permit

James City County Wetlands Board

National Environmental Policy Act

The Environmental Impact Statement, Section 106 Compliance review, this Statement of Findings for Executive Orders 11990 and 11988, and the Record of Decision would complete the requirements for the National Environmental Policy Act for this project.

CONCLUSIONS

The NPS finds that this proposed action is consistent with the policies and procedures of NPS *Special Directive 93-4: Floodplain Management Guideline* and *Director's Order #77-1: Wetland Protection*, including the "no net loss of wetlands" policy.

Appendix D: Biological Opinion



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6669 Short Lane
Gloucester, VA 23061

March 4, 2003



Mr. Alec Gould, Superintendent
Colonial National Historical Park
National Park Service
P.O. Box 210
Yorktown, Virginia 23690

Re: Jamestown 2007 Project
Construction, Jamestown Island,
James City County, Virginia

Dear Mr. Gould:

This document transmits the U.S. Fish and Wildlife Service's (FWS) biological opinion based on our review of the proposed infrastructure improvements at Jamestown Island for the Jamestown 2007 celebration in James City County, Virginia and their effects on the bald eagle (*Haliaeetus leucocephalus*) and the sensitive joint-vetch (*Aeschynomene virginica*), both Federally listed threatened. This biological opinion is submitted in accordance with Section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). On September 29, 2002, we received notification from the Association for the Preservation of Virginia Antiquities (APVA) indicating they would partner with the National Park Service (NPS) during formal consultation under Section 7 of the ESA and that they would abide by the terms and conditions detailed in the biological opinion. NPS's October 29, 2002 request for formal consultation was received on October 30, 2002.

This biological opinion is based on information provided in the biological assessment, meetings, electronic mail, telephone conversations, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office. This letter also provides the separate comments of the Service and the Department of the Interior pursuant to the Fish and Wildlife Coordination Act of 1958 (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), which are included following the biological opinion.

I. CONSULTATION HISTORY

Significant events related to this action, occurring both before and after formal consultation was initiated, are listed chronologically in Appendix A.

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

To commemorate the 400th anniversary of Jamestown, NPS has developed a plan to expand visitor facilities, enhance research and educational activities, and further protect the archival materials at Colonial Historical National Park. Following is an overview of specific activities this will entail. Drawings depicting these facilities are found in NPS's *Biological Assessment for Proposed new Construction and Increased Visitor Use Impacts at the Jamestown Island Project Site*, dated October 2002.

NPS proposes to construct a 19,000 square foot New Visitor Center/Educational Facility, composed of multiple single-story buildings, in the existing Visitor Center parking lot, and located immediately outside of the 750 foot primary protection zone around eagle nest VAJC01-01. An associated restroom will be constructed. NPS also proposes to construct a Pedestrian Bridge from the New Visitor Center to the Observation Building, which is located outside of the 1320 foot secondary protection zone around the eagle nest.

NPS proposes to construct an elevated boardwalk hike/bicycle path which will extend south from Neck of Land parking lot over the trace of the old ferry road to the Back River and come no closer than 950 feet to the eagle nest. Where the boardwalk meets the river, NPS further proposes the construction of a 14 foot high, 14 foot wide, Boardwalk Bridge over the Back River. The bridge will also be approximately 950 feet from the nest.

NPS proposes to construct three new boat docks, for NPS visitor use only, at Neck of Land, Powhatan Creek Overlook, and Jamestown Island, the latter of which will be located approximately 1000 feet from the eagle nest. Two boat taxis will run between the three docks approximately every 20 minutes, from 10 am to 5 pm. Tour boats, running 1.5 hour trips, will also operate from one of the docks. Elevated walkways to the boat docks will also be constructed.

NPS proposes to construct the 7,500 square foot Ludwell Exhibit Facility, which will be located approximately 1,100 feet from the eagle nest. An associated restroom will be constructed.

NPS proposes the construction of the APVA and NPS Collections and Research Facility, which entails the 8,000 square foot expansion of the existing APVA Rediscovery Center, located approximately 1,100 feet from the eagle nest.

NPS proposes the construction of a 2,000 square foot Gateway/Orientation Facility, with associated parking for 265 vehicles, at Neck of Land. NPS proposes to modify and downsize the existing 29,000 square foot Visitor Center to a 5,000 square foot Observation Building. Associated restrooms will be constructed near these buildings. NPS proposes to remove the Entrance Booths and install a gate at the entrance to Jamestown Island. All of these actions

occur outside of the 1,320 foot radius secondary protection zone of the eagle nest.

The "action area" is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. FWS has determined that the action area for this project is delineated by the park boundary on the north and west (with a small outpocketing around the northern extent of tour boat up Powhatan Creek), and by the path of the Jamestown Explorer or New Tour Boat around the rest of the island (Figure 1). The action area includes all land, water, and airspace within 1,320 feet of eagle nests VAJC-0101, VAJC01-05, and VAJC87-01.

STATUS OF THE SPECIES RANGEWIDE

Species Description – The bald eagle is a large bird of prey with a wing span of 6½ feet. It is found primarily near the coasts, rivers, and lakes of North America. The Chesapeake Bay bald eagle population was listed as endangered in 1978. The Chesapeake Bay recovery region encompasses Virginia, Delaware, Maryland, the eastern half of Pennsylvania, the panhandle of West Virginia, and the southern two-thirds of New Jersey. The Chesapeake Bay Recovery Team prepared a Recovery Plan that is pertinent to this opinion (USFWS 1990).

On August 11, 1995, the bald eagle population in the Chesapeake Bay was reclassified from endangered to threatened due to increasing numbers and range expansion (50 CFR Part 17 36000-36010). In the Chesapeake Bay Recovery Region, delisting requires (1) a nesting population of 300 to 400 pairs with an average productivity of 1.1 eaglets per active nest, sustained over 5 years and (2) permanent protection of sufficient nesting habitat to support 300 to 400 bald eagle pairs. Additionally, enough roosting habitat to accommodate population levels commensurate with increases throughout the Atlantic region resulting from increased productivity is required (USFWS 1990). Since 1992, the criteria of the number of breeding pairs and productivity per nest (300, 1.1, respectively) have been met. However, there has been little permanent protection of nesting habitat within the Chesapeake Bay region. Over 80% of the bald eagle nests in Virginia and Maryland are located on private and corporate lands.

