May 2006

Environmental Assessment/Assessment of Effect

Rehabilitate Support Facilities

at Washington's Headquarters for Visitor Use

VAFO 111555

National Park Service
Department of the Interior
Valley Forge National Historical Park
King of Prussia, Pennsylvania

U.S. Department of the Interior
National Park Service

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Proposed Action: Valley Forge National Historical Park (NHP) provides a wide variety of educational and recreational opportunities for visitors. The park is host to many notable cultural and natural resources, particularly as the site of the famous winter encampment of General George Washington's Continental Army during the Revolutionary War. To improve the visitor experience and preserve historic structures within the Washington's Headquarters area (the study area), the National Park Service (NPS) proposes to rehabilitate support facilities. The proposed action includes changes to existing parking lots and circulation; enhancement of the cultural landscape; rehabilitation of the train station and its platform; improvements to visitor amenities, heating, ventilation, and air conditioning (HVAC), and the sanitary system; and the addition of interpretive elements. Implementing the NPS preferred alternative would have a long-term, moderate, beneficial impact on soils, visual resources, cultural landscapes, and visitor use and experience. It would also have a long-term, minor, beneficial impact on historic structures, operations, and utilities. The NPS preferred alternative would have a long-term, moderate, adverse impact on archeological resources. This document will be used for compliance with both the National Environmental Policy Act (NEPA) of 1969, as amended and the National Historic Preservation Act (NHPA) of 1966, as amended.

For Further Information Contact: Deirdre Gibson
Valley Forge National Historical Park
(610) 783-1047
deirdre_gibson@nps.gov

Note to Reviewers and Respondents:
If you wish to comment on the Environmental Assessment/Assessment of Effect, you may mail comments by May 31, 2006 to the name and address below or you may post them electronically at http://parkplanning.nps.gov. It is the practice of the NPS to make all comments, including names and addresses of respondents who provide that information, available for public review following the conclusion of the NEPA process. Individuals may request that the NPS withhold their name and/or address from public disclosure. If you wish to do this, you must state this prominently at the beginning of your comment. Commentators using the website can make such a request by checking the box "keep my contact information private." The NPS will honor such requests to the extent allowable by law, but you should be aware that the NPS may still be required to disclose your name and address pursuant to the Freedom of Information Act.

Superintendent
Valley Forge National Historical Park
P.O. Box 953
Valley Forge, PA 19482

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ACRONYMS AND ABBREVIATIONS

ACHP – Advisory Council on Historic Preservation
ADA – Americans with Disabilities Act
AOE – Assessment of Effect
CEQ – Council on Environmental Quality
DO – Director's Order
EA – Environmental Assessment
EIS – Environmental Impact Statement
EPA – Environmental Protection Agency
FTE – Full time equivalents
GMP – General Management Plan
HVAC – Heating, ventilation, and air conditioning
MOA – Memorandum of Agreement
National Register – National Register of Historic Places
NEPA – National Environmental Policy Act
NHP – National Historical Park
NHPA – National Historic Preservation Act
NPS – National Park Service
SHPO – State Historic Preservation Officer
Sq. ft. – Square Feet
VHB – Vanasse Hangen Brustlin, Inc.

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PURPOSE AND NEED

Valley Forge National Historical Park (NHP) provides a wide variety of educational and recreational opportunities for visitors. The park is host to many notable cultural and natural resources, particularly as the site of the famous winter encampment of General George Washington's Continental Army during the Revolutionary War. Each year, Valley Forge NHP receives approximately 1.2 million visitors interested in the park's historical, natural, and cultural resources and recreational opportunities. Of this, approximately 69,000 people annually visit Washington's Headquarters. To improve the visitor experience and preserve historic structures within the Washington's Headquarters area (the study area), the National Park Service (NPS) proposes to rehabilitate support facilities. The proposed action includes changes to existing parking lots, circulation, and the cultural landscape; rehabilitation of the train station and its platform cover; improvements to visitor amenities, heating, ventilation, and air conditioning (HVAC), and the sanitary system; and the addition of interpretive elements. The proposed action does not include changes to the Washington's Headquarters building.

This Environmental Assessment/Assessment of Effect (EA/AOE) evaluates alternatives for the proposed action. The EA/AOE further analyzes the potential impacts these alternatives would have on the natural, cultural, and human environment. This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9); and NPS Director's Order (DO) #12: *Conservation Planning, Environmental Impact Analysis, and Decision-Making*. This EA/AOE also complies with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

STUDY AREA DESCRIPTION

Valley Forge NHP is located in southeastern Pennsylvania, approximately 18 miles northwest of center city Philadelphia. The Schuylkill River divides the park into a northern and southern section, and Valley Creek further divides the southern section. Originally established to include 2,250 acres, Valley Forge NHP has since grown to encompass over 3,400 acres (Figure 1). The study area for the proposed action, however, is confined to the area surrounding Washington's Headquarters as depicted on Figure 2.

The study area is located southeast of the confluence of Valley Creek with the Schuylkill River. This area is bounded to the north by the Norfolk & Southern Railroad and the Schuylkill River, to the west by Valley Creek, to the south/southeast by State Route 23, and to the northeast by River Road. A series of buildings oriented south to north parallel Valley Creek. These buildings include the David Potts House, Potts Barn, Washington's stable, and Washington's Headquarters. A north/south village lane (composed

of oyster shells) runs parallel to the structures on the west. The village lane is used by pedestrians and service vehicles. North of Washington's Headquarters is the train station, which sits along the railroad grade and parallels the Schuylkill River. A springhouse and four replica Commander-in-Chief's guard huts sit east of Washington's Headquarters and southeast of the train station (Figure 2).

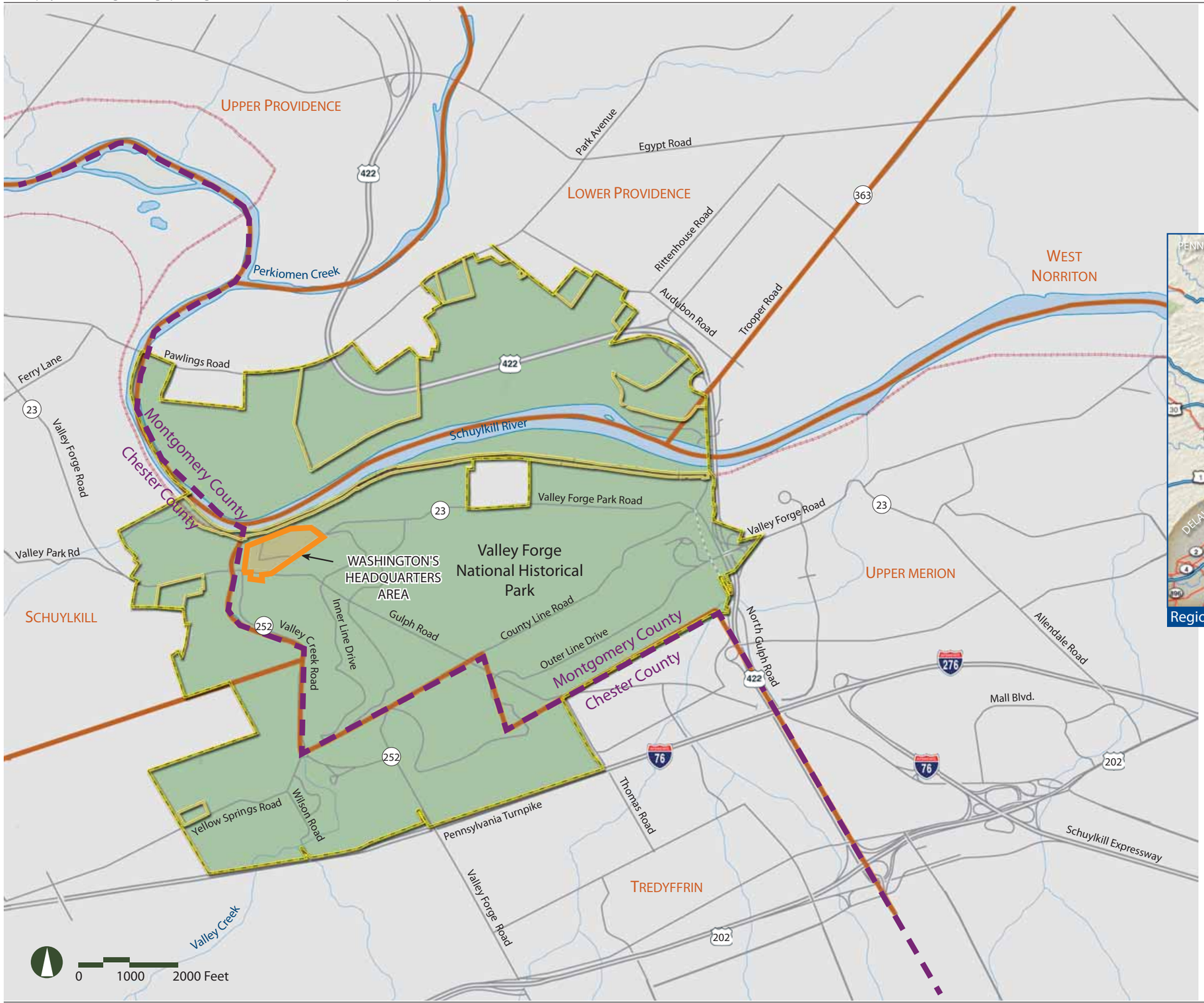
Two entry roads connect with State Route 23 and provide visitor access to the study area. The southernmost entry road leads to the lower parking lot, which lies east of Potts Barn. An unnamed north/south access road connects the lower parking lot to the train station. River Road runs east of the train station and connects with State Route 23 as the northernmost entry road. Along River Road, a middle parking lot is located east of the train station, and an upper parking lot is located northeast of the middle parking lot. The Joseph Plumb Martin Trail, a paved, multiuse path that runs throughout the park, enters the study area along State Route 23 and terminates southwest of the lower parking lot (Figure 2). Paved paths also provide visitor access within the study area. A small restroom and bulletin board are the only visitor amenities within the study area.

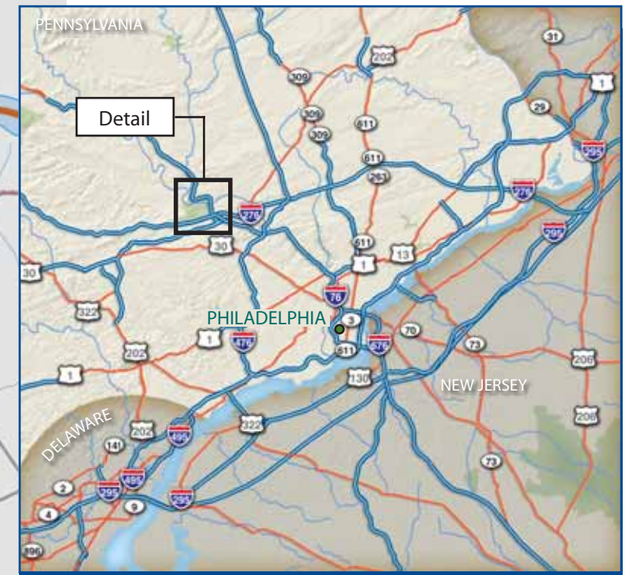
PURPOSE OF AND NEED FOR ACTION

At Valley Forge NHP, the NPS proposes several elements to rehabilitate support facilities in the study area. The purpose of the proposed action is to improve the visitor experience and preserve historic structures. The proposed action is needed because visitor amenities are not universally accessible and do not support the visitation of the site; the train station is in need of rehabilitation; intrusive and/or non-contributing elements are evident within the landscape; visitor circulation is not clear; the entry drive into the study area meets State Route 23 at an unsafe intersection; and adequate utilities are needed at the study area.

Washington's Headquarters is the primary interpretive site at Valley Forge NHP. The building itself is a National Historic Landmark and one of the most significant historic buildings in the park. Washington's Headquarters has been open to the public as a historic house museum for over a century. Because Washington's Headquarters is one of the only buildings currently open to the public in the study area, it receives a great deal of use, which causes everyday wear and tear on this nationally significant structure, as visitors enter and exit the building. In addition, this building is not universally accessible and due to physical constraints, universal accessibility is not possible. Therefore, the proposed action does not include changes to Washington's Headquarters. Because of this hindrance, not all visitors to Valley Forge NHP can experience Washington's Headquarters and the interpretation within. There is also a need for orientation to the study area in general and the stories it portrays, which is not possible in Washington's Headquarters alone.

The train station adjacent to Washington's Headquarters is also historically significant, although it dates to the early 20th century commemorative period and not the encampment era. Valley Forge NHP recognizes the need to rehabilitate/preserve the train station as an important element of maintaining a positive visitor experience at the study area. The train station is not open to the public but is used on an occasional basis for programming space. The structure could become a permanent orientation, programming, and exhibit center for the study area. While the train station is not currently universally accessible, universal accessibility is possible. However, the train station is in need of repair, and if steps are not taken in the near future, portions of its historic fabric could be lost. Lead-based paint is evident throughout the building, and stairs leading from the station to the study area are in poor condition.





Regional Map

Valley Forge
National Historical Park

Rehabilitate Support Facilities at
Washington's Headquarters EA/AOE

Figure 1
Park Vicinity/Regional Map

VHB Vanasse Hangen Brustlin, Inc.

Study Area Boundary

0 100 200 Feet

Valley Forge
National Historical Park
Rehabilitate Support Facilities at
Washington's Headquarters EA/AOE

Figure 2
Study Area

The NPS also recognizes the need to remove intrusive and/or non-contributing elements of the cultural landscape. The cultural landscape is a significant component of the study area because the study area is one of the only places in the park that lends itself to the story of General Washington's leadership during the encampment. The study area is also the only place in the park where visitors can experience the multilayered cultural landscape of the Village of Valley Forge. However, modern intrusions, such as the oversized but underutilized lower parking lot, are present in the landscape and hinder the understanding of the cultural landscape.

Accessible visitor amenities that support the visitation of the study area are needed as few basic facilities and services are available to visitors. Most of the buildings in the study area are not universally accessible, including the restrooms. In addition, because only one restroom facility is available, long lines form, particularly when bus groups arrive.

In addition to visitor amenities, clarification of pedestrian and vehicular circulation and improvements to circulation efficiency are needed. Washington's Headquarters is not an isolated building, but rather part of a bigger encampment story. Undefined circulation within the study area leads to visitor confusion about what is present and available. As a result, visitors coming to the study area often meet difficulties in distinguishing which building is actually Headquarters. Pedestrians also share walkways and other circulation paths within the study area with both vehicles and bicycles, which can be disruptive and cause safety concerns. Also, the main path used by bicyclists, the Joseph Plumb Martin Trail, ends abruptly just southwest of the lower parking lot. This termination can lead to confusion for users of the trail as they attempt to determine which way to go.

Visitor safety, specifically the ingress/egress from State Route 23 and traffic movements, is an important element for the study area. The entry ways leading to the lower and upper parking lots meet State Route 23 at a hazardous intersection with very little sight distance. Commuters heavily use State Route 23 on a daily basis, which makes it difficult to get in and out of the study area, particularly in the morning and evening. Collisions have occurred at these intersections, as visitors attempt to enter and exit the study area.

Adequate utility and infrastructure systems, including water, sewer, electricity, and communications are needed. The buildings in the study area, particularly the train station, do not meet energy efficiency and fire safety policies established by the NPS. In addition, the train station's HVAC system is outdated and in need of repair.

HISTORY AND SIGNIFICANCE OF VALLEY FORGE NHP

Valley Forge NHP encompasses the site of the 1777-78 winter encampment of the American Continental Army under General George Washington. Although this represents only a brief period of the American Revolution, it marks a significant period in American history. As such, it has become essential to the understanding and commemoration of the founding principles of the United States.

As early as 1877, people began looking to the area now known as Valley Forge NHP for commemoration of the encampment. In December 1877, citizens convened and incorporated as the Centennial and Memorial Association. Their goal was to commemorate the centennial of the encampment and preserve Washington's Headquarters. The association acquired the headquarters building in 1879, restored, and

furnished it. The building became the third historic house museum opened in the United States. In the 1880s and 1890s, a rising interest in Valley Forge, particularly the historic and scenic features of the landscape, led to several attempts to preserve not only the headquarters building, but also the encampment growth as a whole. This campaign resulted in the establishment of Valley Forge as Pennsylvania's first state park in 1893. The Valley Forge Park Commission administered the site and acquired additional lands and structures. In so doing, the commission created a memorial park with monuments and managed landscapes for both commemoration and recreation.

During this time, the commission came to believe that the Centennial and Memorial Association was not properly maintaining the headquarters building. They campaigned to secure the building and obtained title to it in 1906. As visitation increased, tour roads, visitor services, and recreational facilities continued to be established to cater to increased use of the park. A movement to transfer the park from Pennsylvania's control to the U.S. Department of the Interior was made in the 1970s in response to threats of encroachment and increased visitor use. The official transfer took place on July 4, 1976, and Valley Forge State Park became Valley Forge NHP, a unit of the NPS. Valley Forge NHP was created to educate and inform all generations about the sacrifices and achievements of General Washington and his army at Valley Forge, as well as the people, events, and legacy of the American Revolution. With a mission to preserve the resources of the area, Valley Forge NHP has become a destination for people wanting to learn more about and experience the American Revolution and the stories associated with the era. Today the park is nationally significant as the location of the 1777-78 encampment and for commemoration of the encampment beginning in the fourth quarter of the 19th century.

PLANNING BACKGROUND

Previous and related planning studies have been completed for Valley Forge NHP. These plans were reviewed to provide additional information and guidance for the proposed action. In addition, scoping was undertaken to allow agencies and interested parties to provide additional information regarding specific portions of the proposed action. The studies utilized and scoping efforts undertaken are summarized below.

Previous and Related Planning Studies

Several plans and studies have informed and led to the development of alternatives for rehabilitating support facilities at the study area. These include the *Valley Forge National Historical Park General Management Plan* (NPS 1982), the working draft of the new general management plan (NPS 2005), National Register of Historic Places (National Register) nominations (NPS 1986; John Milner Associates 2005), the *Cultural Landscape Inventory* (NPS 2001a), and the *Valley Forge NHP Contextual Documentation and Cultural Landscape Plan Volumes I and II* (Susan Maxman and Associates/John Milner Associates 2002).

The ***Valley Forge National Historical Park General Management Plan*** (NPS 1982) was the first planning document produced by the NPS for Valley Forge NHP. The plan outlined the existing conditions within the park, future plans for the park, and the impact they may have on Valley Forge as a whole. The plan identified the study area as a key interpretive venue and presented a conceptual plan for its layout. Proposed changes included removing and revegetating the lower parking lot and the central road system, rehabilitating the train station as a visitor contact station, and improving internal visitor circulation and accessibility.

The working draft of the ***Valley Forge National Historical Park Draft General Management Plan/Environmental Impact Statement*** (GMP/EIS) (NPS 2005) is under development by the NPS. This new GMP/EIS will replace the previous plan and will set goals and guidance for Valley Forge NHP in terms of resource management and visitor use and experience while analyzing the impacts of various proposed actions. Within the *Valley Forge NHP GMP/EIS*, the study area is listed as one of the primary interpretive focus zones within the park. The document recommends the study area for special treatment as the focus for programs and activities.

The ***Valley Forge NHP National Register nomination*** (NPS 1986) and ***Valley Forge NHP National Register nomination update 75% Draft Submission*** (John Milner Associates 2005) provide information on the historic significance of Valley Forge NHP. The nomination identified significant themes and context for the Valley Forge landscape beyond the military encampment. It also identified several buildings within the study area as contributing elements of the historic district, including the David Potts house and the Valley Forge train station. The nomination update provides additional information on the study area specifically and lists it as a significant component landscape to the park's cultural landscape as a whole.

The ***Cultural Landscape Inventory*** (NPS 2001a) documents all cultural and natural features that contribute to the National Register significance of the park. Four component landscapes were documented in more detail: the Port Kennedy area; the Valley Forge farm cluster (Philander C. Knox estate, Lafayette's Quarters, and Stirling's Quarters); the Village of Valley Forge; and Walnut Hill.

The ***Valley Forge NHP Contextual Documentation*** and ***Cultural Landscape Plan Volumes I and II*** (Susan Maxman Architects/John Milner Associates 2002) combine both historic resources studies and cultural landscape reports and includes both contextual research and cultural landscape documentation for the park. These volumes categorize the study area as nationally significant for its association with the encampment of the Continental Army, commemoration, park development, and the Village of Valley Forge development. The cultural landscape inventory and plan do not establish specific landscape treatments, but rather provide general information on the cultural landscapes that exist at Valley Forge NHP. Information from the inventory and plan was used to develop the cultural landscape designs described in the action alternatives presented in this EA/AOE.

Scoping

The scoping process is initiated at the beginning of a NEPA project to identify the range of issues, resources, and alternatives to address in the EA/AOE. Typically, both internal and public scoping is held to address these elements. Scoping includes any interested agency or agency with jurisdiction by law or expertise (including, as appropriate, the State Historic Preservation Officer [SHPO] and Native American tribes) to obtain early input. To begin the planning process for the proposed action, staff from Valley Forge NHP and resource professionals from the NPS conducted internal scoping. This process defined the purpose and need, identified potential actions to address the need, determined the likely issues and impact topics, and identified the relationship of the proposed action to other planning efforts at Valley Forge NHP.

Several agencies were also contacted during the planning process, including the Pennsylvania Natural Diversity Index, the Pennsylvania SHPO, and the U. S. Fish and Wildlife Service. In addition, the following Native American tribes were contacted during this process: the Stockbridge-Munsee Community, Wisconsin; the Delaware Nation; the Oneida Nation of Wisconsin; and the Oneida Indian Nation. Interested parties were also notified of the planning process via a press release. The interested public and agencies will have an opportunity to further review and comment on this EA/AOE during a 30-day review period. For further scoping and public participation information, see "Chapter 5: Consultation and Coordination" of this document and "Appendix A: Relevant Correspondence."

PLANNING ISSUES AND CONCERNS

Planning Issues

During the scoping process, specific considerations and concerns were identified as critical to the proposed action's development. The following were identified as most important to the planning process: preservation of cultural resources, visitor safety/accessibility/circulation, and visitor experience. Along with the purpose and need for the proposed action, these topics guided the development of alternatives and contributed to the selection of impact topics, as identified in the next section.

Preservation of Cultural Resources. Valley Forge NHP is home to a variety of significant cultural resources, in particular the cultural landscape at the study area, Washington's Headquarters, and the historic train station. Archeological resources are also present throughout the park and the study area. Designs for the proposed action should avoid not only impacts to these resources, but also conditions that could impact them in the future. All work should conform to the *Secretary of the Interior Standards for the Treatment of Historic Properties*.

Visitor Safety/Accessibility/Circulation. The study area access roads form hazardous intersections with very little sight distance, and pedestrians, vehicles, and bicycles share circulation paths within the study area. Also, not all locations within the study area are universally accessible. The proposed action at the study area should include universal accessibility as well as improvements for the safety and circulation of visitors.

Visitor Experience. Washington's Headquarters is the primary interpretive site in the park. In addition, the Village of Valley Forge is an essential part of the interpretive story for the study area. Work at the study area should enhance the visitor experience as well as provide a wider interpretation that depicts all aspects of the study area's diverse history.

Regulatory, Management, and Legislative Concerns

Based on discussions with NPS staff and planning team members, implementation of the *Rehabilitate Support Facilities at Washington's Headquarters EA/AOE* should not require any changes to existing legislation or management policies.

IMPACT TOPICS

Impact topics are resources of concern that could be affected, either beneficially or adversely, by the range of alternatives presented in this EA/AOE. They were identified based on the issues raised during scoping, site conditions, federal laws, regulations, Executive Orders, *NPS Management Policies 2001* (NPS 2000), Director's Orders, and staff knowledge of the park's resources.

Impact Topics Analyzed

Impact topics identified and analyzed in this EA/AOE are listed below along with a brief rationale for the selection of each impact topic. Each impact topic is further discussed in detail in "Chapter 3: Affected Environment" of this document.

Soils

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. The *NPS Management Policies 2001* (NPS 2000), NPS DO #77: *Natural Resources Management*, and other NPS and Valley Forge NHP policies provide general direction for the protection of soils. Two soil types dominate the study area: Glenville silt loam and Penn-Lansdale loams. These two soil types are both capable of supporting physical development but differ in their ability to absorb water, which can make some areas within these soils unable to support development due to unstable soils or high water tables. Because the proposed actions could introduce new development to these soils, the impact topic of soils is addressed.

Visual Resources

NPS Management Policies 2001 (NPS 2000) notes that the enjoyment of park resources and values by the people of the Unites States is part of the fundamental purpose of all parks (NPS 2000). The Organic Act also states that NPS units are charged with conserving park scenery, along with all the natural and cultural resources that contribute to important views. As such, the NPS strives to provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the natural and cultural resources found in parks. In the evaluation of visual resources, both the visual character of the study area and the quality of the viewshed within the study area are considered. A viewshed comprises the limits of the visual environment associated with the proposed action including the viewsheds within, into, and out of the study area. The study area is one of the most significant historic places in the NPS and is used as a primary interpretive site within the park. As such, the integrity of the buildings and landscape are important to its interpretation. The proposed action would rehabilitate one of the buildings and could alter views within and into the study area; therefore, the impact topic of visual resources is addressed.

Cultural Resources

The NHPA, NEPA, NPS DO #12, and NPS DO #28: *Cultural Resource Management Guidelines* require consideration of impacts on cultural resources either listed on or eligible for listing on the National Register.

Archeological Resources

The NPS defines an archeological resource as any material remains or physical evidence of past human life or activities that are of archeological interest, including the record of the effects of human activities on the environment. Archeological resources are capable of revealing scientific or humanistic information through archeological research (DO #28, 67). Several archeological surveys have been completed in the study area confirming archeological sites. Valley Forge NHP as a whole is also nationally significant for its known archeological resources and their potential to yield important information about historic periods of occupation within the park. Known archeological resources associated with pre-contact Native American history are also present, and these resources also have the potential to yield important information regarding earlier occupations of the park. Because areas within the study area are archeologically sensitive, the impact topic of archeological resources is addressed.

