Wind Cave

National Park Service
U.S. Department of the Interior

Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, SD 57747

CASEY ADDITION VISITOR USE PLAN/ ENVIRONMENTAL ASSESSMENT

OCTOBER 2014

On the Cover

A view of the buffalo jump and Sanson Ranch house

Photography by: NPS

CASEY ADDITION ENVIRONMENTAL ASSESSMENT SUMMARY

The National Park Service (NPS) at Wind Cave National Park is proposing a Visitor Use Plan for the Casey Addition. The NPS would like to open the recently acquired Casey Addition land to the public to allow visitors an opportunity to experience some key resources in the Casey Addition. In order to provide public access to these key resources, a Visitor Use Plan that identifies appropriate types and levels of visitor use is needed. The purpose of the Casey Addition Visitor Use Plan and Environmental Assessment (EA) is to determine the best way for visitors to use and access the land and what type of visitor activities should take place. The Visitor Use Plan will be coordinated with a comprehensive park-wide Management Zoning Plan that is being developed concurrently.

This EA evaluates four alternatives, a no action alternative (Alternative A) and three action alternatives (Alternatives B, C, and D). The no action alternative describes the existing conditions within the Casey Addition, which is closed to general public use with some limited special events occurring. The three action alternatives address ways to provide visitor access and public facilities within the Casey Addition.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9), Department of Interior NEPA regulations (43 CFR 46), and the National Park Service's Director's Order-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-making*). Resource topics analyzed in the document include: visitor experience/recreation resources, vegetation, and cultural resources (ethnographic resources, archeological resources, cultural landscapes); all other resource topics were considered but dismissed because they would not be affected by the project or do not occur within the project area. The Preferred Alternative (Alternative D) is not anticipated to have any significant impacts.

Public Review and Comment

The Casey Addition EA will be available for public review for 30 days. The EA is available on the Wind Cave National Park Planning, Environment and Public Comment (PEPC) project website at http://parkplanning.nps.gov/wica by following the links for the Visitor Use Plan/EA. A hardcopy is also available for viewing at the Wind Cave Visitor Center information desk, the Hot Springs Public Library, the Custer County Public Library, and the Rapid City Downtown Public Library.

Comments on the EA can be submitted electronically via the NPS PEPC website listed above or by mailing written comments to:

Attention: Vidal Dávila, Superintendent
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, SD 57747-6027

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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CHAPTER 1: PURPOSE AND NEED FOR ACTION

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PROJECT OVERVIEW

In September 2011, Wind Cave National Park acquired a 5,556 acre ranch, called the Casey Addition, and is now determining the optimal way of providing public access to this land (Figure 1-1). A Visitor Use Plan and Environmental Assessment (EA) are needed to determine the best ways for the public to access and enjoy the unique historic and natural resources present on the Casey Addition while providing a minimal level of services. Concurrently, a comprehensive Management Zoning Plan is occurring to fully incorporate management of the Casey Addition into the park.

PROJECT BACKGROUND

Wind Cave National Park is located in the Black Hills of southwestern South Dakota, in Custer County. The park was established with the Wind Cave National Park Enabling Act of January 9, 1903 (32 Stat. 765-766, 16 USC 141-146), to protect Wind Cave, one of the world's longest and most complex caves, from commercial exploitation. Subsequent legislation resulted in the expansion of the size and purpose of the park, which is to protect the unique Wind Cave resources and preserve and enhance the mixed-grass prairie and native wildlife within the park, while providing for the enjoyment of the public.

During 2000, Wind Cave National Park managers were contacted by an adjacent landowner desiring to sell the historic 5,556-acre Sanson/Casey ranch to the park. Over the next several years, park staff worked to acquire the ranch and formally add it to the park. On September 21, 2005, Congress passed Senate Bill 2788 (119 Stat. 2011) (P.L. 109-71), which allowed for the expansion of Wind Cave National Park to include the 5,556 acre ranch, known as the Casey Addition. The Casey Addition land was purchased using funds from the Land and Water Conservation Fund. On September 22, 2011, the Casey Addition officially became part of Wind Cave National Park, and a dedication ceremony was held on October 15, 2011.

The Casey Addition is located adjacent to the southeast portion of the park and contains the 1918 Sanson homestead, a modern ranch, and an archeological site that has characteristics similar to other known prehistoric buffalo jumps, which are areas where American Indians would drive buffalo over the cliff as a hunting method over a thousand years ago. At the present time, the Park Superintendent has closed the Casey Addition land for visitor and employee safety until a Visitor Use Plan and EA is completed and approved.

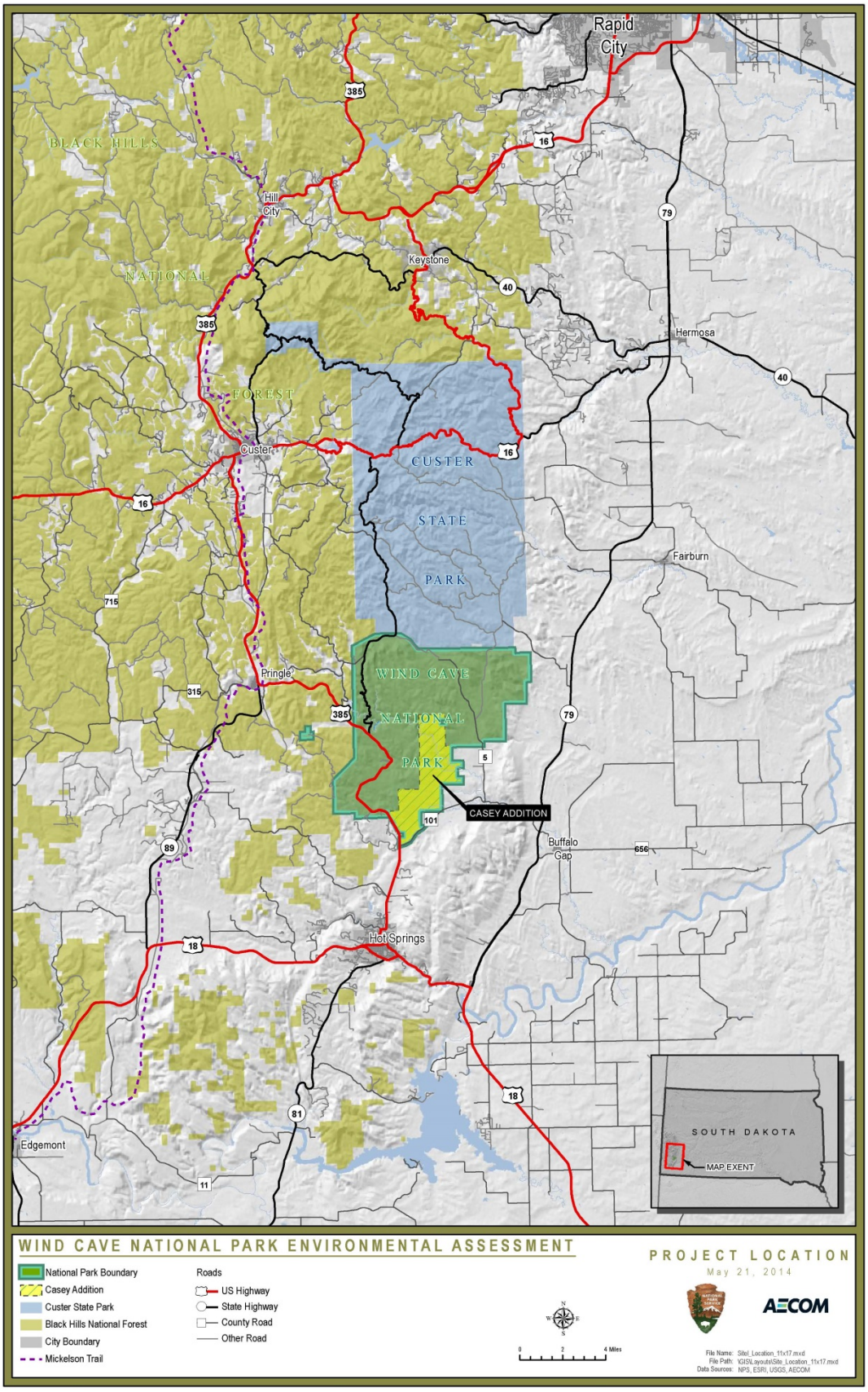

Figure 1-1: Project Location Map

PURPOSE AND NEED

The National Park Service (NPS) would like to open the newly acquired Casey Addition land to the public and allow visitors an opportunity to experience some key resources in the Casey Addition, particularly the prehistoric buffalo jump and the 1918 homestead. In order to provide public access to these key resources, a Visitor Use Plan that identifies the types and levels of visitor use that are appropriate for these key resources is needed. The Visitor Use Plan will be coordinated with a comprehensive park-wide Management Zoning Plan that is being developed concurrently. The Management Zoning Plan will consider how to incorporate existing plans, such as wildlife management plans and the fire management plan, into management of the entire Casey Addition, and coordinate visitor use and experiences within the Casey Addition with recreation management of the entire park. When funding becomes available, a Cultural Landscape Report and Historic Structures Report will be completed for the Casey Addition and will provide direction on the preservation treatment and use of these resources, as well as facilitate opportunities for visitor education and interpretation about the Casey Addition.

The purpose of the Visitor Use Plan and EA is to determine the best way for visitors to use and access the key resources on the Casey Addition, as well as determine what type of visitor activities should take place along the access route to and/or at the key resources, and allow the public to participate in providing input into these decisions. The primary objectives of the Visitor Use Plan are to:

- Determine public vehicular access to and within the Casey Addition, including suitable locations for roads, pull-outs, and parking areas.
- Determine public non-motorized access within the Casey Addition, including the location of trails if determined to be appropriate.
- Determine appropriate recreation uses, including permissible visitor activities at the historic ranch, modern buffalo ranch developed area, and along the route between these two sites.
- Determine the location of any visitor facilities needed at the Sanson Ranch buildings, the buffalo jump, and modern buffalo ranch developed area.

Wind Cave National Park is undertaking this Visitor Use Plan and EA to fulfill the National Park Service’s desire to make the Casey Addition an accessible addition to the park proper. In addition, the park’s vision for the new Casey Addition has evolved with new information gathered since the boundary expansion Finding of No Significant Impact (FONSI) was signed in 2002. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9), Department of Interior NEPA regulations (43 CFR 46), and the National Park Service's Director's Order 12 (*Conservation Planning, Environmental Impact Analysis, and Decision-making*).

RELATIONSHIP TO STATUTES, REGULATIONS AND OTHER PLANS AND POLICIES

Relationship to Existing Plans

Lands within Wind Cave National Park are currently managed under the 1994 Wind Cave Resource Management Plan and the 1994 Final General Management Plan. The Foundation Statement completed in September 2011 will augment the General Management Plan in the future. These plans provide general, overarching management guidance for the park. As stated previously, the Visitor Use Plan will provide access to key resources within the Casey Addition and will be coordinated with a larger-scale Management Zoning Plan that incorporates management of resources and visitor use in the Casey Addition with the rest of the park.

Applicable Statutes and Regulations

The following laws and regulations are pertinent to the provision of visitor use in the Casey Addition. For the protection of park lands and resources, the Visitor Use Plan will be developed in conformance with the following legislation:

- Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225; 16 USC 432, 433).
- National Park Service Organic Act of 1916.
- Historic Sites Act of 1935 (P.L. 74-292; 49 Stat. 666; 16 USC 461).
- Archeological and Historic Preservation Act of 1960 (P.L. 86-523, 16 USC 469-469c-2), as amended.
- National Historic Preservation Act (NHPA) of 1966 (P.L. 89-665; 16 USC 470 et seq.).
- National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 et seq.).
- Executive Order 11593, Protection and Enhancement of the Cultural Environment, 36 CFR 8921, May 13, 1971.
- Executive Order 13007, Indian Sacred Sites, May 29, 1996.
- Endangered Species Act of 1973 (16 USC 1531-1544, 87 Stat. 884), as amended.
- Archaeological Resources Protection Act of 1979 (P.L. 96-95; 16 USC 470aa-mm), as amended.
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001).
- Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, May 14, 1998.
- Wind Cave National Park Boundary Revision 2002.
- Code of Federal Regulations, Title 43.
- Director's Order 12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision-Making.

SCOPING AND PUBLIC INVOLVEMENT ACTIVITIES

Scoping is a process by which early input is requested before the environmental analysis formally begins. The goal of scoping is to solicit input about the proposed project from the public and interested federal, state, and local agencies. Information received during scoping and consultation with agencies and affected American Indian tribes will help the NPS to refine alternatives and identify potential environmental issues associated with the project. The scoping process provides a mechanism for focusing and clarifying the issues so that the EA can address and analyze the primary issues of concern.

The public scoping period for the Visitor Use Plan and EA commenced on February 21, 2012, and ended March 30, 2012. A public notice for scoping was published in the local newspaper of record, posted on the project website, and direct mailed to the project mailing list. The public was able to submit comments during scoping electronically through the project website, by mail, or on comment cards distributed at public meetings.

Three open house public meetings were held during the scoping period on March 13th, 14th, and 15th in Custer, Hot Springs, and Rapid City, South Dakota, respectively. All three meetings were held from 4 p.m. to 7 p.m. and at all three meetings, the public was presented with the project description and background, purpose of and need for action, preliminary alternatives being considered, and a timeline for the EA process. The purpose of these meetings was to solicit input from the public concerning how visitors might access the property and what types of visitor or interpretive opportunities should be available. These public meetings also helped determine the scope of the environmental issues and alternatives to be addressed in the EA.

At a minimum, NPS agency scoping includes input from the State Historic Preservation Officer, the U.S. Fish and Wildlife Service, and American Indian tribes affiliated with the park. During development of this EA, the park contacted the South Dakota State Historic Preservation Officer (SHPO), the U.S. Fish and Wildlife Service (USFWS), and affiliated tribes by letter. Appendix D contains copies of these letters. Letters to the tribes were then followed-up with phone calls. A scoping meeting and site visit for tribal representatives was held on March 14, 2012. A list of the tribes that NPS consulted is provided in Chapter 5.0 – Consultation and Coordination. The USFWS concurred with the park's finding of no effect on endangered and threatened species (Appendix D).

IMPACT TOPICS

NPS policy requires that all proposed projects be screened for potential impacts against a list of natural and cultural resource categories. The NPS used an interdisciplinary review process to complete the Environmental Screening Form to determine the resources that could be affected by this project.

Impact Topics Selected for Detailed Analysis

The NPS is required under NEPA to consider whether a number of different possible issues require detailed analysis as impact topics. Impact topics are resources of concern that could be affected, either beneficially or adversely, by implementing any of the proposed alternatives. Impact topics were identified during the completion of the Environmental Screening Form and external scoping. The following impact topics are analyzed in this document:

Visitor Experience/Recreation Resources

The 1916 Organic Act directs the NPS to provide for public enjoyment of the scenery, wildlife and natural and historic resources of national parks. The primary purpose of the project is to allow public access and recreation use of the newly acquired lands within the Casey Addition. The introduction of visitor facilities, including trails, would provide new recreation resources and visitor use to the site and provide new recreation experiences that would vary by alternative. Therefore, visitor experience/recreation resources is addressed as an impact topic in this EA.

Vegetation

The 2006 publication *NPS Management Policies* requires protection of park resources, including vegetation, to protect a park's scenery, natural and historic objects, and the processes and conditions that sustain them. The Casey Addition consists of healthy native prairie vegetation, which would be disturbed and removed to construct minimal visitor facilities. Part of the purpose of the park is to protect the mixed-grass prairie within the park. As a result, this EA will analyze the impacts of the proposed project on vegetation.

Cultural Resources

Consideration of effects to cultural resources is mandated by NEPA and by Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The provisions of Section 106 require federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation an opportunity to comment on such undertakings. The procedures for implementing Section 106 are contained in 36 CFR Part 800, "Protection of Historic Properties."

These regulations define a federal undertaking as an action that is proposed by a federal agency (or a project proposed by others that would receive funding, permits, licenses, or authorizations from federal agencies) that has the potential to affect historic properties. Historic properties are defined as properties that are either listed or eligible for listing in the National Register of Historic Places, including buildings, structures, historic districts, objects, sites, or archeological resources. In addition, Section 106 of NHPA requires those agencies to consult with the State Historic Preservation Office in determining if previously unidentified historic properties exist in the area of potential effects.

Ethnographic Resources

Ethnographic resources are cultural and natural features that are of notable significance to traditionally associated peoples, which include contemporary park neighbors and ethnic or occupational communities that have been associated with a park for at least two or more generations (40 years), and whose interests in the resources began before the park's establishment. In consultation with tribes associated with this area (see Chapter 5 for a list of tribes contacted), ethnographic resources have been identified within the Casey Addition that could be affected by the proposed project. Therefore, this impact topic will be analyzed further in this EA.

Archeological Resources

Limited surveying has been conducted within the project area and has identified archeological resources, consisting of both historic and prehistoric resources, which would be affected by development of visitor facilities and introduction of visitor use to the site. As a result of potential impacts to known resources and potential unknown locations of archeological resources (due to limited surveying conducted thus far), this topic will be carried forward for further analysis in this EA.

Cultural Landscapes

Cultural landscapes are defined as a geographic area, including both cultural and natural resources and the wildlife and wildlife habitat or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. The Sanson Ranch headquarters and surrounding ranch landscape, comprising the lands within the Casey Addition, were determined eligible for listing on the National Register of Historic Places by the South Dakota State Historic Preservation Office in 2010. They are also identified as a significant cultural landscape and have been documented in a draft Cultural Landscape Inventory. Cultural landscapes, like other historic properties, are subject to the Secretary of Interior's Standards for the Treatment of Historic Properties. Development of visitor facilities and introduction of visitor use to the site could affect the identified cultural landscape; therefore, this topic will be analyzed further in this EA.

Impact Topics Dismissed from Detailed Analysis

During the interdisciplinary review process and external scoping, the following topics were dismissed from further analysis because they would not be affected by the project or do not exist within the project area.

Air Quality

The Clean Air Act of 1990 (P.L. 360, 69 Stat. 322, 42 USC 7401 et seq.), as amended, provides that the federal land manager has an affirmative responsibility to protect a park's air quality-related values (including visibility, plants, animals, soils, water quality, cultural and historic resources, and visitor health) from adverse air pollution impacts. Section 118 of the Clean Air Act requires the NPS to meet all federal, state, and local air pollution standards. Section 176(c) of the Clean Air Act requires all federal activities and projects to conform to state air quality implementation plans to attain and maintain national ambient air quality standards.

Wind Cave National Park is designated as a Class I air quality area. The impacts to air quality from the alternatives under consideration in this EA would result in temporary, minor impacts to air quality through dust and vehicle emissions during construction or demolition. Increased traffic to the site could also result in minor long-term air quality impacts; however, impacts to air quality are expected

to be negligible compared with the overall regional air quality. Therefore, the impact topic of air quality was dismissed from further analysis.

Soils

Typically, projects that include construction of parking areas, trails, or an increase in visitor use can adversely affect soils. However, the project will use Best Management Practices (BMPs) for siting trails to prevent erosion and methods to reduce erosion during construction (see Appendix E). Therefore, impacts to soils are considered to be negligible and thus soils will not be included for further analysis within the EA.

Water Quality/Streamflow/Floodplains

The 1972 Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 USC 1251 et seq.), is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters; to enhance the quality of water resources; and to prevent, control, and abate water pollution. Section 401 of the Clean Water Act requires a permit for any activity that may result in any discharge into the navigable waters of the United States. Section 404 of the Clean Water Act requires a permit for any activity that may result in the discharge of dredged or fill material into navigable waters, including wetlands. *NPS Management Policies* (NPS 2006) provides direction for the preservation, use, and quality of water in national park units. Director's Order 77-2 *Floodplain Management* establishes NPS policies, requirements, and standards for implementing Executive Order 11988: *Floodplain Management*.

There are no freeflowing waterways within the project area; the only waterways within the project area are Beaver and Cottonwood Creeks, intermittent drainages that contain flow after major rain events. Restroom facilities (vault toilets) would be located outside of the 100 year floodplain from the intermittent drainages. Indirectly, risk of potential erosion and runoff from road, parking, and trail construction and use is negligible given the BMPs that will be used on the project and the minimal area of new impervious surface anticipated. Since no direct impact to water resources would result from the proposed project, and indirect effects are thought to be insignificant, water quality, streamflow, and floodplains will not be analyzed in detail in this EA.

Land Use

The Casey Addition has been open space since agricultural operations ceased in 2011, with limited development existing on the property. A land use change occurred when NPS purchased the land in 2011, changing from agricultural (ranching) to fallow land. None of the current Visitor Use Plan alternatives involve any substantial land use change. Under all alternatives, the Casey Addition would continue to remain open space with very limited development for visitor use. Surrounding land uses include agricultural operations and rural residential development. The proposed project would minimally alter the existing land use in the areas of new roads, parking lots, visitor facilities and trails, but generally have no effect on the majority of land uses on the site or adjacent land uses; this impact topic is not included for further analysis in this EA.

Wetlands

The 1972 Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters; to enhance the quality of water resources; and to prevent, control, and abate water pollution. *NPS Management Policies* provides direction for the preservation, use, and quality of water in national parks. Director's Order 77-1 *Wetland Protection* establishes NPS policies, requirements, and standards for implementing Executive Order 11990: *Protection of Wetlands*. There is one wetland area located within the Casey Addition; however, none of the alternatives are anticipated to affect the wetland and thus wetlands will not be analyzed in detail in this EA.

Special Status Species

The Endangered Species Act of 1973, as amended, requires an examination of impacts on all federally listed threatened or endangered species. NPS policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species.

According to the USFWS, there are five special status species that may occur in the project area: whooping crane (*Grus americana*), black-footed ferret (*Mustela nigripes*), northern long-eared bat (*Myotis septentrionalis*), Rufa red knot (*Calidris canutus rufa*), and Sprague's pipit (*Anthus Spragueii*). Over the last 100 years that the park has been recording wildlife observations, there have been no documented sightings of the whooping crane, Rufa red knot, or Sprague's pipit within the park area. Therefore, no effect would occur to these species.

The black-footed ferret was reintroduced into the park in July 2007 and has become established in various prairie dog colonies throughout the park. Currently, however, there are no prairie dog colonies present within the Casey Addition. Therefore, no effect would occur to this species.

A finding of not likely to adversely affect was made for the northern long-eared bat (NLEB) because no trails or other facilities within ½ mile of the known hibernacula for NLEB are included within the alternatives and minimal tree removal is expected as trails in the area would be located on or immediately adjacent to existing two-track roads; no major tree clearing is expected under all alternatives. There are a few historic ranch buildings that may potentially support bat habitat for roosting or maternity use in the summer. Park staff will survey these structures for presence of bats and determine if NLEB is present. If NLEB are found, park staff will consult with the USFWS to determine how to protect the bats while also protecting the historic structures.

Consultation with the USFWS concluded that no adverse impacts to special status species would result from the proposed project. Therefore, special status species will not be analyzed in further detail in this EA.

Wildlife Habitat

The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean that native animal life should be protected and perpetuated as part of the park's natural ecosystem. There are resident antelope, deer and elk (less than 10) present on the Casey Addition. Given that most of the wildlife species present would be able to avoid the areas with human activity, the proposed project is likely to only have negligible to minor impacts to resident wildlife species and therefore wildlife habitat will not be retained as an impact topic for further analysis.

Fish Habitat

Due to the lack of waterways on the property, fish habitat will not be analyzed in detail in this EA.

Exotic Species

There are some noxious weeds present on the Casey Addition, but not in large accumulations and the species present are also present in the rest of Wind Cave National Park. Generally, the Casey Addition contains healthy native grassland. The park develops an annual invasive species treatment plan and treatment strategies (Action Plan for High Priority Weeds) that would be followed as part of the proposed project to address existing noxious weeds. The prevention of noxious weeds from development of visitor facilities would be accomplished by following the BMPs related to non-native plants in Appendix E. Therefore, exotic species will not be retained as an impact topic for further analysis.

Environmental Justice

Executive Order 12898 (*General Actions to Address Environmental Justice in Minority Populations and Low Income Populations*) requires all agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations or communities.

There are no minority or low-income populations present near the project site, thus there will be no disproportionate impacts. Therefore, this impact topic was dismissed from further analysis.

Socioeconomics

Socioeconomic issues are defined as actions that have the potential to create a negative change to the demographics, housing, employment, and economy of an area. Because of the limited scope of the project, no measureable change in the demographics or housing of the area would result from implementation of the project. The construction of the proposed project may add limited employment opportunities in the short-term, but such effects would be transient and negligible. Visitor usage of the Casey Addition is not anticipated to be significant and it will likely not be a destination in itself, but will be used by visitors to the rest of the national park. Therefore, the project would have a negligible beneficial impact to the area economy. Thus, this topic has been dismissed from further analysis in the EA.

Soundscapes/Noise

In accordance with *NPS Management Policies* and Director's Order-47: *Sound Preservation and Noise Management*, an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable varies among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in underdeveloped areas.

A temporary impact to the soundscape of the Casey Addition would occur during facility construction activities (parking area construction, trail construction, signage installation, etc.). This disturbance

would be short in duration and conclude once construction was finished. After facilities were constructed, the soundscape would be minimally impacted by visitors in the Casey Addition. Because noise is not considered to be a factor significantly impacting visitors or wildlife, soundscapes and noise will not be analyzed in detail in this EA.

Park Operations

Potential impacts to park operations could include changes to staffing, maintenance, facilities, ability to enforce park regulations and protection of park resources, and employee and visitor health and safety. Providing additional facilities within the Casey Addition will not require additional staffing (unless visitation exceeds expectations) and will not affect the ability of staff to enforce park regulations or protect park resources. The additional facilities will require additional maintenance, but this will be minor compared to maintenance for the existing facilities within the park. Employee and visitor safety concerns, such as pedestrian safety, security, and access to emergency responders will be addressed during facility design, including compliance with the Architectural Barriers Act, enabling those with disabilities or specific access needs to experience the project area. Therefore, park operations will not be analyzed in detail in this EA.

Energy Consumption

Implementation of the proposed project would have no measurable effect on overall consumption of energy associated with visitation or park operations and maintenance. There will be no lighting of the trails or parking areas. Thus, this topic has been dismissed from further analysis in the EA.

Prime and Unique Farmlands

In 1980, the Council on Environmental Quality directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the U.S. Department of Agriculture, National Resources Conservation Service. Prime or unique farmland is defined as soil which particularly produces general crops such as common foods, forage, fiber, and oil seed. Unique farmland produces specialty crops such as fruits, vegetables, and nuts.

A review of the soils status for the Casey Addition on the U.S. Department of Agriculture “Web Soil Survey” (U.S. Department of Agriculture 2014) reveals that the soils potentially affected by the proposed action include a very small amount of 4 soil map units that are listed as prime farmland if irrigated – approximately 1.6% of the project area contains soil map units that are considered prime farmland if irrigated. No action would be taken to permanently convert the prime agricultural lands from production. Therefore, this impact topic has been dismissed from further consideration.

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CHAPTER 2: ALTERNATIVES

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INTRODUCTION

The Council on Environmental Quality (CEQ) has provided guidance on the development and analysis of alternatives under NEPA. A full range of alternatives, framed by the purpose and need, must be developed for analysis for any federal action. Alternatives should meet the project purpose and need, and minimize impacts to environmental resources. Alternatives should also be "reasonable," which CEQ has defined as those that are economically and technically feasible, and show evidence of common sense. Alternatives that could not be implemented if they were chosen (for economic or technical reasons), or do not resolve the need for action and fulfill the stated purpose in taking action to a large degree, are therefore not considered reasonable. The alternatives chapter describes and analyzes alternative pathways for achieving a desired result.

This EA evaluates a range of alternatives related to providing visitor access and public facilities within the Casey Addition, which are considered in three action alternatives (Alternatives B, C, and D) and compared to a No Action Alternative (Alternative A). This section describes each of the four alternatives and includes a discussion of the environmentally-preferable alternative and a summary of the impacts by alternative. The alternatives were developed from a collaborative analysis based on the interdisciplinary expertise of planning team members, as well as on internal and external scoping processes and consultation with the park's affiliated American Indian tribes.

ALTERNATIVES

Alternative A – No Action Alternative

Under Alternative A (No Action Alternative), the Casey Addition would remain closed to general public use as it is currently, though limited special events and NPS-led interpretive tours would be allowed within the property. Use of the site by American Indian tribes for tribal events (public or non-public) would also be allowed with prior approval from the NPS. It is anticipated that annual use of the property for special and tribal events would be very low, with an estimated 200 people participating in special events and 100 people participating in tribal events annually. It is anticipated that one interpretive tour (hike) per month would occur during the summer with 20 people participating per hike for a total of 60 participants annually. If funding and staffing levels were to increase from current levels, a daily interpretive tour could be provided during the summer with an expected 10 people per tour for a total of approximately 750 participants annually. Therefore, total visitation to the property may range between approximately 360 people and 1,050 people per year under Alternative A.

No facilities for visitor use, such as parking areas, waysides or trails would be constructed within the Casey Addition or along roads surrounding the property under Alternative A. Existing two-track roads on the property would remain in place and would not be altered (Figure 2-1). Public access to the area would remain closed (gated) at the property boundary on 266th Street. Special event use would require NPS personnel present to open and close the gate on 266th Street and parking for such events would probably occur in a small mowed area near the Sanson ranch house. Routine management activities such as vegetation and wildlife surveys and storage of equipment at the Casey Pole Barn area (a pole barn, outbuildings, and corrals used by a former owner for ranching operations) would occur under Alternative A, as well as light road maintenance (mowing) for any special events to reduce fire danger. When funding became available, a Cultural Landscape Report and Historic Structures Report would be completed for the Casey Addition.

