

Environmental Assessment /Assessment of Effect Rehabilitation of Park Routes and Parking Lots

Valley Forge National Historical Park
King of Prussia, Pennsylvania



National Park Service
Department of the Interior



August 2006

Top photograph:

The early 20th century commemorative landscape included carriage roads along the old defensive lines, formal allees of trees, and monuments.

Bottom photograph:

Nineteenth century carriage roads were paved to accommodate automobiles. By the 1950s, auto touring through the park, especially the dogwood grove, seen in this photograph, became extremely popular.

Top inset:

View of Huntington's parking lot, one of the parking lots slated for removal.

Bottom inset:

View of von Steuben statue within the park.

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

**Valley Forge National Historical Park
King of Prussia, Pennsylvania**

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Proposed Action: As the site of the famous winter encampment of General George Washington's Continental Army during the Revolutionary War, Valley Forge National Historical Park (NHP) provides a wide variety of opportunities for visitors and is host to many notable cultural and natural resources. To enhance the visitor experience at Valley Forge NHP, the National Park Service (NPS), in cooperation with the Federal Highway Administration (FHWA), is proposing several circulation improvements within the park. The proposed improvements include constructing a new connector road for park-sponsored tour buses between Inner Line Drive and Outer Line Drive and overlaying and/or rehabilitating Inner Line Drive and Redoubt 4 Road, including pull offs, parking lots, and drainage improvements. Conway's and Huntington's Overlook parking lots would also be completely removed, along with Washington's upper parking lot A and Tower Road and its parking lot. Artillery Park parking lot and Redoubt 3 parking lot would be reconfigured as would circulation at the Von Steuben parking lot. Implementing the preferred alternative would have negligible to moderate, beneficial impacts on soils, vegetation, cultural landscapes, site access and circulation, visitor use and experience, infrastructure, and operations. It would also have a negligible, adverse impact on historic structures. 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.

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Note to Reviewers and Respondents:

If you wish to comment on the Environmental Assessment/Assessment of Effect, you may mail comments by September 8, 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
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CONTENTS

CONTENTS	iii
FIGURES	v
TABLES	v
ACRONYMS AND ABBREVIATIONS	vii
PURPOSE AND NEED	1
Study Area Description	1
Purpose of and Need for Action	2
History and Significance of Valley Forge NHP	7
Planning Background	7
Planning Issues and Concerns	9
Impact Topics	10
ALTERNATIVES	21
Alternative A – No-Action	21
Alternative B – NPS Preferred Alternative	22
Summary of Alternatives	31
Summary of Environmental Consequences	32
Environmentally Preferred Alternative	34
AFFECTED ENVIRONMENT	37
Soils	37
Vegetation	37
Cultural Resources	38
Historic Structures	39
Cultural Landscapes	39
Site Access and Circulation	40
Visitor Use and Experience	41
Infrastructure	42
Operations	42
ENVIRONMENTAL CONSEQUENCES	43
Methodology for Assessing Impacts	43
Soils	47
Vegetation	49
Cultural Resources	51
Historic Structures	52
Cultural Landscapes	54
Site Access and Circulation	56
Visitor Use and Experience	59
Infrastructure	61
Operations	63

Conclusion	65
CONSULTATION AND COORDINATION	67
Brief History of Planning and Public Involvement	67
Interagency and Tribal Coordination	67
List of Recipients	68
REFERENCES	R-1
Bibliography	R-1
List of Preparers and Contributors	R-3
APPENDICES	
Appendix A: Relevant Correspondence	
Appendix B: Cultural Resource Advisors Approvals	

FIGURES

Figure No.	Description	Page
Figure 1	Park Vicinity/Regional Map	3
Figure 2	Park Map/Study Area	5
Figure 3	Alternative A: No-Action	23
Figure 4	Alternative B: NPS Preferred	25
Figure 5	Von Steuben Parking Lot Detail	29

TABLES

Table No.	Description	Page
Table 1	Summary of Alternatives	31
Table 2	Summary of Environmental Consequences	32

ACRONYMS AND ABBREVIATIONS

ACHP – Advisory Council on Historic Preservation
ACM – Asbestos-Containing Material
AoE – Assessment of Effect
ARS – Asbestos Release Site
BSA – Boles Smyth Associates
CEQ – Council on Environmental Quality
CFR – Code of Federal Regulations
DO – Director’s Order
EA – Environmental Assessment
EIS – Environmental Impact Statement
FHWA – Federal Highway Administration
GMP – General Management Plan
National Register – National Register of Historic Places
NEPA – National Environmental Policy Act
NHP – National Historical Park
NHPA – National Historic Preservation Act
NPDES – National Pollution Discharge Elimination System
NPS – National Park Service
PAL – Public Archaeology Lab
PennDOT – Pennsylvania Department of Transportation
SHPO – State Historic Preservation Officer
VFATPS – Valley Forge Area Transportation Planning Study
VHB – Vanasse Hangen Brustlin, Inc.
USDA – U.S. Department of Agriculture

1

PURPOSE AND NEED

As the site of the famous winter encampment of General George Washington's Continental Army during the Revolutionary War, Valley Forge National Historical Park (NHP) provides a wide variety of educational and recreational opportunities for visitors and is host to many notable cultural and natural resources. Each year, Valley Forge NHP receives approximately 1.2 million visitors interested in the park's history, natural and cultural resources, and recreational opportunities. To enhance the visitor experience at Valley Forge, the National Park Service (NPS), in cooperation with the Federal Highway Administration (FHWA), proposes several circulation improvements within the park: constructing a new connector road for park-sponsored tour buses between Inner Line Drive and Outer Line Drive; overlaying and/or rehabilitating Inner Line Drive and Redoubt 4 Road, including pull offs, parking lots, and drainage structures along Inner Line Drive; reconfiguring circulation at the Von Steuben parking lot; reconfiguring Artillery Park parking lot and Redoubt 3 parking lot; and removing Conway's Overlook parking lot, Huntington's Overlook parking lot, Washington's upper parking lot A, and Tower Road and its parking lot.

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 is also intended to comply with requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended and has been prepared in accordance with the Advisory Council on Historic Preservation's (ACHP) implementing regulations for Section 106.

STUDY AREA DESCRIPTION

Valley Forge NHP is located in southeastern Pennsylvania, 18 miles northwest of center city Philadelphia. Situated in Chester and Montgomery Counties, the park encompasses 3,452 acres (Figure 1). The Schuylkill River divides the park into a northern and southern section, and Valley Creek further divides the southern section. The study area for the proposed action, however, is confined to Inner Line Drive and adjacent areas.

Inner Line Drive is located south of the Schuylkill River and east of Valley Creek. The road begins and ends along State Route 23 to the east of Washington's Headquarters. This one-way, narrow, paved road follows the alignment of the Continental Army's inner line of defenses. Interpretive waysides, designed pedestrian trails, views and overlooks, and pull offs afford visitors utilizing this road opportunities to explore many of the resources the park has to offer. Several parking lots are also included within the study area. Starting northwest of Inner Line Drive and proceeding along the road, they include Washington's upper parking lot A, Huntington's Overlook parking lot, Tower Road parking lot, Artillery Park parking lot, Conway's Overlook parking lot, Redoubt 3 parking lot, and the Von Steuben parking lot (Figure 2).

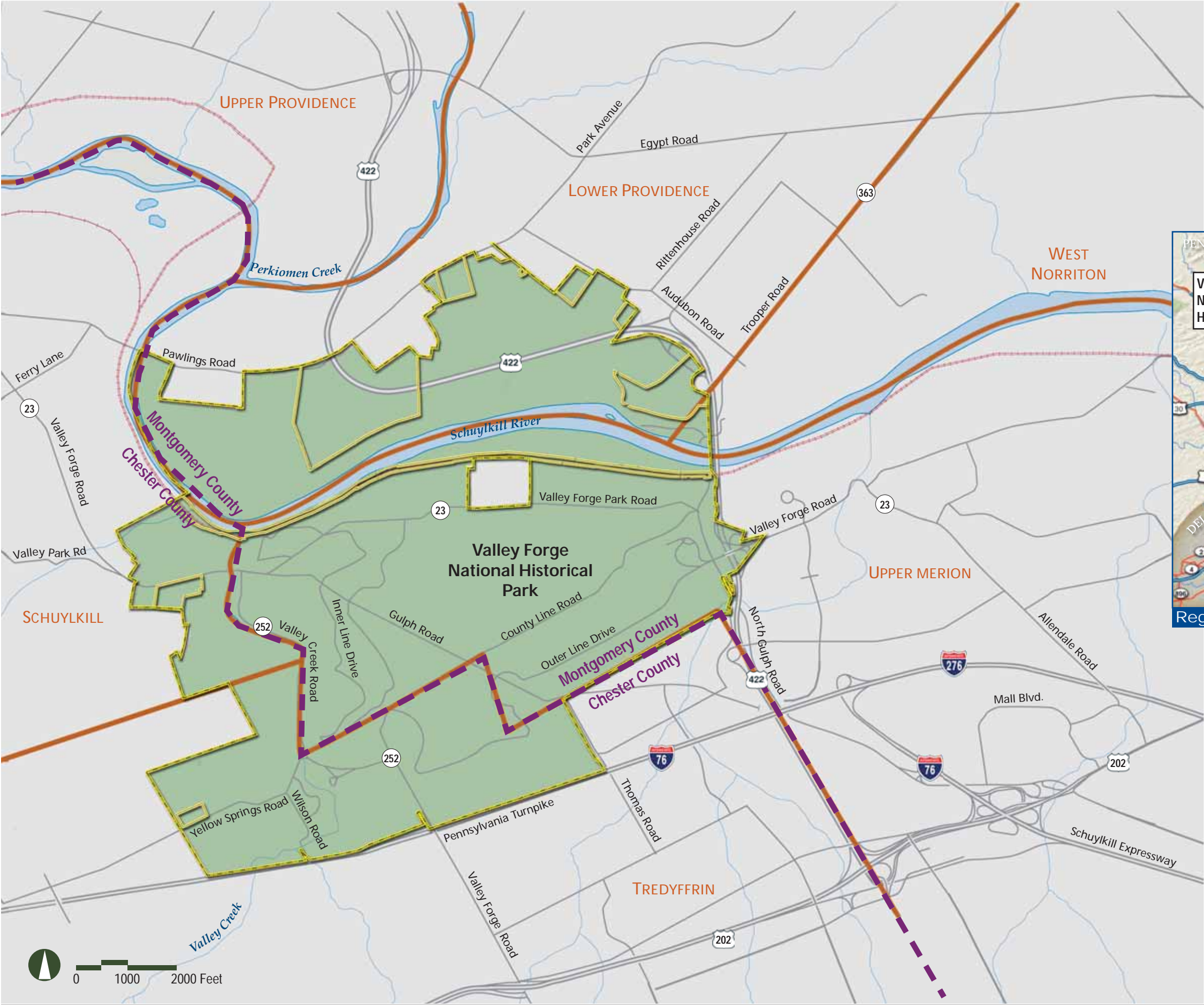
PURPOSE OF AND NEED FOR ACTION

The NPS proposes several circulation improvements within Valley Forge NHP. The purpose of the proposed action is to enhance the visitor experience by improving drainage, road conditions, and circulation along Inner Line Drive, one of the park's main tour routes. The proposed action would seek to meet this purpose by removing seldom-used parking lots and roads that intrude on the cultural landscape of the park. Further, the proposed changes in circulation would address visitor safety needs at the Von Steuben parking lot.

Inner Line Drive is one of the main tour routes within the park, taking visitors on a one-way self-guided tour through the inner line defense system of the encampment. This road is well-traveled by visitors. Because of its high use, the road is wearing out and in need of repair. Drainage structures along the roadway are too small and damaged, causing inefficient stormwater management and poor drainage. These deficiencies have led to further degradation of the road surface and channel erosion. If visitor use along this road is to continue, Inner Line Drive must be rehabilitated and drainage systems improved.

There is also no direct connection from Inner Line Drive to Outer Line Drive, another main park tour road. A connection between these roads would open the way for more efficient operations of the park-sponsored tour buses by enabling shorter headways and minimizing the tour buses' use of Valley Creek Road, which is used heavily by commuters. Such a system was first suggested for the park in the *Valley Forge National Historical Park General Management Plan* (GMP) (NPS 1982) and again in the *Valley Forge Alternative Transportation Feasibility Study* (Volpe 2004) as a means of further reducing traffic congestion while improving visitor experience. This environmental analysis of this system is beyond the scope of this proposed action, however, it would benefit from the proposed improvements.

Finally, several parking lots along/near Inner Line Drive are minimally used by visitors and/or in need of maintenance and repair. The Tower Road parking lot in particular no longer supports the visitor use for which it was created, as the observation tower associated with the area was removed in the 1980s. The underutilized parking lots in the study area intrude on the cultural landscape of the park. Further, the underutilized parking lots place a burden on park maintenance staff as they must still maintain these parking lots.



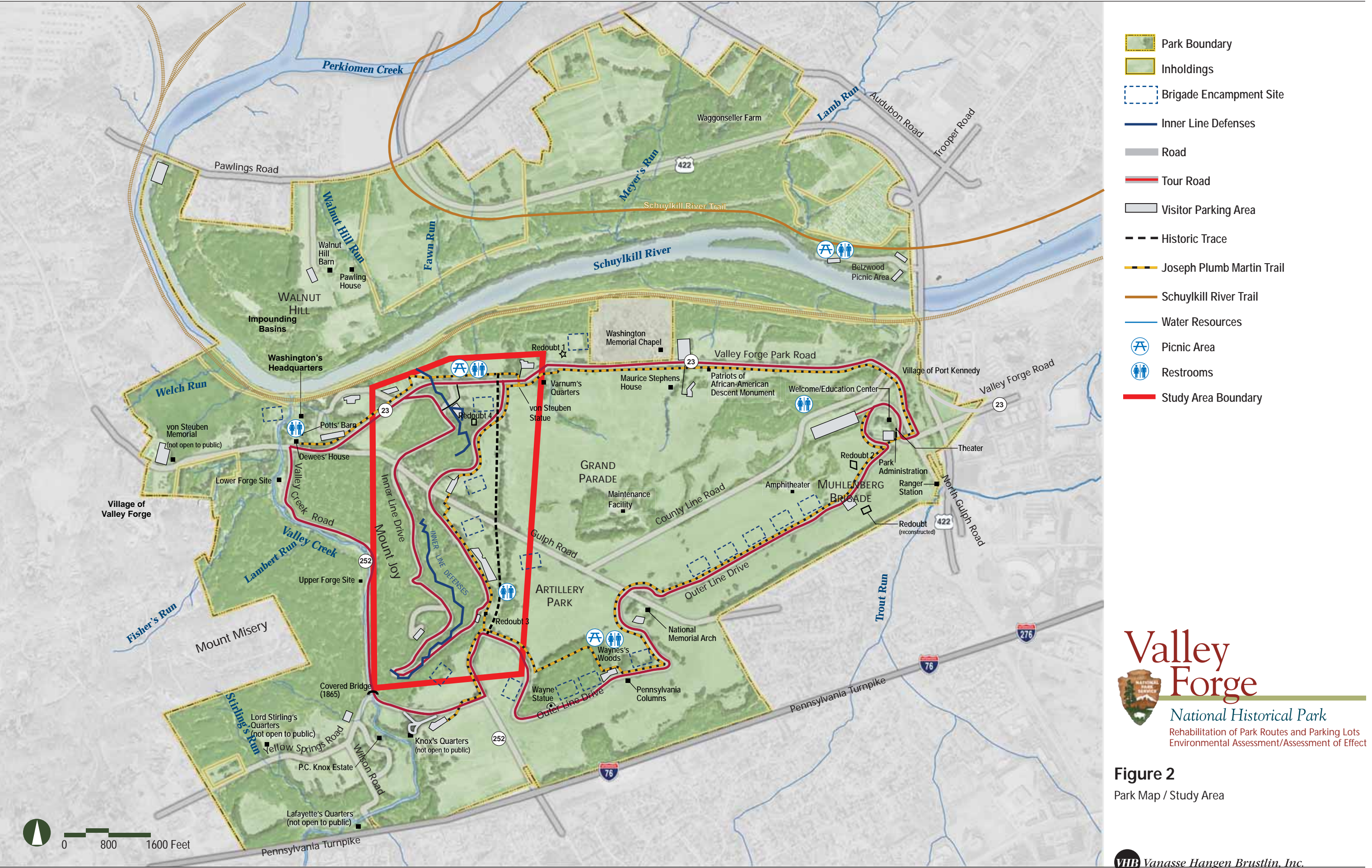


Valley Forge

National Historical Park

Rehabilitation of Park Routes and Parking Lots
Environmental Assessment/Assessment of Effect

Figure 1
Park Vicinity/Regional Map



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 and has become essential to the understanding and commemoration of the founding principles of the nation.

As early as 1828, ceremonies were held at Valley Forge to honor troops, and by the mid 19th century, people had begun a campaign to memorialize the 1777-78 encampment. This led to the establishment of Valley Forge as Pennsylvania's first state park in 1893. The commonwealth established the site both as a memorial park with touring drives, monuments and managed landscapes, and also as a recreational park, with picnic areas, camp grounds, and boating. Following World War II and the post war era, visitation increased and numerous parking lots were constructed.

In the 1970s, visitor use continued to increase as did threats of encroachment. In response to these concerns and the upcoming Bicentennial celebration, the park was transferred from the Commonwealth of Pennsylvania to the U.S. Department of the Interior on July 4, 1976, and Valley Forge State Park become Valley Forge National Historical Park, administered by the NPS as a place to educate and inform all generations about the sacrifices and achievements of General Washington and his army at Valley Forge.

