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Environmental Consequences

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

METHODOLOGY FOR ASSESSING IMPACTS

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

Type

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

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

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

Indirect: An impact caused by an action, but that occurs later in time or farther removed in distance, yet 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 and immediate neighborhood.

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

Duration

Short-term: Impacts that occur only during construction and last less than one year or impacts that are transient, although repeated.

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

Level of Intensity

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

Cumulative Impacts

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

To determine the potential cumulative impacts, existing and anticipated future projects at Valley Forge NHP and in the surrounding area were identified. These included lands administered by the NPS, Chester County, Tredyffrin Township, the Pennsylvania Turnpike Commission, and private lands. 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.

Projects in the area that will be referenced for each impact topic are the 2013 construction of the Wilson Road parking lot and trail section, which includes removing the parking lot on Yellow Springs Road and rehabilitating the landscape; the Pennsylvania Turnpike widening project which includes the expansion of the roadway from four to six lanes; and the construction of the Chester Valley regional trail south of the park boundary.

NATURAL RESOURCES

Soil

Methodology

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

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

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

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

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

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, there would be no construction within the project area. Soils currently developed would remain impervious. There would continue to be 15,911 square feet of impervious surface within the project area. Erosion is not a problem currently and no changes are proposed that would cause erosion.

Overall, the No-Action Alternative would have **no impact** to soils.

Cumulative Impacts

Because the No-Action Alternative would have no impact on soils, no analysis of cumulative impacts is required.

Impacts of Alternative B

This action includes the construction of an 18,000 square foot gravel parking area. Topsoil would be removed and stockpiled for use on this project or elsewhere in the park. Grading, including cut and fill, would occur. A 10' wide gravel access drive would be installed to reach the parking area. During construction, there is a potential for soil erosion. This would be controlled and mitigated by use of sedimentation and erosion control measures. The use of gravel, rather than pervious paving, allows stormwater infiltration in place, which is beneficial, but could lead to washing of fine silt from the lot. Because the outlet for un-infiltrated stormwater from the lot is a park meadow, the fines would be expected to be stabilized by the thick plant growth there. The overall impact on soils under Alternative B would be **long-term, negligible, and adverse.**

Cumulative Impacts

In 2013, as part of a separate project, the park will construct a parking lot and trail section on Wilson Road, as well as a connecting trail to the Covered Bridge. During construction, there is a potential for soil erosion. This would be controlled and mitigated by use of sedimentation and erosion control measures. This action, with Alternative B, would have a **short-term, negligible, adverse** cumulative impact on soils. Alternative B would contribute an **imperceptible, adverse** increment to the cumulative impact.

Topography

Methodology

All available information on topographic resources potentially impacted on the project site was compiled. Mapping of existing topographic conditions was compared with the locations of proposed development. Predictions about short- and long-term site impacts were based on previous projects with similar topography. The thresholds of change for the intensity of an impact are defined as follows:

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

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

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

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

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, there would be no new development within the project area. Current topography would remain intact. Based on the presence of appropriate drainage structures and secure vegetation, as well as the lack of off road pedestrian or vehicular traffic, erosion would not threaten current conditions.

The No-Action Alternative would have **no impact** to topography.

Cumulative Impacts

Because the No-Action Alternative would have no impact on topography, no analysis of cumulative impacts is required.

Impacts of Alternative B

Alternative B would include alteration of the existing topography at the project site. This action includes installation of a new access driveway and construction of a gravel parking area, both of which would somewhat alter existing topography. The existing eight-foot drop (a 6% slope) across the site of the proposed parking area would be lessened to approximately 3% by cutting two feet at the upper edge of the area and filling two feet at the lower edge of the area. The overall impact on topography under Alternative B would be **long-term, negligible and adverse.**

Cumulative Impacts

In 2013, as part of a separate project, the park will construct a separate parking lot and trail section on Wilson Road. This action would somewhat alter topography. This action, with Alternative B, would have a **long-term, negligible, adverse** cumulative impact on soils. Alternative B would contribute a **negligible, adverse** increment to the cumulative impact.