Historic Structures

A historic structure is defined by the NPS as "a constructed work, usually immovable by nature or design, consciously created to serve some human act" (DO #28, 113). In order for a structure or building to be listed on or eligible for listing on the National Register, it must possess historic integrity of those features necessary to convey its significance, particularly with respect to location, setting, design, feeling, association, workmanship, and materials. The National Register Bulletin #15: *How to Apply the National Register Criteria for Evaluation* (NPS 1990) provides a comprehensive discussion of these characteristics. Valley Forge NHP contains numerous historic buildings and individual structures within its boundaries. Within the study area, Washington's Headquarters is a National Historic Landmark, while the David Potts house, Potts Barn, Washington's stable, and the train station are all listed as contributing resources in the park's National Register nomination (NPS 1988). Because the proposed action seeks to rehabilitate the train station and potentially change interpretive features within the study area, the impact topic of historic structures is addressed.

Cultural Landscapes

As described in DO #28, a cultural landscape is "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values" (DO #28, 87). Cultural landscapes are often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The cultural landscape of Valley Forge NHP is nationally significant as the location of the 1777-78 encampment of the Continental Army and for post-war commemoration of the encampment beginning in the 19th century. The cultural landscape of the study area is listed as a significant component landscape on the park's *Cultural Landscape Inventory* (NPS 2001a) and in the park's National Register nomination (NPS 1988). The proposed action would seek to enhance the cultural landscape at the study area. Thus, the impact topic of cultural landscapes is addressed.

Visitor Use and Experience

Enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks (NPS 2000). The NPS strives to provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the natural and cultural resources found in parks. The purpose of the proposed action is to improve the visitor experience within the study area. The visitor experience

encompasses interpretation, understanding, enjoyment, safety, circulation, and accessibility of the study area. Because the proposed action includes changes to circulation and enhancements to the visitor experience, the impact topic of visitor use and experience is addressed.

Operations

The proposed action includes improvements to the landscape, parking lots, and interpretation that would require changes in park operations, particularly to maintenance activities and interpretive staffing. Therefore, the impact topic of operations is addressed.

Utilities

The proposed action would alter existing utilities through changes to the sanitary, electrical, and water systems. These changes would be designed to connect with existing elements in the park, resulting in changes to the park's utility systems. Because utilities would be impacted by the proposed action, the impact topic of utilities is addressed.

Impact Topics Dismissed from Further Analysis

The following impact topics were initially considered but were dismissed from further analysis because the resource is not present in the study area or because any potential impacts would be no more than negligible to minor. A brief rationale for the dismissal of these impact topics is provided below.

Geologic Resources

NPS Management Policies 2001 (NPS 2000) states, "The Park Service will preserve and protect geologic resources as integral components of park natural systems. As used here, the term 'geologic resources' includes both geologic features and geologic processes." The study area is underlain by two geologic formations: Antietam and Chickies. The proposed action would be confined to the upper levels of soil and would not impact these geologic resources. Therefore, the impact topic of geologic resources was dismissed.

Topography

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. The *NPS Management Policies 2001* (NPS 2000), NPS DO #77: *Natural Resources Management*, and other NPS and Valley Forge NHP policies, provides general direction for the protection of topography. The topography within the study area is varied, ranging from moderately high elevations to lower elevations along the river. Although the proposed action includes physical development that could result in changes to topographic conditions, these changes would be relatively small and restricted to developed areas that do not exhibit natural topographic conditions. However, measurable topographic changes would occur because of the re-establishment of historic contours across the study area. Because these contours are historic, impacts related to these changes are addressed under the impact topic of "Cultural Landscapes." Therefore, the impact topic of topography was dismissed.

Vegetation

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. The *NPS Management Policies 2001* (NPS 2000), NPS DO #77: *Natural Resources Management*, and other NPS and Valley Forge NHP policies provides general direction for the protection of vegetation. Vegetation within Valley Forge NHP is a mix of different forest communities, grassland, cropland, and wetland areas. The study area is a managed landscape that consists of mowed lawn, ornamental trees, and thin strips of forest. Because the proposed action focuses on rehabilitation of the cultural landscape and the vegetation is considered a managed landscape, the impact topic of vegetation was dismissed. Any proposed tree removal/planting is addressed under the impact topic of "Cultural Landscapes."

Wildlife and Wildlife Habitat

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. The *NPS Management Policies 2001* (NPS 2000), NPS DO #77: *Natural Resources Management*, and other NPS and Valley Forge NHP policies provide general direction for the protection of wildlife and wildlife habitat. Wildlife and wildlife habitat at Valley Forge NHP encompass an abundance of species. However, the proposed action is limited to the study area, which consists of a managed landscape that is heavily used throughout the day by visitors. Any disturbance within the study area due to construction would be temporary, lasting only as long as construction activities. Visitor use of the study area would continue at the current level. Any permanent loss or gain of vegetation would result in negligible alterations of the existing habitats or carrying capacities. Because any potential adverse impacts to wildlife and wildlife habitat would be short-term and no more than negligible to minor in intensity, the impact topic of wildlife and wildlife habitat was dismissed.

Special Status Species

In addition to NPS polices and management guidelines, the Endangered Species Act of 1973, as amended provides for the protection of rare, threatened, and endangered species (floral and faunal). In a letter dated February 27, 2006, the U.S. Fish and Wildlife Service acknowledged that no federally listed or proposed threatened or endangered species under their jurisdiction are known to occur within the study area. As a result, the impact topic of special status species was dismissed. See correspondence in Appendix A for additional information.

Surface Water and Groundwater

The *NPS Management Policies 2001* (NPS 2000), NPS DO #77: *Natural Resources Management*, along with the Clean Water Act and other federal, state, and local regulations provide general direction for the protection of surface water and groundwater. Water quality in the vicinity of Valley Forge NHP, particularly the Schuylkill River and its tributaries, has been impacted by increased runoff and development. The study area is bordered to the north by the Schuylkill River and to the west by Valley Creek. A small, unnamed spring-fed drainage extends from the lower parking lot to Valley Creek. While the proposed action is near the confluence of Valley Creek and the Schuylkill River, it is unlikely that any of the alternatives would alter existing drainage patterns or impervious cover, elevate pollutant loads, or modify the overall hydrologic pattern. As a result, the impact topic of surface water and groundwater was dismissed. Potential changes to drainage patterns and impervious cover will be addressed under the impact topic of "Soils."

Wetlands

Executive Order 11990, "Protection of Wetlands" and NPS DO #77-1: *Wetland Protection* define the NPS goal to maintain and preserve wetland areas. Valley Forge NHP has approximately 70 acres of wetland area within its boundaries. However, there are no wetlands located within the study area nor would nearby wetlands be impacted by the proposed action. The closest wetland area is near Varnum's Headquarters, over 1,000 feet away from the study area. Therefore, the impact topic of wetlands was dismissed.

Floodplains

Executive Order 11988, "Floodplain Management" and NPS DO #77-2: *Floodplain Management* require an examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. Despite periodic flooding related to stormwater loads and man-made alterations to the floodplain, the study area is located outside of the 100- and 500-year floodplains. The study area is adjacent to the Valley Creek floodplain, which, as noted above, has been drastically altered due to stormwater loads and man-made alterations. Also, the proposed action would not introduce large structures to the study area that would impede the flow of floodwaters toward the floodplains. Therefore, the impact topic of floodplains was dismissed.

Prime Farmland

Prime farmland is one of several designations made by the U.S. Department of Agriculture to identify important farmlands in the United States. It is important because it contributes to the nation's short- and long-range needs for food and fiber. In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, few to no rocks, and permeable soils (designated as prime farmland soils). The soil types within the study area (Glenville silt loam and Penn-Lansdale loams) are designated as prime farmland soils. However, the study area is not managed as farmland and has been developed to support visitor use and interpretation. In addition, the proposed action would not result in an irretrievable loss of these soil types but would result in a net reduction of impervious surfaces within the study area. Therefore, the impact topic of prime farmland was dismissed.

Air Quality

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.) requires land managers to protect air quality. Section 118 of the Clean Air Act further requires parks to meet all federal, state, and local air pollution standards and *NPS Management Policies 2001* (NPS 2000) addresses the need to analyze potential impacts to air quality during park planning. Located within Chester and Montgomery counties, Valley Forge NHP sits within the Environmental Protection Agency's (EPA) Philadelphia-Wilmington-Trenton Severe Ozone Non-attainment Area. Actions proposed at the study area would have minimal short-term impacts to air quality. Hauling of material, operating of equipment, and other construction activities could result in temporary increases in vehicle exhaust and emissions. However, hydrocarbons, nitrates, and sulfur dioxide emissions, as well as any airborne particulates created by fugitive dust plumes would be rapidly dissipated because air stagnation is rare at the study area. Overall, there could be negligible impacts on local air quality; however, such impacts would be short-term, lasting only as long as construction. Therefore, the impact topic of air quality was dismissed.

Lightscape Management

In accordance with *NPS Management Policies 2001* (NPS 2000), the NPS strives to preserve natural, ambient lightscapes, which are natural resources and values that exist in the absence of human-caused light. The study area is located in a relatively developed, heavily traveled portion of Valley Forge NHP. As a result, the study area receives regular impacts to existing lightscapes from passing vehicles, as well as surrounding overhead and security lighting. Any additional lighting would be added only within the parking lots (where lights already exist) and along walkways for visitor safety and security, and would be shielded or focused downward to minimize light pollution. As a result, these additions would not elevate the existing lightscape impacts within the study area. Therefore, the impact topic of lightscape management was dismissed.

Soundscape Management

As described in *NPS Management Policies 2001* (NPS 2000) and NPS DO #47: *Sound Preservation and Noise Management*, preservation of natural soundscapes associated with national park units is an important part of the NPS mission. Natural soundscapes exist in the absence of human-caused sound. The natural, ambient soundscape is the aggregate of all natural sounds that occur in the park beyond the range of sounds that humans can perceive. This sound can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sounds considered acceptable varies among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas. At the study area, natural soundscapes do not exist because of the continual flow of vehicular traffic adjacent to the study area. The park does make an effort to minimize the impact of human-cause sounds, where possible. Any construction associated with implementation of the proposed action, e.g. the hauling of material or the operation of construction equipment, could result in additional, dissonant sounds, but such sounds would be temporary and not out-of-place in such a heavily trafficked setting. Because the study area is already developed and supports a variety of activities and traffic, the impact topic of soundscape management was dismissed.

Cultural Resources

Museum Objects

The NPS defines a museum object as "a material thing possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. Museum objects include pre-contact Native American historic and historic objects, artifacts, works of art, archival material, and natural history specimens that are part of a museum collection" (DO #28, 137). While the proposed action may include placing exhibits within the train station and other areas, such as the stable, these exhibits would not be considered artifacts. Most of these exhibits would be replicas and not original to the study area. Any objects discovered at the study area would be addressed under the impact topic of "Archeological Resources." Therefore, the impact topic of museum objects was dismissed.

Ethnographic Resources

An ethnographic resource is defined as any "site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (DO #28, 157). Ethnographic resources eligible for listing on the

National Register are traditional cultural properties. No sites, structures, or objects at the study area (or within Valley Forge NHP) have been identified as either ethnographic resources or traditional cultural properties. Therefore, the impact topic of ethnographic resources was dismissed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001) would be followed. See Appendix A for correspondence with interested Native American tribes.

Section 106 Summary
There are no traditional cultural properties in the area of potential effects or its general vicinity. In accordance with the Advisory Council on Historic Preservation's (ACHP) regulations implementing Section 106 of the NHPA (36 CFR 800.4(d)(1), the determination of effect is ***no historic properties affected***.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian Trust resources from a proposed project or action by U.S. Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian Trust responsibility is a legally enforceable obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal laws with respect to Native American tribes. There are no known Indian Trust resources in Valley Forge NHP, and the lands comprising the park are not held in trust by the secretary of the interior for the benefit of Indians due to their status as Indians. Therefore, the impact topic of Indian Trust resources was dismissed.

Socioeconomic Resources

NPS Management Policies 2001 (NPS 2000) requires the NPS to identify any impact to socioeconomic resources when determining the feasibility of a proposed action. The proposed action would neither change local and regional land use nor substantially impact local businesses or other agencies. Any increase would be temporary, lasting only as long as construction, and negligible to minor in intensity. Therefore, the impact topic of socioeconomic resources was dismissed.

Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the EPA, environmental justice is the "…fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

The goal of "fair treatment" is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts. The communities surrounding Valley Forge NHP contain both a minority and low-income population; however, environmental justice is dismissed as an impact topic for the following reasons:

- The park staff and planning team solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the proposed action would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse impacts on any minority or low-income population.
- The impacts associated with implementation of the proposed action would not disproportionately affect any minority or low-income population or community.
- Implementation of the proposed action would not result in any identified effects that would be specific to any minority or low-income community.
- Any impacts to the socioeconomic environment resulting from implementation of the proposed action are negligible to minor in intensity, lasting only as long as construction. In addition, the park staff and planning team do not anticipate the impacts on the socioeconomic environment to appreciably alter the physical and social structure of the nearby communities.

Energy Requirements and Conservation Potential

The CEQ guidelines for implementing NEPA require examination of energy requirements and conservation potential as a possible impact topic in environmental documents. Valley Forge NHP strives to incorporate the principles of sustainable design and development into all facilities and park operations. The objectives of sustainability are to design structures to minimize adverse impacts on natural and cultural values; to reflect their environmental setting; to maintain and encourage biodiversity; to construct and retrofit facilities using energy efficient materials and building techniques; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and practices through sustainable design and ecologically sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. The action alternatives presented in this document subscribe to and support the practice of sustainable planning and design in part by addressing underutilized parking lots and upgrading facilities with more energy-efficient systems. The proposed action aims to develop alternatives that meet the purpose and need of the project while maintaining sustainable design. The park would encourage suppliers and contractors to follow sustainable practices and address sustainable park and non-park practices in interpretive programs. Consequently, any adverse impacts relating to energy use, availability, or conservation would be negligible. Therefore, the impact topic of energy requirements and conservation potential is dismissed.

2
ALTERNATIVES

This chapter describes various alternatives for rehabilitating support facilities at Washington's Headquarters at Valley Forge NHP. Alternatives for the proposed action were designed to improve the visitor experience and preserve historic structures within the study area. Each alternative includes a discussion of the following elements: changes to existing parking lots, circulation, and the cultural landscape; rehabilitation of the train station and its platform cover; improvements to visitor amenities, HVAC, and the sanitary system; and the addition of interpretive elements. The EA/AOE examines three alternatives: a No-Action Alternative (Alternative A) and two action alternatives (Alternatives B and C).

ALTERNATIVES DEVELOPMENT

To develop alternatives, two collaborative, multi-disciplinary brainstorming workshops were held at Valley Forge NHP. In December 2005, staff from Valley Forge NHP and the NPS Denver Service Center; Heritage Landscape Designs; Main Street Design, Inc.; Bob Weis Design Island Associates, Inc.; John Milner Architects; and HDR Engineering, Inc. met to discuss the objectives of the proposed action and the elements to be included. During this meeting, members discussed key issues that required additional attention. The outcome of this meeting was development of a clear direction on how to proceed with the schematic design phase of the proposed action. A Pre-Design report providing additional information on the existing elements was compiled after the meeting to document decisions made. The second meeting, in January 2006, served as both an alternative development workshop and kick-off meeting for the EA/AOE. In addition to members participating in the first workshop, staff from the NPS Northeast Region and Vanasse Hangen Brustlin, Inc. (VHB) attended the meeting. During this meeting, the elements to be included in the proposed action were refined based on site visits and further information gathered after the initial meeting. Sequencing of the interpretive elements and the study area overall were also discussed and refined to what is included in this document.

A Value Analysis was also held for the proposed action on February 28-March 1, 2006 at Valley Forge NHP. This is a process of arriving at an optimal solution to a complex issue through a structured and reasoned analysis of the factors and functions related to the issue. The goal of Value Analysis is to provide a structured process that ensures that functional requirements are met, that all viable alternatives are considered, that the factors used to evaluate them are sound, that all alternatives are tested equally against these criteria, that solutions are cost effective on both an initial and life-cycle cost basis, that benefit to cost relationships were considered, that an independent second opinion was provided, and that the rationale for decisions is clearly documented. In addition to staff who attended the first two meetings, U.S. Costs facilitated the Value Analysis. For the analysis for the proposed action, options for individual

elements (parking lot and circulation; comfort station; train station platform cover; HVAC system; and sanitary sewer system) were presented. Attendees discussed the advantages and disadvantages of each option and used a decision-making process based on the Choosing by Advantages concept to compare the options. Based on consensus, options for each element were incorporated into two action alternatives that are presented in this EA/AOE.

ALTERNATIVE A (NO-ACTION)

Alternative A, the No-Action Alternative, would continue present management operations and maintain existing facilities at the study area. The No-Action Alternative is required by federal regulations and provides a basis for comparing the environmental consequences of the action alternatives. Should the No-Action Alternative be selected, the NPS would respond to future needs and conditions associated with circulation, facilities, and interpretation within the study area without major actions or changes in the present course. Under this alternative, which is depicted on Figure 3, the following elements would occur:

- Maintain the lower and middle parking lots in their current location and configuration.
- Manage the cultural landscape as is.
- Maintain the Joseph Plumb Martin Trail as is with its termination in the study area.
- Maintain the train station and its platform as is.
- Continue to use the bulletin board as the interpretive element for the study area.
- Maintain the restrooms in Potts Barn.
- Maintain existing sanitary systems and HVAC.

Under Alternative A, parking would be available at the existing lower and middle parking lots. The lower lot would provide approximately 140 spaces [an estimated 1.7 acres or 73,000 square feet (sq. ft.)]. The entrance into the lower parking lot from State Route 23 would remain the primary entrance into the study area. Additional parking would continue to be available at the middle parking lot, which is approximately 0.6 acres or 25,000 sq. ft. The internal, north/south access road leading from the west end of the lower parking lot to an area east of the train station would remain under this alternative. In addition, the existing Joseph Plumb Martin Trail would terminate within the study area, southwest of the lower parking lot. Paved circulation paths would generally guide visitors around the study area.

The cultural landscape would be managed as is, representing the encampment and commemorative periods. Encampment-era structures, commemorative plantings, topographic contours, and circulation patterns would reflect both periods, as well as modern-day features. Four reconstructed Commander-in-Chief's guard huts would also remain in the landscape.

A bulletin board, located at the lower parking lot, would direct visitors to Washington's Headquarters and the comfort station. Washington's Headquarters would remain as the only publicly accessible building in the area. Interpretation within Washington's Headquarters would remain as furnished rooms and opportunities to interact with staff in period costumes. The comfort station, consisting of eight toilets and two sinks in the women's room and six toilets, two urinals, and two sinks in the men's room would continue to serve the entire study area. These facilities, which currently accommodate a total site capacity of 600, would remain in Potts Barn.

VEGETATION KEY

CANOPY DIAMETER		DECIDUOUS TREES DBH
	10'	UNDER 4"
	20'	4-8"
	30'	9-16"
	40'	17-24"
	50'	25-31"
	60'	32" AND UP

CANOPY DIAMETER		EVERGREEN TREES DBH
	8'	UNDER 8"
	16'	8-16"
	24'	17-24"
	32'	25-31"
	40'	32" AND UP

CANOPY DIAMETER		ORNAMENTAL TREES DBH
	8'	UNDER 8"
	16'	8-16"
	24'	17-24"
	32'	25-31"
	40'	32" AND UP

General

- STUMP
- DECIDUOUS SHRUB
- WOODLAND

Valley Forge
National Historical Park
Rehabilitate Support Facilities at Washington's Headquarters EA/AOE

Figure 3
Alternative A: No-Action

Source: Heritage Landscapes

A septic tank and leach field located between Potts Barn and Valley Creek would continue to serve the comfort station. The train station would continue to be used occasionally for programming space, but would not be open to the public on a regular basis. The platform would remain uncovered. The train station would continue to be served by its own septic tank and leach field located on the southwest side of the building. The HVAC in the train station, consisting of an oil-fired furnace and two 75-gallon tanks would remain in the basement of the building. With this system, only heat is supplied to the building. The only fresh air into the building is through the windows and doors when opened.

ELEMENTS COMMON TO THE ACTION ALTERNATIVES

Several elements are common to both action alternatives. These include rehabilitation of the train station, the addition and sequencing of interpretive elements, the removal of the north/south access road through the center of the study area, the continuation and connection of the Joseph Plumb Martin Trail to the Valley Creek Trail, and relocation of the Commander-in-Chief's guard huts. These common elements are depicted on Figures 4 and 5 for each of the action alternatives.

Rehabilitation of Train Station

Under the action alternatives, the train station rehabilitation would maintain the majority of the original building configuration and material while providing a functional layout for the proposed use. Once rehabilitated, this building would serve as an orientation and program space for visitors and would be open to the public on a regular basis. The action alternatives propose the following: exterior repairs, roof repairs, interior repairs, water service upgrades, and electric and telephone service upgrades. No substantial modifications to the train station's existing structural system would occur. All work proposed would conform to the *Secretary of the Interior Standards for Rehabilitating Historic Buildings* (NPS 1991).

On the exterior of the building, all woodwork, windows, doors, and columns would be prepared, primed, and painted. Mold growth would be remediated on all wood surfaces as part of the preparation, and any lead-based paint would be abated. On the second story, approximately 150 linear feet of brick would be repointed using a mortar mix and pointing style that matches existing, adjacent mortar. Any cracks in the stucco would be repaired, and the entire stucco surface would be painted. All window bars would be removed. The existing wood columns and capitals would be repaired, and the paint would be stripped off the associated stone blocks on which the columns rest, also known as plinths. The exterior basement door would be restored, with new weather-stripping installed. On the first floor, the exterior door on the east side would be restored, with new weather-stripping installed, while the doorways on the north and south elevations would be replaced. In addition, the south elevation doorway would have a "flush" metal threshold installed. New iron components would be added to raise the existing railing to a height of 42 inches. Flexible sealant would be installed at the joint between the existing west side stair and the curbs. The south side concrete stairs would be repaired as needed. The existing concrete platform and paving on the north side of the building would be removed, and the existing control joint would be built up.

The entire slate roof would be replaced with similar color and exposure, along with 25% of the sheathing, 100% of the copper flashing, and 100% of the ridgecaps. An ice and water shield would be installed at all valleys and eaves as part of the replacement, and the entire membrane roof would be replaced. A stone

chimney cap would be installed on the unused flue. Metal coverings at eave returns would also be replaced. All gutters and downspouts would be replaced, and the new components would be prepared and painted prior to installation. Approximately 12-18 linear feet of wood soffit boards, fascia boards, and cornices would be replaced, and all open vertical corner joints at existing wood fascia boards and cornices would be repaired. Approximately 38 linear feet of missing and/or deteriorated wood trim would be replaced, along with approximately 190 linear feet of deteriorated wood ceiling boards.

Interior repairs would also occur at the train station. Although the basement would not be accessible to the public, it would be rehabilitated. Any plastic sheeting, metal anchors, and abandoned fasteners would be removed, and new column footings at the foundation would be installed. Interior storm windows would be installed throughout the building. On the first floor, or main floor of the building, the configuration would remain relatively unchanged. All existing interior doors would be refinished with existing hardware restored. The interior walls and woodwork would be prepared, primed, and painted. Any lead-based paint would be abated during this process. The baggage room would become the main entry for visitors. Exhibit space would be available in the adjacent ticket office and the small room to the south side of the building. The waiting room would become the primary interpretation space. In this room, the existing wood floor would be refinished. The storage room and restroom would be primarily for staff use only, but the restrooms would be used for incidental public use and would be made universally accessible. The floor and wall finishes would be patched as needed. In the storage room, a slop sink would be added. Stairs leading to the second floor and basement would be reconstructed as needed. Although the second floor would not be accessible by the public, interior repairs would also occur. All painted interior walls and woodwork would be prepared, primed, and painted. As on the first floor, any lead-based paint would be abated during this process. A new drywall ceiling would be installed and new partition framing would be installed at the windows. This space may be used as storage space for the multimedia equipment used in the interpretive programming.

A new 1 ½-inch domestic water service would be installed to serve the train station, and a new separate fire sprinkler system would be installed per code requirements. The new domestic water piping system would be sized to meet acceptable water flow capacity and velocity requirements. It would also be insulated for temperature maintenance and condensation prevention. Domestic water piping would be type L, hard copper with wrought copper fittings and non-lead solder. In the rare instance that under floor piping would be required, type K soft copper would be used. The new domestic water line connection point in the train station would be directly downstream of the existing main shut-off valve. In addition, all existing water piping downstream of the main shut-off valve would be insulated. An instantaneous electric water heater housed in the basement of the train station would serve this new system. The fire protection would encompass a dry pipe sprinkler system served by a single water service riser located next to the existing domestic water service in the basement. The dry pipe system would conform to the National Fire Protection Association 13 code requirements.

The electrical and telephone service in the train station would be upgraded. A new 208/120 volt, phase 3 service would be provided from the existing power pole to the transformer pad, with new service conduits and connectors to the building. This may require trenching to establish the new service. The main distribution panel would be located in the basement of the train station. In addition, a grounding electrode system would be provided with a ground ring around the building for interconnection of the lightning protection system. Within the building, incandescent and fluorescent lighting with electronic ballasts

would be either surface mounted or recessed in all finished areas. Exit signs would also be installed with a battery back-up system. Unfinished areas of the building would be served with fluorescent lighting with electronic ballasts mounted either on the surface or as pendant lights. At a minimum, two outlets on each wall of staff space and one outlet in each public space would be provided. The telecommunication system would be upgraded. This would consist of existing conduit and cable from the basement telephone board to the property line. New 3-inch conduit for future fiber optic connections would be run from the basement telephone board to the property line for use by the communication company.

Addition and Sequencing of Interpretive Elements

New interpretation at the study area would provide various interpretive options ranging from interactive multimedia experiences to opportunities for quiet contemplation. These elements would be closely interrelated while still functioning effectively as independent elements. Although the sequencing of these elements would change between the action alternatives, the components would remain relatively the same. The following is a list of components that would be constructed at the study area. The numbers in parentheses correspond to the interpretive stop numbers shown on Figures 4 and 5 (Alternative B, Alternative C).