Today, Valley Forge NHP is nationally significant as the location of the 1777-78 winter encampment and for commemoration of the site beginning in the fourth quarter of the 19th century. Although multiple layers of history are exhibited throughout the park landscape, the park has preserved various parts of its history to convey those stories of the past. With a mission to preserve these vast resources, Valley Forge NHP has become a destination for people wanting to learn about and experience the American Revolution and the stories associated with the era.

PLANNING BACKGROUND

Previous and related studies have been completed for Valley Forge NHP. These plans were reviewed to provide additional information and guidance in developing the proposed action. In addition, scoping efforts were 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 the development of alternatives for circulation improvements networks within Valley Forge NHP. These include the *Valley Forge National Historical Park General Management Plan* (NPS 1982), the working draft of the new GMP (NPS 2006), the *Valley Forge Area Transportation Planning Study* (VFATPS) (Boles Smyth Associates [BSA] 2002), the *Valley Forge Trail and Parking Lot Report* (BSA 2002), the *Valley Forge Alternative Transportation Feasibility Study* (Volpe 2004), and the *Culvert Investigation and Findings* report for the project area (FHWA 2005).

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 GMP outlined the existing conditions within the park, future plans for the park, and the impact they may have on Valley Forge as a whole. Even at this early stage of park planning, the NPS recognized the visitor tour roads would become a problem as tourists and commuters shared these narrow corridors. Though no infrastructure changes were suggested to alleviate these conditions, the GMP did suggest the potential use of a subsidized transportation shuttle service to allow visitors to see the many sites within the park while alleviating congestion on park roads. In summers 2003, 2004, and 2005, the park has successfully experimented with a fee-based interpretive bus tour. The tour breaks even financially and visitor surveys show a very high degree of satisfaction with the tours.

The GMP also noted that vehicle parking capacity at Valley Forge NHP is approximately 2,000 spaces. NPS noted that some of these parking spaces were not in ideal locations and suggested alternatives that would remove under-used lots. The removal of these under utilized parking lots would be accomplished under the proposed action.

The working draft of the ***Valley Forge National Historical Park Draft General Management Plan/Environmental Impact Statement (GMP/EIS)*** (NPS 2006) is currently under development by the NPS. This new GMP/EIS will replace the 1982 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. Similar to the 1982 GMP, the draft GMP/EIS identifies rarely used parking lots for removal and proposes a free shuttle service that would travel the Valley Forge tour roads, providing access to various educational and scenic opportunities within the park. This would improve circulation and access, particularly to the Inner Line Drive area. A shuttle service would rely on the connector road proposed by this EA/AoE.

The ***Valley Forge Area Transportation Planning Study*** (BSA 2002) was a joint effort sponsored by the NPS, FHWA, and the Pennsylvania Department of Transportation (PennDOT). The goal of this study was to develop a range of comprehensive solutions to the traffic and transportation problems of the area. The range of options as a whole was intended to improve quality of life for regional residents as well as preserve and protect Valley Forge NHP. The proposed action would take steps toward implementing the findings of this study.

In support of the VFATPS, the ***Valley Forge Trail and Parking Lot Report*** (BSA 2002) surveyed what areas in the park are used most by visitors and by what means they get there. Pertinent to the proposed action, the study identified under utilized parking lots and recommended their removal.

The ***Valley Forge Alternative Transportation Feasibility Study*** (Volpe 2004) provides an initial look at Valley Forge NHP's transportation/circulation network, as well as its parking lot capabilities. The report suggests circulation improvements that could enhance the park, including connector roads, a shuttle service, and elimination of under-used parking lots. The report specifically suggests a connector road between Inner Line Drive and Outer Line Drive near the historic road trace, noting that this connector road could support a shuttle service. Highlighting some of the most and least used parking lots, this report identifies the secondary lots surrounding Washington's Headquarters and several along Inner Line Drive, in particular the lot at Conway's Encampment, as lots with low usage. These recommendations were developed into the proposed action analyzed in this EA/AoE.

The ***Culvert Investigation and Findings*** report for the study area (FHWA 2005) documents the results of previous field investigations to review the condition of existing culverts and drainages. During the field investigations, FHWA staff recorded the conditions of the existing infrastructure and made recommendations for improvements. These findings are documented in the report and were used to define the action alternative for this EA/AoE.

Scoping

The scoping process is initiated at the beginning of a NEPA project to identify the range of issues, potential resource impacts, 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, the NPS and FHWA Eastern Federal Lands Highway Division completed an internal scoping process to identify project goals, resource constraints, and means of avoiding or lessening the impact to these resources. This resulted in a design scoping report that was completed in April 2003. This report focused on Maxwell Drive and Tower Road. For the proposed action, only the Tower Road portion of the report applies. Recommended improvements discussed in the design scoping report include reviewing the Observation Tower area for use and need due to the Observation Tower removal in the 1980s.

In March 2004, the NPS, in coordination with the FHWA Eastern Federal Lands Highway Division, completed a second design scoping report for all of the areas examined in the study area. This report identified worn out pavement that was in need of rehabilitation, several parking lots that were candidates for obliteration due to low visitor usage and high maintenance costs, and a new one-way connector road primarily for alternative transportation vehicle use (FHWA 2004). The report went on to discuss general issues and concerns related to the proposed action.

Several agencies were also contacted during the planning process including the Pennsylvania Department of Conservation and Natural Resources, 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 public 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 issues and concerns were identified as critical to the proposed action’s development. The following were identified as most important to the planning process: safety,

accessibility, resource protection, and topography/drainage. Along with the purpose and need for the proposed action, these issues guided the development of the action alternative and are identified below.

Safety. New access points should be designed in a manner that provides ample turning room and line of sight for oncoming traffic. Any new roads should be designed at grades and angles that support safe driving in all weather conditions. New roads should also avoid existing paved trails, to avoid conflicts with bicycle and pedestrian traffic. Additional efforts should be made to ensure visitor and employee safety during the construction process.

Accessibility. The *Valley Forge Alternative Transportation Feasibility Study* (Volpe 2004) and the draft GMP (NPS 2006) suggest the potential for operating a park shuttle along the Valley Forge tour roads. The road improvements in the proposed action alternative should be designed to accommodate shuttles if/when Valley Forge NHP chooses to introduce this type of system.

Resource Protection. Valley Forge NHP is home to a variety of important cultural and natural resources. Designs for the proposed action alternative should avoid not only potential impacts to structural, archeological, and cultural landscape resources, but also conditions that could impact them in the future.

Drainage. Existing roadways and parking lots through Valley Forge NHP cover varying terrain. A system of culverts, ditches, and other drainage structures has been incorporated into this circulation system, and any of the proposed improvements should be designed to use the surrounding topography in order to maintain or improve drainage patterns.

Regulatory, Management, and Legislative Concerns

Based on discussions with NPS staff and planning team members, implementation of the *Valley Forge NHP Rehabilitation of Park Routes and Parking lots EA/AoE* would not require any changes to existing legislation or management policies. However, several permits would be required prior to construction. They include:

- Pennsylvania National Pollution Discharge Elimination System (NPDES) permit
- Erosion and Sediment Control Plan (pursuant to Chapter 102 of the Pennsylvania State Code)

The NPS and FHWA would obtain all required permits prior to implementing the proposed action.

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. For the proposed action, impact topics were identified based on the issues raised during scoping; safety, accessibility, resource protection, drainage, and operations; 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 their selection. Each impact topic is further discussed in Chapter 3: Affected Environment, and analyzed for level of impact in Chapter 4: Environmental Consequences.

Soils

NPS policy is to protect the natural abundance of all naturally occurring communities. *NPS Management Policies 2001* (NPS 2000), NPS DO #77: *Natural Resources Management*, and other NPS and Valley Forge NHP policies provide general direction for protection of soils. The predominant soils in the area are moderately well-drained silt loams derived from weathered limestone, schist, gneiss, and quartzite. Considerable portions of the soils within the park are categorized as Class I or Class II soils for agriculture. Class I soils have few limitations that restrict use while Class II have moderate limitations, which may impact the selection of plants for revegetation. The proposed action would require soil disturbance in several locations within the study area; therefore the impact topic of soils is addressed.

Vegetation

NPS policy is to protect the components and processes of naturally occurring vegetative communities including the natural abundance, diversity, and ecological integrity of plants. Vegetation within Valley Forge NHP is a mix of different forest communities, grassland, cropland, and wetland areas. Mixed forest and nonnative grasses cover the immediate study area, and because the proposed action would both replace vegetation with asphalt in some areas and restore vegetation in areas where asphalt would be removed, therefore the impact, topic of vegetation is addressed.

Cultural Resources

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

Historic Structures

The NPS defines a historic structure 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, design, setting, feeling, association, workmanship, and materials. National Register Bulletin #15: *How to Apply the National Register Criteria for Evaluation* provides a comprehensive discussion of these characteristics. Valley Forge NHP contains numerous historic buildings and other individual structures including ruins, monuments, markers, statues, roads, earthworks, and walls. These elements all help to reflect the park’s history and contribute to its significance. Various monuments, memorials, and statues line the roads that are included in the proposed action. The drainage structures (culvert headwalls) that are a part of this study area are also considered potentially historic structures. Therefore, 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. Many of the circulation systems used within the park today help to convey the historical occupations of the landscape to the various periods of significance presented at Valley Forge NHP. Because the proposed action involves alterations to these various roadways and adjacent landscapes, the impact topic of cultural landscapes is addressed.

Site Access and Circulation

Safe and efficient circulation of all visitors at Valley Forge NHP is critical to an enjoyable visitor experience. Access to Inner Line Drive is limited to two locations: State Route 23 and Gulph Road. The proposed action would improve access to Inner Line Drive for shuttle buses, as well as overall circulation on the road. However, during construction, segments of Inner Line Drive would be closed. Therefore, the impact topic of site access and circulation 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 proposed action would facilitate visitor use by streamlining the route for park-sponsored tour buses, thus improving the overall experience for visitors. Removing the underutilized parking lots would enhance the landscape, thereby enhancing visitor experience. Clarifying vehicular and pedestrian circulation at the Von Steuben parking lot/Inner Line Drive intersection would also improve visitor use and experience at Valley Forge NHP. Therefore, the impact topic of visitor use and experience is addressed.

Infrastructure

The proposed action focuses on circulation network enhancements and parking lot removal. It also includes work to replace damaged drainages and nonstandard road signs and gates. Parking lot removal and drainage improvements would remove under utilized infrastructure and improve remaining elements. The result would be noticeable throughout the study area. Therefore, the impact topic of infrastructure is addressed.

Operations

Changes in park operations would result from the proposed action. Removal of parking lots and Tower Road and construction of a new connector route would all require changes in the park’s operations, particularly to maintenance activities. Therefore, the impact topic of operations 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 negligible to minor. A brief rationale for the dismissal of these impact topics is given 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 dominated by three geologic formations: Ledger, Antietam, and Harpers. The proposed action would be confined to the very 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. Located in southeastern Pennsylvania, Valley Forge NHP falls within the Piedmont physiographic province and borders the Great Valley of Chester County. Topography within the study area is varied, with the highest elevations on Mount Joy. Minor grading activities would be associated with the removal and/or installation of parking lots and roads; however, these changes would be long-term, negligible, and beneficial and long-term, negligible, and adverse and would have an immeasurable impact on the local topography. As a result, the impact topic of topography was dismissed.

Prime Farmlands

Prime farmland is one of several designations made by the U.S. Department of Agriculture (USDA) to identify important farmland 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 primary soil type within the study area is Duffield, designated as prime farmland soil. 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.

Surface Water and Groundwater

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. Surface waters in the vicinity of Valley Forge NHP have been affected for decades by development activities and industry in the area. Water quality within the Schuylkill River and its tributaries has been impacted by a variety of factors including increased runoff.

The groundwater system has also been impacted by various pollutant sources over the years. While the proposed action is not located close to any rivers or streams, there would be slight changes to the impervious surfaces and topography in the area. However, because the study area currently drains to open areas of karst geology, capable of quickly absorbing runoff, any noticeable impacts to drainage patterns in the area would be avoided. Changes in impervious surface could result in changes to pollutant loads and runoff patterns. The changes in pollutant loads would be immeasurable when combined with the surrounding area. Changes in drainage patterns would be handled by new or improved drainage structures. Because these structures are discussed under the “Infrastructure” impact topic, the impact topic of surface water and groundwater 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. None of the proposed actions are located within the 100- or 500-year floodplain. The closest floodplain to the study area is in the vicinity of the northwest corner, in which Washington’s upper parking lot A is approximately 330 feet away from the Schuylkill River floodplain. Because all development is outside of the floodplain areas, the impact topic of floodplains was dismissed.

Wetlands

Executive Order 11990, “Protection of Wetlands” and NPS DO #77-1: *Wetland Protection* define the NPS’s 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 the Von Steuben parking lot and is 1280 feet away from the study area boundary. Therefore, the impact topic of wetlands was dismissed.

Wildlife and Wildlife Habitat

NPS policy is to protect the natural abundance and diversity of all naturally occurring communities. *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. An abundance of wildlife species and various habitats exists at Valley Forge NHP and within the study area. However, areas proposed for replanting and/or removal of vegetation are in previously disturbed areas along a visitor tour road, and any disturbance from visitors and vehicles would continue at some level. Disturbances during construction would be temporary, lasting only as long as construction activities. Any permanent increases or decreases in vegetation would be negligible to minor in intensity and would not alter existing habitats or carrying capacities. Therefore the impact topic of wildlife and wildlife habitat was dismissed.

Special Status Species

In addition to NPS policies 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 October 20, 2004, the U.S. Fish and Wildlife Service acknowledged that the study area is within the known range of the bog turtle (*Clemmys muhlenbergii*), a federally listed threatened species. Bog turtles

typically inhabit small, discrete populations occupying suitable wetland habitat disbursed along a watershed. As discussed above in the “Wetland” section, the proposed action area has no wetlands within its boundaries, nor would wetlands be impacted by the proposed action. As a result, the proposed action would not impact the bog turtle.

The letter also noted that the federally listed small whorled pogonia (*Isotria medeoloides*) has also been known to exist in the general location of the study area; however, previous surveys have not identified this plant within the park. There are also several state listed plant species that have been identified within the study area. These species include the wild kidney bean (*Phaseolus polystachios*), St. Andrew’s cross (*Hypericum stragulum*), and blue lupine (*Lupinus perennis*). These species have not been confirmed within the study area in recent years. Prior to any site development or construction, a survey would be conducted to confirm that these species no longer exist or would be impacted by the proposed action. Therefore, the impact topic of special status species was dismissed. See correspondence in Appendix A for additional information.

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 Philadelphia-Wilmington-Trenton Severe Ozone Non-attainment Area. The proposed action would have minimal short-term impacts to air quality. Hauling material, operating equipment, and other construction activities could result in a short-term increase of vehicle exhaust and emission. 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 within the study area. Overall, there could be a negligible impact to 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 lightscales, which are natural resources and values that exist in the absence of human-caused light. Valley Forge NHP closes at dusk, and none of the parking lots included in the study area are lit. Also, no lighting would be added to the study area as a result of the proposed action. 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. No natural soundscapes are present in the park. Additionally, the impact to soundscapes through the construction process would be short-term and exist in areas frequently impacted by human-caused sounds. 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 a heavily trafficked setting. Because the study area consists of a well-traveled tour road and supports a variety of activities and traffic, the impact topic of soundscape management was dismissed.

Visual Resources

As described in *NPS Management Policies 2001* (NPS 2000) preservation of visual resources is an important part of the NPS mission at every park unit. Visual resources may include natural, cultural, or historic scenes. The removal of parking lots and improvement of infrastructure could alter some of these views within the project area. The results of these improvements would have a direct impact on the cultural landscape and visitor experience. Because the impacts are tied directly to these topics, changes to visual resources are included under these impact topics. Therefore, visual resources was dismissed as an impact topic.

Cultural Resources

Archeological Resources

Valley Forge NHP is nationally significant for its known archeological resources and its potential to yield important information about historic periods already evident in the park. Since the establishment of the state park in the 1890s, the landscape at Valley Forge NHP has been aggressively modified for memorialization and commemoration. Although prior to the acquisition of the park by the NPS, little effort was made to investigate encampment era areas before construction activities, it is probable that these activities displaced encampment era and other archeological resources.

In September 2004, the Public Archaeology Lab (PAL) undertook an archeological investigation of the proposed connector road location between Inner Line and Outer Line Drives near Redoubt #3. The investigation included a 1.3-acre swath in the area of the proposed connector route. Test pits were set along transects within the 1.3-acre area and confirmed and approved in the field by the park archeologist. Thirty-one test pits and five additional judgment test pits were excavated through the study area along with a metal detector search. This area had been previously disturbed by the original connector road as well as construction of an underground high voltage transmission line. The primary material uncovered during this investigation included late 19th century, 20th century, and modern cultural material. The 19th century material identified during the investigation is not associated with the 19th century period of significance identified in the park's enabling legislation. No pre-contact Native American or historic features were found (PAL 2004). Neither the parking lots proposed for obliteration nor the Tower Road was included in this archeological investigation, since they involve the removal of asphalt from parking lots that were disturbed during construction, thus the potential for archeological resources within these areas area minimal. However, the Huntington's Overlook parking lot was built on or near a historic

redoubt¹ and as a result would require an archeologist to be present during any ground-disturbing activities, including the obliteration of the area. Because no pre-contact Native American or historic features were discovered, the impact topic of archeological resources was dismissed.