Elements Common to All Action Alternatives

All three action alternatives (Alternatives B, C, and D) would protect historic structures in the same fashion and allow administrative use of existing two-track roads.

The alternatives include placing temporary seven-foot high chain-link fences around the historic Sanson ranch barn and outbuildings to prevent vandalism and other alterations to these structures, as well as prevent the public from entering these structures due to safety concerns. The fencing would be removed upon mitigation of these concerns. Once the Historic Structures and Cultural Landscape Reports were completed, funding would be sought to preserve eligible structures. All structures would be secured to ensure public safety.

Administrative vehicle use of the existing two-track roads on the property would be allowed. Under Alternatives C and D, most of the two-track roads would also become trails.

Parking areas would be constructed under all of the action alternatives. The main parking areas in all three action alternatives would be gravel and located above the ground surface (raised) to minimize disturbance. The accessible parking area near the ranch house site would be hard-surfaced (concrete or asphalt).

As with the No Action Alternative (Alternative A), limited special events and NPS-led interpretive tours would be allowed within the property. Use of the site by American Indian tribes for tribal events (public or non-public) would also be allowed with prior approval from the NPS. It is anticipated that annual use of the property for special and tribal events would be very low, with an estimated 200 people participating in special events and 100 people participating in tribal events annually. The park would remain open for public use during all special events.

Recreational uses that would be allowed within the Casey Addition under all action alternatives include hiking and associated traditional park uses accessed on foot such as photography, wildlife viewing, nature observation, etc.; day use horseback riding; special events; and interpretive tours/programs. Horseback riding within the Casey Addition would be subject to the same regulations as horseback riding in other areas of the park, such as obtaining a free permit, using weed free hay, no feed allowed in the park, and prohibition on riding within certain areas (near historic buildings, water sources, on hiking trails and roadways, and in campgrounds and picnic areas).

Table 2-1 summarizes projected annual visitation by activity for each of the four alternatives.

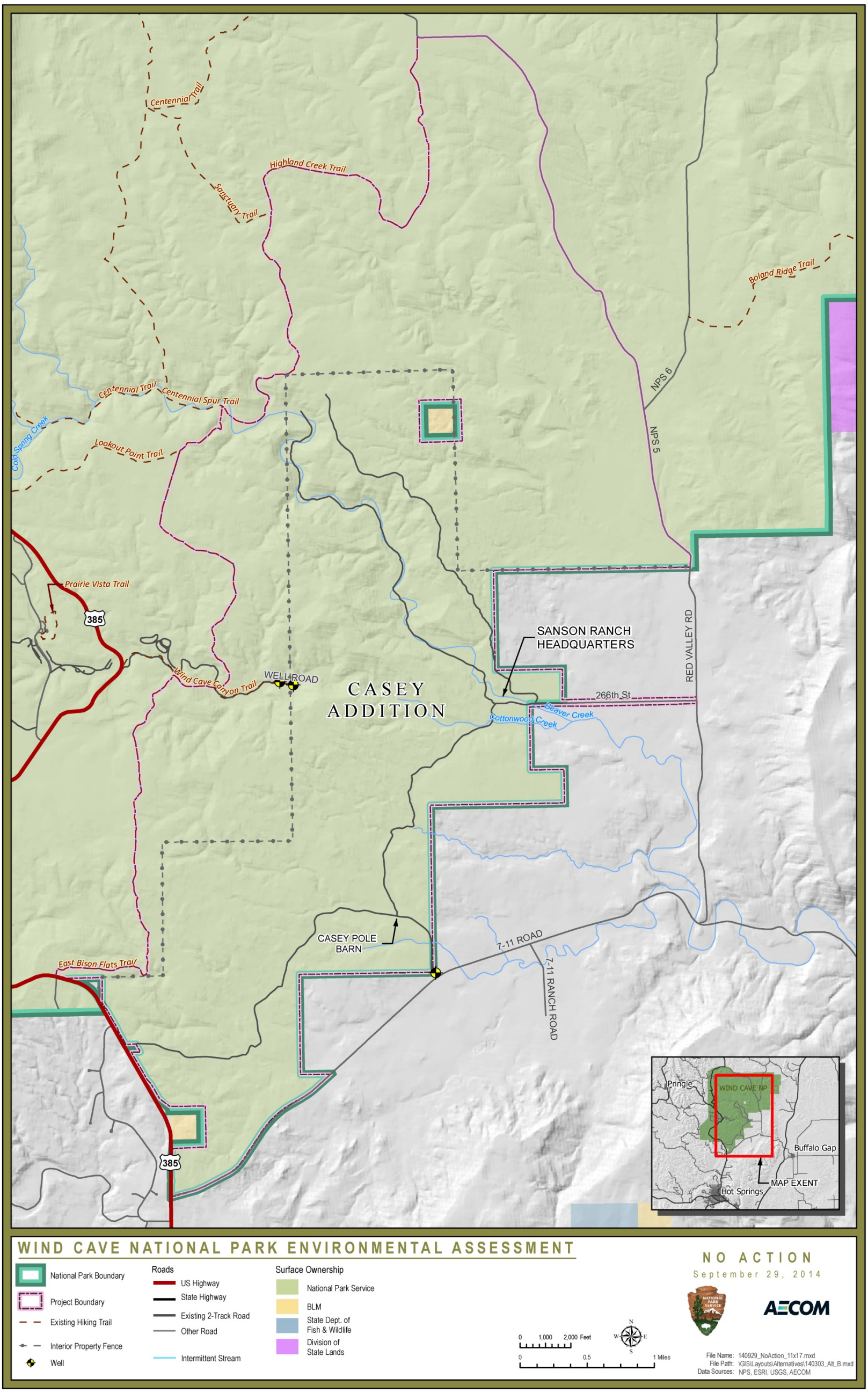

Figure 2-1: Alternative A, No Action Alternative

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Table 2-1. Summary of Projected Annual Visitation to the Casey Addition (persons).

	Alternative A (persons)	Alternative B (persons)	Alternative C (persons)	Alternative D (persons)
Special and Tribal Events	300	300	300	300
NPS-led Interpretive Tours	60-750	60-750	60-750	60-750
Self-Guided Tours	0	5,750	6,250	6,250
School Group Tours	0	250	250	250
Hiking	0	250	300	300
General Recreation Use (e.g. Photography, Wildlife Viewing, etc.)	0	450	500	500
Day-use Horseback Riding	0	110	110	100
Backcountry Camping	0	0	0	50
Total	360-1,050	7,170-7,860	7,770-8,460	7,820-8,510

Alternative B

Alternative B includes actions to provide public access to the Casey Addition via 266th Street, construct parking and vault toilet facilities at two sites (near the park entrance and ranch house), and develop a short accessible trail between the ranch house site parking area and the viewpoint (Figure 2-2).

Access to the Casey Addition would be provided from County Road 5 along 266th Street. The existing ten-and-a-half foot wide gravel surface road from County Road 5 to the ranch house parking area would be improved to a 24-foot wide graveled surface road that meets Custer County road specifications (see Appendix F). There would be one cattle guard installed on the road and the existing swinging gate at the property boundary would remain. The improved road would be maintained by the NPS within the park boundary.

Two sites would be created or improved under Alternative B; a primary parking area near the park boundary would be added and improvements would be made at the ranch house site. The parking area near the park boundary would be located north of 266th Street, as shown in Figure 2-3, less than 0.5 miles east of the ranch house site. A gravel parking area would be provided for two buses/RVs and 20 vehicles, for a total parking area size of about 12,500 square feet. The parking area would be situated such that it could be expanded in the future to provide parking for an additional 20 vehicles should demand for additional parking arise. A vault toilet and entrance sign

would also be provided at the park boundary site. A new swinging gate would be installed at the west end of the parking area across 266th Street.

The entire park boundary site, including the parking area (and expansion area) and vault toilet, would be surrounded by a barrier fence to the north, east and west extending as far as the creek crossing. To access the main public use area near the ranch house, visitors would walk along a trail immediately adjacent to 266th Street from the proposed park entrance parking area to the ranch house parking area. The trail would be graveled to a width of 24-36 inches, with a clearing width of 12 to 18 inches beyond the edge of the gravel and would include a small foot bridge over Beaver Creek.

At the ranch house site, improvements would include a concrete parking area for six vehicles, including two accessible parking spaces and a vault toilet. The parking area at the ranch house site would be for visitors needing accessible parking and for administrative use only and would be about 2,600 square feet in size. A concrete accessible trail would lead visitors from the parking area to a viewpoint overlooking the bluffs, prairie, and the buffalo jump site. Wayside signs would be installed at the viewpoint along with benches for resting and viewing the scenery.

Under Alternative B, the two-track roads would be open to administrative vehicle use only and signed as needed.

It is anticipated that 1,360 people would participate annually in hiking, open recreation use (photography, bird watching, picnicking, etc.), school group tours, tribal and special events, and horseback riding. At this time, it is anticipated that one interpretive tour (hike) per month would occur during the summer with 20 people participating per hike for a total of 60 participants annually. If funding and staffing levels were to increase from current levels, a daily interpretive tour could be provided during the summer with an expected 10 people per tour for a total of 750 participants annually.

In addition to the 1,420 to 2,110 people anticipated to annually participate in hiking, open recreation use, school group tours, horseback riding, special events, tribal events, and interpretive tours, 5,750 people are anticipated to participate in self-guided tours under Alternative B on the trail to the viewpoint from the ranch house site parking area. Therefore, total annual visitation to the property is anticipated to be between approximately 7,170 and 7,860 people, compared to approximately 360-1,050 people under the No Action Alternative. As the property becomes better known and fully integrated into Wind Cave National Park, visitation may increase.

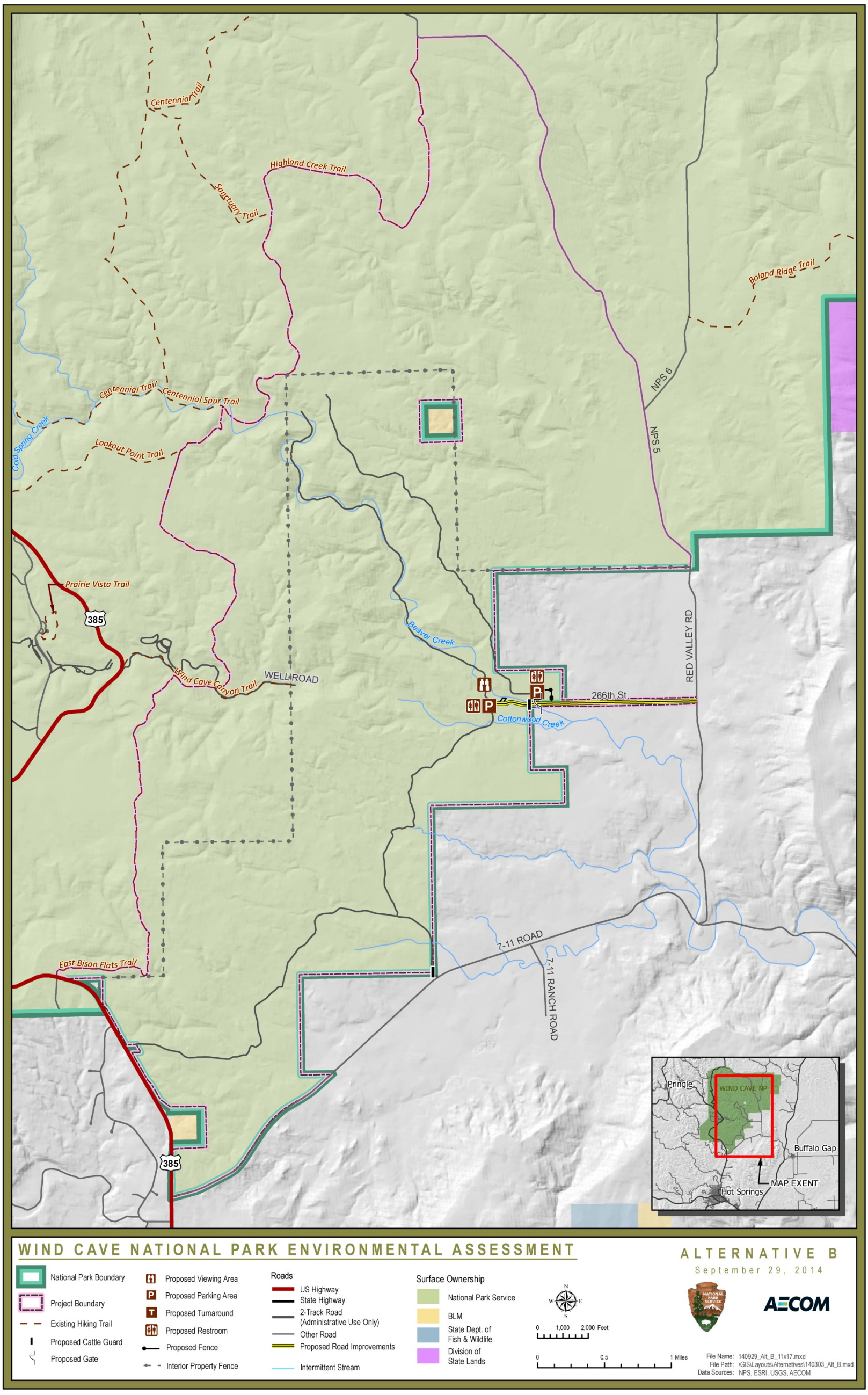

Figure 2-2: Alternative B

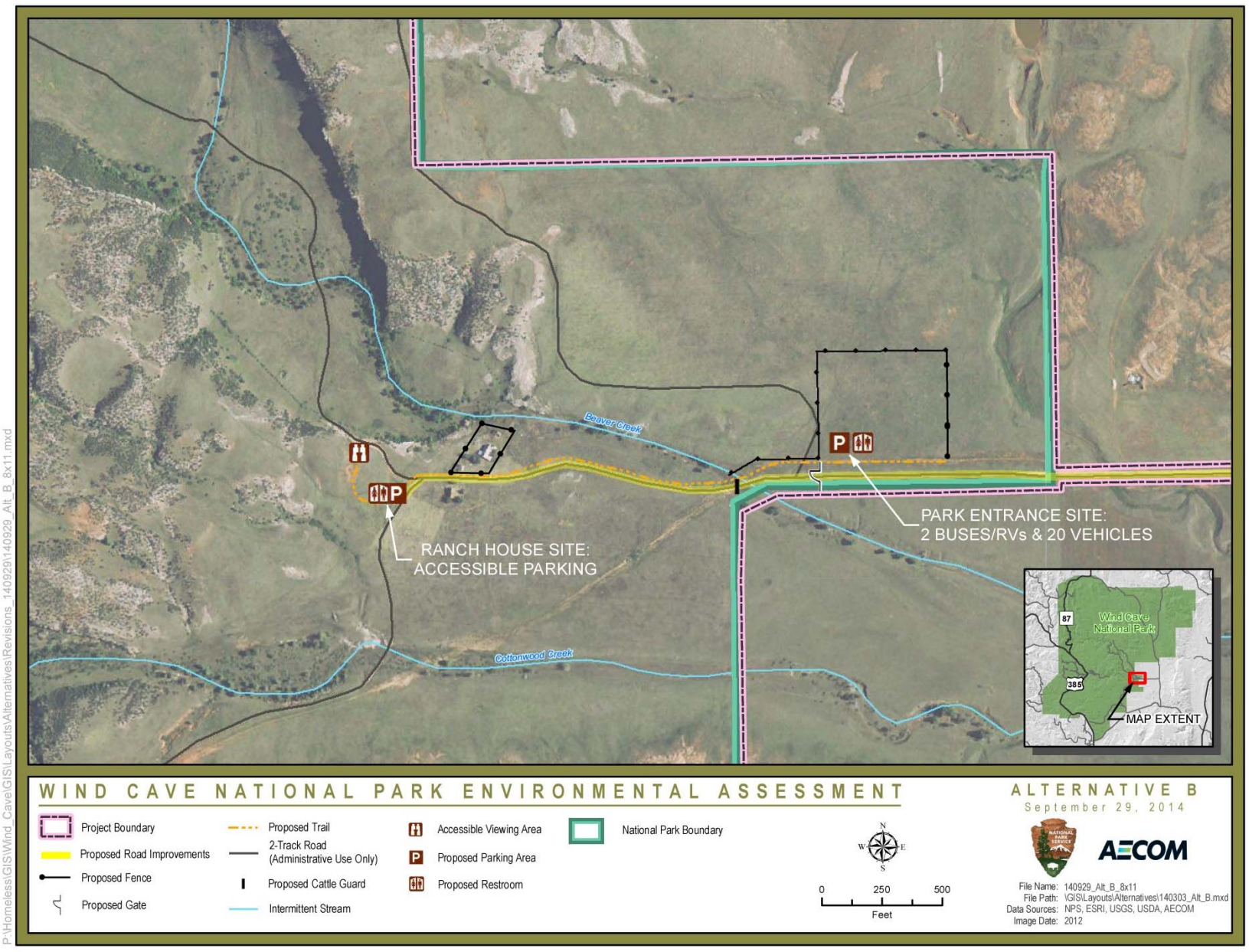

Figure 2-3: Alternative B – Zoom In

Alternative C

Like Alternative B, Alternative C includes actions to provide access to the Casey Addition via 266th Street and add parking, a trail and a viewing area at the ranch house site. Alternative C would also provide access to the property from 7-11 Road and Highway 385 and develop several trails and two road pull-out sites. Under Alternative C, the parking area at the ranch house site would be larger than under Alternatives B and D and a second parking area would not be provided (Figure 2-4).

Under Alternative C, access to the Casey Addition would be provided along an improved 266th Street as described under Alternative B. Access to the property would also be provided from 7-11 Road through the Casey Pole Barn area along the existing two-track road alignment up to 266th Street at the ranch house site as shown in Figure 2-4. The existing two-track road would be upgraded to a gravel road that meets Custer County road specifications (see Appendix F) and a cattle guard would be provided. In addition, a gravel turnaround area would be provided just off 7-11 Road in front of the existing swinging gate at the property boundary leading to the Casey Pole Barn area.

Under Alternative C, a gravel turnaround area and park entrance sign would be included at the park entrance on 266th Street (Figure 2-5). The turnaround area would be surrounded by a barrier fence to the north and west with a swinging gate at the west end of the turnaround on 266th Street.

Under Alternative C, the ranch house site would be developed with the same trail and viewing area facilities in the same location as described under Alternative B.

In Alternative C, the only parking area within the property would be at the ranch house site south of the ranch house (Figure 2-5). A gravel parking area would be provided that was large enough for 2 buses/RVs and 20 vehicles, for a total parking area size of about 12,500 square feet. The parking area would be situated such that it could be expanded to provide parking for an additional 2 buses and 20 vehicles should demand for additional parking arise. A vault toilet would also be provided at the site.

Under Alternative C, two trailhead pull-out sites would be developed, one on 7-11 Road and one on Highway 385. The 7-11 Road pull-out would be located about 2 miles southwest of the 7-11 Road access road as shown in Figure 2-4. The pull-out would consist of an asphalt parking area for 11 vehicles and 6 horse trailers, as well as a cattle guard. The pull-out on Highway 385 would be located about a mile north of the intersection with 7-11 Road. This pull-out would consist of an asphalt parking area for 15 vehicles and 4 horse trailers, and include a cattle guard.

A 1.4 mile self-guided interpretive hiking-only loop trail would be constructed under Alternative C from the ranch house site around the buffalo jump site and back. The trail would begin at the ranch house site, continue north and west, up the slope past the buffalo jump site, pass over the bluff and descend into the Beaver Creek drainage before continuing southeast through the prairie and then along 266th Street to the ranch house site. The portion of the trail from the ranch house site to the north, below and over the bluffs, would be new trail development approximately 1,900 feet (0.35 miles) long (i.e. the trail would not be located on an existing road). The portion of the trail on the bluff heading southeast until the trail meets 266th Street would be along an existing 2-track road. The trail along 266th Street would be new trail development immediately adjacent to an existing road. Wayside signs providing interpretive information would be installed along the interpretive trail and small footbridges would be placed over the two Beaver Creek crossings. Where possible, the trail

would be designed to meet accessibility standards. A safety barrier that would blend with the historic visual character of the landscape would be provided and set back from the edge of the buffalo jump.

Another 16.5 miles of hiking-only trails would be provided in the northern section of the property and leading out of the two road pull-out sites as shown in Figure 2-4. Three main trails would originate from the ranch house site and head northwest to join with the Highland Creek Trail and provide loop trail opportunities. Two of the three trails would be located almost entirely on existing two-track roads; the southern of the three trails would be located on an old trail. In the southern portion of the property, one main trail would be provided that would generally follow an existing two-track road that leads northeast from Highway 385 up to the ranch house site. The spur trail down to the 7-11 Road pull-out would not be located on an existing road. Where the trail from Highway 385 joins with the access road from 7-11 Road, the trail would be located immediately adjacent to the road up to the ranch house site. An additional spur trail would connect the main trail to the East Bison Flats Trail, located just north of the Casey Addition boundary, and would generally follow an existing road. A cattle guard would also be located near Highway 385 on this trail. Trailhead signs would be installed for each trail. Where possible, the trails would be designed to meet accessibility standards. Trails on existing two-track roads would require limited to no grading or alteration. New hiking trails would use native surface with a width of 12 to 18 inches, with minimal clearing outside of this width, and a target range of 0-10% slope (see Appendix E for trail design standards). A short gravel trail would also be provided around the ranch house, which would have a width of 24-36 inches with a clearing width of 12 to 18 inches beyond the edge of the gravel.

Under Alternative C, the two-track roads, even if used as trails, would be open to administrative vehicle use only and signed as needed.

Total annual visitation under Alternative C would be slightly higher than Alternative B due to additional visitors participating in hiking, self-guided tours, and open recreation use on the additional trails proposed in Alternative C, including the trails leading from the two road pull-outs. It is anticipated that total annual visitation for Alternative C would range from approximately 7,770 to 8,460 people, an increase of approximately 600 visitors annually from Alternative B, and an increase of approximately 7,410 visitors over the No Action Alternative. As the property becomes better known and fully integrated into Wind Cave National Park, visitation may increase.

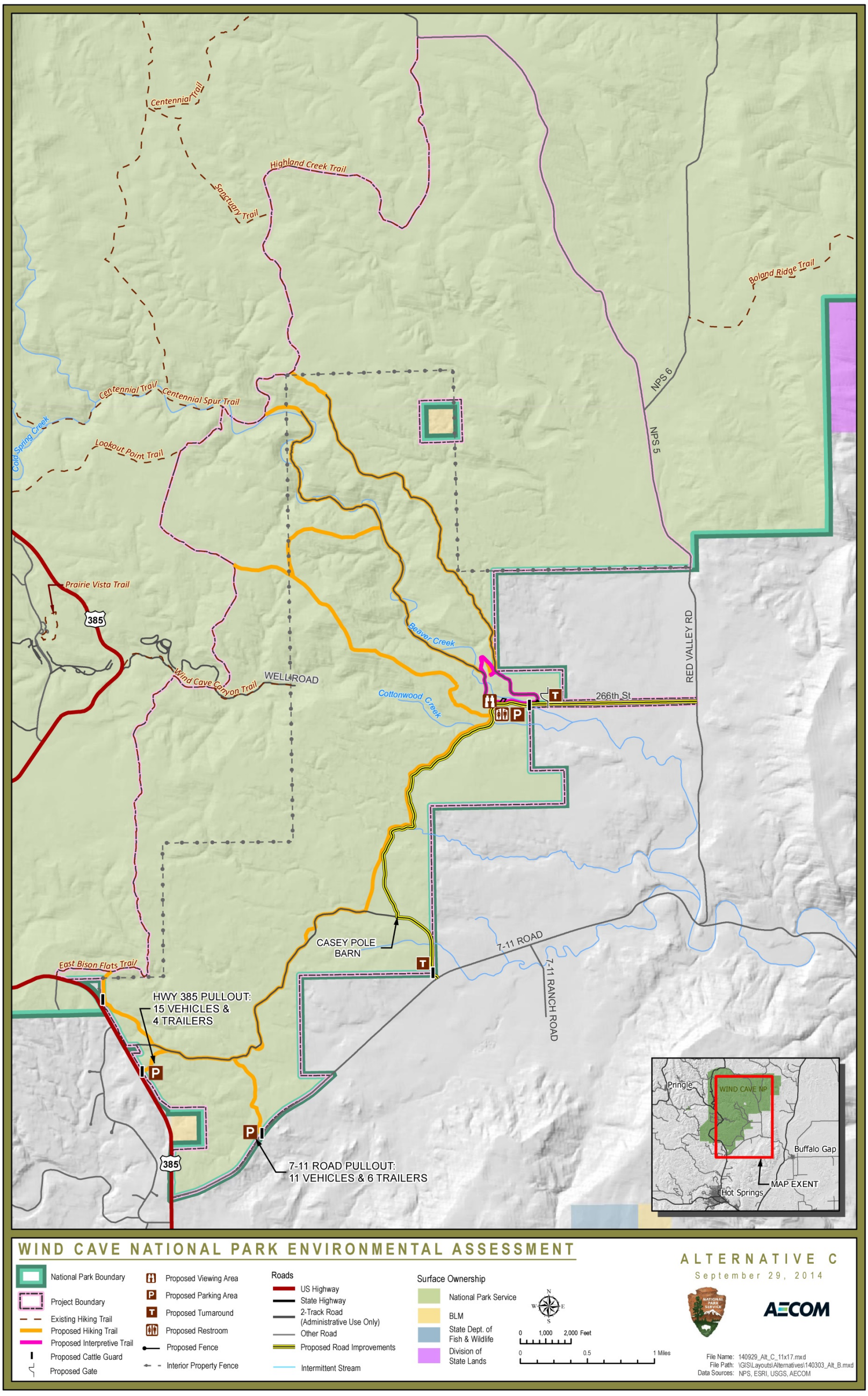

Figure 2-4: Alternative C

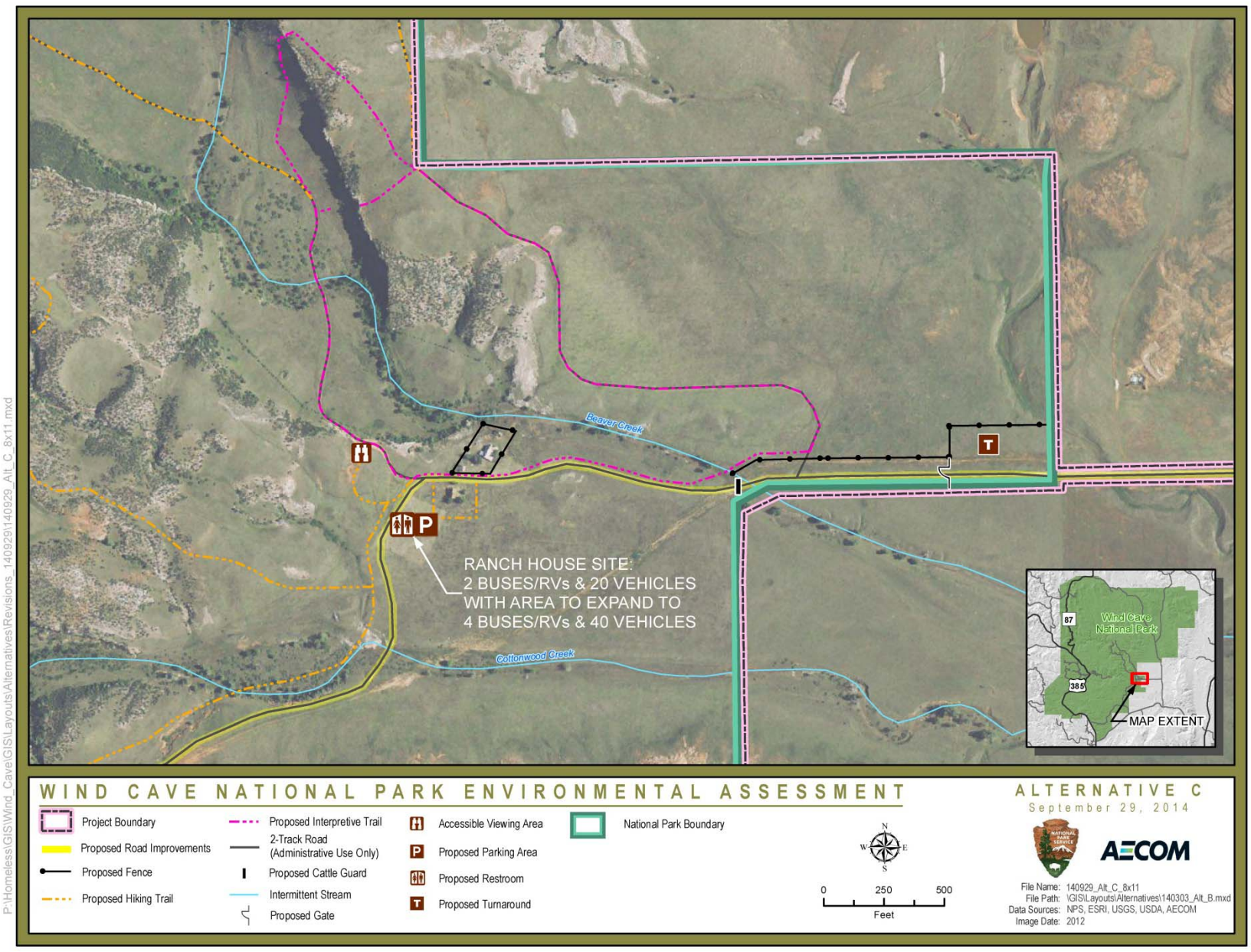

Figure 2-5: Alternative C – Zoom In

Alternative D – Preferred Alternative

Similar to Alternative C, Alternative D includes actions to provide access to the Casey Addition via 266th Street and 7-11 Road, construct a turnaround at the park entrance on 266th Street, develop several trails and two road pull-out sites, and provide parking, a trail, and a viewing area at the ranch house site. Alternative D would provide the main parking area behind a knoll near the ranch house site. Alternative D would also include allowing backcountry camping in most of the Casey Addition and an area within the park north and west of the Casey Addition with the same camping regulations as found in the rest of the park (Figure 2-6).