In Virginia, the bald eagle breeding population has steadily increased from an estimated low of approximately 32 pairs in the late 1960s to 360 known nesting pairs in 2002, with approximately 30 pairs suspected to be nesting in the Piedmont, which is not surveyed regularly. Habitat loss now poses a greater threat to the bald eagle since its preferred habitat is where most of the human population growth is occurring in the United States.

The Service announced a nation-wide "Intent to Delist" proposal in July 1999, followed by a notice for public comment in the Federal Register (Proposed Rule, Volume 64, No. 128; Tuesday, July 6, 1999). No further action has been taken, and the species is still listed as of the date of this Biological Opinion.

Life History/Populations Dynamics – Unless otherwise noted, the information in this section was taken from VDGIF (1994) and Watts *et al.* (1994).

Bald eagles breed at four to five years of age, the same time they develop their white head and tail. Adult birds generally mate for life, establishing nesting territories that they return to each year. Nesting pairs may remain near their territory year-round, particularly toward the southern range of the species. In addition to the resident breeding population, Virginia has five bald eagle "concentration areas" where sub-adults and non-breeding adults congregate. These areas are used for foraging, perching, and roosting during one or more seasons of the year. There are no concentration areas near the action area.

During the day, eagles spend approximately 94% of their time perching (Gerrard *et al.* 1980, Watson *et al.* 1991). During the breeding season, 54% of that time is spent loafing, 23% scanning for food or eating, and 16% nesting (Watson *et al.* 1991). Eagles prefer high perches in trees that rise above the surrounding vegetation to provide a wide view that faces into the wind (Gerrard *et al.* 1980). In Maryland, eagles used shoreline that had more suitable perch trees, more forest cover, and fewer buildings than unused areas at all times of the year (Chandler *et al.* 1995). Chandler *et al.* (1995) found that distance from the water to the nearest suitable perch tree was shorter for areas used by bald eagles than areas that did not receive eagle use. In their study, eagles tended to perch within 164 feet of the shore. They recommended that shoreline trees greater than 7.87 inches in diameter at breast height and dead trees not be removed. Eagles often locate prey from a shoreline perch, and hunting forays from perches appear to be more successful than those initiated from flight (Jaffee 1980). Gerrard *et al.* (1980) found that after a successful fishing trip, eagles flew to a low perch to feed; these perches were less than 33 feet above the water and were well below the level of neighboring tree tops. Clark (1992) observed that, within the Powell Creek concentration area on the James River, eagles perched in shoreline trees, flew out to pick up fish, and then returned to the perch to eat.

Bald eagles are opportunistic foragers, preying on fish, birds, and small mammals, as well as scavenging carrion. In the summer, fish are the primary component of the diet. Eagles in Virginia feed on shad, catfish, carp, menhaden, perch, and eels depending on their seasonal availability. In the fall and winter, eagles shift their foraging to waterfowl and supplement their diet to a greater extent with carrion. Because the main diet of bald eagles inhabiting the Chesapeake Bay and its tributaries during the summer is fish, the majority of birds are likely to be present along the shoreline at any given time (Wallin and Byrd 1984). Foraging is a key behavior that influences daily and seasonal activity budgets (Watson *et al.* 1991). Foraging patterns may be strongly influenced by tidal fluctuations. Several studies have found that eagles foraged much more than expected during low tides and less than expected at high tides (McGarigal *et al.* 1991, Watson *et al.* 1991). In King George County, Virginia, overall bald eagle foraging frequency was highest from 4:35 to 6:00 a.m., with a small decline from 6:00 to 10:00 a.m. At 10:00 a.m. foraging decreased further and then remained the same until 6:00 p.m. when it decreased rapidly (Jaffee 1980).

Watts and Whalen (1997) conducted boat and eagle observations from three pier locations within the Powell Creek eagle concentration area on the James River during the summer of 1997. Peak eagle foraging began at dawn and continued until 8:30 a.m. After 8:30 a.m., eagle foraging activity declined and remained fairly stable until 11:00 a.m., when the amount of foraging decreased rapidly and remained low for the rest of the day. Between 6:00 and 8:30 a.m., 55% of morning foraging was documented. By 9:30 a.m., 70% of foraging had occurred. By 10:00 a.m., 79% of foraging had occurred, and 95% of all morning foraging activities had occurred by 11:00 a.m.

During the late afternoon/early evening, bald eagles fly inland to roost for the night. Most summer eagle roosts in the Chesapeake Bay region were found in greater than 100-acre forest blocks and were further from human development than random sites (Buehler *et al.* 1991b). Ninety-five percent of the roosts were within 2,362 feet of water and 50% were at least 2,231 feet from the nearest building (Buehler *et al.* 1991b). Trees used for roosting were larger in diameter, taller, and more accessible from the air than other available trees (Keister and Anthony 1983, Buehler *et al.* 1991b). Another important attribute of communal roosts is proximity to food sources (Keister and Anthony 1983). Because food for eagles occurs in the water, suitable habitat along rivers is important. Clark (1992) found that, within the Powell Creek concentration area, distance to the roost was the most important habitat factor that influenced eagle distribution along the shoreline. Buehler *et al.* (1991b) determined that on the Northern Chesapeake Bay "... fewer than 2% of the random trees met the minimum habitat values of roost trees, indicating that suitable roost trees are scarce relative to other trees. This relative scarcity suggests that if shoreline forest is removed indiscriminately, roost habitat could become limiting to the bald eagle population in the future."

Status and Distribution – Historically, bald eagles were plentiful along major river systems and coastal areas in the United States and Canada. However, habitat loss associated with human settlement, and later, the use of persistent pesticides (such as DDT) for crop management, resulted in a dramatic decline in eagle populations. By the late 1960s, most breeding populations had been decimated by eggshell thinning and associated low productivity. Since the nationwide ban on most persistent pesticides, bald eagle populations have experienced gradual recovery in both productivity and total numbers.