Section 106 Summary

In accordance with the ACHP's regulations implementing Section 106 of the NHPA [36 CFR 800.4 (d) (1)], the determination of effect for archeological resources is ***no historic properties affected***.

Museum Objects

The NPS defines a museum object as "a material thing possessing functional aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. Museum objects include prehistoric and historic objects, artifacts, and works of art, archival material, and natural historic specimens that are part of a museum collection" (DO #28, 137). The proposed action does not involve museum objects or the storage or display of such objects in any way. The archeological investigation conducted along the connector road did not identify any notable archeological resources. The few resources that were uncovered during the investigation were accessioned into the park collection. Potential objects discovered at the site during construction would be brought to the park Project Manager and transferred to the appropriate park staff. Based on the archeological investigation, it is not anticipated that the proposed action would uncover any substantial museum objects. Therefore, the impact topic of museum objects was dismissed.

Ethnographic Resources

Ethnographic resources are 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 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.

Section 106 Summary

There are no traditional cultural properties in the area of potential effects or its general vicinity. In accordance with the ACHP's regulations implementing Section 106 of the NHPA [36 CFR 800.4 (d)(1)], the determination of effect for ethnographic resources 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 Department of the Interior agencies be explicitly addressed in environmental documents. The

¹ A defensive, earthwork fortification

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 appreciably impact local businesses or other agencies. Any increase would be temporary, lasting only as long as construction, and be negligible 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 impacts of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, 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 of 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, the impact topic of environmental justice is dismissed 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. Inner Line Drive would remain a toll-free road, and improvements would be confined to federal land.
- 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 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 alternative presented in this document subscribes to and supports the practice of sustainable planning and design by removing infrastructure such as the Tower Road and parking lots and repairing damaged infrastructure such as Inner Line Drive and culverts. By recognizing these resources and planning issues, the project aims to develop an alternative that meets 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. 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.

Community Services

The park contains important community resources, such as utility lines. High voltage power lines are buried in close proximity to the proposed connector road and Tower Road. These lines would be located prior to the proposed action commencing to ensure they were not disrupted. Therefore, community services is dismissed.

2

ALTERNATIVES

This chapter describes various alternatives for the rehabilitation of park routes and parking lots at Valley Forge NHP. The alternative for the proposed action was designed to support site access, visitor use and experience, and park infrastructure. The EA/AoE examines a No-Action Alternative (Alternative A) and the NPS Preferred Alternative (Alternative B). No additional options were included in the analysis. Both the No-Action and action alternative include a discussion of the connector road between Inner Line Drive and Outer Line Drive, parking lot removal(s), roadway rehabilitation, and circulation improvements in the area of the Von Steuben parking lot, Artillery Park parking lot, and Redoubt 3.

ALTERNATIVE A (NO-ACTION)

The No-Action Alternative would continue the present management, operations, and conditions within the study area. The No-Action Alternative is required by federal regulations and provides a basis for comparing the management direction and environmental consequences of the NPS Preferred Alternative. Should the No-Action Alternative be selected, the NPS would respond to future needs and conditions associated with transportation and circulation without major actions or changes in the present course.

Under the No-Action Alternative, Inner Line Drive and Outer Line Drive would remain as two separate roads. Park-sponsored tour buses would continue to travel along Valley Creek Road to reach Inner Line Drive (see Figure 2). Parking would be available at all of the parking lots within the study area. Inner Line Drive, Outer Line Drive, Redoubt 4 Road, Conway's and Huntington's Overlook Parking lots, Washington's Upper Parking Lot A, Tower Road and its parking lot, Artillery Park parking lot, and Redoubt 3 parking lot would remain in their current configuration (Figure 3).

Inner Line Drive and Redoubt 4 Road would remain as an aggregate base with asphalt overlay. This would include pull offs and parking lots along Inner Line Drive. Non-standard wooden gates and traffic signs along Inner Line Drive would remain in place. The intersection of State Route 23 with Inner Line Drive at the Von Steuben parking lot would remain in its current configuration with two entry drives into the parking lot (one at State Route 23 and one at Inner Line Drive). The Joseph Plumb Martin Trail near the Von Steuben parking lot would remain in its entirety.

ALTERNATIVE B (NPS PREFERRED ALTERNATIVE)

Alternative B, the action alternative, is the NPS Preferred Alternative. This alternative presents the proposed action and defines the rationale for action in terms of resource protection and management, and visitor and operational use. Under this alternative, a connection between Inner Line and Outer Line Drives would be established for future use by shuttles, under utilized and deteriorating parking lots and roads would be removed, Inner Line Drive would be rehabilitated, and circulation within the area of the Von Steuben parking lot and Redoubt 3 parking lot would be improved (Figure 4). The estimated cost for the implementation of this alternative is between \$1.8 and \$2.3 million and is programmed to be built in fiscal year 2007.

Connector Road between Inner Line Drive and Outer Line Drive

Under Alternative B, a one-way connector road would be constructed from the southeastern corner of Inner Line Drive, running parallel with Inner Line Drive, to Outer Line Drive (Figure 4). The direction of traffic for the connector road would be from the Outer Line Drive to the Inner Line Drive, in a northerly direction only. This configuration is designed to provide access between the park's two primary tour roads for use by the park-sponsored tour bus.

The alignment of the proposed connector road would roughly follow an old trace road² used previously by Valley Forge NHP to connect Inner Line and Outer Line Drives. It is believed that this trace followed too steep a grade and turned at angles that would be unsafe by today's roadway standards. To correct these deficiencies, the new alignment would follow the old trace road on a tangent for a portion of the southeast section before using the actual trace alignment.

The connector road would be approximately 611 feet in length and 11 feet wide, covering approximately 12,221 square feet. The road would be constructed of an asphalt surface with an aggregate base. One-foot wide turf shoulders would line each side of the road. On the east side of the road, wet weather drainage structures constructed of 24-inch diameter corrugated metal or reinforced concrete pipe could extend up to 15 feet from the road. This would be independent of any existing drainage structures and would transport runoff to areas capable of handling the additional water without incurring adverse impacts. There would also be minimal regrading of contours so the water would flow away from the pavement.

This road would be used only for the park-sponsored tour bus and park emergencies and not for private vehicle traffic. A radio-controlled gate at either end of the connector road would be put in place to be operated by the bus driver.

Parking Lot Removal

The Volpe 2004 report provided a cursory assessment of portions of the circulation network and parking lots at Valley Forge NHP. The report identified several parking lots that received little or no use and did not noticeably contribute to visitor circulation or enhance the visitor experience. Based on this report and

² The outline or remnants of a historic road that is no longer paved or used for regular transportation.



Figure 3
Alternative A: No-Action

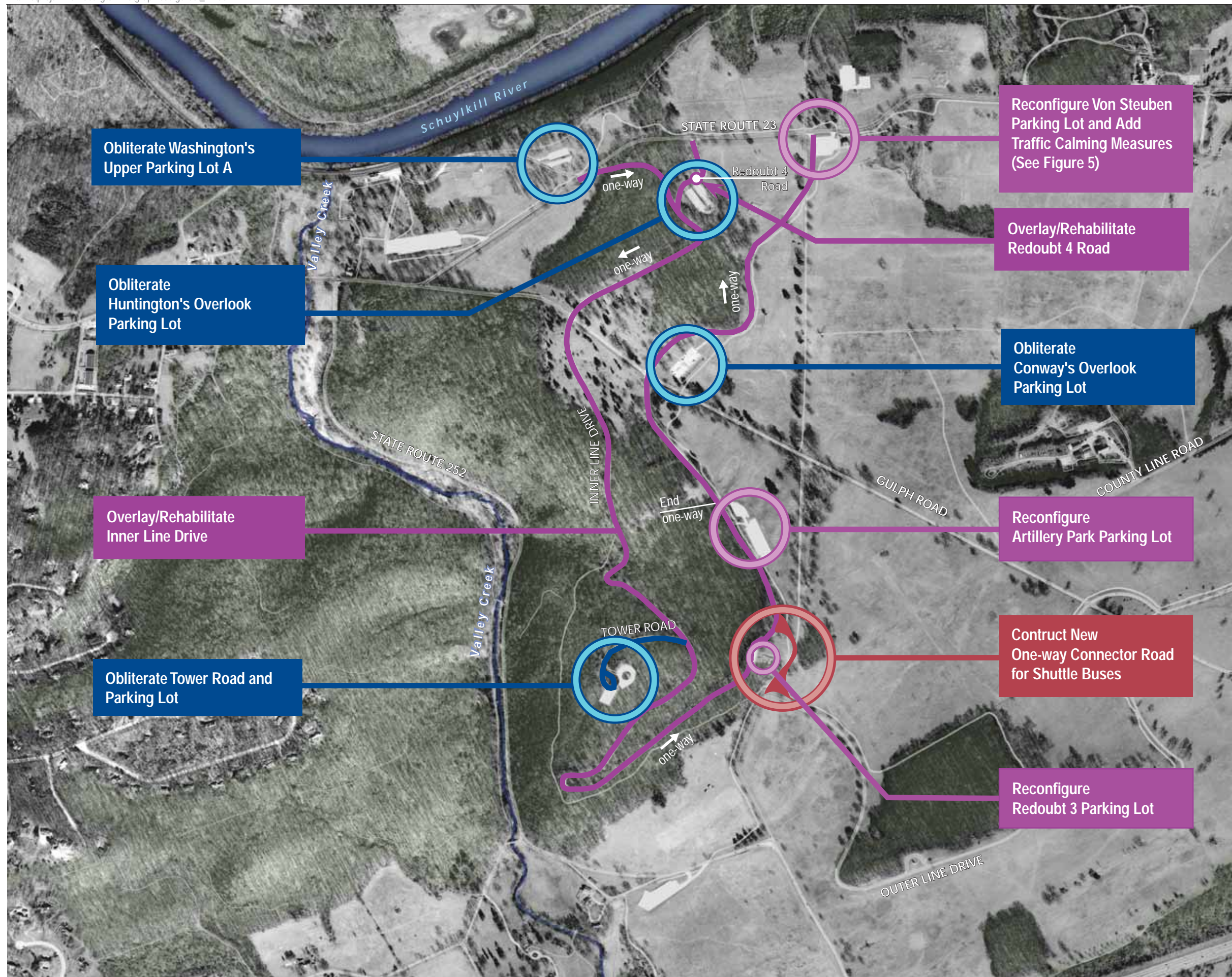


Figure 4
Alternative B: NPS Preferred

other discussions with NPS and FHWA staff, Valley Forge NHP selected four parking lots to be removed under Alternative B: Washington's upper parking lot A (21,600 square feet with 20 parking stalls), Huntington's Overlook parking lot (35,100 square feet with 34 parking stalls), Conway's Overlook parking lot (46,800 square feet with 100 parking stalls), and Tower Road parking lot and an abandoned concrete pad (parking lot is 22,500 square feet with 85 parking stalls) (see Figure 4).

This process would consist of removing the asphalt and base beneath the parking lots as well as surrounding drainage structures. These areas would then be regraded to the contours that were present prior to construction of the parking lots and replanted with native grasses.

Additional work would take place at Tower Road. This would include demolition of the road itself (36,432 square feet). The road area would be replanted with native grasses. The stone steps on the path to the Tower lot would be repaired and the grade re-established to meet the level of the top step once the asphalt is removed.

Artillery Park parking lot (41,185 square feet with approximately 84 parking stalls) would be reconfigured under this alternative. The northernmost portion of the parking lot would be removed (10,295 square feet approximately 23 parking stalls). The remaining portion of the parking lot would be reconfigured to include both vehicle and recreational vehicle parking. Redoubt 3 parking lot (2,972 square feet with approximately 17 parking stalls) would also be reconfigured to include continuous curbing and a four-foot clear zone for vehicle overhang.

Overall, approximately 173,190 square feet (3.9 acres) of impervious surface would be removed and revegetated.

Roadway Rehabilitation

Under Alternative B, portions of Inner Line Drive and Redoubt 4 Road, including one pull off and remaining parking lots would be rehabilitated. This rehabilitation would involve 2 to 3 inches of milling, or breaking down the asphalt, followed by removal and new asphalt overlay. For areas where the pavement is in poor condition, further rehabilitation would occur. This would involve the removal of the existing pavement structure including the asphalt and aggregate base, which would be replaced with new material. Portions of Inner Line Drive would be closed during construction.

Other rehabilitation efforts would also occur along Inner Line Drive. These improvements would include the replacement in-kind of three nonstandard wooden gates along Inner Line Drive and the replacement of all old traffic signs with new signs. Eight damaged culverts covering an estimated 1,000 linear feet would also be replaced. At the Artillery Park parking lot, the northern portion of the lot would be removed (10,295 square feet approximately 23 parking stalls) and revegetated, as described above, and the southern portion would be reconfigured and rehabilitated.

Several alterations would also be made within the Von Steuben parking lot. Along State Route 23, advance-warning signs would be installed east and west of the parking lot to alert drivers to a new crosswalk. The entry drive into the parking lot from State Route 23 would be closed. The parking lot would be reconfigured and a single entry to the lot from Inner Line Drive would be established. Across State Route 23 from the parking lot,

the portion of the Joseph Plumb Martin would be removed. A new connection to the Joseph Plumb Martin Trail would be constructed that would extend the trail along the edge of the newly reconfigured parking lot. The existing crosswalk for the Joseph Plumb Martin Trail would be moved so it is west of the parking lot providing for more sight distance (Figure 5).

Mitigation

In order to avoid significant impacts from the proposed action alternative, several mitigation measures would be carried out. These include construction monitoring by an archeologist on site, planting native grasses, survey of state-listed species in advance of construction, stormwater management, and precautions related to hazardous materials.

In order to avoid impacts to unknown archeological resources, the NPS would ensure in-place preservation of archeological resources. During the construction/removal process, an archeologist would be on-site to identify any unknown archeological resources. Known archeological resources would be avoided to the greatest extent possible. If archeological resources were discovered during construction, work would stop in the area, the proper NPS personnel notified, and the excavation, recordation, and mapping of any substantial cultural remains would be completed before construction would restart, to ensure that archeological data was not lost.

Invasive species, described under the “Vegetation” section of “Chapter 3: Affected Environment” of this document, are of great concern at Valley Forge NHP. The removal of the parking lots and roads proposed under the action alternative would result in bare soil, prime for invasive species. In order to avoid the spread of these species, select native species would be planted at these sites. Depending on the vegetative species used however, it could take time before the initial plantings take hold. This would require a long-term mitigation effort, as the sites would require monitoring to ensure invasive species do not develop and spread. Despite the long-term nature of this mitigation effort, it would likely be highly successful based on previous species monitoring programs at neighboring NPS units.

Prior to any construction activities related to the proposed action, the NPS would conduct a survey of the area to identify any federally or state-listed species within the study area. Several species were previously identified in the study area but have not been confirmed in recent years. This survey would allow the NPS to identify federally or state-listed species and provide protection during construction of the proposed action. These species are discussed in more detail under “Vegetation” in “Chapter 3: Affected Environment” of this document.

The proposed action would alter Valley Forge NHP’s drainage system through the removal and introduction of new drainage structures and impervious surfaces. New drainage structures would be independent of any existing drainage structures and would outlet to locations of low impact. Minimal regrading would occur, so water would flow away from the pavement. Stormwater mitigation would also be developed during the proposed action. While short-term observation may be required to ensure that the drainages successfully coexist with the existing system, this mitigation effort would most likely be immediately successful.