Under Alternative D, access to the Casey Addition would be provided along an improved 266th Street as described under Alternative B and from 7-11 Road as described under Alternative C. The park entrance site on 266th Street would be used as a turnaround area as described under Alternative C.

Under Alternative D, the ranch house site would be developed with the same facilities in the same location as described under Alternative B.

Rather than creating the main public parking area near the park boundary entrance as proposed under Alternative B, or south of the ranch house as proposed in Alternative C, the main public parking area would be developed under Alternative D on a flat bench south of a knoll located southwest of the ranch house site off the road to the Casey Pole Barn area (Figure 2-7). The knoll would serve to mostly block the view of the parking area from the ranch house. The parking area would include a vault toilet and gravel parking area for two buses/RVs and 20 vehicles and would be about 12,500 square feet in size. The parking area would be situated such that it could be expanded to provide parking for an additional two buses and 20 vehicles should demand for additional parking arise. To access the ranch house site, visitors would walk east along a trail out of the parking area to a trail immediately adjacent to the road to the Casey Pole Barn area and walk north to the ranch house site parking area. The trail from the parking area to the ranch house site would be of similar design to the trail around the ranch house as described in Alternative C.

Similar to Alternatives B and C, an accessible trail would lead visitors from the ranch house parking area to a viewpoint overlooking the bluffs, prairie, and buffalo jump site. Wayside signs would be installed at the viewpoint along with benches for resting and viewing the scenery. Unlike Alternatives B and C, a gazebo-like structure would also be installed at the viewpoint to provide shelter for interpretive programs and computer equipment used during distance learning educational programs. The design of the gazebo would blend with the historic visual character of the landscape.

The two road pull-out sites described under Alternative C would be developed in the same locations with the same facilities under Alternative D.

The 1.4 mile self-guided hiking trail and 16.5 miles of other hiking trails developed under Alternative C would also be developed under Alternative D in the same locations.

Under Alternative D, backcountry camping would be allowed in the Casey Addition northwest of the trail leading from the Highway 385 pull-out and the 7-11 access road and throughout most of the northern portion of the property as shown in Figure 2-6. Within the park, backcountry camping would be allowed in the project area east of the Highland Creek Trail and west of NPS 5 Road up to the Casey Addition property boundary. This area is adjacent to the existing backcountry camping area within the park northwest of the Casey Addition. There would be no designated camping areas or

sites within the backcountry camping area. Backcountry camping use within the Casey Addition and expanded area within the park would be subject to the same regulations as backcountry camping use in the remainder of the park. These regulations relate to obtaining a permit, low impact camping, resource protection, use of fires/stoves, campsite locations, food storage, tent/person maximums, and litter control.

Total annual visitation under Alternative D would be similar to Alternative C, though slightly higher due to backcountry camping use allowed under Alternative D. Based on information regarding backcountry camping use in Wind Cave National Park, it is anticipated that backcountry camping use within the Casey Addition would be low, with an anticipated 50 visitors/year participating in backcountry camping. Therefore, total annual visitation for Alternative D would range from approximately 7,820 to 8,510 people, compared to 360-1,050 people under the No Action Alternative. As the property becomes better known and fully integrated into Wind Cave National Park, visitation may increase.

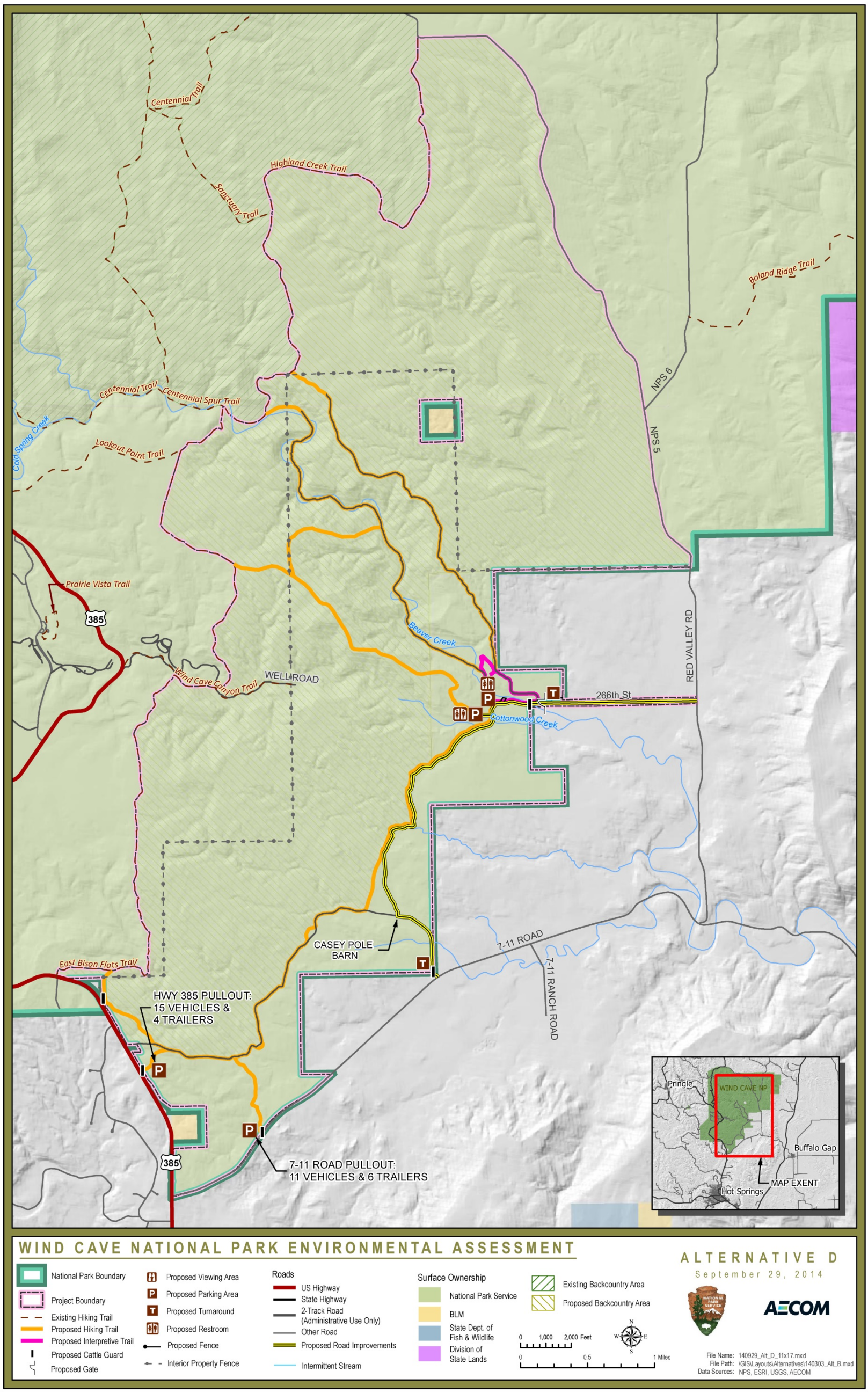

Figure 2-6: Alternative D

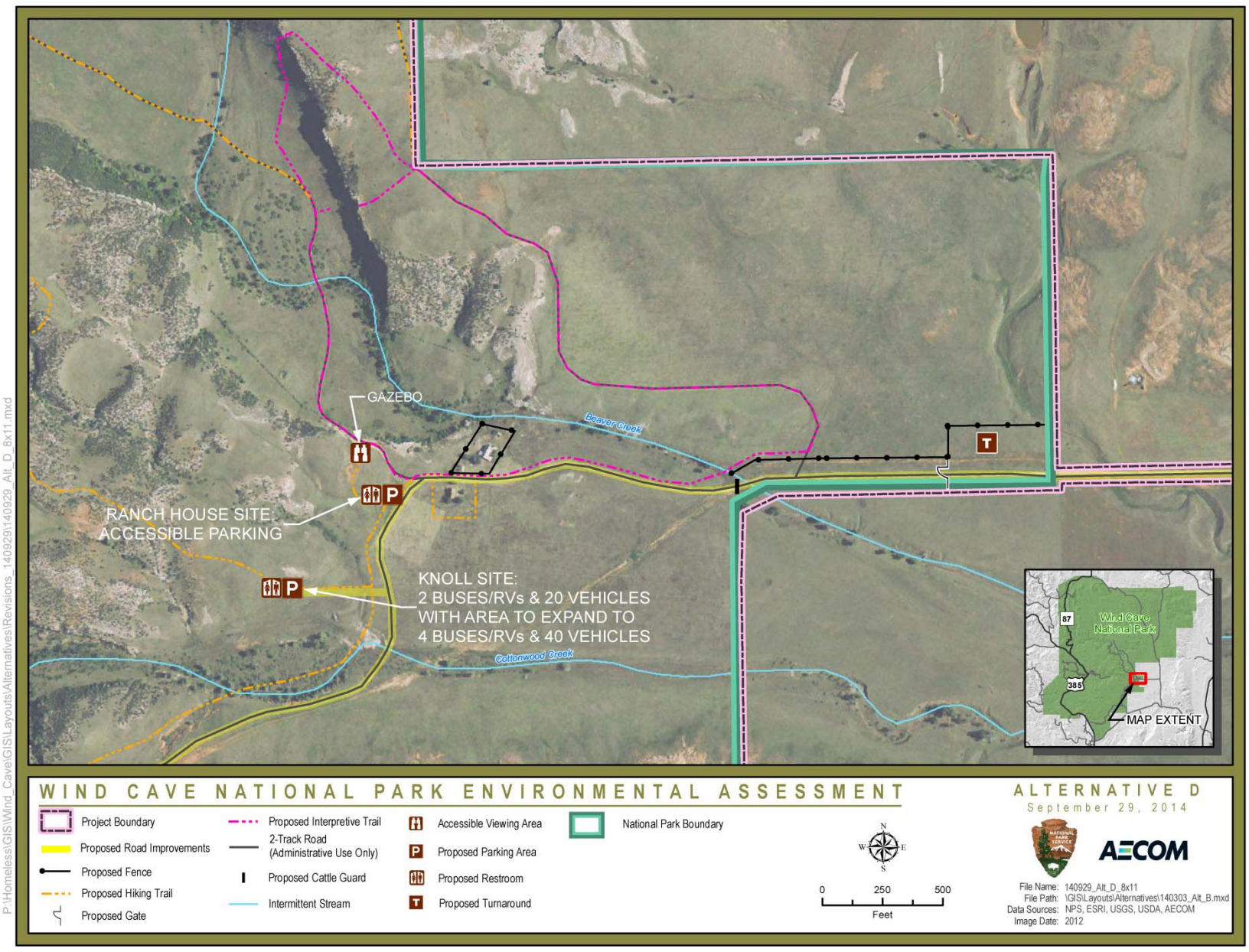

Figure 2-7: Alternative D – Zoom In

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

NPS has identified Alternative D as the preferred alternative. Alternative D protects the viewsheds of the historic Sanson ranch headquarters and the buffalo jump by providing the main parking area on the south side of a knoll southwest of the ranch house, out of view from the house and out of the viewing area from the buffalo jump site. The large parking area under Alternative D is close to the features of interest in the Casey Addition, but this parking area location would reduce impacts to archeological resources and provide better protection of the viewshed of the cultural landscape and nearby ethnographic resources compared to the large parking areas in the other alternatives. Under this alternative, backcountry camping would be permitted.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

The NPS considered, but eliminated, several alternative elements because they did not conform to NPS policy or the existing General Management Plan. Alternative elements considered but eliminated include constructing additional roads, excluding bison from the area, allowing off-road driving, and allowing mountain biking off established roads.

Constructing additional roads within the Casey Addition, such as an east-west road from Highway 385 to the ranch house site or roads within the vicinity of known significant cultural sites was eliminated as an alternative element because NPS policy states that roads should only be built if there are no feasible and prudent alternatives. The existing road to the ranch house site provides a sufficient means of access to the Casey Addition; therefore, new roads on the property are not justified.

Excluding bison from the property was eliminated as an alternative element because it is outside the scope of the Visitor Use Plan. Excluding or allowing bison in the Casey Addition will be evaluated in a separate NEPA review.

Executive Order 11644 mandates federal agencies to designate areas where off-road vehicle use will be allowed. Off-road vehicles are defined as ‘any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain’ (except any registered motorboat or any vehicle used for emergency purposes). NPS policy towards off-road vehicles is codified in 36 CFR 4.10(b), which states that off-road routes for vehicles may only be designated in national recreation areas, national seashores, national lakeshores, and national preserves, and only by special regulation (NPS 2006). Thus, off-road driving is not allowed within National Parks and allowing off-road driving in the Casey Addition was eliminated as an alternative element.

Allowing mountain biking off established roads was eliminated as an alternative element because it would not be consistent with the current General Management Plan. The existing General Management Plan does not include off-road bicycle use (bike trails). However, there are abundant opportunities for off-road mountain biking in the area surrounding the park.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

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

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

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the Department of the Interior policies contained in the Departmental Manual (516 DM 4.10) and the CEQ's *NEPA's Forty Most Asked Questions,* defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (Section 101(b)(516 DM 4.10). In their *Forty Most Asked Questions,* CEQ further clarifies the identification of the environmentally preferable alternative, stating "Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (Q6a).

Alternative A, the No Action Alternative, would cause the least impact to the biological and physical environment and best protect and preserve historic, cultural and natural resources. The Preferred Alternative (Alternative D), while not the environmentally preferable alternative, will not affect natural or cultural resources to the level of significance.

SUMMARY OF IMPACTS BY ALTERNATIVE

A summary of the environmental consequences as a result of the alternatives described in this chapter follows in Table 2-2. The full analysis for each impact topic is found in Chapter 4.

Table 2-2: Summary of Impacts by Alternative

Resource	Alternative A – No Action Alternative	Alternative B	Alternative C	Alternative D – Preferred Alternative
Visitor Experience/ Recreation Resources	• General public recreation use of the Casey Addition would continue to be prohibited and recreation use would continue to be limited to special and tribal events and NPS-led tours. • Therefore, the ability of the public to realize recreation benefits from NPS acquisition of the property would be very limited.	• Facilitate visitation by the general public, allow visitors to experience many of the historic features of the Casey Addition. • Long-term beneficial impacts to visitor experiences and recreation. • Recreation facility development would have a long-term negligible impact to visitor experiences as few people visit the Casey Addition currently because it is closed to public use. • Long-term beneficial and short- and long-term minor adverse impacts when combined with cumulative impacts.	• Greatly increase recreation opportunities and experiences, provide connections with the rest of the park, and facilitate visitor use of a large portion of the Casey Addition. • Recreation facility development would have a long-term minor adverse impact to visitor experiences as few people visit the Casey Addition currently because it is closed to public use. • Long-term beneficial and short- and long-term minor adverse impacts when combined with cumulative impacts.	• Substantially increase recreation opportunities, provide connections to the rest of the park, and facilitate visitor use of the majority of the Casey Addition. • Long-term major beneficial impacts to visitor experiences and recreation. • Recreation facility development would have a long-term minor adverse impact to visitor experiences as few people visit the Casey Addition currently because it is closed to public use. • Long-term beneficial and short- and long-term minor adverse impacts when combined with cumulative impacts.
Vegetation	• Vegetation in the Casey Addition would remain relatively unchanged. • Short-term minor adverse and long-term	• Short- and long-term minor adverse impacts due to removal of two to three acres of vegetation for construction of new visitor facilities.	• Short- and long-term minor adverse impacts due to removal of six to seven acres of vegetation for construction of new visitor facilities and trails.	• Short- and long-term minor adverse impacts due to removal of six to seven acres of vegetation for construction of new visitor facilities trails. • Short- and long-term

	beneficial impacts when combined with cumulative projects.	• Impacts associated with the construction of parking areas, road improvements and fencing would be restricted to areas immediately surrounding these improvements. • Beneficial impacts, as well as short- and long-term minor adverse impacts when combined with cumulative impacts.	• Impacts associated with the construction of the parking area, road improvements, fencing, and trails would be restricted to areas immediately surrounding these improvements. • Beneficial impacts, as well as short- and long-term minor adverse impacts when combined with cumulative impacts.	negligible impacts from allowing backcountry camping use. • Impacts associated with the construction of parking areas, road improvements, fencing, and trails would be restricted to areas immediately surrounding these improvements. • Impacts from backcountry camping use would be dispersed throughout the backcountry area. • Beneficial impacts, as well as short- and long-term minor adverse impacts when combined with cumulative impacts.
Cultural Resources: Ethnographic Resources	• Short- and long-term negligible adverse impacts due to possible risk of illegal disturbance from the lack of staff/visitor presence. • Beneficial impacts due to limited public access. • Beneficial, short-term negligible and long-term minor adverse impacts when combined with cumulative impacts.	• Short-term minor and long-term negligible adverse impacts from ground disturbance and visual setting changes related to development of visitor facilities and road improvements. • Short- and long-term minor adverse impacts from development of the viewpoint trail. • Short- and long-term minor adverse impacts when combined with cumulative impacts.	• Short- and long-term negligible and minor adverse impacts from ground disturbance and visual setting changes related to development of visitor facilities, trails, and road improvements, as well as an increased risk of site disturbance due to greater public access to areas with sacred sites. • Short- and long-term minor adverse impacts when combined with cumulative impacts.	• Short- and long-term negligible to minor adverse impacts to ethnographic resources from ground disturbance and visual setting changes related to development of visitor facilities, trails, and road improvements, as well as an increased risk of site disturbance due to greater public access to areas with sacred sites. • Designed to blend with the landscape, the gazebo-like structure at the viewpoint location would result in short- and long-term minor impacts. • Short- and long-term

				negligible to minor adverse impacts from backcountry camping use due to greater public access to areas with sacred sites. • Short- and long-term minor adverse impacts when combined with cumulative impacts.
Cultural Resources: Archeological Resources	• Short- and long-term negligible adverse impacts due to the possible risk of illegal disturbance to resources due to the lack of staff/visitor presence. • Long-term negligible to minor adverse impacts from the lack of study of archeological resources due to the lack of development at the site. • Short-term minor and long-term negligible to minor adverse impacts when combined with cumulative impacts.	• Short- and long-term negligible to minor adverse impacts from ground disturbance related to construction of visitor facilities and road improvements. • With mitigation, short- and long-term minor adverse impacts from development of the viewpoint trail. • Mitigation would include surveying and testing prior to final facility siting and design, as well as construction monitoring. • Short- and long-term minor adverse impacts when combined with cumulative impacts.	• Short- and long-term negligible to minor adverse impacts from ground disturbance related to construction of visitor facilities, trails and road improvements. • Short- and long-term minor to moderate adverse impacts from development of the parking area south of the ranch buildings. • With mitigation, short- and long-term minor adverse impacts from development of the viewpoint trail. • Mitigation would include surveying and testing prior to final facility siting and design, as well as construction monitoring. • Short- and long-term minor adverse impacts when combined with cumulative impacts.	• Short- and long-term negligible to minor adverse impacts from ground disturbance related to construction of visitor facilities, trails, road improvements, and the gazebo-like structure. • Mitigation would include surveying and testing prior to final facility siting and design, as well as construction monitoring. • Long-term negligible to minor adverse impacts from backcountry camping use. • Mitigation for these impacts would include archeological probability analysis and survey of backcountry areas. • Short- and long-term minor adverse impacts when combined with cumulative impacts.
Cultural Resources: Cultural Landscapes	• Long-term minor adverse from material integrity loss over time from disuse.	• Short- and long-term minor adverse impacts from development of the new parking and restrooms	• Short- and long-term negligible adverse impacts from development of turnarounds, pull-out sites,	• Short- and long-term minor adverse impacts from development of the turnarounds, pull-out sites,

	• Beneficial impacts, as well as short-term negligible and long-term minor adverse impacts when combined with cumulative impacts.	facilities and road improvements. • Short- and long-term minor to moderate adverse impacts from development of the viewpoint trail. • Impacts reduced to negligible to minor adverse impacts through siting and designing of the parking areas, trails, fencing, and restrooms to be visually unobtrusive. • Beneficial impacts, as well as short- and long-term minor adverse impacts when combined with cumulative impacts.	and road improvements. • Short- and long-term minor to moderate adverse impacts from development of the viewpoint trail. • Impacts reduced to negligible to minor adverse impacts through siting and designing of the, trails and fencing to be visually unobtrusive. • Short- and long-term negligible adverse impacts from development of hiking trails. • Short and long-term moderate adverse impacts due to location for the parking adjacent to the majority of identified contributing historic resources. • Beneficial impacts, as well as short- and long-term moderate adverse impacts when combined with cumulative impacts.	road improvements, new parking areas and restroom facilities. • Short- and long-term minor to moderate adverse impacts from development of the viewpoint trail. • Impacts reduced to negligible to minor adverse impacts through siting and designing of the trail to be visually unobtrusive. • Short- and long-term minor adverse impacts from placement of the gazebo-like structure at the viewpoint. • Short- and long-term negligible adverse impacts from development of hiking trails. • Long-term negligible adverse impacts from backcountry camping use. • Beneficial impacts as well as short- and long-term minor adverse impacts when combined with cumulative impacts.

CHAPTER 3: AFFECTED ENVIRONMENT

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INTRODUCTION

This chapter summarizes relevant resource components of the existing environment directly in the project area. It describes environmental components that would be affected by the alternatives if they were implemented, and provides a baseline against which environmental consequences of the Visitor Use Plan can be compared. Additional material, specifically related to impacts and effects of the alternatives, is included in Chapter 4, Environmental Consequences.

VISITOR EXPERIENCE/RECREATION RESOURCES

The Black Hills area of South Dakota, where Wind Cave National Park and the Casey Addition are located, is a major recreation area within the state. Wind Cave National Park is located 10 miles north of Hot Springs, South Dakota and immediately south of Custer State Park. The park received over 516,000 visitors in 2013 (NPS 2014a) and includes both below ground and above ground recreation opportunities. Below the surface, the park includes many caves, including one of the world's longest caves, Wind Cave. Cave tours are a popular activity in the park and allow visitors to experience the amazing boxwork and other unique resources located in the caves. Above ground, the park includes a visitor center, picnic area, 30 miles of hiking trails, 3 nature trails, and a campground. The park provides opportunities for hiking, horseback riding, camping, wildlife viewing, nature observation, scenic driving, backcountry camping, photography, and picnicking (NPS 2014d). There are also many opportunities for interpretation and education at the park, particularly at the visitor center, on ranger-led programs/tours, and on the park's three nature trails. Interpretation at the park currently focuses on the exploration of Wind Cave, cave resources and features, and the mixed-grass prairie ecosystem and transition to Black Hills forests. To a limited extent, interpretation focuses on prehistoric and historic occupation of the area, early inhabitant cultures, and interactions with settlers (NPS 2002).

Currently, the backcountry camping area within Wind Cave National Park abuts the northwest corner of the Casey Addition. Relative to the other uses within the park, participation in backcountry camping is relatively low with only 226 users in 2013 (Farrell 2014). Two hiking trails in the park also abut the Casey Addition boundary, the Highland Creek Trail and Wind Cave Canyon Trail. The Highland Creek Trail is an 8.6 mile trail running north/south from NPS Road 5 to Highway 385. The trail parallels the western boundary of the Casey Addition and continues northward from the northwestern corner of the Casey Addition. This trail is currently the longest trail in the park and is considered strenuous. The Wind Cave Canyon Trail is a 1.8 mile trail running east from Highway 385 to the Casey Addition western boundary. The trail is considered an easy walk and provides one of the best places in the park for bird watching (NPS 2014b).

There are nine other trails within the park for a total of 30 miles of hiking opportunities. Overall, an estimated 1,000 visitors hike the trails within the park, which are generally out-and-back trails, with few loop trail opportunities (Farrell 2014).

Though the Casey Addition is now part of Wind Cave National Park, it is not open for general public use at this time. However, a few special events and NPS-led interpretive tours have occurred within the Casey Addition since the NPS acquired the property in late 2011. Therefore, there is no general public recreation currently occurring and very limited, infrequent event use of the Casey Addition.

Several recreation areas are within 15 miles of Wind Cave National Park and the Casey Addition, including Custer State Park, the Mickelson Trail, the Mammoth Site, and the Black Hills National

Forest (NPS 2014c). Custer State Park offers a visitor center, campgrounds, trails, 182 acres of lakes, and a large bison herd. Opportunities for wildlife viewing, fishing, camping, scenic driving, hiking, mountain biking, horseback riding, rock climbing, and educational programs are available within the state park (South Dakota Game, Fish and Parks 2014a). The Mickelson Trail is a 109-mile long trail for hiking, biking, and horseback riding; a trailhead is located west of Hot Springs (South Dakota Game, Fish and Parks 2014b). The Mammoth Site is an *in situ* museum showcasing the fossils of 61 mammoths and other prehistoric animals (The Mammoth Site 2014). The Black Hills National Forest provides numerous recreation facilities and opportunities for visitors to participate in mountain and road biking, camping, rock climbing, fishing, hiking, backpacking, horseback riding, water sports, hunting, off-highway vehicle use, scenic driving, gold panning, rock hounding, picnicking, education/interpretation, wildlife viewing, and nature observation (US Forest Service 2014). Within the region, people can also visit Angostura State Recreation Area, as well as several nearby NPS sites including Badlands National Park, Minuteman Missile National Historic Site, Devils Tower National Monument, Agate Fossil Beds National Monument, Jewel Cave National Monument, and Mount Rushmore National Memorial (NPS 2014c).

VEGETATION

The protection and management of its plant communities is a core purpose and mission of Wind Cave National Park. The Casey Addition is an extension of the park's natural habitat and vegetative communities, which include communities that are typical of the ponderosa pine (*Pinus ponderosa*)/prairie transition zone of the lower elevations of the Black Hills (Figure 3-1). The information that follows was drawn from US Geological Survey-NPS Vegetation Mapping Program data included in the National Park Service's Environmental Assessment, Boundary Expansion Study (NPS 2002).

There are several vegetative habitat types on the Casey Addition including drainages, shrublands, upland wooded areas, and grasslands. The drainages, including Beaver Creek and a few small, unnamed draws, are dominated by chokecherry (*Prunus virginanus*) shrublands, but also support boxelder (*Acer negundo*)-chokecherry and ponderosa pine/chokecherry forests. The birch (*Betula* sp.) - aspen (*Populus tremuloides*) forest is an uncommon community type that occurs within a small drainage, probably less than two acres in size. There is also a small amount of plains cottonwood/western snowberry woodland in the Casey Pole Barn area.

The mountain mahogany (*Cercocarpus montanus*)/sideoats grama (*Bouteloua curtipendula*) association dominates the shrublands on the Casey Addition. This association is present along steep, dry, south-facing slopes. Mountain mahogany cover on aerial photography ranges from 50 to less than 15 percent. It is also found on steep, north-facing slopes, where canopy cover ranges from 50 to 100 percent. Sideoats grama and little bluestem (*Schizachyrium scoparium*) are the dominant grass species occurring in and around this plant community. Small patchy complexes of western snowberry are also found throughout the Casey Addition in drainage bottoms, dry draws, and mesic swales.

Three upland ponderosa pine woodland types occur on the Casey Addition. These include:

1. The ponderosa pine/little bluestem woodland is the most dominant type of woodland within the Casey Addition. The semi-open to open canopy of this class supports an understory of grasses and sparse shrubs. The gravelly and sandy soils in these woodland areas typically also support little bluestem.