Soundscape

Methodology

Context, time and intensity together determine the level of impact for an activity. It is usually necessary to evaluate all three factors together to determine the level of soundscape impact. In some cases, an analysis of one or more factors may indicate an impact level, while an analysis of another factor may indicate a different impact level, according to the criteria below. In such cases, best professional judgment based on documented rationale must be used to determine which impact level best applies to

the situation being evaluated. The thresholds of change for the intensity of an impact are defined as follows:

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

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

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

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

Impacts of Alternative A (No-Action)

The project site is a relatively quiet area in the park. Traffic noise from the nearby Pennsylvania Turnpike is the most common sound and is omnipresent. Under the No-Action Alternative, there would be no new development or change of use within the project area. Current soundscape conditions would remain unchanged. Maintenance of the structures and resulting generation of noise would occur on an ad hoc basis as funds were available. Therefore, the current soundscape of the property would remain unchanged.

Overall, the No-Action Alternative would have **no impact** to soundscapes.

Cumulative Impacts

Because the No-Action alternative would have no impact on soundscapes, no analysis of cumulative impacts is required.

Impacts of Alternative B

Construction of the access lane and parking area would result in a **short-term, negligible, and adverse impact** on soundscapes. The proposed action would result in temporary increases to traffic and resulting noise associated with events as guests arrive and depart in vehicles. The noise from additional traffic would result in **short-term, moderate, and adverse impacts** on soundscapes. During events, guests may occupy the front porch, terrace, and surrounding yards. A tent may be erected during an event. The lease will set a maximum level of decibels for music and other amplified sound so that the sound heard by the general public at Valley Creek and on the Mount Misery Trail is minimal. No amplified sound would be audible from private residences, the closest of which is located across the Pennsylvania Turnpike, 2000’ from the project site. Future study and experimentation is needed to set this limit. Because music and amplified sound from events will be detectable, there would be a **short-term, moderate, and adverse impact** on soundscapes.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to soundscapes in and around the project site. The Pennsylvania Turnpike widening project includes the expansion of the roadway from four to six lanes. Traffic on Yellow Springs Road is predicted to reach 3,800 AADT 2030, a doubling of current traffic, which will increase traffic noise on the project site and in

the general area (NPS 2007). The addition of a parking lot on Wilson Road will bring more traffic resulting in an increase of noise. These developments could result in a **long-term, major, and adverse impact** to soundscapes in the project area.

These developments, with Alternative B, would have **long-term, major, and adverse** cumulative impact on soundscapes. Alternative B would contribute an **imperceptible, adverse** increment to the cumulative impact.

Lightscape

Methodology

Context, time and intensity together determine the level of impact for an activity. It is usually necessary to evaluate all three factors together to determine the level of lightscape impact. In some cases, an analysis of one or more factors may indicate one impact level, while an analysis of another factor may indicate a different impact level, according to the criteria below. In such cases, best professional judgment based on documented rationale must be used to determine which impact level best applies to the situation being evaluated. The thresholds of change for the intensity of an impact are defined as follows:

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

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

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

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

Impacts of Alternative A (No-Action)

The project site is a relatively dark area of the park. Under the No-Action Alternative, there would be no new development or change of use within the project area. Current lighting conditions would remain unchanged. Overall, the No-Action Alternative would have **no impact** to lightscape.

Cumulative Impacts

Because the No-Action alternative would have no impact on lightscape, no analysis of cumulative impacts is required.

Impacts of Alternative B

The project site is a relatively dark area of the park. While the park is closed to visitor use after dark, the site is visible to passers-by on Route 252 and Yellow Springs Road. Light pollution generally is a result of visible light sources and of light sources that allow light to be projected upward to the sky. On nights when events are held, the house interior would be lit, and existing permanent exterior light fixtures would be lit for safety. The tent and paths to it would be lit by temporary fixtures. The light sources within the new fixtures would be shielded from view, and no fixtures would be permitted that would

cast light skyward. The tent itself would glow, however. The overall impact to lightscape under Alternative B would be **short-term, moderate, and adverse**.