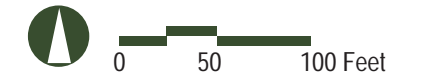
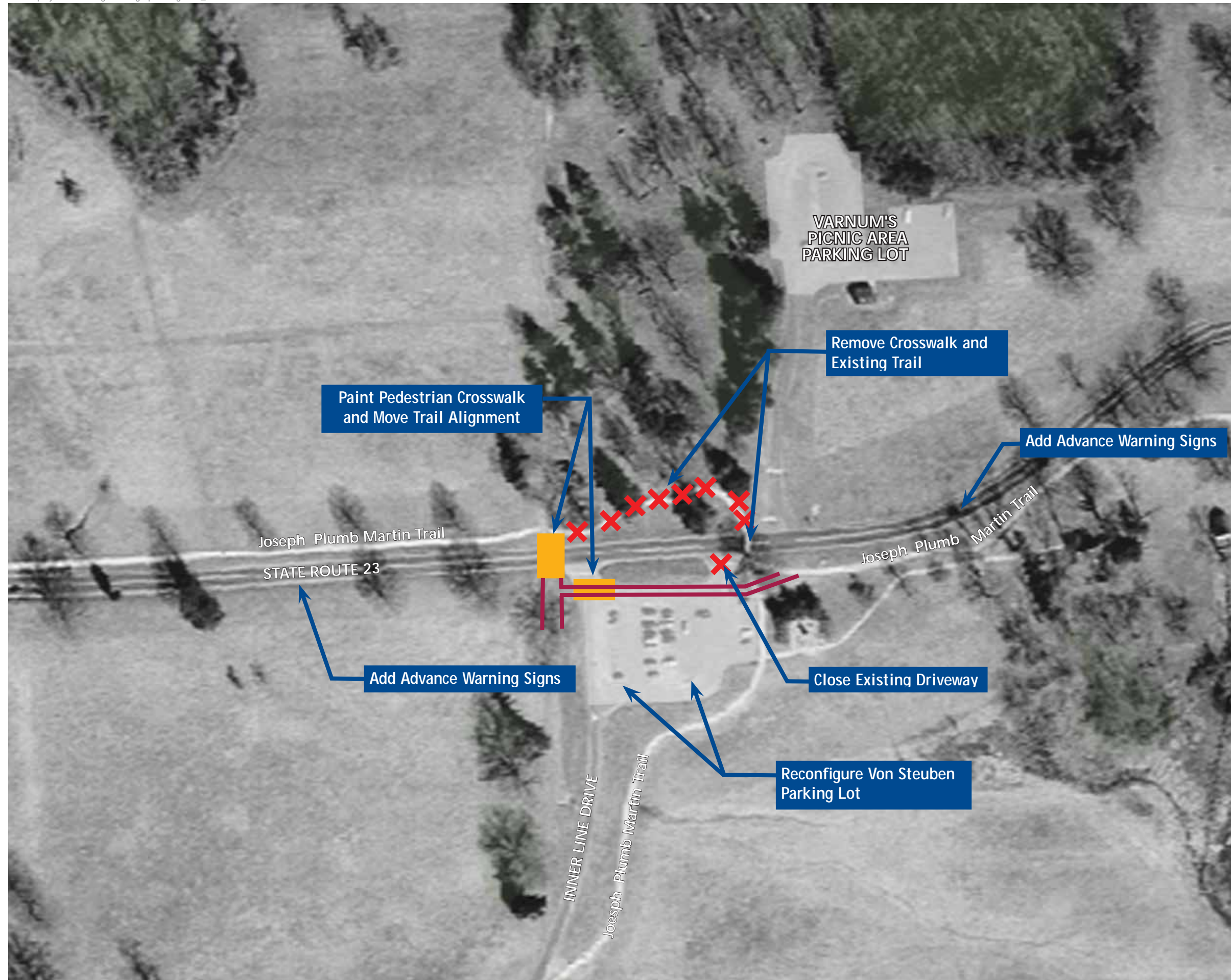


Figure 5
Von Steuben Parking Lot Detail

Finally, previous asbestos production and disposal activities on Valley Forge NHP lands prior to NPS's acquisition of the land have led to the designation of sections of the eastern and central portions of the park as an Asbestos Release Site (ARS). The possibility exists that asbestos-containing material (ACM) from the ARS was deposited in other areas of the park, including the study area. The two most likely modes of transport of ACM to the study area are the deposition of asbestos fibers carried from the ARS by wind and the direct transport/disposal of asbestos fibers through vehicle traffic or dumping. Limited subsurface investigations determined that asbestos is not present in the study area (VHB 2005); however, appropriate precautions should be taken during construction if unknown asbestos is encountered.

In addition to potential ACM, urban fill material containing coal, slag, ash, sand, and gravel were observed within the study area (VHB 2005). This fill material was used to grade the bases of the parking lots. Contaminants commonly associated with these types of fill materials include heavy metals (arsenic and/or lead) and polycyclic aromatic hydrocarbons. The fill materials would remain on-site beneath newly paved surfaces, and no fill materials would be required to be removed as part of construction. Because there are contaminants associated with urban fill, potential impacts to human health and the environment may result if proper soil management procedures are not adhered to. In general, Best Management Practices would be used to prevent migration of fill during construction (dust suppression, segregation of fill, etc.), and the fill would be maintained beneath paved areas and not within areas accessible to humans. Also, disclosure of the presence of fill material to the site contractors would be required.

SUMMARY OF ALTERNATIVES

Table 1 provides a summary of the alternatives presented above and how they address the planning issues and purpose and need of the proposed action.

Table 1: Summary of Alternatives		
Alternative Elements related to Planning Issues	Alternative A (No-Action)	Alternative B (NPS Preferred)
Safety	Visitor safety would be impaired by poor, inefficient circulation.	Would improve circulation system and improve safety for visitors.
Accessibility	The tour roads would remain divided, limiting visitor accessibility through the area.	New connector road would provide physical link between tour roads.
Resource Protection	Natural and cultural resources would be at risk, as visitors traversed through/over resources in an effort to improve accessibility.	Native grasses would be planted.
Drainage	Damaged, clogged, and small culverts would not provide adequate drainage to the project area.	Aging and damaged culverts would be replaced resulting in improved drainage and safer conditions throughout the project area.

Table 1: Summary of Alternatives

Alternative Elements related to Planning Issues	Alternative A (No-Action)	Alternative B (NPS Preferred)
Meet Purpose and Need	No. This alternative would not enhance visitor experience as circulation along Inner Line Drive would not be improved and parking lots that intrude on the cultural landscape would remain. Visitor safety, particularly at the Von Steuben parking lot would not be improved under this alternative.	Yes. This alternative would improve circulation along Inner Line Drive and connect it with Outer Line Drive, one of the park's other main tour roads. It would remove parking lots that intrude on the cultural landscape and improve visitor safety through changes at the Von Steuben parking lot. This would also enhance the visitor experience.

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”

Resource	Alternative A (No-Action)	Alternative B (NPS Preferred)
Soils	<p>No development within the study area</p> <p>Overall impact: long-term, minor, and adverse with no impairment</p> <p>Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, minor, adverse cumulative impact</p>	<p>Net reduction of approximately 173,190 square feet (3.9 acres) of impervious surfaces</p> <p>Overall impact: long-term, minor, and beneficial with no impairment</p> <p>Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, minor, adverse cumulative impact</p>
Vegetation	<p>No changes to vegetation</p> <p>Overall impact: long-term, negligible, and adverse with no impairment</p> <p>Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, moderate, beneficial cumulative impact</p>	<p>Net gain of approximately 173,190 square feet (3.9 acres) of vegetation</p> <p>Overall impact: long-term, minor, and beneficial with no impairment</p> <p>Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, moderate, beneficial cumulative impact</p>

Table 2: Summary of Environmental Consequences

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

Resource	Alternative A (No-Action)	Alternative B (NPS Preferred)
Historic Structures	<p>No changes to historic structures</p> <p>Overall impact: long-term, negligible, and beneficial with no impairment</p> <p>Cumulative impact: would contribute an imperceptible, beneficial increment to a long-term, minor, beneficial cumulative impact</p>	<p>Removal of non-contributing parking lots; removal of damaged drainage systems</p> <p>Overall impact: long-term, minor, and adverse with no impairment</p> <p>Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, negligible, beneficial cumulative impact</p>
Cultural Landscapes	<p>No changes to cultural landscapes</p> <p>Overall impact: long-term, minor, and adverse with no impairment</p> <p>Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, minor, beneficial cumulative impact</p>	<p>Cultural landscape enhanced and parking lots removed. Contours returned to pre-construction conditions.</p> <p>Overall impact: long-term, minor to moderate, and beneficial with no impairment</p> <p>Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, minor, beneficial cumulative impact</p>
Site Access and Circulation	<p>No changes to site access and circulation</p> <p>Overall impact: long-term, minor, and adverse with no impairment</p> <p>Cumulative impact: would contribute an imperceptible, adverse increment to a long-term, minor, and beneficial cumulative impact</p>	<p>Site access and circulation patterns improved, connector road constructed, under used parking lots removed</p> <p>Some short-term, minor, adverse impacts would occur as the existing road system was rehabilitated and Inner Line Drive would be closed during construction.</p> <p>Overall impact: long-term, moderate, and beneficial with no impairment</p> <p>Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, minor, and beneficial cumulative impact</p>
Visitor Use and Experience	<p>No change to visitor use and experience</p> <p>Overall impact: long-term, minor, and adverse with no impairment</p> <p>Cumulative impact: would contribute a noticeable, adverse increment to a long-term, minor to major, beneficial cumulative impact</p>	<p>Connection made between tour routes, removal of parking lots enhances visual landscape, crosswalks installed</p> <p>Some short-term, minor, adverse impacts to visitor use would occur during the construction process when portions of the existing road network and Inner Line Drive were closed for repairs.</p> <p>Overall impact: long-term, moderate, and beneficial with no impairment</p> <p>Cumulative impact: would contribute a appreciable, beneficial increment to a long-term, minor to major, beneficial cumulative impact</p>

Table 2: Summary of Environmental Consequences

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

Resource	Alternative A (No-Action)	Alternative B (NPS Preferred)
Infrastructure	<p>No change to infrastructure</p> <p>Overall impact: long-term, moderate, adverse with no impairment</p> <p>Cumulative impact: would contribute a noticeable, adverse increment to a long-term, minor to major, beneficial cumulative impact</p>	<p>New connector road constructed, removal of under used parking lots results in less infrastructure</p> <p>Overall impact: long-term, minor, beneficial with no impairment</p> <p>Cumulative impact: would contribute a noticeable beneficial increment to a long-term, minor to major, beneficial cumulative impact</p>
Operations	<p>No change to operations</p> <p>Overall impact: long-term, moderate, and adverse with no impairment</p> <p>Cumulative impact: would contribute a noticeable, adverse increment to a long-term, minor to major, beneficial cumulative impact</p>	<p>Repaving of roads would reduce maintenance, removal of parking lots would reduce maintenance, new drainage structures would reduce maintenance costs</p> <p>Overall impact: long-term, minor, and beneficial with no impairment</p> <p>Cumulative impact: would contribute a noticeable, beneficial increment to a long-term, minor to major, beneficial cumulative impact</p>

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined by CEQ as “the alternative that would promote the national environmental policy as expressed in NEPA’s Section 101. This includes:

- 1. Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;*
- 2. Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;*
- 3. Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;*
- 4. Preserving important historic, cultural and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;*
- 5. Achieving a balance between population and resource use that would permit high standards of living and a wide sharing of life’s amenities; and*
- 6. Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (National Environmental Policy Act, Section 101).*

Although each of the alternatives meets the criteria outlined in NEPA Section 101 (b) to some degree, Alternative B surpasses the No-Action Alternative in fulfilling these factors. Alternative B would better serve and protect the park resources now and in the future by rehabilitating and improving internal circulation. These improvements would also enhance visitor safety and make visits to the area more productive by linking the two tour roads. While the removal of select parking lots would reduce parking options for visitors, these lots have already been identified as being poorly used and would not eliminate any popular parking options. The removal would, however, allow the park to develop new opportunities that could enhance the range of beneficial uses within the area. The parking lot removal would also increase the park's ability to preserve natural and cultural resources in the area. The improved resource protection would be accomplished concurrently with the development of the connector road, thus improving the choices offered to the visitor. The improved resource protection and visitor choice would create a better balance between resource and population in the area. Alternative B would also improve renewable resources by increasing the amount of pervious surface in the area. Taking all of this into consideration, Alternative B best meets the criteria for the environmentally preferred alternative.

3

AFFECTED ENVIRONMENT

Situated in southeastern Pennsylvania along the Schuylkill River, Valley Forge NHP covers approximately 3,452 acres of land in Chester and Montgomery Counties (see Figure 1) and receives approximately 1.2 million visitors each year. Located in the Piedmont physiographic province and bordering the Great Valley of Chester County, the park is home to a variety of cultural and natural resources. The study area itself is confined to approximately 335 acres south of the Schuylkill River and east of Valley Creek (see Figure 2).

Organized by resource topic, this chapter describes the resources that could be impacted by the proposed action. Resources examined in detail include soils, vegetation, cultural resources (historic structures and cultural landscapes), site access and circulation, visitor use and experience, infrastructure, and operations. Resources dismissed from further consideration were discussed in “Chapter 1: Purpose and Need.”

SOILS

There is a wide variety of soil types in the Valley Forge area. According to the *USDA Soil Conservation Service Survey of Montgomery County Pennsylvania* (1967), the primary soil type within the study area is the Duffield soil complex. This soil type extends from Valley Forge NHP to Willow Grove, Pennsylvania. These soils are deep, well-drained soils, with small pockets of poorly drained areas. Permeability within this soil type is moderate and available water capacity is high or very high. When untreated, the soil is strongly acidic to neutral in the upper layers and strongly acidic to slightly acidic in the lower soil layers. The soil is well suited for pastures and tree planting. Despite this suitability, in some locations within the study area, soils are oversaturated due to poor drainage. These excessively wet conditions do not allow the soil to firmly support vegetation. Furthermore, wet conditions also increase the rate of erosion and soil loss.

VEGETATION

Vegetation within Valley Forge NHP is a mix of different forest communities, grassland, cropland (limited to a small area on the north side of the park), and “wet meadow” (herbaceous wetlands). The two primary vegetative communities located within the study area are a modified successional forest type and nonnative grasses. Some ornamental tree groves also exist in the study area.

The forest alliances within Valley Forge NHP cover approximately 1,390 acres (34% of the park) and include Modified Successional Forest type. Species in this type include white ash (*Fraxinus americana*), black walnut (*Juglans nigra*), and American elm (*Ulmus americana*). Less common sub-types also include tree-of-heaven (*Ailanthus altissima*), black locust (*Robinia pseudoacacia*), eastern red cedar (*Juniperus virginiana*), and oriental bittersweet (*Celastrus reticulata*). Typical sub-canopy species include box elder (*Acer negundo*), flowering dogwood (*Cornus florida*), black cherry (*Prunus serotina*), and sassafras (*Sassafras albidum*).

After forested lands, grasses (Festuca herbaceous alliance) comprise the second largest percentage of park property, encompassing approximately 1,330 acres (32% of the park). This particular vegetative community is further subdivided into mowed grassland and tall grass. Today, tall grass is the single most prevalent vegetative community in Valley Forge NHP, covering almost 930 acres. Common species within the tall grass community include redtop (*Agrostis gigantea*), broom sedge (*Andropogon virginicus*), panic grass (*Panicum anceps*), sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), tall fescue (*Festuca elatior*), red fescue (*Festuca rubra*), and purple top (*Tridens flavus*). Broom sedge and purple top are both native species to the area.

Within these vegetative communities, several state-listed plant species have been identified. The wild kidney bean (*Phaseolus polystachios*), a species of special concern, is found in moist woods and roadside banks and was observed within the study area in 1986. Additionally, the St. Andrew's cross (*Hypericum stragulum*) has been identified in the study area. This species of special concern inhabits open woods, thickets, dry sandy soil, and serpentine barrens, and was last seen in the study area in 1997. Finally, the rare blue lupine (*Lupinus perennis*) was identified within the study area in 1993 and generally inhabits open fields, woods edges, and roadsides. Based on the age of the identifications, the Pennsylvania Department of Conservation and Natural Resources has requested that the NPS conduct a field survey to identify these species, or any other species of concern that may exist within the study area. This survey is further discussed under the "Mitigation" section in the "Chapter 2: Alternatives" of this document.

In addition to these species, the prevalence of non-native species or invasive species is a great concern to Valley Forge NHP. Invasive species can compete with native species for food, water, and space, eventually winning out, which can drastically alter habitats and the overall landscape. As of early 2001, 20 miles of forest edge and 900 acres of woodlands were infested with invasive vines and shrubs. The list of exotic invasive species includes Oriental bittersweet (*Celastrus orbiculatus*), Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), and barberry (*Berberis* sp.). Invasive species targeted for immediate control through the park include: Mile-a-Minute (*Ipomoea cairica*) along the north and south bank and floodplains of Schuylkill River; Canada Thistle (*Cirsium arvense*) dispersed in small pockets through the park; Japanese Barberry (*Berberis thunbergii*) spread throughout Mount Joy and other areas; and Ailanthus (*Ailanthus* sp.) a recent addition to the list. Control of aggressive, nonnative vegetation is one of the top priorities for natural resource management within the park.

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 are apparent

throughout the park, the area retains sufficient integrity to convey a majority of the stories of its past. Specific cultural resources potentially impacted by the proposed action include historic structures and cultural landscapes. Cultural resources dismissed from further consideration were discussed in “Chapter 1: Purpose and Need” and include archeological resources, museum objects, and ethnographic resources.

Historic Structures

Valley Forge NHP contains 74 historic 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. There are 43 authorized monuments and memorials many along Inner Line and Outer Line Drives. These structures typically commemorate an individual, group, event, or idea. Prior to Valley Forge becoming a unit of the NPS, the Valley Forge State Park Commission invited governments from the 13 states with brigades at Valley Forge to erect monuments on the site of their camps. All states, with the exception of Connecticut, placed monuments that now line Inner Line and Outer Line Drives.

Within the study area, the stone steps associated with the Tower Road parking lot were installed in 1925-26 during the commemorative period of the park and have not been altered. However, this parking lot was constructed to serve the Observation Tower at Valley Forge, which no longer exists.

Potentially historic drainage structures are located along Inner Line Drive within the study area. The historical significance of these concrete culverts has not been determined according to the *Cultural Landscape Plan* (Susan Maxman Architects and John Milner Associates 2002). Thus, Valley Forge NHP invited the Pennsylvania SHPO to the site to review the culverts identified in the study area. A verbal concurrence was reached that the culverts could be removed as there were numerous culverts throughout the park and the culverts in the study area no longer support their intended use. The Pennsylvania SHPO further noted that many of the culverts within the study area were damaged.

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”(NPS 1998). Extant cultural landscape features at Valley Forge NHP are associated with a series of historic periods, spanning approximately 250 years. Within this period, four major periods are evident on the landscape at the park including 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 settlement by European immigrants. This landscape reflects the settled landscape present when the army arrived. Within the study area, there are no extant features from this period. 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 archeological sites, many of which are present in the study area. The post encampment landscape includes

the period of 1778 to 1878 and is not reflected at the study area. The commemoration period represents the development of a commemorative landscape designed to intertwine tourism and recreation with the Revolutionary War history of the site and encompasses a majority of the study area. Of these periods, the encampment and commemorative periods are the most notable for the study area.

