



FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment for Cultural Landscape Report Implementation

Wilson's Creek National Battlefield Republic, Missouri

INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) has prepared an Environmental Assessment (EA) for the purpose of satisfying the compliance requirements for the implementation recommendations from the Wilson's Creek National Battlefield *Cultural Landscape Report* (2004) (CLR). The EA documents the results of the potential environmental impacts associated with Implementation of the CLR Treatment Recommendations. Wilson's Creek National Battlefield is located at 6424 West Farm Road 182 near the town of Republic, Missouri. At the time the CLR was finalized, the park boundary was changing. Congress passed legislation authorizing a boundary expansion in 2003, and additional lands were purchased from willing sellers. Since 2004, the park has grown by approximately 280 acres. Land acquired for inclusion in the park edged the original park to the northwest, southwest, and southeast. It now extends over 2,369 acres, and spans the boundary between Christian and Greene counties.

There are three primary purposes of an EA: 1) to help determine whether the impact of a proposed action or alternative could be significant; 2) to aid in NEPA compliance when no environmental impact statement (EIS) is required by evaluating a proposal that will have no significant impact, but that may have measurable adverse impacts; and 3) to facilitate preparation of an EIS, if one is determined to be necessary.

The Council of Environmental Quality (CEQ) regulations specifically direct that "Agencies shall integrate the NEPA process with other planning at the earliest possible time to ensure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts" [40 CFR § 1501.2]. Additionally, both CEQ regulations and NPS policies direct EAs to be prepared when compliance with NEPA can be achieved and environmental analysis is sufficient such that preparation of an EIS is not necessary.

As stated in the Final EA, the proposed action would implement the CLR recommendations, provide a vision and clear direction for the protection of the park's cultural resources, and preserve the overall character of Wilson's Creek National Battlefield. The assessment and conclusions described in the EA resulted in the

determination that there will be no significant impacts from implementation of the selected alternative. This Finding of No Significant Impact (FONSI) describes the alternative the NPS has selected for implementation, provides the rationale for its selection, and explains why it will not result in significant impacts. Measures to mitigate adverse effects from implementation of project actions are presented in Attachment A of this document and a non-impairment determination is included in Attachment B. Brief descriptions of each alternative are provided below.

PURPOSE, NEED, AND OBJECTIVES

The purpose of the proposed action is to help fulfill the mandate of protection and management of fundamental park resources and values including the cultural landscape and features present at the time of the Battle of Wilson's Creek. Changes made through the implementation of treatment recommendations will provide park visitors with a stronger understanding and meaningful relationship to the Civil War Battle fought onsite. Proposed changes will also provide park visitors with additional enjoyable outdoor experiences that will coincide with enhanced stewardship of the park's significant natural and cultural resources.

The project is needed to accomplish the following objectives:

- Consideration of visitor safety needs associated with the interface of deer and visitor use of the park and surrounding roads;
- Regeneration of existing vegetation within the park in association with development of a program that reduces white-tail deer population within the park;
- Development of prioritized and aggressive management of cultural resources and features that respect the issue of sustainability;
- Consideration of haying as one of the tools of sustainable vegetation management, including within warm season grass fields;
- Development and installation of new wayside exhibits needed to convey accurate and compelling battlefield stories;
- Relocation of specific trail segments that regularly erode and require repair;
- Management of different vegetation communities through use of prescribed fire, grazing, mowing, and herbicide application in specific areas, using specific protocols;
- Management of Eastern redcedar (*Juniperus virginiana*) currently shading out glade habitat areas;
- Rehabilitation of glade areas to promote habitat for the federally-listed threatened Missouri bladderpod (*Lesquerella filiformis*);
- Management of crop exhibits and orchard exhibits with respect to deer presence in the park;
- Development and installation of new trails, interpreted viewsheds, contemplative/interpretive nodes, and exhibit design for cultural features present at the time of the battle but no longer extant.

SELECTED ALTERNATIVE

The NPS alternative selected for implementation is Alternative 2: Implementation of Remaining CLR (2004) Treatment Plan Recommendations, Proposed Deer Management Strategies, and the Interpretive Programs Indicated in the Long-Range Interpretive Plan. During alternative development, it was determined that the purpose and need for the plan could be met with a single action alternative and that other alternatives were neither feasible nor necessary. Alternative 2 is the preferred alternative because it would best address and fulfill the purpose and need of the project.

Alternative 2 would complete the implementation of recommendations provided within the CLR based on an understanding of which recommendations have been implemented, which remain viable, and which require modification to meet current park management goals. As part of an overall strategy for managing the cultural landscape, this alternative recommends developing additional connections between interpretive programming and what is known about the landscape that comprised the park at the time of the battle. The strategy includes increased vegetation management for more views; development of alternative trails; new cannon placement; additional wayside exhibit installation; and enhanced depiction of vernacular lifeways present at the time of the battle.