Cumulative Impacts

Present and reasonably foreseeable future actions have and continue to contribute impacts to lightscape in and around the project site. Widening of the Pennsylvania Turnpike and possible increases to traffic will add additional light from vehicle headlights—this light is visible during the six months of the year when deciduous trees have no leaves. Additionally, some of the trees that currently somewhat screen the turnpike from the project site will be removed for construction. Until they re-grow, light from traffic on the turnpike will be more visible. This activity, in addition to light from the proposed actions, could contribute a **long-term, moderate, and adverse impact** to lightscape in the project area.

CULTURAL RESOURCES

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

Under the ACHP's regulations, a determination of either *adverse effect* or *no adverse effect* must be made for affected, National Register-listed or eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register, e.g. diminishing the integrity (or the extent to which a resource retains its historic appearance) of the resource's location, setting, design, feeling, association, workmanship, or materials. Adverse effects also include reasonable foreseeable effects caused by the alternative that would occur later in time, be farther removed in distance, or be cumulative (36 CFR Part 800.5 *Assessment of Adverse Effects*). A determination of *no adverse effect* means that there is an effect, but the effect would not diminish the characteristic of the cultural resource that qualify it for inclusion in the National Register.

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

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

Historic Structures

Methodology

In order for a structure or building to be listed on the National Register, it must be associated with an important historic context, i.e. possess significance – the meaning or value ascribed to the structure or building, and have integrity of those features necessary to convey its significance, i.e. location, setting, design, feeling, association, workmanship, and materials (NARA 2012). For purposes of analyzing potential impacts to historic structures/buildings, the thresholds of change for the intensity of an impact are defined as follows:

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

Minor: Adverse impact – Alteration of a feature(s) would not diminish the overall integrity of the resources.

Beneficial impact –Preservation of landscape pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

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

Beneficial impact – Rehabilitation of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes*.

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

Beneficial impact – Restoration of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Impacts of Alternative A (No-Action)

Under Alternative A, maintenance and preservation would continue as funding became available and it is possible that irreversible damage to historic fabric could occur if repairs and rehabilitation do not take place in a timely way. The house could undergo gradual deterioration. The paint will wear away, internal pipes may become worn and could burst or leak and the house may experience mold, rotting, and warping of exterior carpentry and floors over time. The house would continue to receive maintenance and repairs on an ad hoc basis. This would result in a **long-term, moderate to major, adverse impact** to the historic structures.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that the implementation of Alternative A would have ***no adverse effect*** on historic structures at the project site.

Cumulative Impacts

No present or reasonably foreseeable future actions have or continue to contribute impacts to historic structures in and around the project site. Therefore, there is no cumulative impact.

Impacts of Alternative B

The P.C. Knox House would not undergo rehabilitation to facilitate the proposed action. Funds from the proposed lease would be used for pending projects to replace the heating system and undertake similar rehabilitation projects, however. This would result in a long-term, moderate, beneficial impact. Accessibility features would be temporarily installed in and around the house. This would have no impact. The overall impact to historic structures would be **long-term, moderate, and beneficial**.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B would have ***no adverse effect*** on historic structures at the project site.

Cumulative Impacts

No present or reasonably foreseeable future actions have or continue to contribute impacts to historic structures in and around the project site. Therefore, there is no cumulative impact.

Cultural Landscapes

Methodology

Cultural landscapes are the result of the long interaction between people and the land, and the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by historic land-use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living records of an area's past, as well as a visual chronicle of its history. The dynamic nature of modern human life, however, contributes to the continual reshaping of cultural landscapes, making them a good source of information about specific times and places, but also rendering their long-term preservation a challenge.

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

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

Minor: Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the landscape.

Beneficial impact – Preservation of landscape pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Moderate: Adverse impact – Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape.

Beneficial impact – Rehabilitation of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes*.

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

Beneficial impact – Restoration of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

Impacts of Alternative A (No-Action)

Under Alternative A, no changes would be made to the landscape. The lawn would continue to be mowed on its regular schedule, and trees and other shrubbery would be left as-is. Maintenance would continue to take place intermittently. No restoration or rehabilitation would take place on exterior features, and features could continue to be lost.

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

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative A would have ***no adverse effect*** on cultural landscapes at the project site.