- ***Sign at entrance.*** This would encompass a large-scale, double-sided, illuminated sign that would conform to any applicable NPS standards (1, 4).

- ***Exterior interpretive graphics at or adjacent to the lower or middle parking lot.*** This would include a vertical-format, double-sided, illuminated, freestanding graphic panel unit that would welcome visitors to the park, show where they are in relation to the park, indicate the key features of the study area, introduce the interpretive themes, and provide basic visitor information such as directing first-time visitors to the Welcome Center. There would also be a second panel, of the same format, providing orientation specific to the study area (2, 4).

- ***Exterior interpretive graphics and a possible audio program along the pathway on the east side of the study area or on the hilltop adjacent to the middle parking lot.*** A low-profile wayside or other graphic unit and an audio tour segment would be used to interpret the importance of efficient transportation at the study area before, during, and after the encampment (3, 8).

- ***Program at the east end of the train station platform.*** This element would utilize exterior interpretive graphics, audio programs, sculptural figures, and/or props (4, 4). Under the extended canopy on the east end of the train station, vertical format, freestanding interpretive graphic panels, realistic, life-sized sculptural figures, and props would create a themed setting where visitors would learn about the train station. Environmental audio would also be used to help enrich visitor experience (5, 5).

- ***Multimedia program within the train station.*** Inside the train station, interpretive graphics and an audio program would occur in the foyer. In the former waiting room an 8-10 minute multimedia program would focus on the study area (6, 5).

- ***Exterior interpretive graphics at Washington's Headquarters***. A low-profile wayside or other graphic unit would identify and briefly interpret Washington's Headquarters (7, 7). Personal interpretation, interpretive graphics, period furnishings, and multimedia programs would occur inside, and interior rooms may remain as diorama-style period recreations or may incorporate multimedia programs (8, 9).

- ***Exterior interpretive graphic, sculptural figures and/or props, interpretive landscape treatment at the former site of the dining cabin.*** Landscape treatments would be used on the approximate site of the dining cabin erected at Washington's Headquarters during the encampment to illustrate the dining cabin footprint (9, 10).

- ***Exterior interpretive graphics, sculptural figures, and/or props, interpretive landscape treatment at Washington's Marquee.*** A replica of Washington's Marquee may be installed seasonally on the approximate site where Washington's field tent stood. This would be used as a setting for ranger talks and other park programs (10, 11).

- ***Exterior interpretive graphics, low-profile wayside, or other graphic unit along Village Lane***. These graphics would be used to help visitors understand the many layers of history "hidden" at the study area, in addition to the existing buildings and site features (11, not in Alternative C).

- ***Exterior interpretive graphics at the stables.*** Outside the stables, a low-profile wayside or other graphic unit and a movement activated audio program would be used to interpret both the importance and the sophistication of communications during the revolution. Flexible program space and interpretive graphics would be created inside the stables for ranger talks and other park programs. This space would also be available to visitors as a place to rest when programs were not planned (12, 12).

- ***Exterior interpretive graphics at Potts Barn.*** A low-profile wayside or other graphic unit would be used at Potts Barn (13, 13).

- ***Exterior interpretive graphics, interpretive landscape/hardscape [1]treatments along Village Lane.*** These graphics would focus on the forge and related industrial history stories (14, 14).

- ***Exterior interpretive graphics at the David Potts House and along the historic trace, north of the David Potts House looking southwest***. A low-profile wayside of other graphic unit would used to interpret the David Potts House and the view from the house (15, 15)

- ***Sculpture north of the David Potts House.*** The commemorative sculpture of General Washington would be reinstalled in an appropriately landscaped setting. Casual seating would be provided, and a low-profile wayside or other graphic unit would identify and interpret the statue for visitors (16, 1).

[1] Physical elements placed in the landscape that are made of hard materials, such as walkways, large-scale features, patios, etc.

- ***Exterior interpretive graphics at the orchards*** A low-profile wayside or other graphic unit would be used to interpret the newly constructed orchards (17, not in Alternative C).

- ***Exterior interpretive graphics at the springhouse.*** These graphics would include a low-profile wayside or other graphic unit to interpret the critical importance of a reliable source of clean, fresh water at the study area during the encampment (18, 2).

- ***Exterior interpretive graphics at the replica huts.*** This would include two of the following: a hut furnished as an accurate period reproduction of what it might have looked like during the encampment viewable but not accessible to visitors; a hut open and accessible to visitors furnished with durable replica elements; a hut housing a multimedia or audiovisual program triggered by entering visitors; or a hut furnished as a flexible program space for ranger talks and other park programs. Low-profile waysides or other graphic units would be used to provide an interpretive overview of the huts and their core stories (19, 3).

Removal of North/South Access Road through Middle of Study Area

The north/south access road connecting the lower parking lot to the train station would be removed under the action alternatives. This road is approximately 450 feet long and 20 feet wide. Removed pavement would be recycled, reused elsewhere in Valley Forge NHP, or disposed of off site. Once the road was removed, the topography would be regraded to restore the historic contours, consistent with a commemorative plan of the study area.

Connection of Joseph Plumb Martin Trail to the Valley Creek Trail

Under the action alternatives, the Joseph Plumb Martin Trail would be shifted further south of the lower parking lot and extended west. The extension of the trail would be 10 feet wide and approximately 800 feet long. This new extension of the Joseph Plumb Martin Trail would cross State Route 23 at the corner of the David Potts House and then cross Route 252 where it would connect with the Valley Creek Trail. To accommodate this crossing, grading would occur at the corner of the David Potts House to provide a flat area for pedestrians and cyclists waiting to cross the road. In addition, signalized crosswalks would be established on both State Route 23 and Route 252 at this location. The remaining approximately 240 feet of the Joseph Plumb Martin Trail that terminates in the study area would be removed and planted in a meadow ground cover.

Removal and Relocation of the Commander-in-Chief's Guard Huts

The Commander-in-Chief's guard huts are one-story, 14 by 16 feet, and constructed of pressure-treated logs and mud colored cement daub. The structures sit on concrete footings. Two of the four Commander-in-Chief's guard huts would be removed under each action alternative. These could be placed elsewhere within the park. The other two huts would be relocated just south of the train station along a path. The area where the huts currently sit would be planted in a meadow ground cover.

Mitigation

In order to mitigate any impacts to cultural resources and further comply with Section 106 of the NHPA, the NPS is consulting with the Pennsylvania SHPO. A Memorandum of Agreement (MOA) discussing all cultural resources potentially impacted by the proposed action has been prepared (see Appendix B). Per the MOA, the NPS will continue consultations with the Pennsylvania SHPO as the proposed action is implemented, regardless of which alternative is selected.

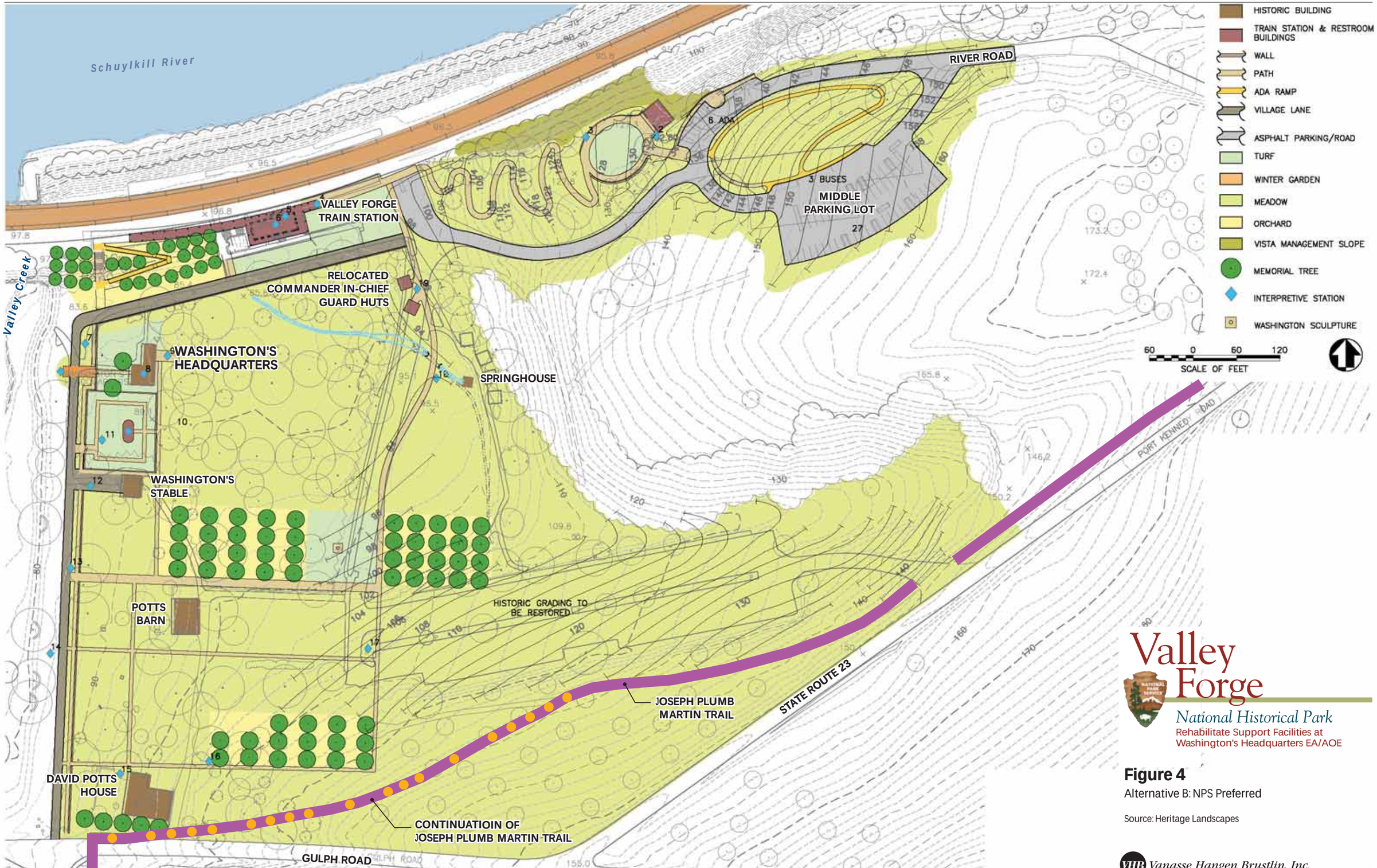
It is NPS practice to comply with or exceed local and state water quality and erosion and sediment control regulations. Any trenching operations (i.e., to install buried utility lines) would utilize a rock saw, backhoe, and/or trencher. Excavated material from the dug trench would be side-cast for storage. After trenching is complete, bedding would be placed and compacted in the bottom of the trench, and the pipe installed in the bedding. Backfilling and compaction would begin immediately after the pipe is placed into the trench, and the trench surface would be returned to preconstruction contours. Any trenching restoration operations would follow guidelines approved by park staff. These guidelines would minimize disturbance to soils and vegetation due to construction activities and restore affected areas to their original form wherever possible. Excavated material stored within the construction zone would be protected from erosion.

Although soil removed during construction is susceptible to some erosion, such erosion would be minimized by placing silt fencing, as required, adjacent to the excavated soil. Excavated soil would be protected only as long as it takes to dig the trench and install utility lines. As such, the proposed action would include appropriate planning that would comply with local and state regulations. This would include silt fencing and proper storage of fill material. Once construction was completed and disturbed surfaces recontoured, erosion mats or other erosion control measures would be used to protect bare, exposed soils from erosion until revegetation takes place. Efficient planting and staging, and careful machine work would be emphasized. These measures would be easy to implement and highly successful, thus avoiding any measurable impact to the surrounding environment during the construction process.

ALTERNATIVE B (NPS PREFERRED ALTERNATIVE)

In addition to the "Elements Common to the Action Alternatives" (rehabilitation of the train station, addition and sequencing of interpretive elements, removal of the north/south access road, connection of the Joseph Plumb Martin Trail to the Valley Creek Trail, and removal and relocation of the Commander-in-Chief's guard huts), as described above, Alternative B would encompass the following as shown on Figure 4:

- Remove the lower parking lot.
- Alter the middle parking lot.
- Enhance the interior circulation of the study area.
- Enhance the cultural landscape of the study area.
- Rebuild the train station platform cover fully using new materials and extending it to the historic length on both the east and west.
- Construct a new comfort station.
- Utilize a water tap sanitary sewer system.
- Upgrade the existing HVAC to an air-to-air heat pump system.



Valley Forge
National Historical Park
Rehabilitate Support Facilities at
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Figure 4
Alternative B: NPS Preferred

Source: Heritage Landscapes

Under this alternative, the lower parking lot and entry drive would be removed along with existing paths in the study area. This would encompass the removal of approximately 1.6 acres (70,000 sq.ft.) of pavement. Obliteration of the entry drive leading into the lower parking lot from State Route 23 would result in an additional 3,000 sq.ft. of pavement removed. A portion of this material would be reused to construct the middle parking lot. The remainder of the asphalt and soil would be used elsewhere within the park or hauled off site and disposed of. Existing paths removed under this alternative would result in approximately 0.3 acre (14,400 sq.ft.) of asphalt removal, including the asphalt path adjacent to the guard huts, the Village Lane, and other roads and paths. A portion of the area would be regraded to historic contours consistent with a commemorative plan of the study area, and meadow grass would be planted where asphalt was removed. As part of the removal process, three storm drains, 10 storm catch basins, and 900 linear feet of storm drain piping associated with the lower parking lot would be removed.

To accommodate parking, visitors would be directed to the redesigned middle parking lot. The intersection that provides access to the middle parking lot from State Route 23 would be shifted to the west to provide better sight lines to State Route 23 and Inner Line Drive. Approximately 0.2 acre (8,300 sq.ft.) of asphalt would be removed as part of the construction. The redesigned middle parking lot would require approximately 0.4 acre (16,100 sq.ft.) of new asphalt and an additional estimated 0.6 acre (25,000 sq.ft.) of paving placed over the existing middle parking lot. The new lot would be at essentially the same grades as the current middle parking lot but would be expanded to accommodate a parking capacity of 60 car spaces, 3 bus spaces, and 6 handicapped spaces. An existing access drive would allow for universal accessibility to the train station from the middle parking lot. The approximate 50-foot-by-50-foot asphalt section adjacent to the train station would be replaced with stabilized turf to accommodate parking of maintenance and emergency vehicles. It would also be used as a drop off/universally accessible parking area for incidental use only. This area would not be used for visitor parking.

To the northwest of the middle parking lot, an oval lawn would be constructed. Soils for the oval lawn would be a custom mix that would be well drained and resist compaction. The topography of the lawn would be built up slightly to aid in drainage. To the north of the lawn, a river overlook would be established using a 42-inch wall and railing. The wall would be made of exposed aggregate concrete and would include a 24-inch base with an 18-inch decorative rail. To the south of the lawn, a low seating wall would be constructed. Under this alternative, the area to the north of the overlook would become a vista management slope, with trees cleared and slopes stabilized with erosion control fabric and deeply rooted grasses and wildflowers to enhance views to the river. Once established, infrequent slope cutting, every other year, would be required to suppress any woody growth. Most of the trees removed in this area would be young Tree of Heaven (*Ailanthus altissima*).

From the oval lawn and overlook area, a winding path, approximately 600 feet in length, would lead down the slope to the train station on a less than 5% slope to comply with the Americans with Disabilities Act (ADA). At the far west end of the train station platform, a set of stairs would lead visitors from the train station to Washington's Headquarters. In addition to the stairs, a "V" shaped, universally accessible ramp would be constructed starting at the top of the stairs and ending at the base of the stairs.

At the western and northern edges of the study area, the Village Lane would be paved to allow for pedestrian circulation as well as service and emergency vehicle access. This 1,300-foot lane would be constructed of exposed aggregate concrete, 12-foot wide running north/south, and widening to 18 feet as

it turns east/west to the south side of the train station. This would terminate just east of the train station in the newly constructed turf area. The pedestrian paths that parallel this lane would also be reconstructed in exposed aggregate concrete. These paths would be 5-foot and 12-foot widths. Low stone walls that parallel the path along the village lane would remain under this alternative, as they provide a visual element to mark the former boundaries of the village properties.

The cultural landscape immediately adjacent to Washington's Headquarters and the proposed Marquee site would consist of trimmed and manicured turf grass. To the west of Washington's Headquarters, special paving and two new flagpoles would mark an overlook area next to Valley Creek. A low stone wall would surround Washington's Headquarters, delineating the property boundaries. Areas further south and east would be planted with meadow vegetation cover, such as English daisy, creeping veronica, plantain, dandelion, common violets, Johnny-jump-up, and short grasses.

The entire study area would also be planted predominantly in a meadow vegetation cover similar to the vegetation planted adjacent to Washington's Headquarters. Continuing south, three orchard blocks (approximately 90 trees, primarily crabapple) would be planted. Bird's foot trefoil would be planted as ground cover. To accommodate these changes, approximately 88 trees would be removed. See Appendix C for specific tree removals. The landscape design depicted in Figure 4 is a conceptual plan only and not meant to serve as an exact planting guide.

The train station platform cover would be rebuilt to its original length using contemporary materials. The cover would be constructed to be freestanding and would utilize one row of columns, rather than the two rows that originally existed. The platform itself would be replaced.

A new comfort station would also be constructed north of the redesigned middle parking lot. This structure would be 28 feet by 34 feet with a 4-foot overhang on the front of the building. The size of this facility is based on the International Plumbing Code, which is currently enforced in the Commonwealth of Pennsylvania. The new comfort station would consist of wood roof shingles over structural wood sheathing. The men's restroom would contain four toilets, one of which would be universally accessible, and two sinks. The women's restroom would contain five toilets, two of which would be universally accessible, and three sinks. One family/companion restroom would also be provided. Directly behind this would be a HVAC/custodial room with a slop sink. One drinking fountain would be located on the outside of the building. Because the new comfort station would be constructed, the restrooms in Potts Barn would be altered for emergency use only.

The sanitary system would utilize a tie-in to an existing sanitary line on the west side of the study area. Tredyffrin Township maintains a 30-inch diameter sanitary sewer main along the east side of Valley Creek with a valve manhole located northwest of Washington's Headquarters. This valve would be used for the tie-in.

The HVAC system in the train station would be upgraded to encompass an air-to-air heat pump system. This system would provide heat in the winter without the use of a gas burner. The air-source heat pump system would consist of small packaged units (also called heat pumps), which contain a refrigerant circuit with a compressor, refrigerant coils, and a blower fan. These packaged units would be placed in the basement of the train station.

ALTERNATIVE C

Alternative C would also include the "Elements Common to the Action Alternatives" (rehabilitation of the train station, addition and sequencing of interpretive elements, removal of the north/south access road, connection of the Joseph Plumb Martin Trail to the Valley Creek Trail, and removal and relocation of the Commander-in-Chief's guard huts) as described above. In addition, this alternative would include the following as shown in Figure 5:

- Reconfigure the lower parking lot.
- Enhance the interior circulation.
- Enhance the cultural landscape of the study area.
- Restore the train platform cover fully using in kind materials, and extending it to its historic length on both the east and west.
- Construct a new comfort station.
- Construct a new leach field for the sanitary sewer system.
- Upgrade the existing HVAC to a forced air system.

Under this alternative, the lower parking lot would be reduced in size and reconfigured. This would encompass the removal of approximately 1.1 acres (46,800 sq.ft.) of pavement, which would be recycled, reused elsewhere in Valley Forge NHP, or hauled off site and disposed of. As part of the removal process, 3 storm culverts, 10 storm catch basins, and 900 linear feet of storm drain piping would be removed. Existing paths would be removed under this alternative resulting in approximately 0.3 acre (14,400 sq.ft.) of asphalt removal. This would include the asphalt path adjacent to the guard huts, the Village Lane, and other roads and paths within the study area. The area of asphalt removal would be regraded to historic contours consistent with a commemorative plan of the study area. Further, meadow grass would be planted where asphalt was removed.

The lower parking lot would be reconfigured generally within the footprint of the current lot with an extension to the north for a separate bus drop-off area. These alterations would require approximately 3,800 sq.ft of new pavement and approximately 0.6 acre (28,200 sq.ft.) of asphalt overlay on the existing pavement. The newly configured parking lot would include 60 car spaces, 3 bus spaces, and 9 handicapped spaces. The entry drive would be reconfigured to encompass a perpendicular intersection with State Route 23, and the grade would be flattened. Dense woodland and shrub planting would be used to screen the west, south, and northeast sides of the lower parking lot. This planting area would be fenced to prevent destruction from deer browsing. The proposed plantings would extend southward on both sides of the Joseph Plumb Martin Trail approaching State Route 23 and northward to blend into the woodland areas along the slope. All walks adjacent to the parking lot would be reconfigured to less than a 5% slope to comply with ADA requirements.

Alternative C seeks to recapture the maintained appearance of the commemorative era of the early 20th century, as seen in historic images. The cultural landscape immediately adjacent to Washington's Headquarters and the proposed Marquee would be trimmed and manicured turf grass as in Alternative B. To the west of Washington's Headquarters, special paving and two new flagpoles would mark an overlook area next to Valley Creek. A low stone wall would surround Washington's Headquarters, delineating the property boundaries. Areas further south and east would be planted with meadow grasses similar to those proposed in Alternative B.

The village circulation patterns under Alternative C would be similar to those in Alternative B, as they evoke the spatial organization and land division of the historic Valley Forge landscape. Walks would be 5 feet wide, with the exception of the main walk to the north of Potts Barn, which would be 12 feet wide. The majority of the paths are already universally accessible and minimal grading to the landscape would be required.

A variation of the orchards in Alternative B would be planted under Alternative C. A 50-tree orchard in a north-south configuration would be planted east of Potts Barn. These trees would represent the 50 states. A row of 13 trees planted adjacent to the orchard would further symbolize the original 13 colonies. The sculpture of George Washington would be placed within the 50-tree orchard, facing a square lawn panel and the 13 trees. The entire orchard would be enclosed to the north, south, and east by a low wall. The orchard, sculpture, square lawn panel, and wall provide a commemorative and contemplative space within the cultural landscape. An alleé of 13 trees to the north, adjacent to the train station would also serve as commemorative space. To accommodate these changes, approximately 100 trees would be removed. See Appendix C for specific tree removals. The landscape design depicted in Figure 5 is a conceptual plan only and not meant to serve as an exact planting guide.

The train station platform cover under this alternative would be restored to its original length using in-kind materials. The cover would be attached to the building and would utilize the historic layout of two rows of columns. The platform would be replaced.

A new comfort station would be constructed. The location of this facility would be north of the lower parking lot. The layout of the comfort station would be similar to that described in Alternative B.

The sanitary system would utilize a leach field constructed south of the new comfort station in an area that currently contains an abandoned leach field. A lift station would be required to pump the sewage flow to the new leach field. A 4-inch diameter sanitary line extending from the new comfort station would be required based on the proposed conceptual design of the facility.

Under Alternative C, the HVAC system in the train station would be upgraded to encompass a conventional, forced air system. This system would consist of a combination of an indoor gas-fired furnace and an outdoor air-cooled condensing unit. Ductwork would be routed in the basement of the train station and sized to minimize the airflow pressure, which would also reduce noise and eliminate drafts within the train station. The outdoor equipment for this system would be located on the roof of the train station behind the north gable.

GENERAL CONSTRUCTION SCHEDULE AND COST

Construction would occur over approximately a 12-month period, beginning in May 2007. Proposed action construction would be determined by project funding. The net construction cost of this proposed action is estimated to be $8.0 million, in Fiscal Year 2006 dollars.

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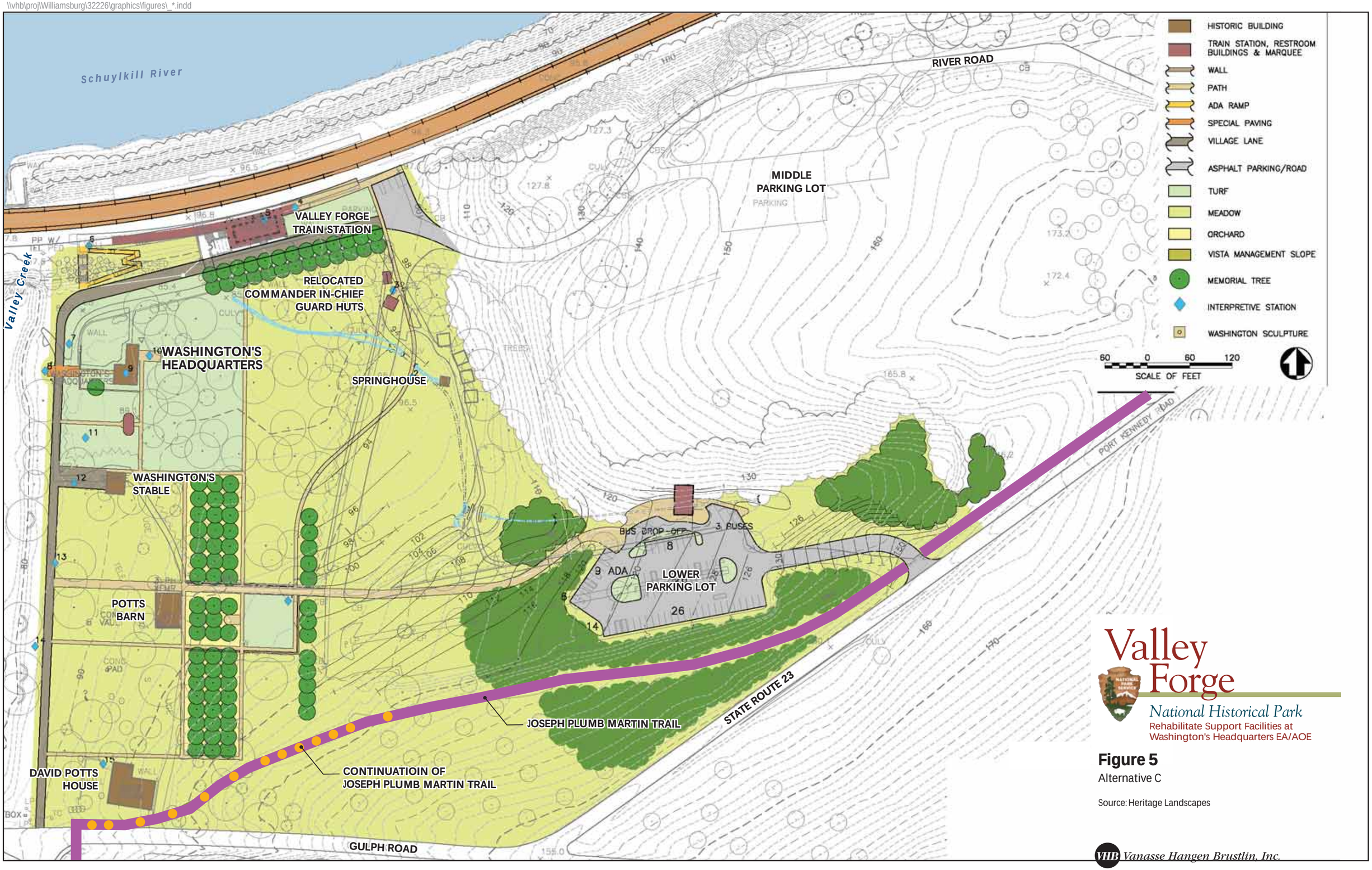

Valley Forge
National Historical Park
Rehabilitate Support Facilities at
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Figure 5
Alternative C

Source: Heritage Landscapes

VHB Vanasse Hangen Brustlin, Inc.