Rehabilitation of the landscape would also include contemplative and interpretive areas within the park that afford opportunities for the public to reflect on events of the battle. Several directed viewsheds will be cleared to support an understanding of the battlefield from contemplative and interpretive nodes and other key locations. Proposed trail extensions would be developed to provide connections with historic features not located along existing trails. Wayside exhibits would convey information about historic farmstead features at specific locations and viewpoints, providing a clear connection between the battle and the landscape.

Under Alternative 2, the key features of the existing developed core of the park will remain the same. The entrance drive, visitor center parking area, tour road, portions of the equestrian and pedestrian trails, the picnic area, visitor center/museum, and maintenance area will continue to function and have a similar appearance to that present today. Circulation throughout the park will provide, where feasible, universal accessibility on the trail system and access to visitor center exhibits and outdoor interpretive exhibits, ensuring compliance with ABAAS (Architectural Barriers Act Accessibilities Standards).

RANGE OF ALTERNATIVES CONSIDERED

In addition to the selected alternative described above, the EA analyzed a no action alternative, which included projects already implemented in the park based on the treatment recommendations in the CLR completed in 2004.

Under Alternative 1, management of the entire park would have continued in accordance with NPS policies and standards. The focus would have been on preservation of the existing character of the park and current interpretive programs. Under this alternative, there would have been no changes to the facilities that currently accommodate visitor access and interpretation, or park administration and maintenance. Proposed changes that have already been approved, such as the addition of new wayside exhibits at Bloody Hill, would

have proceeded. The existing visitor center would have continued to serve as the primary means for visitor contact and orientation. The entrance drive and associated parking lot would have remained the primary vehicular access route for visitors to experience the park's resources. Visitors would have continued to gain a majority of their knowledge of the Battle of Wilson's Creek through experiencing exhibits located within the visitor center, wayside exhibits sited at tour road stops, and along pedestrian and equestrian trails. The current picnic area would have continued to support the visitor experience and equestrian use of designated trails also would have continued. No provision would have been made for additional parking beyond the current parking areas, including the existing horse trailer parking areas. Existing patterns of spatial organization composed of clearings surrounded by generally wooded landscape, would have been perpetuated. Glade habitats would have remained overrun with Eastern red cedar trees, affecting the habitat and survival of the Missouri bladderpod, unless recommendations were implemented as a park PMIS project per the *Vegetation Management Implementation Plan 2014*. No change would have been made to the interpretation of the battlefield landscape. Views identified as important interpretive vistas, (east and west battlefield overlooks) would have continued to be managed for clear sight lines, while other views identified as important, would not have been cleared.

Alternative 1 was not selected because it would have precluded the park from meeting some of the goals of the Purpose and Need statement and resolving the list of management issues. No further exploration of ways to utilize the cultural landscape as a tool for interpreting the Battle of Wilson's Creek would have been conducted. This alternative would also have limited the park in its ability to accomplish design and management objectives including visitor safety needs associated with the interface of deer and visitor use of the park and surrounding roads; development and installation of new wayside exhibits needed to convey accurate and compelling battlefield stories; relocation and new design specifications for trail segments that regularly erode and require repair; management of different vegetation communities through use of prescribed fire, grazing, mowing, and herbicide application in specific areas; and rehabilitation of glade areas to promote habitat for federally-listed threatened Missouri bladderpod.

MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES (BMPs)

The NPS and its contractors will implement mitigation measures and best management practices to minimize the degree and/or severity of adverse effects on natural resources, historic structures, cultural landscapes, historic viewsheds, visitor use and experience, and human health and safety. The NPS may add mitigation measures and BMPs to this list in the future at its discretion if the additional measures do not cause environmental impacts. Mitigation measures and BMPs are attached in this FONSI (Attachment A).

SIGNIFICANCE CRITERIA REVIEW

This section explains why the selected alternative will not have a significant effect on the quality of the human environment. As defined in 40CFR 1508.27, significance is determined by examining the following criteria:

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Whether taken individually or as a whole, the impacts of the Selected Alternative do not reach the level of significant adverse effects that would require preparation of an EIS. Most adverse impacts associated with implementation of the Selected Alternative would be short-term and temporary during construction activities, prescribed burns for vegetation management, and strategies to reduce deer to appropriate and manageable numbers. Mitigations and Best Management Practices are incorporated into the proposed action to ensure further reduction and minimization of adverse impacts. Both the 2003 GMP and the 2007 GMP Amendment also considered the impacts of cultural landscape rehabilitation.

When the impacts of the Selected Alternative are combined with other past, present, and reasonable foreseeable future actions in the project area, the overall impacts to cultural and natural resources within the park would be minor in the short-term and have long-term beneficial impacts. Known archeological resources are protected through ongoing processes implemented by the park, including cultural resource surveys and ground testing with the implementation of each of the actions within the project. Historic buildings and structures are currently maintained and managed to retain their historical character and expanded interpretation proposed within the selected alternative incorporates additional maintenance to building and structure sites. Cultural landscapes would benefit from vegetation management and expanded interpretation that integrates the cultural landscape into the interpretive story of the site.