Cumulative Impacts

A funded project will commence in Fiscal Year 2013 to remove the existing parking lot on Yellow Springs Road and relocate it to Wilson Road, west of the project site. The old parking lot will be removed and the landscape rehabilitated. The new parking lot will be screened, but will be somewhat visible from the project site. This development, along with Alternative A, would have a **long-term, minor, and adverse** effect on cultural landscapes in the area. Alternative A would contribute a **long-term, minor, and adverse** increment to the cumulative impact.

Impacts of Alternative B

Under Alternative B, a row of diseased hemlocks would be removed and would be replaced by a new hedge, rehabilitating the original screen function of the trees. This would result in a long-term, minor, and beneficial impact to the cultural landscape. Other trees to be removed for the proposed parking area were not present during the P. C. Knox era and there would be no impact. The access road and parking area using gravel, rather than pavement, makes the new features reversible. Addition of the parking area and lane would result in a long-term, minor, and adverse impact.

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

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B would have ***no adverse effect*** on cultural landscapes at the project site.

Cumulative Impacts

A funded project will commence in Fiscal Year 2013 to remove the existing parking lot on Yellow Springs Road and relocate it to Wilson Road, west of the project site. The site of the old parking lot will be rehabilitated and vegetated. The new parking lot will be screened, but will be somewhat visible from the project site. This development would have a **long-term, minor, and adverse** effect on cultural landscapes in the area. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*), the NPS concludes that cumulative impacts associated with Alternative B would have ***no adverse effect*** on cultural landscapes at the project site.

VISUAL RESOURCES

Methodology

For this EA/AOE, visual resources are defined as what visitors see from within the park, what users of the site see, and what is seen by passers-by on Yellow Springs and Wilson Roads.

Information on viewsheds potentially impacted in this area was complied. Proposed development and modifications of existing facilities were studies on maps and in site visits. Predictions about short- and long-term site impacts were based on previous projects with similar results. The thresholds of change for the intensity of an impact are defined as follows:

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

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

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

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

Impacts of Alternative A (No-Action)

Under Alternative A, no changes would be made to the site that would affect visual resources. The house and grounds would continue to receive maintenance and repairs on an ad hoc basis, but could undergo gradual deterioration over time. The overall impact to visual resources would be **long-term, minor and adverse.**

Cumulative Impacts

A funded project will commence in Fiscal Year 2013 to remove the existing parking lot on Yellow Springs Road and relocate it to Wilson Road, west of the project site. The old parking lot will be removed and the landscape rehabilitated. The new parking lot will be screened, but will be somewhat visible from the project site. Alternative A would contribute a **long-term, minor, and adverse** increment to a **long term, minor and adverse** cumulative impact.

Impacts of Alternative B

The proposed valet parking area would be visible from beyond the project site only when vehicles are present. Some trees would be removed during construction of the parking area and the access lane. Most are in poor condition; some would be replaced. Handicap accessible equipment and safety measures would be temporarily installed on the side, front, and back yards of the house. A tent would be erected in the back yard that would remain for the entire rental season. Service vehicles such as portable kitchens, restrooms, and electricity generators may park along the drop-off circle.

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

Cumulative Impacts

A funded project will commence in Fiscal Year 2013 to remove the existing parking lot on Yellow Springs Road and relocate it to Wilson Road, west of the project site. The old parking lot will be removed and

the landscape rehabilitated. The new parking lot will be screened, but will be somewhat visible from the project site. Alternative B would contribute a **long-term, minor, and adverse** increment to a **long term, minor and adverse** cumulative impact.

VISITOR USE

Methodology

NPS *Management Policies* (2006) 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 that the NPS is committed to providing appropriate, high-quality opportunities for people to enjoy the parks. Part of the purpose of Valley Forge NHP is to offer opportunities for education, inspiration, enjoyment, and recreation.

Public scoping input and an assessment of what is available to the public were used to estimate the effects of the actions of the alternatives of this document. The thresholds of change for the intensity of an impact to visitor use and experience are defined as follows:

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

Minor: Changes in visitor use and/or experience would be detectable, although the changes would be slight. Some members of the public would be aware of the effects associated with the alternative, but the effects would be slight and not noticeable by most visitors.

Moderate: Changes in visitor use and/or experience would be readily apparent to most of the public. Visitors would be aware of the effects associated with the alternative and might express an opinion about the changes.