The encampment created a temporary military overlay on an existing industrial and agricultural landscape, based on natural features and systems critical to selection of sites for building encampment fortifications, roads, and housing. As with many historic, military sites, many of the landscape features associated with the encampment were not meant to be permanent and have not survived above ground,

The commemorative landscape is also present within the study area. Commemorative and early state park development of the Valley Forge landscape included in the design and siting of internal park tour roads, the restoration and rebuilding of earthworks, redoubts, and redans, the siting of various park facilities, addition of interpretive signage, reforestation, and planting of ornamental trees.

Tour roads were designed to provide access to historically significant areas of the park. Although general alignment of the tour roads is intact today, the detailed character of circulation features surviving from this period has changed considerably. Road surfaces and widths have been modified and edge details have been changed. Visitor parking lots were also added during the commemorative period and many are an intrusion on the cultural landscape.

SITE ACCESS AND CIRCULATION

The primary circulation route within Valley Forge NHP is State Route 23, a two-lane road that runs east to west. Other state routes within the park include Valley Creek Road (State Route 252), Gulph Road, and County Line Road. Pawlings Road (State Route 4004), US 422, and US 202 are the primary roads adjacent to the park, along with the Pennsylvania Turnpike, which runs along the park's southern border. Within the study area, the primary roads are State Route 23, Gulph Road, and Inner Line Drive and Outer Line Drive (see Figure 1).

Commuters and commercial traffic heavily use the public roads within the park. This leads to daily congestion during morning and evening rush hours. These historic roads were not designed for heavy, high-speed traffic, and their narrow widths and short sight distances have led to conflicts and accidents.

Most visitors to Valley Forge NHP arrive by car and use a self-guided tour route to explore the park. This tour route encompasses a one-way road system containing two loop roads, Inner Line Drive and Outer Line Drive, which parallel the inner and outer line of defenses, respectively. While there is no current connection between Inner Line Drive and Outer Line Drive, there is an historic trace road running through the center of the park. This trace once connected the two drives, and it offers the possibility of a re-connection between them.

Valley Forge NHP is also accessible for pedestrians and bike travelers as it is located at the confluence of three major trail systems: the Horse-Shoe Trail, the Schuylkill River Trail, and the Perkiomen Creek Trail. Visitors use these trails heavily on a daily basis. Smaller trails within the park are also available to visitors. The Joseph Plumb Martin Trail is a multi-use loop path that is evident throughout the study area.

VISITOR USE AND EXPERIENCE

Not only is Valley Forge NHP a place to learn the history of the American Revolution, it has 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. A majority of the approximately 1.2 million annual visitors come primarily for recreation purposes rather than the historic resources the park has to offer. However, recreational visitors also enjoy the historical resources within the park using interpretive opportunities that are scattered throughout Valley Forge NHP.

To tour the entire park, visitors can use the self-guided driving tour that includes Inner Line Drive and Outer Line Drive. These two drives provide access to many of the park's encampment-era features. Outer Line Drive leads visitors from the Welcome Center at the eastern end of the park along the site of the encampment's southern line of defenses. Inner Line Drive in part parallels the remains and reconstructed examples of the inner line of defense earthworks. Along Inner Line Drive are interpretive and informational signs to guide visitors. Pull offs provide access to designed views and overlooks while parking lots allow visitors to park and view interpretive earthworks and encampment-era facilities. Inner Line Drive also provides access to pedestrian trails.

Leaving the Washington's Headquarters area, visitors encounter Washington's upper parking lot A, Huntington's Overlook parking lot, Tower Road and its associated parking lot, Artillery Park parking lot, Conway's Overlook parking lot, Redoubt 3 parking lot, and the Von Steuben parking lot. Washington's upper parking lot A is associated with the park's primary interpretive attraction, Washington's Headquarters, but is little used, as two larger lots are closer to headquarters.

Huntington's Overlook parking lot sits on a knoll along Inner Line Drive south of Route 23. Two separate rectangular parking lots parallel each other and allow visitors to view Redoubt 4, which anchored one end of the inner line of defenses. Tower Road and its associated parking lot once supported an observation tower. The tower was demolished in the early 1980s. Since then, this parking lot has declined in use.

There is a small pull off that edges Inner Line Drive above Redoubt 3. From this pull off visitors can access a wooden platform and overlook the redoubt and an encampment road. The Artillery Park parking lot encompasses a two-bay parking lot with one-way entrances and exits onto Inner Line Drive. Here visitors can experience a blacksmith hut and interpretive opportunities associated with artillery of the Revolutionary War. Conway's Overlook parking lot is similar in configuration with one-way entrances and exits.

The Von Steuben parking lot is located at the intersection of Inner Line Drive and State Route 23. This parking lot encompasses two entrances, one from Inner Line Drive, and one from State Route 23.

Visitors can access the Joseph Plumb Martin Trail from Artillery Park, Conway's Overlook, and the Von Steuben parking lots.

INFRASTRUCTURE

Infrastructure within the study area consists of roads, parking lots, drainages, and utilities. The main roadways within the study area are State Route 23, Gulph Road, Outer Line Drive, and Inner Line Drive. In recent years, several portions of Inner Line Drive have degraded and eroded. These conditions include transverse and longitudinal cracking, which has created unsafe driving conditions. Aging traffic signs and wooden gates are used to control access to the area.

Because these roads provide access to various points of interest throughout the park, a number of parking lots were positioned at points along the road network. The state park commission added many of these lots in anticipation of Bicentennial crowds. Within the park, there are over 20 parking lots of various sizes. Some of these lots are well used, like the parking lot at the Von Steuben Statue, which is filled to at least 50% capacity on average. However, the secondary parking lots at Washington's Headquarters and the lots associated with the former tower, Redoubt 4, Redoubt 3, and the Conway Encampment are rarely used (Volpe 2004).

The road and parking lot network is drained by a series of culverts and inlets that connect to other drainages within the park. Within the study area, several drainage pipes have cracked. Drainage from roads and parking lots, as well as ponding on unpaved surfaces, has led to damage of pavement and natural resources as well as channelization and erosion at culvert outlets. The historical significance of the drainage structure has not been determined to date, according to the *Valley Forge National Historical Park Contextual Documentation and Cultural Landscape Plan: Volume I & II 100% Draft* (Susan Maxman Architects and John Milner Associates 2002).

As Valley Forge NHP is located in a relatively developed area, there are a number of utility lines running through the park. Within the study area there are several high voltage electric lines and water lines that run underground. There is a known high voltage line buried between Inner Line Drive and Outer Line Drive and a similar high voltage line and water line buried close to Tower Road.

OPERATIONS

Roads, parking lots, drainages, and utilities all require attention from park staff. Operations within the study area include security patrols of the parking lots and surrounding areas and maintenance to manage the vegetation surrounding the interpretive sites, roads, and parking lots. Maintenance staff is also required to plow the parking lots during the winter months. Many of these maintenance activities are limited by available staff and funding.

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 those 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. This document is also being used to comply with the requirements of Section 106 of the NHPA. The CEQ regulations that implement NEPA require assessment of impacts to cultural resources as well as natural resources. Section 106 summaries are provided for historic structures and cultural landscapes. Because archeological resources and ethnographic resources were dismissed from further discussion in “Chapter 1: Purpose and Need,” the Section 106 summaries for those impact topics are included in that chapter.

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, consultations with the Pennsylvania SHPO, and public input.

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 further 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 rate of recovery.

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

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

Level of Intensity

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

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 non-federal) or person undertakes such other actions (40 CFR 1508.7).

To determine the potential cumulative impacts, past, present, and 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 the *Valley Forge NHP GMP/EIS*, the Mount Joy Observation Tower Demolition (a past project), and Rehabilitating Support Facilities At Washington's Headquarters.

The working draft *Valley Forge National Historical Park Draft GMP/EIS* (NPS 2006) is being developed to replace the park's initial GMP that was developed over 20 years ago. This new GMP/EIS will provide guidance and planning to carry the park through the next 15-20 years and will include measures for natural resource management, cultural resource management, education and interpretation objectives, as well as means of improving the visitor experience and overall park operations. From this document, specific projects were identified as cumulative projects for this EA/AoE. These include:

- Stabilization and protection of encampment-era earthworks and archeological sites
- Improved care of monuments and statues
- Preservation of cultural landscapes
- Re-establishing views between Redoubts 1, 2, 3, and 4
- Management of vegetation to restore biodiversity and eliminate invasive species
- Closure of Gulph Road to public traffic and restoration of historic trace
- Improved interpretation at interpretive focus areas (including Washington's Headquarters, Artillery Park, and Varnum's Quarters/Star Redoubt)
- Establishing an internal park shuttle

This project would impact soils, vegetation, historic structures, cultural landscapes, site access and circulation, visitor use and experience, infrastructure, and operations.

The **Mount Joy Observation Tower demolition** occurred in the early 1980s. A recreational structure, this tower was built to support park development and was associated with the cultural landscape at Valley Forge NHP which possesses state level significance. Made of iron, the observation tower was constructed in the early 1930s as a visitor amenity for the park. The tower was condemned and closed in May 1980 as it presented a serious public safety hazard from use or possible collapse. Trees had grown up around the tower eliminating the view it once provided. Because of its deteriorated condition from rust and decay, the structure could not be repaired and the cost of replacing it was prohibitive. As a result, Valley Forge NHP dismantled it and removed it from the park. Because this structure was demolished prior to the *Valley Forge National Historical Park Contextual Documentation and Cultural Landscape Plan: Volume I & II 100% Draft* (Susan Maxman Architects and John Milner Associates 2002) its National Register eligibility was not determined. Although this project occurred previously, the Tower Road and parking lot addressed in this EA/AoE were constructed to support this tower. Because of this connection, this project is included in the cumulative impact analysis for this document. The project previously impacted historic structures, cultural landscapes, visitor use and experience, infrastructure, and operations.

Valley Forge NHP is currently in the planning phase of a project to **Rehabilitate Support Facilities at Washington's Headquarters**. All of the changes proposed would encompass the area in and around Washington's Headquarters only. This project includes changes to existing parking lots, circulation, and the cultural landscape; rehabilitation of the Valley Forge train station and its platform cover; improvements to visitor amenities, heating, ventilation, air conditioning, and the sanitary system; and the addition of interpretive elements. This project would impact soils, vegetation, historic structures, cultural landscapes, site access and circulation, visitor use and experience, infrastructure, and operations.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of the proposed actions on 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 consistent 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 the overall cumulative impact is such a small amount that it is impossible or difficult to discern.
- Noticeable:** The incremental effect contributed by the alternative, while evident, is still relatively small in proportion to the overall cumulative impact.
- Appreciable:** The increment effect contributed by the alternative constitutes a large portion of the overall cumulative impact.

Impairment

In addition to determining the environmental consequences of the No-Action and NPS Preferred Alternative, *NPS Management Policies 2001* (NPS 2000) and DO #12 require analysis of potential impacts to determine whether actions have 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 requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that would otherwise be present for the enjoyment of those resources and values. An impact would be more likely to constitute impairment to the extent 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 by concessionaries, 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 site access and circulation, visitor use and experience, infrastructure, and operations. These impact topics do not require a determination of impairment.

SOILS

Methodology

All available information on soils potentially impacted in various areas of Valley Forge NHP 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 previous projects with similar soils and recent studies. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** The impacts to soils would be at or below 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 to soils would be readily apparent and result in a change to the soil character over a relatively wide area. Mitigation measures would be necessary to offset adverse impacts and likely be successful.
- Major:** The impacts to soils would be readily apparent and would substantially change the character of soils over a large area in and out of Valley Forge NHP. 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, no changes would be made within the study area that would impact soils. Areas that are currently impervious would remain that way and no new impervious surfaces would be created. Ponding along the roadside from clogged and inadequate drainage structures would continue. These excessively wet conditions would not allow the soil to firmly support vegetation. Furthermore, wet conditions would also increase the rate of erosion and soil loss. Overall, the No-Action Alternative would have a **long-term, minor, adverse** impact on soils.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have contributed cumulative impacts to soils in and around the study area. Present and on-going projects in the park that could contribute to these actions include implementation of the GMP/EIS and the work at Washington's Headquarters. The GMP/EIS includes plans for development, as well as new natural resource management strategies. These new strategies involve the removal of impervious surfaces, the creation of new impervious surfaces, and potential changes in the ground cover that occupies the upper layers of soil. These changes would involve short- and long-term, negligible to minor, adverse impacts, as well as short- and long-term, negligible to minor, beneficial impacts to soils.

Most of the work for Washington's Headquarters would involve the removal and installation of impervious surface. In some places, new impervious surface would be added to support the new comfort station, paths,

and drainage systems. In other areas, such as the lower parking lot, impervious surface would be removed. Overall, these actions would result in a net loss of impervious surface. The exposed soils would be covered with vegetation to protect natural soil conditions. The reduction of impervious surface would result in long-term, moderate, beneficial impacts to soils. Implementation of the GMP/EIS and the Washington's Headquarters project, along with the No-Action Alternative, would have an overall long-term, minor, adverse cumulative impact on soils. Based on the relative small size of the project area, the No-Action Alternative would contribute an imperceptible, adverse increment to the cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, soil disturbances would be confined to areas where road and parking lots were being removed and areas where new pavement would be placed. Approximately 173,190 square feet (3.9 acres) of impervious surface would be removed, including four and a half parking lots, a cement pad, and Tower Road. The removal would be confined to an area small enough that the use of heavy equipment would not be necessary, thus avoiding compacting soils. Although the soil would be displaced and exposed as the pavement was removed, the removal would allow the soil to absorb rain water and disperse pollutants from stormwater runoff, part of its natural characteristics. Natural characteristics would also be restored through improved drainage, which would eliminate ponding and allow the soil to support vegetation and avoid increased erosion.

Additional impacts to soils would occur through the construction of new impervious surfaces. The areas selected for new development are currently pervious, but have been disturbed by construction and development in the past. This would occur at the connector road and through the reconfiguration of entry drives and trail heads at the Von Steuben parking lot and cover an estimated 10,000 square feet (0.2 acres). The paved surface would prohibit the soil from supporting vegetation, absorbing rainwater, or many of its other natural characteristics. This impact would be supplemented by temporary disturbances to an estimated 30,000 square feet (0.7 acres) of soil. This temporary impact would consist of an estimated 15-foot swath on each side of the road that would be used to install additional drainage features. The soil displaced from this process could be reused to fill the swath, avoiding loss of natural soils or soil characteristics.

In addition, approximately 1,000 linear feet of culverts would be replaced. The soil beneath the culverts has been covered for some time and would only be exposed briefly while the old systems were removed and the new ones installed. Other temporary impacts could occur as road signs were pulled from the ground and new ones were installed. Neither of these actions would constitute a measurable impact.

Finally, some grading activities would occur at locations where impervious surfaces were removed, as well as along the new connector road. This would result in the displacement and removal of soils, but would not constitute a measurable loss of natural soils or a change to their characteristics. Under this alternative, approximately 173,190 square feet (3.9 acres) of impervious surface would be removed. An additional 10,000 square feet (0.2 acres) would be installed. The overall impact to soils of Alternative B would be **long-term, minor, and beneficial**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to cumulative impacts on soils in the study area are described under the “Cumulative Impacts” for the No-Action Alternative. Those projects, along with Alternative B, would have an overall long-term, minor, adverse cumulative impact on soils. Alternative B would contribute noticeable, beneficial increments to this cumulative impact.

VEGETATION

Methodology

All available information on vegetation and vegetative communities potentially impacted by the proposed action was compiled for this document. Mapped locations of sensitive vegetation species, populations, and communities were identified and avoided. Predictions about short- and long-term impacts were based on recent studies and previous projects with similar vegetation. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** No native vegetation would be affected, although some individual plants could be affected as a result of the proposed action. However, there would be no impact on native species populations.
- Minor:** The alternative would affect some individual native and non-native plants as well as a relatively minor portion of that species’ population. Mitigation to offset adverse impacts, including special measures to avoid affecting species of special concern, could be required and would likely be effective.
- Moderate:** The alternative would affect some individual native and non-native plants and a sizeable segment of the species’ population over a relatively large area. Mitigation to offset adverse impacts could be extensive but would likely be successful.
- Major:** The alternative would have a considerable impact on native and non-native plant populations, including species of special concern, and affect a relatively large area in and out of Valley Forge NHP. Mitigation measures to offset the adverse impacts would be required and extensive, and success of the mitigation measures would not be guaranteed.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, no changes would be made to the vegetative communities within the study area. In some small areas, vegetation would have difficulty taking root as ponding disrupted soils and washed away new plants. The threat of the spread of invasive species would remain, and Valley Forge NHP would continue its efforts to control and eliminate targeted species. Overall, the No-Action Alternative would have a **long-term, negligible, adverse** impact on vegetation.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have contributed cumulative impacts to vegetation in and around the study area. Present and on-going projects in the area that could contribute to these actions include implementation of the GMP/EIS and the work at Washington's Headquarters. The GMP/EIS includes plans for development, as well as new natural resource management strategies. These new strategies involve the removal of vegetation, new plantings, and changes to the management of vegetation within Valley Forge NHP. Based on the park's efforts to manage and eliminate invasive species, all of these changes would result in improved management and/or elimination of invasive species. While there is the potential for the loss of some native vegetation, the overall removal of invasive species and improved vegetation diversity would constitute a long-term, moderate, beneficial impact.

Work at Washington's Headquarters includes removal of select trees for vista management as well as planting of new trees and ground cover within the Washington's Headquarters area. Implementation of the GMP/EIS and the Washington's Headquarters project, along with the No-Action Alternative, would create a long-term, moderate, beneficial cumulative impact to vegetation. The No-Action Alternative would contribute an imperceptible, adverse increment to this cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, an estimated 173,190 square feet (3.9 acres) of previously paved space would be removed and replanted with select native vegetation. The immediate replanting, management, and monitoring of these areas would avoid the spread of invasive species within the study area. Furthermore, by improving poorly drained areas, the proposed action would ensure that naturally occurring vegetation would remain intact.