There will be a number of disruptions to surface soils due to construction and grading within the selected alternative. Most impacts are associated with specific small areas of the park and would typically be short-term and limited to the time of project completion. Mitigation measures and BMPs will ensure negligible impacts to soils and geology. Long-term positive impacts to soils would be expected due to vegetation management techniques for soil stabilization, and design of trail alignments to avoid steep grades and minimize ongoing soil erosion. Existing and future land use management and vegetation management also protect prime and unique agricultural lands.

Regarding potential impacts on water resources, floodplains, and water quality, there would be long-term and substantial beneficial effects with the implementation of the selected alternative. Benefits include restoration of the riparian buffers along stream corridors, restoration of the watershed, and improvement of water quality within the springs and creeks. Short-term impacts due to implementation of the selected alternative would be mitigated through planning and scheduling all construction activities to prevent erosion and sedimentation.

There would be short-term adverse impacts on vegetation within this alternative. Mitigation measures are required to ensure the short-term adverse impacts would not become long-term adverse impacts. Actions in the selected alternative align with proposed projects in the *Vegetation Management Implementation Plan* (2014) and provide detailed guidance on the implementation of actions. The result is a long-term and positive impact on desired vegetation assemblages. Associated with vegetation is wildlife habitat which will be improved and expanded within the selected alternative, a long-term beneficial impact on wildlife within the park. The proposed vegetation management, including glade restoration and the removal of eastern red cedar will have a long-term beneficial impact on rare, threatened, and endangered species, in particular the Missouri bladderpod.

2. The degree to which the proposed action affects public safety and health.

The selected alternative will have beneficial effects on public health and safety. Overall, the selected alternative will have long-term beneficial impacts on visitor use and experience and safety due to increased interpretive opportunities, expanded education and communication, construction and realignment of trails, development of contemplative nodes with associated site furnishings and shade, and establishment of programs and strategies to manage and control the deer population.

3. Unique characteristics of the geographic area such as proximity to historic and cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas: As described in the EA, the selected alternative will not affect wild and scenic rivers, or ecologically critical areas because those resources do not exist at Wilson's Creek National Battlefield. Prime agricultural land is part of the landscape at the park. This resource is protected through existing and proposed vegetation management, including crop rotation, soil protection, and general preservation of land use with mitigation or BMPs required during short-term construction actions. The park will continue to survey for and identify potential historic properties within areas surrounding the park and proposed for ground disturbance.

4. Degree to which effects on the quality of the human environment are likely to be highly controversial. The selected alternative is not highly controversial. No issues arose during public scoping or the preparation of the EA. No issues were brought to the park's attention during the public review period that indicated a dispute with either the methods or results of the environmental analysis.

5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks:

No highly uncertain, unique, or unknown risks were identified during the preparation of the EA or the public review period.

6. Degree to which the selected alternative may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The selected alternative will not have a significant effect and does not establish a precedent for future actions with significant effects. In addition, the action will not represent a decision in principle about a future consideration with the potential for significant effects.

7. Whether the selected alternative is related to other actions with individually insignificant but cumulatively significant impacts.

No significant adverse cumulative impacts were identified in the EA. Likely future actions taken individually or collectively will result in no significant adverse effect on the human or natural environment due to phasing of projects, locations within specific small areas of the park, and use of mitigation measures during and after construction. Within some of the proposed actions, the incremental impact would be long-term and positive due to vegetation management strategies, prescribed burn procedures and mitigation, and trail removals and re-alignments that prevent ongoing and serious soil erosion. The incremental impact of the selected

alternative when added to other past, present, and reasonably foreseeable future actions will not be significant.

8. Degree to which the selected alternative may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

Effects of the selected alternative on cultural landscapes, historic buildings and structures, archeology, and historic viewsheds are long-term and beneficial. Benefits to the cultural landscape will be the reasonable balance achieved between the objectives for integration of the cultural landscape into the interpretive story and ongoing management objectives to protect and restore vegetation communities and rehabilitate glade communities. Benefits to historic buildings and structures will come from continued preservation, management, and maintenance to preserve their historical character, and expanded interpretation will incorporate additional maintenance to building and structure sites. Existing historical viewsheds will be maintained and others opened up, providing visual associations with the cultural landscape. All improvements will be designed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, reducing the potential for adverse impacts on the historic setting. No known archeological sites will be disturbed. To minimize potential adverse effects, surveys will be conducted prior to all ground-disturbing activities; monitoring for subsurface artifacts will be conducted during ground-disturbing activities in the park.