OPTIONS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

The following options were considered during the early stages of the planning process but were rejected based on their inability to meet the purpose of the proposed action. These options do not encompass an entire alternative, but rather various elements of the alternatives. No full alternatives were considered other than the two action alternatives, as the elements of each alternative were examined independently and then compiled to form alternatives.

Partial, freestanding, train platform cover. This option was dismissed as it would not enhance the entry space of the train station and would not provide adequate shelter space for visitors.

Geothermal system. This option was dismissed for its initial cost, as well as for the number of unknowns associated with installing a geothermal well system. There is a large initial cost for installing a geothermal system. Uncertainty exists when drilling in Karst formations. Drilling could alter subsurface conditions, which may impact surface features or the structural integrity of the buildings.

SUMMARY OF ALTERNATIVES

Table 1 provides a summary of the alternatives presented above.

Table 1: Summary of Alternatives

Alternative Elements	Alternative A – No-Action	Alternative B – NPS Preferred Alternative	Alternative C
Joseph Plumb Martin Trail	No extension or connection of the Joseph Plumb Martin Trail to the Valley Creek Trail	Joseph Plumb Martin Trail would be extended and connected to the Valley Creek Trail	Same as Alternative B
North/South Access Road	North/south access road would remain	North/south access road would be removed	Same as Alternative B
Train Station	No rehabilitation of train station would occur	Train station would be rehabilitated	Same as Alternative B
Commander-in-Chief's Guard Huts	No changes would be made to Commander-in-Chief's huts	Two huts would be removed and relocated elsewhere in the park; two huts would be relocated to just south of train station	Same as Alternative B
Interpretive Elements	No new interpretive elements would be constructed	New interpretive elements would be constructed	Same as Alternative B
Parking Option	Middle and lower parking lots would remain	Lower parking lot would be removed; middle parking lot would be reconfigured	Lower parking lot would be reconfigured; no changes to middle lot
Cultural Landscape	Landscape would not change	Landscape would reflect 20th century commemorative period	Same as Alternative B but with slight differences based on time period selected

Table 1: Summary of Alternatives			
Alternative Elements	Alternative A – No-Action	Alternative B – NPS Preferred Alternative	Alternative C
Train Station Platform Cover	Train station platform would remain uncovered	Train station platform cover would be freestanding, fully extended, with a single row of columns and constructed of contemporary materials	Train station platform cover would be attached to building, fully extended, with a double row of columns, using in-kind materials
Comfort Station	Existing comfort station in Potts Barn would be used	New comfort station would be constructed adjacent to middle parking lot	New comfort station would be constructed adjacent to lower parking lot
Sanitary Sewer	Existing vault would be used	Sanitary system would use a sewer connection	Sanitary system would use a leach field
HVAC in Train Station	Existing HVAC would be used	An air-to-air heat pump system would be used	A conventional, forced air system would be used
Meet Purpose and Need	No. This alternative would not provide accessible amenities as the existing restroom would remain and the train station would remain closed to the public on a regular basis. The train station would not be rehabilitated and the lower parking lot would remain an intrusion on the cultural landscape. Visitor circulation would not be clarified and visitor safety would not be improved. Utilities would also remain unchanged.	Yes. This alternative would construct a new comfort station that is universally accessible. It would rehabilitate the train station and open it to the public on a regular basis. The cultural landscape would be enhanced through the elimination of the lower parking lot and visitor circulation within in the study area would be clarified with interpretive elements and new paths. Visitor safety would also be addressed through a redesigned middle parking lot and access to the study area. Utilities would be upgraded.	Yes. This alternative would construct a new comfort station that is universally accessible. It would rehabilitate the train station and open it to the public on a regular basis. The lower parking lot would be reduced, although it would not fully be removed from the cultural landscape. Visitor circulation within in the study area would be improved with interpretive elements and new paths; however, it would still be confusing to visitors as the sequence of elements would not be in order. Visitor safety would be addressed through changes to the lower parking lot entrance. Utilities would be upgraded.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

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

Table 2: Summary of Environmental Consequences

For a complete description of impacts, see "Chapter 4: Environmental Consequences"

	Alternative A-No-Action Alternative	Alternative B	Alternative C
Soils	No development within the study area Overall impact: long-term, negligible, and adverse with no impairment Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, minor, beneficial cumulative impact	Net reduction of approximately 1.5 acres of impervious surface Overall impact: long-term, moderate, and beneficial with no impairment Cumulative impact: would contribute an appreciable, beneficial increment to a long-term, minor, beneficial cumulative impact	Net reduction of approximately 1.2 acres of impervious surface Overall impact: long-term, moderate, and beneficial with no impairment Cumulative impact: would contribute an appreciable, beneficial increment to a long-term, minor, beneficial cumulative impact
Visual Resources	No changes to the visual resources Overall impact: long-term, minor, and adverse with no impairment Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, negligible, adverse cumulative impact	Enhancement of cultural landscape and removal of visual intrusion of lower parking lot; visitors would view overall study area initially and then descend into the study area Overall impact: long-term, moderate, and beneficial with no impairment Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, negligible, adverse cumulative impact	Enhancement of cultural landscape with lower parking lot reduced but not entirely removed; visitors would view study area at eye level Overall impact: long-term, minor adverse and long-term, minor, beneficial with no impairment Cumulative impact: would contribute an imperceptible, beneficial increment to a long-term, minor, beneficial cumulative impact
Archeological Resources	No proposed action related ground disturbance Overall impact: no impact with no impairment Cumulative impact: no cumulative impact	Impacts could occur during pavement removal and regrading; sanitary sewer system would require trenching of new lines Overall impact: long-term, moderate, and adverse with no impairment Cumulative impact: would contribute a noticeable, adverse increment to a long-term, moderate, adverse cumulative impact	Impacts could occur during pavement removal and regrading; leach field would negligibly impact resources as it is located in an abandoned leach field Overall impact: long-term, moderate, and adverse with no impairment Cumulative impact: would contribute a noticeable, adverse increment to a long-term, moderate, adverse cumulative impact

Table 2: Summary of Environmental Consequences

For a complete description of impacts, see "Chapter 4: Environmental Consequences"

	Alternative A-No-Action Alternative	Alternative B	Alternative C
Historic Structures	No changes to historic structures Overall impact: long-term, moderate, and adverse with no impairment Cumulative impact: would contribute a noticeable, adverse increment to a long-term, negligible, beneficial cumulative impact	Rehabilitation of train station; canopy would be contemporary materials Overall impact: long-term, minor, and beneficial with no impairment Cumulative impact: Would contribute a noticeable, beneficial increment to a long-term, negligible, beneficial cumulative impact	Rehabilitation of train station; canopy would be in-kind materials Overall impact: long-term, minor, and beneficial with no impairment Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, negligible, beneficial cumulative impact
Cultural Landscapes	No changes to cultural landscape Overall impact: long-tern, minor, and adverse with no impairment Cumulative impact: would contribute a imperceptible, adverse increment to a long-term, negligible, beneficial cumulative impact	Cultural landscape enhanced; lower parking lot removed from cultural landscape; views open to the river Overall impact: long-term, moderate, and beneficial with no impairment Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, minor, beneficial cumulative impact	Cultural landscape enhanced; lower parking lot reduced but not removed; no view open to the river Overall impact: long-term, negligible, and beneficial with no impairment Cumulative impact: would contribute a imperceptible, beneficial increment to a long-term, negligible, beneficial cumulative impact
Visitor Use and Experience	No changes to visitor use and experience Overall impact: long-term, moderate, and adverse Cumulative impact: would contribute a noticeable, adverse increment to a long-term, minor, beneficial cumulative impact	Hazardous intersection removed; train station open to the public on a regular basis; circulation patterns enhanced Overall impact: long-term, moderate, and beneficial Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, moderate beneficial cumulative impact	Intersection altered; train station open to public on a regular basis; circulation patterns altered, but confusion would remain Overall impact: long-term, minor, and beneficial Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, minor, beneficial cumulative impact

Table 2: Summary of Environmental Consequences

For a complete description of impacts, see "Chapter 4: Environmental Consequences"

	Alternative A-No-Action Alternative	Alternative B	Alternative C
Operations	No changes to current operations Overall impact: long-term, minor, and adverse Cumulative impact: would contribute a imperceptible, adverse increment to a long-term, negligible, beneficial cumulative impact	Lower parking lot removed resulting in less maintenance; train station open to the public requiring more cleaning Overall impact: long-term, minor, and beneficial Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, negligible, beneficial cumulative impact	Lower parking lot reduced but not removed; train station open to the public requiring more cleaning Overall impact: long-term, negligible, and beneficial Cumulative impact: would contribute a imperceptible, beneficial increment to a long-term, negligible, beneficial cumulative impact
Utilities	No changes to current utilities Overall impact: long-term, minor, and adverse Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, negligible, adverse cumulative impact	HVAC system replaced with air-to-air heat pump; new plumbing and electric lines required for new comfort station; leach field at Potts Barn facility would last longer due to less use Overall impact: long-term, minor, beneficial Cumulative impact: would contribute a noticeable beneficial increment to a long-term, negligible, beneficial cumulative impact	HVAC system replaced with conventional forced air system; new leach field would eliminate need for existing leach field at train station Overall impact: long-term, negligible, beneficial Cumulative impact: would contribute an imperceptible, beneficial increment to a long-term, negligible, beneficial cumulative impact

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Environmentally Preferred Alternative is defined by the 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) goes on to define the Environmentally Preferred Alternative through the application of six criteria listed below. Generally, these criteria define the Environmentally Preferred Alternative as the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources. Each criterion is presented below, followed by a discussion of how well the proposed alternatives meet each one.

1. ***Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.*** The goal of the NPS at all units is to serve as trustees of the environment for future generations. Under the No-Action Alternative, the NPS would not sustain the historic train

station. The landscape would not be rehabilitated, and no commemorative features would be added. Alternatives B and C would enhance the park's ability to meet this criterion by rehabilitating the train station and upgrading inefficient infrastructure. While both action alternatives would also rehabilitate the landscape, Alternative B would completely remove the lower parking lot, thus removing this intrusion from the cultural landscape and allowing the area to be fully rehabilitated.

2. ***Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings***. Under the No-Action Alternative, the park would strive to provide safe, healthful, productive, and aesthetically pleasing surroundings for its visitors. However, the study area would remain inaccessible for some visitors, and the intersection with State Route 23 would not be changed. Alternatives B and C would take steps to improve the safety and aesthetics of the study area. New paths would be constructed under both action alternatives. The train station would be rehabilitated, including abatement of lead-based paint. Both action alternatives would make the study area easily accessible by all visitors, although Washington's Headquarters itself would remain inaccessible to some. Under Alternative B, the NPS would remove the lower parking lot and eliminate the hazardous intersection. In addition to improving visitor safety, removal of the lot would also make the site more aesthetically and culturally pleasing. The intersection of State Route 23 and access to the middle parking lot would be modified with longer sight lines to improve safety. Further, Alternative B would open river views thus enhancing the experience. Alternative C would improve the existing intersection through altering the angle at which the entry drive meets State Route 23. Alternative C would also improve aesthetics by reducing the size of the lower parking lot and landscaping to shield the lot from the traffic on Gulph Road. However, the lower lot would remain as an intrusion on the cultural landscape.

3. ***Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.*** Valley Forge NHP currently provides a small range of uses at the Washington's Headquarters area. While the No-Action Alternative would continue to provide minimal uses, Alternatives B and C would improve the park's ability to meet this criterion. By rehabilitating and opening the train station to the public on a regular basis, the action alternatives would provide more choices and a universally accessible program. Further, the use of various interpretive elements would allow a wider range of uses and appreciation of the study area. Connection of the Joseph Plumb Martin Trail with the Valley Creek Trail would also provide a wider range of beneficial uses, as recreational users could maximize their enjoyment of the site.

4. ***Preserve important historical, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice***. Valley Forge NHP has preserved portions of the study area as part of the United States national heritage. Under the No-Action Alternative, the NPS would continue to maintain its role at the study area. Both action alternatives would rehabilitate the train station, which would preserve a National Register eligible building. This would also reduce the wear and tear on Washington's Headquarters, a National Historic Landmark. The rehabilitation would also support diversity and individual choice as visitors would have several options for experiencing the study area rather than just Washington's Headquarters and an uniformed, self-guided tour. Alternative

B would open river views providing yet another interpretive opportunity. It would also remove the lower parking lot, thus enhancing the cultural landscape. As some areas to be developed in Alternative B are undisturbed, additional archeological testing would be required along with mitigation of impacts to important archeological resources, if present.

5. ***Achieve a balance between population and resource use that will permit high standards of living and wide sharing of life's amenities***. The NPS strives to achieve a balance between population and resource use at Valley Forge NHP. Under the No-Action Alternative, Valley Forge NHP would continue to meet this criterion. Both action alternatives would meet this criterion by improving visitor services with new interpretation, train station rehabilitation, and a new comfort station. The train station rehabilitation would improve the resource and ensure its future use. This building would also be made universally accessible for all visitors to enjoy. Further, Alternative B would remove the lower parking lot completely, thus allowing for reclamation of the entire area.

6. ***Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources***. Under the No-Action Alternative, no changes would be made, which could result in loss of the train station and eventually damage to Washington's Headquarters. Thus, this alternative would not meet this criterion. Both action alternatives would upgrade HVAC systems to more energy-efficient systems. Under Alternative B, asphalt removed from the lower parking lot would be recycled for use in construction of the middle parking lot, if possible.

Although each of the alternatives meets the above criteria to some degree, Alternative B surpasses the other alternatives in fulfilling the criteria outlined in NEPA Section 101(b). Overall, both action alternatives would result in an adverse impact to archeological resources. However, the impacts of Alternative B on other resources would be long-term, minor to moderate, and beneficial, while the impacts of Alternative C would be long-term, negligible to moderate, and beneficial. Alternative B would remove the lower parking lot from the cultural landscape and reduce safety risks to visitors by eliminating the hazardous intersection leading to the study area. This removal would also enhance the visual resources of the study area as the lower parking lot could be replanted with grasses. Alternative B would also create circulation and interpretation that is easily accessible and understandable to visitors. Taking all of this into consideration, and balancing the impacts to natural and cultural resources and the population, Alternative B best meets the criteria for the environmentally preferred alternative. Alternative B was also identified as the NPS Preferred Alternative.

3
AFFECTED ENVIRONMENT

Situated in southeastern Pennsylvania along the Schuylkill River in Chester and Montgomery Counties, Valley Forge NHP encompasses 3,452 acres. Within the Piedmont physiographic province, the park lies within the Great Valley and is home to a variety of natural and cultural resources. The proposed action is confined to the study area, which is outlined on Figure 2. This chapter describes the existing environmental conditions in the study area. Organized by resource topic, this chapter describes the resources that could be impacted by the proposed action. Resources examined in detail include soils; visual resources; cultural resources (archeological resources, historic structures, and cultural landscapes); visitor use and experience; operations; and utilities. Resources dismissed from further consideration were discussed in "Chapter One: Purpose and Need."

SOILS

The study area is dominated by two soil types: the Glenville silt loam and the Penn-Lansdale loams. The Glenville soils are contained within the western portion of the study area, while the Penn-Lansdale loams are found in the eastern portion of the study area. Generally, the Glenville soils are well drained. Well-drained soils remove water from the surface, avoiding excessive runoff and providing a secure base for physical development. However, these soils are also known to contain pockets of poorly drained soils. The Penn-Lansdale loams are consistently well drained with lower water tables than the Glenville soils. This promotes drier, more stable conditions for soil stability, vegetative growth, and physical development (U.S. Department of Agriculture 1963).

The soils within the study area are a mix of exposed, covered, and compacted. Exposed soils are those that line the banks of the Schuylkill River and Valley Creek. These soils are naturally exposed, as the respective stream flows keep substantial vegetation from developing. In undisturbed, inland areas, soils exhibit natural characteristics. These characteristics include the ability to support naturally occurring vegetation and absorb water. Developed lands are unable to support vegetation or absorb water. This is due to either an impervious cover or highly compacted soils. Non-exposed soils in the study area are compacted soils that are covered by pavement or buildings.

VISUAL RESOURCES

The visual environment at the study area includes what the visitor sees during the approach to the study area as well as within the study area. Bordered by State Route 23, Valley Creek, and the Schuylkill River, two small entry roads provide access to the study area. These lead from State Route 23, a heavily traveled

commuter route. Entering from the southernmost entry road, visitors arrive at the large, lower parking lot, which overwhelms the small site (see Figure 2). This lot is the park's second largest parking lot. From the lower parking lot, visitors are at eye level with the buildings in the study area. As a result, the focus becomes the buildings rather than the study area as a whole. A view of the entire site is not available to visitors.

The north/south access road connects the lower parking lot to the train station. This road bisects the landscape and introduces buses and vehicles to the center of the study area viewshed. River Road then runs east and connects the train station to a small, middle parking lot. From here, River Road continues east to the smaller, upper parking lot, and then the road connects with State Route 23.

Within the study area, the park maintains a mowed lawn with a large number of shade trees, most of which date to the early commemorative period of the park. In addition, paved pedestrian walkways provide access from the parking lot to other areas of the study area. These include the Joseph Plumb Martin Trail that terminates within the study area. Located along these walkways are a series of buildings, structures, and landscape features associated with the various periods of the study area's history. These buildings include the David Potts house, Potts Barn, Washington's Headquarters, and Washington's stable. Non-historic wooden worm fencing, which does not date to the commemorative period, separates the buildings and helps to lead visitors through the study area.

North of Washington's Headquarters is the Valley Forge train station. Adjacent to the railroad tracks and parallel to the Schuylkill River, this building forms a strong physical boundary of the study area. The embankment constructed for the railroad tracks is a dominant landform in the area and further separates the study area from the river and from the view of the river. A small, paved parking lot supports this building with an asphalt path leading from this parking area back to the lower parking lot. A small cluster of replica Commander-in-Chief's huts line this path along with a stone springhouse.

CULTURAL RESOURCES

Valley Forge NHP encompasses the site of the 1777-78 encampment of the American Continental Army under General George Washington's command. Although multiple layers of history exist throughout the park, the park retains sufficient integrity to convey a majority of stories of its past. Several buildings within the study area are specifically listed as contributing elements of the Valley Forge NHP National Register historic district. Washington's Headquarters is also individually listed as a National Historic Landmark. In addition, the study area is also a significant component landscape to the park's cultural landscape as a whole. Because of the National Register significance, and the significance to the park's overall cultural landscape, specific cultural resources related to the proposed action include archeological resources, historic structures, and cultural landscapes. Cultural resources dismissed from further consideration were discussed in "Chapter 1: Purpose and Need."

Archeological Resources

At the study area, work has focused around Washington's Headquarters. In 1973, Charles Hunter and Vance Packard Jr. excavated approximately 4,000 sq.ft. east of Washington's Headquarters. This excavation uncovered a stone wall interpreted as the remains of a 19th century reconstruction of

Washington's log dining room. Wall trenches were also found and were thought to be portions of the 19th century caretaker's quarters (Hunter and Packard 1973). Another excavation within the vicinity of Washington's Headquarters occurred in 1986 as part of a drainage swale construction project behind Washington's Headquarters. Numerous 18th and 19th century ceramics were uncovered, as was a stone foundation. The foundation, most likely of a log structure dating to the 1880s, may be on a footing from an earlier structure (Kurtz 1986).

In 2001, a report was compiled on archeological resources associated with the western portion of Valley Forge NHP that included the study area and the train station (NPS 2001). This report explained that the parking area adjacent to the train station and the north/south access road both overlie the location of several known structures removed in the early 20th century. This report further explains that a late 19th century depot and adjacent house were all closely clustered in the parking area adjacent to the train station. The existing train station replaced the depot in the early 20th century (Kurtz 2001).

The north/south access road also covers a portion of a large mill used for manufacturing shoddy[2] cloth. The mill, along with several support buildings, stood until the first decade of the 20th century (Kurtz 2001). This road passes very close to the site of the Mewes House. According to 19th century maps, this would have been a small farmstead consisting of a frame house, barn, orchard, springhouse, and outbuildings. It is unknown when this farmstead was constructed or when it was demolished (Kurtz 2001). It is known however that the springhouse, built to support the farmstead, was located a short distance up the same water source as the one standing today.

Although several archeological excavations have been conducted near Washington's Headquarters, many areas, particularly those immediately adjacent to structures, may yield additional important archeological data. Other important classes of archeological resources, such as trash middens, drainage systems, and fence lines, may also be present. These features are often not closely associated with structures, and therefore, could be located in areas where no structures were known to have stood.

It should also be noted that the level of disturbance from the construction, operation, and demolition of mills in the study area make it uncertain whether 18th century deposits remain within or adjacent to structures. Further, a review of historical park maps and surface topography show that the lower parking lot was heavily graded during its construction. As a result, few archeological resources are anticipated in the lower parking lot.

Historic Structures

Valley Forge NHP contains 74 buildings and numerous individual structures within its boundaries, including ruins, monuments, markers, statues, roads, earthworks, and walls. These elements all help to reflect the park's history and contribute to its significance. The study area is listed on the National Register as a historic district and Washington's Headquarters is a National Historic Landmark. The historic district encompasses a series of buildings that follow a trace road alignment, which parallels Valley Creek. Oriented south to north, they include the David Potts house, Potts Barn, Washington's

[2] Woolen yarn made from scraps or used clothing, with some new wool added.

stable, Washington's Headquarters, and the train station. A springhouse is located east of these structures along with four non-historic reproduction Commander-in-Chief's guard huts. Of the historic structures, only Potts Barn, Washington's stable, and the train station would be impacted by the proposed action. Therefore, these buildings are the only ones discussed in detail. Washington's Headquarters is also discussed however, as it is the only building open to the public in the study area.

Located north of the David Potts house is Potts Barn. Built circa 1760 to 1820, this 48-foot by 33-foot structure is a vernacular, two-story structure with a gabled roof clad in wood shingles. Three paneled doors are located on the eastern façade, and there is a paneled overhead garage door leading to a service bay. The eastern façade also encompasses an inset balcony on the second floor, constructed in 1928. Today, the building houses the restroom facilities for the study area on the first floor. The remaining portions of the building are used by park staff and not open to the public.

North of Potts Barn is Washington's stable, which is believed to have been built in 1773. This one-story building measures 30 feet by 24 feet. The entire building has a gabled roof clad in wood shingles. The walls of the building are thought to be the only remaining original fabric of the structure. Historic photos show a much larger barn than the current building, indicating that the building underwent extensive alterations, as it was converted into a working barn and then back to a smaller stable. The building was renovated into a museum in 1926 and modified in 1975 to the existing structure. The building is not open to the public.

The dwelling known as Washington's Headquarters may have been built in 1773 or as early as 1759. The two-story masonry house was constructed in the vernacular Quaker-German style with a gable roof clad in wooden shingles. A single-story, roofed, hyphen[3] links the central structure to a one-story kitchen. In addition, the hyphen is enclosed on the east by a stone wall and to the west by a stone archway decorated with a keystone. The main entrance to the house is on the western façade. Washington established his headquarters in this house and lived there with his staff and wife during the winter encampment. Because of its associations with Washington and the encampment, the structure is also listed as a National Historic Landmark and is considered the most significant historic building in the park. Today, the building has been completely restored and is open to the public. Furnished with encampment-era and reproduction museum objects, the building has been operated as a historic house museum for over a century.

At the northern boundary of the study area is the Valley Forge train station. Built in 1911, this two-story building encompasses a full attic, basement, and covered porch that surrounds the entire building. Built on a large embankment created to meet the grade of the rail line, the 63-foot by 25-foot building is located northeast of Washington's Headquarters and south of the railroad tracks near the bank of the Schuylkill River. Fluted columns along the north, west, and east elevations support the porch roof. The slate roof is brittle, and there is evidence of repairs, particularly around the north gable. The current building replaced an earlier station.

[3] A center passage through a building; sometimes enclosed as a center hallway.

Four entrances provide access to the building. The windows are single-hung sash with sash chains and pulleys. Some of the ground-level windows have protective iron bars installed in the masonry. It is unknown whether the bars are original to the station or a later addition. Two flights of stairs, one on the east and one on the south, extend down to a landing at the center of the retaining wall running on the south side of the building. The western stair, also called the grand stair, is a curved, concrete stair with intermittent landings and handrails on both sides. The present stairs date from the mid 1980s when they were installed over the original. From here, the steps lead into a single flight of stairs leading down to a pedestrian walkway.

The physical integrity of the train station is high. The floor plan of the station is intact and reflects early 20th century train stations constructed by the Philadelphia and Reading Railroad Company. The primary spaces of the first floor of the train station are the waiting room, the ticket office, and baggage area. The waiting room is two-stories with a vaulted plaster ceiling and full height wall paneling. Waiting room benches are in place as are other details and finishes from 1911. The ticket office and baggage room are also intact spaces with vertical board wainscot, built-in ticket desk and closets, sliding baggage door, and light fixtures. Also located on the first floor are a small men's restroom and a women's restroom with a lounge. Most of the finishes in these two rooms are intact, except for plumbing fixtures, which have been replaced. Originally one open space, the basement has been modified by the addition of two partitions. The second floor of the station has also been modified with thin paneling covering the walls, a vinyl tile floor, and new ceiling.