The new connector road, however, would require the removal of approximately 10,000 square feet of non-native grass. Additional vegetative areas along Inner Line Drive and the parking lots may be temporarily impacted as supplies were placed next to the construction area. However, these impacts would last only through the construction period and would not result in the loss or long-term damage of vegetation in this area.

Although the proposed action would result in the loss of some vegetation and the displacement of small species that inhabit the area, overall there would be a net gain of approximately 173,190 square feet (3.9 acres) of vegetation within the study area. This overall net gain of vegetation would accommodate the wildlife communities within the study area and would be composed of select native species that Valley Forge NHP would manage to ensure the containment of invasive species in the area. Prior to construction, a survey for special status species would be conducted. These species would be avoided or relocated if found within the study area. Overall, Alternative B would have a **long-term, minor, beneficial** impact on vegetation.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to cumulative impacts on vegetation would be the same as those described under the No-Action Alternative. Based on the overall improvement of invasive species control and the improved vegetative diversity, these projects, along with Alternative B, would create a long-term, moderate, beneficial cumulative impact to vegetation. Alternative B would contribute noticeable, beneficial increments to this 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 regulations implementing Section 106 of the NHPA (36 CFR Part 800, *Protection of Historic Properties*), impacts to cultural resources were 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 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 on the National Register, e.g. diminishing the integrity (or the extent to which a resource retains the historic appearance) of the resource's location, setting, design, feeling, association, workmanship, or materials. Adverse effects also include reasonably foreseeable effects caused by the proposed action that would occur later in time, be further removed in the 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 in any way the characteristics of the cultural resource that qualify it for inclusion on the National Register.

CEQ regulations and NPS DO #12 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 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 material or form resulting in a loss in the integrity of the resource 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 Alternative B. 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 specifically the criteria of adverse effect found in the ACHP regulations.

Historic Structures

Methodology

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

- Negligible:** Impact(s) is at the lowest levels of detection, with neither adverse nor beneficial consequences. For 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 resource. For 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's Standards for the Treatment of Historic Properties*. For 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 purposes of Section 106, the determination of effect would be *adverse effect*. A Memorandum of Agreement is executed among the NPS and applicable state and/or tribal historic preservation officers and if necessary, the ACHP in accordance with 36 CFR 800.6 (b). Measures identified in the Memorandum of Agreement 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's Standards for the Treatment of Historic Properties*. For 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 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 preservation officer and/or ACHP are unable to negotiate and execute an Memorandum of Agreement in accordance with 36 CFR 800.6 (b).
- Beneficial Impact – Restoration of a structure or building in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, 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. The stone steps and potentially historic drainage structures would remain in place. The overall impact to historic structures under the No-Action Alternative would be **long-term, negligible, and beneficial**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute impacts to historic structures in and around the study area. These projects include the GMP/EIS, the Mount Joy Observation Tower demolition, and rehabilitating support facilities at Washington's Headquarters. Within the GMP/EIS, earthworks would be stabilized and protected as would encampment and post-encampment-era buildings. This would result in long-term, minor, beneficial impacts. The Mount Joy Observation Tower demolition diminished the historical significance of the Tower Road parking lot, but did not reduce the integrity to the extent that it is no longer eligible for the National Register. This would result in a long-term, minor, and adverse impact to historic structures. Rehabilitating support facilities at Washington's Headquarters would rehabilitate the historically significant Valley Forge train station and return the platform cover to its original appearance. These projects, along with the No-Action Alternative would have a long-term, minor, beneficial cumulative impact on historic structures. The No-Action Alternative would contribute an imperceptible, beneficial increment.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, the Tower Road parking lot would be obliterated. This would not, however, impact historic structures. The stone masonry steps on the trail leading to the Tower Road parking would not be obliterated with the parking lot; therefore their historical integrity would not be diminished.

The historical significance of the drainage structures along Inner Line Drive has not been determined to date (Susan Maxman Architects and John Milner Associates 2002). However, there are numerous similar structures throughout the park. The park has received verbal concurrence from the Pennsylvania SHPO that removal of a few irreparable drainage structures within the study area would not affect the integrity of the overall system.

The overall impact to historic structures under Alternative B would be **long-term, minor, and adverse**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (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 at Valley Forge NHP. The determination of effect for the entire undertaking is *no adverse effect* to historic structures.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that would contribute to the cumulative impacts to historic structures in the area are described under the “Cumulative Impacts” for the No-Action Alternative. These projects, along with Alternative B would have a long-term, negligible, beneficial cumulative impact to historic structures. Alternative B would contribute an imperceptible, adverse increment to the cumulative impact.

Cultural Landscapes

Methodology

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

- Negligible:** Impact(s) is at the lowest levels of detection, with neither adverse nor beneficial consequences. For 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 purposes of Section 106, the determination of effect would be *no adverse effect*.
- Beneficial Impact – Preservation of character-defining features in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For purposes of Section 106, the determination of effect 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 Memorandum of Agreement is executed among the NPS and applicable state and/or tribal historic preservation officer, and if necessary, the ACHP in accordance with 36 CFR 800.6 (b). Measures identified in the Memorandum of Agreement to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.
- Beneficial Impact – Rehabilitation of a landscape or its patterns and features in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For 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 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 negotiate and execute a Memorandum of Agreement in accordance with 36 CFR 800.6 (b).

Beneficial Impact – Restoration of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, existing cultural landscapes would be preserved in their current configuration, and under utilized parking lots would continue to dominate the study area. The park would continue to work on reducing these intrusions as funding became available. The overall impacts to cultural landscapes under the No-Action Alternative would be **long-term, minor, and adverse**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have and continue to contribute impacts to cultural landscapes in and around the study area. These projects include the GMP/EIS, the Mount Joy Observation Tower demolition, and rehabilitating support facilities at Washington's Headquarters. The cultural landscape would continue to be preserved through the GMP/EIS, and historic viewsheds could be re-established as feasible. The Mount Joy Observation Tower was associated with the recreational cultural landscape at Valley Forge NHP. Several features of this landscape, including the tower, have been removed over the years and the integrity of this landscape is diminished. This would result in a long-term, minor, and adverse impact to cultural landscapes. The cultural landscape surrounding Washington's Headquarters would be improved through rehabilitating support facilities at Washington's Headquarters. The lower parking lot would be removed thus removing a major intrusion on the cultural landscape. These projects, along with the No-Action Alternative would have a long-term, minor, beneficial cumulative impact on cultural landscapes. Based on the size of the project area, the No-Action Alternative would contribute an imperceptible, adverse increment.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, a connector road would be constructed between Inner Line Drive and Outer Line Drive; however, a connector road previously existed in the study area. Therefore, a new connector road would not detract from the historical integrity of Inner Line and Outer Line Drives. Huntington's Overlook and Conway's Overlook parking lots, two of the lots to be removed, along with Artillery Park parking lot and Redoubt 3 parking lot were determined noncontributing according to the *Valley Forge National Historical Park Contextual Documentation and Cultural Landscape Plan: Volumes I and II 100% Draft* (Susan Maxman Architects and John Milner Associates 2002). Thus, their removal would not diminish the significance of the cultural landscape. Removal would actually improve the landscape, as the area would be regraded to reflect pre-construction contours and revegetated, a long-term moderate, beneficial impact.

The Tower Road parking lot, although a contributing feature to the cultural landscape, has been increasingly underutilized. In addition, the Observation Tower that the parking lot was constructed to support was demolished in the early 1980s. Removal of this parking lot would result in the loss of a contributing element but not to the extent that it would diminish the overall integrity of the landscape. The remaining parking lot slated for removal, Washington's upper parking lot A, is an intrusion on the cultural landscape and its removal would therefore improve the landscape. Removal of the northern portion of the Artillery Park parking lot would also improve the cultural landscape of the area.

There are also drainage ditches primarily along Inner Line and Outer Line Drives. The historical significance of these ditches has not been determined to date according to the *Valley Forge National Historical Park Contextual Documentation and Cultural Landscape Plan: Volumes I and II 100% Draft* (Susan Maxman Architects and John Milner and Associates 2002). However, the park has received verbal concurrence from the Pennsylvania SHPO that removal of a few irreparable drainage structures within the study area would not impact overall integrity. There are numerous similar systems throughout the park and the systems within the study area are damaged and no longer provide the service they were intended for. Replacing these structures would not impact cultural landscapes. The overall impacts to cultural landscapes under Alternative B would be **long-term, minor to moderate, and beneficial**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B would have *no adverse effect* on cultural landscapes at Valley Forge NHP. The determination of effect for the entire undertaking *is no adverse effect* to historic resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to impacts on cultural landscapes would be the same as those described under the No-Action Alternative. The overall cumulative impact from these projects, along with Alternative B, would be long-term, minor, and beneficial. Based on the size of the project area, Alternative B would contribute a noticeable, beneficial increment to the cumulative impact.

SITE ACCESS AND CIRCULATION

Methodology

The purpose of park roads is to enhance visitor experience while providing safe and efficient circulation and access to park resources. Circulation is also dependent on site access via entry roads and regional roadways. The thresholds of change for the intensity of an impact to site access and circulation are as follows:

Negligible: Site access and circulation would not be affected, or the impacts would be at the lowest levels of detection and would not have an appreciable impact on pedestrian and vehicular traffic flow. There would be no changes in the site accessibility.

- Minor:** The impact would be detectable but would be of a magnitude that would not have an appreciable impact on pedestrian and vehicular traffic flow. There would be no noticeable changes in the circulation patterns or site accessibility. 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 circulation patterns, congestion, and/or site accessibility in a manner noticeable to the public. Mitigation would be necessary to offset adverse impacts and would likely be successful.
- Major:** The impacts would be readily apparent and would result in a substantial change in circulation in a manner noticeable to the public and be markedly different from the present circulation patterns and site accessibility. Mitigation measures to offset adverse impacts would be needed, would be extensive, and their success would not be guaranteed.

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, the current access and circulation conditions would continue within the study area. Access for visitors using the tour route to and from Inner Line Drive would be limited to State Route 23 and Gulph Road. Vehicles would have to return to these points, along the one-way road, in order to exit Inner Line Drive. Access to sites along the route would be provided through existing parking lots and access roads (see Figure 3).

Circulation around Inner Line Drive would continue to be a one-way route for much of its length. Portions of the route have deteriorated, and Valley Forge NHP would only be able to address these areas when funds and employee time became available. The current park-sponsored tour bus would continue to use existing park and public roads.

At the Von Steuben parking lot, circulation would remain as is with several entrances from Inner Line Drive and State Route 23. Sight distances from the intersection of the entry drive and State Route 23 would continue to be poor and visitor confusion would continue to occur when vehicles approach this area from both State Route 23 and Inner Line Drive.

The overall impact to site access and circulation under the No-Action Alternative would be **long-term, minor, and adverse**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have contributed cumulative impacts to site access and circulation in and around the study area. Projects in the area that could contribute to these actions include the implementation of the GMP/EIS and rehabilitating support facilities at Washington's Headquarters. The GMP/EIS introduces new themes, interpretation, and points of interest that have the potential to change circulation patterns. These new attractions may require enhanced means of accessing the sites. In addition, as discussed above, the GMP/EIS proposes a new park shuttle to provide access and interpretation of the resources surrounding Valley Forge's tour roads. If a shuttle system were established, the shuttle would use existing park and public roads. The lack of connection between Inner Line and Outer Line Drives adds 20 to 30 minutes to each run, making the shuttle potentially unfeasible (Volpe

2004). These improvements would have a long-term, negligible to moderate, beneficial impact on site access and circulation. Rehabilitating support facilities at Washington's Headquarters would remove a little used parking lot and change the circulation within the Washington's Headquarters area. The north/south access road would be removed and visitors would be directed to the middle parking lot. Internal circulation within the Washington's Headquarters area would also be more clearly defined. Considering these projects, along with the impacts of the No-Action Alternative, the cumulative impact to site access and circulation would be long-term, moderate, and beneficial. Based on the size of the project area, the No-Action Alternative would contribute an imperceptible, adverse increment to this cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, both site access and circulation would be improved. The removal of some parking lots within the study area would reduce access points to some areas along Inner Line Drive. However, the parking lots that are to be removed have all been carefully studied and their use by visitors has been determined to be minimal. Therefore, the removal of these lots would not dramatically hinder access within the study area. The removal of the selected parking lots would actually streamline circulation along Inner Line Drive by removing points of vehicle interaction. Circulation along Inner Line Drive would be further improved by the repaving of locations identified in "Chapter 2: Alternatives" of this document.

Some additional short-term, minor, adverse impacts would also occur as the existing road system was rehabilitated and Inner Line Drive would be closed during construction. This work would be done in phases to ensure that vehicles could still pass through the area. It would also be conducted in the winter months (November through March) when travel is lightest on these roads. There would be no need for time of day restrictions on construction, as commuters do not use Inner Line Drive for local or regional transportation.

Changes to the Von Steuben parking lot would also improve circulation. Opening the western entry point would allow better sight distance for vehicles trying to exit the parking lot. Crosswalks would also be installed to improve pedestrian circulation through the parking lot. The overall impacts to site access and circulation under Alternative B would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to cumulative impacts on site access and circulation would be the same as those described under the No-Action Alternative. These projects, along with Alternative B, would result in a long-term, moderate, beneficial cumulative impact to site access and circulation. Based on the size of the project area, Alternative B would contribute a noticeable, beneficial increment to this cumulative impact.

VISITOR USE AND EXPERIENCE

Methodology

NPS Management Policies 2001 state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks.

Part of the purpose of Valley Forge NHP is to offer opportunities for interpretation, education, inspiration, and enjoyment. Consequently, one of the park's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

Observation of visitation patterns combined with the assessment of what is available to visitors under current management was used to estimate the impacts of the actions in the alternatives in this document. The potential impact to visitor use and experience proposed by the alternatives was evaluated by identifying projected increases or decreases in education, circulation, and other visitor uses, and determining whether or how these projected changes would affect the desired visitor experience, to what degree, and for how long. Based on these findings, the following intensity levels were developed:

- Negligible:** Visitors would not be affected, or changes in visitor use and/or experience would be at or below 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 express an opinion about the changes.
- Major:** Changes in visitor use and/or experience would be readily apparent and would be adverse or 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 the No-Action Alternative, no changes would be made to the visitor experience within the study area. Visitors would continue to enter Inner Line Drive and tour the area with the only options for exiting coming via Gulph Road or returning to State Route 23. The area would provide a number of parking lots to allow visitors to exit their vehicles and enjoy their surroundings, although these lots would continue to be severely underused by visitors.

The overall visitor experience within the study area would remain flawed by degraded pavement along Inner Line Drive, parking lots, and pull offs. These conditions would continue to deteriorate as time progressed diminishing the visitor experience of the surrounding resources.

Under this alternative, parking lots would continue to intrude on the visual landscape. This would diminish visitor experience as asphalt dominated the natural setting in these areas. Safety would also remain a concern as visitors attempted to orient themselves on the tour road. The underutilized parking lots could present distractions for visitors trying to find their way around the park. At the Von Steuben parking lot, short sight distances would continue to be a hindrance for vehicles exiting the parking lot. Pedestrians using the Joseph Plumb Martin Trail in this area would also continue to have trouble crossing Route 23. The overall impact to visitor use and experience under the No-Action Alternative would be **long-term, minor, and adverse.**

Cumulative Impacts

Past, present and reasonably foreseeable future actions have contributed cumulative impacts to visitor use and experience in and around the study area. Projects that could contribute to these actions include the development of the GMP/EIS, the Mount Joy Observation Tower demolition, and rehabilitating support facilities at Washington's Headquarters. The GMP/EIS would introduce new resource management strategies, themes and attractions, and visitor services. All of these improvements would be designed to enhance the overall visitor experience. The implementation of the GMP would have an overall long-term, major, beneficial impact to visitor use and experience. Any major impacts would be addressed in the GMP/EIS and would not carry over to this proposed action. The Mount Joy Observation Tower demolition removed a visitor amenity from Valley Forge NHP. The tower provided an overall view of the Valley Forge NHP landscape from a bird's eye perspective. With this demolition, there is no other area in the park where this perspective can be gained. The result was long-term, moderate, and adverse. Rehabilitating support facilities at Washington's Headquarters would open another building for public use. It would further enhance visitor use and experience through new interpretive elements and refined internal circulation for visitors and pedestrians. The overall impact would be long-term, moderate and beneficial. These projects, along with the No-Action Alternative, would result in a long-term, minor to major, beneficial cumulative impact. As stated above, the major impacts would be addressed in the GMP/EIS and do not require further analysis in this document. The No-Action Alternative would contribute a noticeable, adverse increment to this cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, a number of changes would be made within the study area to improve visitor use and experience. A connector road would be created to link Inner Line Drive with Outer Line Drive. This connection would allow for improved access and interpretation. This would enhance visitor experience for those driving through the park, as well as for those exploring the park via the shuttle.

Little used parking lots would be removed. This would provide a more historic and natural setting in several locations. It would also create a more streamlined circulation pattern, particularly along Inner Line Drive. However, the removal of parking lots under Alt B would have both adverse and beneficial impacts because the parking lots would no longer be available for use and visitors could not get out and look at the overlooks.