The park initiated consultation with the Missouri State Historic Preservation Office (SHPO) with a scoping letter sent on January 31, 2017. The SHPO was also sent an invitation to the public meeting held at the park on November 6, 2017, and received a copy of the Public Review draft of the EA for review and comment during the public review period from October 28th through November 28th, 2017. The SHPO responded with a letter of concurrence with the park determination of *no adverse effect* on historic properties in a letter dated December 7, 2017. The park also initiated consultation with the Tribal Historic Preservation Officer (THPO) in a letter dated October 13, 2017, that included maps, descriptions of the alternatives, and an invitation to comment on the Public Review EA posted on the PEPC site. Consultation was initiated with the Osage Nation, the Cherokee Nation, the Delaware Nation, the Absentee Shawnee Tribe, the Eastern Shawnee Tribe, and the Delaware Tribe. Elizabeth Toombs, Special Projects Officer for the Cherokee Nation Tribal Historic Preservation Office responded with a letter of concurrence with the park determination of *no adverse effect* on cultural resources, dated December 11, 2017.

No districts, sites, highways, structures, or objects listed on the National Register of Historic Places will be adversely impacted.

9. Degree to which the selected alternative may adversely affect an endangered or threatened species or its critical habitat.

In accordance with Section 7 of the Endangered Species Act, the park initiated consultation with the (USFWS) on January 31, 2017. The U.S. Fish and Wildlife Service offered comments pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347),

and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544). They provided a list of federally listed species, proposed species, candidate species and designated and proposed critical habitat identified as potentially present in Christian and Green counties (per the Service's website for the Midwest Region). The Service confirmed that the species that should be evaluated as part of the EA included: gray bat (*Myotis septentrionalis*); Indiana bat (*Myotis sodalis*); Northern long-eared bat (*Myotis septentrionalis*); Missouri bladderpod (*Lesquerella filiformis*); Virginia sneezeweed (*Helenium virginicum*); and Ozark cavefish (*Amblyopsis rosae*). The USFWS also received a copy of the Public Review Draft of the EA for review and comment. In an email response dated November 27, 2017, the USFWS concurred with the NPS finding of *no adverse effect* on threatened or endangered species.

10. Whether the selected alternative threatens a violation of federal, state, or local environmental protection law.

The selected alternative will not violate federal, state, or local environmental protection laws.

Public Involvement

Park staff at Wilson's Creek National Battlefield and resource professionals of the National Park Service Midwest Regional Office conducted internal scoping for the EA project. This interdisciplinary process defined the purpose and need, identified potential actions to address the need, determined the likely issues and impact topics, and identified the relationship of the preferred alternative to other planning efforts at the park. From previous planning efforts and development of resource documents, the park has a well-established list of stakeholders interested in the alternatives being proposed for the park. For the EA, the superintendent initiated public scoping on November 1, 2016. A news release was issued by the staff at Wilson's Creek National Battlefield on November 4, 2016 inviting the public to attend the open house and provide input in the early development of the alternatives and the subsequent EA process. The final draft of the EA went to public review for 30 days, October 28th through November 28th, 2017, and was uploaded on the NPS Planning, Environment, and Public Comment (PEPC) system website. A public meeting was held on November 6, 2017 to review the EA and the alternatives. Comments were collected from discussions and questions at the meeting, emails during the 30-day review period, and comments from the PEPC site. Comments and questions from members of the public were documented and taken into consideration as the EA was finalized. Agency review letters were received from the Missouri State Historic Preservation Office (SHPO), U.S. Fish and Wildlife Service (USFWS), and the Cherokee Nation Tribal Historic Preservation Office (THPO).

Conclusion

In light of the impacts described in the EA for the project and with guidance from *NPS Management Policies 2006*, natural and cultural resources information, professional judgment, and considering agency and public comments, the park has decided to implement the selected alternative, presented as Alternative 2 (Preferred Alternative) in the EA. Implementing the selected alternative will enhance the connection of the landscape to interpretive themes, the historic setting of the site, the visitor experience, and human health and safety, while preserving, protecting, and managing the cultural and natural resources of the park.

The selected alternative will not constitute an action that normally requires preparation of an Environmental Impact Statement (EIS) and, as noted above, impacts resulting from implementing the action will not have a significant impact on the natural, cultural, or human environment. There will not be significant impacts or effects on human health and safety, threatened or endangered species, historic properties listed on or eligible for listing on the National Register of Historic Places, or unique characteristics of the region.

No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative impacts or effects, or elements of precedence were identified during the impact assessment. Implementing the selected alternative will not violate any federal, state, or local environmental protections laws. The impacts that result from the selected alternative will not impair any park resources or values necessary to fulfill specific purposes identified in the park's enabling legislation. (See Attachment B: Determination of Non-Impairment)

I find that the preferred alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508 et. seq.) an environmental impact statement will not be prepared for this project.