An extensive concrete platform extends to the east and west of the train station. The area to the east is in fair condition. The platform is bounded to the west and north by a chain link fence. From the western edge of the platform, a former concrete staircase provides direct visitor access to the study area. West of the train station platform is a pedestrian underpass. Constructed at the same time as the train station, this underpass was built to provide protection for passengers who needed to cross the tracks. The underpass, which is sealed off, is composed of a 6-foot wide tunnel that runs approximately 76 feet under the railroad tracks.

The springhouse, east of headquarters, is a low rubble[4] structure that measures 11 feet by 12 feet. Constructed circa 1773-77, this building is associated with Washington's Headquarters. The eastern end is built into an embankment that slopes down along the northern and southern walls to meet the grade at the western façade. The building maintains a gabled roof with exposed rafter tails and wood shingles.

Four replica Commander-in-Chief's guard huts constructed in 1948 are located east of Washington's Headquarters on a hillside above the springhouse. Constructed as interpretive exhibits, these structures do not contribute to the National Register significance of the park.

[4] Irregular fragments or pieces of rock used in masonry.

Cultural Landscapes

As described in NPS DO #28, a cultural landscape is "a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures, buildings, walls, and vegetation, and by use of reflecting cultural values and traditions." Extant cultural landscape features at Valley Forge NHP are associated with a series of four major historic periods: the early settlement period, the encampment landscape, the post-encampment landscape, and the commemorative period.

The early settlement period begins prior to the American Revolution, circa 1700, with early settlement by European immigrants. This landscape reflects the settled landscape present when the Army arrived. Within the study area, pre-encampment-era buildings, topography, and some circulation exists; however, all other features from this period are gone or have lost integrity. The encampment landscape encompasses a relatively short period when the Continental Army wintered at Valley Forge from December 19, 1777 to June 19, 1778. Park-wide, this context includes earthworks, circulation systems, buildings, vistas, and important archeological sites; however, nothing remains of this period within the study area except the encampment-era buildings. The post-encampment landscape encompasses the period of 1778 to 1878 and is not reflected within the study area. The commemorative period encompasses the late 19th century and early to mid 20th century and includes the features within the study area. Of these four periods, the encampment and commemorative are the most notable for the study area.

The overall integrity of the study area has diminished over the years. However, individual elements, such as the buildings, topography, natural elements such as the Schuylkill River and Valley Creek, and circulation patterns, retain sufficient integrity to convey their importance in the overall encampment landscape. Washington's Headquarters remains the central focus of the study area. This building continues to be one of the primary interpretive sites at Valley Forge NHP because of its association with the Commander-in-Chief, his wife Martha, and the administration of the encampment. The encampment was a temporary military overlay on an existing agricultural and industrial landscape. As is common with military sites from the revolution, many of the detailed elements no longer survive. However, those that do survive, along with the critical landscape features that drew General Washington to this strategic site, have a high degree of integrity. One such feature is topography, which descends relatively gradually across the study area, with a few steep areas, before leveling out near Valley Creek and along State Route 23. Elevations range from approximately 160 feet on the eastern side of the study area to just over 80 feet near Washington's Headquarters (based on the National Geodetic Vertical Datum of 1929).

The Village of Valley Forge is also present at the study area, although hidden from view in many cases. The historic importance of the village stems from the use of an existing house for Washington's Headquarters. Valley Creek is the principal element of the village as it was used to power the mills and forges. The structures of the village were arranged along a lane running north to south paralleling the creek. The banks of Valley Creek exhibit evidence of dams and millraces established to take advantage of the waterpower. Today, however, neither the village nor the encampment-era landscapes are obvious, as few of the features associated with these early forge complexes survive beyond the archeological record. However, although these elements have been lost, the Village of Valley Forge possesses integrity to this early industrial sub period of the encampment, particularly for the qualities of location and association.

The commemorative landscape is also present at the study area. The commemoration and early state park development is a combination of the desire to recapture views of the encampment features and the desire to beautify the study area in honor of its importance. Today, the study area maintains a character commemorating the encampment and associated events. The park maintains a mowed lawn in the study area with large shade trees, most of which date to the early commemorative period. Black walnut (*Juglans nigra*) and American sycamore (*Platanus occidentalis*) are planted along Valley Creek. Other dominant species within the study area include: Bur oak (*Quercus macrocarpa*), sugar maple (*Acer saccharum*), red oak (*Quercus rubra*), and white pine (*Pinus strobus*). Juniper trees (*Juniperus virginiana*) frame the former stairway leading from the west end of the train platform down to Washington's Headquarters. The deciduous trees range in size from under 4 inches diameter at breast height (dbh) to over 32 inches dbh. The evergreen trees range in size from under 8 inches dbh to over 32 inches dbh. The trees create a canopy cover ranging in size from 10 feet to 60 feet. The condition of trees within this area varies between good, fair, poor, and failing.

VISITOR USE AND EXPERIENCE

Not only is Valley Forge NHP a place to learn the history of the American Revolution, it has also more recently become a place for recreation. The park became increasingly popular in the mid to late 20th century particularly with area residents as a place to enjoy the outdoors. Favored activities at Valley Forge NHP include walking, jogging, and biking. This trend has continued with a majority of the approximately 1.2 million annual visitors coming primarily for recreational purposes rather than the historic resources the park has to offer. However, recreational visitors also enjoy the history and resources within the park.

The study area is the primary interpretive site in the park, receiving approximately 69,000 annual visitors. Washington's Headquarters is completely restored and open to the pubic as a historic house museum with encampment-era and reproduction objects displayed throughout. Visitors can pay a $3.00 entrance fee to tour the building and learn how Washington and his staff lived and worked during their stay at Valley Forge. Rangers and volunteers in period costumes briefly introduce the site as visitors enter the building. Because Washington's Headquarters is currently the only building in the area open to the public, visitors underutilize the study area. Also, Washington's Headquarters is not universally accessible. There are few programs in the study area, and no waysides to explain to visitors how Washington's Headquarters relates to the study area.

Once in the study area, very few basic facilities and services are available to visitors beyond a bulletin board. The only restroom facility is located in Potts Barn, which is not large enough for the visitor capacity at the study area. As a result, during peak visitation periods, visitors can wait in long lines to use the facility.

Access to the lower parking lot from State Route 23 is difficult due to the intersection angle and the constant traffic, particularly at rush hour. Once on site, visitors can park in the lower, middle, or upper parking lot. Paved circulation paths lead visitors around the site, and the Joseph Plumb Martin Trail, which terminates southwest of the lower parking lot, provides bicycle access to the study area.

OPERATIONS

Operations at the study area include maintenance and general custodial work, as well as interpretation. Maintenance for the study area consists of ¼ full time equivalents (FTE) per year[5]. This includes a custodian that is at the study area on a daily basis to clean Washington's Headquarters and the Potts Barn restrooms. Typically, this requires one to two hours per day. The train station is also cleaned once a week, or as needed, based on use of the building. Grounds maintenance at the study area typically includes snow plowing of the lower and middle parking lots in the winter and lawn mowing in the spring and summer. Lawn mowing usually occurs every other week and requires two hours to complete. Currently, there is little routine maintenance of the trees in the study area. There is also yearly maintenance associated with cleaning any blocked drainages caused by the collection of road debris.

Interpretation staff is also present at the study area and constitutes approximately three FTE per year. On a daily basis, staff is present to collect fees at the Potts Barn. Visitor services in Washington's Headquarters also require staff in period dress who briefly introduce the site to visitors as they enter the building. Staff is also available to answer questions about the study area. Volunteers assist at the study area as needed, usually for half-day intervals. Volunteers are also used for special presentations that occur at the study area periodically.

UTILITIES

Utilities at the study area include potable water, electric and phone lines, septic tanks, and leach fields. Aqua Pennsylvania is responsible for the park's water supply. Potable water enters the study area through a 1 ¼ inch plastic pipe along the banks of Valley Creek. This line feeds the train station and is in need of repair as the banks of Valley Creek are eroding and exposing the pipe. Tredyffrin Township also maintains a water line that extends under the middle parking lot.

Electric and phone lines parallel the railroad track and extend to a pole approximately 25 feet from the train station. From the pole, the lines run under the train station platform. Electric lines are also connected to the David Potts House and Potts Barn. This line runs under State Route 23 and connects to a junction box in front of the David Potts House. From there the line runs parallel to Village Lane between David Potts House and Potts Barn, before connecting to a transformer on the west side of Potts Barn. Telephone lines run in a similar sequence to this line. In addition, telephone lines feed Washington's Headquarters. These lines run west of Potts Barn to Washington's Headquarters, utilizing an existing heating line trench under the stables.

Three septic tanks and leach fields exist at the study area. These include a tank and leach field adjacent to the south stairs of the train station and a tank and leach field to the west of Potts Barn. The tank and leach field near the David Potts House is abandoned. A Treddyfin Township sewer line runs under the Schuylkill River near the pedestrian underpass.

[5] One FTE represents a full year of work, whether performed by one full-time employee or multiple part-time employees.

Drainage structures are also present at the study area. The existing lower parking lot entry drive contains a culvert that drains State Route 23. This leads to a swale north of Washington's Headquarters, which empties into Valley Creek. The point where the swale empties into Valley Creek can become filled with road debris during the winter, which leads to flooding within the study area. To avoid or mitigate these conditions, the blockage usually has to be cleaned out once a year.

4

ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences associated with the alternatives presented in "Chapter 2: Alternatives." It is organized by impact topic, which distills the issues and concerns into distinct subjects for discussion analysis. NEPA requires consideration of context, intensity, and duration of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. NPS policy also requires that impairment of resources be evaluated in all environmental documents; therefore, impairment is addressed in the "Conclusion" section at the end of this chapter. The CEQ regulations that implement NEPA require assessment of impacts to the human environment, which includes natural and cultural resources.

METHODOLOGY FOR ASSESSING IMPACTS

As required by NEPA, potential impacts are described in terms of type (beneficial or adverse, direct or indirect), context (site-specific, local, or regional), duration (short-term or long-term), and level of intensity (negligible, minor, moderate, or major). These terms are defined below. Overall, these impact analyses and conclusions were based on the review of existing literature and Valley Forge NHP studies, information provided by on-site experts and other agencies, professional judgments and park staff insight, and federal agencies. The impact analyses presented in this document are intended to comply with both NEPA and Section 106 of the NHPA; therefore, Section 106 summaries for each cultural resource topic are also included.

Type

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

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

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

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

Context

Context is the setting within which an impact is analyzed.

Site-specific: The impact would affect the project site.
Local: The impact would affect the park.
Regional: The impact would affect localities, cities, or towns surrounding the park.

Duration

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

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

Level of Intensity

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

Cumulative Impacts

The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as impacts which result when the impact of the proposed action is added to the impacts of other present and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions (40 CFR 1508.7).

To determine the potential cumulative impacts, existing and anticipated future projects at Valley Forge NHP and in the surrounding area were identified. These included lands administered by the NPS, the Commonwealth of Pennsylvania, and Chester and Montgomery Counties. Potential projects identified as cumulative actions included any planning or development activity currently being implemented or expected to be implemented in the reasonably near future. The projects identified as contributing to cumulative impacts on the resources addressed by this EA/AOE include traffic calming measures on State Routes 23, construction of a pedestrian bridge over the Schuylkill River, stormwater management and restoration of Valley Creek, and removal of underused parking lots.

Traffic Calming Measures on State Route 23

The working draft of the *Valley Forge NHP Draft GMP/EIS* (NPS 2005) proposed traffic calming measures along State Routes 23 to reduce conflicts with visitor activities in the park. These measures would include reducing speeds, pedestrian crosswalks, textured pavement and markings, advanced warning signs, curbing, and driveway closures. The intersection of State Routes 23 and Route 252, which is directly adjacent to the study area, would be modified using these techniques. This project has the potential to impact visitor use and experience, operations, and utilities.

Construction of a Pedestrian Bridge over the Schuylkill River

The working draft of the *Valley Forge NHP Draft GMP/EIS* (NPS 2005) proposes a new bridge over the Schuylkill River, northeast of the study area. This bridge would allow for connections with regional trail systems and provide a link between the northern and southern portions of the park. The location for the pedestrian bridge has not been determined to date and could range anywhere from 500 to 2,500 feet northwest of the study area. Depending on the location, the bridge could be visible from the middle parking lot of the study area. Construction of the pedestrian bridge over the Schuylkill River has the potential to impact visual resources.

Stormwater Management and Restoration of Valley Creek

The Chester County Water Resources Authority is leading an initiative to develop an Integrated Stormwater Management Plan (Chester County Planning Commission 2002b) for the approximately 23 square miles of the East Valley Creek watershed, of which about one square mile is in Valley Forge NHP. The stream is subject to frequent and severe flash flooding. The plan would include both a Pennsylvania Act 167 stormwater management study for a watershed-wide approach to preservation and restoration, and a natural stream assessment (fluvial geomorphology study) to identify how well various stream reaches are functioning. The final plan would provide a model stormwater management ordinance for adoption by each municipality in the watershed as well as recommendations for stormwater management and watershed restoration. Further implementation of the plan would directly affect that portion of the creek that is within the park, since Valley Creek empties into the Schuylkill River near Washington's Headquarters.

The Valley Creek Restoration Plan (Valley Creek Watershed Trustee Council 2004) calls for projects to infiltrate stormwater, stabilize stream channels, maintain greenways along the creeks in the watershed, increase access by anglers and other users of the watershed, and restore a population of brook trout in Crabby Creek. To implement stormwater management actions in the plan, the Valley Creek Restoration Partnership formed, comprising environmental groups with active advisory participation from the park, federal, state, and local government, and universities. Successful implementation would dramatically lessen the severe impacts of flash flooding along Valley Creek in the park. This project could potentially impact soils, archeological resources, historic structures, cultural landscapes, and visitor use and experience.

Removal of Underused Parking Lots

This is an existing project to remove four parking lots throughout Valley Forge NHP including: Washington's Upper Parking lot, Huntington's Overlook Parking Area, Conway's Parking Area, and Tower Road and its parking area. Of these parking lots, only Washington's Upper Parking lot is near the study area. This process would consist of removing the asphalt and base beneath it as well as surrounding drainage structure. These areas would then be regraded to their historic contours, and each site would be replanted with appropriate vegetation. This project could potentially impact soils, visual resources, archeological resources, cultural landscapes, visitor use and experience, and operations.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of particular resources. Because some of these cumulative actions are in the early planning stages, the evaluation of cumulative impacts was based on a general description of the project. Cumulative impacts

are considered for all alternatives, and are presented at the end of each impact topic discussion. In defining the contribution of each alternative to cumulative impacts, the following terminology is used:

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

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

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

Impairment

In addition to determining the environmental consequences of the preferred and other alternatives, *NPS Management Policies 2001* (NPS 2000) and DO #12 requires analysis of potential impacts to determine whether actions have the potential for impairment of park resources and values.

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

1. Necessary to fulfill specific purposes identified in establishing legislation or proclamation of the park;
2. Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
3. Identified as a goal in the park's general management plan or other relevant planning documents.

Impairment may result from NPS activities in managing the park, as well as visitor activities or activities undertaken by concessionaires, contractors, and others operating in the park. An impairment determination for all impact topics is provided at the end of this chapter in the "Conclusion" section, with the exception of Visitor Use and Experience, Operations, and Utilities, for which no impairment determination is made.

SOILS

Methodology

All available information on soils potentially impacted in various areas of the park was compiled. Where possible, map locations of sensitive soils were compared with locations of proposed development and modifications of existing facilities. Predictions about short- and long-term site impacts were based on recent studies and previous projects with similar soils. The thresholds of change for the intensity of an impact are defined as follows:

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

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

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

Major: The impacts on soils would be readily apparent and would substantially change the character of the soils over a large area in and out of the park. Mitigation measures to offset adverse impacts would be needed, extensive, and their success could not be guaranteed.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, there would be no new development within the study area. There would continue to be approximately 4.5 acres (198,000 sq.ft.) of impervious surface within the study area. The impervious cover would prevent covered soils from supporting vegetation or absorbing water. It would also compact the soils beneath and immediately adjacent to them. Despite these impervious surface impacts, the existing drainage systems would avoid runoff and erosion problems.

Overall, there would be a **long-term, negligible, adverse impact** to soils.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to soils in and around the study area. These projects include stormwater management and restoration of Valley Creek, and the removal of underutilized parking lots. Stormwater management and restoration of Valley Creek would reduce scouring and erosion. Continual stormwater runoff and flash flooding create high rates of erosion and soil exposure. The work to reduce these conditions and restore the natural streambed would have a long-term, moderate, beneficial impact to soils. Removal of the underutilized upper parking lot would also restore natural soil conditions by removing impervious surface. This project would have a long-term, minor, beneficial impact on soils. These projects, along with Alternative A would have a long-term, minor, beneficial cumulative impact on soils. The No-Action Alternative would contribute an imperceptible, adverse increment to the cumulative impact.

Impacts of Elements Common to the Action Alternatives

Several developments would be made under both Alternative B and C that would have impacts on soils. The first would be the connection of the Joseph Plumb Martin Trail to the Valley Creek Trail. This connection would create an estimated 0.2 acre (8,000 sq.ft.) of new impervious surface. It would, however, remove approximately 2,400 sq.ft. of existing impervious surface. The result would be a net gain of approximately 0.1 acre (5,600 sq.ft.) of impervious surface.

The action alternatives would also remove the north/south access road through the middle of the site. This would result in the removal of an estimated 0.2 acre (9,000 sq.ft.) of impervious surface that could then be planted with native vegetation to support natural soil conditions.

Finally, the removal and/or relocation of several interpretive elements would also impact soils, such as the removal of the Commander in Chief's guard huts and the addition of waysides. The installation of the new domestic water service would also temporarily displace soils, as a trench was dug and the line was constructed. However, upon completion of the trench, most of the displaced soil could be replaced to cover the new line. The remaining soil from these projects could be spread across the study area where impervious cover was being removed.

Impacts of Alternative B (NPS Preferred Alternative)

Alternative B would include the impacts described above, as well as additional development. Overall, this alternative would result in a net reduction of approximately 1.5 acres (64,000 sq.ft.) of impervious surface. An estimated 3.0 acres (134,000 sq.ft.) of impervious surface would remain. Much of this reduction would occur through the removal of the lower parking lot. The removal and/or realignment of existing paths would allow additional area to be regraded and planted to support natural soil conditions. Other removals would include pavement surrounding the huts and lighting fixtures, and the removal of drainage systems. Soil displaced through these activities could be spread across the remainder of the study area or hauled off site to another location.

New impervious surfaces would be installed for the new comfort station, village lane, additional paths and stairs, and new drainage systems. These new structures would block soils from absorbing water or supporting vegetation and may result in the compression of surrounding soils.

Construction of the middle parking lot and installation of new drainage structures would temporarily expose soils that had been covered by impervious surface. These soils would be protected through mitigation efforts described in "Chapter 2: Alternatives" to avoid any impacts. The realignment of the entry driveway to the upper parking lot would also expose soils that had been previously impervious, allowing them to be returned to natural conditions. However, it would also install pavement over areas that had exhibited natural soil conditions. Overall, there would be a net reduction of impervious surface through this realignment.

Additional soil impacts, unrelated to the installation or removal of impervious surface, would also occur. The regrading of paths and the installation of new paths, which would comply with ADA standards, would displace soils as cut and fill methods were used to reduce the slope of these routes. The displaced soil could be spread through other locations within the study area or hauled away. The installation of the

turf area would require the replacement of existing soils with those that could support regular use for parking. Although these soils may have higher rates of absorption and lower rates of compaction than existing soils, they would not alter the overall soil characteristics. Additional impacts would occur through the proposed tree removal and planting, which could temporarily displace soils. Displaced soils could be used to fill the space left by a removed tree or secure the base of a new tree. Finally, connecting the study area to an existing sanitary system would require the installation of subsurface infrastructure. The installation process would require trenching to reach the depth of the existing infrastructure. Once the connection was in place, the displaced soil could be used to fill the trench. Any remaining soils could be spread across the study area.

Based on the net reduction in impervious surfaces, the overall impact to soils under Alternative B would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to soils in the study area are discussed under the "Cumulative Impacts" for Alternative A. Those projects, along with Alternative B, would have a long-term, minor, beneficial cumulative impact on soils. Alternative B would contribute an appreciable, beneficial increment to the cumulative impact.

Impacts of Alternative C

Alternative C would include the "Impacts of Elements Common to the Action Alternatives" described above, as well as additional development. Overall, this alternative would result in a net removal of approximately 1.2 acres (53,000 sq.ft.) of impervious surface, while an estimated 3.4 acres (146,000 sq.ft.) of impervious surface would remain. The reduction in impervious surface would be related to the redesigned lower parking lot, realigned entry drive, and removal of some existing paths. The removal of these surfaces would allow for natural soil conditions to be returned to these locations.

These reductions would be countered by new development that would add impervious surface to the study area. New impervious surfaces would be installed for the new comfort station, village lane, additional paths and stairs, and new drainage systems. These new structures would block soils from absorbing water or supporting vegetation and may result in the compression of surrounding soils.

Realignment of the lower parking lot and installation of new drainage structures would temporarily expose soils that had been covered by impervious surface. These soils would be protected through mitigation efforts described in "Chapter 2: Alternatives" to avoid any impacts. Additional soil impacts, unrelated to the installation or removal of impervious surface, would also occur. The regrading of the entrance and paths would displace soils as cut and fill methods were used to reduce the slope of these routes. The displaced soil could be spread through other locations within the study area. Additional impacts would occur through the proposed tree removal. The removal of existing trees and/or the planting of new trees could temporarily displace soils. Displaced soils could be used to fill the space left by a removed tree or secure the base of a new tree. Finally, the use of the leach field would temporarily displace some soils as the infrastructure was installed. Once the field was in operation, existing soils would be capable of absorbing the output from the system, as they have in the past.

Based on the overall reduction in impervious surfaces, the overall impact to soils under Alternative C would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to soils in the study area are discussed under the Cumulative Impacts" for Alternative A. Those projects, along with Alternative C, would have a long-term, minor, beneficial cumulative impact on soils. Based on the size of the study area compared to the surrounding region, Alternative C would contribute an appreciable, beneficial increment to the cumulative impact.

VISUAL RESOURCES

Methodology

The visual environment is defined as what the visitor sees during the approach to the study area as well as what is seen by the visitor within the study area itself. The quality of the visual environment is a vital resource and is instrumental for improving the visitor experience for the study area and Valley Forge NHP. All available information on viewsheds potentially impacted in the study area of the park was compiled for this document. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impacts to the visual quality of the landscape would be at or below the level of detection, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience.

Minor: Impacts to the visual quality of the landscape would be detectable, although the impacts would be localized and would be small and of little consequence to the visitor experience. Mitigation measures, if needed to offset adverse impacts, would be simple and likely successful.

Moderate: Impacts to the visual quality of the landscape would be readily detectable and localized, with consequences at the regional level including localities, cities, or towns surrounding the park. Mitigation measures, if needed to offset adverse impacts, would be extensive and likely successful.

Major: Impacts to the visual quality of the landscape would be obvious and would have substantial consequences to the visitor experience in the region including localities, cities, or towns surrounding the park. Extensive mitigation measures would be needed to offset any adverse impacts, and their success would not be guaranteed.

Impacts of Alternative A (No-Action)

Under Alternative A, no changes would be made to the study area that would impact visual resources. The lower parking lot would remain in its current location and continue to dominate the visual setting of the study area. The north/south access road would remain and would continue to bisect the interior of the

study area. As a result, visitors would continue to view the study area as two separate entities rather than as a whole. There would be no attempts made to open views to the Schuylkill River, and arriving visitors would have no view of these features from the lower parking lot.

The train station would be used on an as needed basis and not regularly open to the public. The train station platform would remain as is with no cover. While this would not immediately impact visual resources, the building would continue to degrade and maintenance deficiencies would occur that could result in the loss of historic fabric.

The overall impact to visual resources would be **long-term, minor, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to visual resources in and around the study area. These projects include construction of a pedestrian bridge over the Schuylkill River and removal of the underutilized upper parking lot. The pedestrian bridge would place another element into the viewshed. While this structure would be between 500 to 2,500 feet away from the study area, it could potentially be seen from the middle parking lot. As a result, the project would have a long-term, negligible, adverse impact on visual resources. Removal of the underutilized upper parking lot would restore the area to a more natural appearance. This project would have a long-term, minor, beneficial impact on visual resources. These projects, along with Alternative A would have a long-term, negligible, adverse cumulative impact on visual resources. The No-Action Alternative would contribute an imperceptible, adverse increment to this cumulative impact.

Impacts of Elements Common to the Action Alternatives

Under the action alternatives, several elements would remain constant. These include rehabilitation of the train station, placement of interpretive elements, removal of the north/south access road, connection of the Joseph Plumb Martin Trail to the Valley Creek Trail, and removal and relocation of the Commander-in-Chief's guard huts. Rehabilitation of the train station would have a minor impact on visual resources as it would create a more visually pleasing building particularly through exterior changes that would enhance the details and improve the overall appearance of the building. Visitor and interpretation elements would also be added to the study area. Most of the signage, including placement of the Marquee and the hardscape treatment at the dining cabin would be situated in areas where they would not take away from visual resources. The features are intended, however, to enhance visitor understanding of the study area. The removal of the north/south access road would eliminate the visual intrusion of vehicles moving through the middle of the study area. Revegetation of the road would unify the space.

Impacts of Alternative B (NPS Preferred Alternative)

In addition to the "Impacts of Elements Common to the Action Alternatives," Alternative B would enhance the visual environment through rehabilitation of the study area to a late 19th century landscape. The most obvious visual intrusion, the lower parking lot, would be removed and replaced with native vegetation. Further, vegetation management would also enhance the visual quality and unity of the study area. Trees would be pruned or removed, three orchard blocks, and meadow grasses would be planted. This alternative would also allow for vista management on the slope adjacent to the redesigned, middle

parking lot. This would open a view to the Schuylkill River and establish a visual connection between the study area and the river.