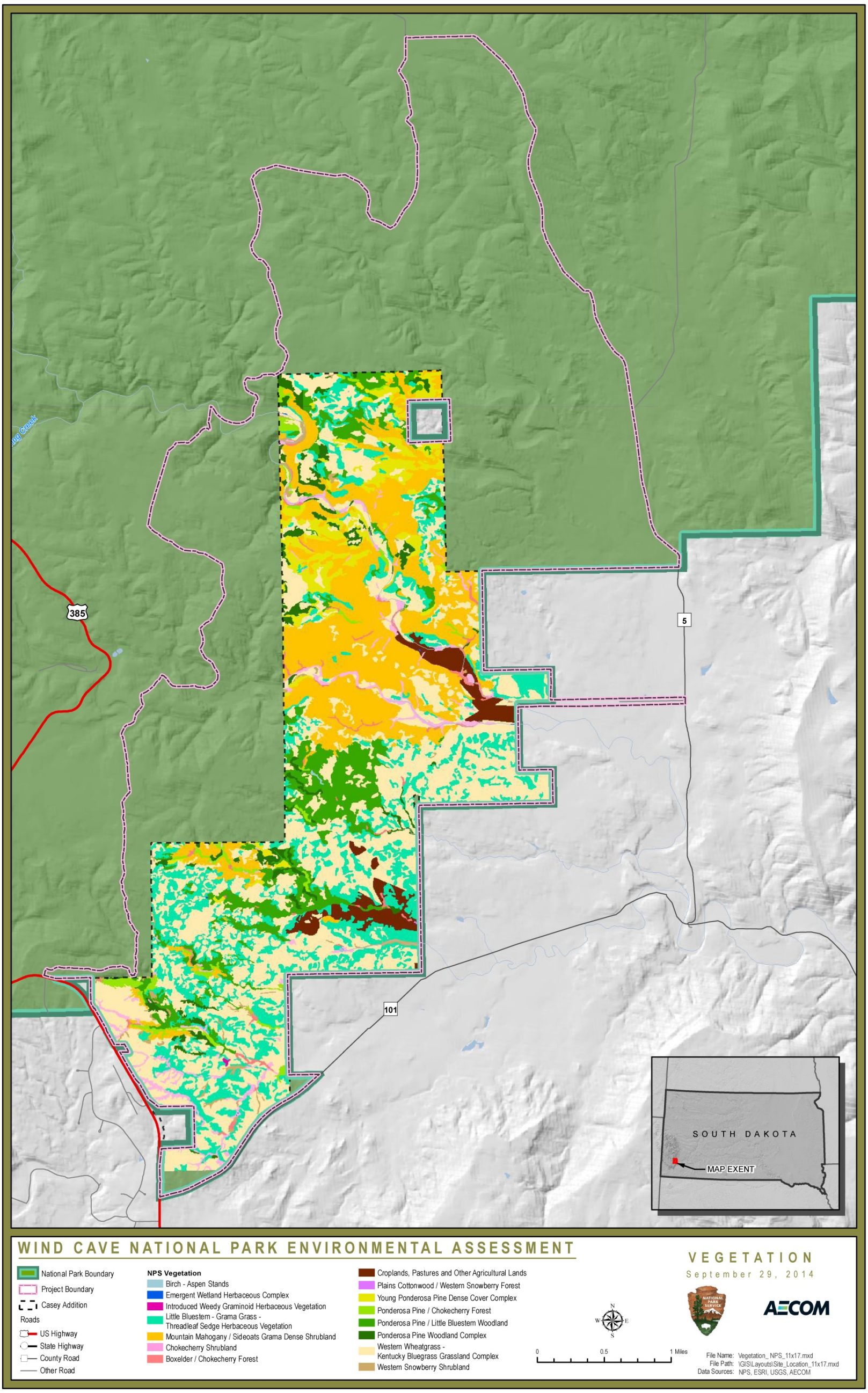

Figure 3-1: Vegetation Map of the Casey Addition

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2. The young ponderosa pine, dense cover complex is the second most extensive woodland type on the Casey Addition. This community includes all areas that were recently reforested by ponderosa pine (roughly 20 years old). Young ponderosa pines usually form large, dense (dog-hair) stands next to older pine classes and/or burned areas. Mountain mahogany often occurs near this community (especially along Wind Cave Canyon).

3. Small stands of ponderosa pine woodland also occur on the Casey Addition. Included within this type are ponderosa pine/sun sedge (*Carex inops* ssp. *heliophila*), ponderosa pine/western wheatgrass (*Pascopyrum smithii*), and ponderosa pine/common juniper (*Juniperus* communis) associations. Areas where ponderosa pines encroach onto deep, loamy soils are representative of this class.

Grasslands within the Casey Addition are of two primary associations: the little bluestem-grama grass/threadleaf sedge (*Carex filifolia*) herbaceous vegetation association, and the western wheat grass-Kentucky bluegrass (*Poa pratensis*) association. The former typically occurs on sparse to barren gravelly slopes and knolls throughout the property. The grama grass component consists of both sideoats grama and blue grama (*Bouteloua gracilis*).

The western wheatgrass-Kentucky bluegrass association includes the western wheatgrass-green needlegrass (*Nassella viridula*) and Kentucky bluegrass herbaceous vegetation types. This mapping unit is found throughout the Casey Addition on mesic loamy to clayey soils.

Limited amounts of exotic species have been known to occur on the Casey Addition, including hounds tongue (*Cynoglossum officinale*), Canada thistle (*Cirsium arvense*), and leafy spurge (*Euphorbia esula*). However, these species have been nearly eliminated by hand-pulling.

CULTURAL RESOURCES

For the purposes of this project and this document, “cultural resources” includes ethnographic resources, archeological resources, and cultural landscapes as subtopics. Each of these three subtopics is addressed in a separate subsection below. A summary of the history of the park is provided below to support an understanding of the affected general cultural resources in the study area.

The early cultural history of the Black Hills and Wind Cave National Park vicinity is complex. A simplified version of the history is provided here for purposes of this EA; more detail can be found in the extensive ethnographic and ethnohistorical study, “The Home of the Bison” (Albers et al. 2003), which is available on the park’s website at www.nps.gov/wica.

By the mid-eighteenth century, the Black Hills vicinity was inhabited by various tribes that had a constantly changing mix of alliances and conflicts, including the Crow, Kiowa, Apache, Comanche, Arapaho, Arikara, Ponca, Cheyenne, Lakota, and others. These peoples were all seasonal hunters and foragers who traveled and used the lands within the Black Hills (Albers et al, 2003 ii-iii; NPS 2014e). By the late eighteenth century, the dominant tribes that controlled the southern and eastern Black Hills were the Cheyenne, Arapaho, and Lakota (NPS 2005a, 2-17). The Lakota had become the primary tribe in the vicinity of Wind Cave National Park by the time of first Euro-American contact.

In 1834, Euro-American frontiersmen passing through the area ignited rumors of gold in the Black Hills; these rumors persisted on and off for decades, despite efforts by the U.S. military to

discourage a rush into the area, which was at that time under control of the Lakota Nation (formalized by the Fort Laramie Treaty in 1851) (NPS 2012, 13). However, in 1874, Lt. Col. George Armstrong Custer's U.S. government funded exploration of the Black Hills confirmed the presence of gold, spurring a flood of migrants into what would become South Dakota. The Black Hills Gold Rush resulted in the arrival of many Euro-American settlers in what had been officially designated as Lakota territory. After the rush, many of these emigrants moved out of the Black Hills, although some established homesteads there (NPS 2012, 2). In 1877, the U.S. government seized the Black Hills via the February Act of 1877, unilaterally taking the land from its American Indian inhabitants and establishing reservations.

August Sanson was a Swedish immigrant who first arrived in the Black Hills as a gold prospector and subsequently worked on cattle drives in the new but growing ranching industry of the region. Sanson established a ranch homestead in 1882, acquiring 160 acres of land in southeastern Custer County through the Homestead Act. With the arrival of rail transportation in Rapid City, South Dakota, soon afterward, more settlers flowed into the area (NPS 2012, 7 and 14). August Sanson married neighbor Johanna Grashorn in 1888, and her adjacent lands were merged with Sanson's. They developed the ranch headquarters during the next decades, adding numerous wood and stone outbuildings and residing in Sanson's original home until it burned in 1910 in a wildfire. During 1910-1918, the Sanson family moved into an old claim shack on Johanna's former property, constructing a new house on the site of the old homestead in 1918. During this time, Carl, then 16, took over management of the ranch from his father, and continued to manage the property until its sale in 1987. Carl Sanson successfully brought the ranch through the Great Depression and other difficulties, including numerous wildfires (NPS 2012, 16). He was active in local organizations such as the Custer County Historical Society and served as director of the South Dakota Stock Growers Association (NPS 2012, 8-9). The ranch landscape evolved into a series of fenced pastures, connected by two-track roads radiating out from the homestead/headquarters complex.

In 1985, Carl Sanson began selling off land following several years of drought (NPS 2012, 17). After selling the main property to a bison ranching operation in 1987, Carl Sanson retained use of the house. He never married or had children, and passed away as the last remaining Sanson family member in 1991 (NPS 2012, 11). The property remained in private ownership until it was purchased by the Conservation Fund in 2010. The Casey Addition land, including the homestead, was purchased by the NPS from The Conservation Fund in 2011.

Ethnographic Resources

For thousands of years, many different American Indian groups have had varying degrees of historical and cultural affiliation with the Black Hills in the vicinity of Wind Cave. According to Albers et al. (2003), "Only some of them, notably the Lakotas, Cheyennes, and possibly the Arapahos, have retained an on-going association with the area that conforms to the definition of a traditional cultural property" (Albers et al. 2003, ii). Many other tribes have historical connections to the Black Hills. These groups include the Arikaras, Comanches, Crows, Hidatsas, Kiowas, Mandans, Plains Apaches, and Poncas (Albers et al. 2003, ii). Current tribes consulted for this EA included the Cheyenne, Arapaho, various Lakota Nation tribes; Assiniboine; Ponca; Mandan, Hidatsa, and Arikara Nation (Three Affiliated Tribes); and Gros Ventre.

The Black Hills are a resource-rich landscape that has sustained human settlement for thousands of years with its abundant springs, vegetation, stone, and wildlife (Spence 2011, 29-57). In part

because of this wealth of resources, the Black Hills as a whole and much of the landscape in and around Wind Cave National Park, both below and above ground, has long been considered sacred by the Lakota and the Cheyenne as a site of genesis (Albers et al. 2003, 1). These two tribes have a long-standing relationship to this area of the Black Hills and as a result, many significant ethnographic resources, both known and unidentified, exist throughout the larger Black Hills landscape, which includes the project area.

Bison and other game were hunted in the park and the project area vicinity and seasonal (usually winter) camps and hunting grounds were located in the area. The people who hunted and foraged in this area shared an intimate knowledge of the landscape and a rich oral history of its features and their sacred associations (Albers et al. 2003, ix). Springs, caves, stones and stone outcrops, and other natural features often are considered to have sacred properties representing some of the many different beliefs associated with the Black Hills landscape and with Wind Cave. Common themes in Cheyenne and Lakota beliefs related to these resources include bison and bison spirits, female and regenerative spirits, and natural forces such as the winds, the sun, and the stars, all of which form part of a rich cosmological tapestry (Albers et al. 2003, v-vii).

Ethnographic resources within the project area vicinity include a buffalo jump, multiple sacred sites, habitation sites, and subsurface American Indian cultural resources identified archeologically (see archeological resources section for more information). In addition, the larger landscape has been identified by tribal representatives as having potential significance as a traditional cultural property, as “a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity” (NPS 1990, 1). They also mentioned several sacred sites in the vicinity, such as possible burials and sacred stones (NPS 2014e).

The Arapaho are known to have inhabited the general area historically, but their association to resources is not clearly established in published sources (Albers et al. 2003, ii). According to Albers et al., the Arapaho were connected to the Black Hills under U.S. treaty law, having arrived in the area from sometime before 1750 until the U.S. government seized their lands in 1877 (Albers et al. 2003, ii).

Archeological Resources

Archeological resources include numerous sites that have been identified from the prehistoric period through the nineteenth century. The Sanson Site (39CU0002) is a multi-component site encompassing the Sanson Ranch headquarters and other resources in the hills along Beaver Creek near the southeastern edge of the Black Hills. The Sanson Ranch historic-period site components are addressed below within the Cultural Landscapes section.

As early as 1949, an area within this site was identified as a buffalo jump: a landform used as a trap for bison hunting, where a herd would be provoked to stampede and then driven off a cliff. The site was visited in 1963 by Edward Sudderth who excavated at the base of the bluff and recovered bison bones (Sudderth 1964). In 1972-73, Dr. Larry Agenbroad from Chadron University mapped linear stone features and circles and excavated a trench at the base of the cliff (NPS 2012, 9). Later investigations related to a pipeline were undertaken in 2009 and 2010, inventorying a large collection of lithic debitage and tools over the vicinity.

It is now believed that this multi-component site may have served as a location for many activities over time, but may not have been solely a buffalo jump due to the identification of many other types

of archeological features that indicate other kinds of uses, such as habitation. NPS Midwest Archeological Center (MWAC) archeologists believe the site dates back at least 4,000 years. This early date is based on the presence of an early projectile point style (NPS 2014e). Temporally diagnostic projectile points, as well as radiocarbon samples from recovered bison bone and a hearth feature, indicate the site was occupied multiple times over an approximately 4,000 year period from about 4,200 to 250 years ago (Vawser et al 2012, i).

MWAC conducted investigations at the Sanson Site in 2012 and 2014, concluding that the site is well-preserved and retains sufficient archeological integrity to be likely eligible for listing in the National Register of Historic Places under Criterion D (Vawser et al 2012, ii and 1). Additional artifacts were identified at this time and results of the inventory were used to identify locations of avoidance for the alternatives for visitor access in the proposed action.

According to MWAC, “Prehistoric components of the site include a large scatter of surface artifacts including lithic debitage and tools, ceramics, groundstone, and hammerstones. Features include artifact concentrations and caches, bedrock groundstone, hearths, rock cairns, stone alignments, and stone circles. The prehistoric components of the site are spread over a wide area” (Vawser et al 2012, 2). In addition, it appears likely that, should future surveys be undertaken, more sites may be found in the project area.

Cultural Landscapes

The Sanson Ranch was recognized in 1985 as the oldest ranch owned and operated by the same family in Custer County (NPS 2012, 11). The period of significance for the cultural landscape stretches through the Sanson family’s ownership, from 1882 to 1987. The ranch straddles the area where the Black Hills and the Great Plain ecosystems meet, resulting in varied topography and vegetation within the landscape. A wide variety of grasses, including mixed-grass and short grass prairie, sustained the ranch’s livestock, as did mountain mahogany and yucca (which unlike grass, grew above the snow, providing forage in the winter). Along drainages were woody plants, such as pine and spruce, and wildflowers of many kinds. Cultivated vegetation, such as deciduous shade trees (cottonwood, elm, honey locust) and ornamental and garden plants were grown around the house and buildings. The open ranch lands with fenced pastures are identified as representative of a cultural tradition associated with ranching culture. The open ranching landscape, together with the closely spaced cluster of buildings and structures forming the ranch headquarters, are the character-defining features of this vernacular, agricultural landscape (NPS 2012, 23-40). The landscape’s features collectively tell the story of its consistent use for livestock ranching throughout the period of significance.

At the ranch headquarters cluster, most of the existing buildings and structures have been standing since before 1920, including the house, barn, chicken coop, dugout (second garage), garage, and shed. Most of these are constructed with local wood and stone, and are minimally altered (although the house was re-roofed). All of the structures in the Sanson Ranch area, except the shed, have been determined eligible for listing on the National Register of Historic Places. Ranch roads radiating out from the headquarters, primarily unpaved two-tracks, and footpaths, are also considered contributing features of the cultural landscape. Constructed water features were developed over the ranch’s history to support the watering of livestock and irrigation of crops, and include a cistern, livestock watering tanks, a covered well with hand pump, and later electric well pumps. These features help tell the story of how evolving technology was used to sustain ranching operations over

more than a century of use by the Sanson family. Numerous small-scale landscape features from the period of significance are apparent in the ranch headquarters area and scattered through the landscape. These include decorative, functional, and day-to-day features such as a wooden archway and gate, a fallen stone wall, a covered well with hand pump, watering devices, cistern, stone paving, garage foundation, a fire vault with smoking refrigerator, and fences. Some other small-scale features have been documented as non-contributing, including an old laundry machine, metal mattress frame, metal gate, and two large stones in front of the house. Both contributing and non-contributing small-scale features show how the Sanson family lived and how the ranch operated.

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CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

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INTRODUCTION

This chapter analyzes both beneficial and adverse impacts that would result from implementing the alternatives considered in this EA. This chapter also includes definitions of impact thresholds (e.g., negligible, minor, moderate, and major), methods used to analyze impacts, and the analysis used for determining cumulative impacts. As required by CEQ regulations implementing NEPA, a summary of the environmental consequences for each alternative, which can be found in Chapter 2: Alternatives, is provided in Table 2-2. The resource topics presented in this chapter, and the organization of the topics, correspond to the resource discussions contained in Chapter 3: Affected Environment of this EA.

GENERAL METHODOLOGY FOR ANALYZING IMPACTS

General Analysis Methods

In accordance with the CEQ regulations, direct, indirect, and cumulative impacts are described (40 CFR 1502.16) and the impacts are assessed in terms of context and intensity (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts for each resource may vary; therefore, these methodologies are described under each impact topic.

The analysis of impacts follows CEQ guidelines and Director's Order 12 procedures (NPS 2011) and is based on the underlying goal of providing long-term protection, conservation, and restoration of native species and cultural landscapes. This analysis incorporates the best available scientific literature applicable to the region and setting, the species being evaluated, and the actions being considered in the alternatives. However, applicable literature is not always available. In such cases, analysis may require assumptions of specific conditions. Assumptions used for analysis in this EA are identified and explained for each resource, as needed.

Impact Thresholds

Determining the impact thresholds is a key component in applying NPS Management Policies and Director's Order 12. These thresholds provide the reader with an idea of the intensity of a given impact on a specific resource. The impact threshold is determined primarily by comparing the effect to a relevant standard based on applicable or relevant/appropriate regulations or guidance, scientific literature and research, or best professional judgment. Definitions of intensity vary by impact topic; therefore, intensity definitions are provided separately for each impact topic analyzed in this document. Intensity definitions are provided throughout the analysis for negligible, minor, moderate, and major impacts. In all cases, the impact thresholds are defined for adverse impacts. Beneficial impacts are addressed qualitatively. Potential impacts of the alternatives are described in terms of type, context, duration, and intensity (negligible, minor, moderate, and major).

For the purposes of this analysis, impact types are classified as either beneficial or adverse, direct or indirect. The terms "impact" and "effect" are used interchangeably throughout this EA.

- *Beneficial*: An impact that would result in a positive change to the resource when compared to the existing conditions.
- *Adverse:* An impact that causes an unfavorable result to the resource when compared to the existing condition.

- *Direct:* Impacts that would occur as a result of the proposed action at the same time and place of implementation (40 CFR 1508.8).
- *Indirect:* Impacts that would occur as a result of the proposed action, but later in time or farther in distance, but still reasonably foreseeable from the action (40 CFR 1508.8).

The impact context is the affected environment within which an impact would occur, such as local, park-wide, regional, global, affected interest, society as a whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic. As such, the impact analysis determines the context, not vice versa.

The duration of the impacts in this analysis are defined as:

- *Short-term impacts* – impacts generally only occur during the initiation and implementation of the project, including construction activities, and the resources resume their pre-project conditions following the implementation of the project.
- *Long-term impacts* – impacts extend beyond implementation of the project and would likely have permanent effects on the resource.

For each impact topic analyzed, an assessment of the potential significance of the impacts according to context, intensity and duration is provided in the “conclusion” section that follows the discussion of the impacts under each alternative.

CUMULATIVE IMPACT SCENARIO ANALYSIS METHODOLOGY

CEQ regulations require the assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no action and action alternatives.

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at the park and, if applicable, the surrounding area. The reasonably foreseeable future actions that could affect the various resources within the Casey Addition are described below. The spatial boundary for the cumulative impacts assessment is discussed under the cumulative impact section for each resource. The temporal boundary for the cumulative impacts assessment has been defined as 10 years into the future from implementation of the proposed project.

Past, Present, and Reasonably Foreseeable Actions

NPS has identified several reasonably foreseeable actions that could affect resources within the Casey Addition. These actions may include restoring, preserving or rehabilitating historic structures and landscapes, upgrading the wildlife capture facility, paving area roads and roads within the property, using prescribed burns, converting wells to solar power, and removing the dilapidated buildings in the Casey Pole Barn area.

It is possible that in the future, NPS may preserve, restore, or rehabilitate some or all of the historic ranch buildings. One or more of these buildings could be used as a contact station, caretaker

residence, or for interpretation such as living history programs. It is anticipated that all such preservation-related work would occur inside or just outside of the buildings with existing roads and parking areas being used for construction equipment and staging. It is assumed that only minimal localized ground disturbance would occur as part of work on the buildings. Determination of how the structures would be used would be made at a later date and would depend on the specific preservation treatment described in the Cultural Landscape Report and Historic Structures Report to be completed for the site.

The NPS may upgrade the existing cattle capture facility, located in the Casey Pole Barn area, to be used for capturing bison or elk. Upgrading the facility could include replacing wood corrals with metal corrals, enlarging the corrals slightly, and making the elevated walkways safer by replacing wooden walkways with metal walkways. It is not anticipated that any new roads or road improvements would be needed.

To protect and enhance prairie habitat, in the future, NPS may use prescribed burns to mimic the natural fire regime. The entire Casey Addition could be subject to periodic prescribed burns, which would be planned and executed according to the guidelines in the Wind Cave National Park Fire Management Plan (NPS 2005b).

Depending on the level of visitation the property receives, the NPS may choose in the distant future to pave the road through the Casey Pole Barn area that provides access to the ranch house site from 7-11 Road. It is also possible that in the distant future, Custer County may pave 266th Street and/or upgrade the intersection of County Road 5 and 7-11 Road. At this point, there are no plans to pave any of these roads.

Currently, there are seven wells located throughout the property. These wells were previously used to fill cattle/bison water troughs and were powered by electricity from overhead power lines. With the removal of the electrical lines in 2014, in order to provide wildlife with a water source, a substitute power source would need to be installed for these wells. NPS would likely install a small solar cell structure that would charge a battery that would power the wells. Without power, the three wells have currently been turned off and therefore the wells are not operational at this time.

In the Casey Pole Barn area, located in the southern part of the Casey Addition, there are two old buildings that were used for unknown purposes and have become dilapidated. In the future, NPS may choose to remove these buildings due to their unsafe condition. It is believed that these buildings were moved to their current location and therefore may have lost any historical significance. Any proposed actions regarding these buildings would be done in consultation with the South Dakota SHPO.

VISITOR EXPERIENCE/RECREATION RESOURCES

Methodology and Assumptions

This impact analysis considered current uses within the Casey Addition and the potential effects of constructing a variety of visitor facilities on the visitor experience and recreation opportunities and use at the site, including both current and induced use. The visual character of the Casey Addition experienced by current and future visitors was also considered as a component of the recreation setting. Also considered in the analysis was the estimated number of visitors to the Casey Addition, which was based on existing use by activity within the rest of Wind Cave National Park.

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on visitor use and experience and recreation:

• *Negligible*: Visitors would likely be unaware of any effects associated with implementation of the alternative. There would be no noticeable change in recreation, visitor use and experience, or in any defined indicators of visitor satisfaction or behavior.

• *Minor:* Changes in visitor use and/or experience would be slight and detectable, but would not appreciably limit critical characteristics of the visitor experience. Visitor satisfaction would remain stable.

• *Moderate*: A few critical characteristics of the desired visitor experience would change and/or the number of participants engaging in a specified activity would be altered. Some visitors who desire their continued use and enjoyment of the activity/visitor experience may pursue their choices in other available local or regional areas. Visitor satisfaction would begin to decline.

• *Major*: Multiple critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced or increased. Visitors who desire their continued use and enjoyment of the activity/visitor experience would be required to pursue their choices in other available local or regional areas. Visitor satisfaction would markedly decline.

• *Beneficial*: Characteristics of the desired visitor experience would improve, and/or the number of participants engaging in an activity would increase, and/or recreation opportunities would be greatly increased. Visitor satisfaction would increase.

Alternative A: No Action Alternative

Impacts

Under Alternative A, public recreation use of the Casey Addition would continue to be limited to special and tribal events and NPS-led interpretive tours during the summer, with an estimated 360-1,050 people/year visiting the Casey Addition. There would be no adverse impacts to recreation from this alternative and no beneficial impact to recreation due to the prohibition of general public use at the site.

Cumulative Impacts

Due to the lack of impacts to recreation, there would be no cumulative impacts as a result of Alternative A.

Conclusion

Under Alternative A, general public recreation use of the Casey Addition would continue to be prohibited and recreation use would continue to be limited to special and tribal events and NPS-led tours. Therefore, the ability of the public to realize recreation benefits from NPS acquisition of the property would be very limited.

Elements Common to All Action Alternatives

Impacts

Erecting temporary fences around the historic Sanson ranch barn and outbuildings would be a visual detraction from the setting of the main recreation site under each action alternative and would have a short-term minor adverse effect on the recreation setting by slightly obscuring the view of the historic buildings and introducing a non-historic element to the setting. However, the fences would enhance public safety by preventing entry into potentially unsafe buildings, thereby benefitting recreation.

Administrative vehicle use of existing two-track roads would have short-term negligible adverse impacts to recreation, primarily if the roads were also open to recreation, as some are under Alternatives C and D (as trails). Administrative vehicle use would be minimal and therefore only affect recreation briefly due to noise disturbance, and if used as trails, from recreationists temporarily moving out of the way for administrative vehicles.

Raised, gravel parking areas would serve to minimize ground disturbance, resulting in less disturbance to the recreation setting, thereby benefitting recreation.

Under all three action alternatives, general public recreation use of the Casey Addition would be allowed. Recreation uses that would be allowed within the Casey Addition under all action alternatives include hiking and associated traditional park uses accessed on foot such as photography, wildlife viewing, nature observation, etc.; day use horseback riding; special events; and interpretive tours/programs. Similar to Alternative A and existing conditions, special and tribal events and NPS-led tours of the Casey Addition would continue to be allowed under all three action alternatives.

Allowing general recreation use of the Casey Addition by the public would result in long-term major beneficial impacts to visitor experiences and recreation resources by greatly increasing the land base available for recreation within the park, providing additional recreation opportunities within the park, providing opportunities for education/interpretation on new topics/resources, and increasing the visitor experiences available within the park due to the diversity of recreation settings within the Casey Addition and opportunities for the public to visit and learn about resources not found in the remainder of the park.

Cumulative Impacts

The elements common to all action alternatives would have long-term beneficial impacts to recreation from allowing recreation use at the site; however, temporary fences around historic ranch

barn and outbuildings would have a short-term minor adverse impact to recreation and administrative vehicle use of two-track roads would have short-term negligible adverse impacts. The cumulative project to preserve, restore, or rehabilitate some or all of the historic ranch buildings (based on the Historic Structures and Cultural Landscape Reports) would enhance the recreation setting and provide long-term beneficial impacts to recreation, particularly if the buildings were used for recreation purposes. Though several of the reasonable foreseeable projects may have short-term minor adverse impacts to recreation due to construction noise and visual disturbance and/or temporary road or trail closures, long-term beneficial impacts to recreation would result from enhanced recreation settings, habitat, and infrastructure. When combined with the short-term minor adverse and long-term beneficial impacts to recreation from the cumulative projects, the elements common to all action alternatives would result in long-term beneficial and short-term minor adverse cumulative impacts.

Conclusion

Elements common to all alternatives would generally provide long-term major beneficial impacts to recreation due to the provision of many more recreation opportunities within the park and the ability of the general public to have many new recreation experiences within the Casey Addition and learn about resources not found in the remainder of the park. However, temporary fencing around historic ranch barn and outbuildings would result in short-term minor adverse impacts to recreation and administrative vehicle use of two-track roads would have short-term negligible adverse impacts to recreation.

Alternative B

Impacts

Alternative B includes minimal improvements to facilitate general public recreation use of the Casey Addition, including improving the entrance road and providing parking (including accessible parking), restrooms, and a trail to a viewpoint of the bluffs, prairie, and the buffalo jump site. Total visitation is anticipated to be between 7,170 and 7,860 people per year, a seven fold increase over Alternative A.

The recreation facilities and access provided in Alternative B would allow visitors to experience many of the historic features in the Casey Addition. However, few additional recreation opportunities or new visitor experiences would be provided and would focus primarily on the short trail to the viewpoint site. Visitor experiences and recreation would likely be limited to one small area within the Casey Addition, due to the limited road and trail access provided in this alternative.

Due to the accessible ranch house site parking area being the closer parking area to the main recreation site, there are potential conflicts with people using this parking area at the ranch house site without the appropriate placard. This would result in adverse impacts to visitors that needed accessible parking and would therefore affect their ability to participate in recreation at the site and affect their visitor experience.

The recreation facilities and access proposed in Alternative B may alter the existing recreation setting to a slightly more developed setting in a few places, which would have a long-term negligible impact to visitor experiences as few people currently visit the Casey Addition because it is closed to public use. Development would be concentrated, minimal, facilitate use of the site by the general public, and allow visitors to experience many of the historic features in the Casey Addition.

Therefore, the improvements and facilities included in Alternative B would have long-term beneficial impacts to recreation.

Cumulative Impacts

The reasonably foreseeable cumulative projects would generally benefit recreation by improving visitor facilities, habitat, and safety, though several of the projects may have short-term minor adverse impacts to recreation due to construction noise and visual disturbance and/or temporary road or trail closures. Under Alternative B, visitors would likely primarily use the ranch house area and thus would provide the basis (i.e., presence of recreationists) for any short-term minor adverse impacts to recreation from prescribed burns (near the ranch house area), historic resource preservation, and any future road improvements (none are planned at this time). The cumulative project to preserve, restore, or rehabilitate some or all of the historic ranch buildings (based on the Historic Structures and Cultural Landscape Reports) would enhance the recreation setting and provide long-term beneficial impacts to recreation, particularly if the buildings were used for recreation purposes. However, the accessible parking area at the ranch house site would alter the views to and from the ranch house, and would have a long-term minor adverse impact to the historic setting of the ranch house. When combined with impacts to recreation from the cumulative projects, Alternative B would result in long-term beneficial, as well as short- and long-term minor adverse cumulative impacts.