Recommended: T. John Hillmer February 6, 2018
T. John Hillmer
Superintendent
Wilson's Creek National Battlefield
Date

Approved: C. H. Sholly 2/13/18
Cameron H. Sholly
Regional Director, Midwest Region
Date

Attachment A: Mitigation Measures and Best Management Practices (BMPs)

Attachment B: Determination of Non-Impairment

ATTACHMENT A

MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES (BMPs)

The National Park Service (NPS) places strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. The NPS would implement an appropriate level of monitoring throughout the construction and maintenance process, the prescribed burn management process, and the implementation strategy for control of the deer population within the park to help ensure that protective measures are being properly implemented and are achieving their intended results. These mitigation measures are applicable for contractors and park staff. The WICR staff and contractors would strive to maximize sustainable designs and management strategies to minimize potential adverse environmental effects. It is intended that the past and ongoing monitoring and mitigation measures would be continued upon implementation of the NPS-selected alternative and supplemented by those actions labeled as future monitoring guidelines and mitigation as needed.

Natural Resources

Past and Ongoing Monitoring and Mitigation Measures

- A sampling and analysis protocol established by NPS Heartland Inventory and Monitoring Network will be used to monitor the plant community over the long term.
- When sites are disturbed by maintenance or construction activities, park staff re-establishes vegetation based on inventories and monitoring by Heartland I&M, and recommendations in the *Vegetation Management Implementation Plan* (2014).
- Heartland I&M continues to monitor the white-tail deer population numbers and incidents of disease in the park. Heartland will also continue to monitor bird communities, aquatic invertebrates in Wilson's Creek, status of Missouri bladderpod, and the forest communities in the park.
- Wilson's Creek National Battlefield will continue to operate under its *Fire Management Plan* (2004). All monitoring and management procedures are outlined in detail in the management plan for prescribed burns in the park.

Future Monitoring and Mitigation Measures

- Best Management Practices (BMPs) are required to support the implementation and management of actions taken in the preferred alternative. Refer to established BMPs for forestry and water quality actions. The Missouri Department of Conservation, the Great Lakes States and U.S. and State Forest Services have well established BMPs.
- NPS will be required to monitor trail use/erosion and make adjustments on carrying capacity based on monitoring findings.
- Temporary barriers will be provided to protect existing trees and shrubs that are not identified for removal, specifically during clearing for battlefield viewsheds. Barriers will extend out to tree drip lines.

- Vegetative filter strips will be used to filter and clean sediment, organic material, nutrients, chemicals, and other pollutants from run-off water as it leaves a non-point source. Placed between pollution sources and water resources, these planted filter systems can effectively mitigate soil erosion and polluted runoff.

Cultural Resources

Past and Ongoing Monitoring and Mitigation Measures

- The condition of known archeological resources will be documented and monitored by staff for changes in condition and site-specific threats.
- Site condition assessments by a NPS-approved archeologist are part of project-specific surveys.
- Ongoing protection of archeological sites from disturbance will occur, except for investigations necessary to address important research questions, and to consider proposed new additions such as trails, interpretive exhibits, and vegetation management treatments.
- All archeological sites will be monitored to determine visitor safety and resource protection concerns.
- Water resource margins will be monitored for erosion and associated emerging archeological resources.
- Prior to all fire management activities, cultural resources will be identified and avoided to the extent possible.
- Mechanical treatments and prescribed fire will be used to reduce fuel loads near historical structures.
- Ongoing management focusing on retaining and enhancing the general historic character of the battlefield cultural landscape will be implemented.

Future Monitoring and Mitigation Measures

- Stabilization of known archeological resources affected by erosion is required by establishing and maintaining grass cover. Installation of erosion control measures such as textiles and grass using methods that do not further disturb subsurface resources are desirable. Avoid the use of material that is visually incompatible with the character of the areas, such as riprap or other large stone.
- It is required that all activities would comply with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 Federal register 44716, revised).
- Prior to any soil disturbing activities, a thorough geophysical baseline survey of the property is required and adequate archeological ground-truthing of the geophysical anomalies would be conducted to determine their nature, integrity, and extent.
- Known archeological resources in the vicinity of project activities will be identified and delineated for avoidance prior to project work.
- NPS will coordinate with the SHPO and tribal THPOs throughout the course of the project to protect and mitigate cultural resources affected by the action alternative.

- In establishment of viewsheds proposed in the preferred alternative, it is required that NPS engage an archeologist, natural resource specialist, and historical landscape architect to field-check the areas to be cleared and ensure that no cultural or natural resources will be adversely affected prior to removal of woodland vegetation.
- Vegetation management consistent with the National Battlefield's *Fire Management Plan* (2004), recommendations in the *Cultural Landscape Report* (2004), and the *Vegetation Management Implementation Plan* (2014), will be used in the implementation of the preferred alternative to modify the battlefield's appearance to resemble more closely the historic conditions.
- It is required that an invasive species control plan specific to the battlefield be an integral part of the actions implemented within the selected alternative.