Although the bald eagle has rebounded over the past 15 to 20 years, current patterns of habitat loss in the Chesapeake Bay region are likely to eventually halt or even reverse this recovery. Shoreline development throughout the Chesapeake Bay is reducing available habitat and poses the single greatest threat to the eagle population. Nesting, roosting, and foraging habitat is being lost to shoreline development for housing, business, industry, recreational facilities, public utilities, and transportation. Conversion of woodlands to agricultural fields and timber harvesting is also resulting in the loss of eagle habitat. As the human population along these shoreline areas continues to grow, more undisturbed wooded habitat used by bald eagles will be permanently altered. In addition, water-based recreation in the Chesapeake Bay region has increased dramatically since the 1970s, resulting in disturbance to eagles in breeding, roosting,

and foraging areas. Between 1992 and 1995, the population in Virginia increased 1.5% each year and boat registration increased 7% during that time (J.R. Davy, Virginia Department of Conservation and Recreation, pers. comm. 1996).

Buehler *et al.* (1991b) stated, "We assume there is an upper limit to the number of eagles that can be supported by any stretch of undeveloped shoreline. Thus, as shoreline continues to be modified, we believe that the length of remaining undeveloped shoreline may become the limiting factor for some eagle populations, including the Chesapeake population." Bald eagles in Virginia will maintain sustainable numbers only if there is adequate habitat for nesting, roosting, and foraging free from human disturbance. Management to preserve and protect these shoreline areas is essential to the continued growth and recovery of the Chesapeake Bay's nesting, summering, and wintering bald eagle population.

Chronic human activity may result in disuse of areas by eagles. Buehler *et al.* (1991b) found that bald eagle use of shoreline was inversely related to building density (magnitude of effect was greatest in summer) and directly related to the development setback distance. Clark (1992) concluded that "increased numbers of waterfront buildings and decreased amounts of shoreline woodland . . . negatively affect eagle shoreline use." Clark (1992) found that eagle numbers decreased with increased numbers of buildings and amount of medium duty roads. Buehler *et al.* (1991a) found that in the northern Chesapeake Bay, 76% of shoreline areas may now be unsuitable for eagle use because of the presence of development within 1,640 feet of the shoreline. Up to an additional 10% of the shoreline was found to be unsuitable at times because of boat and pedestrian traffic. When shoreline is developed, it is irretrievably lost as eagle habitat (Buehler *et al.* 1991b). Human activity resulting in even temporary disruption of the bird's environment represents a major source of potential disturbance in many eagle populations (McGarigal *et al.* 1991, Stalmaster and Kaiser 1998). Human activity in perching areas can interrupt feeding and cause birds to relocate (Fraser 1988, Stalmaster and Kaiser 1998). Watts and Whalen (1997) examined eagle density as a function of human presence and their results suggest that the presence of people had a negative effect on shoreline use by eagles. Watts and Whalen (1997) stated that ". . . it is clear that eagles avoid shoreline segments that regularly have people within 100 m [328 feet] of the water." Buehler *et al.* (1991b) seldom observed eagles on the northern Chesapeake Bay within 1,640 feet of human activity and found that the birds rarely used developed areas or areas frequented by people on foot. During the summer, birds on the northern Chesapeake Bay flush, on average, when humans get within 577 feet (Buehler *et al.* 1991b). Once birds are disturbed, they do not return to the area until several hours after the disturbance has occurred and only when the disturbance no longer persists (Stalmaster and Newman 1978, Stalmaster and Kaiser 1998).

In addition to human activity, removal of shoreline vegetation results in disturbance to eagles and loss of habitat. Clark (1992) found that within the Powell Creek concentration area on the James River, eagle abundance increased with increases in woodland width (defined as maximum width of woodland in each sampling plot measured in meters inland from the shore), snags (defined as number of standing dead trees over five meters in height on the shore of each sampling plot), and

woodland length (defined as maximum length of woodland in each sampling plot measured in meters along the shoreline), which are indicative of the amount of forest habitat available. These three variables indicated lack of development, presence of a vegetation screen from human activities, and the presence of perching habitat. Removal of tall, large diameter trees will decrease the amount of perching and roosting habitat available (Buehler *et al.* 1991b). Laukkonen *et al.* (1989) recommended maintaining shorelines with forested buffers at least 328 feet wide. In addition, the buffer should have a minimum of one tree per 820 feet of shoreline that is at least 15.7 inches in diameter at breast height, is accessible to eagles, and contains suitable perching limbs. They also recommended conserving trees greater than or equal to 23.6 inches in diameter at breast height.

It has been documented that eagles are more tolerant of sounds when the sources were partially or totally concealed from their view (e.g., Stalmaster and Newman 1978, Wallin and Byrd 1984). Strips of vegetation that reduce line-of-sight will allow closer presence of humans and provide perching and roosting trees (Stalmaster and Newman 1978). Stalmaster (1980) recommended restricting land activities 820 feet from eagles perched in shoreline trees to protect 99% of the birds. He suggested that boundaries could be shortened to 246 to 328 feet in width if at least 164 feet of this zone contains dense, shielding vegetation.

Feeding behavior of bald eagles can be disrupted by the mere presence of humans (Stalmaster and Newman 1978, Stalmaster and Kaiser 1998). Early morning human activities are potentially the most disruptive to eagle foraging activity (McGarigal *et al.* 1991, Stalmaster and Kaiser 1998). Disturbance may result in increased energy expenditures due to avoidance flights and decreased energy intake due to interference with feeding activity (Knight and Knight 1984, McGarigal *et al.* 1991, Stalmaster and Kaiser 1998). "The difference between the presence of a species when food is available versus the ability of that species to utilize the food is important. Whereas scavengers might be present in an area and appear to be unaffected by human activity, closer inspection would be required to determine whether the individuals are actually able to feed on that food" (Knight *et al.* 1991). Camp *et al.* (1997) found that wildlife responds to disturbance physiologically before responding behaviorally. They stated that heart rate increases and attention is diverted to human activities at a distance greater than that which actually causes the wildlife to flush. Knight *et al.* (1991) examined winter bald eagle concentration areas in Washington and found that when anglers (not in boats) were present, fewer bald eagles were feeding and the eagles shifted their foraging from early morning to late afternoon. "... The presence of anglers disrupted feeding, which reduced energy intake and increased energy expenditure through avoidance flights. The ultimate effect of such disturbances on energy budgets and individual fitness is unknown" (Knight *et al.* 1991).