Conclusion

Alternative B would facilitate visitation of the Casey Addition by the general public and would allow visitors to experience many of the historic features of the Casey Addition. Therefore, Alternative B would result in long-term beneficial impacts to visitor experiences and recreation. Though recreation facility development would slightly increase within the Casey Addition, thus altering the existing recreation setting, Alternative B would have a long-term negligible impact to visitor experiences as few people currently visit the Casey Addition because it is closed to public use. Combined with the cumulative projects, Alternative B would have long-term beneficial and short- and long-term minor adverse impacts to recreation and visitor experiences.

Alternative C

Impacts

Alternative C would provide a higher level of recreation facility development than Alternative B. Similar to Alternative B, access would be provided via 266th Street and facilities would be added at the ranch house site, though parking would be consolidated into one parking area south of the ranch house. In addition, two pull-outs would be provided, along with two turnaround areas and 18 miles of hiking trails, including a 1.4 mile interpretive trail. Visitor vehicle access would also be provided via 7-11 Road. Annual visitation would be higher for Alternative C compared to Alternatives B and A, with an estimated 7,770 to 8,460 people per year visiting the Casey Addition under Alternative C.

The facilities, trails, and access provided under Alternative C would allow visitors to experience a larger portion of the Casey Addition than under Alternative B. The network of trails included in Alternative C would provide a substantial increase in trail-related recreation opportunities compared to Alternative B and relative to miles of existing trail within Wind Cave National Park (over 50% increase in trail miles). The proposed trails under Alternative C would also greatly increase the loop trail opportunities within the park, provide opportunities for longer hikes and hikes within additional

habitats, and provide connections to other trails within the rest of the park. Education and interpretation opportunities would also increase relative to Alternative B with the provision of the interpretive trail and additional access points for educational signage placement.

Road improvements allowing visitors access to the Casey Addition via 7-11 Road would increase scenic driving opportunities and allow visitors that cannot or do not use the hiking trails to see a larger portion of the Casey Addition without the need to create an extensive new road network. The road pull-outs would also facilitate horseback riding and hiking experiences within the Casey Addition and allow visitors to experience the southern portion of the Casey Addition.

Consolidating parking at the ranch house site under Alternative C would facilitate visitor use of the area due to a reduced distance visitors would have to walk to reach the main recreation site and trails leading out of the ranch house site, primarily the interpretive trail and trail to the viewpoint. The parking location in Alternative C would also protect the viewshed of the buffalo jump site as the parking area south of the ranch house would not be visible from the buffalo jump site. In addition, the consolidated parking area at the ranch house site would lead to fewer conflicts with visitors who choose to use the accessible parking area at the ranch house site and do not have an accessible placard for their vehicles.

Creation of new recreation facilities, trails, and access would alter the recreation setting from existing conditions, which would have a long-term minor adverse impact to visitor experiences as few people currently visit the Casey Addition because it is closed to public use. Although there is more recreation development under Alternative C than Alternative B, development would primarily occur in focused locations, several of which are on the property boundary or highway, and disturbance for new trail development would be minimized as trails would be located on existing two-track roads where possible. Development would be more focused in Alternative C compared to Alternative D with consolidation of parking into one area.

Overall, Alternative C would provide increases in trail-related opportunities, as well as interpretation and education opportunities, facilitate visitor experiences throughout a large portion of the Casey Addition, and provide connections to trails within the rest of the park. Therefore, Alternative C would have long-term major beneficial impacts to recreation and visitor experiences.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative C as Alternative B. In addition, under Alternative C visitors would be allowed to drive and hike through the Casey Pole Barn area, which would provide the basis (i.e., presence of recreationists) for any short-term minor adverse impacts to recreation from building removal, upgrade of the capture facility, and any road changes to the access road. When combined with the short-term minor adverse and long-term beneficial impacts to recreation from the cumulative projects, Alternative C would result in long-term beneficial, as well as short- and long-term minor adverse cumulative impacts.

Conclusion

Alternative C would greatly increase recreation opportunities and experiences within Wind Cave National Park, provide connections with the rest of the park, and facilitate visitor use and experience of a large portion of the Casey Addition. Therefore, Alternative C would result in long-term major beneficial impacts to visitor experiences and recreation. Though recreation facility development would increase within the Casey Addition, thus altering the recreation setting from existing

conditions, Alternative C would have a long-term minor adverse impact to visitor experiences as few people currently visit the Casey Addition because it is closed to public use. Combined with the cumulative projects, Alternative C would have long-term beneficial and short- and long-term minor adverse impacts to recreation and visitor experiences.

Alternative D: Preferred Alternative

Impacts

Alternative D would provide a similar level of recreation facility development to Alternative C and would include many of the same elements; however, accessible parking would be provided at the ranch house site and a main parking area would be located southwest of the ranch house site. In addition, a gazebo-like structure would be placed at the viewpoint and backcountry camping would be allowed in most of the Casey Addition and an area within the park north and west of the Casey Addition. Total annual visitation under Alternative D would be similar to Alternative C, though slightly higher due to backcountry camping use allowed under Alternative D. Total estimated annual visitation for Alternative D would range from approximately 7,820 to 8,510 people, the highest of all of the alternatives.

Similar to Alternative C, Alternative D would provide a substantial increase in trail-related opportunities and interpretation and education opportunities; provide connections to trails within the rest of the park; and provide scenic driving opportunities. The gazebo-like structure at the viewpoint would allow for a range of interpretation and education activities to occur, such as multimedia use, due to the cover provided by the structure. Therefore, additional interpretation and education opportunities would be provided under Alternative D compared to the other action alternatives. Alternative D would also allow visitors to experience even more of the Casey Addition than Alternative C (or Alternatives A or B) by allowing backcountry camping throughout most of the Casey Addition. Alternative D would provide a substantial increase in the acreage available for backcountry camping within the park, increasing acreage to 9,580 acres from 6,486 acres currently (48% increase).

Similar to Alternative B, there are potential conflicts with people using the accessible parking area at the ranch house site without the appropriate placard because this is the closer parking area to the main recreation site. This would result in adverse impacts to visitors that needed accessible parking and would therefore affect their ability to participate in recreation at the site and affect their visitor experience. In addition, the accessible parking area at the ranch house site would be visible from the trail near the buffalo jump site, resulting in the permanent placement of a non-historic feature within the viewshed of this important element of the Casey Addition. This would have a long-term minor adverse impact to visitor experiences near this site.

Similar to Alternative C, creation of new facilities, trails, and access would alter the existing recreation setting, which would have a long-term minor adverse impact to recreation as few people currently visit the Casey Addition because it is closed to public use. Though new backcountry camping opportunities would be provided under Alternative D, this could also lead to damage and degradation of the recreation setting in the backcountry if visitors do not follow park regulations and guidelines related to backcountry camping use. However, backcountry camping use is anticipated to be low, thus reducing the risk of recreation setting degradation.

Overall, Alternative D would provide substantial increases in trail-related opportunities, as well as interpretation, education, and backcountry camping opportunities; facilitate visitor experiences throughout the majority of the Casey Addition; and provide connections to trails within the rest of the park. Therefore, Alternative D would have long-term major beneficial impacts to recreation and visitor experiences.

Cumulative Impacts

The cumulative impacts would be the same for Alternative D as Alternative C. When combined with the short-term minor adverse and long-term beneficial impacts to recreation from the cumulative projects, Alternative D would result in long-term beneficial, as well as short- and long-term minor adverse cumulative impacts.

Conclusion

Alternative D would substantially increase recreation opportunities and experiences within Wind Cave National Park, provide connections to the rest of the park, and facilitate visitor use and experience of the majority of the Casey Addition. Therefore, Alternative D would result in long-term major beneficial impacts to visitor experiences and recreation. Though recreation facility development would increase within the Casey Addition, thus altering the existing recreation setting, Alternative D would have a long-term minor adverse impact to visitor experiences as few people currently visit the Casey Addition because it is closed to public use. Combined with the cumulative projects, Alternative D would have long-term beneficial and short- and long-term minor adverse impacts to recreation and visitor experiences.

VEGETATION

Methodology and Assumptions

Available information on the vegetation present within the Casey Addition project area was compiled and impacts on vegetation were determined based on the general characteristics of the site and vicinity and considerations of potential removal or disturbance to vegetation. This impact analysis also considered proposed new land uses and their potential effects on the natural vegetation communities within the project area. The impact analysis focuses only on vegetation and does not include impacts to exotic species, which were considered but dismissed due to lack of impact.

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on vegetation:

• *Negligible*: Vegetation would not be impacted or the impact would be below or at the lower levels of detection.

• *Minor:* Impacts on vegetation would be detectable. Impacts to undisturbed areas would be small. Mitigation would be needed to offset adverse impacts and would be relatively simple to implement and would likely be successful.

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

• *Major*: Impacts on vegetation would be readily apparent and substantially change the character of vegetation over a large area both in and out of the project area. Mitigation measures necessary to offset adverse impacts would be needed and extensive, with no guarantee of success.

• *Beneficial*: Impacts on vegetation would be positive, preserving or enhancing natural vegetation communities and existing vegetation.

Alternative A: No Action Alternative

Impacts

Under Alternative A, the vegetation of the Casey Addition would remain relatively unchanged because no facilities would be developed and the area would remain closed to general public use.

Cumulative Impacts

The cumulative projects would generally result in short-term minor adverse impacts to vegetation from disturbance. Restoration of the historic ranch buildings may require limited ground disturbance, resulting in short-term minor adverse impacts to vegetation.

Road improvements, upgrading the exiting cattle capture facility, installation of solar cells, and removal of old buildings in the Casey Pole Barn area may require limited ground disturbance, resulting in short-term minor adverse impacts to vegetation.

Prescribed burns would be conducted according to the guidelines in the Wind Cave National Park Fire Management Plan (NPS 2005b) and therefore would likely result in short-term minor adverse

impacts to vegetation during the fire (depending on the size of the burn) and long-term beneficial impacts to vegetation due to improved growing conditions.

Conclusion

There would be no visitor facility development or general public use of the Casey Addition under Alternative A and therefore vegetation in the Casey Addition would remain relatively unchanged. Combined with the cumulative projects, Alternative A would have short-term minor adverse and long-term beneficial impacts to vegetation within the Casey Addition.

Elements Common to All Action Alternatives

Impacts

All of the action alternatives include placing temporary seven-foot-high chain-link fences around the historic Sanson ranch barn and outbuildings. Installation of the fencing would have short-term minor adverse impacts to vegetation in the immediate area surrounding the fence location due to disturbance from fencing equipment and installation. Disturbed areas would be seeded with native vegetation.

Under all of the action alternatives, administrative vehicle use would be allowed on existing two-track roads. This use would not affect vegetation as these roads already exist and thus no additional vegetation would be removed or disturbed. Raised, gravel parking areas would serve to minimize ground disturbance, resulting in less disturbance to vegetation. Impacts from parking areas are discussed under each alternative.

Recreational uses, such as hiking, would generally be limited to developed trails. However, some visitors may travel off trails, which would result in disturbance to vegetation, particularly if informal trails or viewpoints become established. Signage and oversight by park staff would be used to inform visitors to remain on established trails and to close off informal trails; however, it may be necessary to periodically reseed these informal disturbed areas. The development of informal trails or viewpoints would have long-term minor adverse impacts to vegetation.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for elements common to all action alternatives as described under Alternative A. When combined with the beneficial and short-term minor adverse impacts to vegetation from the cumulative projects, the elements common to all action alternatives would result in beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation within the Casey Addition.

Conclusion

Elements common to all alternatives would have short-term minor adverse impacts from installation of fencing around the Sanson ranch barn and outbuildings due to construction-related disturbance of vegetation. Allowed recreational uses would generally be limited to developed trails, but development of any informal trails would have long-term minor adverse impacts to vegetation. Any disturbed areas would be stabilized and seeded with native vegetation. Combined with the cumulative projects, the elements common to all action alternatives would have beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation.

Alternative B

Impacts

Alternative B includes minimal improvements to facilitate general public recreation use of the Casey Addition, including widening the entrance road and adding two parking areas, restrooms, fencing and a concrete trail to an overlook of the bluffs, prairie, and the buffalo jump site. The removal of two to three acres of vegetation for road improvements, parking areas, trails, and restroom facilities would have short- and long-term minor adverse impacts to vegetation immediately surrounding these improvements. Areas disturbed during construction would consist of prairie grasslands and would be restored with native grassland species.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative B as described under Alternative A. When combined with the beneficial and short-term minor adverse impacts to vegetation from the cumulative projects, Alternative B would result in beneficial impacts as well as short- and long-term minor adverse impacts to vegetation within the Casey Addition.

Conclusion

Alternative B would result in short- and long-term minor adverse impacts to vegetation due to removal of two to three acres of vegetation for construction of new visitor facilities. Impacts associated with the construction of parking areas, road improvements and fencing would be restricted to the areas immediately surrounding these improvements. Combined with the cumulative projects, Alternative B would result in beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation.

Alternative C

Impacts

Alternative C would provide a higher level of recreation development than Alternative B. Similar to Alternative B, access would be provided via 266th Street and facilities would be added at the ranch house site, though parking would be consolidated into one large parking area at the ranch house under Alternative C. In addition, two pull-outs would be provided, along with two turnaround areas and 18 miles of hiking trails. Access would also be provided from 7-11 Road. The removal of five to six acres of vegetation for road improvements, the parking area, turnarounds, pull-outs, and restroom facilities would result in short- and long-term minor adverse impacts to vegetation immediately surrounding these improvements, which would be a smaller area than Alternative D due to the creation of only one parking area. Areas disturbed during construction would primarily consist of prairie grasslands as well as some shrubland areas. All disturbed areas would be restored with native species.

Twelve miles of the new hiking trails would be established on existing two-track roads or within old trail corridors. Little or no vegetation would be disturbed from trails on the existing two-track roads because little to no alteration or grading of the roads would be needed. Short- and long-term minor adverse impacts would result from the creation of six miles of hiking trails where no existing road or old trail corridor exists due to removal of vegetation for trail creation (estimated at one acre). Areas disturbed during construction would primarily consist of grasslands and shrublands, as well as some

woodland areas west of the ranch house site. All disturbed areas would be restored with native vegetation.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative C as described under Alternative A. When combined with the beneficial and short-term minor adverse impacts to vegetation from the cumulative projects, Alternative C would result in beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation within the Casey Addition.

Conclusion

Alternative C would result in short- and long-term minor adverse impacts to vegetation due to removal of six to seven acres of vegetation for construction of new visitor facilities and creation of six miles of new trails not within existing two-track road or old trail corridors. Impacts associated with the construction of the parking area, road improvements, fencing, and trails would be restricted to the areas immediately surrounding these improvements. Combined with the cumulative projects, Alternative C would result in beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation.

Alternative D: Preferred Alternative

Impacts

Similar to Alternative C, Alternative D includes actions to provide access to the Casey Addition via 266th Street and 7-11 Road, construct two turnarounds, develop approximately 18 miles of hiking trails, two road pull-out sites, and provide parking, a trail, and a viewing area at the ranch house site. Under Alternative D, a second parking area would be constructed on a flat bench south of a knoll located southwest of the ranch house site. Alternative D would also allow backcountry camping in most of the Casey Addition and an area within the park north and west of the Casey Addition with the same camping regulations as found in the rest of the park. A gazebo-like structure would be installed at the viewpoint.

The removal of five to six acres of vegetation for road improvements, parking areas, turnarounds, pull-outs, restroom facilities, and the gazebo structure would result in short- and long-term minor adverse impacts to vegetation immediately surrounding the improvements. Areas disturbed during construction would primarily consist of prairie grasslands as well as some shrubland areas. All disturbed areas would be restored with native species.

Impacts from development of trails would be the same as described under Alternative C.

Allowing backcountry camping within the Casey Addition and within an increased area of the park would increase the opportunity for vegetation disturbance in undisturbed areas. However, backcountry camping use is projected to be very low on an annual basis throughout the entire backcountry area, thus it is unlikely that any large areas of vegetation would be disturbed. Therefore, allowing backcountry camping use would result in short- and long-term negligible adverse impacts to vegetation that would be dispersed throughout the backcountry area.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative D as described under Alternative A. When combined with the beneficial and short-term minor adverse

impacts to vegetation from the cumulative projects, Alternative D would result in beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation within the Casey Addition.

Conclusion

Alternative D would result in short- and long-term minor adverse impacts to vegetation due to removal of six to seven acres of vegetation for construction of new visitor facilities and creation of six miles of new trails not within existing two-track road or old trail corridors. Short- and long-term negligible impacts would result from allowing backcountry camping use within the Casey Addition and an expanded area of the park. Impacts associated with the construction of parking areas, road improvements, fencing, and trails would be restricted to the areas immediately surrounding these improvements whereas impacts to vegetation from backcountry camping use would be dispersed throughout the backcountry area. Combined with the cumulative projects, Alternative D would result in beneficial impacts, as well as short- and long-term minor adverse impacts to vegetation.

ETHNOGRAPHIC RESOURCES

Methodology and Assumptions

This impact analysis considered the ethnographic resources within the Casey Addition and the potential effects of constructing visitor facilities and introducing new uses on the ethnographic resources in the project area. The ethnographic resources of the project area include the overall landscape, as well multiple sacred sites, habitation sites, and subsurface remains of American Indian cultural resources. Ethnographic resources could potentially be affected by any actions that affect springs, caves, stones and stone outcrops, and other natural features; and the ability of these features to convey their sacred properties and support traditional ceremonial or spiritual uses. The actions considered to have impacts to ethnographic resources would also include visible changes to the natural landscape, such as modern intrusions like utility lines, roads, and buildings.

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on ethnographic resources:

• *Negligible*: The effects on ethnographic resources associated with implementation of the alternative would not be noticeable and would not alter the landscape's integrity with regard to its cultural significance and its ability to convey sacred properties and support traditional ceremonial or spiritual uses. Access to/use of traditional ceremonial or spiritual sites by tribal practitioners would be maintained.

• *Minor:* Impacts to ethnographic resources would be slight and detectable, but would not appreciably alter the landscape's integrity with regard to its cultural significance and its ability to convey sacred properties and support traditional ceremonial or spiritual uses. Access to/use of traditional ceremonial or spiritual sites by tribal practitioners would be maintained.

• *Moderate*: A few ethnographic resources could be disturbed by the proposed action, and could slightly alter the landscape's integrity with regard to its cultural significance and its ability to convey sacred properties and support traditional ceremonial or spiritual uses. Access to/use of traditional ceremonial or spiritual sites by tribal practitioners may be impeded.

• *Major*: Multiple ethnographic resources and large areas of the landscape would be disturbed by the proposed action, which would significantly alter the landscape's integrity with regard to its cultural significance and its ability to convey sacred properties and support traditional ceremonial or spiritual uses. Access to/use of traditional ceremonial or spiritual sites by tribal practitioners would be closed.

• *Beneficial:* The effects on ethnographic resources associated with implementation of the alternative would be positive, with greater protection of sacred sites and enhanced ability of the landscape to convey sacred properties and support traditional ceremonial or spiritual uses. Access to/use of traditional ceremonial or spiritual sites by tribal practitioners would be maintained and access by non-practitioners would be limited.

Alternative A: No Action Alternative

Impacts

Under Alternative A, special event use would occur occasionally at the Casey Addition, but the property would be gated and would not be open to the general public. The limitation of access to the landscape would result in beneficial impacts to ethnographic resources because tribal groups would be able to access sacred sites for traditional activities; however, public access would not be allowed, resulting in greater protection and preservation of sacred sites than under the action alternatives. Due to the very limited use of the property, few park staff would be expected to be present at any time to ensure unauthorized access did not occur. As a result, there is a small risk of illegal disturbance to ethnographic resources and sacred sites under this alternative. This would be anticipated to result in localized short- and long-term negligible adverse impacts to ethnographic resources.

No visitor facilities would be constructed under Alternative A, and no modern additions to the landscape would occur, resulting in limited public access, unaltered views, and generally less disturbance to views within areas of ethnographic resources. Thus, there would be no adverse impact from facility development resulting in long-term beneficial impacts to ethnographic resources within the Casey Addition.

Cumulative Impacts

Generally, negligible to minor adverse impacts to ethnographic resources would result from cumulative projects due to minimal changes to the visual setting of some ethnographic resources.

A preservation treatment and possible reuse of historic ranch buildings would not have an impact on ethnographic resources because these buildings are not related to sacred sites or traditional uses.

Upgrading the existing cattle capture facility would not impact ethnographic resources because the facility is not associated with any ethnographic resource.

Prescribed burns within the Casey Addition could have short- and long-term minor to moderate adverse impacts to ethnographic resources, as sacred sites or landscape features could potentially be damaged by fires, or burn schedules could potentially conflict with participation by tribal groups in ceremonial or traditional events or uses at ethnographic sites. These impacts would be reduced to negligible by following the guidelines for ethnographic resource protection in the Wind Cave National Park Fire Management Plan (NPS 2005b) and consulting with American Indian tribes in advance about burn areas and schedules.

Possible road projects in the distant future, including paving 266th Street and the road through the Casey Pole Barn area, and upgrading the intersection of County Road 5 and 7-11 Road, could make these roads more visually intrusive through paving and widening. This would result in long-term minor adverse impacts to ethnographic resources due to the more visually prominent modern appearance of the improved roads. The improved roads would also enhance public access to the area, resulting in long-term minor adverse impacts to ethnographic resources due to increased accessibility to the area's sacred sites by the general public, resulting in a slightly increased risk of disturbance. At this time, there are no plans to pave any of these roads or upgrade the intersection.

The installation of small solar cells to power wells would have long-term negligible adverse impacts to ethnographic resources as these are very small features that are not visually prominent.

Conclusion

The No Action Alternative (Alternative A) would result in short- and long-term negligible adverse impacts to ethnographic resources due to possible risk of illegal disturbance from the lack of staff/visitor presence and beneficial impacts due to limited public access. Combined with the cumulative projects, Alternative A would have beneficial, short-term negligible and long-term minor adverse impacts to ethnographic resources.

Elements Common to All Action Alternatives

Impacts

Under all of the action alternatives, the action to allow limited special/tribal events and interpretive tours within the Casey Addition is also included within the No Action Alternative (Alternative A). The impacts of this action on ethnographic resources within all of the action alternatives would be the same as discussed under Alternative A.

Under all of the action alternatives, temporary seven-foot high chain-link fences would be placed around the historic Sanson ranch barn and outbuildings. These fences would not impact ethnographic resources because it would surround an area that is not associated with sacred or traditional sites.

Under all of the alternatives, administrative vehicle use would be allowed on existing two-track roads. There would be no impact on ethnographic resources because no physical or use change would occur within this circulation network.

Raised, gravel parking areas would serve to minimize ground disturbance and would be less modern in appearance than paved parking areas. Impacts from parking areas are discussed under each alternative.

Recreation uses allowed under all of the action alternatives, such as hiking, horseback riding, and photography, are generally low impact activities and visitation is projected to be relatively low under all of the action alternatives. However, recreation use would increase compared to existing conditions and result in long-term negligible adverse impacts to ethnographic resources due to greater public access to areas where there may be sacred sites.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for elements common to all action alternatives as described under Alternative A. Therefore, the elements common to all action alternatives would result in cumulative short-term negligible and long-term minor adverse impacts to ethnographic resources.

Conclusion

The elements common to all action alternatives would result in long-term negligible adverse impacts from recreation uses allowed at the site due to greater public access to areas where there may be sacred sites. Combined with the cumulative projects, the elements common to all action alternatives would have short-term negligible and long-term minor adverse impacts to ethnographic resources.

Alternative B

Impacts

Alternative B includes road improvements to 266th Street, a new parking area west of the park entrance, and an accessible parking area near the Sanson ranch buildings. The actions involved with providing parking and road improvements, such as road widening, installing a cattle guard and a gate, adding fencing, and construction of parking areas and associated restroom facilities (vault toilets), would have the potential for short-term minor adverse impacts due to construction activity disturbance near ethnographic resources, such as noise, dust, emissions, and visual appearance of construction areas. Long-term negligible adverse impacts on ethnographic resources would also occur due to minimal modifications to the natural landscape resulting in slight changes to the views from nearby ethnographic resources. The addition of small modern features would change the landscape slightly, but these changes have been sited to avoid directly affecting known sacred sites and other ethnographic resources. Notably, topography would completely block view of the Alternative B main parking area from the buffalo jump site.

The construction of a trail to a viewpoint overlooking the bluffs, prairie, and the buffalo jump site would result in short- and long-term minor adverse impacts to ethnographic resources, specifically the buffalo jump site and associated nearby sacred sites, due to the addition of modern features in the landscape and increased public access resulting in a slightly increased risk of disturbance.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative B as described under Alternative A. When combined with the short-term negligible and long-term minor adverse impacts to ethnographic resources from the cumulative projects, Alternative B would result in short- and long-term minor adverse impacts to ethnographic resources.

Conclusion

Alternative B would result in short-term minor and long-term negligible adverse impacts to ethnographic resources from ground disturbance and visual setting changes related to development of visitor facilities and road improvements. Alternative B would also result in short- and long-term minor adverse impacts from development of the viewpoint trail. Combined with the cumulative projects, Alternative B would result in short- and long-term minor adverse impacts to ethnographic resources.

Alternative C

Impacts

Like Alternative B, Alternative C includes road improvements to 266th Street and a parking area near the Sanson ranch buildings, though parking would be consolidated into one large parking area at the ranch house site under Alternative C. Alternative C also includes a turnaround near the park entrance and at 7-11 Road, two pull-outs along Highway 385 and 7-11 Road, and road access from 7-11 Road through the Casey Pole Barn area. The actions involved with providing road improvements would be similar to Alternative B and would result in the potential for short- and long-term negligible to minor adverse impacts to ethnographic resources due to the introduction of new modern features into the landscape, potentially within view of sacred sites and ethnographic resources. The addition of small modern features would change the landscape slightly, but these

changes have been sited to avoid directly affecting known sacred sites and other ethnographic resources.

Under Alternative C, a single parking area would be located just south of the Sanson ranch building cluster, which would consolidate parking into only one area, rather than two areas as proposed in Alternatives B and D. In addition, parking under Alternative C would be located within a developed area that includes relatively modern constructed features, limiting the visual change to the landscape from any nearby sacred or traditional sites. Development of the parking area in Alternative C would have short- and long-term negligible adverse impacts on ethnographic resources. Short-term negligible adverse impacts would result from construction-period activities such as air emissions, noise, visual changes, etc. that could be perceived from sacred sites in the vicinity. Long-term negligible adverse impacts would result from the addition of the new parking area and associated modern features, as well as increased visitor activity, within the view of ethnographic resources. As shown in Figure 4-1, the Alternative C parking area is minimally visible from the buffalo jump site.

Figure 4-1: View of Alternative C parking area from the buffalo jump site

The impacts of the trail to the viewpoint near the buffalo jump site would be the same as described in Alternative B.

Under Alternative C, most of the two-track roads would become hiking trails. In addition, some new trail segments would be created through areas with no existing roads, including near the buffalo jump site. The development of hiking trails throughout the Casey Addition would result in short- and long-term minor adverse impacts on ethnographic resources because the public would have slightly

greater access to areas where there may be sacred sites, resulting in increased potential for disturbance of these sites.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative C as described under Alternative A. When combined with the short-term negligible and long-term minor adverse impacts to ethnographic resources from the cumulative projects, Alternative C would result in short- and long-term minor adverse impacts to ethnographic resources.

Conclusion

Alternative C would result in short- and long-term negligible and minor adverse impacts to ethnographic resources from ground disturbance and visual setting changes related to development of visitor facilities, trails, and road improvements, as well as an increased risk of site disturbance due to greater public access to areas with sacred sites. Combined with the cumulative projects, Alternative C would result short- and long-term minor adverse impacts to ethnographic resources.

Alternative D: Preferred Alternative

Impacts

Similar to Alternative C, Alternative D includes road improvements to 266th Street, a turnaround near the park entrance and at 7-11 Road, two pull-outs along Highway 385 and 7-11 Road, road access from 7-11 Road through the Casey Pole Barn area, and creation of 18 miles of trail throughout the Casey Addition. Impacts from these actions would be the same as described under Alternative C.

The actions involved with providing road and parking improvements would be similar to Alternative B and would result in the potential for short- and long-term negligible to minor adverse impacts to ethnographic resources due to the introduction of new modern features into the landscape, potentially within view of sacred sites and ethnographic resources. The addition of small modern features would change the landscape slightly, but these changes have been sited to avoid directly affecting known sacred sites and other ethnographic resources. As shown in Figure 4-2 below, the main parking area would generally not be visible from the buffalo jump site.

Under Alternative D, a gazebo-like structure would be placed at the viewpoint location, which would result in short- and long-term adverse impacts to ethnographic resources due to its potential for views to, and visibility from, sacred and traditional sites in the vicinity. Impacts to ethnographic resources would be minor because the structure would be designed to blend with the historic visual character of the landscape. The gazebo-like structure would be a small feature within the large panoramic landscape view from the buffalo jump site as shown in Figure 4-2.