Visitor Use and Experience

Past and Ongoing Monitoring and Mitigation Measures

- Incidences of human and wildlife interactions will be monitored.
- Visitation data will be monitored through various methods such as visitor surveys, transportation data, and concessioner data.
- Periodic visitor surveys and data collection will be used to determine visitor use patterns, visitor characteristics, visitor use conflicts, and visitor preferences and satisfactions with interpretive and recreational opportunities, programs, services and facilities.
- Resource condition surveys will be conducted as needed.
- Monitoring all prescribed fires that have the potential to impact visitor experience.
- Continued management of the battlefield cultural landscape will provide visitors with an insight in the general conditions that the combatants encountered on August 10, 1861 and would facilitate the visitor's understanding of the dynamic course of this battle.
- NPS managers will continue to monitor areas used by visitors for signs of native vegetation disturbance, trampling, trail erosion, or the development of social trails.
- Existing facilities will be retro-fitted and new facilities designed to meet Leadership in Energy and Environmental Design (LEED) standards to demonstrate the NPS commitment to protect our natural and cultural resources for future generations.

Future Monitoring and Mitigation Measures

- During establishment and clearing for viewsheds, educational and/or interpretive information will be provided to park employees and visitors on the value of clear-cutting to rehabilitate habitats and improve views important to interpreting events of the Battle of Wilson Creek.
- In interpreting missing 1861 farmsteads, it is required that vegetation be mowed, which offers the visitor a strong visual aid to understanding the location and importance of each farmstead to the 1861 battle. Split rail fencing in conjunction with mowing, or separately, will offer another strong visual aid for interpreting missing farmsteads.

- Visitor use and access to areas of highly sensitive and vulnerable cultural or natural resources requires mitigation measures. Appropriate activities in these areas will be limited to research and passive recreational uses such as hiking. Interpretive programs and exhibits will provide information and interpret ongoing research activities.

Human Health and Safety

Past and Ongoing Monitoring and Mitigation Measures

- The general public will be informed of wildland fires and prescribed fires through press releases and general interpretive presentation.
- No public access will be allowed to any areas affected by fire.
- Appropriate regulatory and/or enforcement agencies will be notified prior to any prescribed burns to assist in safely managing pedestrian, equestrian, or vehicular traffic. Warning signs will be posted along roads and trails, as necessary.
- Prior to prescribed fires, notification of nearby residents will be carried out. During burns, signs will be posted along all roads and trails, and park staff will be posted at roads that could be impacted by smoke to divert motorists to other routes.

ATTACHMENT B

DETERMINATION OF NO IMPAIRMENT

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National Park Service (NPS) *Management Policies 2006* (§ 1.4) requires analysis of potential effects to determine whether or not actions will impair a park's resources and values. The fundamental purpose of the national park system established by the Organic Act and reaffirmed by the General Authorities Act, as amended, mandates the NPS conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give NPS management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park, although that discretion is limited by the statutory requirement that the NPS must leave 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, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values. Non-resource topics are generally not subject to impairment assessment. Whether an impact could lead to impairment depends on the particular resources that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact will be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- Key to the natural or cultural integrity of the park or the opportunities for enjoyment of the park, or
- Identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact may be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. Impairment may result from visitor activities, NPS administrative activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park.

An impairment determination is not made for all resource impact topics analyzed for the Selected Alternative. An impairment determination is not made for land use, visitor use and experience, and visitor health and safety because impairment findings relate back to park resources and values. These impact areas

are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

Soils and Geology

There would be no impact to geologic resources. There will be a number of disruptions to surface soils due to construction and grading within the selected alternative. Most impacts are associated with specific small areas of the park and impacts would be limited to the duration of project implementation and completion. Mitigation measures will ensure negligible effect on soils. Thinning and clearing of woodland is considerable in the selected alternative for establishment of interpretive nodes and historic viewsheds. Tree removal is anticipated to lead to soil disturbance and erosion, particularly for removal of woodland and management of bottomland woods. Once new savanna-like conditions are established, soil erosion and disturbance would be abated. Overall negligible or minor adverse impacts to soils would be expected. Long-term beneficial impacts to soils would be expected due to vegetation management techniques for soil stabilization, design of trail alignments, and use of filter strip and vegetated swales beside the road to slow down water infiltration and pollutant movement into the groundwater or streams. The short-term adverse effects on soils will not diminish its role in fulfilling the park's purpose of preserving and interpreting the natural and cultural history, and the natural integrity of the national battlefield. Therefore, the selected alternative will not impair geology and soil resources.