Clark (1992) found that within the Powell Creek eagle concentration area, eagle abundance decreased with increased numbers of "boat landings." Boat landings were defined as "... piers, boat ramps, and sites where boats are regularly landed or anchored on the shore. ..." Wallin and Byrd (1984) had similar findings within the Caledon concentration area on the Potomac River. Clark (1992) recommended that additional boat landings within or adjacent to the Powell Creek

concentration area be discouraged, including those on tributary creeks of the James River.

Boating activity is likely to adversely impact eagles because it disrupts feeding activity and affects large areas in short periods of time (Knight and Knight 1984). Activities of recreational boaters are not predictable and thus are especially disruptive to birds (Wallin and Byrd 1984). McGarigal *et al.* (1991) found that eagles usually avoided an area within 656 to 2,952 feet of a single stationary experimental boat, with an average avoidance distance of 1,300 feet. During this time, eagles spent less time foraging and made fewer foraging attempts. McGarigal *et al.* (1991) recommend a 1,312 to 2,624 foot wide buffer around high-use foraging areas. Knight and Knight (1984) studied wintering eagles in Washington and found that a 1,148 foot wide buffer would protect 99% of birds perched in shoreline trees from a single canoe. However, eagles feeding on the ground were more sensitive to disturbance and required larger buffers. Knight and Knight (1984) found that a buffer of at least 1,476 feet would be required to protect 99% of eagles feeding on the ground from a single canoe.

Moving boats, as well as stationary boats, disrupt eagles. Buehler *et al.* (1991b) found that on the northern Chesapeake Bay, eagles were flushed by an approaching boat at an average distance of 575 feet. M.A. Byrd (College of William and Mary's Center for Conservation Biology, pers. comm. 1989) has observed that when eagles are flushed by recreational boats from perch sites along the James River, they usually fly inland and cease foraging for at least several hours. Watts and Whalen (1997) studied boats and eagles on the James River. They found that nearly 25% of eagles perched on the shoreline flushed when their survey boat was within 656 feet of the shoreline. When the boat was within 328 feet of the shoreline, nearly 80% of the birds flushed. During shoreline surveys, they found that nearly 50% of all boats observed were within 656 feet of the shoreline and more than 35% were within 328 feet. Jon boats, jet skis, and bass boats tended to be closer to the shoreline than sport boats (defined as v-hull type boats). "The general distribution of boats relative to the shoreline . . . in combination with the observed flushing probabilities . . . suggest that a large number of boats may directly influence shoreline use by eagles" (Watts and Whalen 1997). Their data analysis suggested that the presence of boats within 656 feet of the shoreline has a significant negative effect on shoreline use by bald eagles.

Stahmaster and Kaiser (1998) studied wintering eagles on the Skagit River in Washington and found that eagles foraging on the ground were intolerant of humans within 300 m, especially in the morning and that the ". . . manner in which eagles responded to motorboats demonstrated that this activity was extremely disruptive to the population, even though only a small number of human were involved." Luukkonen *et al.* (1989) studied non-breeding eagles in North Carolina and found "eagles and people tended to concentrate their activities on different portions of both lakes." They estimated that boat densities of more than 0.5 boats/km² altered eagle distribution patterns. "Disturbance by boaters or others may negatively affect eagle energy budgets by causing unnecessary eagle movements and by displacing eagles from foraging areas" (Luukkonen *et al.* 1989). Wood and Collopy (1995) studied breeding and non-breeding eagles on three lakes in Florida. They found a significant negative relationship between boat numbers and eagle numbers on one of the lakes. The other two lakes did not show this relationship, but did not

receive as much boat traffic. Boat use was highest on weekends and eagle use was highest on weekdays. Moving boats seemed to be more disruptive than stationary boats. Boating activity reduced the number of eagles using the shoreline, increased the perching distance from the shoreline, and increased the flushing distance (mean flush distance was 174 feet).

Chemical poisoning and shooting are now less of a threat than in past years, but continue to cause loss of eagles. The Service, U.S. Environmental Protection Agency, and the states monitor pesticide-related eagle mortalities; restrictions on some types of pesticides have resulted from eagle mortalities. With increased petrochemical transport activities in the Chesapeake Bay region, the potential exists for eagles to come into contact with oil resulting from spills. Eagle deaths occasionally occur throughout the species' range due to collisions with power lines or electrocutions at power poles. In Virginia, power companies have voluntarily agreed to place "perch guards" on many power poles that have a high risk of eagle electrocution.

Analysis of the Species Likely To Be Affected - The proposed action has the potential to adversely affect the bald eagle within the action area. The effects of the proposed action on the bald eagle will be considered further in the remaining sections of this biological opinion.

The Service also provided comments on the sensitive joint-vech for this project. Based on NPS's adherence to recommended project modifications, which include avoiding the ferry road trace (appropriate elevation for sensitive joint-vech and location of last known population), using alternative construction methods (the top-down method) designed to minimize impacts to marsh vegetation and soils, and designing (implementation began prior to October 2002) a non-native, invasive marsh vegetation monitoring and control plan, the Service has determined that the proposed action is not likely to adversely affect the sensitive joint-vech and it will not be considered further in this consultation.