Figure 4-2: View of the Alternative D main parking area and gazebo-like structure locations from the buffalo jump site

In addition to the recreation uses allowed under all of the action alternatives, backcountry camping would be allowed in most of the Casey Addition and within an expanded area of the park under Alternative D. Backcountry camping use is projected to be very low (an increase of potentially 50 people per year), thus, few visitors would likely camp in backcountry areas that may be in proximity to sacred and traditional sites. Therefore, allowing backcountry camping, in addition to the other recreation uses, would result in short- and long-term negligible to minor adverse impacts to ethnographic resources from disturbance by visitors.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative D as described under Alternative A. When combined with the short-term negligible and long-term minor adverse impacts to ethnographic resources from the cumulative projects, Alternative D would result in short- and long-term minor adverse impacts to ethnographic resources.

Conclusion

Alternative D would result in short- and long-term negligible to minor adverse impacts to ethnographic resources from ground disturbance and visual setting changes related to development of visitor facilities, trails, and road improvements. Designed to blend with the landscape, the gazebo-like structure at the viewpoint location would result in short- and long-term minor impacts to ethnographic resources. Recreation uses allowed within the Casey Addition under Alternative D, including allowing backcountry camping, would result in short- and long-term negligible to minor adverse impacts to ethnographic resources due to greater public access to areas with sacred sites. Combined with the cumulative projects, Alternative D would result in short- and long-term minor adverse impacts to ethnographic resources.

ARCHEOLOGICAL RESOURCES

Methodology and Assumptions

This impact analysis considered current uses within the Casey Addition and the potential effects of constructing a variety of visitor facilities on the archeological resources in the project area. Because archeological resources typically lie below the ground surface and would be affected by actions that disturb the ground, considerations of the likely extent of ground disturbance for identified actions was evaluated for each alternative.

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on archeological resources:

• *Negligible*: The impacts on archeological resources associated with implementation of the alternative would be barely measurable, with no perceptible adverse or beneficial consequences.

• *Minor:* A minor adverse impact affects archeological sites with the potential to yield important information in prehistory or history. Impacts are detectable and measurable, but do not diminish the overall integrity of the resource. The impact does not result in changes to defining features or aspects of integrity that contribute to eligibility to the National Register of Historic Places. For purposes of NHPA Section 106 compliance, the determination of effect is no adverse effect. It is expected that mitigation activities including a phased approach to design and construction beginning with survey, then moving as necessary to testing and data recovery and construction period monitoring could offset adverse impacts.

• *Moderate*: A moderate adverse impact is sufficient to cause a noticeable change, substantially affecting archeological sites with the potential to yield information, even if most of the resource can be avoided, and resulting in loss of overall integrity that consequently jeopardizes a site's National Register eligibility. Impacts include measurable change to character defining elements. For purposes of NHPA Section 106 compliance, determination of effect is adverse effect. It is expected that mitigation activities including a phased approach to design and construction beginning with survey, then moving as necessary to testing and data recovery and construction period monitoring could offset adverse impacts.

• *Major*: A major adverse impact consists of highly noticeable disturbance, degradation, or destruction of an archeological resource, and results in the loss of most or all of the site and its potential to yield important information. These impacts result in the loss of overall integrity and substantial changes to character-defining elements to the extent that the resource is no longer eligible for National Register listing. For the purposes of NHPA Section 106 compliance, the determination of effect is adverse effect.

• *Beneficial*: The effects on archeological resources associated with implementation of the alternative would be positive, with greater preservation and protection of known or potential subsurface resources.

Alternative A: No Action Alternative

Impacts

Under Alternative A, special/tribal event use would occur occasionally at the Casey Addition, but the property would be gated and would not be open to the general public. While few people would access areas of sensitive archeological resources, few staff members would be expected to be present on the property at any time to ensure unauthorized access did not occur. As a result, there is a small risk of illegal disturbance to archeological sites under this alternative. This could result in localized short- and long-term negligible adverse impacts to known eligible archeological resources.

No new facilities would be constructed under Alternative A; thus there would be no new construction-related ground disturbance on the property. Lack of development within the Casey Addition, however, could also lead to a lack of studies to identify archeological sites within the property, resulting in less documentation and collected knowledge about the sites, making them harder to manage and protect from naturally occurring damage (wildfires, erosion, etc.). This would result in long-term negligible to minor adverse impacts to known eligible archeological resources within the Casey Addition.

Cumulative Impacts

Generally, short-term negligible adverse impacts to archeological resources would result from the cumulative projects because most of the cumulative projects do not require large areas of new ground disturbance.

A preservation treatment and possible reuse of historic ranch buildings may require limited ground disturbance, and thus would have short-term minor adverse impacts to archeological resources. Impacts would be expected to be mitigated through pre-construction archeological investigations and monitoring.

Upgrading the existing cattle capture facility could include excavation of very small areas (fencepost holes), which would have no adverse impact on known eligible archeological resources. Though there is the potential for unknown resources below ground in this area, impacts would be expected to be mitigated through pre-construction archeological investigations and monitoring.

In the Casey Pole Barn area, the removal of two dilapidated buildings would have short-term negligible adverse impacts on archeological resources as the area was previously disturbed when the buildings were relocated to the current site.

Prescribed burns within the Casey Addition could have adverse impacts on archeological resources, but it is assumed that any impacts would be mitigated by following the guidelines for cultural resource protection in the Wind Cave National Park Fire Management Plan (NPS 2005b).

The potential for road projects in the distant future, including paving 266th Street and the road through the Casey Pole Barn area, and upgrading the intersection of County Road 5 and 7-11 Road, are not anticipated to affect known eligible archeological resources within the project area. Though there is the potential for unknown resources below ground in these areas, impacts would be expected to be mitigated through pre-construction archeological investigations and monitoring.

The installation of small solar cells to power wells would not impact known eligible archeological resources.

Conclusion

The No Action Alternative (Alternative A) would result in short- and long-term negligible adverse impacts to archeological resources due to the possible risk of illegal disturbance to resources due to the lack of staff/visitor presence. Alternative A would also result in long-term negligible to minor adverse impacts from the lack of study of archeological resources due to the lack of development at the site. Combined with the cumulative projects, Alternative A would have short-term minor and long-term negligible to minor adverse impacts to archeological resources.

Elements Common to All Action Alternatives

Impacts

Under all of the action alternatives, the action to allow limited special/tribal events and interpretive tours within the Casey Addition is also included within the No Action Alternative (Alternative A). The impacts of this action on archeological resources within all of the action alternatives would be the same as discussed under Alternative A.

Under all of the action alternatives, seven-foot high chain-link temporary fences would be placed around the historic Sanson ranch barn and outbuildings. This action would result in short-term minor adverse impacts to archeological resources due to the localized areas of excavation required to install fence posts.

Under all of the alternatives, administrative vehicle use would be allowed on existing two-track roads. Because these roads already exist, there would be minimal new ground disturbance and long-term negligible to minor adverse impact on archeological resources.

Raised, gravel parking areas would serve to minimize ground disturbance and thus would reduce potential impacts to archeological resources. Impacts from parking areas are discussed under each alternative.

Recreation uses under all of the action alternatives would include day use horseback riding, as well as hiking and related pedestrian activities such as photography and bird watching. Because these are generally low impact activities and visitation is projected to be relatively low, recreation use would result in short- and long-term negligible to minor adverse impacts to archeological resources due to increased accessibility to the larger landscape, thus slightly increasing the potential for visitors to access and disturb sensitive archeological sites.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for elements common to all action alternatives as described under Alternative A. When combined with the short-term minor adverse impacts to archeological resources from the cumulative projects, the elements common to all action alternatives would result in short-term minor and long-term negligible to minor adverse impacts to archeological resources.

Conclusion

The elements common to all action alternatives would result in short-term minor adverse impacts from fencing the Sanson ranch barn and outbuildings, long-term negligible to minor adverse impacts from administrative vehicle use, as well as short- and long-term negligible to minor adverse impacts due to recreation uses allowed at the site. Combined with the cumulative projects, the elements

common to all action alternatives would have short-term minor and long-term negligible to minor adverse impacts to archeological resources.

Alternative B

Impacts

Alternative B includes road improvements to 266th Street, a new parking area west of the park entrance, and an accessible parking area near the Sanson ranch buildings. The actions involved with providing parking and road improvements, such as road widening, installing a cattle guard and a gate, adding fencing, and construction of the two parking areas and associated restroom facilities, would not affect known eligible archeological sites. However, such actions would have the potential to disturb as-yet unidentified subsurface archeological resources of unknown significance. This would result in short- and long-term negligible to minor adverse impacts to unknown, potentially eligible archeological resources due to localized ground disturbance.

The construction of a concrete accessible trail to a viewpoint overlooking the bluffs, prairie, and the buffalo jump site could require shallow, localized ground disturbance for the accessible trail and installation of base material to support the concrete trail surface and safety barrier. This trail would result in short- and long-term minor to moderate adverse impacts to eligible archeological resources, specifically the Sanson Site.

Mitigation measures, including additional archeological survey and testing prior to finalizing the parking area and restroom siting and design, as well as archeological monitoring during construction, would reduce adverse impacts of this alternative on unknown, potentially eligible archeological resources to minor by identifying resources to be protected prior to construction and identifying any resources discovered during construction. If an unknown archeological resource was discovered during ground disturbance, all construction activities in the vicinity of the find would stop immediately. An archeologist would examine the find and determine its significance in coordination with NPS, SHPO, and affiliated tribes.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative B as described under Alternative A. When combined with the short-term minor adverse impacts to archeological resources from the cumulative projects, Alternative B would result in short- and long-term minor adverse impacts to archeological resources.

Conclusion

Alternative B would result in short- and long-term negligible to minor adverse impacts to archeological resources from ground disturbance related to construction of visitor facilities and road improvements. With mitigation, Alternative B would also result in short- and long-term minor adverse impacts from development of the viewpoint trail. Mitigation for these impacts would include surveying and testing prior to final facility siting and design, as well as construction monitoring, which would identify archeological resources within potential construction locations and identify any resources discovered during construction. Combined with the cumulative projects, Alternative B would result in short- and long-term minor adverse impacts to archeological resources.

Alternative C

Impacts

Like Alternative B, Alternative C includes road improvements to 266th Street and a parking area near the Sanson ranch buildings, though parking would be consolidated into one large parking area at the ranch house site under Alternative C. Alternative C also includes a turnaround near the park entrance and at 7-11 Road, two pull-outs along Highway 385 and 7-11 Road, and road access from 7-11 Road through the Casey Pole Barn area. The actions involved with providing road improvements would be similar to Alternative B, although with a slightly larger amount of potential ground disturbance due to the longer segments of road improvements proposed in this alternative, as well as the two turnarounds and two road pull-out sites. Therefore, these visitor facilities and road improvements would result in short- and long-term negligible adverse impacts to known eligible archeological resources due to increased potential for site disturbance related to increased public access within areas containing known eligible archeological resources.

Under Alternative C, a single parking area would be located just southwest of the Sanson ranch building cluster, which would consolidate parking into only one area, rather than two areas as proposed in Alternatives B and D. However, the parking area location in Alternative C, a plowed field, has been identified as a relatively less-disturbed area with possible archeological sensitivity (NPS 2013). As a result, the construction of the parking area has the potential for localized short- and long-term minor to moderate adverse impacts on potentially eligible archeological resources.

Similar to Alternative B, Alternative C includes the construction of a concrete accessible trail to a viewpoint overlooking the bluffs, prairie, and the buffalo jump site. Impacts from this trail on archeological resources would be the same as described under Alternative B.

Under Alternative C, most of the two-track roads would become hiking trails. In addition, some new trail segments would be created through areas with no existing roads, including near the buffalo jump site. The development of hiking trails throughout the Casey Addition would result in short- and long-term negligible to minor adverse impacts to known eligible archeological resources due to the slightly increased potential for disturbance to sites related to increased visitor access within the vicinity of known eligible archeological resources.

Mitigation measures described in Alternative B would also apply to Alternative C and would reduce adverse impacts of Alternative C on unknown, potentially eligible archeological resources to minor by identifying resources to be protected prior to construction and identifying any resources discovered during construction.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative C as described under Alternative A. When combined with the short-term minor adverse impacts to archeological resources from the cumulative projects, Alternative C would result in short- and long-term minor adverse impacts to archeological resources.

Conclusion

Alternative C would result in short- and long-term negligible to minor adverse impacts to archeological resources from ground disturbance related to construction of visitor facilities, trails and road improvements. Alternative C would also result in short- and long-term minor to moderate

adverse impacts from development of the parking area south of the ranch buildings. With mitigation, Alternative C would also result in short- and long-term minor adverse impacts from development of the viewpoint trail. Mitigation for impacts from facility and trail development and road improvements would include surveying and testing prior to final facility siting and design, as well as construction monitoring, which would identify archeological resources within potential construction locations, as well as identify any resources discovered during construction. Combined with the cumulative projects, Alternative C would result in short- and long-term minor adverse impacts to archeological resources.

Alternative D: Preferred Alternative

Impacts

Similar to Alternative C, Alternative D includes road improvements to 266th Street, a turnaround near the park entrance and at 7-11 Road, two pull-outs along Highway 385 and 7-11 Road, road access from 7-11 Road through the Casey Pole Barn area, and creation of 18 miles of trail throughout the Casey Addition. Impacts from these actions would be the same as described under Alternative C. Impacts from developing the parking areas would be similar to Alternative B and would result in short- and long-term negligible adverse impacts to known eligible archeological resources due to increased potential for site disturbance related to increased public access within areas containing known eligible archeological resources

Under Alternative D, a gazebo-like structure would be placed at the viewpoint location, which would result in short-term minor adverse impacts to known eligible archeological resources due to minimal, localized ground disturbance during construction.

In addition to the recreation uses allowed under all of the action alternatives, backcountry camping would be allowed in most of the Casey Addition and within an expanded area of the park under Alternative D. Backcountry camping use is projected to be very low, thus few visitors would camp within areas of undisturbed archeological resources. Therefore, allowing backcountry camping, in addition to the other recreation uses, would result in short- and long-term negligible to minor adverse impacts to archeological resources due to increased potential for disturbance by visitors. Mitigation activities, such as archeological probability analysis and survey of backcountry areas to identify and protect archeological sites from disturbance, would lessen the potential for adverse impacts.

Mitigation measures described in Alternative B would also apply to Alternative D and would reduce adverse impacts of Alternative D on unknown, potentially eligible archeological resources to minor by identifying resources to be protected prior to construction and identifying any resources discovered during construction.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative D as described under Alternative A. When combined with the short-term minor adverse impacts to archeological resources from the cumulative projects, Alternative D would result in short- and long-term minor adverse impacts to archeological resources.

Conclusion

Alternative D would result in short- and long-term negligible to minor adverse impacts to archeological resources from ground disturbance related to construction of visitor facilities, trails,

road improvements, and the gazebo-like structure. Mitigation for these impacts would include surveying and testing prior to final facility siting and design, as well as construction monitoring, which would identify archeological resources within potential construction locations, as well as identify any resources discovered during construction. Alternative D would also result in long-term negligible to minor adverse impacts from backcountry camping use. Mitigation for these impacts would include archeological probability analysis and survey of backcountry areas. Combined with the cumulative projects, Alternative D would result in short- and long-term minor adverse impacts to archeological resources.

CULTURAL LANDSCAPES

Methodology and Assumptions

This impact analysis considered current uses within the Casey Addition and the potential effects of constructing a variety of visitor facilities on the historically significant cultural landscape of the Sanson Ranch, including contributing features such as the ranch headquarters buildings, the open ranching landscape of grasslands, the cultivated vegetation around the cluster of headquarters buildings, pasture fencing, surviving small-scale agricultural features such as old farm equipment and wells, and unpaved two-track roads radiating from the ranch headquarters out into the former pastureland. The impact analysis considered factors that would affect the integrity of the cultural landscape and its contributing features, such as the addition of new non-historic features; removal or modification of historic features; and alteration of the views across the historic landscape (particularly in the vicinity of the ranch headquarters building cluster).

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on the cultural landscape:

• *Negligible*: The effects on the historical integrity of the cultural landscape associated with implementation of the alternative would not be noticeable; a few minor changes may occur to the landscape's contributing features, but these would not alter the character of the cultural landscape as a whole.

• *Minor:* Impacts to the cultural landscape would be slight and detectable, but would not appreciably alter the historical integrity of the cultural landscape. A few changes may occur to the landscape's contributing features, but these would only slightly diminish its integrity as a whole.

• *Moderate*: Some detectable impacts would occur to the cultural landscape and its contributing features, and the integrity of the cultural landscape would be diminished as a whole.

• *Major*: Impacts to the cultural landscape would be noticeable, with changes to or loss of multiple contributing features. These changes would result in the cultural landscape's historic integrity being substantially diminished or lost.

• *Beneficial:* The effects on cultural landscapes associated with implementation of the alternative would be positive, with greater preservation of cultural landscape features and enhancement of the historic character of the landscape.

Alternative A: No Action Alternative

Impacts

Under Alternative A, while special/tribal event use would occur at the Casey Addition, the property would be gated and would not be open to the general public. As a result, few people would access the cultural landscape associated with the historic Sanson Ranch. This lack of use would support the preservation of cultural landscape resources in their current state, resulting in beneficial impacts to cultural landscape resources. However, the lack of regular access and use could also result in long-term minor adverse impacts to some cultural landscape resources, particularly the ranch headquarters, due to incremental loss of material integrity over time as the resources remain in a

disused state (with no preservation treatment prescribed due to the lack of a Historic Structures Report or Cultural Landscape Report).

No new facilities would be constructed under Alternative A, thus, there would be no construction-related ground disturbance on the property, resulting in no impacts to cultural landscapes.

Cumulative Impacts

Generally, long-term negligible to minor adverse impacts on cultural landscape resources would result from the cumulative projects.

A preservation treatment and possible reuse of historic ranch buildings would have beneficial impacts on cultural landscape resources as these buildings are key components of the Sanson Ranch cultural landscape.

Upgrading the existing non-historic cattle capture facility would not impact the cultural landscape because it is within an area of numerous non-historic and non-contributing features.

In the Casey Pole Barn area, the potential removal of two dilapidated buildings would have a long-term negligible adverse impact on the cultural landscape as these buildings are believed to be non-contributing to the cultural landscape.

Prescribed burns within the Casey Addition could have short- and long-term minor to moderate adverse impacts on the cultural landscape, as the visual qualities of the landscape would differ depending on the phasing of burning; vegetated areas would have a different character over time due to different burn schedules and areas. If the firebreaks or boundaries between these areas do not follow historic landscape boundary features such as streams, pasture fence lines, or roads, in the long-term, prescribed burns could result in alterations to the visual character of the cultural landscape. These impacts would be reduced to negligible by following the guidelines for cultural resource protection in the Wind Cave National Park Fire Management Plan (NPS 2005b) and guidance in the Wind Cave Cultural Landscape Report (2005a).

Possible future road projects, including paving 266th Street and the road through the Casey Pole Barn area, and upgrading the intersection of County Road 5 and 7-11 Road, could result in changes to the visual character of the roads, which are largely unpaved two-track ranch roads. The upgrading of these roads through paving and widening would result in long-term minor adverse impacts to the cultural landscape because the character of contributing ranch roads could be changed, although there are currently no plans to implement any of these upgrades.

The installation of small solar cells to power wells would have long-term negligible adverse impacts to the cultural landscape, as these are very small features and are not identified as contributing to the historic character of the cultural landscape.

Conclusion

The No Action Alternative (Alternative A) would result in long-term minor adverse impacts to cultural landscape resources from material integrity loss over time from disuse. Combined with the cumulative projects, Alternative A would have beneficial impacts, as well as short-term negligible and long-term minor adverse impacts to cultural landscape resources.

Elements Common to All Action Alternatives

Impacts

Under all of the action alternatives, the action to allow limited special/tribal events and interpretive tours within the Casey Addition is also included within the No Action Alternative (Alternative A). The impacts of this action on cultural landscape resources within all of the action alternatives would be the same as discussed under Alternative A.

Under all of the action alternatives, temporary seven-foot high chain-link fences would be placed around the historic Sanson ranch barn and outbuildings. This would have short-term minor adverse impacts to the Sanson Ranch cultural landscape due to construction disturbance to the landscape viewshed and temporary alteration of the visual and spatial relationship between the headquarters buildings and the surrounding ranch landscape. The addition of a fence that was not present historically would add a physical element separating the buildings from their context in a manner that is not consistent with their historic character. The impact could be lessened if the fence was designed to be visually unobtrusive. In the future, the Cultural Landscape and Historic Structures Reports will direct the treatment and use of the historic cultural landscape and the historic structures.

Under all of the alternatives, administrative vehicle use would be allowed on existing two-track roads. Because these roads already exist, there would be no impact on the cultural landscape.

Raised, gravel parking areas would serve to minimize ground disturbance and would be less modern in appearance than paved parking areas. Impacts from parking areas are discussed under each alternative.

Recreation uses allowed under all of the action alternatives, such as hiking, photography, and day use horseback riding, are generally low impact activities and visitation is projected to be low. Thus, recreation use would result in no adverse impacts to cultural landscapes in both the short- and long-term.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for elements common to all action alternatives as described under Alternative A. When combined with the beneficial, short-term negligible and long-term minor adverse impacts to cultural landscape resources from the cumulative projects, the elements common to all action alternatives would result in beneficial impacts, as well as short- and long-term minor adverse impacts to cultural landscape resources.

Conclusion

The elements common to all action alternatives would result in short-term minor adverse impacts from fencing the Sanson ranch barn and outbuildings. Combined with the cumulative projects, the elements common to all action alternatives would have beneficial impacts, as well as short- and long-term minor adverse impacts to cultural landscape resources.

Alternative B

Impacts

Alternative B includes road improvements to 266th Street, a new parking area west of the park entrance, and an accessible parking area near the Sanson ranch buildings. The actions involved

with providing the parking and road improvements, such as road widening and installing cattle guards and a gate, would result in small but visible changes to the character of one two-track road associated with the ranch, although the road would still remain along the existing alignment. The most noticeable changes would be the addition of a small accessible parking area and restroom facility (vault toilet) near the Sanson ranch buildings, which are the primary contributing building cluster elements in the cultural landscape. However, while the changes would be noticeable within the ranch headquarters area, the location of these facilities at an existing building cluster would minimize the changes to the historically open character of the larger ranch landscape. Near the park entrance, the addition of a parking area, small restroom facility, and non-historic fencing would be visible. The construction of all of these new visitor facilities would result in short- and long-term minor adverse impacts to the cultural landscape, particularly in the Sanson Ranch headquarters area as the parking area would be visible from the headquarters area as shown in Figure 4-3.

Figure 4-3: View of the Sanson Ranch headquarters area from the Alternative B main parking area near the park entrance

The construction of a concrete trail to a viewpoint overlooking the bluffs, prairie, and the buffalo jump site would be a visible alteration within the historic landscape. This trail would represent a noticeable change to the circulation of the Sanson Ranch vicinity, and thus would result in short- and long-term minor to moderate adverse impacts to the cultural landscape.

Impacts to the visual setting of the cultural landscape from new visitor facilities could be reduced to short- and long-term negligible to minor adverse impacts through siting and designing of the parking areas, trails, fencing, and restrooms to be visually unobtrusive.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative B as described under Alternative A. When combined with beneficial and short-term negligible and long-term minor adverse impacts to cultural landscape resources from the cumulative projects, Alternative B would result in beneficial impacts, as well as short- and long-term minor adverse impacts to cultural landscape resources.

Conclusion

Alternative B would result in short- and long-term minor adverse impacts to the cultural landscape from development of the new parking and restrooms facilities and road improvements. Alternative B would also result in short- and long-term minor to moderate adverse impacts from development of the viewpoint trail. These impacts could be reduced to negligible to minor adverse impacts through siting and designing of the parking areas, trails, fencing, and restrooms to be visually unobtrusive. Combined with the cumulative projects, Alternative B would have beneficial impacts, as well as short- and long-term minor adverse impacts to cultural landscape resources.

Alternative C

Impacts

Like Alternative B, Alternative C includes road improvements to 266th Street and a parking area near the Sanson ranch buildings, though parking would be consolidated into one large parking area at the ranch house site under Alternative C. Alternative C also includes a turnaround near the park entrance and at 7-11 Road, two pull-outs along Highway 385 and 7-11 Road, and road access from 7-11 Road through the Casey Pole Barn area. Providing turnarounds, pull-out sites, and road improvements under Alternative C would introduce some new modern features into the landscape, potentially within views that contribute to the cultural landscape integrity of the former ranch. Road improvements and alterations to the circulation features elsewhere in the larger landscape (i.e., turnarounds and pull-outs) would result in short- and long-term negligible impacts to the cultural landscape as they are not visible from the concentration of contributing cultural landscape features at the ranch headquarters area.

Under Alternative C, a single parking area would be located just south of the Sanson ranch building cluster, which would consolidate parking into only one area, rather than two areas as proposed in Alternatives B and D. However, the parking area location in Alternative C is adjacent to the majority of identified contributing historic resources associated with the Sanson Ranch cultural landscape. As a result, the construction of the parking area would have short-term moderate adverse impacts during construction due to disturbance, and long-term moderate adverse impacts on the cultural landscape once construction has ended due to the altered circulation and addition of new visible modern features within the Sanson Ranch cultural landscape. Figure 4-4 below shows the parking area location relative to the ranch house.

Figure 4-4: View of the Sanson ranch house from the Alternative C parking area

Similar to Alternative B, Alternative C includes the construction of a concrete accessible trail to a viewpoint overlooking the bluffs, prairie, and the buffalo jump site. Impacts from this trail on cultural landscape resources would be the same as described under Alternative B.

Impacts to the visual setting of the cultural landscape from some of the new visitor facilities could be reduced to short- and long-term negligible to minor adverse impacts through siting and designing of the trails and fencing to be visually unobtrusive.

Under Alternative C, most of the two-track roads would become hiking trails. In addition, some new hiking trail segments would be created through areas with no existing roads. Creation of 18 miles of hiking trails within the Casey Addition would result in indirect short- and long-term negligible adverse impacts on the cultural landscape because trails on existing roads would not change cultural landscape features and the new trail segments would generally not be visible from the majority of the identified features of the cultural landscape associated with the Sanson Ranch and historic contributing circulation features would not be physically altered.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative C as described under Alternative A. When combined with beneficial and short-term negligible and long-

term minor adverse impacts to cultural landscape resources from the cumulative projects, Alternative C would result in beneficial impacts, as well as short- and long-term moderate adverse impacts to cultural landscape resources.

Conclusion

Alternative C would result in short- and long-term negligible adverse impacts from development of turnarounds, pull-out sites, and road improvements. Alternative C would also result in short- and long-term minor to moderate adverse impacts from development of the viewpoint trail. These impacts could be reduced to negligible to minor adverse impacts through siting and designing of the, trails and fencing to be visually unobtrusive. Alternative C would also result in short- and long-term negligible adverse impacts to cultural landscape resources from development of hiking trails throughout the Casey Addition. Impacts to cultural landscapes from development of the new parking area would be greater than Alternatives B and D, with short- and long-term moderate adverse impacts to cultural landscapes due to location for the parking adjacent to the majority of identified contributing historic resources associated with the Sanson Ranch cultural landscape. Combined with the cumulative projects, Alternative C would have beneficial impacts, as well as short- and long-term moderate adverse impacts to cultural landscape resources.

Alternative D: Preferred Alternative

Impacts

Similar to Alternative C, Alternative D includes road improvements to 266th Street, a turnaround near the park entrance and at 7-11 Road, two pull-outs along Highway 385 and 7-11 Road, road access from 7-11 Road through the Casey Pole Barn area, and creation of 18 miles of trail throughout the Casey Addition. Impacts from these actions would be the same as described under Alternative C.

The addition of parking areas and restrooms at the ranch house site would result in short- and long-term minor adverse impacts as described in Alternative B. Development of the main parking area south of a knoll southwest of the ranch house site would also result in short- and long-term minor adverse impacts to cultural landscape resources as the topography of the knoll would mostly hide this parking area from viewsheds of the Sanson ranch buildings. As shown in Figure 4-5 below, only the roof of the ranch house would be visible from the parking area.

Figure 4-5: View of the Sanson ranch house from the Alternative D main parking area behind the knoll

Under Alternative D, a gazebo-like structure would be placed at the viewpoint location, which would result in short-term (during construction) and long-term adverse impacts to the cultural landscape due to its potential for visibility from contributing features of the cultural landscape in the vicinity of the ranch headquarters building cluster. The visual intrusion from the gazebo-like structure would be minor because the structure would be designed to blend with the historic visual character of the landscape and the structure itself would not be a dominant element of the viewshed from the ranch buildings. A view of the location for the gazebo-like structure is shown in Figure 4-6 (note the powerline pole has been removed and the gazebo-like structure would be located where the powerline pole was located).

Figure 4-6: View of the gazebo-like structure location from the ranch house

In addition to the recreation uses allowed under all of the action alternatives, backcountry camping would be allowed in most of the Casey Addition and within an expanded area of the park under Alternative D. The areas where backcountry camping would be allowed are generally not visible from the contributing cultural landscape resources and thus would result in a long-term negligible adverse impact to the cultural landscape.

Cumulative Impacts

The cumulative projects and their associated impacts would be the same for Alternative D as described under Alternative A. When combined with beneficial and short-term negligible and long-term minor adverse impacts to cultural landscape resources from the cumulative projects, Alternative D would result in beneficial impacts, as well as short- and long-term minor adverse impacts to cultural landscape resources.