Finally, much needed repaving would be carried out along Inner Line Drive and at several parking lots and pull offs (see “Chapter 2: Alternatives”). This would reduce distractions to the visitor and provide a safer environment to enjoy Valley Forge NHP. At the Von Steuben parking lot, crosswalks would be installed across State Route 23 and Inner Line Drive to allow visitors using the Joseph Plumb Martin Trail to safely cross these main roads. Further, by opening the western entrance into the parking lot, sight distances would be improved.

Some short-term, minor, adverse impacts to visitor use would occur during the construction process when portions of the existing road network and Inner Line Drive were closed for repairs. These repairs would be done in phases to allow visitors partial access to the area. The work would also be done during the winter months (November through March) when visitation is at its minimum. The overall impact to visitor use and experience under Alternative B would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to impacts on visitor use and experience would be the same as those described under the No-Action Alternative. These projects, along with Alternative B, would result in a long-term, minor to major, beneficial cumulative impact. As stated above, the major impacts would be addressed in the GMP/EIS and do not require further analysis in this document. Alternative B would contribute an appreciable, beneficial increment to this cumulative impact.

INFRASTRUCTURE

Infrastructure, for the purpose of this analysis, refers to the quality and effectiveness of the infrastructure, and the ability to maintain it to adequately protect and preserve vital resources and provide for an effective visitor experience.

Staff members who were knowledgeable of these issues were included in the planning team that evaluated the impacts of each alternative. Impact analysis is based on the current description of infrastructure presented in “Chapter 3: Affected Environment” of this document.

- Negligible:** Infrastructure would not be affected, or the impacts would be at low levels of detection and would not have an appreciable impact on infrastructure.
- Minor:** The impact would be detectable and likely short-term, but would be of a magnitude that would not have an appreciable impact on infrastructure. If mitigation was needed to offset adverse impacts, it would be simple and likely successful.
- Moderate:** The impacts would be readily apparent, likely long-term, and would result in a substantial change in infrastructure in a manner noticeable to staff and public. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.

Major: The impacts would be readily apparent, long-term, would result in a substantial change in infrastructure in a manner noticeable to staff and the public and be markedly different from existing infrastructure. 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 infrastructure within the study area. Inner Line Drive; along with its gates, signage, and drainages would continue to age and deteriorate, creating unsafe conditions. The deterioration of the culverts and drainages would lead to inefficient capture and transport of stormwater runoff. Several of the parking lots would remain extremely underused and would continue to deteriorate and to require maintenance. Improvements to these conditions would be made only as staff and funding became available. The overall impact to infrastructure under the No-Action Alternative would be **long-term, moderate, and adverse**.

Cumulative Impacts

Past, present and reasonably foreseeable future actions have contributed cumulative impacts to infrastructure in and around the study area. Projects in the area that could contribute to these actions include the development of the GMP/EIS, the Mount Joy Observation Tower demolition, and rehabilitating support facilities at Washington's Headquarters. The GMP/EIS would introduce new and improved infrastructure elements. The project would have a long-term, negligible to major, beneficial impacts. Any major impacts would be addressed in the GMP/EIS and would not carry over to this proposed action. The Mount Joy Observation Tower demolition removed underused and/or deteriorated infrastructure from the park. This project provided a long-term, minor, beneficial impact. Rehabilitation of support facilities at Washington's Headquarters would construct a new comfort station, adding additional infrastructure to the park. It would also alter the existing utilities, resulting in a long-term, negligible, beneficial impact. These projects, along with the No-Action Alternative, would result in a long-term, minor to major, beneficial cumulative impact. As stated above, the major impacts would be addressed in the GMP/EIS and do not require further analysis in this document. Based on the relatively small size of the study area, the No-Action Alternative would contribute a noticeable, adverse increment to this cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, changes made to the infrastructure within the study area would be readily apparent. Inner Line Drive would be repaved and new signs and gates would be installed. The damaged drainages in the study area would also be replaced to provide efficient capture and drainage of stormwater from the roads and parking lots.

The most noticeable changes, however, would come from the creation of the connector road and the obliteration and reconfiguration of the selected parking lots and Tower Road. The loss of the parking lots would not result in adverse impacts to the park's infrastructure. As the 2004 Volpe report notes, these lots have low value.

This work would have the potential to impact some underground utilities in the area. But as discussed under “Planning Issues” in “Chapter 1: Purpose and Need” of this document, these utilities would be located prior to the proposed action commencing to ensure that they would not be affected. The overall impact to infrastructure under Alternative B would be **long-term, minor, and beneficial**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to impacts on infrastructure would be the same as those described under the No-Action Alternative. These projects, along with Alternative B, would result in a long-term, minor to major, beneficial cumulative impact. As stated above, the major impacts would be addressed in the GMP/EIS and do not require further analysis in this document. Alternative B would contribute a noticeable, beneficial increment to this cumulative impact.

OPERATIONS

Operations, for the purpose of this analysis, refer to the quality and effectiveness of the staff activities, and their ability to adequately protect and preserve vital resources and provide for an effective visitor experience.

Staff members who were knowledgeable of these issues were included in the planning team that evaluated the impacts of each alternative. Impact analysis is based on the current description of park operations presented in the “Chapter 3: Affected Environment” of this document.

- Negligible:** Operations would not be affected, or the impacts would be at low levels of detection and would not have an appreciable impact on park staff.
- Minor:** The impact would be detectable and likely short-term, but would be of a magnitude that would not have an appreciable impact on operations. If mitigation was needed to offset adverse impacts, it would be simple and likely successful.
- Moderate:** The impacts would be readily apparent, likely long-term, and would result in a substantial change to operations in a manner noticeable to staff and public. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.
- Major:** The impacts would be readily apparent, long-term, would result in a substantial change to 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. Inner Line Drive and its components would continue to age and deteriorate, as would several of the parking lots. This deterioration would require regular maintenance. Continued erosion around the

damaged culverts would also require attention, as grasses and soils lost to runoff would clog the drainages and lead to flooding or ponding water. The operations associated with these structures would be focused on the site at a level adequate enough to remain open. Improvements to these conditions would be made only as staff and funding became available. The overall impact to operations under the No-Action Alternative would be **long-term, moderate, and adverse**.

Cumulative Impacts

Past, present and reasonably foreseeable future actions have contributed cumulative impacts to operations, in and around the study area. Projects that could contribute to these actions include the development of the GMP/EIS, the Mount Joy Observation Tower demolition, and rehabilitating support facilities at Washington's Headquarters. The GMP/EIS would introduce new operating procedures resulting in a long-term, negligible to major, beneficial impact. Any major impacts would be addressed in the GMP/EIS and would not carry over to this proposed action. The Mount Joy Observation Tower demolition removed infrastructure from the park that was costly to maintain. The removal allowed staff to focus on other areas and programs. This project provided a long-term, minor, beneficial impact to operations. Rehabilitating support facilities at Washington's Headquarters would require less maintenance activity as the existing and new infrastructure would be made more efficient and/or require less maintenance. The meadow grass cover that would replace the lower parking lot would require mowing only once a year and could be included in the existing mowing activities. These improvements would also allow staff to focus on other areas and programs. These projects, along with the No-Action Alternative, would result in a long-term, minor to major, beneficial cumulative impact. As stated above, the major impacts would be addressed in the GMP/EIS and do not require further analysis in this document. Based on the size of the project area, the No-Action Alternative would contribute a noticeable, adverse increment to this cumulative impact.

Impacts of Alternative B (NPS Preferred Alternative)

Under Alternative B, there would be changes made to the operations within the study area. Inner Line Drive would be repaved and new signs and gates would be installed. This would protect the investment already made in these facilities, create better safety conditions, and require less maintenance in the coming years. The damaged drainage structures in the study area would also be replaced to provide improved and efficient drainage from the roads and parking lots. The improvements made to drainage would reduce the need for landscaping activities to repair damaged or lost grass and soil from runoff and ponding water.

The most noticeable changes, however, would come from the creation of the connector road and the obliteration of the selected parking lots and Tower Road. The connector road would be relatively small compared to the surrounding roadways, and its proximity to some of the park's most traveled routes would allow it to be easily included in other maintenance activities in the area.

The parking lot removal would counterbalance the installation of the connector road by reducing the amount of road maintenance and security patrols within the study area. This would free up time for Valley Forge maintenance and law enforcement staff to focus on other resources in the area.

Based on these improvements, the overall impact to operations under Alternative B would be **long-term, minor, and beneficial**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in the area of Valley Forge NHP that would contribute to impacts on operations would be the same as those described under the No-Action Alternative. These projects, along with Alternative B, would result in a long-term, minor to major, beneficial cumulative impact. As stated above, the major impacts would be addressed in the GMP/EIS and do not require further analysis in this document. Alternative B would contribute a noticeable, beneficial increment to this cumulative impact.

CONCLUSION

Alternative A (No-Action)

Under the No-Action Alternative, there would be long-term, negligible, adverse impacts to vegetation, as well as long-term, minor, adverse impacts to soils, cultural landscapes, site access and circulation, and visitor use and experience. This alternative would also have long-term, moderate, adverse impacts to infrastructure and operations. There would also be long-term, negligible, beneficial impacts to historic structures. The No-Action Alternative would contribute imperceptible, adverse increments to cumulative impacts related to soils, vegetation, cultural landscapes, and site access and circulation. It would also contribute noticeable, adverse increments to cumulative impacts related to visitor use and experience, infrastructure, and operations. This alternative would also contribute imperceptible, beneficial increments to cumulative impacts related to historic structures. The analysis of potential impacts of the No-Action Alternative did not identify any major, adverse impacts; therefore, implementation of the No-Action Alternative is not likely to result in impairment of any park resource or value.

Alternative B (NPS Preferred)

Under Alternative B, there would be long-term, minor, adverse impacts to historic structures. It would also have long-term, minor, beneficial impacts to soils, vegetation, cultural landscapes, infrastructure, and operations. It would also have long-term, moderate, beneficial impacts to site access and circulation, and visitor use and experience. Alternative B would contribute noticeable, beneficial increments to cumulative impacts related to soils, vegetation, cultural landscapes, site access and circulation, infrastructure, and operations. It would contribute appreciable, beneficial increments to cumulative impacts related to visitor use and experience. It would also contribute imperceptible, adverse increments to cumulative impacts related historic structures. The analysis of potential impacts of Alternative B did not identify any major, adverse impacts; therefore, implementation of Alternative B 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 a “diligent” effort to involve the interested and affected public in the NEPA process. This process, known as scoping, helps to determine 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,” a design scoping meeting was held by FHWA, NPS, and KCI Technologies, Inc. on August 12, 2003 to discuss several proposed transportation projects, including the Observation Tower Road and its parking lot. At that time, design/construction plans for the road and parking lot were unknown, but it was noted that repairs were needed if visitor use was to continue (FHWA 2003). On January 8, 2004, FHWA and NPS staff met again to discuss the actions proposed in this EA/AoE. Purpose and need were defined, major issues and concerns were identified, and the proposed actions were delineated (FHWA and NPS 2004). To initiate the EA/AoE planning process, a kick-off meeting was held via conference call on July 23, 2004. The purpose of this meeting was to obtain and generally review existing data; discuss the purpose and need and alternatives; define planning issues and potential impact topics; and discuss the project schedule. The meeting was attended by representatives from the NPS, Vanasse Hangen Brustlin, Inc. (VHB), and PAL. To engage the public in the planning process, a press release was issued in August 2004.

INTERAGENCY AND TRIBAL COORDINATION

Agencies contacted during the planning process include the Pennsylvania Department of Conservation and Natural Resources, the U.S. Fish and Wildlife Service, and the Pennsylvania SHPO as represented by the Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation. In a letter dated November 8, 2004, the Pennsylvania Department of Conservation and Natural Resources stated that three state listed species, discussed in “Chapter 1: Purpose and Need,” had been identified within the study area

in previous years. Because these species have not been confirmed in recent years, the agency requested that the NPS conduct a survey to identify any federally or state-listed species within the study area. The NPS will continue to coordinate with the Pennsylvania Department of Conservation and Natural Resources to conduct the survey and ensure that any species that are located within the study area would not be impacted by the proposed action.

In an October 20, 2004 letter, the U.S. Fish and Wildlife Service identified the existence of the bog turtle (*Clemmys muhlenbergii*), a federally listed threatened species. However, because the bog turtle habitat is primarily confined to wetland areas, and the proposed action does not impact any wetland areas, the bog turtle would not be impacted by this proposed action. (See “Chapter 1: Purpose and Need” for additional information, and Appendix A contains copies of written correspondence with these agencies.)

The Pennsylvania SHPO also conducted a site visit of the study area with the superintendent and other staff on May 11, 2005 to address the potentially historic drainage culvert. During this site visit, the park received a verbal concurrence that removal of the drainage culverts within the study area would not impact historic resources. There are numerous other culverts within the park and the culverts within the study area are damaged and no longer provide the use they were intended.

The following Native American tribes were also contacted via letter: the Stockbridge-Munsee Community, Wisconsin; the Delaware Nation; the Oneida Nation of Wisconsin; and the Oneida Indian Nation. These correspondences, and other letters, are included in Appendix A of this document.

LIST OF RECIPIENTS

This 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. This document 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, which are listed below.

Federal Agencies and Officials

U.S. Fish and Wildlife Service

Tribal Governments

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

State Agencies and Officials

Pennsylvania Department of Conservation and Natural Resources
Pennsylvania Department of Transportation
Pennsylvania State Historic Preservation Officer

Local Agencies and Officials

Montgomery County-Norristown Public Library
Phoenixville Public Library
Tredyffrin Public Library
Upper Merion Township Public Library

Other Groups and Organizations

Encampment Store, Inc.
Friends of Valley Forge National Historical Park

REFERENCES

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LIST OF PREPARERS AND CONTRIBUTORS

This document was prepared by Vanasse Hangen Brustlin, Inc. (VHB) with input from staff at Valley Forge NHP, NPS Denver Service Center, FHWA-Eastern Federal Lands Home Office, and the NPS Northeast Region Office.

Vanasse Hangen Brustlin, Inc.

Margaret Beavers	Environmental Scientist	Graphic preparation and GIS analysis
Dawn Frost	Preservation Planner	Document preparation, cultural resources review and analysis
Marc Richards	Environmental Planner	Hazardous materials analysis
Scott Smizik	Environmental Planner	Document preparation, natural resources analysis
Sonia Tempesta	Graphics Specialist	Graphic support
Tricia Wingard	Project Manager	Project management and coordination, guidance of NEPA process, and document review

Contributors and Reviewers

Valley Forge NHP

Michael Caldwell	Superintendent
Deirdre Gibson	Chief of Planning and Natural Resources
Jeff Kangas	Chief of Maintenance
Barbara Pollarine	Deputy Superintendent
Liza Rupp	GIS Analyst and Park Archeologist

Northeast Region

Margaret Bursaw	Resource Planning Specialist
Doug Campana	Archeologist
Shaun Eyring	Landscape Architect
Jacki Katzmire	Environmental Protection Specialist

Denver Service Center

Kristie Franzmann	Project Manager
David Hayes	Parks Road Program, Environmental Specialist
Steve Hoffman	Parks Road Program, Natural Resource Specialist

Federal Highway Administration

Craig Sanders	Project Manager
Chris Burnell	Highway Engineer
Kevin Rose	Environmental Compliance Specialist

APPENDIX A: RELEVANT CORRESPONDENCE

ONEIDA INDIAN NATION



ONEIDA NATION HOMELANDS

June 16, 2006

Deirdre Gibson
Chief of Planning and Natural Resources
U.S. Dept. of the Interior
National Park Service
Valley Forge National Historical Park
1400 North Outer Line Drive
King of Prussia, PA 19406-1009

Dear Ms. Gibson,

Thank you for recent invitations to consult (letters of May 12 and June 8 from Superintendent Caldwell), as required under Section 106 of the amended National Historic Preservation Act, on two projects at Valley Forge:

- alterations to improve the circulation route along Inner Line and Outer Line Drives; and
- modification of the existing water supply system.

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 culturally significant to Oneidas at the locations you indicate.

Sincerely,

A handwritten signature in cursive script that reads "Anthony Wonderley".

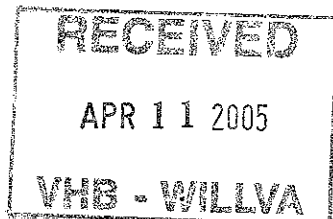
Anthony Wonderley, Ph.D.
Historian
Oneida Indian Nation

JUN 23 2006

cc: Brian Patterson, Peter Carmen (OIN)



Pennsylvania Fish & Boat Commission



Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
(814) 359-5237 Fax: (814) 359-5175

April 5, 2005

IN REPLY REFER TO
SIR# 18265

VANASSE HANGEN BRUSTLIN
TRICIA WINGARD
477 MCLAWS CIRCLE, SUITE 1
WILLIAMSBURG, VA 23185

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
VALLEY FORGE NATIONAL HISTORICAL PARK MODIFICATIONS
Township, CHESTER County, Pennsylvania**

Dear Ms. WINGARD:

I have examined the map accompanying your recent correspondence which shows the location for the above referenced project. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the following rare or protected species are known from the vicinity of the project site:

<u>Common Name</u>	<u>Scientific Name</u>	<u>PA Status</u>
Red-bellied turtle	<i>Pseudemys rubriventris</i>	threatened

The red-bellied turtle is one of Pennsylvania's largest native aquatic turtles. This turtle species is known to inhabit relatively large, deep streams, rivers, ponds, lakes and marshes with permanent water and ample basking sites. Red-bellied turtles are restricted to the southcentral and southeastern regions of the Commonwealth. The existence of this turtle species is threatened by habitat destruction, poor water quality, and competition with aggressive non-native turtle species that share its range and habitat (e.g., red-eared slider, *Trachemys scripta elegans*).