ENVIRONMENTAL BASELINE

Status of the Species Within the Action Area - Bald eagles are proliferating in and around Jamestown Island. Nest VAJC01-01 was discovered during the annual nesting surveys in March 2001. Two young were produced in the 2001 breeding season and one eaglet fledged in the 2002 season. The pair is also utilizing the nest this year (Rafkind, pers. comm. 2002), although it will not be known if they have produced eggs until the nesting surveys in March 2003. There are two other eagle nests on Jamestown Island (VAJC01-05 and VAJC87-01, both active in 2002 and 2003), but the only portion of the proposed action likely to affect them is the operation of the four boats.

The eagles at nest VAJC01-01 probably moved into this busy area during the late fall of 2000, when levels of human activity are relatively low. According to the Bald Eagle Protection Guidelines for Virginia (USFWS & VDGIF 2000), eagles usually prefer much less nearby human activity than the level at Jamestown Island. The guidelines recommend a 1,320-foot protection zone with minimal human disturbance around nests. The guidelines warn of the negative effects

of boat traffic and loud noises. This eagle nest is approximately 600 feet from the only road onto Jamestown Island, with a clear line of sight to the road. Furthermore, the nest is approximately 600 feet from the visitors parking lot, with a limited line of sight view of traffic in the parking lot. Even though there is not much vegetation to block the eagles' view of the traffic, a marsh does separate the nest tree from the road and the parking lot. This marsh will serve to prevent access on foot any closer than approximately 400 feet. The nest is approximately 200 feet from Back River, the waterway that separates Jamestown Island from the mainland.

This particular pair of eagles appear to be used to some degree of human disturbance. In addition to the routine vehicle traffic, several NPS projects were completed during the winter of 2001. A water line replacement project was undertaken from September 2000 to February 2001, and equipment was staged in the parking lot approximately 600 feet from the nest. Many loud activities, such as the operation of dump trucks, excavators, backhoes, tractors, tampers, and jackhammers, were all used within 750 feet of the nest. Chain saws and payloaders were used to cut down and remove some trees around the parking lot in October 2000. Sewer lines were blown with an air compressor in October 2000. The Isthmus Bridge (approximately 1,400 feet from the nest but with a clear line of sight) was cleaned and painted during October and November 2000. Many trucks used to the road to complete other maintenance activities farther down the island throughout the fall and winter of 2000-2001. In the spring of 2001, NPS completed paving of the bridge and Visitor Center parking lot and chipped and sealed the surface of the road between the bridge and parking lot. NPS also staged timbers at the far end of the parking lot to repair/replace wooden bridges on Loop Road and the path to the Visitors Center.

NPS submitted an observation log of eagle behavior from March 14 to June 14, 2002. The log documented many instances of boat traffic in Back River, and vehicular traffic on Jamestown Island, with little reaction from the nesting eagles or their eaglets. Adult eagles appeared to be most aware of disturbance (both water and land) when eaglets were moving about and near fledging (when they are most vulnerable). Several times adult eagles were particularly agitated or vigilant when multiple jet skis passed the nest at the same time. These same eagles seemed relatively undisturbed by most noise, the visual combination of multiple jet skis (like a boat) may have been the disturbing factor. The adult eagles also appeared disturbed occasionally by particularly loud vehicles as they passed in the parking lot. Most events and vehicles causing the adult eagles to become agitated occurred when the eaglets were moving about and close to fledging.

Factors Affecting Species Habitat Within the Action Area - There are currently several activities that occur during the eagle breeding season which may be affecting eagle habitat in the area. Current boat traffic on Back River may reduce available foraging habitat and reduce the quality of nesting habitat. Vehicular traffic onto Jamestown Island and pedestrian visitors most likely also reduce the quality of nesting habitat. Routine maintenance activities, such as tree removal or road repairs in the vicinity of the nest, may disturb the eagles.

EFFECTS OF THE ACTION

Beneficial Effects – Beneficial effects are those effects that are wholly positive, without any adverse effects. As defined, there are no beneficial effects in the proposed action.

Direct Effects – Increased activity at the New Jamestown Island Dock may directly or indirectly affect nesting eagles. New tour boats and construction of the three new docks will significantly increase water traffic. Presently, nesting eagles are acclimated to and tolerate existing levels of boat traffic on Back River. Increases in water traffic and general disturbance near the nest are types of activities that can cause eagles to abandon nests and/or offspring, prohibit a return the following year, and interrupt foraging and roosting behavior. Plans for multimodal access to Jamestown Island include boat taxis, which will begin no earlier than 10 am and run every 20 minutes, daily, until 4 or 5 pm. Taxis will leave Neck of Land dock, stop at Jamestown Island dock, stop at Powhatan dock, and pass Jamestown Island (and the eagle nest) again on the way back to Neck of Land dock. There will also be two new tour boats, which will begin daily operation no earlier than 10 am, and will depart from the Neck of Land dock for 1 to 2 hour trips around Jamestown Island. Tour boats will make 3 to 4 trips daily, from April to October. These boats are proposed to be similar in size and style to the Jamestown Explorer. The Jamestown Explorer may change its operation to leave from one of the new NPS docks or stop at one along its normal route. The increase in Park-related water traffic of approximately 48 trips (water taxis and tour boats) past eagle nest VAJC01-01 is likely to adversely affect nesting bald eagles by directly disturbing nesting eagles and indirectly by disrupting foraging opportunities on Back River.

Other disturbances beyond levels that have occurred in the past will also occur in the vicinity of nest VAJC-0101. Increased motorized vehicle (cars, buses, and small trucks) and pedestrian/bicyclist (over the new boardwalk) use will add levels of disturbance. Additionally, construction of the Ludwell Exhibit Facility and the Collections and Research Facility approximately 1,100 feet from the nest will occur during the breeding season. It is difficult to distinguish which, if any, of the above activities may cause harassment or harm of the eagles to the point of nest abandonment or injury/death to the eggs or young. Of the human activities within the vicinity of nest, boat activity will probably disturb the eagles the most (Watts, pers. comm. 2001).

First-year nesting pairs have a greater chance of abandoning a nest than pairs that have occupied a nest for several years (Watts, pers. comm. 2001). By the time construction begins, this pair will have used nest VAJC01-01 for at least three years. However, a significant increase in vehicular, boat, and pedestrian traffic is anticipated, and FWS believes these disturbances may cause the eagles not to return to the nest the year construction begins, or cause the adult pair to abandon the nest or the eaglets to jump out of the nest the first year the boardwalk or boat taxis are in use during the breeding season.