Major: Changes in visitor use and/or experience would be readily apparent to all members of the public who come into contact with the resource and could be characterized as either severely adverse or exponentially beneficial. Visitors would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

Impacts of Alternative A (No-Action)

Under Alternative A, there would be no changes to visitor use and experience. The park library would continue to remain available to the public by appointment only, and the outdoors area would continue to remain open and available to the public. The house is not open to the general public, but park visitors may explore the back patio and yards. Trails on and around the project site would remain open. There would be **no impact** on visitor use and experience.

Cumulative Impact

Because the No-Action Alternative would have no impact on visitor use, no analysis of cumulative impacts is required.

Impacts of Alternative B

The P.C. Knox House currently holds the park library, which is available on an appointment-only basis. The library would be closed during an event at the house. This conflict is expected to occur rarely, since the library's current limited hours only occur on weekdays. The house is not open to the general public. During an event, the house would be available to guests of the event. During an event, the general public would not be allowed to use the patio and yards of the project site. The Knox Trail would remain open to pedestrians, bicyclists, and equestrians, but use could be impacted by vehicles traveling on Library Lane. All impacts to visitor use would be ephemeral—occurring only during events.

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

Cumulative Impacts

Construction of a new parking lot and trail on Wilson Road to replace the Yellow Springs parking lot that serves Mount Misery and Valley Creek Trails will commence in 2013. The Chester Valley regional trail south of the park is under construction currently. Connectivity will improve, which is a long-term, major, beneficial impact. Alternative B would contribute a **short-term, moderate, adverse** increment to a **long term, major and beneficial** cumulative impact.

TRAFFIC AND CIRCULATION

Methodology

The project site is served by state and Tredyffrin Township roads. A comparison of traffic volumes adjacent to the project area is the basis for characterizing the level of impact for this project. Comparisons are given for existing traffic volumes and for projected year 2030 volumes. The following parameters were used to identify the level of intensity for the transportation elements in this analysis:

Negligible: Changes to traffic and circulation would be at the lowest levels of detection and would have an imperceptible impact on vehicular traffic flow. For purposes of this analysis for the action alternatives, changes would be less than a 5% increase over No Action traffic volumes (2001 Average Annual Daily Traffic [AADTs]).

Minor: The change to traffic and circulation would be detectable but would be of a magnitude that would not have an appreciable impact on vehicular traffic flow. Traffic volume increases would be between 5% and 10% over 2001 AADTs.

Moderate: The impacts would be readily apparent and would result in a substantial change in circulation patterns and congestion in a manner noticeable to the public. Traffic volume increases would be anticipated to be between 10% and 25% over 2001 AADTs.

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. Traffic volume increases are anticipated that are greater than 25% over 2001 AADTs.

Impacts of Alternative A (No Action)

Under Alternative A, no new uses would be made of the project site, and no additional traffic would be generated. There would be **no impact** to traffic and circulation.

Cumulative Impact

Because the No-Action Alternative would have no impact on traffic or circulation, no analysis of cumulative impacts is required.

Impacts of Alternatives B

Yellow Springs Road would serve as the primary ingress and egress for events at the project site. Use of the site for events would increase traffic on Yellow Springs by staff and guests. Events with the maximum number of 200 guests could bring 100 vehicles to the site. Each vehicle would make one trip to arrive and one trip to depart, adding 200 trips per event to Yellow Springs Road. This would represent a 9.9% increase to current traffic levels on event days. This would represent a **short-term, minor, adverse** impact to traffic volume.

Fifty per cent of the potential trips could be projected to cross the Covered Bridge, a one-lane bridge with limited sight distances. NPS has requested that an audit be conducted to assess the potential of adding a stop sign for southbound Route 252 traffic, which would help to address the problem of limited sight distance.