Red-bellied turtles are known from near the project area. It is possible that they could also occur in any wetlands and water bodies on-site. Therefore, if wetlands with open water areas, streams or ponds are to be disturbed from the project activity, we will need to conduct a more thorough evaluation of the potential adverse impacts to the red-bellied turtle. Items including detailed project plans, project narrative, aerial photographs of the general area, general habitat descriptions, and color photographs of the project area, wetlands identification and delineation, stream characterization (flow velocity, width, depth, substrate type, pools and riffles, identification of basking areas, logs, woody debris, presence of aquatic vegetation) would expedite our review process. Pending the review of information, a survey for targeting the presence of the species of concern may be warranted. However, if wetlands or water bodies are not to be disturbed by the proposed activity, and provided that best management practices are employed and strict erosion and

Our Mission:

www.fish.state.pa.us

To provide fishing and boating opportunities through the protection and management of aquatic resources.

SIR #18265
WINGARD
Page 2

sedimentation measures are maintained, I do not foresee any adverse impacts to red-bellied turtle or any other rare or protected species under Pennsylvania Fish and Boat Commission jurisdiction.

If you have any questions regarding this response, please contact Bob Morgan of my staff (814-359-5129) and refer to the SIR number at the top of this letter. Thank you for your cooperation and attention to this matter of endangered species conservation and habitat protection.

Sincerely,


Christopher A. Urban, Chief
Natural Diversity Section

cc: DEP, SE Region



Pennsylvania Department of Conservation and Natural Resources

November 8, 2004

717-787-7067

Fax 717-772-0271

Bureau of Forestry

Arthur L. Steward
Superintendent
National Park Service
Valley Forge National Historical Park
P.O. Box 953
Valley Forge, PA 19482-0953

Re: Bureau of Forestry, Pennsylvania Natural Diversity Inventory Search for Valley Forge National Historical Park Improvements, Chester County, PA - PNDI # 016523

Dear Arthur:

November 8, 2004

After reviewing the information you submitted on August 20, 2004 regarding the above project, we have determined that there may be potential plant conflicts.

Phaseolus polystachios (wild kidney bean) is a species of special concern that was found within the southern portion of your study area. It grows in moist woods, roadside banks and waste ground and was last observed at the site in 1986. *Hypericum stragulum* (St. Andrew's-cross) is a species of special concern that was last observed near the study site in 1997. It inhabits open woods, thickets, dry sandy soil, and serpentine barrens. *Lupinus perennis* (blue lupine) is a Pennsylvania rare species that was last observed nearby in 1993. It grows in open fields, woods edges, and roadsides in sandy, acidic soils. We recommend that a qualified botanist conduct a botanical survey at the appropriate time of year before the onset of any disturbance associated with the project, in order to confirm or deny the presence of these species in the project area. Only potential habitat needs to be searched. Please have the botanist complete the forms located at <http://pndi.state.pa.us/fieldsurvey/fieldsurvey.htm>. The survey should be a search for all Pennsylvania listed species, not only the species listed above. Following submittal of the survey report to our office, we will coordinate with you to determine if measures are necessary to avoid impact to the species.

Please fax project information to Kathy Derge, Fish and Boat Commission at 814 359 5175 because of a potential animal impact, if you have not done so already.

This response represents the most up-to-date summary of the PNDI data files and is applicable for one year. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Please phone Autumn Sabo, Environmental Review Botanist, at 717-787-7067 if you have questions concerning this response.

Sincerely,

Chris Firestone
Native Plant Program Manager

Stewardship

Partnership

Service



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

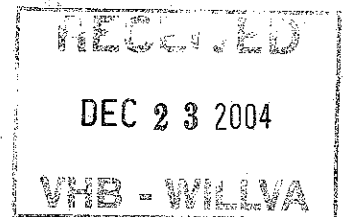


October 20, 2004

Arthur L. Stewart
United States Department of the Interior
National Park Service
Valley Forge National Historical Park
P.O. Box 953
Valley Forge, PA 19482-0953

Re: Valley Forge National Historical Park

Dear Mr. Stewart:



This responds to your letter of August 18, 2004, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed modifications to Inner Line and Outer Line Drives located in Chester 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.

The proposed project is within the known range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied "intermediate successional stage" wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

If any wetlands occur within or near the project area, their potential suitability as bog turtle habitat should be assessed, as described under "Bog Turtle Habitat Survey" (Phase 1 survey) of the enclosed *Guidelines for Bog Turtle Surveys*. This habitat survey could easily be conducted by a wetland biologist concurrent with a routine wetland identification and delineation. If any wetlands are identified as potential bog turtle habitat, efforts should be made to avoid any direct or indirect impacts to those wetlands. If adverse effects to these wetlands cannot be avoided, a more detailed and thorough survey will be necessary, as described under "Bog Turtle Survey" (Phase 2 survey) of the *Guidelines for Bog Turtle Surveys*. The Phase 2 survey should be conducted by a qualified biologist with bog turtle field survey experience (see enclosed list of qualified surveyors). Survey results should be submitted to the Fish and Wildlife Service for

review and concurrence. If project activities might adversely affect bog turtles, additional consultation with the Service will be required, pursuant to the Endangered Species Act. This response relates only to endangered and 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. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

Please contact Jennifer Dombroskie of my staff at 814-234-4090 if you have any questions or require further assistance regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "David Densmore", followed by a long horizontal line extending to the right.

David Densmore
Supervisor

Enclosures

Federally Listed, Proposed, and Candidate Species in Pennsylvania
(revised June 24, 2004)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status¹</u>	<u>Distribution (Counties and/or Watersheds)</u>
MAMMALS			
Indiana bat	<i>Myotis sodalis</i>	E	Hibernacula: Armstrong, Blair, Fayette, Lawrence, Luzerne, Mifflin and Somerset Co. Maternity sites: Blair Co.
BIRDS			
Bald eagle	<i>Haliaeetus leucocephalus</i>	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	<i>Charadrius melodus</i>	E	Migratory. No nesting in Pennsylvania since 1950s. Designated critical habitat on Presque Isle (Erie Co)
REPTILES			
Bog turtle	<i>Clemmys (Glyptemys) muhlenbergii</i>	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	<i>Sistrurus catenatus catenatus</i>	C	Butler, Crawford, Mercer and Venango Co. [Historically found in Allegheny and Lawrence Co.]
MUSSELS			
Clubshell	<i>Pleurobema clava</i>	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	<i>Alasmodonta heterodon</i>	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	<i>Epioblasma torulosa rangiana</i>	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.)]

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u> ¹	<u>Distribution (Counties and/or Watersheds)</u>
MUSSELS (continued)			
Rayed bean	<i>Villosa fabalis</i>	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	<i>Plethobasus cyphus</i>	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	<i>Acipenser brevirostrum</i>	E	Delaware River and other Atlantic coastal waters
PLANTS			
Northeastern bulrush	<i>Scirpus ancistrochaetus</i>	E	Adams, Bedford, Blair, Carbon, Centre, Clinton, Cumberland, Dauphin, Franklin, Huntingdon, Lackawanna, Lehigh, Lycoming, Mifflin, Monroe, Perry, Snyder, and Union Co. [Historically found in Northampton Co.]
Small-whorled pogonia	<i>Isotria medeoloides</i>	T	Chester, Centre, 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

**U.S. FISH AND WILDLIFE SERVICE
& PENNSYLVANIA FISH AND BOAT COMMISSION
RECOGNIZED QUALIFIED BOG TURTLE SURVEYORS***

(List revised July 20, 2004)

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Fax: 215-757-3904
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dpoppel@ensr.com

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& Ben Berra
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bberra@skellyloy.com
abrookens@skellyloy.com

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(W) 410-436-4912
(Aberdeen Proving Ground)

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Oley, PA 19547
610-987-6585

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aquaterra1@aol.com

* This list includes professional and amateur herpetologists the Fish and Wildlife Service and Pennsylvania Fish and Boat Commission recognize as qualified to identify bog turtle habitat and survey for the presence of bog turtles. Field investigations should be administered by a qualified surveyor, AND the qualified surveyor should also be present in the field AT ALL TIMES when bog turtle surveys or research is being conducted. This list may not include all individuals qualified to survey for this species. Inclusion of names on this list does not constitute endorsement by the Service or any other U.S. Government agency or State agency.



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

October 13, 2004

[Handwritten signature]
Arthur L. Stewart
Valley Forge National Historical Park
P.O. Box 953
Valley Forge, PA 19482-0953

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: ER 95-2574-029-K
NPS: Circulation and Parking Improvements at Valley Forge
National Historical Park, Notification of Combined NEPA/Section
106 Compliance, Chester and Montgomery Co.

Dear Mr. Stewart:

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. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

Thank you for your notification of the above referenced project and your intention of combining NEPA and Section 106 compliance. We look forward to reviewing the Environmental Assessment in the near future.

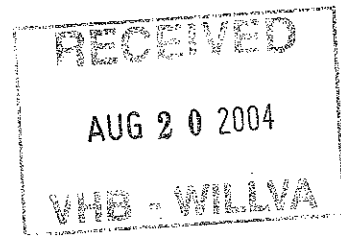
If you need further information please consult Ann Safley at (717) 787-9121.

Sincerely,

Kurt W. Carr, Chief
Division of Archaeology & Protection

KWC/ras

H4217 VAFO(S)



AUG 18 2004

Ms. Ellen Shultzabarger
Environmental Review Specialist
Bureau of Forestry
Department of Conservation & Natural Resources
P.O. Box 8552
Rachel Carson State Office Building, 6th Floor
Harrisburg, PA 17105-8552

Re: Current List of Federally- and State-Listed Rare, Threatened, and Endangered Species

Dear Ms. Shultzabarger:

Valley Forge National Historical Park (Valley Forge NHP) marks the site of the winter encampment of General George Washington's Continental Army. Today, the park provides a variety of educational and recreational opportunities to its visitors. In an effort to improve the visitor experience, the National Park Service (NPS) proposes to modify circulation along Inner Line and Outer Line Drives. The proposal includes re-establishing a former Outer-Inner Line connector road for use by shuttle buses. Other related activities include overlaying and/or rehabilitating Inner Line Drive and the Redoubt 4 road, including pullouts, parking areas, and drainage improvements. In addition, disused parking areas and roadways will be removed. Conway's and Huntington's Overlook parking areas on Inner Line Drive, as well as Washington's upper parking area A, would be completely removed and the landscape restored. Tower Road and its parking area would also be removed, including removal of asphalt and drainage structures, as well as re-vegetating the disturbed areas.

This letter serves as notification that we have begun the National Environmental Policy Act (NEPA) process and are proposing to have an Environmental Assessment/Assessment of Effect available for public and regulatory review early next year. In order to comply with the NEPA process as well as the 1973 Endangered Species Act, as amended, we are gathering information concerning federal and state rare, threatened, and endangered species documented or reasonably suspected within 0.5 miles of the project site, which is depicted on the enclosed Chesterbrook, Pennsylvania USGS

Quadrangle. We are also coordinating with the U.S. Fish and Wildlife Service to obtain and review their file information.

Should you know of or come across any other resource constraint that may be a possible planning issue, please do not hesitate to contact us. We anticipate no significant environmental impacts associated with the project and look forward to receiving any guidance or comments you may have regarding the process or the project itself. Thank you for assisting with this project, and if you need any additional information or should you have any questions regarding this matter, please feel free to contact Deirdre Gibson at (610) 783-1047.

Sincerely,

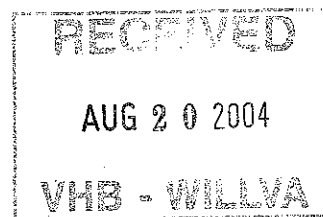
/S/ Arthur L. Stewart *AKM*

Arthur L. Stewart
Superintendent

Enclosure

cc: Deirdre Gibson, NPS-VAFO
Kristine Franzmann, NPS-DSC
✓ Tricia Wingard, VHB

H4217 VAFO(S)



AUG 18 2004

Mr. Kurt Carr, Chief
Division of Archeology & Protection
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North St.
Harrisburg, PA 17120-0093

Re: Circulation and Parking Improvement at Valley Forge National Historical
Park Notification of Combination NEPA/Section 106 Compliance

Dear Mr. Carr:

Valley Forge National Historical Park (Valley Forge NHP) marks the site of the winter encampment of General George Washington's Continental Army. Today, the park provides a variety of educational and recreational opportunities to its visitors. In an effort to improve the visitor experience, the National Park Service (NPS) proposes to modify circulation along Inner Line and Outer Line Drives. The proposal includes re-establishing a former Outer-Inner Line connector road for use by shuttle buses. Other related activities include overlaying and/or rehabilitating Inner Line Drive and the Redoubt 4 road, including pullouts, parking areas, and drainage improvements. In addition, disused parking areas and roadways will be removed. Conway's and Huntington's Overlook parking areas on Inner Line Drive, as well as Washington's upper parking area A, would be completely removed and the landscape restored. Tower Road and its parking area would also be removed, including removal of asphalt and drainage structures, as well as re-vegetating the disturbed areas.

The process and documentation required for compliance with the National Environmental Policy Act (NEPA) will be used to comply with Section 106 of the National Historic Preservation Act of 1966, as amended. In accordance with section 800.8(3)(c) of the Advisory Council on Historic Preservation's regulations (36 CFR 800), I am notifying your office in advance of the park's intention to use the Environmental Assessment (EA) to meet its obligations under Section 106. The EA, which will contain an assessment of effect for all cultural resources potentially affected, will be available for your review and comment later this year.

If you have any initial concerns or comments, or if you have any questions or need additional information, please contact Deirdre Gibson by writing at the above address or by telephone at (610) 783-1047. We would also be happy to arrange a meeting with you at your convenience to discuss this project, if necessary.

Sincerely,

/S/ Arthur L. Stewart *king*

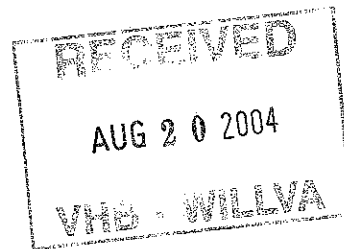
Arthur L. Stewart
Superintendent

Enclosure

cc: Deirdre Gibson, NPS-VAFO
Kristine Franzmann, NPS-DSC
✓ Tricia Wingard, VHB

H4217 VAFO(S)

AUG 18 2004



Mr. David Densmore
U.S. Fish and Wildlife Service
Pennsylvania Ecological Services Field Office
315 South Allen Street
State College, PA 16801-4850

Re: Current List of Federally-Listed Rare, Threatened, and Endangered Species

Dear Mr. Densmore:

Valley Forge National Historical Park (Valley Forge NHP) marks the site of the winter encampment of General George Washington's Continental Army. Today, the park provides a variety of educational and recreational opportunities to its visitors. In an effort to improve the visitor experience, the National Park Service (NPS) proposes to modify circulation along Inner Line and Outer Line Drives. The proposal includes re-establishing a former Outer-Inner Line connector road for use by shuttle buses. Other related activities include overlaying and/or rehabilitating Inner Line Drive and the Redoubt 4 road, including pullouts, parking areas, and drainage improvements. In addition, disused parking areas and roadways will be removed. Conway's and Huntington's Overlook parking areas on Inner Line Drive, as well as Washington's upper parking area A, would be completely removed and the landscape restored. Tower Road and its parking area would also be removed, including removal of asphalt and drainage structures, as well as revegetating the disturbed areas.

This letter serves as notification that we have begun the National Environmental Policy Act (NEPA) process and are proposing to have an Environmental Assessment/Assessment of Effect available for public and regulatory review early next year. In addition, this letter will serve 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. In order to comply, we are requesting information concerning federal and state rare, threatened, and endangered species documented or reasonably suspected within 0.5 miles of the project site, which is depicted on the enclosed Chesterbrook, Pennsylvania USGS Quadrangle. We also are coordinating with the Pennsylvania Natural Heritage Program to obtain and review their file information (Pennsylvania Natural Diversity Index).

Should you know of or come across any other resource constraint that may be a possible planning issue, please do not hesitate to contact us. We anticipate no significant environmental impacts associated with the project and look forward to receiving any guidance or comments you may have regarding the process or the project itself. Thank you for assisting with this project, and if you need any additional information or should you have any questions regarding this matter, please feel free to contact Deirdre Gibson at (610) 783-1047.

Sincerely,

/S/ Arthur L. Stewart

Arthur L. Stewart
Superintendent

Enclosure

cc: Deirdre Gibson, NPS-VAFO
Kristine Franzmann, NPS-DSC
✓ Tricia Wingard, VHB

APPENDIX B: CULTURAL RESOURCE ADVISORS APPROVALS

Historical Landscape Architect Specialist Reviews (View)

Historical Landscape Architect: Deirdre Gibson

Comments: Project will benefit cultural landscapes by removing modern intrusive parking lots

Check if project does not involve ground disturbance:

Assesment of Effect: No Adverse Effect

Recommendations for conditions or stipulations:

none

Review Date: 08/07/2006

Last Updated Date:

Last Updated By: deirdre_gibson

Historical Architect Specialist Reviews (View)

Historical Architect: Deirdre Gibson

Comments: Park received verbal concurrence from PA SHPO that removal of several irreparable catch basins would not affect integrity of overall system. No other historic properties are affected.

Check if project does not involve ground disturbance:

Assesment of Effect: No Adverse Effect

Recommendations for conditions or stipulations:

Review Date: 08/07/2006

Last Updated Date:

Last Updated By: deirdre_gibson



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

NPS #D-80, August 2006

United States Department of the Interior – National Park Service