Prime and Unique Agricultural Land

Approximately 908 acres fall into the category of prime and unique agricultural land or soils of state importance. Most of the acreage that falls in the Peridge silt loam category is currently being farmed as hay fields (Sharp cornfield and Sharp stubblefield), as is some acreage that falls in the Secash-Cedargap, Wilderness, and Pembroke categories (Gibson oatfield and Ray cornfield and orchard). These existing areas of cropland will remain within the selected alternative, thus preserving the prime agricultural soils. The remainder of the prime agricultural lands are preserved through establishment of warm season grass fields within historic crop field areas. None of the ground disturbing actions in the selected alternative would change the agricultural land use that maintains these soils, and there would be no threat to soil fertility or its natural physical features. Adverse impacts to prime agricultural lands would be negligible. Implementation of mitigation measures would ensure the viability and quality of the soils. Therefore, the selected alternative will not impair prime and unique agricultural land.

Water Resources and Floodplains

There would be long-term beneficial impacts to water resources with the implementation of the selected alternative. Contributing to the positive effects are the restoration of the riparian buffers along stream corridors and restoration of the watershed. Disturbance from proposed clearing of vegetation for expanded interpretation, trails, and trail crossings would be short-term and sediment run-off into streams would be limited once the soils are stabilized and integrated into the larger vegetation management strategies within the park. Actions within the selected alternative would not cause changes in the ability of the floodplain to convey floodwaters and effects on its values and functions would be undetectable. Actions would not contribute to enhancing flood events. With mitigation measures and monitoring and BMP strategies, there

would be negligible adverse impacts to water resources and floodplains. Thus, the selected alternative will not impair the floodplains or stream banks associated with the waterways in the park.

Water Quality

Protection of surface water and ground water is a management priority and currently water quality has shown improvement since the *Natural Resources Condition Assessment*, (2009). Protection of water resources would continue and there would be targeted efforts at restoration of the riparian buffer in the stream corridors and management for restoration of the watershed. The selected alternative provides the opportunity to further enhance water quality and ensure it meets and exceeds the standards required into the foreseeable future. Long-term beneficial impacts to water quality would be expected due to vegetation management techniques, slope stabilization, and riparian buffer restoration. Localized impacts due to specific construction projects would be minor with the incorporation of mitigation measures and project phasing. Thus, the selected alternative will not impair water quality because it will remain in its existing good condition and continue to get better and will contribute to the interpretation of the cultural landscape.

Vegetation

Actions associated with implementation of the selected alternative would have ground-disturbing actions, but resulting impacts would be short-term and minor to vegetation. Impacts would not threaten the viability of plant communities or native plant species and the sites would quickly recover from temporary disturbance. Mitigation measures are required to ensure that short-term impacts are minor and do not extend to long-term impacts. Mitigation would include selection of appropriate staging locations for equipment and materials for all projects, and erosion and sediment control measures would be incorporated during any construction. Rehabilitating savanna communities is compatible with and should be done in conjunction with rehabilitation of glades, establishment of riparian buffers, establishment of filter strips, and the re-establishment of critical viewsheds. The recommended vegetation management and park-wide coordination in the selected alternative would have long-term beneficial impacts on vegetation by establishing desired communities. At Wilson's Creek National Battlefield, invasive species have reduced species biodiversity and altered the natural systems that once sustained the native landscapes. It is required that an invasive species control plan specific to the battlefield be an integral part of the actions implemented within the selected alternative. This would have a long-term beneficial impact on desired native vegetation. The overall impact from the selected alternative will be beneficial and will modify the vegetation to improve its role in fulfilling the park's purpose of preserving or interpreting the history of the battlefield landscape and preserving unique natural resources. Thus, the selected alternative will not impair vegetation resources.

Wildlife

There would be no long-term adverse impacts on wildlife and wildlife habitat from the actions within the selected alternative. Most impacts would be associated with specific proposals for trail development, expanded interpretation and extensive vegetation management. Due to vegetation management recommendations within the selected alternative, wildlife habitats will be improved and expanded.

NPS has established a deer density goal that would be used as a target to reduce deer numbers as a part of the management action within the selected alternative. Deer density goals and subsequent management strategy for population reduction would have a beneficial impact on the overall health and condition of the

remaining herd. Target density numbers would be designed to protect the survival of the species within the park without threatening the viability of the deer population. The proposed management strategies for reduction of the deer population within the park include direct lethal reduction using fire arms or archery equipment. Actions necessary to facilitate sharp shooting may include: setting up bait stations, locating deer, sharpshooting, and processing and disposition of deer meat and carcasses. These actions are subject to mitigation measures to ensure human health and safety, the quality of the visitor experience and access to the park, and clear communication to the public of the actions taking place. These actions would have a long-term beneficial impact on the white-tailed deer population and health. Mitigation measures ensure the impacts are positive for the deer reduction as well as for visitor use, safety, and experience within the park. Thus, the selected alternative will not impair wildlife resources.