Further, by entering the study area from above, the site is allowed to unfold for visitors in a classic sense of arrival. The universally accessible ramp from the western edge of the train station platform would add another element to the visual landscape, but because stairs were present in this location, this ramp would only minimally alter the view of the study area. The path from the middle parking lot to the train station would be graded in such a way that it would not be visible from the interior of the study area.

The train station platform cover under Alternative B would be rebuilt to its full, historic length, which would enhance the train station by returning it to its historic appearance.

The new comfort station would place another building within the study area landscape. However, this would be away from the interior of the study area. Therefore, this would only minimally impact visual resources. Utilities would be underground, and the HVAC system equipment woul d be houses inside the train station.

The overall impact to visual resources would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to visual resources in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative B, would have a long-term, negligible, adverse cumulative impact to visual resources. Alternative B would contribute a noticeable, beneficial increment to the cumulative impact.

Impacts of Alternative C

Under this alternative, the "Impacts to Elements Common to the Action Alternatives" would be included, as described above. Visually, the study area landscape would be modified to represent a 1915 plan, where possible. The middle parking lot would remain in its current configuration, while the lower parking lot would be scaled back to approximately one-third of its original size. While this would reduce that amount of asphalt on the landscape, it would not completely remove the visual intrusion of parked vehicles. Vehicles would still park in this lot, further adding to the visual intrusion as visitors experience the study area.

Pruning or removing certain trees would occur, and a 50-tree orchard would be established east of Potts Barn. A second 50-tree orchard would be placed surrounding a sculpture of George Washington, and most of the interior of the study area would be planted with meadow grasses. Vegetation management would unify the study area, making it understandable to visitors. No vista management would occur under this alternative. However, additional trees would be planted to screen the view of State Route 23 from the lower parking lot and vice versa. This would create a visual buffer around the study area and reduce the amount of traffic seen from the interior of the study area.

As in Alternative B, the universally accessible ramp from the western edge of the train station platform would add another element to the visual landscape. Because stairs have been in this location, this ramp would only minimally alter the view of the study area. Further, because visitors would begin their experience on the same level as the buildings, a view of the entire study area would not be available and visitors may tend to focus on individual buildings rather than the study area as a whole.

The train station platform cover under Alternative C would be restored to its full, historic length, as in Alternative B. This would enhance the station by returning it to its historic appearance. It would also introduce a row of double columns to the cover, which was historically present.

The new comfort station would place another building within the landscape, as in Alternative B. However, under this alternative, the new building would be adjacent to the lower parking lot.

The leach field would make no change to the landscape and HVAC system would not impact visual resources as most of the equipment for the HVAC system would be placed inside the train station. Any equipment outside would be placed on the roof of the train station directly behind the north gable and would not be readily visible.

The overall impact to visual resources would be **long-term, minor, and adverse**. It would also be **long-term, minor, and beneficial**, as the lower parking lot would be reduced to one-third its original size and the landscape would be improved.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to visual resources in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term, negligible, adverse cumulative impact to visual resources. Alternative C would contribute an imperceptible, beneficial increment to the cumulative impact.

CULTURAL RESOURCES

The CEQ regulations that implement NEPA require assessment of impacts to cultural resources as well as natural resources. In this EA/AOE, impacts to cultural resources are described in terms of type, context, duration, and intensity, as described above, which is consistent with CEQ regulations. These impact analyses are intended, however, to comply with the requirements of both NEPA and Section 106 of the NHPA. In accordance with the ACHP regulations implementing Section 106 of the NHPA (36 CFR Part 800 *Protection of Historic Properties*), impacts to cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that were either listed on or eligible for listing on the National Register; (3) applying the criteria of adverse effect to affected cultural resources either listed on or eligible for listing on the National Register; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the ACHP's regulations, a determination of either *adverse effect* or *no adverse effect* must also be made for affected, National Register listed or eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register, e.g. diminishing the integrity (or the extent to which a resource

retains its historic appearance) of the resource's location, setting, design, feeling, association, workmanship, or materials. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR Part 800.5 *Assessment of Adverse Effects*). A determination of *no adverse effect* means that there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

CEQ regulations and NPS DO #12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* also call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Cultural resources are non-renewable resources, and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resources that can never be recovered. Therefore, although actions determined to have an adverse effect under Section 106 may be mitigated, the effect remains adverse.

A Section 106 summary is included in the impact analysis sections for cultural resources under the action alternatives. The Section 106 summary is intended to meet the requirements of Section 106 and is an assessment of the effect of the undertaking (implementation of the alternative) on cultural resources, based upon the criteria of effect and the criteria of adverse effect found in the ACHP regulations.

Archeological Resources

Methodology

For purposes of analyzing impacts to archeological resources, thresholds of change for the intensity of an impact are based upon the potential of the site to yield information important in pre-contact Native American history or history, as well as the probable historic context of the affected site. The intensity thresholds are defined as follows:

Negligible: Impact is at the lowest level of detection with neither adverse nor beneficial consequences. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

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

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

Moderate: Adverse impact – Disturbance of a site (s) results in loss of integrity. For the purposes of Section 106, the determination of effect would be *adverse effect*. A Memorandum of Agreement (MOA) is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the ACHP in accordance with 36 CFR 800.6(b). Beneficial impact – Stabilization of a site(s). For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Major: Adverse impact – Disturbance of a site(s) results in loss of integrity. For the purposes of Section 106, the determination of effect would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or ACHP are unable to negotiate and execute a MOA in accordance with 36 CFR 800.6(b).

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

Impacts of Alternative A (No-Action)

Under Alternative A, no project-related ground disturbance would occur that would result in disturbance of known archeological resources. Continued visitor use would not impact known archeological resources.

Overall, there would be **no impact** to archeological resources under Alternative A.

Cumulative Impacts

Because Alternative A would have no impact on archeological resources no cumulative impact analysis is required.

Impacts of Elements Common to the Action Alternatives

Several elements are common to the action alternatives. Most of these have the potential to impact known and unknown archeological resources. The connection of the Joseph Plumb Martin Trail with the Valley Creek Trail would require ground-disturbing activities and re-grading of the study area, particularly near the David Potts House for the placement of the waiting area to cross State Route 23. Removal of the north/south access road would also require ground disturbance and re-grading. Placement of interpretive elements and removal and relocation of the huts would also have the potential to impact archeological resources. Ground disturbance would occur with the installation of new interpretive elements throughout the study area. These would be designed to avoid known archeological resources. A number of 19th century structures are known to have existed in the study area. Precautions would be taken to avoid identified archeological resources in the study area. Removal and relocation of the huts would require ground disturbance as the foundations were removed from their current location. Two of the huts would be placed near a new path, which would require minimal ground disturbance to level the ground in preparation for the concrete slab foundation placement.

The rehabilitation of the train station would have no impact on archeological resources, as it requires no ground-disturbing activities.

Impacts of Alternative B (NPS Preferred Alternative)

In addition to the "Impacts of Elements Common to the Action Alternatives," under Alternative B the lower parking lot would be completely removed. The middle parking lot would be reconfigured over half of the existing middle lot, although the size would remain consistent with the current size. In addition, a path would be constructed between the middle parking lot and train station for universal accessibility. A second path would be created at the western edge of the train station platform for universal accessibility into the study area. A number of 19th century structures are known to have existed in the study area. As such, impacts to archeological resources would occur during the pavement removal and regrading process. While park maps show that a portion of the middle lot had been previously graded for use as a parking lot, there is still potential for archeological resources to exist. Further, there is also potential for Revolutionary War-era resources within the slope between the train station and the middle parking lot, as no development has occurred in this area.

Vista management under this alternative, as well as tree removal and planting within the study area, also has the potential to impact archeological resources. Stabilization of the slope and removal of trees would require ground-disturbance. However, this area has been heavily disturbed by the construction of the railroad and therefore any archeological resources would have been previously disturbed. Temporary ground disturbance would occur with tree removal and plantings..

Construction of the new comfort station could also impact archeological resources, as it is adjacent to the redesigned middle parking lot and within a sensitive archeological area. Although the size of the building is relatively small (28 feet by 34 feet), this would moderately impact archeological resources particularly through the placement of plumbing underneath the foundation. Construction of the new sanitary sewer system would also impact archeological resources as it would require trenching of new lines and an underground connection to the existing water main.

As neither the train station platform cover of HVAC system would involve ground disturbance, they would not impact archeological resources. The train station platform cover would be constructed on the existing concrete platform, and the new HVAC equipment would be placed inside the building.

At this time, the nature and extent of impacts to archeological resources by these elements cannot be determined. An archeological investigation is being conducted under the terms of the MOA (see Appendix B). Much of the area has not been formally investigated for archeological resources. Prior to construction activities, a program for the identification and evaluation of archeological resources would be conducted. Further, the NPS would ensure that in-place preservation of archeological resources is provided for. During construction, known archeological resources would be avoided to the greatest extent possible. If archeological resources cannot be avoided during construction, the excavation, recordation, and mapping of any substantial cultural remains would be completed prior to construction, to ensure that important archeological data that otherwise would be lost is recovered and documented.

The overall impact to archeological resources would be **long-term, moderate, and adverse**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B would have an ***adverse effect*** on archeological resources. A MOA was negotiated and prepared in consultation with the Pennsylvania SHPO and is attached here in Appendix B. The NPS would continue consultations with the Pennsylvania SHPO, in accordance with the MOA, throughout implementation of this alternative.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to archeological resources in and around the study area. These projects include stormwater management and restoration of Valley Creek and removal of the underutilized upper parking lot. Implementation of stormwater management and restoration of Valley Creek would have a long-term, moderate, adverse impact to archeological resources, as the existing silt that has built up would be removed during this process. The upper parking lot to be removed has been surveyed for archeological resources and no pre-contact Native American historic or historic resources were discovered. These projects, along with Alternative B would have a long-term, moderate, adverse cumulative impact on archeological resources. Alternative B would contribute a noticeable, adverse cumulative impact.

Impacts of Alternative C

Under this alternative, the "Impacts to Elements Common to the Action Alternatives" would occur. Also under this alternative, the lower parking lot would be reduced to one-third of the current size. This would require removal of asphalt and regrading. Further, the entry road would be altered to improve the intersection of the lower parking lot with State Route 23.

The paths would o be altered under this alternative, and select tree removal and replanting would occur. Regrading would occur as the paths were removed and new paths established. In addition, vista management, as well as tree planting and removal, would occur across the study area, which could impact archeological resources. Trees would be planted to screen the lower parking lot from State Route 23; a portion of these trees would be planted in previously undisturbed areas. Temporary ground disturbance would occur with tree removal and plantings.

Construction of the new comfort station could also impact archeological resources as it would require ground disturbing activities. Although the size of the building is relatively small (28 feet by 34 feet), this action would moderately impact archeological resources particularly through the placement of plumbing underneath the foundation. Impacts to archeological resources would be negligible as the new leach field would be located in the vicinity of an abandoned leach field.

As in Alternative B, the train station platform cover and HVAC system would not impact archeological resources. The platform cover would be constructed on the existing concrete platform and no ground disturbing activities would occur. The new HVAC system would also require no ground disturbing activities as most of the equipment would be placed inside the building. Any equipment required to be outside would be placed on the roof of the building and therefore not require any ground disturbance.

Similar to Alternative B, at this time, the nature and significance of impacts to archeological resources by these elements cannot be determined. Much of the area has not been formally investigated for archeological resources. Prior to construction activities, a program for the identification and evaluation of archeological resources would be conducted. Further, the NPS would ensure that in-place preservation of archeological resources is provided for. During construction, known archeological resources would be avoided to the greatest extent possible. If archeological resources could not be avoided during construction, the excavation, recordation, and mapping of any substantial cultural remains would be completed prior to construction, to ensure that important archeological data that otherwise would be lost is recovered and documented.

The overall impact to archeological resources would be **long-term, moderate, and adverse**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative C would have an ***adverse effect*** on archeological resources. A MOA was negotiated and prepared in consultation with the Pennsylvania SHPO and is attached here in Appendix B. The NPS would continue consultations with the Pennsylvania SHPO, in accordance with the MOA, throughout implementation of this alternative.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to archeological resources in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term, moderate, adverse cumulative impact to archeological resources. Alternative C would contribute a noticeable, adverse increment to the cumulative impact.

Historic Structures

Methodology

For purposes of analyzing potential impacts to historic structures/buildings, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) is at the lowest level of detection, with neither adverse nor beneficial consequences. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Adverse impact – Alteration of a feature(s) would not diminish the overall integrity of the resources. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Beneficial Impact – Stabilization/preservation of character-defining features in accordance with the *Secretary of the Interior Standards for the Treatment of Historic Properties*. For the purposes of Section 106, the determination of effect would be *no adverse effect.*

Moderate: Adverse impact – Alteration of a feature(s) would diminish the overall integrity of the resource. For the purposes of Section 106, the determination of effect would be *adverse effect*. A MOA is executed among the NPS and applicable state and/or tribal historic preservation offices and if necessary, the ACHP in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.

Beneficial impact – Rehabilitation of a structure or building in accordance with the *Secretary of the Interior Standards for the Treatment of Historic Properties*. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Major: Adverse impact - Alteration of a feature(s) would diminish the overall integrity of the resource. For the purposes of Section 106, the determination of effect would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state and/or tribal historic preservation officer and/or the ACHP are unable to execute a MOA in accordance with 36 CFR 800.6(b).

Beneficial impact – Restoration of a structure of building in accordance with the *Secretary of the Interior Standards for the Treatment of Historic Properties*. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Impacts of Alternative A (No-Action)

Under Alternative A, Valley Forge NHP would continue efforts to preserve historic structures. No project-related construction would take place that would impact historic structures, and maintenance and preservation would continue as funding became available. Because completion of repairs to the train station would be prolonged, there would be potential for further building deterioration. This deterioration could continue to the point that the integrity of the character-defining features of the building is diminished and historic fabric is lost. Further, because no rehabilitation would occur, the building would not be opened to the public on a regular basis and it would continue to be an underutilized space. As a result, the wear and tear on Washington's Headquarters g would continue as this would be one of the only buildings open to the public in the study area. This could result in damage to the National Historic Landmark as visitors continually entered and exited.

The overall impact to historic structures would be **long-term, moderate, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to historic structures in and around the study area. These projects include stormwater management and restoration of Valley Creek. Implementation of stormwater management and restoration of Valley Creek would help to preserve historic structures, as it would reduce the potential of flooding in the study area. This would result in a long-term, minor, beneficial impact to historic structures. This project, along with Alternative A would have a long-term, negligible, beneficial cumulative impact on historic structures. The No-Action Alternative would contribute a noticeable, adverse increment to this cumulative impact.

Impacts of Elements Common to the Action Alternatives

The proposed rehabilitation of the train station would include exterior repairs; roof repairs; interior repairs; and water service, electric, and telephone upgrades. All of these would be designed to maximize preservation of historic fabric and minimize visual intrusion. All work would conform to the *Secretary of the Interior Standards for the Treatment of Historic Properties*. Exterior repairs to the train station include painting woodwork, re-pointing of approximately 150 linear feet of mortar, stucco painting, window bar painting and replacement, and restoration of wood columns and stone plinths. The entire slate roof would be replaced in-kind as would the membrane roof. Associated repairs would also be made to ensure success of the new roofs. These actions would rehabilitate the exterior character-defining features of the building that convey its architectural significance and aid in its ability to contribute to the historic district.

Interior repairs consist of replacing doors and adding interior storm windows, as well as repainting. Although the interior configuration would remain relatively intact, additional changes would be made to create a visitor area and staff support space in the train station. This would include making the existing restroom universally accessible. Most of the proposed interior renovations would not affect the exterior, physical features of the building necessary to convey its architectural significance. These renovations would also reduce damage to Washington's Headquarters as it would offer another building open to the public on a regular basis for visitor interpretation.

The installation of a fire sprinkler system could impact the interior fabric through the routing of conduit and piping through existing walls, ceilings, and floors, and installation of outlets for sprinkler heads in the walls and/or ceilings. This would contribute to the preservation of the structure however by preventing fire damage. Installation of electrical and telephone upgrades would utilize existing conduits and wall placements where possible. All lighting fixtures would be reused where possible or placed in the same location where feasible. Some installation of security equipment and lighted exit signage would also be necessary. This would contribute to the preservation of the structures also by preventing occurrences of vandalism and theft, and providing emergency egress.

While most of the interpretive elements proposed for the study area would not impact historic structures, several are associated with historic structures. A multi-media presentation would be constructed within the train station. However, this would consist of removable elements and would not alter the interior or exterior of the train station. Interpretive elements are also proposed at Washington's Headquarters. This would alter existing interpretive elements within the building but would not alter the building itself. Flexible program space is also proposed within Washington's stables. Again, this would not alter the exterior of the building but would change the non-historic interior configuration. The connection of the Joseph Plumb Martin Trail to the Valley Creek Trail and removal of the north/south access road would not impact historic structures. The removal and relocation of huts would not impact historic structures as these are considered non-historic structures.

Impacts of Alternative B (NPS Preferred Alternative)

In addition to the "Impacts of Elements Common to the Action Alternatives," Alternative B would reconfigure the middle parking lot, reconstruct the train station platform cover, construct a new comfort station, install a new sanitary sewer connection, and new HVAC system. Of these activities, the platform

cover, new comfort station, and HVAC system would impact historic structures. By installing a full length platform cover, this alternative would enhance the train station and return it to its original appearance. However, this would be a freestanding cover rather than attached to the building. It would also be constructed of contemporary materials rather than in-kind material. While this would place a contemporary element on a historic structure, it would reduce the potential fire hazard as it would not be made of wood.

The new comfort station would not impact historic structures. The changes made to existing restrooms in the Potts Barn would alter the interior floor plan of this historic structure; however, the interior of this building has been previously altered to construct the restroom initially. Therefore, the building has lost any integrity it might have possessed. There would however be a new door constructed and a new window constructed to replace one of the doorways being eliminated. As the new HVAC system equipment would be placed in the basement, no exterior alterations would be required.

The overall impact would be **long-term, minor, and beneficial**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B would have a ***no adverse effect*** on historic structures. However, due to the potential for adverse effects to archeological resources under this alternative, the determination of effect for the entire undertaking is adverse. A MOA was negotiated and prepared in consultation with the Pennsylvania SHPO and is attached here in Appendix B. The NPS would continue consultations with the Pennsylvania SHPO, in accordance with the MOA, throughout implementation of the alternative.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to historic structures in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative B, would have a long-term, minor, beneficial cumulative impact to historic structures. Alternative B would contribute a noticeable, beneficial increment to the cumulative impact.

Impacts of Alternative C

In addition to the "Elements Common to the Action Alternatives," the impacts to historic structures under Alternative C would be similar to those under Alternative B.

The overall impact would be **long-term, minor, and beneficial**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative C would have a ***no adverse effect*** on historic structures. However, due to the potential for adverse effects to archeological resources under this alternative, the determination of effect for the entire undertaking is adverse. A MOA

was negotiated and prepared in consultation with the Pennsylvania SHPO and is attached here in Appendix B. The NPS would continue consultations with the Pennsylvania SHPO, in accordance with the MOA, throughout implementation of the alternative.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to historic structures in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term, minor beneficial cumulative impact to historic structures. Alternative C would contribute a noticeable, beneficial increment to the cumulative impact.

Cultural Landscapes

Methodology

For the purposes of analyzing potential impacts to cultural landscape, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) is at the lowest level of detection with neither adverse nor beneficial consequences. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the landscape. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Beneficial impact – Preservation of landscape pattern(s) or feature(s) in accordance with the *Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For the purposes of Section 106, the determination would be *no adverse effect*.

Moderate: Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape. For the purposes of Section 106, the determination of effect would be *adverse effect*. A MOA is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the ACHP in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity under NEPA for major to moderate.

Beneficial impact – Rehabilitation of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes*. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Major: Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape. For the purposes of Section 106, the determination of effect would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or ACHP are unable to negotiate and execute a MOA in accordance with 36 CFR 800.6(b).

Beneficial impact – Restoration of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Impacts of Alternative A (No-Action)

Under Alternative A, the lower parking lot would remain in its current location and configuration. This would continue to pose a modern intrusion on the cultural landscape. There would also be no attempt to open views to the Schuylkill River under this alternative. No connection would be made between the Joseph Plumb Martin Trail and the Valley Creek Trail. The Joseph Plumb Martin Trail would continue to terminate in the study area. Because the north/south access road would remain, the study area would continue to feel bisected and would pose an intrusion on the landscape. The Commander-in-Chief's huts would also remain in their current location and configuration and no attempts would be made to further interpret the cultural landscape of the study area. Current topography would also remain as is and no attempt would be made to restore the historic contours of the study area.

No changes to the cultural landscape would result from retaining the train station, comfort station in Potts Barn, sanitary system, and HVAC system in the train station.

The overall impact to cultural landscapes would be **long-term, minor, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to cultural landscapes in and around the study area. These projects include stormwater management and restoration of Valley Creek and removal of the underutilized upper parking lot. Implementation of stormwater management and restoration of Valley Creek would help to preserve the current stream alignment as well as resources such as Washington's Headquarters. This would result in long-term, moderate, beneficial impacts to cultural landscapes. The removal of the upper parking lot would remove intrusions on the cultural landscapes as the parking lot currently impedes on the cultural landscape of Valley Forge NHP. This would result in long-term, minor, beneficial impacts to cultural landscapes. These projects, along with Alternative A would have a long-term, negligible, beneficial cumulative impact on cultural landscapes. The No-Action Alternative would contribute an noticeable, adverse increment to this cumulative impact. The reduction in cumulative beneficial impacts to cultural landscapes results from the adverse impact of the No-Action Alternative.

Impacts of Elements Common to the Action Alternatives

Several elements common to the action alternatives would have the potential to impact cultural landscapes. While the rehabilitation of the train station would not place a new structure in the landscape, it would enhance the cultural landscape through improving the appearance of the train station. New interpretive elements would provide for better interpretation of the cultural landscape of the study area. The introduction of hardscape treatments such as the Marquee and the boundaries of the dining cabin would further enhance the encampment era cultural landscape. These elements are known to have existed during the encampment and would be placed in their approximate known locations. While the interpretive elements would place new structures into the cultural landscape, they would be designed to have a minimal visual and physical impact on the character-defining features of the cultural landscape. The removal of the north/south access road would eliminate a visual intrusion on the cultural landscape by removing vehicles moving through the site. The connection of the Joseph Plumb Martin Trail to the Valley Creek Trail, and other redesigned paths would result in grading to match the surrounding topography. These changes would require cut and fill work that would not be noticeable once they were complete. Similarly, the installation of huts and new interpretive elements may require grading to create a level surface capable of supporting the structures. The change in the immediate topography would be immeasurable in relation to the overall study area.

Impacts of Alternative B (NPS Preferred Alternative)

In addition to the "Impacts of Elements Common to the Action Alternatives," under Alternative B, the lower parking lot would be removed and parking would be relocated to the middle parking lot. This would remove a large intrusion on the cultural landscape. As a result, cars would no longer park in the interior of the study area further enhancing the cultural landscape. Once the lower parking lot was removed, cut, fill, and grading would be used to return the landscape to its historic contours. Additional work would be done to create an appropriately graded surface for the redesigned, middle parking lot, trails, and stairs. Vegetation removal and replanting under this alternative would rehabilitate the study area to a late 19th century view of the site consistent with the early commemorative cultural landscape. Select pruning and removal of approximately 88 trees would serve to rehabilitate the commemorative landscape. Three orchard blocks would replace these trees, also consistent with the commemorative landscape. Finally, vista management would open a view to the Schuylkill River enhancing the cultural connection between the study area and the river.

By entering the site from the middle parking lot, the site is allowed to unfold for visitors and they can focus on the site as whole rather than being at eye level with the buildings and focusing on them individually. The universally accessible ramp from the western edge of the train station platform would add another modern element to the cultural landscape, but this also is intended to aid visitors in their experience of the study area. Because stairs have been in this location, this ramp would only minimally alter the cultural landscape of the study area.

The train station platform cover would be extended to its full, historical length under this alternative. While the cover would be made of contemporary material, it would restore the rhythm of spatial organization, quality, and scale of the original platform cover.

The new comfort station would place another modern building into the cultural landscape. However, this would be adjacent to the middle parking lot and out of the interpretive landscape of the study area. It would however require grading that would be confined to the immediate area of the comfort station avoiding alterations to the regional topography. Therefore, it would only negligibly impact the cultural landscape. The sewer connection would occur underground and would therefore not be visible. Most, if not all, of the equipment for the HVAC system would be housed inside the train station.

The overall impact to cultural landscapes would be **long-term, moderate, and beneficial**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B would have a ***no adverse effect*** on cultural landscapes. However, due to the potential for adverse effects to archeological resources under this alternative, the determination of effect for the entire undertaking is adverse. A MOA was negotiated and prepared in consultation with the Pennsylvania SHPO and is attached here in Appendix B. The NPS would continue consultations with the Pennsylvania SHPO, in accordance with the MOA, throughout the implementation of the alternative.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to cultural landscapes in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative B, would have a long-term, minor, beneficial cumulative impact to cultural landscapes. Alternative B would contribute a noticeable, beneficial increment to the cumulative impact.

Impacts of Alternative C

Under this alternative, the "Impacts to Elements Common to the Action Alternatives" would occur. In addition, the middle parking lot would remain in its current configuration, while the lower parking lot would also remain and would not be returned to its historic contours. However, it would be scaled back to encompass approximately one-third of the size of the current lot. This would include grading to support the new design. While this would reduce the amount of asphalt on the landscape, it would not completely remove the intrusion. Vehicles would still park in this lot further adding to the intrusion as visitors experience the study area. Vegetation removal and replanting under this alternative would create a landscape consistent with the commemorative period of the study area. To replace the trees removed, a 50-tree orchard would be established east of Potts Barn. A second 50-tree orchard would be placed surrounding a sculpture of George Washington. Most of the interior of the study area would be planted with meadow grasses. All of these new plantings would attempt to unify the study area, making it understandable by visitors. No formal vista management would occur under this alternative. However, additional trees would be planted to screen the view of State Route 23 from the lower parking lot. This would create a visual buffer around the study area and reduce the amount of traffic seen from the interior of the study area.