Cumulative Impact

Valets returning vehicles to guests would use Wilson Road, which is a dead-end road with no traffic other than park visitors. In a separate project, a new 50-car parking lot for trail users will be constructed on Wilson Road in 2013, replacing approximately the same number of parking spaces along Wilson Road and also in the small lot on Yellow Springs Road. This lot is projected to add 300 trips per day to Wilson Road on weekend days with good weather; no additional trips are projected for Yellow Springs Road, since the parking lot is a relocation of existing parking. An event at the maximum number of guests would result in the addition of 100 valet trips on Wilson Road. It also would add 100 valet trips to the 400'-long stretch of Yellow Springs Road between Wilson Road and Library Lane. Use of Wilson Road and Yellow Springs Road by valets would add a **short-term, minor, adverse** impact to traffic volume. PennDOT traffic predictions show that traffic on Yellow Springs Road will increase to 3,800 AADT by the year 2030. At that volume, trips associated with events at the project site would represent a 5.25% increase in traffic on event days. Actions associated with Alternative B would contribute a **minor, adverse** increment to the cumulative impact.

PARK OPERATIONS

Methodology

Park operations, for the purpose of this analysis, refer to the ability to adequately maintain the cultural and natural resources of the park and provide for an effective visitor experience. This includes an analysis of the condition of facilities and developed features. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impacts to park operations would be at low levels of detection and would have little impact on park operations.

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

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

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

Impacts of Alternative A (No-Action)

Under the No-Action Alternative, no changes would be made to structures and landscapes that would either burden or streamline current operations at the project site. Structures and landscapes would continue to be maintained and rehabilitated on an ad hoc basis, as funding permits. Use of the park library by park staff would continue. Law enforcement rangers would patrol occasionally and would respond to emergencies. There would be **no impact** to park operations and no change to yearly estimated maintenance.

Cumulative Impacts

Because the No-Action Alternative would have no impact on park operations, no analysis of cumulative impacts is required.

Impacts of Alternative B

Under Alternative B, some maintenance would become the responsibility of the third party lessee, resulting in a long-term, minor, and beneficial impact to park operations. The lessee, and not park Law Enforcement staff, would be responsible for managing traffic during events, resulting in no impact to park operations. The library located would be closed during events, but since it is only staffed on occasional weekdays, this would result in a short-term, negligible, and adverse impact to park operations. Finally, the park would take on an additional responsibility of managing the lease, resulting in a long-term, minor, and adverse impact to park operations.

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

Cumulative Impacts

No present or reasonably foreseeable future actions have or continue to contribute impacts to park operations in and around the project site. Therefore, there is no cumulative impact.

CONCLUSION

Alternative A (No-Action)

Under Alternative A, there would be no impacts soil, topography, soundscapes, lightscape, visitor use, traffic and circulation, and park operations. There would be long term, minor and adverse impacts on cultural landscapes, and visual resources. There would be long-term, moderate to major and adverse impact to historic structures. Analysis of cumulative impacts is not required for soil, topography,

soundscape, lightscape, historic structures, visitor use, traffic and circulation, and park operations because Alternative A would pose no impacts that could contribute to cumulative impacts. There would be long term, minor and adverse cumulative impacts for the cultural landscape and visual resources. Applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*); the NPS concludes that the implementation of Alternative A would have no adverse effect on cultural resources at the project site.

Alternative B

Under Alternative B, there would be long-term, negligible, and adverse impacts to soil and topography. There would be short term, moderate and adverse impacts to soundscapes, lightscape, and visitor use. There would be long term, moderate and beneficial impacts to historic structures. There would be long term, minor and adverse impacts and long term, minor and beneficial impacts to cultural landscapes. There would be short term, minor and adverse impacts to visual resources and traffic and circulation. There would be long-term, minor, and beneficial, short-term, negligible, and adverse, and long-term, minor and adverse impacts to park operations. Analysis of cumulative impacts is not required for historic structures and park operations because Alternative B would pose no impacts that could contribute to cumulative impacts. The cumulative impact for soundscape is long term, major, and adverse. The cumulative impact for lightscape is long term, moderate, and adverse. The cumulative impact for cultural landscapes and visual resources is long term, minor, and adverse. Applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5 *Assessment of Adverse Effects*); the NPS concludes that the implementation of Alternative B would have no adverse effect on cultural resources at the project site. The cumulative impact for topography is long term, negligible, and adverse. The cumulative impact for visitor use is short term, moderate, and adverse. The cumulative impact for traffic and circulation is minor and adverse. The cumulative impact for soil is short term, negligible, and adverse.