Indirect Effects – Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. More than five acres of mature forested habitat will be cleared to build the Neck of Land parking lot, Gateway Center, and accompanying elevated walkways on the northern side of the marsh. Clearing this area removes an important shoreline buffer between the eagles and human development. Also, this forested area could potentially have provided an alternate nesting area for the eagles if the activity on Jamestown Island caused them to abandon nest IC01-01 (Watts, pers. comm., 2003). Additionally, construction of the Bridge over Back River and the resulting slowing of boat traffic in the immediate area of the nest may reduce foraging habitat.

Interrelated and Interdependent Actions – An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. In 2007, NPS anticipates a special anniversary celebration of unknown proportion, which will include large amounts of pedestrian and vehicular (land, air, or water) traffic, and other one-time events that cannot be foreseen this far in advance. NPS will conduct a separate environmental assessment and ESA consultation for this event.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA.

There are non-federal activities that affect the eagles nesting at VAJC-0101. There is private land on Jamestown Island owned by the Association for the Preservation of Virginia Antiquities (APVA). Almost all of APVA's land is outside the primary protective zone of 750 feet; their road connection to the main road is the only APVA land within the primary zone. As stated above, there is only one road onto Jamestown Island, and APVA traffic numbers are included in the NPS traffic numbers. The nest is concealed from view from almost all of the APVA land. Some activities, such as occasional individual tree clearing within 1,320 feet (but outside 750 feet) of the nest are permitted during the nesting season, which runs from December 15 to July 15 in Virginia.

APVA maintains a helicopter pad approximately 1,300 feet from the nest. APVA estimates that helicopter flights occur about once a month. APVA has instructed the pilot to avoid coming any closer to the eagle nest than the landing pad and to observe a 1,000-foot vertical clearance from the nest.

Boat traffic on Back River and Sandy Bottom, most notably jet skis, will undoubtedly create noise and disturbances near the nest. Both boat traffic and visitor traffic may increase drastically following the publicity generated for the actual 2007 celebration.

CONCLUSION

After reviewing the status of the bald eagle, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is FWS's biological opinion that the Jamestown 2007 project construction and visitor access activities, as proposed, are not likely to jeopardize the continued existence of the bald eagle. No critical habitat has been designated for this species, therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and federal regulation pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by FWS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by NPS so that they become binding conditions of its actions, for the exemption in Section 7(o)(2) to apply. NPS has a continuing duty to regulate the activity covered by this incidental take statement. If NPS (1) fails to assume and implement the terms and conditions or (2) fails to require any contractors to adhere to the terms and conditions of the incidental take statement, the protective coverage of Section 7(o)(2) may lapse. To monitor the impact of incidental take, NPS must report the progress of the action and its impact on the species to FWS as specified in the incidental take statement.

AMOUNT OR EXTENT OF TAKE

FWS anticipates take associated with bald eagle nest VAJC-0101 as a result of this proposed action. The incidental take is expected to be in the form of harassment of the adult pair, potentially to the level that would cause nest abandonment, and harassment or harm of the eaglets, potentially to the degree that would cause them to jump prematurely from the nest and die.

FWS will not refer the incidental take of the bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), or the Bald and Golden Eagle

Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

EFFECT OF THE TAKE

In the accompanying biological opinion, the FWS determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

FWS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of bald eagles:

- o Minimize harassment of eagles by construction.
- o Minimize harassment of eagles by pedestrian and bicycling visitors.
- o Minimize harassment of eagles by boat traffic.
- o Incorporate plans to further reduce pedestrian or boat traffic during the breeding season if monitoring shows that increased human use is negatively affecting breeding success.

TERMS AND CONDITIONS

To be exempt from the prohibitions of Section 9 of the ESA, NPS must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. No external construction, staging, or maintenance activities within 1,320 feet of the nest shall occur during the eagle breeding season (November 15 to July 15) of any given year, with the exception of the Expanded Collections Storage and the Ludwell Exhibit Facility. Construction and maintenance activities within a completely enclosed building may occur during the breeding season. NPS may coordinate with FWS each year to determine when the eagles stop using the nest and to discuss beginning construction activities earlier than July 16.
2. The Expanded Collections Storage and the Ludwell Exhibit Facility may be constructed at any time, but staging may not occur north of, or closer to the eagles nest than the proposed Expanded Collections Storage and Ludwell Exhibit Facility.
3. During the breeding season, boat taxis and tour boat service will begin operation no

earlier than 10:00 am, discourage visitors from making loud noises when passing within 750 feet of the nests, maintain a distance of at least 350 feet from eagle nests VAJC01-05 and VAJC87-01, and maintain the maximum distance from nest VAJC01-01 (the nest near the Visitor Center) that is safely possible.

4. NPS will monitor the nest weekly from November 15 to July 15 from the parking lot or the road to determine if the eagles are present. With binoculars or a spotting scope, look for the adult eagles standing in or on the nest or perching very close by. Monitor the nest for 30 minutes or until the nesting pair for nest VAJC-0101 is observed. Prior to incubation, monitoring should occur near dusk. After incubation begins, monitoring may be conducted at any time during the day. The report should state that eagles were present or absent. Monitoring shall begin the year construction begins on any structure within 1,320 feet of the nest and continue through the third year after visitors begin utilizing the boat taxis and boardwalk. Submit this report to FWS no later than July 31 of each year (for the breeding season ending 15 days prior). This and any additional information to be sent to FWS should be sent to the following address:

Virginia Field Office
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, Virginia 23061
Phone (804) 693-6694
Fax (804) 693-9032