Paths would also change under this alternative. However, because visitors would begin at the lower parking lot, the cultural landscape would remain confusing. The interpretive elements and overall introduction to the study area is at the train station and this would not be the first element encountered from the lower parking lot. As in Alternative B, the universally accessible ramp from the western edge of the train station platform would add another modern element to the cultural landscape, but this also is intended to aid visitors in their experience of the study area. Because stairs have been in this location, this ramp would only negligibly alter the cultural landscape of the study area. Further, because visitors would begin their experience on the same level as the buildings, a view of the entire study area would not be available and visitors may tend to focus on individual buildings rather than the study area as a whole.

The train station platform cover under Alternative C would be extended to its full, historical length as in Alternative B. This would enhance the station by returning it to its historic appearance and restoring the rhythm of spatial organization, quality, and scale of the original platform cover. It would also introduce a row of double columns to the cover, which was historically present. However, the use of in-kind material could cause confusion between what is historic and what is new construction.

The new comfort station would place another building within the landscape as in Alternative B. However, under this alternative, the new building would be adjacent to the lower parking lot and therefore within the cultural landscape.

The leach field would make no change to the cultural landscape and HVAC system would not impact the cultural landscape. Most of the equipment for the HVAC system would be placed inside the train station. Any equipment outside would be placed on the roof of the train station directly behind the north gable and would not be readily visible.

The overall impact to cultural landscapes would be **long-term, negligible, and beneficial**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative C would have a ***no adverse effect*** on cultural landscapes. However, due to the potential for adverse effects to archeological resources under this alternative, the determination of effect for the entire undertaking is adverse. A MOA was negotiated and prepared in consultation with the Pennsylvania SHPO and is attached here in Appendix B. The NPS would continue consultations with the Pennsylvania SHPO, in accordance with the MOA, throughout the implementation of the alternative..

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to cultural landscapes in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term negligible, beneficial cumulative impact to cultural landscapes. Alternative C would contribute an imperceptible beneficial increment to the cumulative impact.

VISITOR USE AND EXPERIENCE

Methodology

NPS Management Policies 2001 (NPS 2000) states that enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy parks. Past interpretive and administrative planning documents provided background on changes to visitor use and experience over time. Anticipated impacts to visitor use and experience were analyzed using information from Valley Forge NHP studies. Based on these findings, the following intensity levels were developed:

Negligible: Changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the impacts associated with the alternative.

Minor: Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be slightly aware of the impacts associated with the alternative.

Moderate: Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the impacts associated with the alternative and would likely be able to express an opinion about the changes.

Major: Changes in visitor use and/or experience would be readily apparent and would be severely adverse or exceptionally beneficial. The visitor would be aware of the impacts associated with the alternative and would likely express a strong opinion about the changes.

Impacts of Alternative A (No-Action)

Under Alternative A, no changes would be made to the visitor experience within the study area. Handicap parking would remain in its current location. No interpretive facilities would be added to the study area under this alternative and the message would continue to remain unclear. There is also a mixed message of what is historic and what is not. Further, visitors would still face confusion in which way to go and, which building is actually Washington's Headquarters. Little signage within the site add to this confusion. Washington's Headquarters would continue to serve as the only interpretive experience within the study area and would remain inaccessible for some visitors.

The lower parking lot would continue to meet State Route 23 at a hazardous intersection, creating difficulties for visitors entering and exiting the study area. Also, because State Route 23 borders the study area, the constant flow of vehicles creates traffic noise that can detract from the experience of the study area. Recreational users, particularly bicyclists, would continue to use the study area and the paved paths to reach other areas of the park. Without a connection between the Joseph Plumb Martin Trail and the Valley Creek Trail, bicyclists would still distract visitors as they enter the study area and then try to determine which way to go. The north/south access road would continue to be a distraction to visitors under this alternative. The road bisects the study area and creates pedestrian and vehicular conflicts as

visitors circulate through the study area. However, the north/south access road would allow visitors another option for exiting the study area.

Under this alternative, the train station would remain as is and used only occasionally and nothing would be done to the train station platform. This would leave Washington's Headquarters as the primary building open to the public for interpretation. By leaving the train station platform as is, visitors would have no covered space within the study area to gather.

Under this alternative, the comfort station would remain in the Potts Barn with no upgrades made. Because the existing restroom is undersized for the study area capacity, long lines would continue to form, particularly when tour or bus groups arrive. The existing restroom under this alternative is not ADA accessibile

No changes would be made to the sanitary system or HVAC system resulting in no changes to visitor use and experience.

The overall impact would be **long-term, moderate, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute cumulative impacts to visitor use and experience at the study area. These projects include traffic calming measures on State Routes 23, stormwater management and restoration of Valley Creek, and removal of the underutilized upper parking lot. Traffic calming measures would reduce the high-speed traffic on State Route 23 at the southern end of the study area. This would aid in visitors entering and exiting the lower parking lot from State Route 23. Traffic calming measures would also make the intersection of State Routes 23 safer for visitors accessing the study area on foot or bicycle. These improvements would result in long-term, minor, beneficial impacts to visitor use and experience. Implementation of stormwater management and restoration of Valley Creek would help to preserve resources for future visitor use. It would also enhance recreational opportunities of the creek by increasing access by anglers and other users of the watershed. This would result in long-term, minor, beneficial impacts to visitor use and experience. Removal of the underutilized upper parking lot would reduce visual distractions and provide a more natural setting for visitors to enjoy. This would result in long-term, minor, beneficial impacts to visitor use and experience. These projects, along with Alternative A, would have a long-term, minor, beneficial cumulative impact on visitor use and experience. The No-Action Alternative would contribute a noticeable, adverse increment to this cumulative impact.

Impacts of Elements Common to the Action Alternatives

Several elements common to the action alternatives would impact visitor use and experience. Rehabilitation of the train station would provide an orientation for visitors to gain a better understanding of the train station and more importantly an overall introduction to the study area. This would also create a space for visitors who could not experience Washington's Headquarters to feel a part of the study area. Because the train station would be universally accessible, all visitors would have the opportunity view the exhibits within the train station. This would also increase visitor choice at the study area, as several buildings would be open to the public rather than just Washington's Headquarters, which is not universally accessible.

Placement of the interpretive elements would greatly enhance visitor experience at the study area. By placing the various interpretive elements around the study area, visitors would have a better understanding of what the study area encompasses and the stories of the study area itself. The elements would provide a broader range of experiences for visitors to partake, including several multimedia experiences. In addition, confusion would be eliminated because the interpretive elements would provide a clear route to follow through the study area, while still providing options for visitors who did not want to participate in every stop.

The removal of the north/south access road through the middle of the site would eliminate pedestrian and vehicular conflicts as visitors moved through the study area.. This would also remove an intrusion for visitors trying to experience the study area. However, the removal of the north/south access road would also remove a second means of exit from the study area. The Joseph Plumb Martin Trail connection with the Valley Creek Trail would allow bicyclists to connect to other areas of Valley Forge NHP from the study area. This would also eliminate confusion from bicyclists reaching the study area and not knowing how to access other areas of the park.

Removal and relocation of the huts would negligibly impact visitor use and experience. This would eliminate two of the huts from this area of the park; however, the remaining two huts would provide adequate interpretation of Washington's guards.

Impacts of Alternative B (NPS Preferred Alternative)

In addition to the "Impacts of Elements Common to the Action Alternatives," the lower parking lot would be removed and the middle lot would be reconfigured. Handicapped parking would be accommodated in the middle lot as well as through either a drop off or parking area adjacent to the train station. This would further eliminate visitor confusion, as there would be a clear entry and exit into the study area. Universally accessible paths leading from the middle parking lot to the train station would provide visitors with their first glance of Washington's Headquarters, providing an overall view of the study area.. However, these paths would be long in order to accommodate ADA compliance. The changes in circulation paths within the interior of the study area would also reduce visitor confusion upon entering the study area. These paths would be designed to allow visitors to move through the study area and would present a clear path for visitors to use to get from one interpretive element to the next.

The enhancement of the landscape through select tree removal and planting would also open up the study area to visitors. The landscape alterations would allow for other stories, such as the commemoration of Washington's Headquarters to be fully explained to visitors. The river overlook would provide a place for visitors to view the river and begin to understand the relation of the river to Washington's Headquarters. This area also provides a space for visitors to regroup prior to entering the study area.

The train station platform cover would be restored to its full, historic length under this alternative. Not only would this enhance the overall perception of the train station, it would also provide a clear entry into the newly opened train station. This platform would also help direct visitors from the train station to the universally accessible ramp and stairway leading into the study area. This cover would also allow visitors to gather under cover while waiting to enter the train station and could be used as protection from inclement weather. Because this alternative would use a single row of columns to support the cover, more usable space would be available for visitors to congregate.

The new comfort station under this alternative would be constructed adjacent to the redesigned middle parking lot. This restroom would accommodate the carrying capacity of the study area, thus reducing wait time for visitors wanting to use the facility. The current restroom facility in Potts Barn would be modified and available for secondary use, as would the restroom in the train station. Visitors who do not want to return to the comfort station in the middle parking lot may experience longer wait times at the secondary facilities.

The upgraded HVAC system would allow for both heat and air conditioning in the train station. This would improve visitor experience, as previously no air-conditioned spaces were available at the study area. The sanitary system would not impact visitor use and experience.

The overall impact to visitor use and experience would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to visitor use and experience in this area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative B, would have a long-term, moderate, beneficial cumulative impact on visitor use and experience. Alternative B would contribute a noticeable, beneficial increment to the cumulative impact.

Impacts of Alternative C

Alternative C would include the "Impacts of Elements Common to the Action Alternatives," as described above. In addition, the lower parking lot would be reduced to approximately one-third of its current size and include handicapped parking. The configuration of the lower parking lot would also require buses to go through the parking lot twice, which would add to the potential for pedestrian and vehicle conflicts. Because the lower parking lot would remain, visitors would still be required to use the existing intersection to exit onto State Route 23. While the intersection and sight lines would be improved, it could still be difficult for visitors to exit the study area, particularly during rush hour traffic.

Because visitors would enter the study area from the lower parking lot, there would still be some confusion as to the layout of the study area. The train station would be the start of the visitor experience for the study area; however under this alternative it would not be the first element encountered. In addition, because of the distance between the train station and the lower parking lot, there may be some visitors who would not leave the lower parking lot as the walk may be too difficult. Confusion would also remain as visitors encounter the buildings within the study area at eye level rather than first experiencing an overall view. This alternative does not include a designated space for visitors to regroup prior to entering the study area.

The changes in circulation paths within the interior of the study area would, however, reduce visitor confusion. These paths would be designed to allow visitors to move through the study area and would present a clear path for visitors to use to get from one interpretive element to the next.

The train station platform cover would be restored to its full, historic length under this alternative. Not only would this enhance the overall perception of the train station, it would also provide a clear entry into the newly opened train station. However, because this platform cover would be constructed using in-kind materials, there could be some confusion as to what is historic and what is newly constructed. This platform would help direct visitors from the train station to the universally accessible ramp and stairway leading into the study area. This cover would also allow visitors to gather while waiting to enter the train station and would provide protection from inclement weather. However, a double row of columns would be used to support this cover, resulting in less space underneath the cover for people to stand and congregate.

The new comfort station under this alternative would be constructed adjacent to the lower parking lot. This restroom would accommodate the visitation of the site and reduce the wait time for visitors wanting to use the facility. The current restroom facility would be available for secondary use, as would the restroom in the train station.

As in Alternative B, the upgraded HVAC system would allow for both heat and air conditioning in the train station. This would improve visitor experience, as previously no air-conditioned spaces were available at the site. The leach field would not impact visitor use and experience.

The overall impact to visitor use and experience would be **long-term, minor, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to visitor use and experience in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term, minor, beneficial cumulative impact on visitor use and experience. Alternative C would contribute a noticeable, beneficial increment to the cumulative impact.

OPERATIONS

Methodology

Park operations, for the purpose of this analysis, refers to the quality and effectiveness of the infrastructure and the ability to maintain the infrastructure used in the operation of the park in order to adequately protect and preserve vital resources and provide for an effective visitor experience. This includes an analysis of the condition and usefulness of the facilities and developed features used to support the operations of the park. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impacts to park operations would be at low levels of detection and would not have a substantial impact on park operations.

Minor: The impact would be detectable but would be of a magnitude that would not have a substantial impact on park operations. If mitigation was needed to offset adverse impacts, it would be simple and likely successful.

Moderate: The impacts would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.

Major: The impacts would be readily apparent, would result in a substantial change in park operations in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse impacts would be needed, would be extensive, and their success could not be guaranteed.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, no changes would be made to the current operations within the study area. The lower parking lot would remain in its current location and configuration and would remain underutilized. This would require maintenance to plow both the middle and lower parking lots during the winter months even though both lots are underutilize by visitors. The train station and platform cover would continue to deteriorate. This deterioration would result in maintenance to paint the building and address deficiencies as funding became available. This building is not regularly open to the public, and would take maintenance staff from other buildings that are open on a regular basis. The HVAC system would remain and would continue to run inefficiently. Because of the inefficiencies of the system, maintenance of the system could be more frequent particularly as the system continues to degrade. No changes would be made to the comfort station in the Potts Barn and the sanitary system that would result in no changes to operations.

The overall impact would be **long-term, minor, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute cumulative impacts to operations at Valley Forge NHP. These projects include traffic calming measures on State Routes 23 and removal of the underutilized upper parking lot. Traffic calming measures would create more infrastructure to maintain through additional pavement and signage resulting in long-term, negligible, adverse impacts to operations and infrastructure. The upper parking lot removal would reduce the amount of road maintenance and security issues within Valley Forge NHP. This would allow staff to focus on other resources in the study area. This would result in long-term, minor, beneficial impacts to operations and infrastructure. These projects, along with Alternative A, would have a long-term, negligible, beneficial cumulative impact on operations and infrastructure. The No-Action Alternative would contribute an imperceptible adverse increment to the cumulative impact.

Impacts of Elements Common to the Action Alternatives

Several elements would remain constant through the action alternatives. These include rehabilitation of the train station, placement of interpretive elements, the removal of north/south access road, the connection of Joseph Plumb Martin Trail with the Valley Creek Trail, and removal and relocation of the

huts. Rehabilitation of the train station would require additional maintenance of the building, particularly for cleaning the building everyday as it would be open to the public on a regular basis. It would also require staff to operate the facility and direct visitors through the interpretive programming. Maintenance would also be required for the interpretive elements and additional time may be required to mow around these elements. Removal of the north/south access road would reduce the amount of plowing needed during the winter months; however, because the study area would be revegetated, additional maintenance would be needed to maintain the newly planted grasses. Connection of the Joseph Plumb Martin Trail with the Valley Creek Trail would not impact operations as a portion of the Joseph Plumb Martin trail currently exists in the study area. However, it could create an additional surface to plow during winter months. Removal and relocation of the huts and the interpretive elements would minimally impact operations. The huts currently require negligible maintenance and this would not change with relocation.

Impacts of Alternative B – NPS Preferred Alternative

Under Alternative B, the "Impacts to Elements Common to the Action Alternatives," would be included. In addition, the lower parking lot would be removed and the middle parking lot would be reconfigured over half of the existing upper lot. This middle lot would be easy to plow during the winter months, as no islands would be constructed, and the lower lot would no longer exist. The universally accessible ramp both at the entrance to the study area and at the western edge of the train station platform would require additional maintenance and upkeep and would also require salting during the winter months.

Changes to the landscape within the study area would require less maintenance. The meadow grass cover proposed over much of the study area would require mowing only once a year rather than every other week as is currently done. In addition, the vista management on the slope adjacent to the middle parking lot would require maintenance once every two years.

Under this alternative, the train station platform cover would be constructed of contemporary materials. This would reduce the maintenance required as it would not require yearly painting. These materials would also be fireproof, which would result in less possibility of fire in the study area.

The newly constructed comfort station would maintain one door, making it easy to secure if needed. However, while custodial space is provided in the building, maintenance workers would have to go through the family restroom to access the space.

Also, by upgrading the HVAC system, maintenance would be reduced as the system would be more energy efficient and less likely to break down than the current system. Existing culverts, drainage pipes, and catch basins would be replaced as part of the parking lot development. These new structures would improve the efficiency of the site's drainage system and also reduce the need for regular maintenance.

The overall impact to operations and infrastructure would be **long-term, minor, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to operations in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with

Alternative B, would have a long-term, negligible, beneficial cumulative impact. Alternative B would contribute a noticeable, beneficial increment to the cumulative impact.

Impacts of Alternative C

As in Alternative B, the "Impacts to Elements Common to the Action Alternatives," would be included under this alternative. In addition, the lower parking lot would be reduced to approximately one third of its current size. The middle parking lot would remain in its current location and configuration. The lower parking lot would require less maintenance to plow, as it would be smaller than its current configuration. It would however be more difficult to plow as it has islands built into the design. Under this alternative, only one universally accessible ramp would be constructed on the western edge of the train station platform. This would require upkeep and salting during the winter months.

As in Alternative B, changes to the landscape within the study area would require little additional maintenance. The meadow grass cover proposed over much of the study area would require mowing only once a year. In addition, no vista management would occur resulting in no additional maintenance.

Under this alternative, the train station platform cover would be constructed of in-kind materials. This would increase the maintenance required as it would require yearly painting. These materials also pose a potential fire hazard because of the wood material and would have to be monitored closely.

As in Alternative B, the newly constructed comfort station would maintain one door, making it easy to secure if needed. However, while custodial space is provided in the building, maintenance workers would have to go through the family restroom to access the space.

The new leach field would eliminate the existing septic tanks and leach field for the train station. The life expectancy of the existing leach field at Potts Barn would be longer as the restrooms would be used less frequently. Also, the upgraded HVAC system would be more energy efficient and require less maintenance. Existing culverts, drainage pipes, and catch basins would be replaced as part of the parking lot development. These new structures would improve the efficiency of the site's drainage system and also reduce the need for regular maintenance.

The overall impact to operations would be **long-term, negligible, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to operations in this area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term, negligible, beneficial cumulative impact. Alternative C would contribute an imperceptible beneficial increment to the cumulative impact.

UTILITIES

Utilities, for the purpose of this analysis, refers to the quality and effectiveness of the infrastructure and the ability to maintain the infrastructure used in the operation of the park in order to adequately protect and preserve vital resources and provide for an effective visitor experience. This includes an analysis of

the condition and usefulness of the facilities and developed features used to support the operations of the park. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impacts would be at low levels of detection and would not have a substantial impact on park utilities.

Minor: The impact would be detectable but would be of a magnitude that would not have a substantial impact on park utilities. If mitigation was needed to offset adverse impacts, it would be simple and likely successful.

Moderate: The impacts would be readily apparent and would result in a substantial change in park utilities in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.

Major: The impacts would be readily apparent, would result in a substantial change in park utilities in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse impacts would be needed, would be extensive, and their success could not be guaranteed.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, no changes would be made to the current utilities within the study area. The existing water line would remain unchanged. Because it is nearing the end of its life cycle, it would need to be replaced in the near future. Further, the leach field that supports the restrooms in Potts Barn is also nearing the end of its life cycle. Because this would continue to be the only restroom facility for the entire site, this leach field would need to be replaced in the near future.

The overall impact would be **long-term, minor, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute cumulative impacts to utilities at Valley Forge NHP. These projects include traffic calming measures on State Routes 23. Traffic calming measures could result in changes to utilities through new traffic signals and relocation of utilities for placement of traffic calming measures. This would result in long-term, negligible, adverse impacts to utilities. This project, along with Alternative A, would have a long-term, negligible, adverse cumulative impact on utilities. The No-Action Alternative would contribute an imperceptible adverse increment to the cumulative impact.

Impacts of Elements Common to the Action Alternatives

Several elements would remain constant through the action alternatives. These include rehabilitation of train station, placement of interpretive elements, removal of north/south access road, the connection of Joseph Plumb Martin trail with the Valley Creek Trail, and removal and relocation of the huts. Only the rehabilitation of the train station would impact utilities as new plumbing, electric, and telephone lines would be run to support the facility.

Impacts of Alternative B – NPS Preferred Alternative

Under Alternative B, the "Impacts to Elements Common to the Action Alternatives," would be included. In addition, the lower parking lot would be removed and the middle parking lot would be reconfigured over half of the existing middle lot, and a new comfort station would be constructed. Along with these new developments, the train station platform cover would be constructed of contemporary materials. The HVAC system would be replaced with an air-to-air heat pump system and a sanitary sewer would be connected.

Construction of a new comfort station would require new plumbing and electric lines to support the facility. Further, by constructing a new restroom facility, the leach field of the existing restrooms in Potts Barn would last longer as it would experience less use overall. The sanitary sewer connection would require a tap into the existing Tredyffrin Township sewer line. This would also allow for the removal of one leach field in the study area.

The overall impact to utilities would be **long-term, minor, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to utilities in the study area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative B, would have a long-term, negligible, beneficial cumulative impact. Alternative B would contribute a noticeable, beneficial increment to the cumulative impact

Impacts of Alternative C

As in Alternative B, the "Impacts to Elements Common to the Action Alternatives," would be included under this alternative. In addition, the lower parking lot would be reduced to approximately one third of its current size. The middle parking lot would remain in its current location and configuration. A new comfort station would be constructed, as in Alternative B. Along with these new developments, the train station platform cover would be constructed of historic materials. The HVAC system would be replaced with a conventional forced air system and a new leach field would be utilized.

The new leach field would eliminate the existing septic tanks and leach field for the train station. As in Alternative B, the existing leach field at Potts Barn would last longer as the restrooms in this facility would not be used on a daily basis. However, it would still require the use of a leach field for the new comfort station.

The overall impact to operations would be **long-term, negligible, and beneficial**.

Cumulative Impacts

Present and reasonably foreseeable future actions that would contribute to cumulative impacts to utilities in this area are described under the "Cumulative Impacts" for Alternative A. These projects, along with Alternative C, would have a long-term, negligible, beneficial cumulative impact. Alternative C would contribute an imperceptible beneficial increment to the cumulative impact.

CONCLUSION

Alternative A (No-Action)

Under Alternative A, there would be no impact to archeological resources. There would be a long-term, negligible, adverse impact to soils. There would be a long-term, minor, adverse impact to visual resources, cultural landscapes, operations, and utilities. There would also be a long-term, moderate, adverse impact to historic structures, and visitor use and experience. The cumulative impacts would range from long-term, negligible, adverse to long-term, minor, beneficial. The analysis of potential impacts of Alternative A did not identify any major, adverse impacts to soils, visual resources, archeological resources, historic structures, cultural landscapes, visitor use and experience, operations, or utilities, therefore, implementation of Alternative A is not likely to result in impairment of any park resource or value.

Alternative B (NPS Preferred Alternative)

Under Alternative B, there would be a long-term, moderate beneficial impact to soils, visual resources cultural landscapes, and visitor use and experience. It would also have long-term, minor, beneficial impacts to historic structures, operations, and utilities. It would also have long-term, moderate, adverse impacts to archeological resources. Cumulative impacts would range from long-term, negligible, and beneficial to long-term, moderate, and beneficial. There would also be long-term, negligible to long-term, moderate, adverse cumulative impacts. The analysis of potential impacts of Alternative B did not identify any major, adverse impacts to soils, visual resources, archeological resources, historic structures, cultural landscapes, visitor use and experience, operations, or utilities, therefore, implementation of Alternative B is not likely to result in impairment of any park resource or value.

Alternative C

Under Alternative C, there would be long-term, moderate, beneficial impacts to soils. There would also be long-term, negligible, beneficial impacts to cultural landscapes, operations, and utilities and long-term, minor, beneficial impacts to historic structures and visitor use and experience. Long-term, minor, adverse impacts would result to visual resource and long-term, moderate, adverse impacts to archeological resources. Cumulative impacts would range from long-term, moderate, and adverse to long-term, moderate, and beneficial. The analysis of potential impacts of Alternative C did not identify any major, adverse impacts to soils, visual resources, archeological resources, historic structures, cultural landscapes, visitor use and experience, operations, or utilities, therefore, implementation of Alternative C is not likely to result in impairment of any park resource or value.

5
CONSULTATION AND COORDINATION

NPS DO #12 requires the NPS to make "diligent" efforts to involve the interested and affected public in the NEPA process. This process, known as scoping, helps to determine the important issues and eliminate those that are not; allocate assignments among the interdisciplinary team members and/or other participating agencies; identify related projects and associated documents; identify other permits, surveys, consultations, etc. required by other agencies; and create a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. This chapter documents the scoping process for this project and includes the official list of recipients for the document.

BRIEF HISTORY OF PLANNING AND PUBLIC INVOLVEMENT

As described in "Chapter 2: Alternatives," two collaborative, multi-disciplinary brainstorming workshops were held at Valley Forge NHP. The first meeting, in December 2005, was held to discuss potential elements of the proposed action. The outcome of this meeting was a design report that described the objectives of the proposed action and the elements included. The second meeting, in January 2006, served as both an alternative development workshop and kick off meeting for the EA/AOE. During the public scoping for the park's new GMP/EIS (NPS 2005), the proposed alternatives identified the study area as one of the primary interpretive focus zones within the park. To engage the public in the planning process for the EA/AOE, a press release was issued in February 2006.

INTERAGENCY AND TRIBAL COORDINATION

Agencies contacted during the planning process included the Pennsylvania Natural Diversity Index, the Pennsylvania SHPO, and the U.S. Fish and Wildlife Service. The following Native American tribes were contacted: the Stockbridge-Munsee Community, Wisconsin; the Delaware Nation; the Oneida Nation of Wisconsin; and the Oneida Indian Nation. The Pennsylvania SHPO commented on the proposed action noting that the MOA had been signed. The U.S. Fish and Wildlife Service also commented that except for the occasional transient species, no federally listed or proposed threatened or endangered species under their jurisdiction are known to occur within the proposed action area. See Appendix A for copies of written correspondence with these agencies.

LIST OF RECIPIENTS

The EA/AOE will be on formal public and agency review for 30 days and has been distributed to a variety of interested individuals, agencies, and organizations. It is also available on the Internet at http://parkplanning.nps.gov, and hard copies are available at the Valley Forge NHP Welcome Center and local libraries.