Conclusion

Alternative D would result in short- and long-term minor adverse impacts to the cultural landscape from development of the turnarounds, pull-out sites, road improvements, new parking areas and restroom facilities. Alternative D would also result in short- and long-term minor to moderate adverse impacts from development of the viewpoint trail, which could be reduced to negligible to minor adverse impacts through siting and designing of the trail to be visually unobtrusive. Short- and long-term minor adverse impacts would result from placement of the gazebo-like structure at the viewpoint. Alternative D would also result in short- and long-term negligible adverse impacts to cultural landscape resources from development of hiking trails throughout the Casey Addition and

long-term negligible adverse impacts from backcountry camping use. Combined with the cumulative projects, Alternative D would have beneficial impacts as well as short- and long-term minor adverse impacts to cultural landscape resources.

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CHAPTER 5: CONSULTATION AND COORDINATION

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THE SCOPING PROCESS

Internal Scoping

Internal scoping was conducted by an interdisciplinary planning team. Members of the project planning team, additional park staff, resource specialists, and NPS Midwest Regional Office staff met on February 24, 2012, to discuss preliminary alternatives, potential environmental impacts, cumulative impact projects, and Section 7 and Section 106 consultation. The team also identified existing data sources and defined data needs. During the scoping period, members of the interdisciplinary planning team conducted several site visits.

External Scoping

The goal of scoping is to obtain input about the proposed project from the public and interested federal, state, and local agencies, and any affected American Indian tribes. Public scoping ensures that people have an early opportunity to comment and to contribute early in the decision-making process. Information gathered during the scoping process helps to identify potential environmental issues and refine alternatives.

The public scoping period for the Visitor Use Plan and EA commenced on February 21, 2012, and ended March 30, 2012. A public notice for scoping was published in the local newspaper of record (The Hot Springs Star) on February 21, 2012, posted on the National Park Service Planning, Environment and Public Comment (PEPC) project website, and direct mailed to the project mailing list. The park issued a press release on February 21, 2012, announcing the initial public scoping period and planned scoping meetings. A second press release regarding the public scoping meetings was issued on March 7, 2012. The public was able to submit comments during scoping electronically through PEPC, by mail, or on comment cards distributed at public meetings.

Three open house public meetings were held during the scoping period on March 13th, 14th and 15th in Custer, Hot Springs, and Rapid City, South Dakota, respectively. All three meetings were held from 4 p.m. to 7 p.m. At all three meetings, the public was presented with the project description and background, purpose of and need for action, preliminary alternatives being considered, and a timeline for the EA process.

During the scoping period, the public was invited to submit comments related to the scope of the planning process, how visitors might access the property, what types of visitor or interpretive opportunities should be available, the scope of the environmental issues, and alternatives to be addressed in the plan. Twenty-eight correspondences were received during the scoping period via email, comment cards from public meetings, on a PEPC form, or by letter. All comments were read, analyzed, and considered during the development of the plan and EA.

Documents related to the Visitor Use Plan and EA are available on the PEPC website at: http://parkplanning.nps.gov by following the links for Wind Cave National Park. These documents include press releases, project updates, a map of the Casey Addition, and this EA.

CONSULTATION

The NPS has coordinated and consulted with state and federal agencies and tribal governments during the NEPA process to identify issues and/or concerns related to the plan and EA. During scoping, these entities received a scoping notice via direct mail, as described in the External Scoping section above. In addition, certain agencies with specific consultation requirements and tribal consultation are described in more detail below. Consultation is ongoing throughout the NEPA process and in some cases will continue after its conclusion.

Scoping letters were sent to the following tribes and tribal contacts regarding the project in February 2012 to initiate formal Government-to-Government consultation: Cheyenne River Sioux Tribe, Cheyenne-Arapaho Tribes, Crow Creek Sioux Tribe, Flandreau Santee Sioux Tribe, Fort Belknap Indian Community, Fort Peck Assiniboine and Sioux, Kiowa Tribe of Oklahoma, Lower Brule Sioux Tribe, Lower Sioux Indian Community, Northern Arapaho Tribe, Northern Cheyenne Tribe, Oglala Sioux Tribe, Ponca Tribe of Nebraska, Ponca Tribe of Oklahoma, Rosebud Sioux Tribe, Santee Sioux Nation, Sisseton-Wahpeton Oyate, Standing Rock Sioux Tribe, Three Affiliated Tribes, and Yankton Sioux Tribe. Two consultation meetings with tribal representatives were held in March 2012 and November 2012 to discuss cultural and ethnographic resources and the proposed project. As a result of the scoping letters and meetings, a Traditional Cultural Property (TCP) study and an archeological study were conducted in the area around the buffalo jump. Due to interest in the site, tribes were also offered an opportunity to comment on preliminary draft alternatives in April 2014. Tribal consultation is ongoing throughout the planning process.

The park sent a letter to the South Dakota State Historic Preservation Officer (SHPO) to initiate consultation in accordance with Section 106 of the National Historic Preservation Act (NHPA) in April 2012. A copy of the letter can be found in Appendix D. SHPO representatives visited the site in September 2012 and June 2014. Coordination with the SHPO and consulting parties is ongoing. Section 106 consultation will continue throughout the design and planning process.

The U.S. Fish and Wildlife Service (USFWS) was contacted by letter in September 2013 regarding consultation on this project. The USFWS provided a list of federally listed and proposed species that may occur in the project area on November 20, 2013. NPS provided a response letter indicating a finding of no effect for whooping crane (*Grus americana*), Rufa red knot (*Calidris canutus rufa*), Sprague's pipit (*Anthus Spragueii*), and black-footed ferret (*Mustela nigripes*), as well as a finding of not likely to adversely affect the northern long-eared bat (*Myotis septentrionalis*). The USFWS submitted a letter on May 19, 2014, concurring with the NPS conclusion that the project will not adversely affect listed species. A copy of this correspondence is included in Appendix D.

LIST OF RECIPIENTS OF THE ENVIRONMENTAL ASSESSMENT

Notification of the availability of this EA will be sent to the following agencies, tribes, and organizations, as well as other entities and individuals who requested a copy, are on the park's mailing list, or participated during the public scoping process.

Federal Departments and Agencies

Dept. of Agriculture
- U.S. Forest Service

Dept. of the Interior
- Bureau of Land Management
- National Park Service
  - Midwest Regional Office
  - Midwest Archeological Center
  - Badlands National Park
  - Jewel Cave National Monument
  - Mt. Rushmore National Memorial
  - Minuteman Missile National Historic Site

U.S. Fish and Wildlife Service
U.S. Congressional Representatives from South Dakota

State Agencies

South Dakota State Historic Preservation Officer
South Dakota Game, Fish and Parks
Custer State Park

County and Local Governments

Custer County Commissioners
City of Hot Springs
City of Custer

American Indian Tribes

Cheyenne River Sioux Tribe
Cheyenne-Arapaho Tribes
Crow Creek Sioux Tribe
Flandreau Santee Sioux Tribe
Fort Belknap Indian Community
Fort Peck Assiniboine and Sioux
Kiowa Tribe of Oklahoma
Lower Brule Sioux Tribe
Lower Sioux Indian Community
Northern Arapaho Tribe

Northern Cheyenne Tribe
Oglala Sioux Tribe
Ponca Tribe of Nebraska
Ponca Tribe of Oklahoma
Rosebud Sioux Tribe
Santee Sioux Nation
Sisseton-Wahpeton Oyate
Standing Rock Sioux Tribe
Three Affiliated Tribes
Yankton Sioux Tribe

Other Organizations

Hot Springs Chamber of Commerce
Custer Area Chamber of Commerce

LIST OF PREPARERS AND CONSULTANTS

National Park Service Wind Cave National Park

Eric Allen, Fire Management Officer
Beth Burkhart, Botanist
Vidal Dávila, Superintendent
Tom Farrell, Chief of Interpretation
Karri Fisher, Administrative Officer
Mark Greene, Acting Facility Manager
Rod Horrocks, Physical Science Technician
Greg Kouns, Chief Ranger
Kevin Kovacs, Bio Science Technician
Dan Roddy, Biologist
Greg Schroeder, Chief of Resource Management

National Park Service Midwest Archeological Center

Anne Vawser, Archeological Information Management Team Leader

AECOM

Anne Ferguson, Recreation Planner
Adriane Truluck, Cultural Resource Specialist
Christy Dolan, Senior Archeologist
Stev Weidlich, Ethnographic Specialist
Steve Ensley, GIS Specialist
Susan Bemis, Planner
Gary Maynard, Senior Planner
Jason Hughey, Ecologist

APPENDICES

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APPENDIX A: REFERENCES

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APPENDIX B: GLOSSARY

Affected Environment: The existing environmental conditions affected by a proposed action and alternatives at the time the project is implemented.

Archaeological Resources: These are any material remains of human life or activities which are at least 100 years of age and which are of archaeological interest.

Backcountry: As used by the NPS, this term refers to "primitive, undeveloped portions of parks" (Management Policies 8.2.2.4). Development within backcountry areas is generally limited to trails, unpaved roads, and administrative facilities associated with dispersed recreational use.

Boxwork: An uncommon type of mineral structure formed by erosion and found in caves. Boxwork is commonly composed of thin blades of the mineral calcite that project from cave walls or ceilings and intersect one another at various angles, forming a box-like or honeycomb pattern.

Buffalo jump: A cliff formation that American Indians historically used in order to hunt and kill plains bison in mass quantities.

Consultation: The process of identifying and consulting with affected agencies, organizations and persons regarding the potential impacts of an undertaking.

Contributing Resource: A building, site, structure, or object that adds to the historic significance of a property or district.

Cultural landscape: A cultural landscape is a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with an historic event, activity, or person, or exhibiting other cultural or aesthetic values.

Cultural Landscape Inventory: A NPS documentation report that inventories and evaluates the contributing features of a cultural landscape in a format that is then placed into a system-wide database.

Cultural Resources: Archeological or historic resources including prehistoric and historic districts, sites, buildings, objects, cultural landscapes, ethnographic resources, sacred sites, traditional cultural properties, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Cumulative Impacts: Under NEPA regulations, the incremental environmental impact or effect of an action together with the effects of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

Ecosystem: A system formed by the interaction of a community of organisms with their environment.

Ethnographic: Pertaining to the systematic study of peoples and cultures. An ethnographic study is designed to explore cultural phenomena where the researcher observes society from the point of view of the subject of the study.

Ethnohistory: The study of cultures and indigenous custom by examining historical records. It is also the study of the history of ethnic groups that may no longer exist today.

Exotic species: Also known as introduced species, these plants or animals have been introduced into habitats where they are not native.

***In situ*:** A Latin phrase that translates literally to “on site” or “in position.”

Interpretation: The act of explaining the meaning of something. NPS uses the term to refer to facilities, materials or activities that assist the visitor in learning about a park and its resources and history.

Multi-component: Archeological term for having multiple layers of history and historic uses represented within the same site.

National Historic Preservation Act: The Act that established a program for the preservation of historic properties throughout the nation, and for other purposes, passed in 1966.

National Register of Historic Places (National Register): The official list of U.S. historic places considered worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Register is part of a national program managed by the NPS to coordinate and support public and private efforts to identify, evaluate, and protect America’s historic and archeological resources.

Noxious weed: A plant that has been designated by country, state, or national agricultural authority as one that is injurious to agricultural and/or horticultural crops, natural habitats and/or ecosystems, and/or humans or livestock.

Prescribed burn: Also known as hazard reduction or controlled burn, this is a technique used in natural vegetation management to reduce fuel buildup and decrease the likelihood of serious hotter wildfires; it is also used to stimulate germination of some desirable native trees and prairie plants.

Projectile: An archeological term for a point, typically made of stone (lithic) that would have been used as part of a historic or prehistoric weapon. Projectiles are often used to identify and date archeological sites.

Radiocarbon: Radiocarbon or carbon dating is a radiometric dating technique used by archeologists to identify the general date range for a site. It uses the decay of carbon-14 to estimate the age of organic materials, such as wood, up to about 60,000 years before present.

Scoping: Required by NEPA, scoping is a process with a series of activities that include solicitation of public and agency comments on the proposed action and its possible effects; establishing the depth of environmental analysis needed; and determining analysis procedures, data needs, and task assignments.

Section 106: A section of the National Historic Preservation Act of 1966 that requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 mandates the historic preservation review process.

Traditional Cultural Property: A significant property associated with cultural practices or beliefs of a living community that are rooted in that community or cultural groups’ history and are important to maintaining the continuing cultural identity of the community.

APPENDIX C: ACRONYMS

BMP: Best Management Practice

CEQ: Council on Environmental Quality

CFR: Code of Federal Regulations

EA: Environmental Assessment

FONSI: Finding of No Significant Impact

MWAC: NPS Midwest Archeological Center

NEPA: National Environmental Policy Act

NHPA: National Historic Preservation Act

NLEB: northern long-eared bat

NPS: National Park Service

PEPC: Planning, Environment and Public Comment

SHPO: State Historic Preservation Officer

TCP: Traditional Cultural Property

USC: United States Code

USFWS: United States Fish and Wildlife Service

APPENDIX D: AGENCY AND TRIBAL CORRESPONDENCE

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:
H4217 (WICA)

February 28, 2012

Mr. Dana Dupris
Cultural Preservation Specialist
Cheyenne River Sioux Tribe
P. O. Box 590
Eagle Butte, SD 57625

Subject: Casey Addition Visitor Use Plan and Environmental Assessment

Dear Mr. Dupris:

The purpose of this letter is to provide you advance notice that the National Park Service is commencing the planning process for the Casey Addition Visitor Use Plan and Environmental Assessment. The 5,556-acre property known as the Casey Addition was acquired by the park in September 2011 and is currently closed to the public. The National Park Service is working to open this new addition to the public so that visitors can visit the land which includes a prehistoric buffalo jump and a 1918 homestead. This will be an interim plan to allow the land to be open to the public and provide a minimum level of services.

The park is aware that the buffalo jump is an important ethnographic resource, and we want to ensure that the project will not affect it or other ethnographic resources valued by your tribe. Therefore, this letter is to formally initiate Government-to-Government consultation in accordance with legislation, Executive Orders, regulations, and policy, including sections 101 and 106 of the National Historic Preservation Act of 1966 as amended, 36 CFR 800, National Park Service *Management Policies* and Director's Order 28, *Cultural Resources Management* (especially Chapter 10, Ethnographic Resources).

We have initiated planning required by Section 106 of the National Historic Preservation Act, and also as required by the NEPA regulations. Work on an environmental assessment has started that will study and assess the impacts of this plan on existing cultural and natural resource and determine any required mitigation. We believe that your participation will result in better planning for cultural resources management, and will help ensure that cultural resources valued by your tribe are adequately considered during the planning and design process and in preparation of the accompanying environmental assessment.

As part of this planning process, the park will hold a series of three public scoping meetings. The first meeting will be in Custer on Tuesday, March 13, at the Pine Room in the Custer County Courthouse Annex Building at 447 Crook Street. On Wednesday, March 14, a meeting will be held at The Mueller

Center in Hot Springs at 801 S. 6th Street. The last meeting will be in Rapid City on Thursday, March 15, at the Ramkota Hotel and Best Western at 2111 N. Lacrosse Street. All three meetings will run from 4 p.m. to 7 p.m.

While you are invited to attend any of the three public meetings being held as part of this initial planning process, we will be hosting a special meeting for members of our affiliated tribes on Wednesday, March 14th, at the Wind Cave National Park Visitor Center Auditorium.

We will begin at 8:30 a.m. As part of the discussion, we will be visiting the newly acquired property to familiarize participants with its resources. The park will pay the hotel costs for March 13th along with a $100 honorarium for one member from your tribe to attend this meeting. Additional members can attend but will have to pay their own way. Breakfasts will be provided by the hotel, and the park will provide lunch.

If you will be able to attend the workshop, please call me at 605-745-4600 or via e-mail at vidal_davila@nps.gov by Friday, March 8th, so we can make the necessary arrangements.

We look forward to your participation in this planning process.

Sincerely,

Vidal Davila

Vidal Davila
Superintendent

cc: Mr. Steve Adams, Associate Regional Director, Cultural Resources
Dr. Michael J. Evans, Program Chief, Ethnography and Senior Cultural Anthropologist

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:
WICA (H4217)

July 26, 2012

Mr. Gabe Prescott, President
Lower Sioux Indian Community
P. O. Box 308, Res. Hwy 1
Morton, MN 56270

Dear Mr. Prescott:

The purpose of this letter is to provide an update on the planning process the National Park Service started last February for the Casey Addition (Sanson Ranch) Visitor Use Plan and Environmental Assessment (EA). The 5,556-acre property known as the Casey Addition was acquired by the park in September 2011 and is currently closed to the public. The National Park Service is working to open this new addition to the public so visitors can visit the land which includes a prehistoric buffalo jump and a 1918 homestead.

We initiated planning required by Section 106 of the National Historic Preservation Act, and also as required by the NEPA regulations, with a letter to your office dated February 28, 2012. Work on the environmental assessment started with a public scoping period from February 21 to March 30. During this period, the park hosted two meetings for tribal representatives to show them the property and to gather information for the planning process.

As a result of these letters and meetings, the park received only one written comment from a tribal representative. Mr. Curley Youpee from the Fort Peck Tribal Executive Board recommended a Traditional Culture Property (TCP) study be conducted in the area around the buffalo jump.

Consequently, a TCP documentation project will be conducted by Mr. Youpee and his THPO office staff with technical assistance from Dr. Maria Nieves Zedeno at the Bureau of Applied Anthropology, University of Arizona, in Tucson. (See Appendix A for excerpts of the Scope of Work for the project.)

The tribal representatives who visited the park last March during the scoping period questioned if the buffalo jump was ever used for that purpose. Before the Wind Cave

National Park finishes the planning process, it is critical to determine the status of the buffalo jump. Consequently, the National Park Service, through its Midwest Archeological Center (MWAC), will conduct an archeology investigation in and around the buffalo jump from August 21 to September 6, 2012, if funding can be secured. (See Appendix B for team members and Appendix C for the project's Research Plan.) We hope to learn soon if there funding to cover this investigation.

We want to involve tribal members in this investigation. Wind Cave National Park will pay for two tribal members to attend the archeological investigation of the buffalo jump and surrounding area. The park will contract with two tribes for upwards of $2,500 dollars for three weeks of participation. Participants should be able to commit for a minimum of two weeks of work, and preference will be given to those who can stay for the entire three weeks. Participants will be responsible for their own lodging and food. If more than two tribes volunteer to participate, it will be up to them to choose which tribe will participate. Every tribe can send one representative to observe, but they will not be paid for their participation.

To participate in this research project, please contact the park's Chief of Interpretation, Tom Farrell, at 605-745-1130 or via e-mail at: tom_farrell@nps.gov by Tuesday, August 14rd. The project is located in a closed area, and the park will need to know who is coming in advance.

Two additional studies being completed this summer are:

- An inventory of the vegetation found around the historic Sanson Ranch buildings and nearby buffalo jump. This will insure nothing in the plan affects any rare native plants or sensitive native plant communities.
- A National Historic Preservation Act Section 110 evaluation of the Sanson property to determine if it meets the criteria for eligibility as a rural historic landscape as per the National Register of Historic Places. The ranch buildings were determined eligible for the National Register by the state on March 11, 2010.

The park is sponsoring these studies because as a result of the public scoping conducted last spring for the Visitor Use Plan/ EA, we realized we did not have enough information to proceed. Thus, we have put a hold on the plan until December to allow time for us to learn more about this new area.

The National Park Service has also started a Zone Management Plan for the park. This plan will look at the park lands and resources holistically and develop broad alternatives for use and management. With many plans and studies underway concurrently, the timeline and focus of the Visitor Use Plan has shifted to take full advantage of the new information that will be generated and to avoid redundancy. We expect to resume work on the Visitor Use Plan this winter and expect to have draft alternatives of the EA available for public review next spring. The focus of the plan has changed from an interim plan to an implementation plan giving us clear direction to move forward rather than in intermediate steps.

I thank you for your interest in Wind Cave National Park. We look forward to your involvement in the planning process once it picks up again next winter/ spring.

Sincerely,

Vidal Davila
Superintendent

cc: Mr. Steve Adams, Associate Regional Director, Cultural Resources
Dr. Michael J. Evans, Program Chief, Ethnography and Senior Cultural Anthropologist

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:
H4217 (WICA)

October 15, 2012

Mr. Tracy King, President
Fort Belknap Community Council
656 Agency Main St.
Harlem, MT 59526-9455

Subject: Meeting to Discuss Recent Cultural Inventory of Sanson Ranch at Wind Cave National Park

Dear Mr. King:

The purpose of this letter is to invite you to a meeting at Wind Cave National Park on Thursday, November 29, 2012, to discuss the three-week long cultural inventory held last August on the park's new land, the former Sanson Ranch. This meeting is a follow-up to the meeting held at the park last March 14th. At that time, the park was beginning the planning process for a Visitor Use Plan and Environmental Assessment for the 5,556-acre property known as the Casey Addition (Sanson Ranch) that was acquired by the park in September 2011.

We put the Visitor Use Plan on hold last summer when we realized we needed additional information about the new land before moving forward with the planning process. Before the park resumes developing alternatives for the Visitor Use Plan this winter, we would like to meet with you to discuss findings from this summer's cultural survey and to think about ways of interpreting the area.

This letter is a continuation of the formal Government-to-Government consultation in accordance with legislation, Executive Orders, regulations, and policy, including sections 101 and 106 of the National Historic Preservation Act of 1966 as amended, 36 CFR 800, National Park Service *Management Policies* and Director's Order 28, *Cultural Resources Management* (especially Chapter 10, Ethnographic Resources) begun with a letter to the tribes dated February 28, 2012.

We believe that your participation will result in better planning for cultural resources management, and will help ensure that cultural resources valued by your tribe are adequately considered during the planning and design process and in preparation of the accompanying environmental assessment.

The meeting will be held at the Wind Cave National Park Visitor Center Auditorium beginning at 8:30 a.m. The park will pay the hotel costs for Wednesday, November 28, along with a $100 honorarium for one member from your tribe to attend this meeting. Additional members can attend but will have to pay their own way. Breakfasts will be provided by the hotel, and the park will provide lunch.

Due to a new monetary policy of the Department of the Interior, we can no longer write government funded checks. We realize this is more complicated, but we will need the Data Universal Number System (DUNS Number) from your tribe, and your tribe will need to be registered in the System for Award Management (www.sam.gov). Funds for Consultation Services will then be deposited with your tribe following the meeting. (If anything changes with these requirements, we should know by the time you notify us you are coming.)

If you will be able to attend the meeting, please notify me at 605-745-4600 or via e-mail at vidal_davila@nps.gov by Monday, November 26, so we can make the necessary arrangements.

We look forward to your participation in this planning process.

Sincerely,

Vidal Davila
Superintendent

cc: Mr. Steve Adams, Associate Regional Director, Cultural Resources
Dr. Michael J. Evans, Program Chief, Ethnography and Senior Cultural Anthropologist

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:
H4217 (WICA)

December 20, 2012

Mr. Tracy King, President
Fort Belknap Community Council
656 Agency Main St.
Harlem, MT 59526-9455

Subject: Report on Meeting held at Wind Cave National Park to Discuss Recent Cultural Inventory of Sanson Ranch

Dear Mr. King:

The purpose of this letter is to report on the meeting held at Wind Cave National Park on Thursday, November 29, 2012, to discuss the three-week long cultural inventory held last August on the park's new land, the former Sanson Ranch. This meeting was a follow-up to the meeting held at the park last March 14th. At that time, the park was beginning the planning process for a Visitor Use Plan and Environmental Assessment (EA) for the 5,556-acre property known as the Casey Addition (Sanson Ranch) that was acquired by the park in September 2011.

The meeting began at 9 a.m. with a blessing from the Oglala Lakota representative, Mr. Fred Mousseaux. After a welcome from park superintendent Vidal Davila and introductions of attendees (see attached list), Anne Vawser from the Midwest Archeological Center (MWAC) in Lincoln, Nebraska, presented an overview of the team's findings during a PowerPoint presentation. (This PowerPoint presentation is on the CD included with this letter, as is an electronic copy of the draft report.) Albert M. LeBeau III, National Park Service archeologist with MWAC, was available via video conference and discussed his findings as part of the presentation.

After their presentations and a brief break, a trip to the site was conducted. The group viewed the area and discussed potential interpretive and educational opportunities at the site.

Afterwards, the group returned to the visitor center for lunch. Items discussed following lunch included:

- The need to review meeting purpose with a timeline of actions. The park acquired this land on September 22, 2011. Before any visitor facilities (such as hiking or interpretive trails, a parking lot, etc.) can be made, a Visitor Use Plan/ EA needs to be completed, along with what the National Park Service calls a Zone Management Plan/ EA. The Visitor Use Plan will look at

how people will access and use the new land, while the Zone Management Plan will look at how to incorporate the additional 5,556 acres into the rest of the park. Both plan's draft alternatives will go out to the public for review sometime in late spring or early summer. At that time, the park will host a consultation meeting to discuss the draft alternatives for both plans. Following the draft alternatives meetings, the final plans will be developed. We hope the planning process for both plans will be completed by the end of 2013 or early in 2014. After that point, if the plans call for any facility upgrades, we'll need to seek funding.

The meeting, and this follow-up letter, was to consult with the park's affiliated tribes on what was found during the cultural survey, seek any additional information about the site the tribes are willing to share, and discuss potential interpretive messages and facilities.

The interpretive message could revolve around the results of the study showing this to be a multi-component site where a variety of activities (including communal hunting, lithic procurement and tool manufacture, and a variety of activities such as habitation, food processing, and ceremonial activities) occurred. They found evidence that this is an extensive site and potentially dates back perhaps as far as 4,000 years.

While draft alternatives for the visitor use plan have not been developed, they could include a self-guiding trail around the historic Sanson Ranch buildings, habitation site, and possible buffalo jump. This trail would contain wayside exhibits developed in conjunction with the park's affiliated tribes. Other visitor facilities could include a parking area, vault toilet, and an observation area with interpretive panels for people with mobility issues who could not walk the self-guiding trail. If you have ideas for the use of this land, please let us know.

- <u>The on-going Traditional Cultural Property (TCP) inventory of the site being conducted by Mr. Curley Youpee, Cultural Resource Department Director, Fort Peck Tribal Executive Board.</u> Following the consultation meeting held last March 14th at the park concerning the Visitor Use Plan for the newly acquired land, the park received only one written comment from a tribe. Mr. Curly Youpee recommended a TCP inventory be conducted for the area around the archeology site. Funding was available, so he is currently working with Dr. Maria Nieves Zedeno from the University of Arizona to complete the inventory.

  We believe it is important to learn what other tribes think of this site today, what we need to protect or interpret, and how the park should manage it in the future. Mike Evans, Cultural Anthropologist for the National Park Service, invited tribes interested in participating in a TCP study of this site to contact him at michael_evans@nps.gov. Mike believes there might be funding in Fiscal Year 2013 to conduct some of these studies. We believe it is important to get more tribal involvement in these types of studies, and we encourage you to contact Mike.

- <u>Coordinating the dates of future meetings with Ms. Dianne Desrosiers, Historic Preservation Officer with the Sisseton-Wahpeton Sioux Tribal Council.</u> The park never knows what other meetings tribal officials might already be committed to when we are selecting a date for a

meeting at the park. It was suggested asking Ms. Desrosiers if a potential date the park is looking at to host a meeting is clear on tribal calendars to avoid scheduling conflicts.

- Send a review copy of the draft archeology report to the tribes for their review and comment. Attached, both in hardcopy and digitally on the CD, you will find copies of the draft report. Analysis of the data is still on-going and comments received from the tribes will be incorporated into the final report. If you have additional information about this site that you would like to share, or would like to comment on the draft, please send your comments to me by January 25.

We look forward to your participation in this planning process for Wind Cave National Park. If you have any questions, please contact me or Tom Farrell, our Chief of Interpretation. We can both be reached at (605) 745-4600 or at vidal_davila@nps.gov or tom_farrell@nps.gov.

Sincerely,

Vidal Davila
Superintendent

Attachments

cc: Mr. Steve Adams, Associate Regional Director, Cultural Resources
Dr. Michael J. Evans, Program Chief, Ethnography and Senior Cultural Anthropologist
Mr. Jay D. Vogt, South Dakota State Historic Preservation Officer

Meeting Attendees & Observers
Wind Cave National Park
November 29, 2012

Attendees

1. Dana Dupris, Cheyenne River Sioux Tribe
2. Fred Mousseaux, Oglala Lakota
3. Tom Farrell, Wind Cave National Park
4. Vidal Davila, Wind Cave National Park
5. Anne Vawser, Midwest Archeological Center
6. Albert M. LeBeau III, Midwest Archeological Center (via video conference)
7. Mike Evans, Midwest Regional Office

Observers

8. Rod Horrocks, Wind Cave National Park
9. Greg Schroeder, Wind Cave National Park
10. Steve Schrempp, Wind Cave National Park
11. Greg Kouns, Wind Cave National Park
12. Chris Holbeck, Midwest Regional Office
13. Amy Bracewell, Mount Rushmore National Memorial
14. Cheryl A. Schreier, Mount Rushmore National Memorial
15. Dan Roddy, Wind Cave National Park
16. Beth Burkhart, Wind Cave National Park
17. Barbara Muenchau, Wind Cave National Park
18. Ted Firkins, Wind Cave National Park

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:
1.A.2 (WICA)

April 2, 2014

Mr. Kevin Keckler, Chairman
Cheyenne River Sioux Tribe
P.O. Box 590
Eagle Butte, SD 57625

Subject: Review of Preliminary Draft Alternatives for Visitor Use Plan/ Environmental Assessment, Wind Cave National Park

Dear Mr. Keckler:

Wind Cave National Park is seeking comments concerning preliminary draft alternatives for the Visitor Use Plan/ Environmental Assessment (EA) being written for opening up for visitation 5,556 acres of land the park acquired in September of 2011.