Threatened and Endangered Species

The proposed vegetation management and maintenance and the inclusion of glade restoration and removal and management of eastern red cedar will have a long-term beneficial impact on rare, threatened, and endangered species, in particular the Missouri bladderpod. Although scarcely resembling their former extent or character, the glades still retain a number of lichens and herbaceous plant species requiring conservation and should be classified as significant natural features to be protected. With proper management, these areas will become healthier, and increase the habitat potential for the endangered Missouri bladderpod. Vegetation management regimes for McElhaney branch cave and Manley Woods and other forest and woodland vegetation would have long-term beneficial impacts on the Gray bat, the Indiana Bat, the Northern long-eared bat, the Ozark cavefish, and the Virginia sneezeweed and their potential habitats within the park. Also, actions providing enhancement of riparian buffers, protection of the floodplain, and prevention of sediment runoff all improve water quality and thus the habitat for all of the rare, threatened, and endangered species within the park. As a result, the selected alternative will not impair rare, threatened, or endangered species within the park.

Air Quality

Air quality in the area is generally good; the park and surrounding areas are in attainment for all National Ambient Air Quality Standards. Specific actions resulting from the implementation of the selected alternative and associated with effects on air quality include management strategies using prescribed burning for establishment and restoration of vegetation communities. The prescribed burning would have a short-term adverse impact on air quality; however, due to established guidelines and mitigation measures in the *Fire Management Plan (2004)* and the mitigation measures in the EA, there would be no long-term effects on air quality. Prescribed burns are normally of short duration and have little effect on air quality past the initial burning period. Thus, the selected alternative will not impair the air quality of the park.

Archeological Resources

The selected alternative includes some ground disturbance associated with the implementation of some of the proposed actions. Examples include: trail expansion and trail realignment; installation of interpretive waysides, cannon, and orientation exhibits; clearing vegetation for restoration of historic viewsheds; and establishment of a new tour road stop #1. Overall, known archeological resources are included in the existing policies and processes implemented by the park for protection of cultural resources. Actions in the selected

alternative would not disturb any known archeological sites that may be potentially eligible for nomination to the National Register. The ground disturbing activities within the selected alternative have the potential to encounter and adversely impact previously unknown archeological resources. Adverse effects would be minimized by pre-construction surveys and monitoring in the areas with high potential for artifacts. The EA presents mitigation measures for the protection of unknown archeological resources and for the use of prescribed burning and potential impacts on archeological resources. These mitigation measures include: efforts to avoid damage to identified resources during suppression and prescribed fire operations; involvement of archeologists or cultural resource specialists in all operations to the maximum extent feasible; development of a thorough geophysical baseline survey of the property prior to any soil disturbing activities; ground-truthing of the geophysical anomalies to determine their nature, integrity, and extent; and NPS will coordinate with the SHPO and the tribal THPOs throughout the course of the project to protect and mitigate archeological resources affected by the selected alternative. With the implementation of the mitigation measures and guidelines, the selected alternative would have no adverse effects on unknown archeological sites. Therefore, the selected alternative will not impair archeological resources within the park.

Historic Buildings and Structures

Current management regimes will continue in the selected alternative and include repair and maintenance to deteriorated historic buildings, structures, and features on the battlefield landscape. Also included is the maintenance and management of the Edgar and Manley cemeteries. Management goals are to protect and preserve the historic features that survive from the Civil War period, including the Ray house and spring house and various roads and trails. Preservation, protection, and maintenance of buildings and structures surviving from the 1861 – 1960 period of significance is ongoing. Expanded interpretation that includes historic buildings and structures within the cultural landscape would have a long-term beneficial impact on these cultural resources. The cultural landscape and historic buildings and structures are necessary to fulfill the park's purpose and are key to its cultural integrity and considered significant site resources. Thus, the selected alternative will not impair historic buildings and structures within the park.

Cultural Landscapes

Specific actions resulting from the implementation of the selected alternative accomplish objectives to protect and restore native plant communities, restore and enhance critical viewsheds, restore riparian corridors and their function, establish field and historic vegetation exhibits, and interpret missing 1861 farmsteads, all while controlling invasive vegetation within the park identified in previous documents. Impacts to the cultural landscape would be long-term and beneficial due to vegetation management and expanded interpretation that integrates the cultural landscape into the interpretive story of the site. Visitors would be able to see and understand the role of the landscape in the Battle of Wilson's Creek. Therefore, the selected alternative will not impair the Wilson's Creek National Battlefield cultural landscape.

Historic Viewsheds

Re-establishment of ten critical viewsheds associated with the Civil War landscape is proposed within the selected alternative to support the interpretation of the Battle of Wilson's Creek. Where views are particularly critical to interpreting the events of the 1861 battle, the action would proceed with clearing and thinning operations prior to vegetation community rehabilitation to establish these new corridors as soon as

possible. As other treatment actions are implemented, a strong sense of what troops saw on the landscape during the battle will become apparent. Restoration of historic viewsheds will have long-term beneficial effect on the cultural landscape as a result of expanded interpretation of the historic context of the battle, battle events, and troop movements across the landscape. Thus, the selected alternative will not impair visual resources.