5. If, in any given year of monitoring, no eagles have been sighted around the nest by January, NPS shall notify FWS. Similarly, if eagles are documented around the nest, and then at any point during the breeding season NPS has reason to believe the eagles have abandoned the nest, FWS shall be notified immediately.
6. NPS will also monitor bicycle/pedestrian use of the boardwalk, boat taxi usage, and motorized vehicular traffic onto the island from November 15 to July 15 from the first year the new boat taxi service or pedestrian boardwalk is in use until the third year after the last of these two structures are built. Report shall include a separate monthly average of both daily weekend usage and daily weekday usage (example: Pedestrian use of boardwalk in January averaged 110 people per day on weekends and 45 people per day on weekdays). Report shall also include a monthly average of daily weekend and weekday number of boat taxi trips and vehicular traffic onto the island. This information shall be included in the nest monitoring report indicated in #4.
7. If monitoring indicates that increased boat, bicycle/pedestrian, or vehicular traffic has negatively impacted the nest success of this eagle pair, for example, the pair abandons or chooses not to use the nest at all, NPS will consult with FWS to modify pedestrian, boat, and/or vehicular traffic to reduce impacts to acceptable levels. Acceptable levels are

those which are not expected to deter the eagles from using nest VAJC-0101 or to cause nest abandonment or loss of chicks.

8. Jamestown Island Dock will be constructed at least 1000 feet away from the nest and neither boat taxis nor tour boats will be stored, maintained, or fueled at this dock. Tour boat operations shall not be conducted from this dock.
9. NPS will patrol the area with new structures routinely during the breeding season to ensure that visitors are not harassing the eagles by making loud noises or by walking off of the trail or boardwalk and closer to the nest. All NPS employees should be briefed so that they can correct visitors on the spot if they see visitors harassing the eagles. As long as all NPS employees can identify improper activities and have the authority and confidence to correct visitors, no special patrols are required.
10. Park will post "No Stopping" zones on Back River from Sandy Point to Jamestown Island Boat Ramp.
11. Care must be taken in handling any dead specimens of listed species that are found in the project area to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead specimens is required to enable FWS to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead specimen, notify FWS at the address provided.

FWS believes that two adult eagles may be harassed to the level of nest abandonment and that one clutch of eaglets may be harassed or harmed to the level of death as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures. NPS must immediately provide an explanation of the causes of the take, and review with FWS the need for possible modification of the reasonable and prudent measures and the terms and conditions.

IV. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to

help implement recovery plans, or to develop information.

One of the two conditions specified in the Chesapeake Bay Bald Eagle Recovery Plan to achieve full recovery of the species for delisting is permanent protection of sufficient nesting habitat to support 300-400 bald eagle pairs and enough roosting habitat to accommodate population levels commensurate with increases throughout the Atlantic region. Despite the fact that this condition has not been met (Watts, 1999), the bald eagle will probably be delisted in the near future. Habitat degradation is the most serious threat to the eagle and the ESA is currently the only regulatory tool that specifically protects the habitat on which the bald eagle depends. Habitat loss in the Chesapeake Bay is likely to accelerate and eagle numbers may again begin to decrease. To help prevent this, FWS believes that Federal land holders should work with FWS to formulate and sign management agreements to protect eagle habitat on their lands in perpetuity. The FWS would be pleased to work with NPS to design such a management agreement.

With the exception of boat traffic, there is little recent information addressing how eagle behavior is affected by disturbance activities such as will occur at Jamestown Island. An opportunity exists at Colonial National Historical Park to conduct needed research in this area while simultaneously enhancing the Park's educational value to the public. Multiple video camera recordings could be used to correlate eagle behavior in the nest with activities around the nest (on the water, pedestrian bridge, and/or road). NPS could coordinate with the College of William and Mary, Center for Conservation Biology, to develop a plan that would efficiently answer the most important questions regarding this eagle pair and their reactions to activities around them. NPS could also use the video of the eagles to educate visitors. Because of the manipulation of equipment in and around the nest tree required to implement this plan, however, further consultation with FWS would be necessary.

V. REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the initiation request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

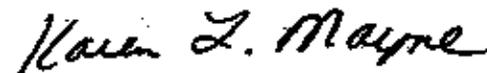
For this Biological Opinion, the level of incidental take is harassment of the adult pair to the level of nest abandonment and possible death of one clutch of eaglets. If this level of take is reached, reinitiation of consultation is required.

VI. FISH AND WILDLIFE COORDINATION ACT

FWS is concerned about the impacts to more than five acres of forested habitat that will occur when the parking lot at Neck of Land is constructed. We reference Executive Order 13186 entitled, Responsibilities of Federal Agencies to Protect Migratory Birds (FR Vol. 66, No. 11, Jan. 17, 2001). This Executive Order states in part that federal agencies shall "support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions" and "restore and enhance the habitat of migratory birds, as practicable." FWS recommends habitat restoration/enhancement to offset impacts to migratory birds and other fish and wildlife resources. Actions such as habitat restoration, reforestation, or establishment of vegetated buffers along field edges are some of many options that should be considered.

FWS appreciates this opportunity to work with NPS in fulfilling our mutual responsibilities under the ESA. If you have any questions, please contact Ms. Jolie Harrison of this office at (804) 693-6694, extension 208.

Sincerely,



Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

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Appendix A. Consultation History