This Government-to-Government consultation for this EA began in March of 2012 with a scoping meeting held for affiliated tribes. In November of 2012, another meeting was held to provide updates on the planning process, discuss potential alternatives of the plan, and to review an archeology investigation of the area held during late summer of 2012.

Before releasing the plan's draft alternatives to the public, we are seeking your comments on the preliminary draft alternatives, which comprise Chapter Two of the EA. (The majority of the draft EA has not been written. The entire draft EA will be available for tribal and public review later this summer.)

If a representative of your tribe would like to visit the park and view the area mentioned in the plan, we would like to help facilitate a visit by paying for up to two nights of lodging and providing a $150 honorarium. There will also be an opportunity to comment on the draft alternatives next summer when the park plans a meeting with all the tribes, but if you would like to participate in this early review we need your visit to occur, and your comments back to the park, by May 5. Please let us know if you intend to visit the park during this time so we can arrange your lodging.

We would also like to invite you to send a monitor to the park this June when National Park Service archeologists from the Midwest Archeological Center (MWAC) will again be working on the new property, primarily conducting inventory through surface survey and geophysical prospection, although some very limited testing is also planned. They plan to be here for three weeks, from June 9

to 27, 2014, and welcome your participation. The park would be able to pay $190 per day for a monitor, but they would be responsible for providing their own lodging and food.

We look forward to your participation in this planning process for Wind Cave National Park. If you have any questions, please contact me or Tom Farrell, our Chief of Interpretation. We can both be reached at (605) 745-4600 or at vidal_davila@nps.gov or tom_farrell@nps.gov.

Sincerely,

Vidal Davila

Vidal Davila
Superintendent

Attachments

cc: Dr. Michael J. Evans, Program Chief, Ethnography and Senior Cultural Anthropologist
Mr. Jay D. Vogt, South Dakota State Historic Preservation Officer

Tribal Correspondence Mailing List

Mr. Kevin Keckler
Chairman
Cheyenne River Sioux Tribe
P.O. Box 590
2001 Main Street
Eagle Butte, SD 57625

Mr. Eddie Hamilton
Governor
Cheyenne-Arapaho Tribes of Oklahoma
P. O. Box 38
Concho, OK 73022

Mr. Brandon Sozue
Chairman
Crow Creek Sioux Tribal Council
P. O. Box 50
Fort Thompson, SD 57339

Mr. Anthony Reider
President
Flandreau Santee Sioux Tribe
P. O. Box 283
603 W. Broad Ave.
Flandreau, SD 57028

Ms. Tracey King
President
Fort Belknap Community Council
RR1, Box 66
Harlem, MT 59526

Mr. Floyd Azure
Chairman
Fort Peck Tribal Executive Board
P. O. Box 1027
Poplar, MT 59255

Ms. Amber Toppah
Chairman
Kiowa Tribe of Oklahoma
P.O. Box 369
Carnegie, OK 73015

Mr. Michael B. Jandreau
Chairman
Lower Brule Sioux Tribal Council
P.O Box 187
Lower Brule, SD 57548

Mr. Gabe Prescott
President
Lower Sioux Indian Community
P. O. Box 308, Res. Hwy 1
Morton, MN 56270

Mr. Harvey Spoonhunter
Chairman
Northern Arapaho Tribe
P. O. Box 396
Fort Washakie, WY 82514

Mr. Leroy Spang
President
Northern Cheyenne Tribal Council
P. O. Box 128
Lame Deer, MT 59043

Mr. Bryan V. Brewer
President
Oglala Sioux Tribal Council
P. O. Box 2070
Pine Ridge, SD 57770

Ms. Becky White
Chairman
Ponca Tribe of Nebraska
P. O. Box 288
Niobrara, NE 68760

Mr. Earl Howe
Chairman
Ponca Tribe of Oklahoma
20 White Eagle Drive
Ponca City, OK 74601

Mr. Cyril Scott
President
Rosebud Sioux Tribal Council
P. O. Box 430
Rosebud, SD 57570

Mr. Roger Trudell
Chairman
Santee Sioux Tribal Council
425 Frazier Avenue N., Suite 2
Niobrara, NE 68760-7219

Mr. Mike Selvage
Chairman
Sisseton-Wahpeton Sioux Tribal Council
P. O. Box 509
Agency Village, SD 57262

Mr. Dave Archambault II
Chairman
Standing Rock Sioux Tribal Council
P. O. Box D
Fort Yates, ND 58538

Mr. Marcus Levings
Chairman
Three Affiliated Tribes Business Council
404 Frontage Road
New Town, ND 58763

Mr. Thurman Cournoyer
Chairman
Yankton Sioux Tribal Bus. & Claims Comm.
P. O. Box 248
Marty, SD 57361

Mr. Dana Dupris
Cultural Preservation Specialist
Cheyenne River Sioux Tribe
P. O. Box 590
19 Dupree Street
Eagle Butte, SD 57625

Mr. Dale Hamilton
Coordinator of Cultural and Heritage Programs
Cheyenne-Arapaho Tribes of Oklahoma
P. O. Box 137
Concho, OK 73022

Ms. Carol Robertson
Historic Preservation Officer
Flandreau Santee Sioux Tribe
P. O. Box 283
603 W. Broad Ave.
Flandreau, SD 57028

Mr. Michael B. Black Wolf
Historic Preservation Officer
Fort Belknap Community Council
RR1, Box 66
Harlem, MT 59526

Mr. Curley Youpee
Cultural Resource Dept. Director
Fort Peck Tribal Executive Board
P. O. Box 1027
Poplar, MT 59255

Ms. Clarie Green
Cultural Resource Officer
Lower Brule Sioux Tribal Council
187 Oyate Circle
Lower Brule, SD 57548

Ms. Grace Goldtooth
Historic Preservation Officer
Lower Sioux Indian Community
P. O. Box 308, Res Hwy 1
Morton, MN 56270

Ms. Darlene Conrad
Historic Preservation Officer
Northern Arapaho Tribe
P. O. Box 396
Fort Washakie, WY 82514

Mr. Conrad Fischer
Historic Preservation Officer
Northern Cheyenne Tribe
P. O. Box 128
Lame Deer, MT 59043

Mr. Randy Teboe
Historic Preservation Officer
Ponca Tribe of Nebraska
P. O. Box 288
Niobrara, NE 68760

Mr. Richard Iron Cloud
Historic Preservation Officer
Oglala Sioux Tribal Council
P.O. Box 320
Pine Ridge, SD 57770

Mr. Rick Thomas
Historic Preservation Officer
Santee Sioux Tribal Council
425 Frazier Avenue N., Suite 2
Niobrara, NE 68760-7219

Mr. Russell Eagle Bear
Historic Preservation Officer
Rosebud Sioux Tribe
P. O. Box 658
Rosebud, SD 57570

Ms. Dianne Desrosiers
Historic Preservation Officer
Sisseton-Wahpeton Sioux Tribal Council
P. O. Box 717
Agency Village, SD 57262

Ms. Waste' Win Young
Historic Preservation Officer
Standing Rock Sioux Tribe
P. O. Box D
Fort Yates, ND 58538

Mr. Elgin Crowsbreast
Historic Preservation Officer
Three Affiliated Tribes Business Council
404 Frontage Road
New Town, ND 58763

Mr. Pete Coffey Jr.
Chief Compliance Officer
Three Affiliated Tribes Business Council
405 Frontage Road
New Town, ND 58763

Mr. Lyle Miller
Historic Preservation Officer
Yankton Sioux Tribal Bus. & Claims Comm.
P. O. Box 248
Marty, SD 57361

Dr. Michael J. Evans
Program Chief, Ethnography and Senior
Cultural Anthropologist
National Park Service
683 Panorama Drive
Moscow, ID 83843

Mr. Jay D. Vogt
State Historic Preservation Officer
South Dakota State Historical Society
900 Governors Drive
Pierre, SD 57501

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:
H4217 (WICA)

April 4, 2012

Mr. Jay D. Vogt
State Historic Preservation Officer
South Dakota State Historical Society
900 Governors Drive
Pierre, South Dakota 57501-2217

Subject: Section 106 Review: Visitor Use Plan/ EA for Casey Addition to Wind Cave National Park, PEPC # 41142

Dear Mr. Vogt:

The purpose of this letter is to notify you that the National Park Service is beginning the planning process for the above referenced project. The primary goal of this project is to provide visitor access to the park's newly acquired 5,556 acres. This is an interim plan to allow the land to be open to the public and provide a minimum level of visitor services. A larger vision plan, incorporating the new land into the historic park, called a Management Zone Plan, will start later this spring.

The park is aware that American Indians value Wind Cave itself as a very special place, so we want to be sure that the project will reflect ethnographic resources valued by tribes. Therefore, we have begun formal Government-to-Government consultation in accordance with legislation, Executive Orders, regulations, and policy, including sections 101 and 106 of the National Historic Preservation Act of 1966 as amended, 36 CFR 800, National Park Service *Management Policies* and Director's Order 28, *Cultural Resources Management* (especially Chapter 10, Ethnographic Resources). This consultation is intended to ensure that mutually held goals for management of important natural and cultural resources are met.

To date, on-site meetings with seven tribal representatives have occurred. As a result of these meetings, the National Park Service is working to start the process of identifying Traditional Cultural Properties in and around the Sanson Buffalo Jump (39CU0002). If your office has any recommendations about sources of information or groups and individuals to consult during this identification process, please contact me or Tom Farrell, our Compliance Coordinator.

To help ensure that cultural resources included in or eligible for inclusion in the National Register are appropriately considered during preparation of the plan and the accompanying EA, we are initiating consultation with your office in accordance with 36 CFR 800, and with the 2008 Servicewide Programmatic Agreement between your office and the National Park Service.

Preparation of an EA is necessary to meet the requirements of the National Environmental Policy Act. In addition, the process and documentation required for preparation of the EA will be used to comply with the Section 106 of the National Historic Preservation Act. In accordance with section 800.8(c) of the Advisory Council on Historic Preservation's regulations (36 CFR Part 800), I am notifying your office in advance of the park's intention to use the EA to meet its obligations under Section 106.

We will send a copy of the draft EA to you for review and comment as soon as it is completed. We look forward to receiving your input on our plans and any concerns you have about the project. We would be pleased to discuss this project further, either by telephone or in a meeting.

If you have any questions, please contact me or Tom Farrell, our Section 106 Compliance Coordinator. We can both be reached at (605) 745-4600 or via e-mail at vidal_davila@nps.gov or tom_farrell@nps.gov.

Sincerely,

Vidal Davila
Superintendent

cc: Chief, HNRP, Associate Regional Director, Cultural Resources

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 US Highway 385
Hot Springs, South Dakota 57747

IN REPLY REFER TO:

WICA (1.D)

September 19, 2013

Chief, Division of Ecological Services
U.S. Fish and Wildlife Service – Region 6
134 Union Boulevard, Suite 650
Lakewood, CO 80228

SUBJECT: Notification of Project and Consultation Initiation

The National Park Service is starting the development of a Visitor Use Plan/ Environmental Assessment to provide visitor services on 5,556 acres of land acquired in 2011. This additional land is adjacent to the historic southern boundary of Wind Cave National Park in Custer County, South Dakota.

The park is requesting a list of any endangered or threatened species for Custer County, South Dakota that might occur in Wind Cave National Park.

This letter serves as a record that the National Park Service is initiating consultation with your agency pursuant to the requirements of the Endangered Species Act and National Park Service management policies.

I appreciate your attention to this inquiry and look forward to working with your office throughout this planning effort. Please direct any responses to: Superintendent, 26611 U.S. Highway 385, Hot Springs, South Dakota, 57757.

Sincerely,

Vidal Davila
Superintendent

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

November 20, 2013

MEMORANDUM

To: Superintendent, National Park Service, Wind Cave National Park
Hot Springs, South Dakota

From: Field Supervisor, Ecological Services Natalie Gates, Acting F.S.
South Dakota Field Office; Pierre, South Dakota

Subject: Visitor Use Plan/Environmental Assessment in Custer County, South Dakota

This memorandum is in response to your request dated September 19, 2013, for environmental comments regarding the above referenced project involving the preparation of an environmental document for the development of a Visitor Use Plan/Environmental Assessment in Custer County, South Dakota.

In accordance with section 7(c) of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed and proposed species may occur in the project area (this list is considered valid for 90 days):

Species	Status	Expected Occurrence
Whooping crane (*Grus americana*)	Endangered	Migration in all counties.
Black-footed ferret (*Mustela nigripes*)	Endangered (Experimental)	Known in Custer County.
Northern long-eared bat (*Myotis septentrionalis*)	Proposed Endangered	Summer resident, seasonal migrant, known winter resident in the Black Hills.
Rufa red knot (*Calidris canutus rufa*)	Proposed Threatened	Rare seasonal migrant.

Additionally, the following candidate species may occur in the area:

Species	Status	Expected Occurrence
Sprague's pipit (*Anthus Spragueii*)	Candidate	Possible breeding/migration.

Sprague's pipit is a candidate species and accordingly is not, at present, provided Federal protection under the Endangered Species Act. Their candidate status defines this bird as a species in decline that the U.S. Fish and Wildlife Service believes needs to be listed as threatened or endangered, but listing is currently precluded by other priorities.

If the National Park Service or their designated representative determines that the project "may adversely affect" listed species in South Dakota, it should request formal consultation from this office. If a "may affect - not likely to adversely affect" determination is made for this project, it should be submitted to this office for concurrence. If a "no effect" determination is made, further consultation may not be necessary. However, a copy of the determination should be sent to this office.

The U.S. Fish and Wildlife Service appreciates the opportunity to provide comments on this project. If you have any questions on these comments, please contact Terry Quesinberry of this office at (605) 224-8693, Extension 234.

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

1.A.2. (WICA)

April 15, 2014

Mr. Scott Larson
U.S. Fish and Wildlife Service
Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

Dear Mr. Larson:

As you know, from your memorandum dated November 20, 2013, Wind Cave National Park (Park) is beginning the planning process for a recently acquired 5,556 acre parcel of land adjacent to its southern boundary. At the present time, I have closed the area to the public until this Visitor Use Plan/ Environmental Assessment (EA) is completed. This planning process is to solicit ideas from the public concerning how people will access the property, what types of visitor activities should take place; and if, and where, visitor facilities should be constructed.

In your November 20, 2013, memorandum you provided the status and the expected occurrence of federally listed and proposed species as well as a candidate species that may occur in our project area. We have reviewed your list and my resource staff is providing their comments and determinations for those species.

Conclusions:

The Park has been keeping records of wildlife observations for nearly 100 years. To date we have not documented the presence of the Whooping crane (*Grus americana*), Rufa red knot (*Calidris canutus rufa*) nor the Sprague's pipit (*Anthus Spragueii*). The Park has determined there will be "no effect" to these species.

The Endangered Black-footed ferret (*Mustela nigripes*), reintroduced into the park in July 2007, have become established in various prairie dog colonies throughout the park. Currently there are no prairie dog colonies present on the new parcel of land therefor we determined there will be "no effect" to this species.

Another species that may reside in the Park is the Northern long-eared bat (*Myotis septentrionalis*). The Park has not surveyed these new lands for this species of bat but it is likely to be found on the property. If funding becomes available, mist netting (August/September) and acoustic monitoring (May through October) will be completed on the new property in 2014. However, we do not anticipate doing any activities within the new property for this project that would be detrimental to the species.

Within Wind Cave National Park there have been 4 bat surveys conducted inside the older part of the park with the earliest, Peck 1964 and the most recent, Schmidt et al.2004. The only record of the Northern long-eared bat (NLEB) during the summer months was on August 13, 2004, when a lactating female was mist netted. An acoustic survey conducted during the same time period also recorded the sound from a NLEB. The presence of this species was also documented during a February 2011 hibernacula survey. One bat was identified in Wind Cave and one bat was documented in a backcountry cave. The backcountry cave is found on the new property which is part of the project area being discussed.

There are no trails nor any construction planned to be within a ½ mile of this hibernacula. There is potential trail construction associated with this plan but it will involve existing two track roads that will be turned into trails therefor should involve minimal tree removal. If there is potential roosting or maternity sites found along the suggested trail routes resource staff will evaluate and determine if it is safe to leave the snag or live tree in place.

There is no major tree clearing projects associated with this plan.

Potential road grading and parking lot designation should not have any effects on the NLEB since these activities will be on existing road beds and existing open grassy areas. No trees should be removed in this process.

There are a few out-buildings/sheds and one ranch house that may potentially support bat habitat for roosting or maternity use in the summer months. Resource staff will survey these structures for presence of bats and determine if the NLEB is present. If the NLEB is found park staff will consult with the USFWS to determine if there is some mitigating factors that can help with the protection of the bats as well as the structures themselves.

Based on the information provided, we have made Endangered Species Act determinations of "Not Likely to Adversely Affect" for the NLEB and "No Effect" for the other species for this project. We request concurrence from your agency to our determinations.

Please contact me at 605-745-1129 if you need additional information or have questions. I look forward to hearing from you.

Sincerely,

Vidal Davila

Vidal Davila
Superintendent

United States Department of the Interior

NATIONAL PARK SERVICE
Wind Cave National Park
26611 U.S. Highway 385
Hot Springs, South Dakota 57747

1.A.2. (WICA)

April 15, 2014

The U.S. Fish and Wildlife Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.

5/19/14 Scott Larson
Date SD Field Supervisor
USFWS

Mr. Scott Larson
U.S. Fish and Wildlife Service
Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

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There are a few out-buildings/sheds and one ranch house that may potentially support bat habitat for roosting or maternity use in the summer months. Resource staff will survey these structures for presence of bats and determine if the NLEB is present. If the NLEB is found park staff will consult with the USFWS to determine if there is some mitigating factors that can help with the protection of the bats as well as the structures themselves.

Based on the information provided, we have made Endangered Species Act determinations of "Not Likely to Adversely Affect" for the NLEB and "No Effect" for the other species for this project. We request concurrence from your agency to our determinations.

Please contact me at 605-745-1129 if you need additional information or have questions. I look forward to hearing from you.

Sincerely,

Vidal Davila

Vidal Davila
Superintendent

APPENDIX E: TRAIL DESIGN STANDARDS

This appendix includes specific guidelines for various trail types regarding trail design parameters (width, surface, grade, etc.), as well as best management practices to prevent establishment of non-native species when constructing trails and other visitor facilities.

The following table includes design guidelines recommended for each of four trail types: trails on existing two-track roads, new hiking trails (not on existing two-track roads), the accessible interpretive trail (including the trail to the overlook), and trails around the parking areas and ranch house. These guidelines provide a range of limits based upon the user type, intended experience, and conditions in specific trail locations.

Table E-1:Design Guidelines for Trail Types

		Trail Type			
		New Trails on Existing Two-Track Roads	**New Hiking Trails (not on existing two-track roads)**	**Accessible Interpretive Trail (includes trail to overlook)**	**Trails around Parking Areas & Ranch House**
Tread Width		As is	12” – 18”	ADA/minimum	24” – 36”
Tread Surface/Material		Native with limited or no grading	Native	Surface meet ADA standards	Imported materials/ gravel
Trail Grade	**Target Range (>90% of trail)**	As is	0-10%	<5%	<8%
Cross-Slope	**Target Range**	As is	5-20%	ADA/Minimum	<3% of trail
	Maximum	As is		ADA/Minimum	3%
Design Clearing	**Width**	As is	Minimal	ADA standards	12” -18” outside of tread edge
	Height	As is	Minimal	ADA standards	8’
Design Turns	**Radius**	As is	Minimal	ADA standards	3’- 6’

Note: ADA = Americans with Disabilities Act

Best Management Practices (BMPs) related to prevention of non-native plant species establishment when constructing trails or other visitor facilities:

- Minimize construction limits and areas to be cleared, where possible.
- Disturbed earth areas will be revegetated with non-exotic plants.
- Any imported soil would be certified weed free prior to entering the park.
- All vehicles having contact with soil or materials that may contain noxious weed seeds will be washed prior to working in weed free areas or transporting weed free materials.
- No non-sterile imported topsoil or hay bales would be used during revegetation to avoid introduction of exotic plant species.
- Revegetation will use seeds of propagules from native plants (genetic stock originating in Wind Cave National Park).
- All disturbed earth areas will be monitored to identify and eradicate any noxious weeds or exotic vegetation.
- Due to the presence of noxious weeds and exotic species within the project area, the contractor would comply with the following measures:
    - NPS would inspect all contractor vehicles and equipment prior to their entry into the park for mud, weeds and other unwanted substances. Pressure wash all vehicles, heavy equipment, hauling vehicles and trailers before their first entry into the park. Pressure wash hauling vehicles that have previously transported weed contaminated material before transporting clean material. Subsequent entries of hauling vehicles into the park would not require pressure washing unless the vehicle shows signs of mud, plant material, or as requested by the NPS. Notify the NPS a minimum of 48 hours prior to initial entry of vehicles to the park. The NPS would make arrangements for the inspections.
    - The project would be divided into soil isolation zones to prevent the spreading of noxious weeds by limiting the movement of weed infested materials and equipment. The park would identify each zone to be included in the contract. These zones would be clearly marked on the project site. The NPS would meet the contractor in the field to specify the exact locations of each zone. Rock, conserved topsoil or stockpiled manufactured topsoil would not be transferred between the zones, unless approved by the park. Excavated materials must be retained in the zone where it originated at all times, unless approved by the park, or wasted at a disposal site with the park's approval. All vehicles and construction equipment showing signs of mud or plant material would be cleaned before moving them between different zones or leaving the project site to reduce noxious weeds from spreading. Equipment would be cleaned by brushing to remove material deposited on wheels, bumpers and other exposed surfaces. Cleaning is not required when moving vehicles and construction equipment between zones provided they are clean and free of mud and/or plant material.
    - Notify NPS two weeks in advance regarding the contractors proposed locations for soil and rock stockpiles and turnaround areas for park approval. These sites would be inspected and approved by the park resource advisor or biologist before use. The park would remove noxious weeds from soil at the storage sites prior to project work to ensure the area is free of noxious weeds. The park would review proposed sites for acceptance. If the park does not approve the proposed site then an alternative site would be provided.

- The park would review and approve construction limits as identified in the project plans and contract documents and as staked on-site prior to construction commencing, within which clearing and grubbing would occur.
- All impacted areas would be re-seeded to establish native plants, control erosion, and limit growth of invasive plant species.
- Identify areas of noxious weeds prior to construction and treat the areas before construction begins (topsoil segregation, soil storage, herbicides, etc.).
- Develop a revegetation plan for disturbed areas and require use of genetically appropriate native species. The plan should specify species to be used, seed/plant source, seed/plant mixes, site-specific restoration conditions, soil preparation, erosion control, ongoing maintenance and monitoring requirements.
- Native vegetation should be salvaged and reused as much as practical.
- Minimize the threat of exotic plant infestations by not gathering native materials from existing infested areas.
- Minimize vegetation disturbance during construction by staging on roads and/or shoulders or other previously disturbed areas.

APPENDIX F: CUSTER COUNTY ROAD SPECIFICATIONS

CUSTER COUNTY HIGHWAY DEPARTMENT COUNTY ROAD SPECIFICATIONS
Approved by the Board of Commissioners on 12/28/06

The following minimum construction standards shall apply to all public roads within Custer County unless otherwise first approved in writing by the Custer County Highway Superintendent. The Custer County Highway Superintendent may require plans prepared by a Professional Engineer when waivers or variances to these Specifications are requested.

1. The minimum unobstructed vertical clearance above the driving surface shall be fourteen feet (14').

2. The minimum roadbed width below the driving surface shall be twenty-four feet (24').

3. The entire driving surface will consist of at least four inches (4") of gravel compacted to a uniform consistency.

4. Gravel shall consist of screened rock that is ¾"- and contains fine material with a plasticity index of 15%.

5. Application of dust control measures, such as magnesium chloride, may be required.

6. Driving surface vertical grade:

    A. The vertical grade of the first thirty feet (30') of driving surface from any intersection shall be at zero percent (0%) plus or minus two percent (+/- 2%).

    B. All vertical grade transitions shall be smooth.

    C. No vertical grade shall exceed twelve percent (12%).

    D. Vertical grades shall not exceed the maximum unless first approved by the County Highway Superintendent. In no case shall the grade be so steep as to impede use by emergency vehicles. Should such a grade be determined to exist, a "miscellaneous document" shall be filed with the Register of Deeds that states: "This property is served by a road that contains grades that may make this property inaccessible to emergency vehicles under certain weather/road conditions. Please consult with your local emergency service provider."

7. Road alignment requirements:

    A. Minimum radii of the road centerline on horizontal curves shall not be less than 100 feet (100').

    B. Roads must be designed to eliminate bends, crooks, and other undesirable or hazardous road conditions.

8. Intersection requirements:

    A. A detailed design is to be submitted for intersections that are either unusual in shape or are located on difficult terrain.

B. Acute angles at road intersections are to be avoided. Angles of less than eighty degrees (80º) are not permitted.

C. The shoulder radius at intersections shall not be less than twenty-five feet (25').

9. Culverts shall:

A. Have a minimum diameter of eighteen inches (18").

B. Be of a size, type, and length to assure proper drainage and be approved by the County Highway Superintendent prior to installation. Design of culverts by a licensed professional engineer may be required.

C. Be marked by Type 2 object markers to AASHTO MUTCD standards.

10. Cattle guards shall be at least two feet (2') wider than the minimum driving surface width and centered on the centerline of the driving surface. Installation and maintenance of cattle guards is the responsibility of the adjacent landowner per SDCL 31-25-2 and -3.

11. Ditches shall be of sufficient depth and design to adequately move water from the roadbed. It is recognized that Custer County has very diverse terrain and, as a result, a monolithic standard is difficult to apply. The following standards are to be aspired to but may be waived with prior written approval of the County Highway Superintendent. Waivers shall be based on an inability to meet these standards due to on-site construction constraints:

A. A minimum bottom depth of two and one-half feet (2.5') below the driving surface at all culvert inlets and outlets.

B. Inslopes of 3:1 or shallower for a minimum of six horizontal feet (6') from the edge of the road surface.

C. Backslopes shall not exceed 2:1 without prior written approval of the County Highway Superintendent. Certification as to soil stability by a Professional Engineer may be required.

D. Erosion control structures where deemed appropriate by the County Highway Superintendent.

E. Guardrail installation to AASHTO's Roadside Design Guide standards where terrain constraints and roadway design give rise to safety concerns for drivers that can only be addressed by such guardrail installation.

F. The County Highway Superintendent may require certification by a Professional Engineer as to soil stability and guardrail installation should design parameters exceed the above standards.

12. The developer shall be financially responsible for the installation of traffic signs. Traffic signs shall conform to AASHTO MUTCD standards. The County Highway Department shall install all traffic signs.

13. All dead-end roads longer than one-fourth (¼) mile may be required to have intermediate turn-arounds that are spaced no farther apart than one-fourth (¼) mile. Approaches for private access roads or driveways may be designated as intermediate turn-arounds and constructed to conform to Paragraph 21 of these Specifications.

14. Turn-around design or exceptions sought as a result of this provision must receive written approval by the County Highway Superintendent prior to construction.

15. Roads designed to have one end permanently closed shall be provided at the closed end with a turn-around having a minimum right-of-way diameter of one hundred and thirty feet (130') and a minimum roadway diameter of one hundred feet (100').

16. Construction **recommendations** for Private Access Roads and driveways:

    A. Minimum driving surface width of twelve feet (12').

    B. Inslopes of 4:1 or shallower for a minimum of six horizontal feet (6') from the edge of the driving surface.

    C. Private Access Roads that exceed one thousand, three hundred feet (1,300') in length should make provision for intermediate turn-arounds as outlined in item 11 above.

17. Additional minimum construction standards for Low-Volume Roads:

    A. Minimum driving surface width of eighteen feet (18').

    B. Low-Volume Roads shall provide access for no more than five (5) dwelling units.

18. Additional minimum construction standards for Medium-Volume Roads:

    A. Minimum driving surface width of twenty feet (20').

    B. Medium-Volume Roads shall provide access for six (6) to twenty-five (25) dwelling units.

19. Additional minimum construction standards for High-Volume Roads:

    A. Minimum driving surface width of twenty-four feet (24').

    B. High-Volume Roads shall provide access for more than twenty-five (25) dwelling units.

20. Road surface widths shall not be less than the minimum.

21. Approaches shall be built with a minimum road base width of twenty-four (24'), a minimum shoulder radius of twenty-five feet (25'), and a driving surface at least eighteen feet (18') wide with at least four inches (4") of gravel compacted to a uniform consistency.

22. All rights-of-way shall be at least sixty-six feet (66') wide.

23. Recommendations for speed limits, signage, and guardrail location to be provided to the County Highway Superintendent by the developer for review and approval prior to construction. The County Highway Superintendent may require that a Professional Engineer make said recommendations.

Available at: http://www.sdcounties.org/wp-content/uploads/Custer/Road%20Specifications%20Approved%20version20%2012.28.06.pdf.