Federal Agencies and Officials
Schuylkill River National and State Heritage Area
U.S. Fish and Wildlife Service

Tribal Governments
Delaware Nation
Oneida Indian Nation
Oneida Nation of Wisconsin
Stockbridge-Munsee Community, Wisconsin

State Agencies
Pennsylvania Department of Conservation and Natural Resources
Pennsylvania State Historic Preservation Officer
Senator Santorum

Local Agencies and Officials
Montgomery County
Schuylkill Township
Tredyffrin Township

Consulting Parties and Individuals
American Revolution Center
Aqua Pennsylvania
Chester Springs Library
Children of the American Revolution
Conshohocken Free Library
Convention and Visitor Bureau
Daughters of the American Revolution
The Encampment Store
The Friends of Valley Forge
Montgomery County-Norristown Public Library
Norfolk Southern Railroad
Pennsylvania Electric Cooperation
Phoenixville Public Library
Tredyffrin Public Library
Sons of the American Revolution
Upper Merion Township Library

REFERENCES

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LIST OF PREPARERS AND CONTRIBUTORS

This document was prepared by Vanasse Hangen Brustlin, Inc. with input from staff at Valley Forge NHP and the NPS Northeast Regional Office.

Vanasse Hangen Brustlin, Inc.

Nancy Barker, PWS	Environmental Services Manager	Guidance of NEPA process, document review, and project management
Margaret Beavers	Environmental Scientist	Graphics and GIS analysis
Dawn Frost	Preservation Planner	Overall document preparation; cultural resources review and analysis
Scott Smizik	Environmental Planner	Document preparation; natural resources review and analysis
Tricia Wingard	Project Manager	Guidance of NEPA process and document review

Contributors and Reviewers

Valley Forge NHP

Mike Caldwell	Superintendent
Deirdre Gibson	Chief of Planning and Natural Resources
Jeff Kangas	Chief of Maintenance
Dennis McGinnis	Project Manager
Barbara Pollarine	Deputy Superintendent

Northeast Region

Margaret Bursaw	Resource Planning Specialist
Doug Campana	Archeologist
Shaun Eyring	Landscape architect
Jim Harmon	Archeologist
Jacki Katzmire	Environmental Protection Specialist

Denver Service Center

Greg Cody	Technical Specialist for Cultural Resources
Jenny Reeve	Project Specialist
Patrick Shea	Project Manager
Steve Stone	Senior Natural Resource Specialist

Other Consultants

Melissa Berry	Bob Weis Design Island
Chris Carter	John Milner Architects
Brent Jones	HDR Engineering
Carrie Mardorf	Heritage Landscape Designs
J. Tevere MacFadyen	Main Street Design
Michael Mercadante	Main Street Design
Patricia O'Donnell	Heritage Landscape Designs
Peter Viteretto	Heritage Landscape Designs

APPENDIX A: RELEVANT CORRESPONDENCE

ONEIDA INDIAN NATION

ONEIDA NATION HOMELANDS

April 17, 2006

Michael A. Caldwell, Superintendent
United States Department of the Interior
National Park Service
Valley Forge National Historical Park
1400 North Outer Line Drive
King of Prussia, PA 19406-1009

Dear Mike,

Thank you for recent invitations to consult (letters of March 23 [2] and March 27), as required under Section 106 of the amended National Historic Preservation Act, on three projects at Valley Forge:

--a review of Park issues (General Management Plan with various policy options pertaining to preservation, traffic control, and visitor services) and preparation of an associated Environmental Impact Study;
--a construction project to prepare a pre-school facility; and
--another construction project to prepare an orientation center.

We appreciate your courtesy in acknowledging Oneida ties to Valley Forge. However, the proposed work does not threaten any emotional bonds and we know of nothing sacred to Oneidas at the locations you mention.

It's good to hear from you, Mike, and I hope all is well with your family and new responsibilities.

Sincerely,

Tony Wonderley

Anthony Wonderley, Ph.D.
Historian
Oneida Indian Nation

cc: Brian Patterson, Peter Carmen, Peter Golia, Kim Jacobs (OIN)

221 Union Street
PO Box 662 • Oneida, NY 13421-0662
(315) 829-8461 • Fax (315) 829-8473

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

February 27, 2006

Michael A. Caldwell
U.S. Department of the Interior
National Park Service
Valley Forge National Historical Park
1400 North Outer Line Drive
King of Prussia, PA 19406-1009

RE: USFWS Project #2006-0795

Dear Mr. Caldwell:

This responds to your letter received January 13, 2006, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed support facilities rehabilitation project located in Montgomery County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to occur within the project impact area. Therefore, no biological assessment nor further consultation under the Endangered Species Act are required with the Fish and Wildlife Service. This determination is valid for two years from the date of this letter. If the proposed project has not been fully implemented prior to this, an additional review by this office will be necessary. Also, should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

This response relates only to endangered or threatened species under our jurisdiction based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

Requests for information regarding State-listed endangered or threatened species should be directed to the Pennsylvania Game Commission (birds and mammals), the Pennsylvania Fish and Boat Commission (fish, reptiles, amphibians and aquatic invertebrates), and the Pennsylvania Department of Conservation and Natural Resources (plants).

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Pam Shellenberger of my staff at 814-234-4090 if you have any questions or require further assistance.

Sincerely,

David Densmore
Supervisor

Enclosure

Federally Listed, Proposed, and Candidate Species in Pennsylvania

(revised July 27, 2004)

Common Name	Scientific Name	Status[1]	Distribution (Counties and/or Watersheds)
MAMMALS			
Indiana bat	*Myotis sodalis*	E	Hibernacula: Armstrong, Blair, Fayette, Lawrence, Luzerne, Mifflin and Somerset Co. Maternity sites: Blair Co.
BIRDS			
Bald eagle	*Haliaeetus leucocephalus*	T	Nesting: Armstrong, Berks, Butler, Centre, Chester, Crawford, Dauphin, Erie, Forest, Huntingdon, Lancaster, Lebanon, Lycoming, Mercer, Monroe, Montgomery, Northumberland, Pike, Tioga, Venango, Warren, Wayne and York Co. Winter: near ice-free sections of rivers, lakes and reservoirs (e.g., Delaware River, Pymatuning Reservoir)
Piping plover	*Charadrius melodus*	E	Migratory. No nesting in Pennsylvania since 1950s. Designated critical habitat on Presque Isle (Erie Co)
REPTILES			
Bog turtle	*Clemmys (Glyptemys) muhlenbergii*	T	Adams, Berks, Bucks, Chester, Cumberland, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York Co. [Historically found in Crawford, Mercer and Philadelphia Co.]
E. massasauga rattlesnake	*Sistrurus catenatus catenatus*	C	Butler, Crawford, Mercer and Venango Co. [Historically found in Allegheny and Lawrence Co.]
MUSSELS			
Clubshell	*Pleurobema clava*	E	French Creek and Allegheny River (and some tributaries) in Clarion, Crawford, Erie, Forest, Mercer, Venango, and Warren Co.; Shenango River (Mercer and Crawford Co.) [Has not been found recently in 13 streams of historical occurrence in Butler, Beaver, Fayette, Greene, Lawrence, Mercer, and Westmoreland Co.]
Dwarf wedgemussel	*Alasmidonta heterodon*	E	Delaware River (Wayne Co.). [Has not been found recently in streams of historical occurrence in the Delaware River watershed (Bucks, Carbon, Chester, Philadelphia Co.) or Susquehanna River watershed (Lancaster Co.)]
Northern riffleshell	*Epioblasma torulosa rangiana*	E	French Creek and Allegheny River (and some tributaries) in Clarion, Crawford, Erie, Forest, Mercer, Venango, and Warren Co. [Has not been found recently in streams of historical occurrence, including: Shenango River (Lawrence Co.), Conewango Creek (Warren Co.)]

US Fish and Wildlife Service
315 South Allen Street, Suite 322, State College, Pennsylvania 16801

Common Name	Scientific Name	Status[1]	Distribution (Counties and/or Watersheds)
MUSSELS (continued)			
Rayed bean	*Villosa fabalis*	C	French Creek and Allegheny River (Armstrong, Clarion, Crawford, Erie, Forest, Mercer, Venango, Warren Co.); Cussewago Creek (Crawford Co.). [Has not been found recently in 5 streams of historical occurrence in Armstrong, Lawrence, Mercer and Warren Co.]
Sheepnose	*Plethobasus cyphyus*	C	Allegheny River (Forest and Venango Co.). [Has not been found recently in streams of historical occurrence, including: Allegheny River (Armstrong Co.), Beaver River (Lawrence Co.), Ohio River (Allegheny and Beaver Co.), and Monongahela River (Washington Co.)]
FISH			
Shortnose sturgeon[2]	*Acipenser brevirostrum*	E	Delaware River and other Atlantic coastal waters
PLANTS			
Northeastern bulrush	*Scirpus ancistrochaetus*	E	Adams, Bedford, Blair, Carbon, Centre, Clinton, Columbia, Cumberland, Dauphin, Franklin, Huntingdon, Lackawanna, Lehigh, Lycoming, Mifflin, Monroe, Perry, Snyder, Tioga, and Union Co. [Historically found in Northampton Co.]
Small-whorled pogonia	*Isotria medeoloides*	T	Centre, Chester, and Venango Co. [Historically found in Berks, Greene, Monroe, Montgomery and Philadelphia Co.]

[1] E = Endangered; T = Threatened; P = Proposed for listing; C = Candidate
[2] Shortnose sturgeon is under the jurisdiction of the National Marine Fisheries Service

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

March 10, 2006

United States Department of the Interior
National Park Service
Valley Forge National Historical Park
Attn: Michael A. Caldwell, Superintendent
1400 North Outer Line Drive
King of Prussia, PA 19406-1009

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

RE: H4217 VAFO(P)
ER# 95-2574-029-M
Proposed Rehabilitation of Support Facilities
Near Washington's Headquarters for Visitor Use,
Valley Forge National Historical Park

Dear Mr. Caldwell:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999. Our comments are as follows:

Thank you for your letter of January 10, 2006 with regard to the project near Washington's Headquarters. We recently reviewed and signed a Memorandum of Agreement for this project. A copy of the signed document was sent via facsimile to Greg Cody of the Denver Service Center, and a paper copy of the agreement will be sent to Deirdre Gibson of your staff via U.S. mail.

We look forward to receiving copies of any preliminary or schematic designs once these have been developed, and we look forward to working with you and your staff on this project in the future.

If you have any questions or comments regarding our review of this project, please contact Mark Shaffer at (717) 783-9900.

Sincerely,

Jean H. Cutler

Jean H. Cutler
Director

H4217 VAFO(P)

JAN 10 2006

Mr. Justin Newell
Pennsylvania Natural Diversity Index
208 Airport Drive
Middletown, PA 17057

Subject: Proposed Rehabilitation of Support Facilities near Washington's Headquarters for Visitor Use, Valley Forge National Historical Park

Dear Mr. Newell:

At Valley Forge National Historical Park the National Park Service proposes to rehabilitate the vacant Valley Forge Train Station for use as a visitor orientation, programming, and exhibit center. Other work proposed as part of this project would include removal or reduction in size of the existing parking lot, which was constructed by the Commonwealth of Pennsylvania for the 1976 bicentennial; removal of a non-contributing driveway; addition of a new structure for accessible restrooms; reconfiguration of pedestrian circulation; and consideration of treatment for the cultural landscape, including rehabilitation of the topography.

This letter serves as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended, and NPS *Management Policies*, 2001. As part of the scoping for this project we request any information regarding listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, and any special management considerations for such species. The project area is delineated on the enclosed section of the U.S. Geological Survey topographic map for the vicinity (Valley Forge Pennsylvania quad). We also welcome any comments you may have regarding the project. Our intent is to address your agency's concerns and incorporate any recommendations into the planning process at the earliest possible time.

If you have any questions, please contact please contact Deirdre Gibson, Chief of Planning and Natural Resources, at the above address, by telephone at 610-783-1047, or by email at deirdre_gibson@nps.gov. Your participation in the scoping process for this project is important to us and we look forward to hearing from you.

Sincerely,

/s/ Michael A. Caldwell

Michael A. Caldwell
Superintendent

bcc:
Cody, DSC-DC
Stone, DSC- Transportation
Trish Wingard, VHB
Deirdre Gibson, VAFO

H4217 VAFO(P)

JAN 10 2006

Certified Mail—Return Receipt Requested
No. 7003 2260 0006 5317 8699

Ms. Barbara Franco
State Historic Preservation Officer
Pennsylvania Historical and Museum Commission
300 North Street
Harrisburg, PA 17120

Subject: Proposed Rehabilitation of Support Facilities near Washington's Headquarters for Visitor Use, Valley Forge National Historical Park

Dear Ms. Franco:

George Washington's Headquarters and its immediate environs are the primary interpretive site at Valley Forge National Historical Park. During the Winter of 1777-78, General Washington established his headquarters in a farmhouse and lived there with his wife and staff throughout the six-month encampment. Today the former farmhouse is in excellent condition, but due to its small size the building cannot be effectively used by park staff for visitor programs, orientation or interpretation.

The National Park Service proposes to rehabilitate the nearby Valley Forge Train Station for use as an orientation, programming, and exhibit center. The train station, which was constructed *ca.* 1911 and is currently vacant, is structurally sound but requires rehabilitation, including lead based paint abatement and repainting; upgraded and additional restroom facilities; HVAC and electrical, water, and sewer service upgrades; exterior door replacement and storm window installation; concrete sidewalk and step repairs; and roof replacement. Other work proposed as part of this project would include removal or reduction in size of the existing parking lot, which was constructed by the Commonwealth of Pennsylvania for the 1976 bicentennial; removal of a non-contributing driveway; addition of a new structure for accessible restrooms; reconfiguration of pedestrian circulation; and consideration of treatment for the cultural landscape, including rehabilitation of the topography.

This letter serves as notification that we have begun the National Environmental Policy Act (NEPA) process and propose to complete a draft environmental assessment (EA) for

public and agency review this spring. In concurrence with the NEPA process, we will develop a programmatic agreement (PA) with your office in order to comply with Section 106 of the National Historic Preservation Act. This PA will follow the frame work adopted by the Nationwide Programmatic Agreement between the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

We were delighted that Mark Shaffer, of your staff, participated in a planning workshop for the proposed project on December 8, 2005. I encourage your staff's continued participation in the planning for this project, to ensure that any of your office's concerns regarding potential impacts to historic properties are raised and addressed early in the planning process. As preliminary or schematic designs for the proposed project are developed, I will also provide copies of the plans to you for your staff's review and comment and arrange further meetings as necessary with your staff to discuss the project.

If you have any initial comments, please contact Deirdre Gibson, Chief of Planning and Natural Resources, at the above address or by telephone at 610-783-1047. Your continued participation in the planning process for this project is important to us and I look forward to hearing from you.

Sincerely,

/s/ Michael A. Caldwell

Michael A. Caldwell
Superintendent

cc: Mark Shaffer
Pennsylvania Historical and Museum Commission
300 North Street
Harrisburg, PA 17120

bcc: Cody, DSC-DC
Trish Wingard, VHB
Deirdre Gibson, VAFO

H4217 VAFO(P)

JAN 10 2006

Ms. Pam Shellenberger
U.S. Fish and Wildlife Service
315 South Allen Street
Suite 322
State College, PA 16801-4850

Subject: Proposed Rehabilitation of Support Facilities near Washington's Headquarters for Visitor Use, Valley Forge National Historical Park

Dear Ms. Shellenberger:

At Valley Forge National Historical Park the National Park Service proposes to rehabilitate the vacant Valley Forge Train Station for use as a visitor orientation, programming, and exhibit center. Other work proposed as part of this project would include removal or reduction in size of the existing parking lot, which was constructed by the Commonwealth of Pennsylvania for the 1976 bicentennial; removal of a non-contributing driveway; addition of a new structure for accessible restrooms; reconfiguration of pedestrian circulation; and consideration of treatment for the cultural landscape, including rehabilitation of the topography.

This letter serves as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended, and NPS *Management Policies*, 2001. As part of the scoping for this project we request any information regarding listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, and any special management considerations for such species. The project area is delineated on the enclosed section of the U.S. Geological Survey topographic map for the vicinity (Valley Forge Pennsylvania quad). We also welcome any comments you may have regarding the project. Our intent is to address your agency's concerns and incorporate any recommendations into the planning process at the earliest possible time.

If you have any questions, please contact please contact Deirdre Gibson, Chief of Planning and Natural Resources, at the above address, by telephone at 610-783-1047, or by email at deirdre_gibson@nps.gov. Your participation in the scoping process for this project is important to us and we look forward to hearing from you.

Sincerely,

/s/ Michael A. Caldwell

Michael A. Caldwell
Superintendent

bcc:
Cody, DSC-DC
Stone, DSC- Transportation
✓Trish Wingard, VHB
Deirdre Gibson, VAFO

APPENDIX B: MEMORANDUM OF AGREEMENT

Memorandum of Agreement (MOA) Between the National Park Service and the Pennsylvania Historical Museum Commission Regarding Rehabilitation of Support Facilities at Washington's Headquarters for Visitor Use

WHEREAS, the National Park Service (NPS) administers Valley Forge National Historical Park (the Park) as a unit of the National Park System, and is responsible for the stewardship of the Park's natural and cultural resources; and

WHEREAS the NPS proposes to rehabilitate the support facilities at Washington's Headquarters for visitor use (the Project), which includes

- Removal and relocation of a bicentennial-era parking lot and rehabilitation of the former parking lot site;
- Relocation and widening of River Road, the entrance drive to the headquarters area, and reconfiguration of the Valley Forge Train Station parking lot;
- Construction of a 600 square foot restroom in the headquarters area;
- Rehabilitation of the Valley Forge Train Station as a visitor contact station (lead based paint abatement; repainting; upgraded and additional restroom facilities; electrical upgrade; HVAC upgrade; water service upgrade; sewer system upgrade; exterior door replacement; storm window installation; concrete sidewalk, and step and roof replacement); and

WHEREAS, the NPS has established *Management Policies* (2001) that stipulate that every "...proposed action will be evaluated to ensure consistency or compatibility in the overall treatment of park resources. The relative importance and relationship of all values will be weighed to identify potential conflicts between and among resource preservation goals, park management and operation goals, and park user goals. Conflicts will be considered and resolved through the planning process, which will include any consultation required by 16 USC 470f" (Chapter 5.3.5, *Treatment of Cultural Resources*); and

WHEREAS the NPS and the Pennsylvania Historical Museum Commission (the SHPO) concur that implementation of the Project will have an effect on historic properties included in or eligible for inclusion in the National Register of Historic Places; and

WHEREAS, the SHPO is authorized to enter into this agreement in order to fulfill its role of advising and assisting Federal agencies in carrying out their Section 106 responsibilities under the following Federal statute: Sections 101 and 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470, and pursuant to 36 CFR Part 800, the regulations implementing Section 106, at 800.2 (c)(1)(i) and 800.6(b);

NOW, THEREFORE, the NPS and SHPO agree that the Project shall be implemented in accordance with the following stipulations to take into account the effect of this undertaking on historic properties.

STIPILATIONS

I. Public Scoping

The NPS shall provide opportunities for the public and interested agencies, organizations, and groups to comment on this Project pursuant to the public scoping and environmental assessment requirements of the National Environmental Policy Act (NEPA) (36 CFR 800.8, *Coordination with the National Environmental Policy Act*). Public scoping and the solicitation, documentation, and analysis of comments received during review of the environmental assessment shall be conducted in accordance with the NPS's Director's Order 12, *Conservation Planning, Environmental Impact Analysis, and Decision Making*, the agency's guidance implementing NEPA.

II. Rehabilitation of Support Facilities at Washington's Headquarters

The NPS shall ensure that the Project is implemented in consultation with the SHPO, and that rehabilitation of the support facilities at Washington's Headquarters shall adhere to the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (36 CFR Part 68). In particular, all designs shall be compatible with the historic qualities of the Park and its setting in terms of scale, massing, color and materials.

The NPS shall submit designs and specifications to the SHPO for review and comment at the schematic and 50% design development phases. The SHPO shall have 30 calendar days to review all submittals. Should the SHPO not respond within 30 calendar days, the NPS shall assume concurrence. Should the NPS and SHPO disagree, the NPS will consult according to *Stipulation V, Dispute Resolution.*

In the event that minor modifications in design or materials are required during construction, such modifications would be allowed under this Memorandum of Agreement provided that the changes are consistent with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (36 CFR Part 68) and are approved by the Park's cultural resources staff. The NPS will document such minor modifications in an internal memo to the files that will be available at the Park for inspection by the SHPO.

III. Identification, Evaluation, and Treatment of Archeological Resources

A. *In Place Preservation of Archeological Resources*

The NPS shall ensure that all aspects of the project provide for in-place preservation of significant archeological resources to the greatest extent feasible, consistent with the overall project objectives.

B. *Identification and Evaluation of Archeological Resources*

Prior to the initiation of any construction activities, the archeological consultant working for the NPS shall implement a program for the identification and evaluation of archeological resources in the area of potential effects, as described in Attachment A to this document. The NPS shall submit the results of the identification and evaluation to the SHPO for review and concurrence prior to the initiation of any construction activities.

C. *Treatment of Identified Archeological Resources*

Prior to the initiation of any construction activities, the archeological consultant working with the NPS shall develop an Archeological Data Recovery Plan for the recovery of significant

information from archeological resources eligible to the listed in the National Register of Historic Places that could be affected by the project. The data recovery plan shall address the following:

a) a compilation of maps and other historic documents that may indicate locations of previous structures or other site features in the project area and a thorough review of previous archeological investigations of the archeological area.

b) figure(s) delineating survey areas.

c) survey procedures shall conform to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (1983) and the National Park Service's DO-28, *Cultural Resource Management Guidelines* (1997).

d) procedures for both the treatment of archeological resources (including the provision that all aspects of the project provide for the in-place preservation of significant archeological resources to the maximum extent feasible, consistent with the overall project objectives of stabilizing and rehabilitating the buildings, walls, and other features of the Park) and data recovery.

e) procedures for the processing, cataloging, and curation of all archeological resources recovered. The work plan will minimally specify that (1) all artifacts will be placed in archivally stable containers (interlocking seal-and-closure polyethylene bags, and acid-free boxes); (2) all artifacts and archivally stable, original copies of field notes, data recording forms, maps, drawings, original negatives, photographs, slides, and any other form of documentation resulting from these archeological investigations will be curated at Valley Forge National Park; (3) all archeological resources recovered will be accessioned and cataloged in accordance with the NPS *Museum Handbook*; and (4) all artifacts will be cataloged using the NPS Automated National Cataloging System Plus (ANCS+).

f) procedures for the unlikely discovery of human remains.

g) preparation of written draft and final reports presenting the results of the archeological survey and any excavations and data recovery. Reports shall minimally include the following information: purpose and scope of effort, background information, field and laboratory procedures/techniques and rationale for the methods used, results of fieldwork/laboratory analyses, discussion of findings, conclusions and recommendations, and an appendix of the artifact inventory in ANCS+.

h) completion of one set of NPS Archeological Sites Management Information System (ASMIS) forms and four sets of Pennsylvania state archeological site forms for each new archeological site identified during the research, or updated forms for each existing site that was re-examined.

i) proposed staff and schedule.

The NPS shall submit the Archeological Data Recovery Plan developed by the consultant to the SHPO for review and comment. Unless the SHPO objects within 30-days after receipt of the data recovery plan, the NPS shall ensure that the work plan is implemented prior to the commencement of any construction activities.

IV. Monitoring of Construction Activities

The SHPO may monitor activities pursuant to this agreement after providing at least 24-hours notification. The NPS will cooperate with the SHPO in carrying out any monitoring and review responsibilities.

V. Dispute Resolution

Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree regarding a dispute, the NPS shall request the comments of the Advisory Council on Historic Preservation (ACHP) pursuant to 36 CFR 800.7. Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute. The NPS's responsibility to carry out all actions under this agreement that are not the subject of dispute will remain unchanged.

At any time during implementation of the measures stipulated in this agreement, should an objection to any such measure be raised by a member of the public, the NPS shall take the objection into account and consult as needed with the objecting party, the SHPO, and/or the ACHP to resolve the objection.

VI. Amendment of Agreement

Either the NPS or the SHPO may request that this agreement be amended, whereupon the parties will consult to consider such amendment. Upon the unanimous decision of all parties, such amendments will be implemented. Amendments will be in writing and approved by the original signatories or their designated official.

VII. Termination of Agreement

Either signatory to this agreement may terminate it by providing thirty (30) calendar days notice to the other party, provided that the parties will consult during the period prior to termination to seek agreements on amendments or other actions that would avoid termination. In the event of termination by the SHPO, the NPS would request the comments of the ACHP, in accordance with 36 CFR Part 800.7[a].

VIII. Terms of Agreement

This agreement shall become effective after the date of the last signatory. The agreement shall be null and void if its terms are not carried out within three (3) years from the date of its approval by the NPS and SHPO, unless the signatories agree in writing to an extension for carrying out its terms. Otherwise, this agreement shall become null and void when the project is complete and all of the above stipulations are fulfilled. The agreement and any amendments shall be binding upon the parties, their successors, and assigns.

Execution of this MOA by the NPS and SHPO, and the implementation of its terms, provide evidence that the NPS afforded the SHPO an opportunity to comment on the project and its effects on historic properties, that the NPS has taken into account the effects of the project on historic properties either listed in or eligible to be listed in the National Register of Historic Places, and that the NPS has satisfied its Section 106 responsibilities for the project referenced in this agreement.

AUTHORIZING SIGNATURES

National Park Service, Valley Forge National Historical Park

By: Michael A Caldwell Date: 3-2-06
Mike Caldwell, Superintendent
Valley Forge National Historical Park

Pennsylvania State Historic Preservation Officer

By: Jean A Cutler DSHPO Date: 3-8-06
for Barbara Franco, State Historic Preservation Officer
Pennsylvania Historical and Museum Commission

APPENDIX C: TREE REMOVAL DRAWINGS

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for Native American reservation communities and for people who live in island territories under U.S. administration.

NPS #D-79, May 2006

United States Department of the Interior – National Park Service