- 10-05-00 NPS's Colonial National Historical Park and the Association for the Preservation of Virginia Antiquities (APVA) request FWS attend meeting to discuss preparation of Development Concept Plan to guide infrastructure improvements for 2007 celebration of Jamestown settlement's 400th anniversary.
- 10-24-00 FWS, NPS, APVA, the National Oceanic and Atmospheric Administration (NOAA), the Virginia Department of Conservation and Recreation (VDCR), Division of Natural Heritage (DNH), the Virginia Department of Environmental Quality (DEQ), the Virginia Department of Historic Resources, the Advisory Council on Historic Preservation, Archaeological and Cultural Solutions, Inc., and Vanesse Hangen Brustlin, Inc. (VHB) attend scoping meeting at site.
- 10-25-00 FWS, NPS, and VHB meet at site and establish necessity of further consultation for sensitive joint-vetch if marsh is developed.
- 02-22-01 FWS, NPS, and VHB meet to discuss consultation procedures, timeline and sensitive joint-vetch issues.
- 02-28-01 NPS notifies FWS that the College of William and Mary, Center for Conservation Biology (CCB), has discovered new active bald eagle nest at project site during annual surveys.
- 03-30-01 FWS emails NPS recommended guidelines and timeline for biological assessment to include bald eagle, sensitive joint-vetch, and small whorled pogonia (*Isotria medeoloides*)
- 04-11-01 FWS issues a biological opinion to NPS entitled "Current NPS Operations at Jamestown Island" to address impacts to the bald eagles at the new nest numbered VAJC-0101.
- 06-11-01 NPS notifies FWS that DNH survey results indicate no small whorled pogonia at site.
- 06-22-01 FWS, NPS, APVA, Virginia Department of Game and Inland Fisheries (VDGIF), DNH, CCB, and VHB meet on site to discuss alternatives for infrastructure improvements and potential impacts to eagles of the proposed May 13, 2007 celebration.
- 07-03-01 APVA agrees to formally join NPS's Colonial National Historical Park during formal consultation under Section 7 of the Endangered Species Act.

- 08-01-01 DNH submits draft biological assessment (BA) on behalf of NPS and APVA.
- 08-20-01 FWS provides written comments on draft BA, via email, to DNH, NPS, and APVA.
- 08-27-01 FWS, NPS, DNH, APVA, and VHB meet on site to discuss draft BA, sensitive joint-vech, and boat traffic.
- 10-02-01 FWS, NPS, VHB meet to further discuss project alternatives, BA, and biological opinion (BO).
- 3-28-02 FWS and VHB meet to discuss draft Environmental Impact Statement (EIS) and BA.
- 5-23-02 FWS and NPS meet to discuss draft EIS and BA.
- 8-29-02 NPS submitted eagle nest monitoring report to FWS.
- 9-20-02 FWS, NPS, DNH, VHB, and Carlton Abbott and Partners meet to discuss completion of BA.
- 9-30-02 FWS receives letter from APVA indicating APVA will partner with NPS for Jamestown 2007 Section 7 consultation and abide by terms and conditions of BO.
- 10-29-02 DNH submits BA on behalf of NPS and APVA and initiates formal consultation.

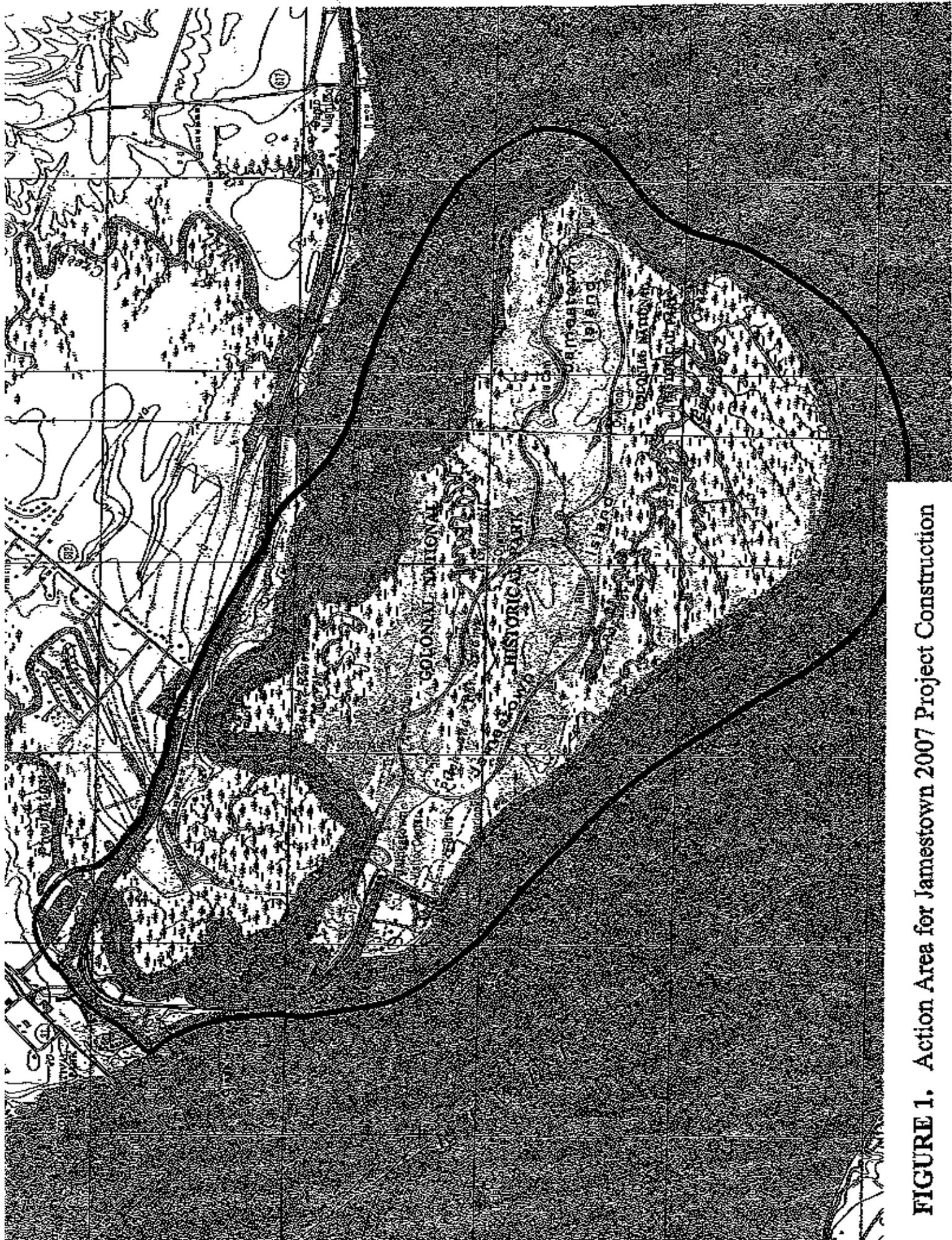


FIGURE 1. Action Area for Jamestown 2007 Project Construction